The Fertility of Child Migrants Later in Life: Understanding the Role of Age at Arrival for Women and Men

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Abstract

It is well known that immigrant fertility is associated with age at migration, but the majority of prior research has focussed on foreign-born women who migrated as adults. Much less is known about the fertility of immigrants who arrived as children, often referred to as child migrants or the 1.5 generation. This study aims to generate new insights about the role of age at arrival in determining the fertility of child migrants later in life. It carries out a case study of Sweden, using longitudinal register data on the whole population. These data allow a comprehensive analysis of completed fertility profiles, for both male and female child migrants, from age 15 to 45. They also enable the use of family fixed effects models, and detailed analysis of specific countries of birth to examine heterogeneity and the potential for generalisation. The results show that there is evidence of fertility adaptation for women and men. This evidence is not consistent across origins, and it also varies – by origin group – across different stages of the childbearing schedule. Nevertheless, the results for men are not dissimilar from those for women, including by country of birth. This may represent evidence of an underlying process, like childhood socialisation followed by adaptation, that is common for women and men. There is less evidence in support of critical ages, although the results from the family fixed effects models for women suggest that this might be a useful avenue for further research.

Keywords:

Child migrant, Generation 1.5, Age at arrival, Adaptation, Fertility, Childbearing

Introduction

A fundamental challenge for social policy is how best to enable the integration and adaptation of immigrants. Fertility is an important aspect of immigrants' lives, not least because it plays a critical role in the transition to adulthood. Childbearing can have a lasting impact on other aspects of the life course such as education and labour market outcomes (Goisis and Sigle-Rushton 2014). The postponement of first birth is strongly associated with socio-economic advantage, whereas early-life childbearing is a known source of disadvantage (). Immigrant childbearing is strongly influenced by origin country norms and reasons for migration. A considerable body of research has shown, across a range of high-income destinations, that fertility is often different for foreign-born women as compared with the native-born. This evidence of 'differential' immigrant fertility can be exaggerated, for example when based on total fertility rates, but it is nevertheless apparent for some immigrant groups, especially when focussing on specific aspects of fertility such as birth timing.

Most of what is known about immigrant fertility currently rests upon studies of foreign-born women who migrated as adults. By comparison, there have been very few studies of women who migrated as children, often called 'child migrants' or 'the 1.5 generation'. This is despite the fact that scholars have increasingly recognised the value of studying child migrants, in particular when interested in immigrant fertility. With respect to social theory, child migrants offer a unique opportunity to examine the role of childhood in the process of integration. Unlike native-born descendants of immigrants, they arrive at different ages, which enables researchers to examine the role of arrival at 'critical ages'. In addition, age at migration is a unique source of variation in exposure to norms, which is one of the most important theoretical mechanisms in the process of settlement and adaptation.

Studies of child migrants also offer a unique opportunity to gain insights about theories of immigrant fertility. Child migrants generate insights that cannot be gained by studying immigrants who arrived as adults because the timing of their migration is much less likely to be interrelated with their fertility. For example, as argued elsewhere (Tønnessen and Wilson 2019; Wilson 2015; Wilson and Sigle-Rushton 2014), it is much easier to study fertility adaptation by focussing on child migrants. This is because patterns of fertility after arrival that look like adaptation may actually be due to the anticipation of migration and/or delays in birth timing (and recuperation after such delays). For adult immigrants it is hard to tease apart these explanations – that relate to anticipation, disruption and selection – from explanations relating to normative exposure, such as adaptation.

One of the most prominent theoretical mechanisms that is used to explain the family formation of immigrants is 'exposure to destination', which in the context of this study is 'exposure to Swedish society'. Put simply, a lack of exposure to Swedish society may cause immigrants to follow the family formation patterns of their origin country, rather than those of Sweden. This exposure can be measured, at least in part, using age at migration (which determines duration of exposure) (Milewski 2010a). Age at migration can be used to investigate the role of critical ages of arrival (Adserà and Tienda 2012). Moreover, it is of particular interest whether the role of age at arrival is different for women and men. Male immigrant fertility remains understudied and yet it may operate differently, for example because young boys may find it more difficult to adapt to living in a new destination if they arrive as teenagers (Portes and Rumbaut 2001; Rumbaut and Portes 2001). Motivated by these interests, and the research contributions that I outline below, I set out to study three research questions:

(1) Does age at arrival determine the childbearing of child migrants?
(2) Is this relationship the same for female and male child migrants?
(3) How much variation is there by country of birth?

To answer these questions, I use Swedish register data. The data and methods are described in detail below, but in summary I argue that the study of child migrant fertility requires longitudinal data that links childhood conditions and migration background with information on completed fertility profiles from age 15-45. It also requires that there are a large enough number of child migrants to enable statistical analysis (including to examine different origin-country groups). These requirements pose strict limits on the data that can be used, and consequently on the contexts that can be studied. In fact, Sweden is one of the few countries of the world in which such a study could take place.

Background

The most dominant theory of immigrant integration is 'assimilation theory', which is rooted in the US literature (Alba and Nee 1997). Based on the most common interpretation of this theory, assimilation can be broadly defined as the decline, and eventual disappearance, of distinctions between immigrants (or their descendants) and a destination society (Alba and Nee 2005). It is important to highlight here that I use the term 'assimilation' in order to ground our research in the most prominent (and most highly cited) international literature. However, in doing this I also recognize that 'assimilation' has a potentially discriminatory interpretation, and I prefer the more neutral (but less often theorized) term 'convergence'. In the study of fertility, 'convergence' implies that differences in childbearing between immigrants and the mainstream (native) population become smaller over time. This is either predicted to occur over an immigrant's life course, based on a theory of adaptation, or across generations – for the descendants of immigrants – based on the theory of intergenerational assimilation (Milewski 2010a). There is some evidence in support of this theory in the US literature (Parrado and Morgan 2008), for the UK (Wilson 2019), and for Sweden (Scott and Stanfors 2011).

In this study, I focus on child migrants (although I include native-born Swedes and second generation children of immigrants as comparison groups at various points in the analysis). There are multiple benefits of studying these 'child migrants'. Since the majority of child migrants are also the children of immigrants, research on this group will generate knowledge about the likely trajectory of long-run integration, beyond the first generation (Rumbaut and Portes 2001). Perhaps more importantly, child migrants offer a unique opportunity to examine the role of childhood in the process of family formation (Adserà and Tienda 2012). Unlike adult immigrants, they do not require detailed (and extremely rare) pre-migration data in order to study their childhood. And unlike other groups of descendants, who are born in the destination, child migrants arrive at different ages. This source of within-group variation enables researchers to examine the role of arrival at critical ages (Adserà et al. 2012).

Critical ages are important, for example, because research shows that children who arrive after the onset of puberty can find it more difficult to adapt to life in their new destination (Bleakley and Chin 2010). This research shows that arrival after puberty makes intermarriage much less likely due to the difficulties of learning a new language. At the same time, age at arrival also enables researchers to more directly examine differences in exposure to a destination society. For example, children who arrive at later ages will spend less time in Sweden before reaching childbearing age. This means that they will have less time to adapt to their new environment, which in turn may impact their plans and behaviours with respect to family formation (Adserà and Tienda 2012).

In fact, exposure to destination is one of the most prominent theoretical mechanisms that is used to explain variation in the family formation of immigrants (Milewski 2010a). For example, it is central to the theory of 'adaptation', which predicts that the family formation of immigrants will become closer to that of destination natives with increasing exposure to destination (Milewski 2010a). Longer durations of exposure can enable immigrants to have longer to adjust to the policies and institutions of their new destination, with the result that their fertility more closely approaches that of the native-born population. This has been observed in Sweden for immigrants who arrive as adults (G. Andersson and Scott 2005).

Exposure to destination is also an essential concept in the literature on spatial integration (E. K. Andersson and Malmberg 2016). Moreover, spatial integration, as measured by residential segregation and community composition, is expected to have an influence on various different aspects of family formation. Segregation has an influence on structural factors, like the opportunities to meet prospective partners (i.e. 'marriage markets'), and it is also indicative of exposure to different attitudes, norms, and practices in relation to families and children (Forste and Tienda 1996). Even if the different dimensions of segregation and community composition are hard to disentangle, research has shown that segregation is associated with lower rates of intermarriage among immigrants (Kalmijn 1998). More recently, it has been shown that segregation during childhood has a significant impact on the fertility of child migrants (Wilson and Kuha 2016). This last finding could be interpreted as evidence of 'childhood socialisation' theory, which predicts that family formation is determined by exposure to norms and attitudes during childhood (Milewski 2010a).

Nevertheless, research in this area is relatively new. Only a few studies have tested the influence of age at migration on the fertility of child migrants. One of these showed that there were differences between the birth rates of child migrants and natives in Canada, and that these differences were associated with age at migration (Adserà and Ferrer 2014). This finding aligns with the general findings of a slightly earlier comparative study of France, Canada, and the UK (Adserà et al. 2012). The purpose of this project is to build upon this research, and to capitalise on the advantages of studying child migrants in order to generate new knowledge about immigrant family formation. One of the key advantages of studying child migrants – in the context of fertility research – is the fact that they arrive prior to (or almost prior to) the commencement of their childbearing years. Among other things, this means that the timing of their migration is less interrelated (i.e. endogenous) to their childbearing. As a result, it is arguably far easier to study some theories of immigrant fertility by studying child migrants. This is best explained by considering some of the most prominent hypotheses that are used to study immigrant fertility.

Hypotheses

A variety of hypotheses have been used to explain and predict the fertility of immigrants and their descendants (e.g. Milewski 2010). Most explanations have been generated in the context of migration from origins with higher fertility than the destination, and may or may not fit the context of migration that I study here: from origins with lower fertility. In this section I therefore focus on the theories and hypotheses that are most relevant for our specific context and the analysis that I undertake.

The hypothesis of *adaptation (straight-line assimilation)* typically asserts that the fertility of immigrants will be initially different from that of the destination, but that it will develop in directions that make it more similar to that of the native population with increasing duration of residence. Although typically used when studying immigrants from origins with higher fertility, adaptation can be applied similarly to the study of immigrants from low fertility origins. The adaptation process may partly be driven by shifting norms, but also by responses to the institutional context of the host society, in relation to, for example, labor market structures or different systems of parental benefits (e.g. Andersson and Scott 2005). Previous research on Sweden suggests that the fertility behavior of most immigrant groups from high-fertility countries tends to resemble that of the native population relatively soon after arrival, and that various socioeconomic factors, such a labor market participation, play a similar role in relation to fertility for Swedish- and foreign-born women alike (Andersson and Scott 2005, 2007; Lundström and Andersson 2012). Recent research has recognized that it is hard to study the adaptation of fertility for immigrants who arrive as adults, in part because they may arrive in a destination having already had more children than what is common in the new context, and in part because migration often interacts with family formation (Andersson 2004). The former factor is less likely to be of concern when studying immigrants from low fertility origins, and both factors are avoided entirely when studying immigrants who arrive already as children (Adsera et al. 2012).

As opposed to adaptation, the hypothesis of *selection* proposes that immigrants may show particular fertility behavior due to the way that they are 'selected' into migration from their origin country, for example because they have certain characteristics that are associated with fertility, or because of any previous childbearing. Related to this are the hypotheses of *anticipation* and *disruption*, such that patterns of fertility behavior which look like adaptation may instead be explained by the disruption of fertility due to anticipation of migration (e.g. withholding births until after arrival; Milewski 2010a). The latter explanations – disruption and anticipation – are of little relevance here because I study child migrants, i.e. immigrants who arrived prior to reaching childbearing age. Selectivity may still be a determinant, including factors related to parental selectivity. In the same vein, I can ignore hypotheses related to the role of *legitimacy*, which predicts that some immigrants will migrate prior to childbearing in order to gain citizenship for their children (Milewski 2010a).

One explanation that is certainly relevant for our study is the hypothesis of *childhood socialization*, which is based on the idea that fertility behaviors depend on exposure to norms and behavior during childhood (Milewski 2010b). Childhood socialization can explain why immigrants from different origins exhibit different fertility patterns in the same destination, in particular if they conform with norms from their country of origin. This hypothesis also has the capacity to make predictions for

the descendants of immigrants who were born in the destination – e.g. the second generation. As the second generation spend their entire childhood in the destination this hypothesis predicts that they are more likely than migrants to have similar fertility to that of ancestral natives (Milewski 2010b). This can be contrasted with the hypothesis of *cultural entrenchment*, which predicts that at least some descendants of immigrants will maintain cultural norms that are different from destination norms, even if they are born in the destination, and that these norms will lead to different patterns of childbearing (Abbasi-Shavazi and McDonald 2002). In many ways, this is similar to the theory of *segmented assimilation*, which challenges the notion that adaptation is guaranteed to occur for the second and later generations, for example because they may choose to adapt to the norms of minority groups, rather than those of the majority population (Portes et al. 2005). Both childhood socialization and cultural entrenchment are explanations that can apply to immigrants from low fertility origins, as well as their descendants.

Data and methods

As I argue above, Sweden represents an ideal context for this study, not least because of the availability of high-quality longitudinal demographic data from its population registers. Our main data source is the *Migrant Trajectories* register data that is currently available for analysis by researchers at the Stockholm University Demography Unit (ethical approval was granted in 2017). These data enable us to study the population who were resident in Sweden from 1968-2017. Data are stored at Statistics Sweden and can be accessed via SCB's micro-online access system MONA. Members of the population enter the register when they are born (if they are born in Sweden) or when they receive a resident permit or register their immigration (which is required in order to live in Sweden, and coverage of the population is close to 100% because it is very difficult to live in Sweden without registering – e.g. it is impossible to access public services or hold a bank account). All members of the population have a unique person number, which is available in our data in an anonymized format.

Swedish population registers collect all demographic events, including the date of the event. Children can be linked to their parents using a register of personal identification numbers (as long as the parents have lived in Sweden, either now or at some point in the past). This enables us to estimate the entire childbearing history of all women living in Sweden with a high degree of accuracy, including for child migrants (who are highly unlikely to have had any children prior to arrival) and the second generation. With respect to migration, our data include all recorded immigrations (and emigrations), which enable us to calculate age at arrival for all immigrants, and to exclude people who emigrate (or die) prior to the time at which I measure their fertility.

Given our research questions, I am able to make use of our longitudinal data in order to compare and contrast measures of fertility quantum – children ever born – at a given age. I note that the term 'quantum' can be defined generally as the frequency that an event occurs (e.g. number of births), and hence can be measured at any age (Ryder 1980). Here I measure quantum at all ages from 15-45, which allows me to plot profiles of fertility quantum by age. These profiles can be compared with the same profiles for native-born women and men in order to plot profiles of fertility differentials (as in Figures 4 and 5). In some cases (e.g. Figures 2 and 3), the models focus on fertility at ages 20, 30 and 45. The first of these indicates teenage childbearing, the second represents the middle of a person's childbearing years, and the latter represents completed fertility (although I note that further births may be expected for a minority of men and women after age 45, more so for men).

Although this study does not directly measure tempo, for example with reference to different birth parities, it can nevertheless be inferred by making comparisons across different childbearing ages, in particular by examining the entire profile of fertility quantum (or quantum differentials) from ages 15-45. To facilitate comparisons across fertility profiles, these are calculated using the same study population at each age. This population includes only those women who have completed (or almost completed) their childbearing (i.e. those who are fully observed from ages 15-45), thereby enabling us to compare their early- and mid-'career' childbearing with their realized completed fertility (i.e. to examine their entire completed fertility profiles).

Several slightly different study populations are used here. The first of these restricts our study to those women and men who were born from 1945-1971 (i.e. aged 45-71 in 2016) and did not emigrate or die prior to age 45. A small number of cases (less than 1%) are dropped due to missing data on key variables, or because they were born in countries that do not have many residents in Sweden and are not easily combined (e.g. Israel, New Zealand, Australia). This population is summarised in Table 1 and is used for all analyses of fertility profiles. It is also used in the regression models (described below and shown in Figures 2, 3 and A2), although all regression models drop those countries of birth that are culturally similar to Sweden (all European countries, the US and Canada). Given that this reduces the statistical power of the analysis, there are two other study populations used in the regression analysis, one for the analysis of fertility at age 20 and one for the analysis at age 30. In essence, each of these expands the focus in order to include all birth cohorts that can be studied. For age 20, this means those born 1945-1996 (i.e. observed at age 20 from 1965-2016). For age 30, this means those born 1945-1986 (i.e. observed at age 30 from 1975-2016).

For the modelling of number of children ever born, I use Generalized Linear Models (GLMs) with a Poisson link function. Base models (without any covariates) are included in the Appendix (Figure A2), but the main models (Figure 2) include covariates for birth cohort (in single years of age), country of birth (grouped as shown in Table 1), and birth order (ungrouped).

Models are also run using family fixed effects (based on having a shared biological mother), which has the advantage that this controls for factors shared between siblings, including migration background and parental characteristics. Models include only those siblings who arrived in the same year, such that they are likely to have migrated for the same reason. These fixed effect models control for birth cohort and birth order (using a full set of dummies as in the models mentioned above). They do not include a variable for country of origin, but this is effectively controlled for given the control for all maternal characteristics.

Child migrants are defined as foreign-born individuals who arrived in Sweden (for the first time) aged 0-18. The second generation (G2) is used only as a comparison group in the regression models, and is defined as Swedish-born children with two foreign-born parents. The inclusion of G2 in the family fixed effects models is particularly important because this allows the identification of age at arrival and birth cohort, which would otherwise be colinear (unlike child migrants, the G2 are concordant on age at arrival).

As a result of these selection criteria, our study population includes more than 50,000 female child migrants who have been continually resident in Sweden from age 15-45, and more than 45,000 male child migrants who meet the same condition. For the sibling models, which drop child migrants from Europe and North America, as well as several other non-eligible groups (like only children), this population falls to around 14,000 for men and women. This is for the analysis of fertility at age 45. For the analysis of fertility at ages 20 and 30, the populations sizes increase to more than 30,000.

Results

[Note: The results will be written in full prior to EPC 2020.]

A summary of the results is as follows:

- Table 1 shows the distribution of child migrants by country of birth
- Numbers similar for men and women
- Many Nordic and other European, but also many from the Middle East
- Origins reflect Sweden's migration history, including its receipt of large number so refugees since 1970, e.g. Chileans, Lebanese, Iranians.

[Table 1 about here]

~ Figure 1 plots the number of children born at age 45 for child migrants versus adult migrants (from the same birth cohorts who arrived between the ages of 19 and 29).

~ Markers for women are solid blue circles and for men are solid red circles.

~ The plot shows a positive association between the fertility of adult migrants and child migrants

~ The average for Swedish-born women is 2.0 and the average for Swedish-born men is 1.8

~ Most groups are close to this Swedish norm

~ Those with the highest numbers of children ever born at age 45 are from the Middle East and Africa

[Figure 1 about here]

- Figure 2 shows the association between age at arrival (in 2-year age groups) and children ever born – at ages 20, 30 and 45 – separately for women and men.
- The models control for birth cohort, country of birth and birth order. (Models without these controls are not very different but are shown in the Appendix – Figure A2)
- There is a strong association. Arriving later, for example as a teenager rather than as an infant, is linked with having more children. This is evidence in support of adaptation.
- The association is stronger at early childbearing ages – notably at age 20.
- But they remain material even at age 45, with relative risks as high as 1.25.
- With the exception of age 20, the results are similar for women and men.

[Figure 2 about here]

~ Figure 3 shows the same models as Figure 2, but with the addition of family fixed effects

~ Models include only those siblings who arrived in the same year

~ This controls for factors shared between siblings, including migration background and parental characteristics

~ These models show that at least some effects are persistent after the addition of family fixed effects. But now there appear to be differences between women and men

~ The relative risk for men arriving at later ages reduces in magnitude for fertility at later childbearing ages (i.e. 30 rather than 20) and is close to zero for fertility at age 45.

~ For women there is evidence of a critical age around adolescence, above which risks are material

[Figure 3 about here]

- Figure 4 shows completed fertility differentials by age at arrival. Profiles are calculated by calculating the average difference in number of children born, at a given age, between child migrants (who arrived at a specified age) and the Swedish-born population.
- For example, the plots show that female child migrants from Former Yugoslavia who arrived at older ages (13-18) had around 0.5 more children in their 20s (i.e. aged 20-29) than Swedish-born women. This difference becomes much smaller at older childbearing ages, but this group nevertheless shows evidence in support of adaptation.
- There is similar evidence, of adaptation in birth timing, for female child migrants from South Europe and other Nordic countries.
- The results for men are not dissimilar from those for women, suggesting a coherent pattern by country of birth. This is evidence of an underlying process, like childhood socialisation followed by adaptation, that is common for women and men.

[Figure 4 about here]

~ Figure 5 shows similar results as Figure 4, but for (selected) non-European countries of birth that have high fertility among G1 adults (based on the results shown in Figure 1).

~ There is evidence in support of adaptation, but it is not consistent across origins or across fertility profiles.

~ Unlike the other groups, there is a difference between male and female child migrants from the Horn of Africa (Eritrea, Ethiopia, Somalia and Djibouti).

~ Iranian child migrants are an outlier – in that they have lower levels of children ever born than the Swedish-born. However, it is still the case that those arriving later have a higher fertility than those arriving earlier.

[Figure 5 about here]

Discussion

[To be completed in the final version of the paper]

Summary

~ There is evidence of fertility adaptation for women and men
~ This evidence is not consistent across origins
~ It also varies – by origin group – across different stages of the childbearing schedule
~ But the results for men are not dissimilar from those for women, suggesting a coherent pattern by country of birth
~ This is evidence of an underlying process, like childhood socialisation followed by adaptation, that is common for women and men
~ There is less evidence in support of critical ages, although the results for women suggest that this might be a useful avenue for further research

Limitations

This study has several limitations, including:

~ Fertility is estimated based on children resident in Sweden, so the estimates for G1 adults (in particular) may be biased downward
~ Sweden may be an atypical case
~ We could try to extend this analysis to examine reason for migration, including refugee status

References

Abbasi-Shavazi, M. J., & McDonald, P. (2002). A comparison of fertility patterns of European immigrants in Australia with those in the countries of origin. *Genus*, *58*(1), 53–76.

Adserà, A., & Ferrer, A. (2014). Factors influencing the fertility choices of child immigrants in Canada. *Population Studies*, *68*(1), 65–79. https://doi.org/10.1080/00324728.2013.802007

Adserà, A., Ferrer, A. M., Sigle-Rushton, W., & Wilson, B. (2012). Fertility Patterns of Child Migrants Age at Migration and Ancestry in Comparative Perspective. *The ANNALS of the American Academy of Political and Social Science*, *643*(1), 160–189. https://doi.org/10.1177/0002716212444706

Adserà, A., & Tienda, M. (2012). Comparative Perspectives on International Migration and Child Well-Being. *The ANNALS of the American Academy of Political and Social Science*, *643*(1), 6–15. https://doi.org/10.1177/0002716212445742

Alba, R., & Nee, V. (1997). Rethinking Assimilation Theory for a New Era of Immigration. *International Migration Review*, *31*(4), 826–874. https://doi.org/10.2307/2547416

Alba, R., & Nee, V. (2005). *Remaking the American mainstream: Assimilation and contemporary immigration*. Harvard University Press.

Andersson, E. K., & Malmberg, B. (2016). Segregation and the effects of adolescent residential context on poverty risks and early income career: A study of the Swedish 1980 cohort. *Urban Studies*, 0042098016643915.

Andersson, G., & Scott, K. (2005). Labour-market status and first-time parenthood: The experience of immigrant women in Sweden, 1981–97. *Population Studies*, *59*(1), 21–38. https://doi.org/10.1080/0032472052000332683

Andersson, G., & Scott, K. (2007). Childbearing dynamics of couples in a universalistic welfare state: The role of labor- market status, country of origin, and gender. *Demographic Research*, *17*, 897–938. https://doi.org/10.4054/DemRes.2007.17.30

Bleakley, H., & Chin, A. (2010). Age at arrival, English proficiency, and social assimilation among US immigrants. *American economic journal. Applied economics*, *2*(1), 165–192.

Forste, R., & Tienda, M. (1996). What's Behind Racial and Ethnic Fertility Differentials? *Population and Development Review*, *22*, 109–133. https://doi.org/10.2307/2808008

Goisis, A., & Sigle-Rushton, W. (2014). Childbearing Postponement and Child Well-being: A Complex and Varied Relationship? *Demography*, *51*(5), 1821–1841. https://doi.org/10.1007/s13524-014-0335-4

Kalmijn, M. (1998). Intermarriage and homogamy: Causes, patterns, trends. *Annual review of sociology*, *24*(1), 395–421.

Lundström, K. E., & Andersson, G. (2012). Labor-market status, migrant status and first childbearing in Sweden. *Demographic Research*, *27*, 719–742. https://doi.org/10.4054/DemRes.2012.27.25

Milewski, N. (2010a). *Fertility of immigrants: A two-generational approach in Germany*. Berlin Heidelberg: Springer. http://link.springer.com.gate2.library.lse.ac.uk/chapter/10.1007/978-3-642-03705-4_1. Accessed 9 March 2015

Milewski, N. (2010b). Immigrant fertility in West Germany: Is there a socialization effect in transitions to second and third births? *European Journal of Population / Revue européenne de Démographie*, *26*(3), 297–323. https://doi.org/10.1007/s10680-010-9211-0

Parrado, E. A., & Morgan, S. P. (2008). Intergenerational Fertility Among Hispanic Women: New Evidence of Immigrant Assimilation. *Demography*, *45*(3), 651–671.

Portes, A., Fernández-Kelly, P., & Haller, W. (2005). Segmented assimilation on the ground: The new second generation in early adulthood. *Ethnic and Racial Studies*, *28*(6), 1000–1040. https://doi.org/10.1080/01419870500224117

Portes, A., & Rumbaut, R. G. (2001). *Legacies: the story of the immigrant second generation*. Berkeley; New York: University of California Press ; Russell Sage Foundation.

Rumbaut, R. G., & Portes, A. (Eds.). (2001). *Ethnicities: children of immigrants in America*. Berkeley, USA: Univ. of California Press.

Ryder, N. B. (1980). Components of temporal variations in American fertility. In R. W. Hiorns (Ed.), *Demographic patterns in developed societies* (pp. 15–54). London: Taylor and Francis.

Scott, K., & Stanfors, M. (2011). The transition to parenthood among the second generation: Evidence from Sweden, 1990–2005. *Advances in Life Course Research*, *16*(4), 190–204. https://doi.org/10.1016/j.alcr.2011.09.003

Tønnessen, M., & Wilson, B. (2019). Visualising immigrant fertility: Profiles of childbearing and their implications for migration research. https://doi.org/10.17045/sthlmuni.9778529.v1

Wilson, B. (2015). *Origin, destination and convergence: understanding the fertility of international migrants and their descendants*. The London School of Economics and Political Science (LSE). Retrieved from http://etheses.lse.ac.uk/id/eprint/3238

Wilson, B. (2019). The Intergenerational Assimilation of Completed Fertility: Comparing the Convergence of Different Origin Groups. *International Migration Review*, *53*(2), 429–457. https://doi.org/10.1177/0197918318769047

Wilson, B., & Kuha, J. (2016). What is the influence of childhood exposure to cultural norms? The role of segregation and community composition in explaining migrant fertility. Presented at the European Population Conference, Mainz, Germany.

Wilson, B., & Sigle-Rushton, W. (2014). A conceptual framework for migrant fertility. Presented at the European Population Conference, Budapest.

Tables and figures

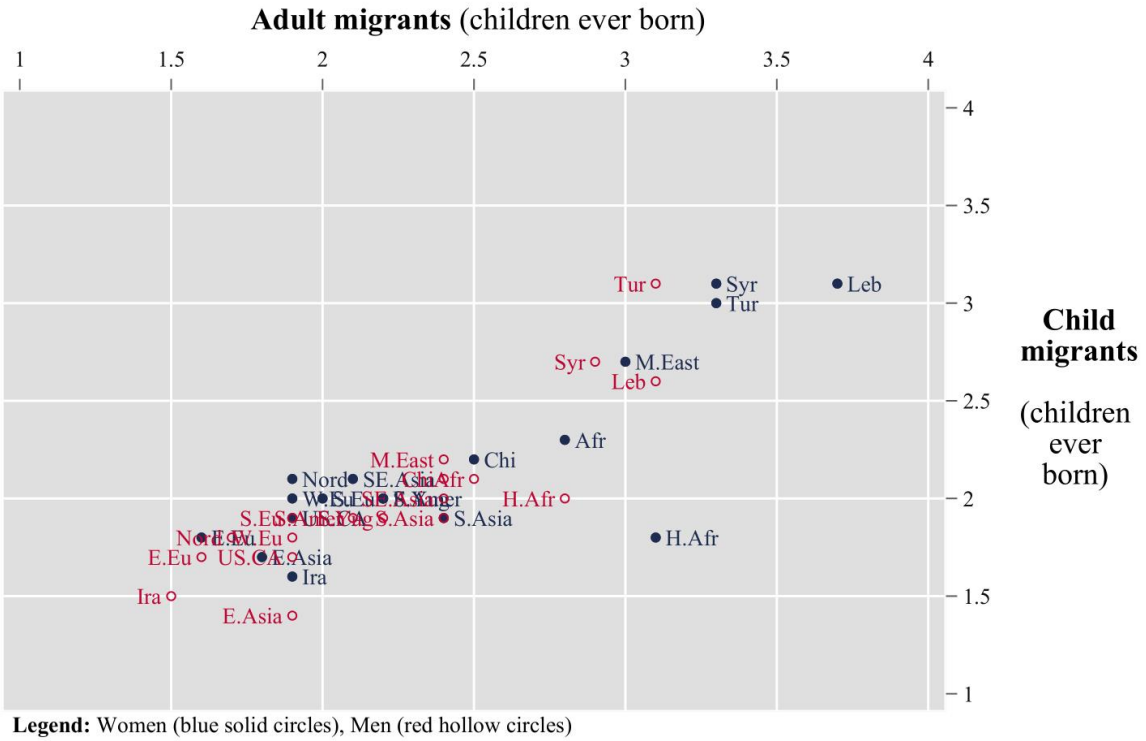


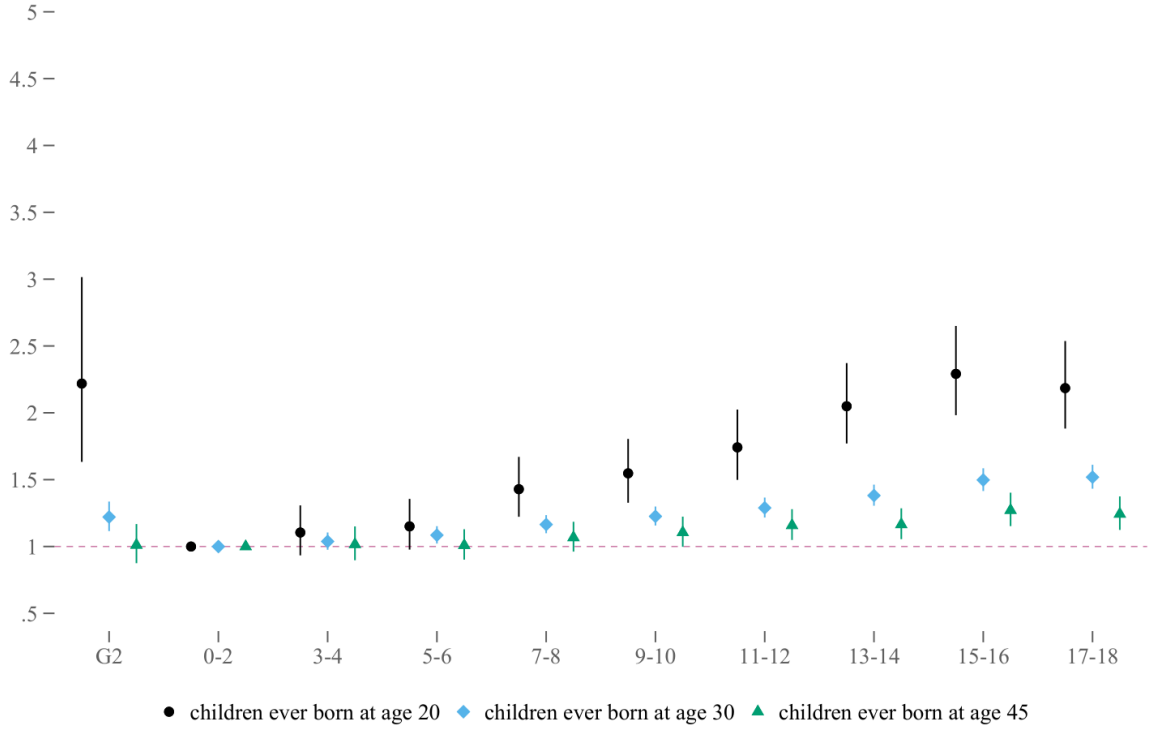
Figure 1: Completed fertility for women and men: Adult migrants versus child migrants

Note: Plots show average number of children born at age 45 for cohorts born 1945-1971. The average for Swedish-born women is 2.0 and the average for Swedish-born men is 1.8.

Country of birth	Women	Men
Nordic	28,560	25,008
West Europe	3,246	3,271
US and Canada	661	694
Former Yugoslavia	4,591	3,737
East Europe	2,681	2,912
South Europe	1,579	1,678
Turkey	2,438	2,555
Lebanon	559	591
Syria	378	331
Iran	383	476
Middle East (other)	161	213
Horn of Africa	353	373
Africa (other)	496	502
South Asia	680	403
East Asia	1,659	691
South East Asia	670	781
Chile	981	996
S. & C. America (other)	762	760

Table 1: Population of child migrants born 1945-1971 by country of birth

2a. Women



2b. Men

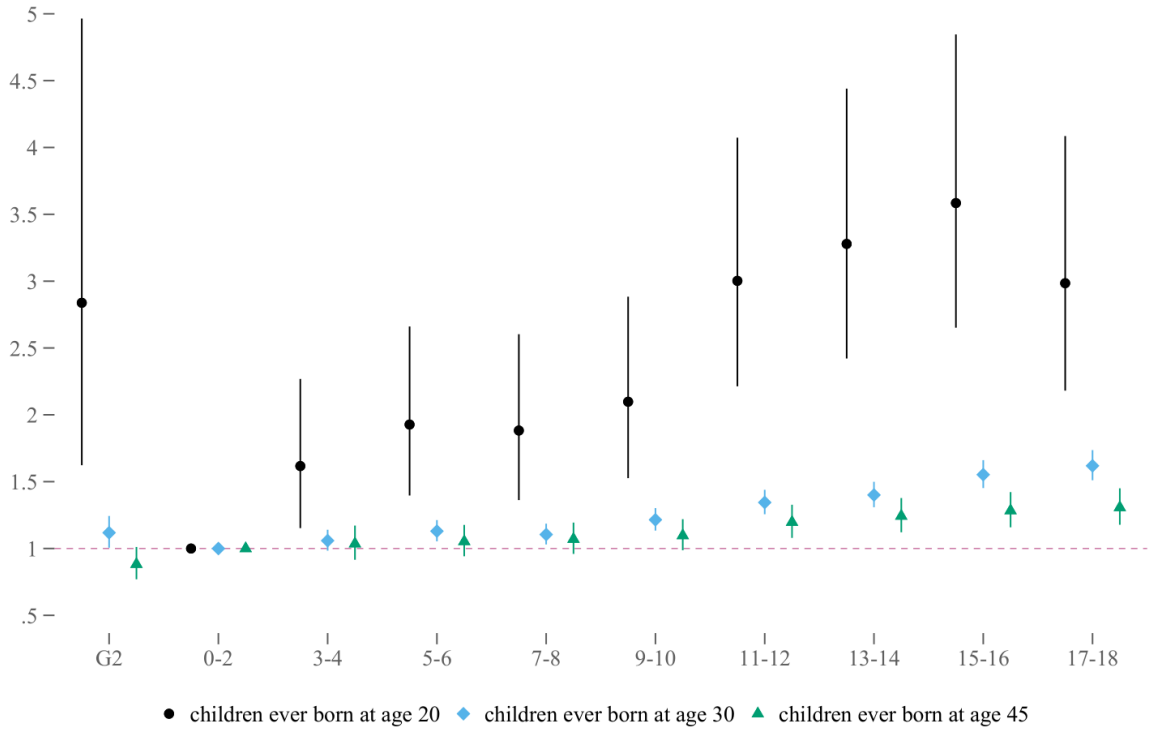
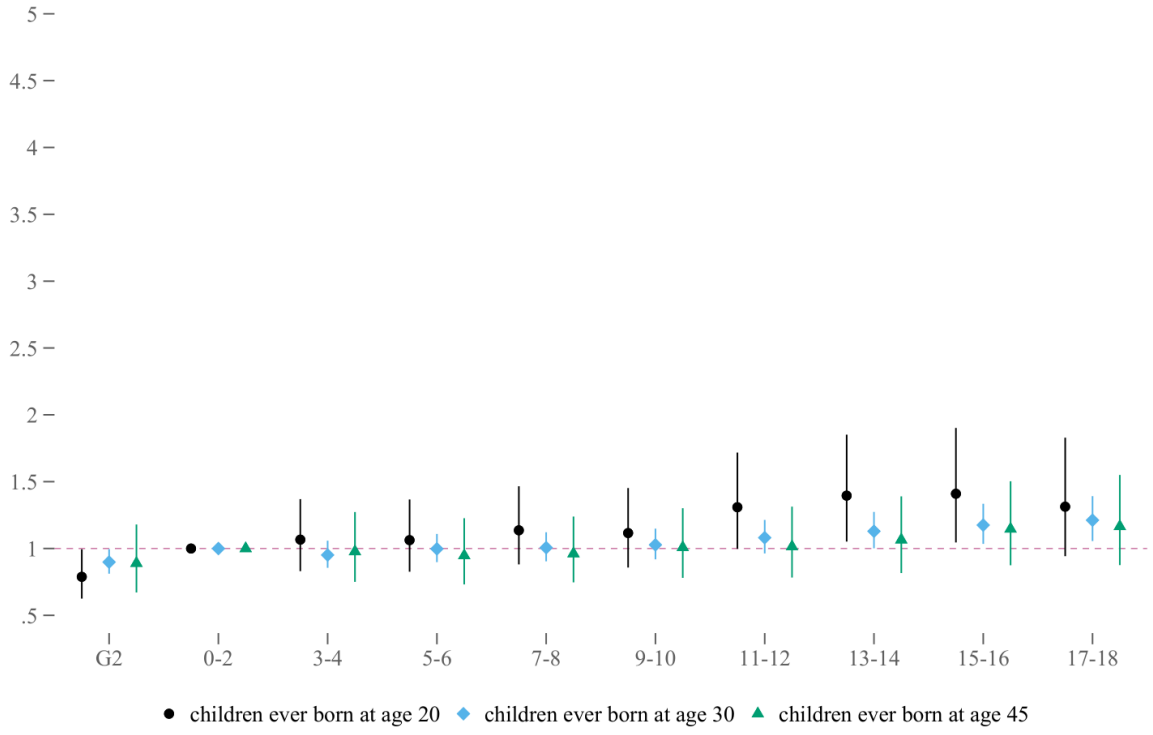


Figure 2: Completed fertility (at age 40) by age at arrival, controls for birth cohort, country of birth and birth order

Note: Plots show IRR (incidence risk ratios) from a series of Poisson regression models, separately for women and men. The analysis is for all child migrants (G1.5) and second generation (G2) in the study population. The reference category in all cases is child migrants who arrived in Sweden age 0-2.

3a. Women



3b. Men

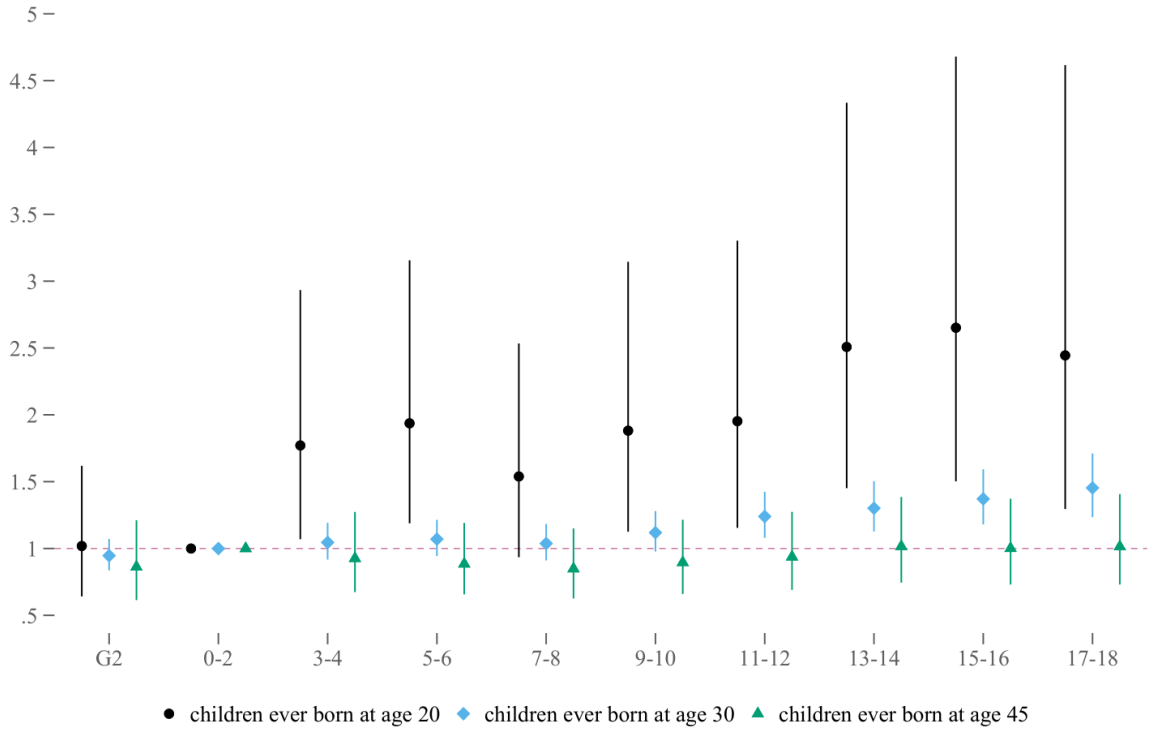
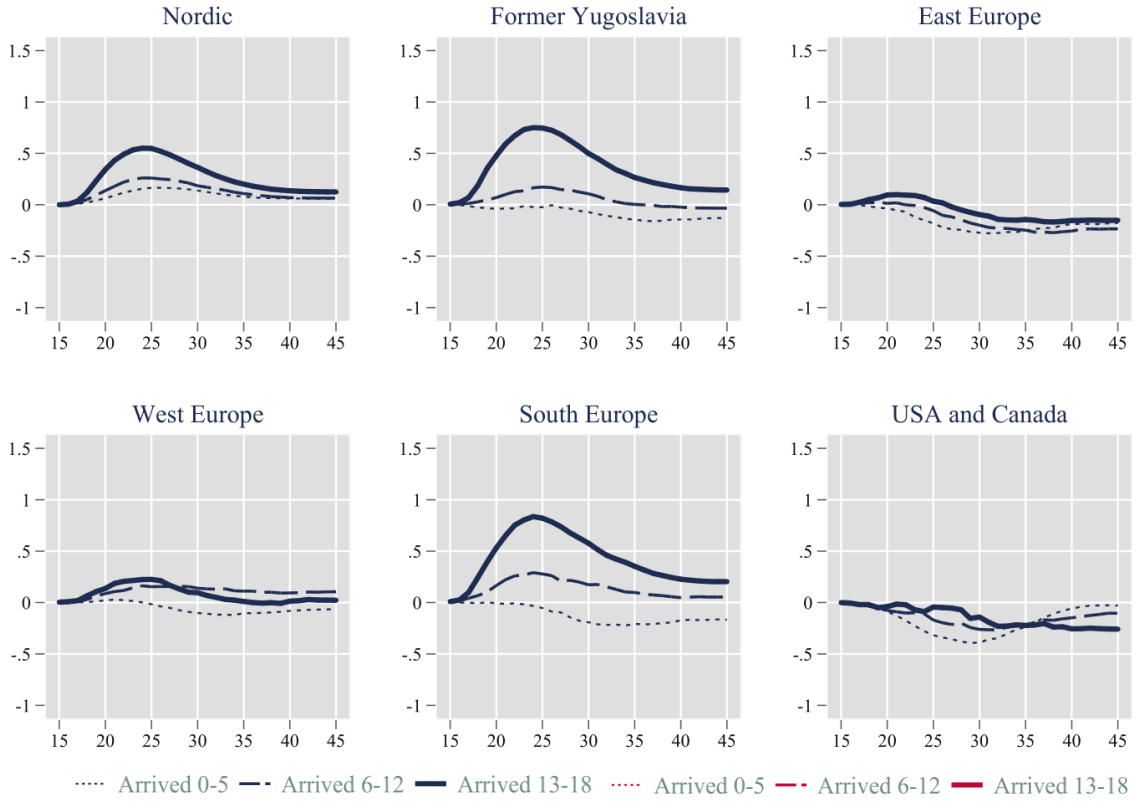


Figure 3: Models of completed fertility (at age 40) by age at arrival using family fixed effects

Note: Plots show IRR (incidence risk ratios) from a series of Poisson regression models with different specifications. The analysis is for only those child migrants (G1.5) and second generation (G2) in the study population who have one or more siblings of the same sex. The reference category in all cases is child migrants who arrived in Sweden age 0-2. Models control for birth cohort and birth order.

4a. Women



4b. Men

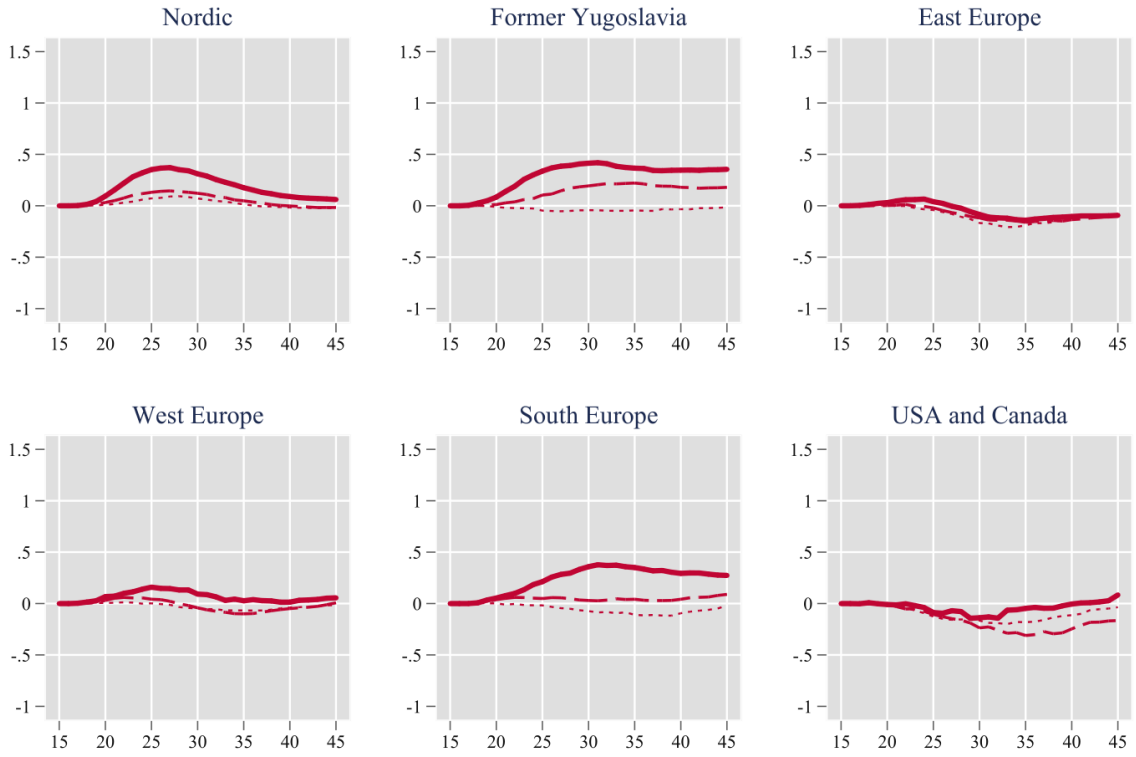
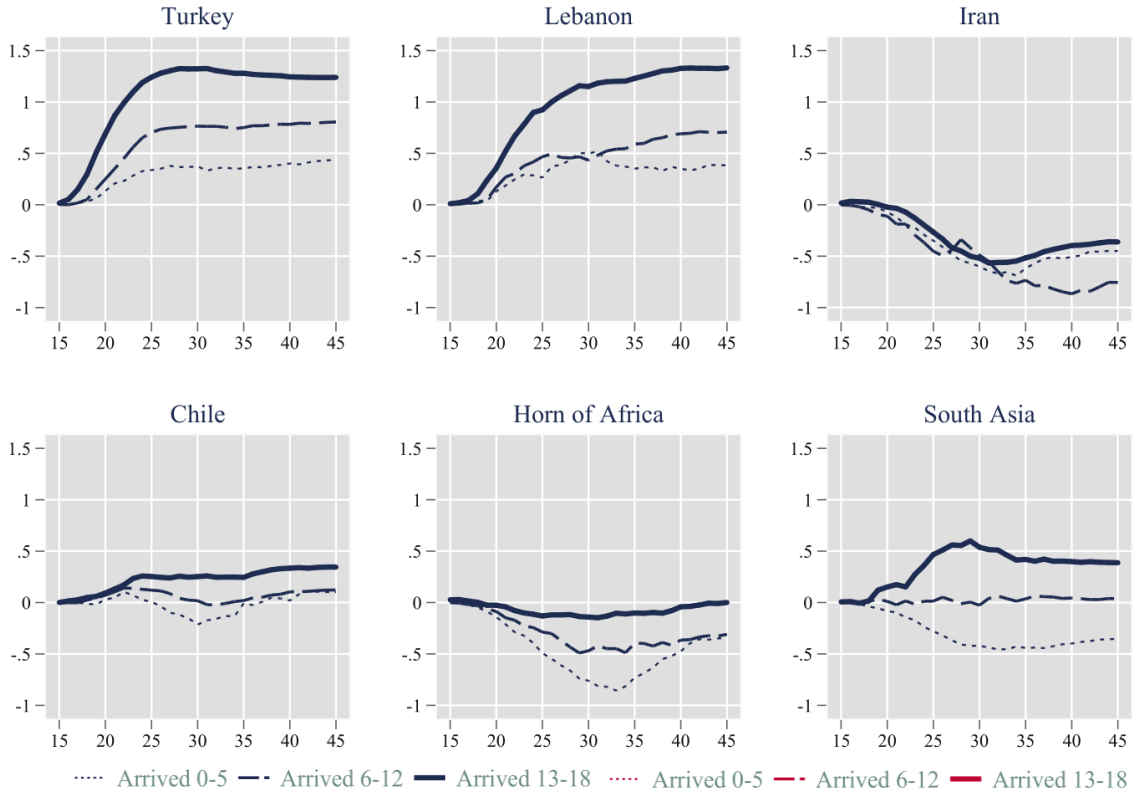


Figure 4: Differentials versus the Swedish-born in children ever born, Europe and N. America

Note: Plots show the differences in average number of children born at each age for child migrants who arrived at a given age as compared with the Swedish-born.

5a. Women



5b. Men

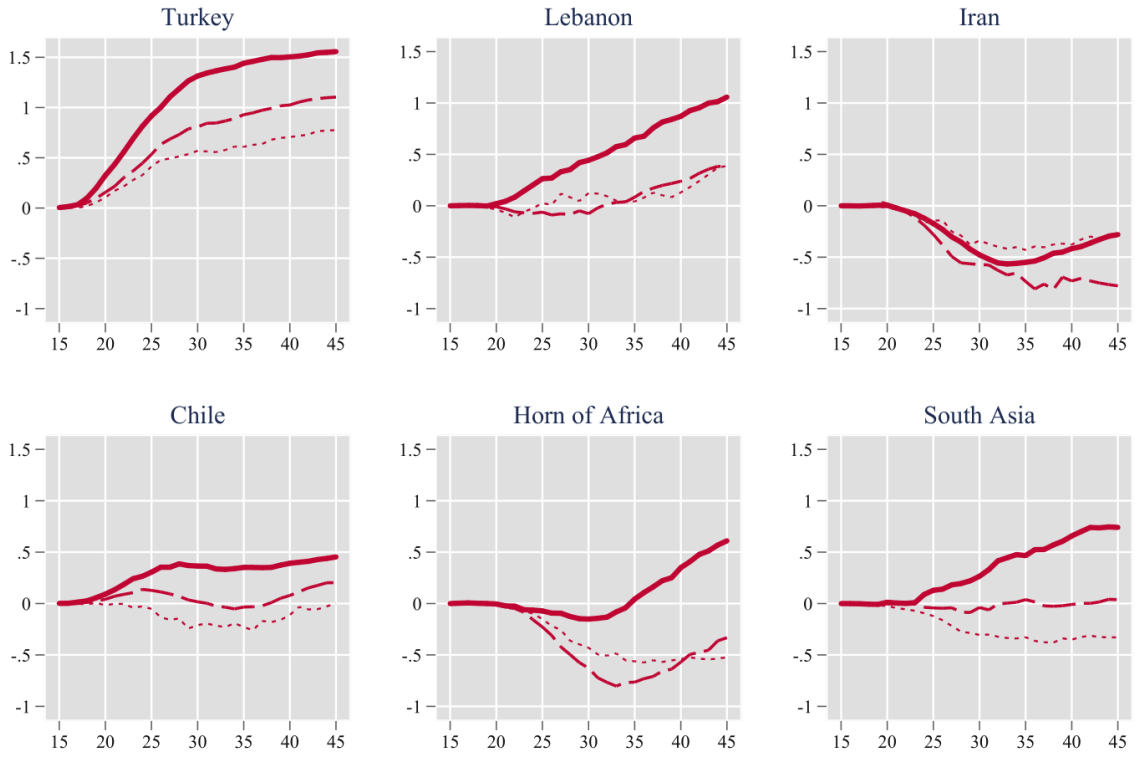


Figure 5: Differentials versus the Swedish-born in children ever born, non-European countries of birth that have high fertility among G1 adults

Note: Plots show the differences in average number of children born at each age for child migrants who arrived at a given age as compared with the Swedish-born.

Appendix Tables and Figures

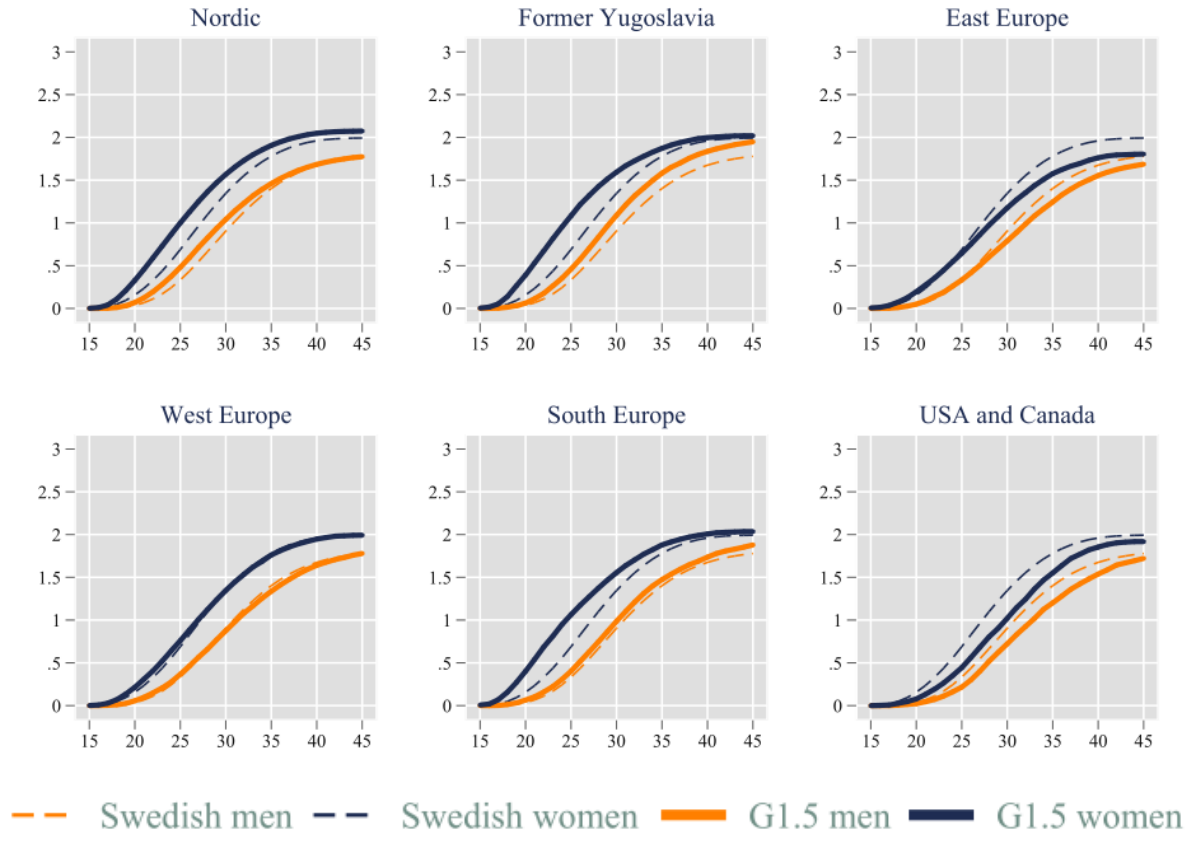


Figure A1: Age profiles of children ever born for women and men

Note: Plots show average number of children born at each age for child migrants (solid lines) by country of birth as compared with the Swedish-born children of Swedes (dotted lines, same in each plot).

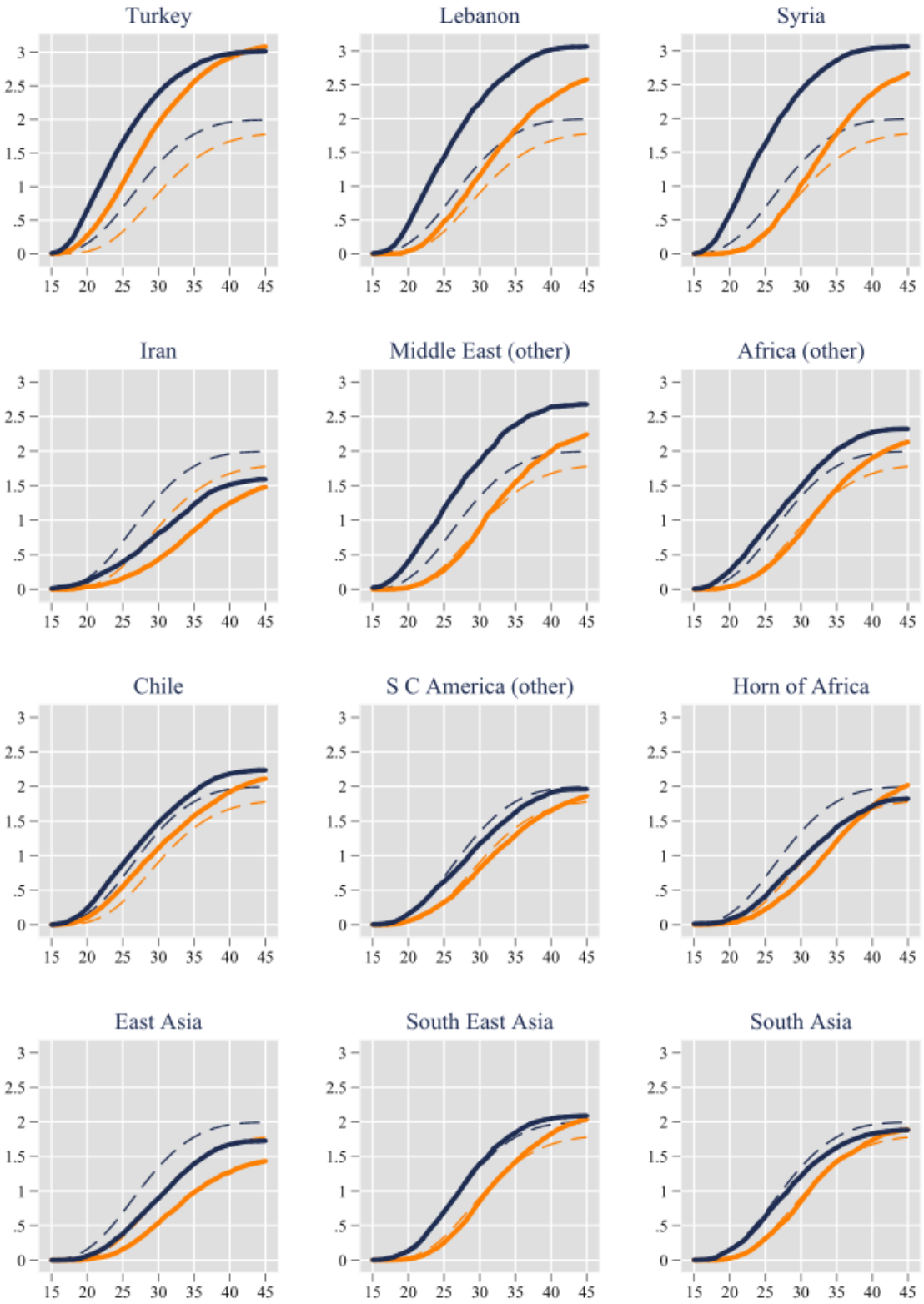
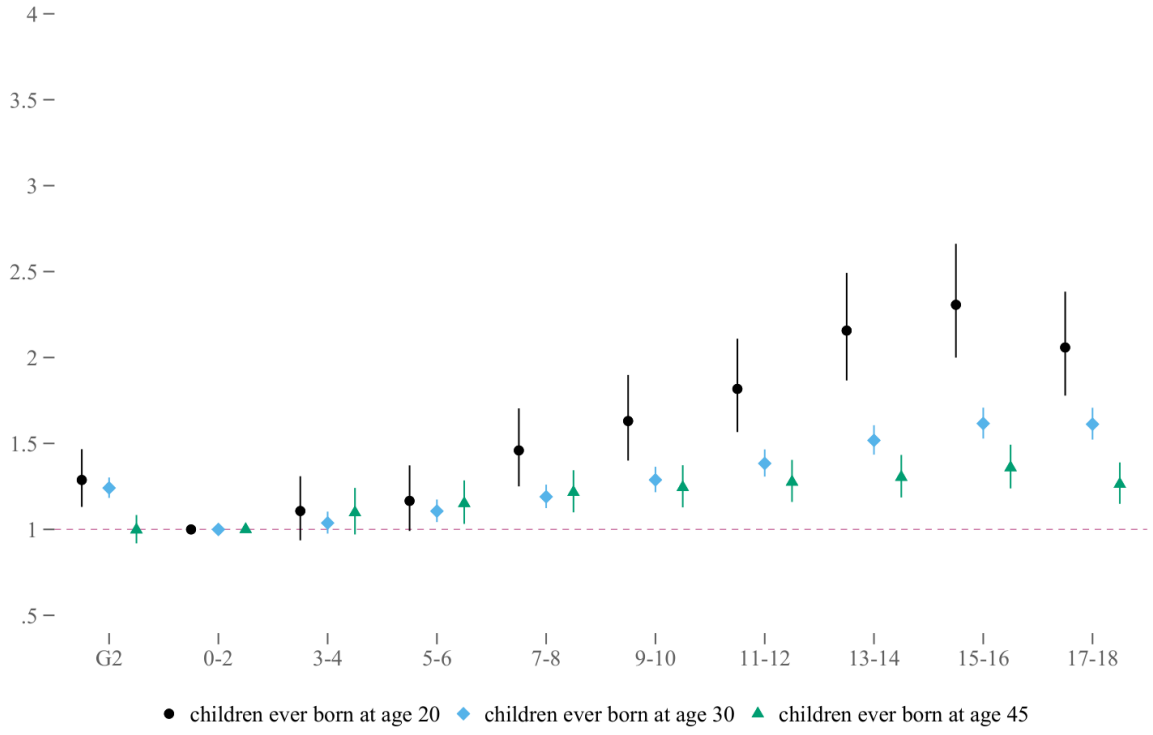


Figure A1 [continued]: Age profiles of children ever born for women and men

Note: Plots show average number of children born at each age for child migrants (solid lines) by country of birth as compared with the Swedish-born children of Swedes (dotted lines, same in each plot).

A2a. Women



A2b. Men

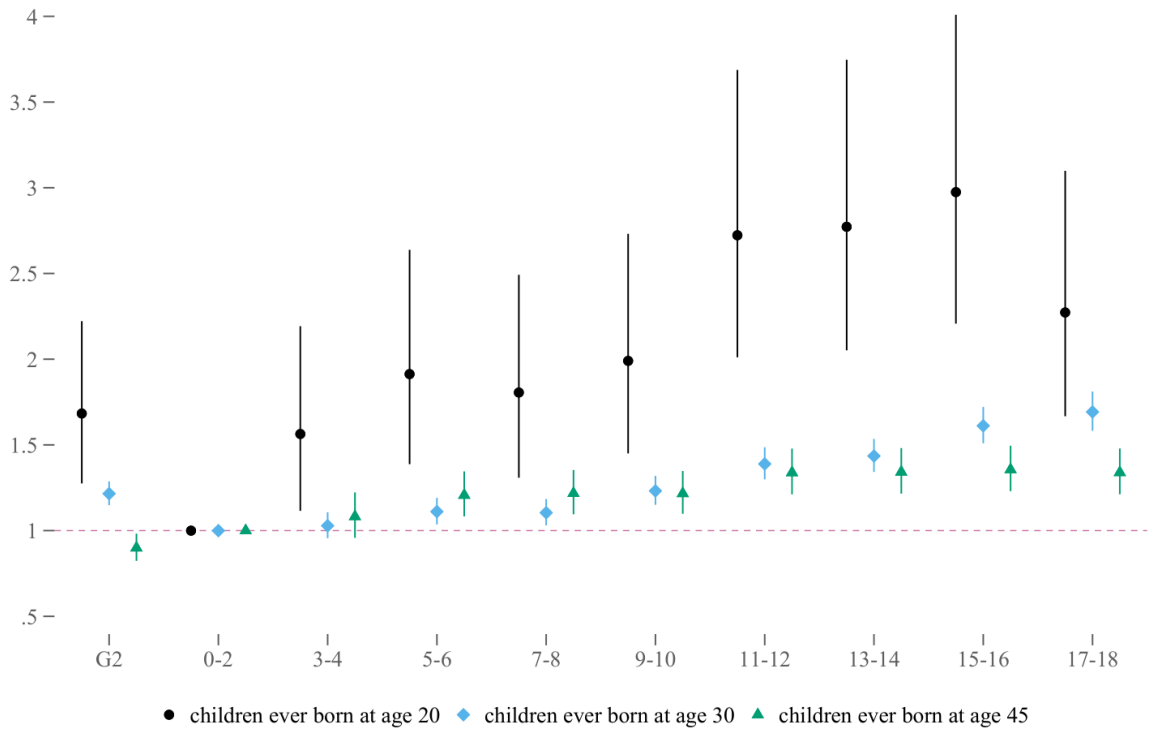
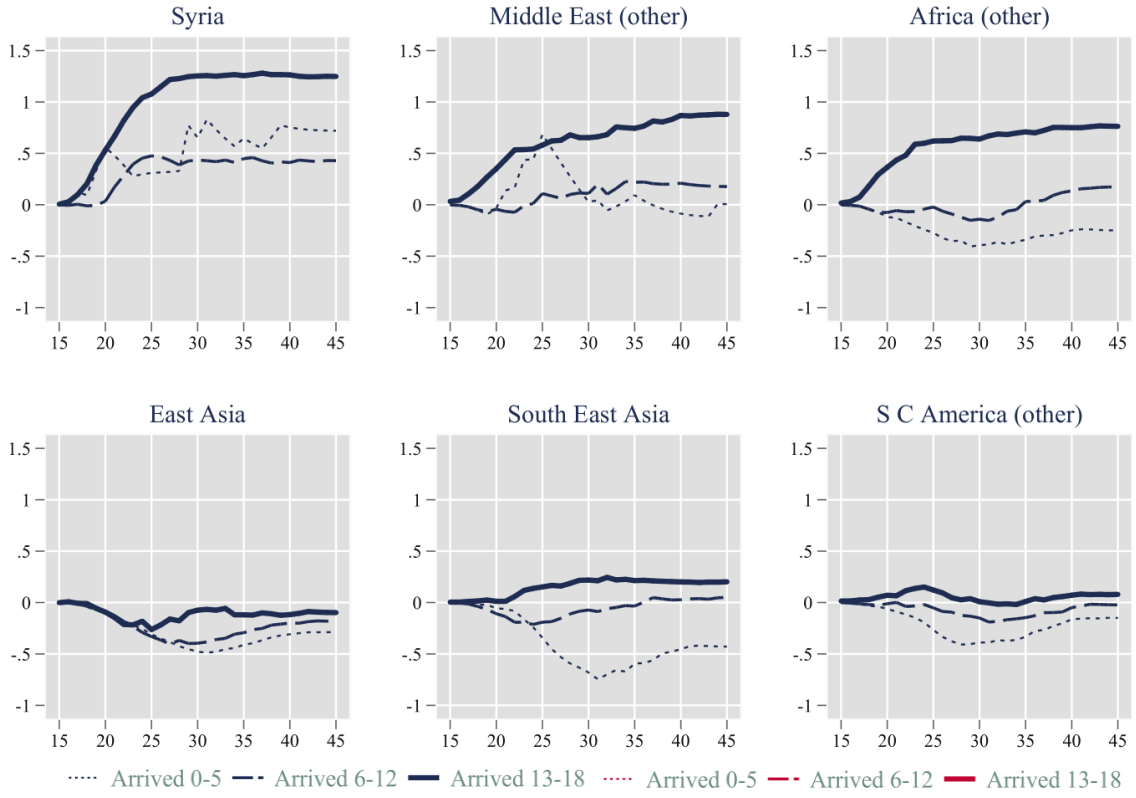


Figure A2: Completed fertility (at age 40) by age at arrival, no controls

Note: Plots show IRR (incidence risk ratios) from a series of Poisson regression models, separately for women and men. The analysis is for all child migrants (G1.5) and second generation (G2) in the study population. The reference category in all cases is child migrants who arrived in Sweden age 0-2.

A3a. Women



A3b. Men

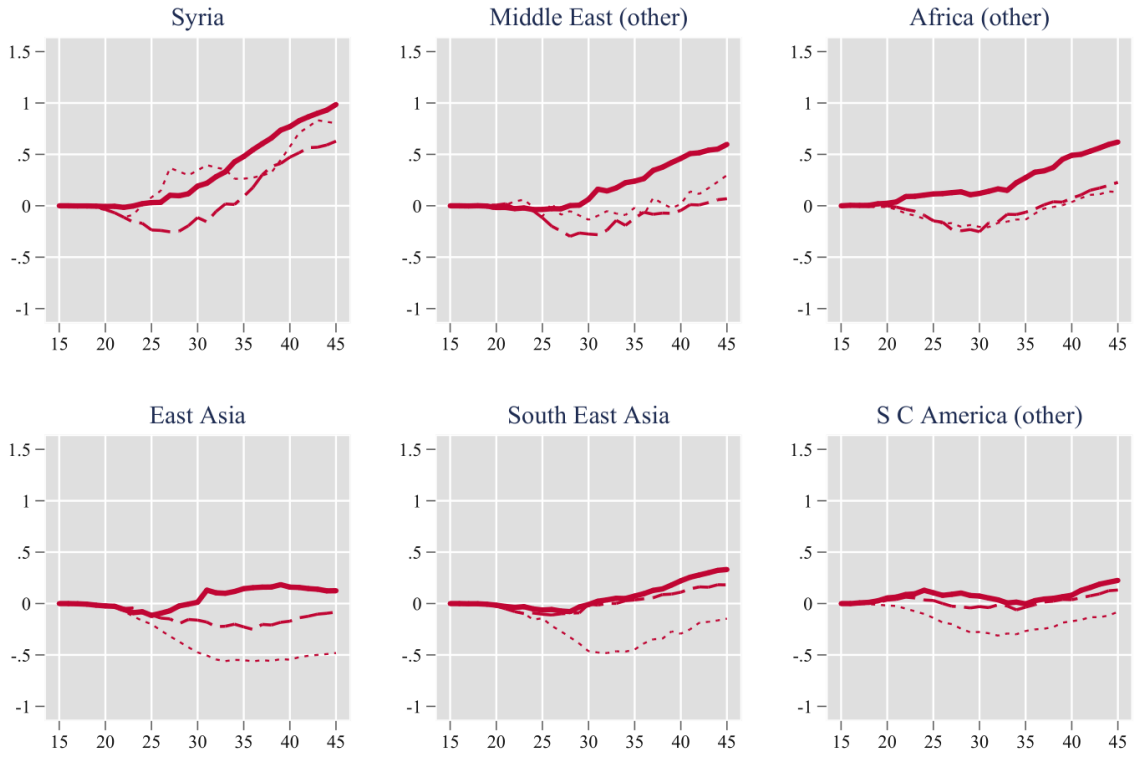


Figure A3: Differentials versus the Swedish-born in children ever born, non-European countries of birth not shown in Figure 6

Note: Plots show the differences in average number of children born at each age for child migrants who arrived at a given age as compared with the Swedish-born.