Fertility Patterns of Child Migrants: Age at Migration and Ancestry in Comparative Perspective

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Abstract: This paper examines the fertility behavior of women who migrated as children to one of three OECD countries—Canada, the U.K. and France—and how it differs from that of the native born by age at migration. By looking at child migrants whose fertility is neither interrupted by the migration event nor ~~as~~ confounded by selection, we obtain a unique perspective of the adaptation process as a mechanism that explains variation in observed foreign and native-born fertility differentials. We find patterns broadly consistent with the adaptation hypothesis, and, on average, limited cross-national variation in fertility differentials. The effect of exposure to the host country, however, seems to vary by country of origin, a finding that underscores the importance of taking into the account the heterogeneity of the foreign-born population.

Keywords: Migrant Youths; Fertility; Canada; France; England and Wales; adaptation; age at migration

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Introduction

In recent years, the countries of the OECD have seen the number and diversity of their foreign-born populations increase substantially. With many countries facing increasing old-age-dependency ratios and demographic pressures on social services, particularly as the post-World War II baby-boom generation approaches retirement, the contribution that immigrants can make to demographic and welfare-state sustainability has attracted the interest of both academics and policymakers. Motivated by these concerns, a substantial body of research has developed that examines the extent to which the fertility of immigrant populations differs from that of the native-born population.

To date, studies have focused predominantly on the fertility outcomes of adult migrants; the fertility behavior of women who migrated as children has received relatively less attention. However, a closer examination of this group of migrants has the potential to contribute to knowledge in ways that are methodologically, theoretically, and policy relevant. For individuals who migrated as children, the link between migration and subsequent behavior should be less complicated by any short-term disruptive effects of the migration experience and less affected by selection and simultaneity bias at the individual level. Because adults are likely to make the decision to migrate in conjunction with education, labor market participation and other factors affecting fertility, it is difficult to consider age at migration as an exogenous determinant of their fertility outcomes. In contrast, children are likely to migrate with their parents and, as a result, their "decision" to migrate is plausibly independent of other variables affecting fertility, such as labor-market participation, education, or their own family formation.[1]

In this paper we examine the fertility behavior of women who immigrated as children (defined here as age 18 or younger) to one of three OECD countries: Canada, the United Kingdom (using data for England and Wales), and France. As a legacy of previous settlement patterns, there are

substantial linguistic, cultural, and institutional similarities between Canada and both European countries, but there are also some substantively interesting differences. Canada was formed as part of a colonial project, whereas migration flows to the United Kingdom and France are more recent, originating in particular from their former colonies and territories. Canada, which has one of the largest shares of foreign-born populations (20 percent), has developed an immigration policy that aims to select highly qualified and high-earning migrants but has also accepted large numbers of refugees. Although in recent years both France and the United Kingdom have made efforts to move toward a Canadian system, relatively few immigrants to France are educated to the tertiary level. The United Kingdom accepts large numbers of both highly skilled cosmopolitan immigrants and low-educated and low-skilled immigrants, usually via family reunification programs, and so has more highly educated immigrants than France but fewer than Canada (Belot and Hatton 2011). In addition to their differing policy regimes, the three countries have adopted different policy responses to the cultural diversity of immigrant populations, with Canada and the United Kingdom embracing multiculturalism to a far greater extent than France. Given these similarities and differences, a comparison of the three countries can highlight variations in patterns of immigrant fertility as well as point to possible explanations for those differences.

Fertility Behavior of Immigrants

In recent decades, all three countries we analyze have seen increases in the share of the foreign born in their total populations as well as changes in the composition of immigrant flows, with a higher percentage coming from high-fertility countries. Before 1980, a substantial share of immigrants to Canada came from the United States or Europe, but by 2006 immigrants from Asia constituted 58 percent of recent arrivals, and the number of immigrants from Africa was about twice pre-1980 levels. For the United Kingdom, the share of immigrants who came from Europe fell from more than half in 1971 to around one-third in 2011, while the share of those who came from South

Asia and Africa increased substantially (Rendall and Salt 2005). Similarly, traditional European migration flows to France, particularly from Spain and Italy, gave way to a new flow of "French Muslims" from North African countries, Turkey, and sub-Saharan Africa.

Although in all three countries, since at least the 1980s, the fertility of immigrant populations has exceeded that of the native born (Belanger and Gilbert 2003, Adsera and Ferrer 2010), their contribution to overall fertility, while increasing, remains fairly small (Coleman, Compton and Salt 2002; Sigle-Rushton 2008; Herran and Pisson 2007). Nonetheless, the extent to which a strategy of welcoming immigrants will sustain fertility over the longer term is less clear; evidence from Canada suggests that the fertility of second-generation immigrants may, in fact, fall below that of other native-born groups (Adsera and Ferrer 2010).

The analysis of migrant/native fertility differences requires an understanding of the forces that shape the fertility choices of migrants. In their seminal paper, Goldstein and Goldstein (1981) identify three important mechanisms to explain the differential fertility behavior of migrants: selection, disruption, and adaptation. These hypotheses have been tested in the literature, with none of them being conclusively accepted or rejected (Kulu 2005). The selection hypothesis posits that individuals who migrate differ systematically from non-migrants in their countries of origin, and this selectivity may explain their subsequent fertility patterns (Forste and Tienda 1996, Kahn 1988, Sobotka 2008). Their fertility preferences may more closely resemble those of the destination country than the source country even before they arrive. Further, migration policies may reinforce the selection process. The second mechanism draws attention to the (actual and anticipated) disruptive effects of migration on fertility (see Ng and Nault 1997, for Canada). Migration may separate spouses at least temporarily, and individuals who are planning to move may postpone childbearing until after they are settled in their new home. This anticipatory behavior may cause a temporary drop in fertility prior to the move, followed by a rapid resumption of fertility afterward

(Toulemon 2004). Finally the adaptation hypothesis posits that as migrants settle in their new environment their fertility norms and expectations begin to resemble those of the native population.

All three mechanisms are likely to shape the fertility of women who migrate as adults, and the independent role of each can be difficult to isolate and assess. This is less of a problem when, as in this paper, the focus is on child migrants. The fertility of those who migrate well before puberty should be unaffected by disruption. Moreover, their fertility choices are likely less affected by selection bias at the individual level, though, of course, selection may still play a role at the household or family level. For example, the Canadian immigration system, which awards more points to the highly educated, might have an indirect influence on child immigrants' educational achievement through parental education. Thus in the empirical analysis it is important to try to account for observed background characteristics (such as education and place of birth) that control for selection at the parental or household level.

Although we cannot entirely discount the selection hypothesis, when the sample includes only child immigrants the adaptation hypothesis is clearly the most salient mechanism. Child immigrants have had more time than adult immigrants to internalize the host country's norms regulating fertility behavior. Their socialization (the norms they have been exposed to during childhood) may have taken place mostly in the destination country (Hervitz 1985). Early arrival affords them more time in the host country and increases the likelihood that the young immigrant attends school and becomes familiar with the rules and institutions in wider society. Consequently, as the literature focusing on economic outcomes of immigrants has argued (Ferrer, Green and Riddell 2006; Picot et al 2007), the age at arrival is a likely to moderate adaptation in important ways.

Data and Empirical Approach

Method and data

Because our dependent variable, the number of children a woman has, is a discrete count variable, we estimate the number of children a woman has using a Poisson model that takes the form:

$$E(F_i) = \lambda_i = \exp(\beta I_i + \gamma X_i) \quad (1)$$

where F is the total number of children of female i, I is an immigrant indicator, and X is a vector of individual characteristics. Because our samples include women of varying ages, we include a control for exposure time (defined as age minus 15 years) in our models. We estimate four sets of models to assess the presence and size of fertility differentials in the three countries. The first set of models provides information on differences between the child immigrant and native-born populations in each country. A second set of models includes a series of indicators for place of birth. These models identify variations within the immigrant population and allow us to identify specific groups of child immigrants who are most and least similar to the native born in their destination countries. In the third set of models, we allow immigrant/native-born fertility differentials to vary by age at immigration. We are particularly interested in whether those who migrated earliest as children appear more similar to the native population because they had more time to internalize the norms of their host countries and whether any differentials increase with age at migration. Finally, since not all immigrants were born in high-fertility countries and because adaptation is about adopting new behaviors, a fourth set of models examines whether the association of fertility with age at migration varies by place of origin.

The first three sets of models include controls for region or province of residence, census year and age (measured using five-year age groups, with 26–30 as the reference group). Additional

controls for marital status and education are introduced in a second specification. Given cross-national variation in the composition of the immigrant population, we examine fertility differentials both before and after we control for socioeconomic and demographic differences between the native and foreign-born populations that might be related to overall adaptation as well as contribute to observed differences in their fertility. Educational choices may reflect, in part, family background in education and/or income opportunities (and, in that regard, selection at the family level) but they may also be an outcome of adaptation. To the extent that some of the adaptation into the host country will occur through the educational system and through partnership behavior, controlling for these two variables will produce estimates net of the effect of educational and marital choices that are, in fact, implicated in decisions about fertility. Proper treatment of the simultaneity of these processes requires complex modeling that it is beyond the scope of this paper.[2] Consequently, the results from these models should not be interpreted as rigorous tests of the adaptation hypothesis. However the results could provide some suggestive evidence that observed patterns of adaptation operate through changes in educational investments and patterns of family formation. This is important to keep in mind when we discuss the fourth sets of models. In the interest of parsimony, we present those results including the full sets of controls only.

Our data are drawn from three sources. For Canada, we use the confidential files of the Canadian Census of Population (20 percent sample) for the years 1991, 1996, 2001, and 2006.[3] For each census year, we select all women 16 to 45 years old, excluding aboriginal women. To reduce computing time, we selected a 20 percent random sample of native-born individuals and all immigrants that arrived in the country by age 18. All calculations are weighted to take into account the over-representation of immigrants. The four censuses, when pooled, provide about 1.3 million observations.

For France, we take advantage of the "Enquête sur Trajectoires et Origines" (TeO) 2008, the main source of information about current living conditions and trajectories of the population living in metropolitan France, particularly immigrants, individuals born in the French overseas territories living in France and their descendants. We select all women ages 16 to 45 who were either native born or migrated to France before age 19. After dropping observations with missing information on the variables we include in our models (2.9 percent of observations), our final analytic sample includes 6,871 women. The TeO dataset has a complex survey design, and weights are applied throughout.

The data for the United Kingdom are a subsample of the Office for National Statistics Longitudinal Study (ONSLS), a complete set of linked census records (1971–2001) for about 1 percent of individuals living in England and Wales, together with data drawn from administrative records (births, deaths, National Health Service registrations, and cancer records). New ONSLS members enter the study through birth and immigration, and existing members leave through death and emigration. Our sample uses ONSLS census records from 1991 and 2001, but for women appearing in both the 1991 and 2001 censuses, we randomly dropped one record. We first selected women who were ages 16 to 45 and living in private residences when they were enumerated. We dropped women who were born in Scotland and Northern Ireland (the two other constituent countries of the United Kingdom). Although born outside of England and Wales, these women are not immigrants and so are difficult to classify in a meaningful way. After we dropped adult migrants and observations with missing values for any of the control variables (just over 15,000 cases: two-thirds were missing education and almost all of the rest were missing age at migration), our final sample contained more than 102,000 women.

We used the "own child" method (the number of children living in the household) to obtain our measure of fertility. Our samples are restricted to relatively young women (up to age 45) to

minimize the likelihood that children have grown up and left home, and where possible, we assessed the impact of any potential bias due to measurement error in our dependent variable.[4] Although infant and child mortality may vary across immigrant groups (and compared with the native born), mortality adjustments have only a negligible effect on own-child estimates of fertility in countries with low child mortality (Dubuc 2009).

We defined an immigrant as an individual not born in the country where our data were collected. In the French data, this includes women born in the overseas departments of Guadeloupe, Martinique, French-Guyana, and Réunion and overseas territories and collectivities (collectively referred to as DOMs). Although they have the same legal status as those born in France, their physical distance and cultural specificities differentiate them from the native-born French. Rather than drop these cases from what is already a relatively small sample, we have opted to retain all individuals born in DOM as a separate group in our sample.

Information on country of birth is provided in varying levels of detail across the three data sets. The Canadian Census has an exhaustive classification of more than 200 countries of birth that we group into 20 manageable categories. In doing so, we have tried to capture common ethnicity and cultural characteristics as well as the size of the immigrant population from the area. For France, we group information on country of birth into 15 categories that closely, but not entirely, match those used in the Canadian census. Small numbers mean that immigrants from America must be included in the "other" category. The African-born in France, on the other hand, are relatively numerous and varied, so we include more detailed measures of place of birth for these women. The 1991 and 2001 U.K. censuses use the ONS Geography Classification of Countries to classify country of origin. In the ONSLS, this information is consolidated to form a harmonized variable with 47 categories. As with the French data, we collapse these into 15 categories that roughly correspond to the Canadian categories, but where it is practical and substantively justified, we retain some more detailed

categories. Details of the coding strategy employed for each country are available from the authors on request.

All of our control variables are categorical. Information on geographic setting differs across the three data sources. The Canadian census includes the province of residence as well as an indicator for census metropolitan area; the U.K. data distinguish among regions and between urban and rural areas; and the French data use 27 indicators for regions. Age at immigration is directly reported in the Canadian and French data. In the data for Canada this refers to the age at which the respondent became a permanent resident, whereas for France it refers to the age at which the respondent first arrived in metropolitan France.[5] For England and Wales, age at immigration is derived either from a direct question on year of arrival in the 1971 census or, for those not present in 1971, from the date they first registered with the National Health Service.

As discussed above, some models also include controls for woman's partnership status and education level. The ONSLS data for England and Wales allow us to distinguish between partnered ("married/cohabiting") and un-partnered women. The Canadian data distinguish the "married/cohabiting" and "divorced/separated/widowed" from the "single, never married." The French data contain information on those who are currently "married/cohabiting." Single (or un-partnered) is always the omitted category.

We include education in the models as a series of indicators for different qualifications which take into account the specificities of the school systems in each country. In Canada schooling is compulsory from age six to 16 and publicly funded until the end of high school (generally the year the student turns 18). For Canada, we include a high school indicator and three indicators for different levels and kinds of post-secondary education (trades, non-university postsecondary, and university). The omitted category is less than high school degree. In France public education starts earlier (at age three) and finishes with the lycée (ages 17 and 18). We include indicators for a brevet

diploma (lower-secondary), a secondary diploma (BAC from the lycée or BEC or CAP from trade school), and two post-secondary indicators: the technical trades (BTS, DUT) and the university and professional school diplomas. The reference category is no degree. In England and Wales, full-time education is compulsory for children ages five to 16 (15 for those born before 1970). The types of qualifications that are awarded in secondary school do not map easily onto international harmonized categories like the International Standard Classification of Education (ISCED) (see Perelli-Harris et al 2010), so we do not distinguish between General Certificate of Secondary Education (GCSE) obtained at the end of compulsory education and A-level qualifications obtained after two additional years, and group them under one indicator for secondary education, "less than degree level." In addition we have one indicator for postsecondary education: "degree qualifications." "No qualifications" forms the reference category.

Descriptive statistics

Sample summary statistics, disaggregated by the native and foreign born, are presented in Table 1. The figures highlight several demographic differences between the native and foreign-born populations. In our samples, the average number of children among child migrants is higher than that of natives in France and in England and Wales and lower in Canada. Child migrants are also younger than natives in all countries, which may partially explain why they are less likely to be married/cohabitating than the native-born population in France and Canada. The figures in Table 1 show that about half of the Canadian, 40 percent of the French and 45 percent of the U.K. immigrant sample arrived in the previous 20 years, but our focus on child migrants means there are few very recent arrivals in our data. Canadian immigrants are fairly evenly distributed among age at arrival categories, whereas French immigrants are slightly more likely to have arrived before the age of six, or at ages 17–18. Overall our samples include a broad range of immigrants of different ages at arrival and arrival cohorts.

(Table 1 here)

The bottom rows of Table 1 show the highest level of education of the samples in each country by immigrant status. Differences in educational attainment between child immigrants and the native born vary substantially across the three countries, which may indirectly reflect their diverse immigration regimes (Belot and Hatton 2011). In the French sample, 65 percent of the native-born population has completed at most high school, versus 75 percent of the immigrants. The percentage with a university education is lower among foreign born (16 percent) than among natives (19 percent). In Canada education is similarly distributed across the native born and child immigrants. In England and Wales, the child immigrant population has larger shares at both the low and high end of the education distribution consistent with the heterogeneity of motives (mainly of their parents) to migrate there. Many of those who migrate for purposes of family reunification and marriage have low levels of education, and compulsory educational qualifications do not map easily onto English categories. But many highly skilled migrants come to metropolitan areas to work or study.

Table 2 shows the great diversity of the immigrant population that arrived before age 19 in each country by place of origin both within and across the three destination countries. European migrants comprise a sizeable fraction of the immigrant population in all three countries (about one-quarter of immigrants in the United Kingdom, two-fifths in Canada and more than a quarter in France). Other major areas of origin can be linked to well-established political and economic ties. The largest share of (child) immigrants to England and Wales and Canada (around 44 percent and 33 percent, respectively) arrived from the Middle East and Asia, reflecting important Commonwealth connections with countries such as India. Commercial links to the United States and Commonwealth links to many Caribbean countries have led to substantial migration from the American continent to the United Kingdom (10 percent) and Canada (22 percent). In contrast, the main immigrant group in

France comes from Africa (52 percent of all French child immigrants), predominantly from former colonies.

(Table 2 here)

An important issue for our analysis is highlighted when we look more closely at the broad regional categories presented in Table 2. Even where regional patterns look similar, important cross-national differences become apparent. For example, while 72 percent of those who migrated from the Middle East and Asia to England and Wales come from Southern Asia, in Canada South Asians comprise only about 24 percent of immigrants from this region, another 27 percent come from South-East Asia and 24 percent were born in China, a country that supplied important flows of cheap labor during the construction of the railways in Canada. Similarly, the majority of African immigrants to England and Wales (80 percent) come from South Africa, whereas the main source of African immigrants to France is North Africa (68 percent). These cross-national differences must be considered when interpreting and comparing the results from models that control for place of birth using more highly aggregated, regional categories.

Results

The relative fertility of child migrants

We provide results in the form of incident rate ratios (IRRs) that can be interpreted as the effect of a one-unit change in the independent variable on the incidence rate of fertility of foreign-born women to a reference category. When the reference category is native-born women, as in most of the models we present below, the IRR for variables that measure immigration status can also be interpreted as fertility rates of immigrant females relative to those of otherwise similar native-born females.

Table 3 reports IRRs from the first set of models that include a simple indicator for immigrant status. Consistent with findings of previous studies and with the descriptive statistics discussed in the

previous section, immigrant women have more children than their native-born counterparts in all three countries. In the baseline models, immigrant fertility rates are about 8 percent higher than the native born in Canada. The differential is substantially higher, well over 30 percent, in France and England and Wales where migration policies are less selective of those with high education and earnings. When educational qualifications and marital status are included as additional controls (specification II), the differential remains the same in Canada, while it falls by about 7 percentage points in France and in England and Wales, which suggests that some of the differences between child migrants and the native born might be explained by differences in socioeconomic and demographic characteristics that condition fertility choices in those countries.

(Table 3 here)

Table 4 shows a second set of models in which the immigrant indicator is replaced by a series of indicators for place of birth. Here we aim to account for cultural differences between the origin and destination countries that might contribute to heterogeneous fertility patterns between the native and foreign born. Rather than use the same reference group for place of birth in all three models, we opted for a reference category that includes immigrants who are likely to speak the same language as the native born and who experienced a similar cultural and institutional context prior to immigrating. In the models for Canada, immigrants born in the United States form the reference category. The reference category for England and Wales is similar but includes all women born in the United States and Canada. The organization of the welfare state is similar in all three countries, and many aspects of fertility in England and Wales (for example, its flatter, less peaked age-specific fertility schedules, relatively high rates of teenage parenthood, and social polarization of completed family size) are more similar to the United States than to other European countries (Sigle-Rushton 2008; 2010). In the French models, DOMs form the reference category.

(Table 4 here)

In France, with the exception of Eastern Europeans who have very low fertility, those born in European countries, in the DOMs or in “other countries” (that include North America and Pacific) have similar fertility to the French (or somewhat higher among those from Central-North Europe). Child migrants from other parts of the world—Turkey, Tunisia and Sub-Saharan Africa in particular—tend to have much higher fertility. With a few exceptions (Algeria, Morocco, and Central Europe), controls for education and marital status tend to narrow differentials between migrants and natives. The estimated IRRs in model II of Table 4 suggest that, with the exception of DOMs and perhaps those born in "other countries," non-European migrants have substantially higher fertility rates.

We find similar patterns of heterogeneity in England and Wales. Estimates in Table 4 show that the fertility of women from most geographic areas tends to be relatively similar to that of the native born, and it is significantly lower among child migrants from China and North America. However, those born in South Asia, the Caribbean, Central and Western Africa, parts of the world with high fertility, have substantially more children than natives. Controls for education and marriage tend to reduce the IRRs for immigrants from South Asia, but the IRRs for Central and Western Africa and the Caribbean increase after socioeconomic controls are introduced. Similarly, in Canada immigrants from Mexico and Central America and the Middle East have the highest fertility rates, while European (except for Southern Europeans) and Asian (other than from Southern Asia) migrants have the lowest fertility rates. Including educational and marital status controls in the regression tends to reduce (or leave unchanged) fertility differentials for all groups except for immigrants from Africa and the Caribbean, who tend to have lower levels of education than other immigrants.

The importance of age at migration

As noted in the theoretical section, restricting the analysis to those who migrated before adulthood allows us to better isolate and identify fertility patterns that reflect adaptation to the rules and expectations that govern fertility behavior in the destination country. In that regard, to account for their length of exposure to the host country's norms and culture, our third set of models replaces the immigrant status indicator with detailed indicators of age at immigration. As before, we estimate a baseline model first, and then introduce controls for education and marital status. To the extent that these characteristics reflect successful adaptation to the host culture and to the extent that they mediate fertility outcomes, their inclusion in the model may remove important components of the adaptation process itself. Finally, we also estimate a third model that includes all of the covariates in the second specification as well as indicators for place of birth. The IRRs for the age-at-immigration indicators are presented graphically in Figure 1 separately for each destination country and for each of these three specifications. Table 1A in the appendix shows the coefficients of each age at migration and their corresponding p-values in all these models

(Figure 1 here)

Results from the basic model (I), presented in Figure 1 separately for each country, are consistent with the predictions of the adaptation model. Holding current age constant, fertility generally increases with age at immigration. In Canada, differences between natives and immigrants who arrived as preschoolers (until age six) are slightly negative for those arriving as infants (under age two) or negligible. The average immigrant to Canada arriving between six and 11 years of age shows a differential of 3 to 4 percent with respect to the native born. This differential increases to about 10 percent for those arriving during early adolescence (ages 12 to 15), and for late adolescents rises sharply from 22 percent for those who arrive at age 16 to 32 percent for the 18-year-olds. In

England and Wales and France, fertility differentials are larger than in Canada for any given age at immigration, although, particularly in the case of France, the IRRs are much more volatile and imprecisely estimated due to the much smaller sample. Immigrants who arrive in England and Wales as infants do not differ significantly from the native born; those who arrive at ages three to 9 have fertility rates that are 11 to 22 percent higher; and rates for those arriving at ages 10 to 14 are 28 to 39 percent higher. For the latter group, there is a clear inflection point at about age 15. Fertility differences between natives and immigrants arriving after age 14 are even more substantial (63 to 80 percent). In France, in the basic model without socioeconomic and cultural controls, fertility differences are larger for any given age at immigration than for the other two countries. Nevertheless, the age-at-immigration profile is similar. Immigrant/native fertility differentials are clearly not statistically significant for those who arrived before age three and not significant in a consistent manner among those who arrived before age eight. As seen in Figure 1 and in Table 1A, very large fertility differences exist for those arriving during adolescence, particularly after age 12.

In the second specification, we add controls for marital status and education to account for compositional differences that may be related to fertility and that presumably vary across the different immigrant groups in each country. As we anticipated, compared to the baseline model (See Figure 1, (a), (b) and (c)), the age-specific IRRs, which are generally positive, increase slightly at young ages; but the additional controls make the age at migration profile flatter because the controls reduce the fertility gap for those arriving later in their childhood, particularly during adolescence in England and Wales and during late adolescence in France. In Canada, the pattern of change is more complex, as controlling for education and marital status also increases fertility for those arriving before age 15. The fertility of those arriving as infants becomes indistinguishable from that of natives instead of slightly lower. These changes are likely related to the highly selective points-based immigration system.

Finally, in order to take into account compositional differences among countries of origin and to control for cultural differences across immigrant groups, we include an additional set of indicators for the place of birth in specification (III). In this specification, the IRRs for each of the age-at-immigration dummies presented in Figure 1 represent fertility differentials between the group used as a reference for place of birth (the United States for Canada, North America for England and Wales, and DOMs in France) and the native born. Close similarities between the reference groups (our criterion for choosing them) and the native population lead us to expect the IRRs for age-at-immigration dummies to move even closer to 1 in this specification. The age-at-immigration dummies change very little in the Canadian data when place-of-birth dummies are added, suggesting that, net of our full set of controls, the fertility levels of the place-of-birth reference group (the United States) are very close to those of the Canadian born and similar to those of the foreign-born population as a whole (which, as we saw in Table 3, includes individuals with both higher and lower levels of fertility). Place-of-birth dummies (Appendix Table 2A) tend to exceed 1 for migrants who were born in high fertility countries but migrated as children. The age-at-immigration profiles for these groups are shifted upward and positive peaks are more exacerbated. In contrast, the profiles become even flatter and shift down for women who were born in lower fertility countries. Estimates in Table 2A suggest that, relative to the profile presented for those who immigrated from the United States to Canada, each age-at-immigration IRR is 30 percent lower for North East Asian immigrants and 50 percent higher for women born in Mexico. For women born in other countries, the fertility profile by age at immigration falls between these two extremes.

In England and Wales, age-at-immigration IRRs for the place-of-birth reference group (women born in North America) are rather lower and flatter, particularly in the adolescent years, than in the previous specifications when all women who migrated as children are compared to the native born. None of the coefficients for age at migration in specification (III) (Table 1A) is

significant. This is not surprising, given that fertility is close to replacement in much of North America. Estimates in Table 2A suggest that, relative to the profile presented for women who originated in North America, each age-at-immigration IRR is about 30 percent and 16 percent lower for those born in Central America and in China respectively, but 65 percent higher for immigrants born in South Asia and around 53 percent higher for women born in Central or West Africa and in the Caribbean with the same characteristics. This means that among women who migrated before age five, those who were born in North America have fertility rates that are 6 to 19 percent lower (though insignificant) than otherwise similar native born women, and those who were born in South Asia or Central and West Africa have fertility rates that are 55-34 percent or 44-24 percent higher, respectively. Because women from South Asia tend to have low levels of education and tend to marry earlier, actual fertility differences between this group and the native born are far wider. In contrast, as in the previous set of models, controlling for these variables does little to change the parameter for women born in Central and West Africa. Women who migrated from North America at ages 15 to 18 have fertility rates that are nearly identical (3 to 7 percent higher, though insignificant) to otherwise similar women who were born in England and Wales, but for otherwise similar women the fertility rates of women born in South Asia (Central and West Africa) are 77–70 (64–58) percent higher.

The results are similar for France, where the omitted group (French citizens born overseas), shows not only lower levels of fertility but also a significantly flatter profile (with no significant coefficients), at least up to age 15, than the profile that was observed in earlier models when all migrants were compared to the native-born French. Results suggest few differences between DOMs and those migrating from Europe, French Asia, America, and the Pacific.[6] By comparison, women who migrated from Africa as children have, at each age at immigration, an IRR that is 27 percent (for Algeria) to 102 percent (for Saharan Africa) higher than the IRR for people born in French territories. Similarly, women born in Turkey and Asian countries outside French Asia also have

significantly higher IRRs than the French, 47 and 66 percent, respectively. Of course, these results impose the same profile of age at migration across all countries of birth, a constraint that we relax in the last set of models.

Age at migration by place of origin

Consistent with the existence of an adaptation process of child migrants in the destination country, the results presented thus far suggest important variations in fertility levels by place of origin but a flattening age-at-immigration profile as more controls are included. However, the previous sets of models simply shift multiplicatively (but because the numbers do not vary too far from 1, the differentials appear largely parallel in the graphs) the underlying age profile by place of birth. This is somewhat restrictive, because the shape and slope of the fertility profile by age at immigration may well differ by country or origin. Because we are interested in understanding whether child immigrants arriving from certain regions adapt to the rules that guide fertility behavior in the host country faster than others with the same years of exposure, in a fourth set of models, we interact the age-at-immigration dummies with controls for place of birth. In these specifications, because of concerns about statistical power (particularly in the French data) and in the interest of parsimony, we aggregate the age-at-immigration categories into age groups that roughly correspond to key stages in the educational systems of our countries (birth to age five; six to 11; 12 to 16; and 17 to 18). We also group the more detailed place-of-birth dummies into broader regional categories (U.S.-Europe, Middle East, South Asia, Other Asia plus the Pacific, Africa, and South America including Central America). However, there are some differences across countries regarding the unique composition of the immigrant population that we have tried to take into account, such as the diversity of Asian immigration in Canada and the United Kingdom.

Figure 2 (a), (b) and (c) shows, for each country, the cumulative effect of the interaction between the age groups and broad areas of origin by allowing interactions between age of immigration and place of birth. The results are from models estimated using the full sets of control

variables (available from the authors upon request). In England and Wales, the shape of the age-at-immigration profile differs substantially by region of birth. Women born in Asia and the Pacific have fertility profiles that are similar to the native born at all ages of immigration. Women who migrated from South America have a rather different profile. Those who immigrated before age six and after 16 have lower fertility than otherwise similar women who were born in England and Wales. Those who migrated at other ages have far more children. A similar but less extreme pattern emerges for women born in North America and Europe. The lower fertility of older migrants may be due to selective migration of students from these areas to participate in higher education (if they live in private households, they are included in our sample).

(Figure 2 here)

The remaining immigrants to England and Wales tend to come from higher-fertility countries. The profile of the IRRs is similar for women who were born in South Asia and Africa. South Asian-born women who migrate before age six have fertility rates that exceed those of the native born by about 31 percent. Conversely, the fertility of African-born women who migrate at the same ages is virtually identical to that of the native born. Those who immigrate at ages that correspond to primary and secondary school exhibit higher fertility, and differences between younger and older school-aged migrants are small. Finally, those who migrate after age 16 have the highest fertility levels relative to the native born—85 percent higher for women born in South Asia and around 30 percent higher for women born in Africa. The profile for women who were born in the Middle East differs substantially. Those who migrate after age 16 have around 34 percent higher fertility than the native born. Those who migrate at preschool or secondary school ages look little different from their native-born counterparts, and those who migrate during primary school actually exhibit lower fertility. Taken together the results are consistent with a model of adaptation in that the youngest immigrants, regardless of area of origin, tend to look very similar to otherwise similar women who were born in England and Wales, and those who migrated after age 16 tend to have

higher fertility. Moreover, disparities tend to be largest for women who were born in South Asia and Africa, countries with cultural norms that tend to encourage and maintain high levels of fertility.

African and Asian immigrants to France have substantially higher fertility rates than their native-born counterparts at all ages at immigration, but differentials are most marked among women who immigrated as teenagers (Figure 2(c)). Fertility differentials for European immigrants are smaller and insignificant. Fertility differentials for the DOMs are also negligible during early childhood. They widen at early adolescence and narrow again during late teenage years (when some are more likely to migrate for educational motives), but this may be the result of a relatively small sample.

Results for Canada are presented figure 2(b). Compared with the other two destination countries, the shape of the age-at-immigration profiles are less varied, and fertility differentials are narrower. In all cases, fertility increases with age at immigration. Immigrants from the Middle East and South America exhibit higher fertility rates, particularly in the late teens (43 percent and 22 percent higher, respectively, than natives). Immigrants from Africa and South Asia who arrived at the youngest ages have relatively low fertility rates (24-22 percent lower than the native born), and immigrants from the rest of Asia and the Pacific have very low fertility rates if they immigrated at the youngest ages (at least 30 percent lower than the native born). These increasing but relatively flat age-at-migration profiles suggest that fertility adaptation is a relatively smooth process among child migrants in Canada, though cultural differences determine the extent of the fertility gap relative to natives. For most groups, age at immigration implies adaptation in the usual sense; the younger they arrive to the country, the more similar their fertility is with respect to the native born. Pacific and Asian immigrants from areas other than South Asia exhibit relatively low fertility at all ages at immigration compared to other immigrants, and within this group the fertility behavior of the women who migrated in their late teens is closer to that of the native born (only 8 percent lower) than that of those who migrated as young children.

Discussion and Conclusion

In this paper we set out to examine the extent to which the fertility of immigrants who arrived as children differs from that of the native born in England and Wales, France, and Canada and how the foreign/native-born differential varies by age at immigration. By looking at child migrants we hoped to isolate the adaptation process to the new culture as a mechanism that explains the varying observed fertility gaps in our sample, as opposed to the mechanisms of selection or disruption that are more relevant for the adult migrants. In particular, we aimed to assess whether people who migrated at younger ages and therefore may have found it easier to adapt to the culture of the host country exhibit fertility behaviors that more closely resemble those of the native born than those of people who migrated at older ages. Our three countries vary both in the type of immigration policy regime, with the most selective migration system in Canada, and in the expectations of the persistence of the cultural heritage among those who migrate, with Canada and the United Kingdom being more multicultural settings. Those institutional differences might condition the fertility behavior of migrants in different ways. However, one of the main findings of the paper is the limited cross-national variation in fertility differential as we have modeled them.

Consistent with findings from previous research which has tended to focus on adult migrants, we found that in all three destination countries the average fertility rates of child immigrant groups tend to exceed those of the native-born populations (though by only a small amount in Canada), and that differentials are particularly large for people who were born in higher fertility regions. At the same time, in each of the three countries we identified groups of immigrants that had smaller families than otherwise similar native-born women. These immigrant groups often comprise a non-trivial share of the foreign-born population, a finding that underscores the importance of taking into the account the heterogeneity of the foreign-born population in later analyses.

Once we allow estimates of fertility to vary by age at immigration, we find patterns broadly consistent with the adaptation hypothesis. With few exceptions, women who immigrated at the youngest ages have fertility rates that are most similar to native-born women. But there are some important differences across the three destination countries. Fertility differentials tend to be smaller and to vary less by age at immigration or place of origin in Canada, where migration policies are most selective in favor of the highly educated—people who may have already internalized low fertility norms (which they might then pass on to their children) prior to immigration. . Although there is a discernible inflection point in adolescence, the results suggest a small role for age at migration. In contrast, age at migration has a stronger relationship with subsequent fertility in the two European countries, where immigration policy is less selective on education and earnings potential and accords more to a traditional regime of (relatively lower skilled) economic migrants. Nonetheless, it is interesting that no large differences in the adaptation of child immigrants appear between England and France despite the relatively greater multiculturalist tradition of the former.

Not surprisingly, we see stronger differentials and more diverse age-at-immigration fertility profiles when we allow relationships between age at immigration and fertility to vary by place or region of birth. The results from England and Wales and France seem to suggest that the effect of exposure to the host country varies by country of origin. It seems to be strongly linked to the fertility outcomes of immigrants who come from Africa and Asia to France and from South Asia to England and Wales.

In both France and England and Wales, the estimates suggest the importance, at least for some migrant groups, of student migration. Groups that are more likely to migrate in late adolescence for reasons of marriage tend to have higher fertility (e.g., South Asian women in England and Wales, and North African and Asian women in France), while those who may be more likely to migrate for education (South American women in England and Wales) tend to see a drop in the incident rate ratios after age 15, even when patterns up until that age are consistent with patterns

predicted by the adaptation model. We see no such pattern in Canada, however. This may be due to the fact that data for Canada does not include temporary immigrants, which tends to exclude the majority of student immigrants.

Although this paper provides new and important results about the similarity of age-at-migration profiles across three diverse settings. , our analysis has some shortcomings both in the interpretation of the findings and in the heterogeneity of the data used across the three countries. A potential concern with the interpretation of the estimated IRRs is that we cannot determine whether it is quantum or tempo effects that are responsible for the observed differences because we are not measuring completed fertility for all women in the sample. Some women are at the beginning of their fertile years and others are nearing the end of them. The estimated IRRs could be potentially biased upward if there are very large differences in the timing of childbearing between native born and migrants who arrived as children such that natives tend to have their children later in life. As a robustness test we have re-estimated the models restricting the sample to women ages 36 to 45, who are much more likely to be near completed fertility. The estimated coefficients and the shape of the age-at-migration profiles are remarkably similar (results are available upon request).

Because the period covered by the datasets used across countries is somewhat different—a set of Census years both for Canada (1991-2006) and the United Kingdom (1991-2001) but just a unique small cross-section for France in 2001—we wanted to see whether results for Canada and the United Kingdom were robust to restricting the data to the Census of 2001 to match more closely the time frame when fertility is measured in all three countries. These results are very similar to those presented here (available upon request).

Taken together, our results have several important practical, methodological, and theoretical implications. They demonstrate, at least in our three sample countries, that the foreign-born population is an extremely diverse group. A failure to account for intra-group heterogeneity might

mask or cancel out relationships of interest. Efforts to predict the contribution that immigrants are likely to make to the demographic sustainability of their destination countries must be attentive to the composition of the foreign-born population and how it is changing over time. The wide variety of patterns we identify underscores the importance of making cross-national comparisons that appreciate the diversity of destination countries as well. Focusing on one country in isolation makes it difficult to appreciate the importance of the social and institutional context of the destination country.

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(Tables 1A and 2A here)

Notes

[1] Of course parents who choose to move their children to a new country at different ages may be selected on different grounds such as their financial need, their attitudes and preferences (which may resemble those of the destination country), or alternatively their search for better educational opportunities for their offspring.

[2] We have decided not to include income controls in our analysis. Because fertility and labor market decisions (which ultimately affect income) are endogenous to one another, their analysis requires advanced modeling techniques that are beyond the scope of this paper, especially when we take into account that our income measure is taken at the time of the survey, not at the time of any birth event. Measures of education and partnership status (especially as we have coded it here) are relatively more stable.

[3] Because the Canadian sample enumerates the entire population, it is possible that the same woman enters the sample multiple times. However, the data are not linked, so we cannot identify and eliminate multiple observations for the same person or correct standard errors appropriately. Hence, estimates may be slightly biased toward zero.

[4] For Canada, Belanger and Gilbert (2003) show that differences in estimated fertility differentials for immigrants and domestic-born individuals for the period 1996-2001 using direct measures of fertility and the "own child" method are not very sizeable. For Canada (1991) and France we were able to perform the analysis using information on the total number of children born. The overall pattern of the results and the estimated coefficients are robust across these different samples and specifications. These results are available upon request.

[5] In general, this would imply that the Canadian measure tends to drive up the age at which the immigrant arrived. This is less important in the case of child immigrants, as most of them enter the country directly as permanent residents. The only exception is for immigrants entering in their late teens who may have come with a student visa. Around 20% of all temporary immigrants are students and, of these, 25% come to study secondary education or less.

[6] This is much harder to assert because of the noisier French sample.

TABLE 1
Sample Summary Statistics for England and Wales, Canada and France. Native and Foreign Born

	England and Wales			Canada			France		
	E&W	Foreign		Canadian	Foreign		French	DOM[a]	Foreign
N. of children (mean)	1.03	1.24		0.87	0.80		1.03	1.02	1.27
Age (mean)	30.95	30.32		30.91	29.52		31.86	32.30	31.04
Married/cohabiting	0.60	0.61		0.56	0.48		0.62	0.61	0.57
Years since Migration (mean)[b]	-	21.26		--	20.14		--	23.73	22.50
0 to 5 yrs ago		0.09			0.08		--	0.03	0.06
6 to 10 yrs ago		0.10			0.12		--	0.12	0.13
11 to 15 yrs ago		0.12			0.15		--	0.07	0.09
16 to 20 yrs ago		0.15			0.17		--	0.14	0.15
20+ yrs ago		0.54			0.48		--	0.64	0.58
Age at arrival[2] (mean)	-	9.10		--	9.43			8.77	8.81
0 to 5 yrs old		0.37			0.30		--	0.44	0.38
6 to 11 yrs old		0.22			0.30		--	0.19	0.26
12 to 16 yrs old		0.20			0.27		--	0.21	0.21
17 to 18 yrs old		0.21			0.13		--	0.18	0.15
Education									
No qualifications	0.18	0.24	Less than HS	0.22	0.23	No degree	0.08	0.07	0.21
Less than degree[1]	0.61	0.50				Primary	0.01	0.01	0.04
Degree qualifications	0.21	0.26				Sec. - *Brevet*	0.07	0.05	0.11
			High school	0.29	0.31	Sec. - *CAP-BEP*	0.24	0.15	0.21
			Trades	0.09	0.07	Sec. - *BAC*	0.25	0.26	0.18
			Non Univ. - PS	0.20	0.17	Non Univ.- PS	0.16	0.20	0.10
			University	0.19	0.21	Superior	0.19	0.25	0.16
Observations	97,531	4,902		914,386	387,805		5,588	120	1,163

Legend: HS = High School; Sec. – Brevet = Secondary school graduation; Sec.- CAP-BEP Secondary education graduation in the trades stream; Sec. – BAC = Secondary education diploma to enter academic steams; Non Univ. – PS = Post-Secondary education ranging between two to four years below university degree.

[a] In France individuals born in French overseas departments (DOM) are categorized as foreign born.

[b] For Canada years since migration (age at arrival) compute years (age) when obtained permanent residence. In France, they indicated the number of years (age) when first arrived to Metropolitan France.

TABLE 2
Place of Birth of the Foreign Born. England and Wales, Canada and France

	England & Wales		Canada		France	
Europe	Republic of Ireland	0.06	UK & Ireland	0.14	Central & Northern Europe	0.06
	Western Europe	0.15	Central &Northern Europe	0.08	Eastern Europe	0.02
	Eastern Europe	0.03	Eastern Europe	0.05	Southern Europe[a]	0.16
			Southern Europe	0.14	Other Europe	0.02
America	North America	0.03	US	0.06		
	Caribbean	0.05	Caribbean	0.08		
	South America[b]	0.01	Mexico	0.01		
			Central America	0.02		
			South America	0.05		
Middle East	Middle East	0.04	Middle East	0.05	French-Asia[c]	0.04
and Asia	China	0.03	China	0.08	Turkey	0.10
	Eastern Asia	0.05	Northern & Eastern Asia	0.03	Other Asia	0.05
	Southern Asia	0.31	Southern Asia	0.08		
			South-Eastern Asia	0.09		
Africa	North Africa	0.01	Northern Africa	0.01	Algeria	0.13
	Central & Western Africa	0.03	Central Africa	0.01	Morocco	0.18
	Southern & Eastern Africa	0.16	Western Africa	0.01	Tunisia	0.03
			Southern Africa	0.01	Sub-Saharan Africa	0.03
			Eastern Africa	0.02	Central Africa	0.09
					Other Africa	0.04
Other		0.03		0.01		0.02
Observations		4,902		387,805		1,163

[a] Only the three major groups Portugal, Spain and Italy,
[b] Includes Central America
[c] Vietnam, Cambodia and Laos

TABLE 3
Fertility of Immigrants Who Arrived as Children Relative to the Native Born
(P-value)

	(I) Basic	(II) With Education and Marital Status
Immigrant to England and Wales	1.33	1.27
	(0.00)	(0.00)
Immigrant to Canada	1.08	1.09
	(0.00)	(0.00)
Immigrant to France	1.38	1.31
	(0.00)	(0.00)

Note: Each row shows the Incidence Rate Ratios of being an immigrant (in each country) from a Poisson regression of the number of children in the household. Both regressions include controls for age, census year (France and England and Wales) and place of residence. Column (II) adds education and marital status.

TABLE 4
Fertility of Immigrants Relative to the Native Born by Place of Birth
(P-values)

	England & Wales			Canada			France	
	(I)	(II)		(I)	(II)		(I)	(II)
North America	0.86	0.89	US	1.07	1.09	French Overseas Departments (DOMs)	1.00	1.03
	(0.07)	(0.17)		(0.00)	(0.00)		(0.99)	(0.71)
Caribbean	1.21	1.42	Caribbean	1.04	1.36			
	(0.00)	(0.00)		(0.00)	(0.00)			
South America	0.99	1.09		1.91	1.68			
	(0.94)	(0.53)		(0.00)	(0.00)			
Central America	0.53	0.63	Central America	1.41	1.41			
	(0.53)	(0.65)		(0.00)	(0.00)			
			South America	1.11	1.13			
				(0.00)	(0.00)			
Republic of Ireland	1.04	1.07	Northern & Central Europe	1.03	1.03	Northern & Central Europe	1.25	1.30
	(0.46)	(0.25)		(0.00)	(0.00)		(0.08)	(0.06)
Western Europe	1.04	1.05	Eastern Europe	0.91	0.94	Eastern Europe	0.57	0.56
	(0.26)	(0.19)		(0.00)	(0.00)		(0.11)	(0.11)
Eastern Europe	1.18	1.09	UK & Ireland	0.98	1.00	Southern Europe	1.13	1.02
	(0.17)	(0.45)		(0.00)	(0.76)		(0.05)	(0.73)
			Southern Europe	1.28	1.14	Other Europe	1.07	1.06
				(0.00)	(0.00)		(0.43)	(0.44)
Middle East	1.06	1.02	Middle East	1.36	1.35	French Asia	1.39	1.23
	(0.40)	(0.79)		(0.00)	(0.00)		(0.00)	(0.04)
China	0.77	0.79	China	0.72	0.83	Turkey	1.96	1.55
	(0.01)	(0.03)		(0.00)	(0.00)		(0.00)	(0.00)
Eastern Asia	0.93	0.92	North Eastern Asia	0.57	0.75	Other Asia	1.64	1.58
	(0.27)	(0.25)		(0.00)	(0.00)		(0.04)	(0.03)
Southern Asia	1.90	1.59	South Eastern Asia	0.95	1.00			
	(0.00)	(0.00)		(0.00)	(0.96)			
Northern Africa	1.15	1.16	Southern Asia	1.28	1.16	Algeria	1.32	1.36

	(0.33)	(0.28)		(0.00)	(0.00)		(0.00)	(0.00)
Central & Western Africa	1.25	1.41	Northern Africa	1.18	1.25	Morocco	1.36	1.68
	(0.01)	(0.00)		(0.00)	(0.00)		(0.00)	(0.00)
Southern & Eastern Africa	1.11	1.12	Central Africa	0.90	1.01	Tunisia	2.24	1.28
	(0.00)	(0.00)		(0.00)	(0.85)		(0.00)	(0.00)
			Western Africa	1.07	1.19	Sub-Saharan Africa	2.23	1.55
				(0.05)	(0.00)		(0.00)	(0.00)
			Southern Africa	0.84	0.92	Central Africa	1.51	1.32
				(0.00)	(0.00)		(0.00)	(0.00)
			Eastern Africa	0.88	1.00	Other Africa	1.47	1.35
				(0.00)	(0.99)		(0.01)	(0.03)
Pacific & Other	1.10	1.10	Pacific & Other	1.18	1.11	Other countries	0.90	1.03
	(0.26)	(0.24)		(0.00)	(0.00)		(0.74)	(0.93)

Note: Model (I) includes age, survey year and place of residence. Model (II) adds education and marital status.

TABLE 1A
Fertility Rate by Age at Immigration Relative to Native Born (P-values)

	England & Wales			Canada			France		
	(I)	(II)	(III)	(I)	(II)	(III)	(I)	(II)	(III)
Less than 1	1.01	1.03	0.87	0.96	1.00	1.02	1.05	1.09	0.77
	(0.88)	*(0.42)*	*(0.13)*	*(0.00)*	*(0.64)*	*(0.06)*	*(0.75)*	*(0.59)*	*(0.17)*
1	0.95	0.98	0.81	0.98	1.01	1.02	1.22	1.17	0.89
	(0.36)	*(0.74)*	*(0.04)*	*(0.03)*	*(0.43)*	*(0.02)*	*(0.12)*	*(0.18)*	*(0.41)*
2	1.04	1.11	0.89	0.99	1.02	1.04	1.14	1.09	0.84
	(0.54)	*(0.10)*	*(0.25)*	*(0.45)*	*(0.02)*	*(0.00)*	*(0.18)*	*(0.40)*	*(0.19)*
3	1.20	1.22	0.94	1.00	1.02	1.04	1.27	1.34	0.92
	(0.01)	*(0.01)*	*(0.56)*	*(0.73)*	*(0.00)*	*(0.00)*	*(0.04)*	*(0.01)*	*(0.54)*
4	1.14	1.12	0.86	0.99	1.02	1.04	1.21	1.27	0.90
	(0.05)	*(0.10)*	*(0.15)*	*(0.09)*	*(0.00)*	*(0.00)*	*(0.07)*	*(0.03)*	*(0.46)*
5	1.16	1.22	0.93	0.98	1.02	1.04	1.16	1.12	0.83
	(0.05)	*(0.01)*	*(0.49)*	*(0.04)*	*(0.01)*	*(0.00)*	*(0.23)*	*(0.30)*	*(0.22)*
6	1.11	1.14	0.84	1.01	1.04	1.06	1.19	1.09	0.86
	(0.19)	*(0.10)*	*(0.13)*	*(0.19)*	*(0.00)*	*(0.00)*	*(0.19)*	*(0.43)*	*(0.34)*
7	1.21	1.19	0.87	1.04	1.07	1.08	1.40	1.26	0.98
	(0.01)	*(0.02)*	*(0.20)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.01)*	*(0.07)*	*(0.88)*
8	1.14	1.16	0.84	1.03	1.06	1.07	1.14	1.12	0.79
	(0.06)	*(0.04)*	*(0.12)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.33)*	*(0.32)*	*(0.15)*
9	1.22	1.15	0.81	1.04	1.07	1.08	1.37	1.32	0.99
	(0.01)	*(0.05)*	*(0.06)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.01)*	*(0.02)*	*(0.94)*
10	1.37	1.32	0.94	1.03	1.07	1.08	1.70	1.53	1.22
	(0.00)	*(0.00)*	*(0.56)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.18)*
11	1.38	1.30	0.92	1.04	1.07	1.08	1.39	1.29	0.95
	(0.00)	*(0.00)*	*(0.42)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.03)*	*(0.08)*	*(0.77)*
12	1.39	1.29	0.92	1.06	1.09	1.10	1.33	1.26	0.95
	(0.00)	*(0.00)*	*(0.46)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.10)*	*(0.16)*	*(0.77)*
13	1.28	1.19	0.86	1.08	1.11	1.12	1.88	1.62	1.35
	(0.00)	*(0.01)*	*(0.18)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.03)*
14	1.37	1.27	0.91	1.10	1.12	1.13	2.04	2.04	1.46
	(0.00)	*(0.00)*	*(0.41)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.01)*
15	1.60	1.43	1.03	1.13	1.13	1.14	1.43	1.27	1.15
	(0.00)	*(0.00)*	*(0.78)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.05)*	*(0.18)*	*(0.43)*
16	1.63	1.45	1.02	1.22	1.18	1.19	2.22	1.87	1.49
	(0.00)	*(0.00)*	*(0.84)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*
17	1.75	1.53	1.07	1.27	1.20	1.21	1.77	1.54	1.23
	(0.00)	*(0.00)*	*(0.49)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.15)*
18	1.80	1.54	1.05	1.32	1.22	1.23	1.41	1.29	0.99
	(0.00)	*(0.00)*	*(0.58)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.00)*	*(0.04)*	*(0.93)*
Education and Marital Status		YES	YES		YES	YES		YES	YES
Place of Birth			YES			YES			YES

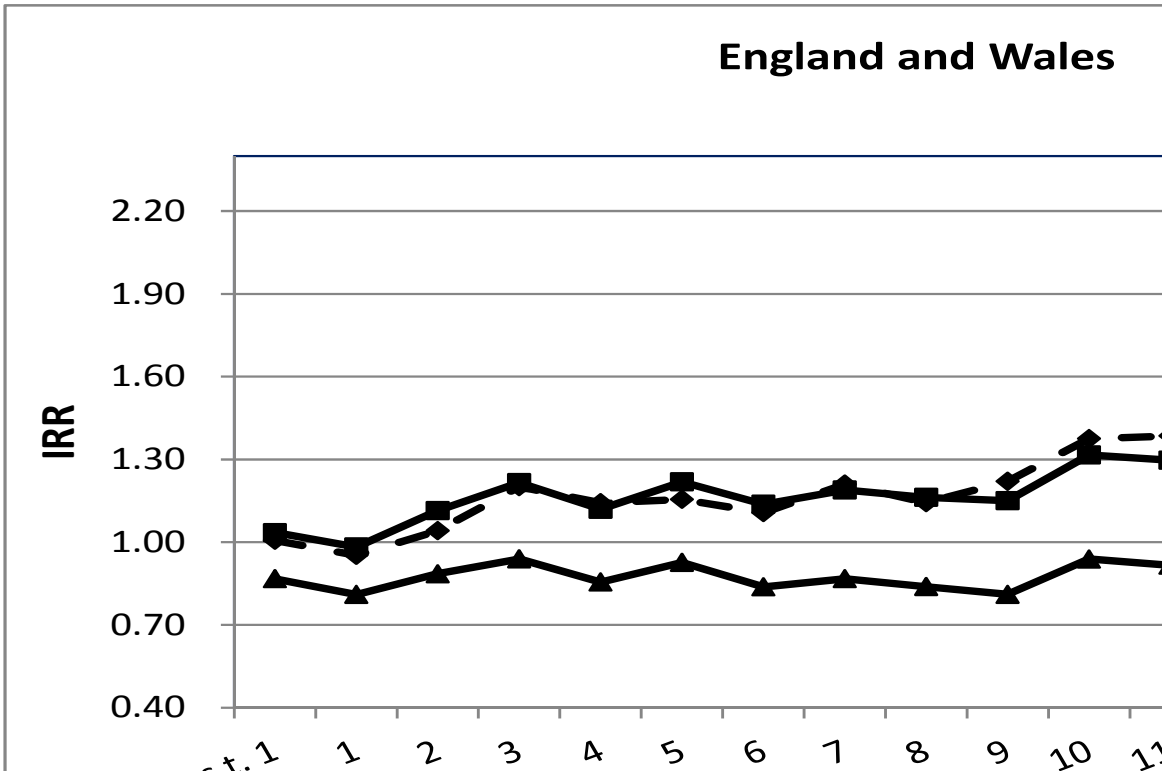
Note: The table shows the Incidence Rate Ratios from a Poisson regression of the number of children in the household. P-values in parentheses. The model in column (I) includes controls for age, survey year and place of residence. Column (II) adds controls for marital status and education. Column (III) adds to the model in column (II) controls for place of birth. These estimates are shown in Figure 1.

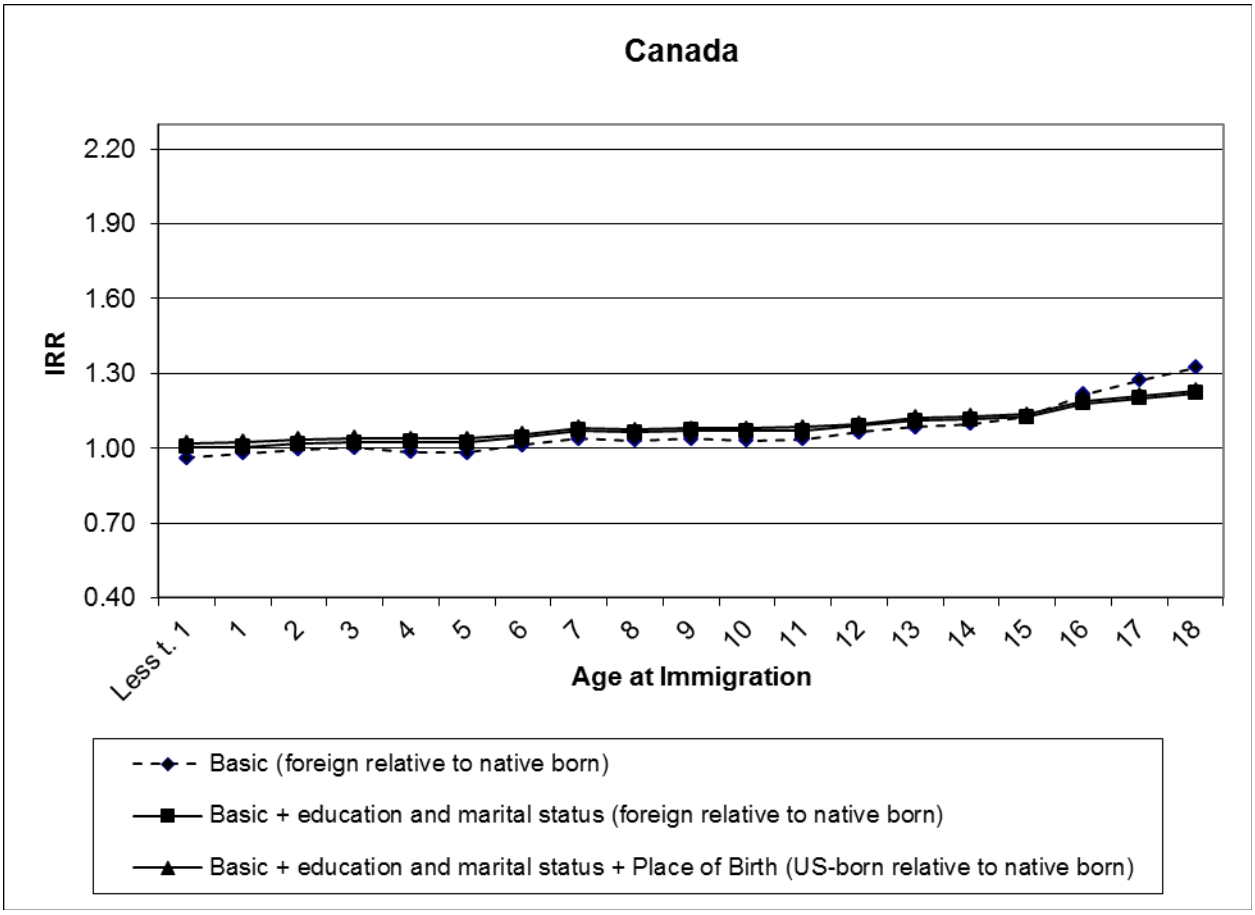
TABLE 2A
Immigrant Indicator from Model (III) in Table 2
(P-values)

	England & Wales		Canada		France
North America	--	US	--	French Overseas Departments (DOMs)	--
Republic of Ireland	1.15	Caribbean	1.21		
	(0.19)		(0.00)		
Western Europe	1.18	Mexico	1.52		
	(0.08)		(0.00)		
Eastern Europe	1.15	Central America	1.24		
	(0.36)		(0.00)		
Caribbean	1.54	South America	1.01		
	(0.00)		(0.35)		
South America	1.21	Northern & Central Europe	0.97	Northern & Central Europe	1.27
	(0.25)		(0.00)		(0.14)
Central America	0.70	Eastern Europe	0.85	Eastern Europe	0.59
	(0.72)		(0.00)		(0.15)
		UK & Ireland	0.93	Southern Europe	1.04
			(0.00)		(0.73)
		Southern Europe	1.04	Other Europe	1.17
			(0.00)		(0.42)
Middle East	1.11	Middle East	1.20	French Asia	1.22
	(0.35)		(0.00)		(0.14)
China	0.84	China	0.74	Turkey	1.47
	(0.22)		(0.00)		(0.00)
Eastern Asia	1.02	North Eastern Asia	0.67	Other Asia	1.66
	(0.88)		(0.00)		(0.02)
Southern Asia	1.65	South East Asia	0.88		
	(0.00)		(0.00)		
		Southern Asia	1.01	Algeria	1.27
			(0.00)		(0.05)
		Northern Africa	1.13	Morocco	1.34
			(0.00)		(0.02)
		Central Africa	0.91	Tunisia	1.91
			(0.00)		(0.00)
Northern Africa	1.28	Western Africa	1.07	Sub-Saharan Africa	2.02
	(0.14)		(0.05)		(0.00)
Central & Western Africa	1.53	Southern Africa	0.84	Central Africa	1.55
	(0.00)		(0.00)		(0.00)
Southern & Eastern Africa	1.20	Eastern Africa	0.88	Other Africa	1.35
	(0.05)		(0.00)		(0.06)
Pacific & Other	1.24	Pacific	1.00	Other countries	0.95
	(0.08)		(0.86)		(0.87)

FIGURE 1

Incidence Rate Ratios for Age at Immigration in England and Wales, France, and Canada.




Canada
2.20
1.90
1.60
1.30
1.00
0.70
0.40
IRR
Less t. 1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
Age at Immigration
Basic (foreign relative to native born)
Basic + education and marital status (foreign relative to native born)
Basic + education and marital status + Place of Birth (US-born relative to native born)

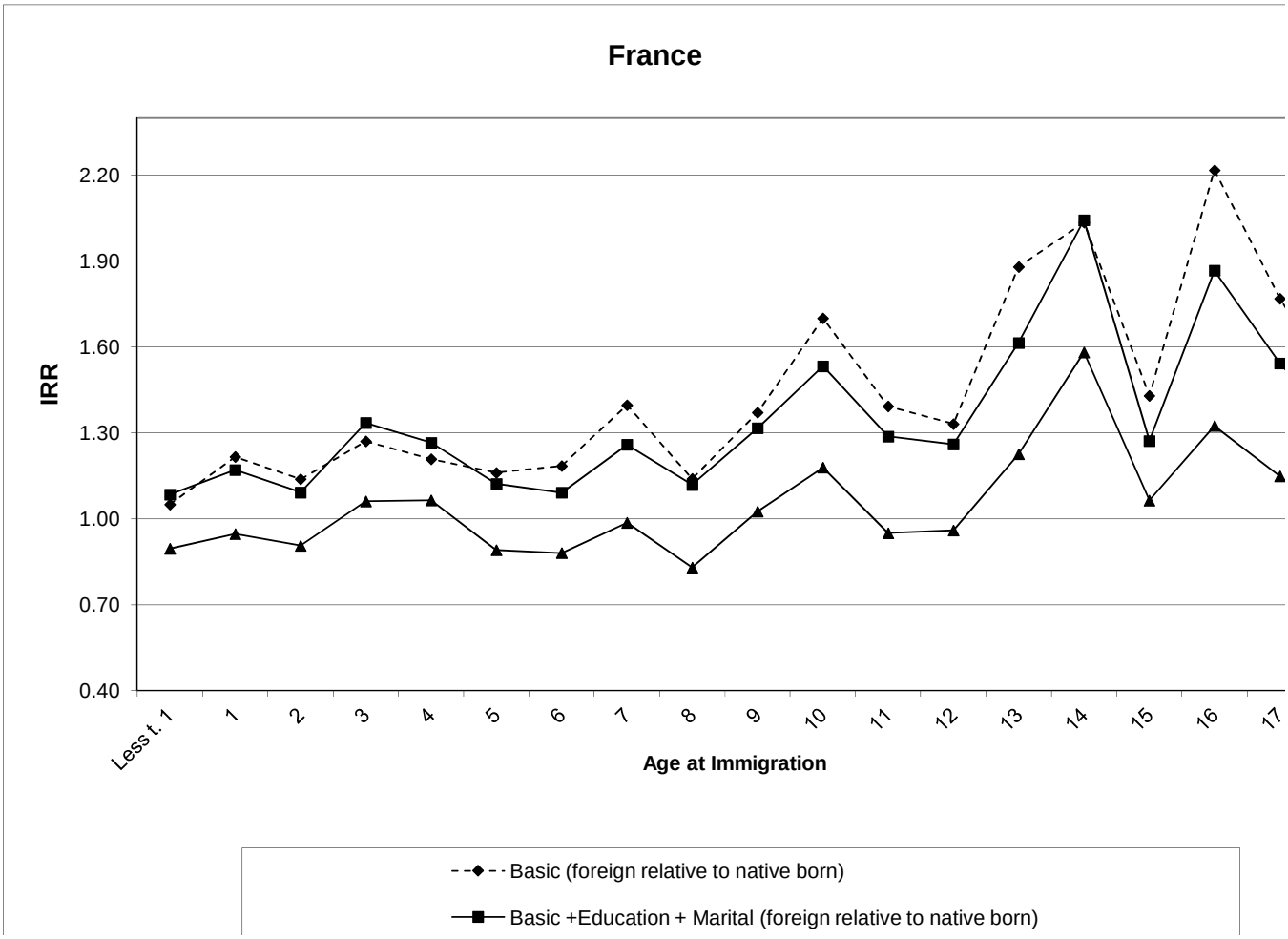
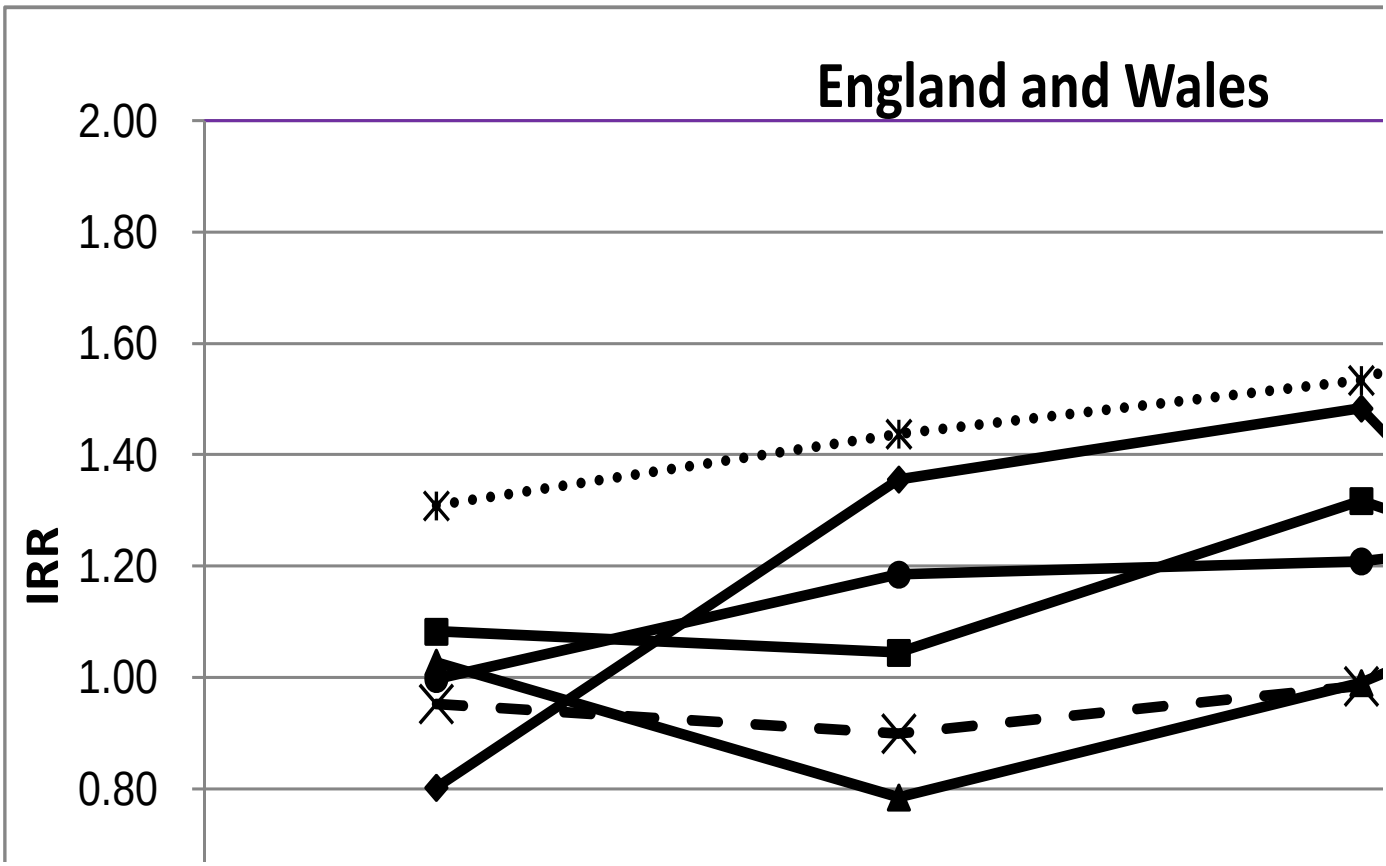
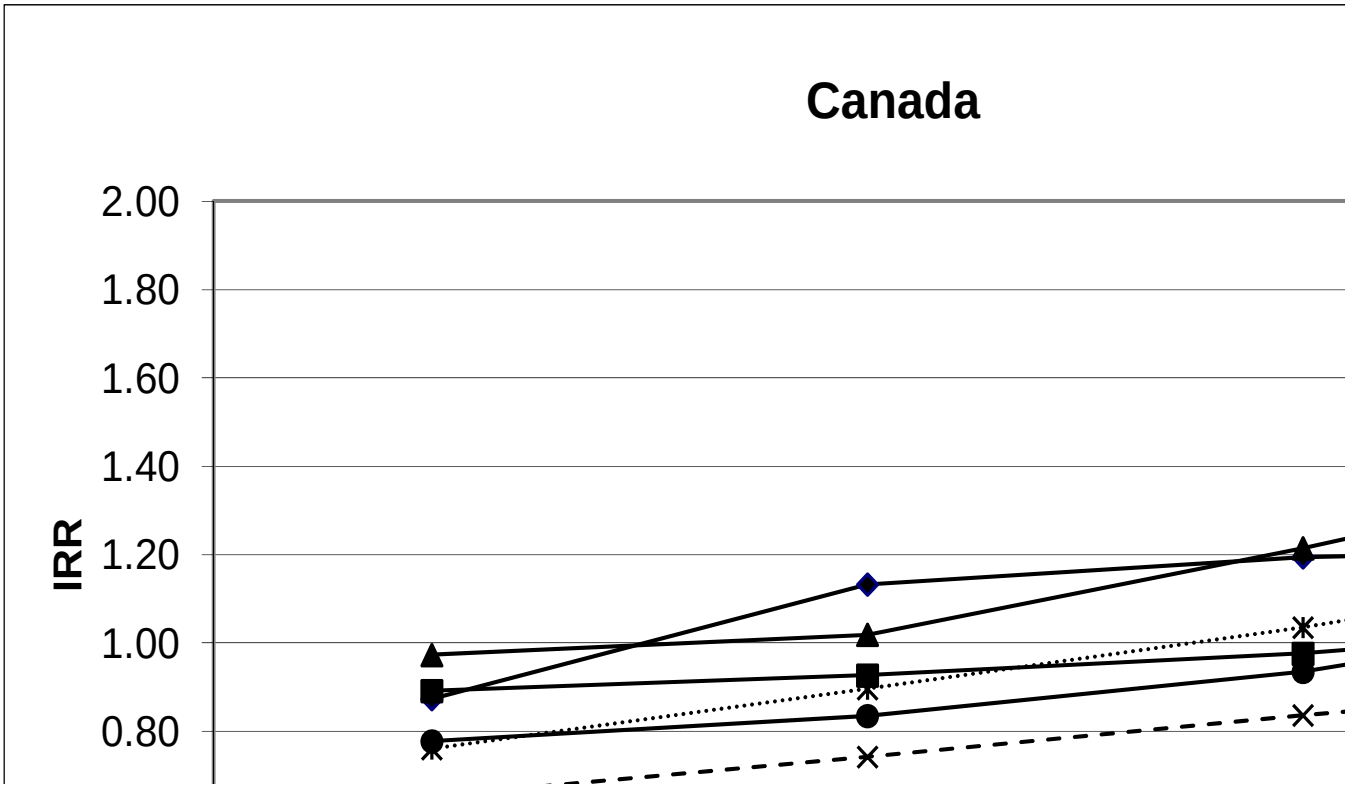
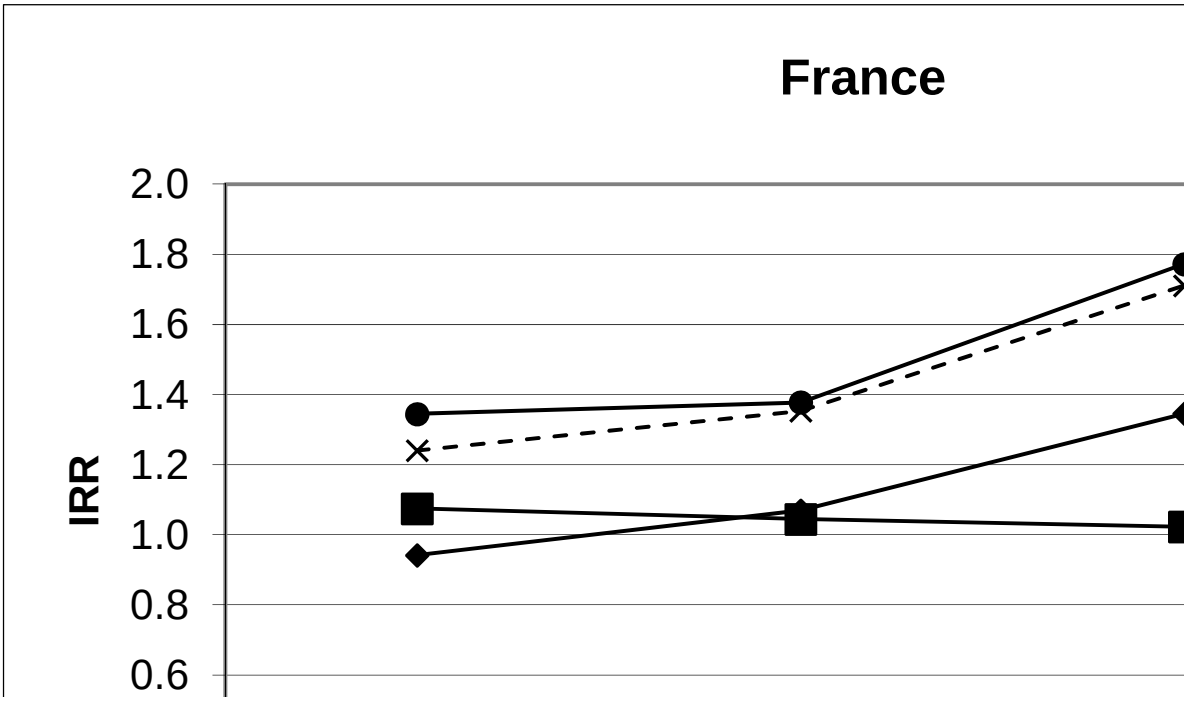

France
2.20
1.90
1.60
1.30
1.00
0.70
0.40
IRR
Less t. 1
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
Age at Immigration
Basic (foreign relative to native born)
Basic +Education + Marital (foreign relative to native born)

FIGURE 2

Incidence Rate Ratios for Fertility by (grouped) Age at Immigration and (grouped) Place of Birth Relative to the Native Born: England & Wales, Canada and France







Note: The results for each country are from regressions that include controls for age, geographic location, year of data collection, education and marital status.