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Childbearing patterns in Sweden for native-born and foreign born.

Abstract
Women born abroad have higher fertility than women born in Sweden. In 2007 the Total Fertility Rate (TFR) for Swedish-born women was 1.82 while it was 2.21 for foreign-born women. Since 2008 separate fertility assumptions are made for Swedish-born and different groups of foreign born women in the population projection for Sweden.

The purpose of the study is to provide better understanding of fertility trends for the foreign born women. The childbearing patterns of the foreign born is compared with the patterns of the Swedish born. A cohort approach is applied and childbearing patterns by birth order for cohorts 1960–64, 1965–69, 1970–74 and 1975–79 are studied.

Results show that women born in Nordic countries, in EU-countries and in countries with high HDI (Human Development Index) have very similar birth patterns as the Swedish-born. Women born in the remaining Europe (except the Nordic countries and EU-countries) and in medium HDI-countries have higher fertility, but for later born cohorts the differences seem to decrease.

Summary

The purpose of this study is to analyse the fertility pattern of women born in Sweden and women born abroad. The foreign-born women are grouped into the following six different groups: Nordic country other than Sweden, EU country (non-Nordic), remaining European country other than EU and the Nordic countries and countries outside Europe with high, medium and low level(s) of development. This is a breakdown done annually by the United Nations, where consideration is given to a country's GDP, life expectancy of the population and level of education; the Human Development Index (HDI). The breakdown composition is the UN composition. It is the same breakdown used by Statistics Sweden for population projection.

In order to study the fertility development for the different groups we have compared the totalled fertility rate and made analyses of the development of first, second, third and fourth children. These analyses have been done for four cohorts: 1960–64, 1965–69, 1970–74 and 1975–79.

Results show that women born in the Nordic countries, EU countries and countries with high levels of development have fertility patterns that are largely similar to those of Swedish-born women. There are only some small differences among these groups.

As regards women born in remaining parts of Europe, the results show that latter-born cohorts have neared the fertility pattern of Swedish-born women. For the youngest cohort there remain only small differences in the propensity to have children.

Even women born in countries with medium levels of development can be said to approach the childbearing patterns of Swedish-born women. Despite this, the differences are still relatively large even for the latter-born cohorts. Women born outside Europe in countries with low levels of development also have a higher level of fertility than Swedish-born women. However, this group shows no clear tendencies of approaching the fertility pattern that native-born women have.

How childbearing is affected by time spent in Sweden since immigration has also been studied. Foreign-born women have been divided into the following five categories depending on time spent in Sweden: Childhood in Sweden, in Sweden for 9 years or more, 6-8 years, and 0-2 years. The results show that the propensity to have children is greater for those who have recently arrived in Sweden. This applies to all birth orders of children, but to a less extent for the second child. The "migration effect" is significantly greater for women that immigrate from remaining European countries (outside EU) and countries with medium to low levels of development. This can be due to the larger extent of asylum seekers and immigrant family members who come from these country groups. The "migration effect" can entirely explain the greater propensity of women born in countries with medium to low levels of

development to have their first child compared to Swedish-born women. It is the recently immigrated women from these country groups that "shore up" the first child fertility.

Women from the most country groups have a greater propensity to have a third and fourth child compared to Swedish-born women. This is not only explained by the "migration effect". Even those who have been in Sweden for more than two years have a greater risk of having a third and fourth child. This also applies to those who come to Sweden during their childhood (except for women from EU countries). An explanation for this propensity of having a third and fourth child can be that they begin childbearing earlier. It may also be explained to some extent by cultural differences.
The total image of the fertility pattern for the foreign born is in any case a development towards the pattern that Swedish-born women have.

1. Introduction

Statistics Sweden reports an annual projection of Sweden's population with assumptions about the development of childbearing, mortality and migration. The assumptions behind the projection are worked out through analyses of these three components. Since 2008 separate assumptions are made for the native born and the foreign born because the level of the total fertility rate varies among the native born and the foreign born. Foreign-born women are divided into the following different groups by their countries of birth: Nordic country aside from Sweden, EU country aside from the Nordic countries, Europe aside from EU and Nordic countries and countries outside Europe with high, medium and low levels of development based on the UN Human Development Index (HDI).

The present report studies the fertility pattern of women born in Sweden and women born in the different country groups. An analysis of foreign-born women's childbearing gives better knowledge about how childbearing in Sweden can develop in the future. The study can be of help when making assumptions about the fertility development for these groups[1].

Because assumptions about future childbearing were based only on women, the study itself is limited to women. Naturally, it is also possible to make fertility projections based on men. But because information about fatherhood is missing slightly more often than motherhood, Statistics Sweden has chosen to base the fertility assumtions on women.

In part the total fertility rate is compared to study fertility development for the different groups, in part an in-depth, parity-specific lifetime analysis where the propensity to have the first, second, third and fourth child is studied. How childbearing is affected by time spent in Sweden since immigration is also studied.

The report begins with a description of the development of the foreign-born population in Sweden. Chapter 3 offers an image of the development of the total fertility rate for the different groups. Chapter 4 gives an in-depth image of childbearing for the Swedish born. The development of bearing the first, second, third and fourth child is described. The following chapter compares the development for the Swedish born to the different groups of the foreign born. After that, the time since immigrating to Sweden and it significance for childbearing is described. Finally some closing comments are offered.

[1] A further description of which countries are included in the different groups can be found in Table 1 of the Table Appendix.

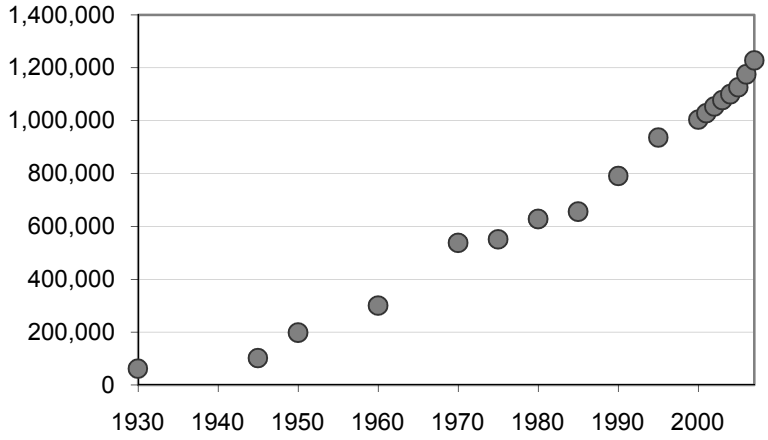
2. Background

This chapter offers a short summary of the development of the foreign-born population in general and the foreign-born women in childbearing years in particular.

Foreign-born population increases

Immigration to Sweden is a post-war phenomenon. As shown in Figure 2.1, the number of foreign-born persons was as low as 100 000 in 1945. Over a little more than 50 years the number of foreign-born persons in the population has increased by approximately 1 million to more than 1.2 million by 2007 and according to Statistics Sweden's latest population projection the number of foreign-born persons is calculated to rise to 1.7 million by 2050[2].

Figure 2.1
Number of foreign-born persons in Sweden 1930-2007



From labour immigration to family member immigration

Due to Sweden's high and relatively stable economic growth after World War II labour immigration was initiated that lasted into the early 1970s. Immigration from Finland reached record heights between the years 1969-1970. The strong economic situation in Sweden coupled with how Finnish agriculture went through extensive structural changes resulting in high unemployment. Immigration from Yugoslavia was also extensive. These two groups together made up nearly 70 percent of the immigrants in 1970[3].

After 1972 the character of immigration changed. The Nordic labour immigration ceased almost totally and was replaced by refugee immigration. Immigrants came from Asia and South America. There was extensive immigration from Iran, Chile, Lebanon, Poland and Turkey during the end of

[2] Statistics Sweden (2008a) *The future population of Swedn 2008–2050*
[3] Statistics Sweden (2004) *Together – Integration into Swedish society*

the 1980s. In the beginning of the 1990s there were a large number of people that fled to Sweden from the grave conflict in the Balkans[4]. During 2006 and 2007 immigration to Sweden had been record high due to worry and conflict in the middle eastern countries and the neighbouring area.

Immigration is not only affected by hardship abroad but also by migration policy and its regulations. The record immigration of recent years is also a result of the temporary change to the Aliens Act, which was in effect during the period of November 2005 to March 2006. The change meant that persons having been rejected for residency had their cases tried again.

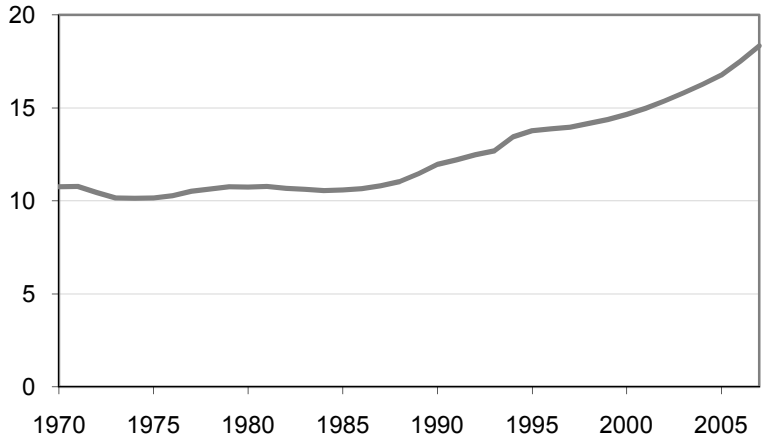
Since the middle of the 1980s the most common reason for immigration has been family ties. In 2006 40 percent of all immigrants (citizens from outside the Nordic countries) were family member immigrants.

Some immigrants who come to Sweden do not stay. More than 25 000 foreign-born persons emigrated in 2007. The percentage of the foreign born who emigrated back again has decreased continuously. A tenable explanation is that immigration has changed character and been successively dominated by refugee immigration and family member immigration[5].

The foreign-born population in childbearing years

Nearly all children are born to women aged 20-40, thus this is the age group on which this chapter will concentrate. Nearly 11 percent of women aged 20-40 were foreign born at the end of the 1980s. In 2007 the corresponding figure was 18 percent (see Figure 2.2).

Figure 2.2
Percentage of foreign-born women among all women 20–40 years 1970–2007



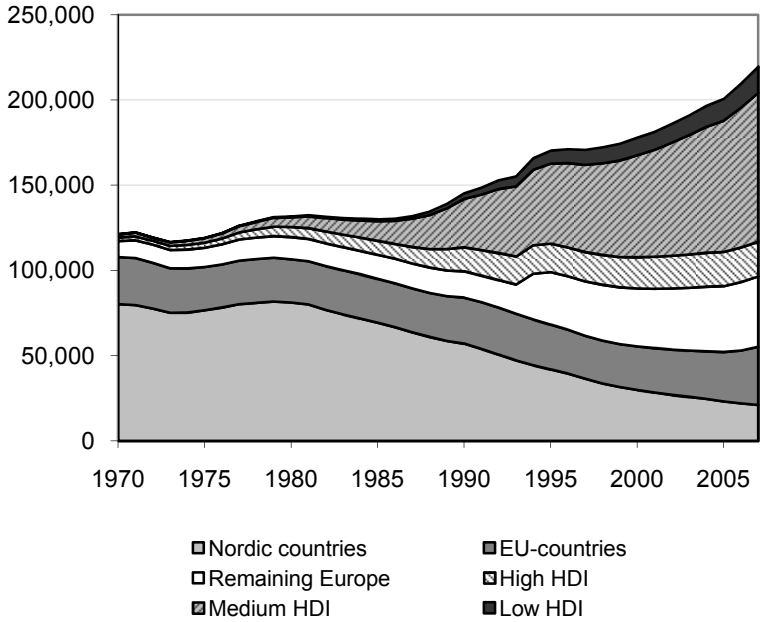
[4] Statistics Sweden (2004) *Post-war immigration and emigration*
[5] Statistics Sweden (2006) *The future population of Sweden 2006–2050*

Foreign-born women are a heterogenous group. Immigration to Sweden comes from nearly 200 different countries. Statistics Sweden's population projection divide the foreign-born women into six different groups depending on their country of origin:

– Nordic countries, excluding Sweden
– EU excluding Nordic countries
– Europe, excluding EU and Nordic countries
– countries outside Europe with a high level of development[6]
– countries outside Europe with a medium level of development
– countries outside Europe with a low level of development

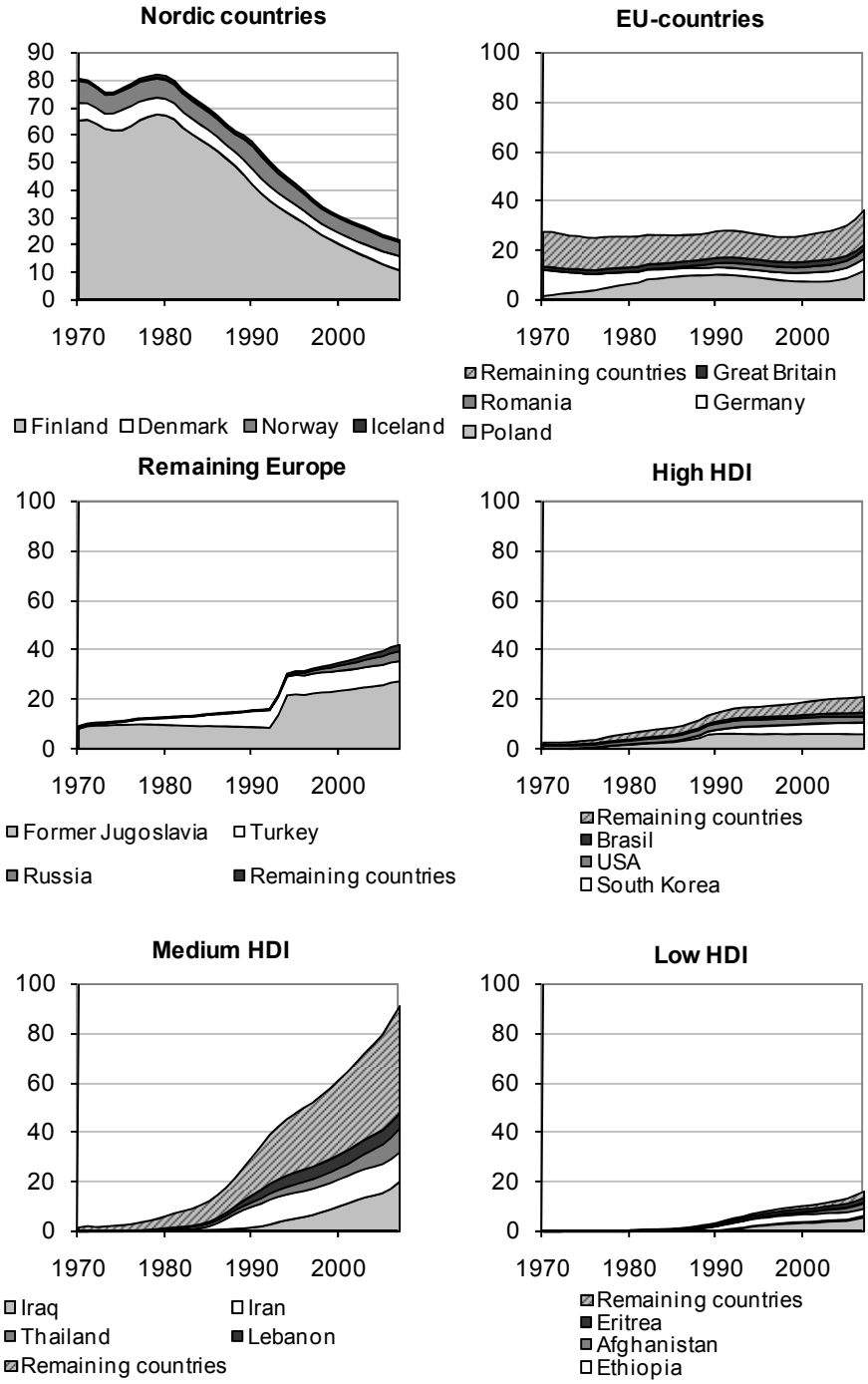
In Figure 2.3 the foreign-born women in childbearing years are classed according to the division above. The group was dominated by Nordic-born women in the 1980s, while women born in a country with medium level of development is now the most common country of origin group. In 2007 the most common country group was women born in one of the former Yugoslavian countries (27 000) followed by Iraq (approx. 20 000) and then Poland (approx. 12 000). The development of the number of women for individual countries of origin is illustrated in Figure 2.4.

Figure 2.3
Number of foreign-born women in childbearing years 20–40 by country group 1980–2007



[6] Based on the United Nations Human Development Index (HDI)

Figure 2.4
Number in thousands of foreign-born women in childbearing ages 20–40 years in the different country groups 1970–2007



3. Fertility rate development

Sweden's foreign-born population is increasing and expected to continue increasing. This means that an increased percentage of the babies born in Sweden are born by an foreign-born mother. This means that foreign-born women's childbearing has an ever greater impact on childbearing in Sweden as a whole.

The purpose with this chapter is to describe the development of the fertility rate for Swedish-born women and the different groups of foreign-born women.

An ever greater percentage are born to the foreign born

Table 3.1 shows how the percentage of children born to a mother who, herself, was not born in Sweden has increased. In 1980 this was 12 percent while it increased to 22 percent in 2007. In 2007 it was most common that children born to foreign-born women had mothers originally from a country with a medium level of development (from countries with a medium HDI) followed by those from the remaining (outside EU) countries of Europe. In the 1980s Nordic origins were the most common

Table 3.1
Percentage of children born to Swedish-born women and foreign-born women 1980, 1990, 2000 and 2007. Percent.

		År			
		1980	1990	2000	2007
The Swedish born		**88**	**87**	**82**	**78**
The Foreign bornd		**12**	**13**	**18**	**22**
of which	born in				
	Nordic countries	7	5	2	2
	EU-countries	2	2	2	3
	Remaining Europe	2	1	3	4
	Countries with High HDI	1	1	2	2
	Countries with Medium HDI	1	3	7	9
	Countries with Low HDI	0	0	2	2
Summa		**100**	**100**	**100**	**100**

The foreign born have more children on average

If one regards the entire group of the foreign born they have a higher fertility compared to the Swedish born. The total fertility rate for the foreign born amounted to 2.21 children per woman in 2007 while the Swedish born had a fertility rate of 1.82 children per woman. In the country as a whole the total fertility rate was 1.88 children per woman.. In order to realise a situation

within which the population fully replenishes itself, that is the replacement fertility rate is achieved, then each woman must give birth to 2.1 children.

What does a childbearing under the replacement fertility rate mean?
What does a fertility rate of approximately 1.9 children per woman really mean for the future population? How much will the population decrease?

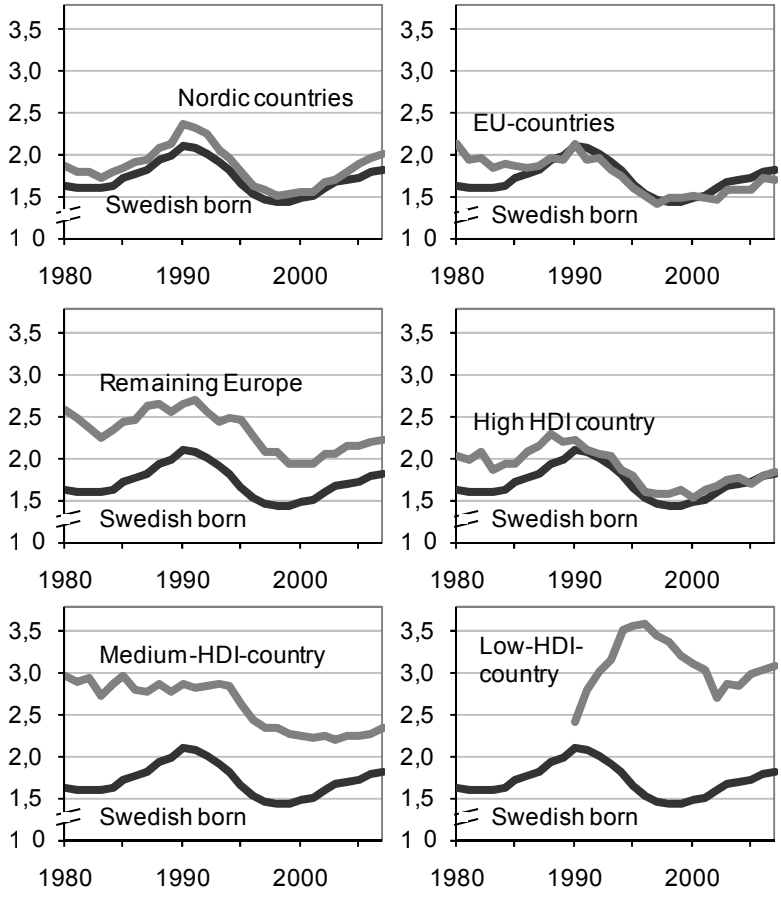
If all other factors of change were constant then in 100 years there would be a population decrease to approximately 80 percent of the original population. Such a population decrease is relatively limited compared to what it would be if the fertility rate were 1.3 children per woman. In that case less than a fourth of the population would remain after 100 years (assuming all other components remained constant)

Research shows that a fertility rate of 1.5 children per woman can be seen as a critical level. If the fertility is lower than 1.5 children per woman it is difficult to balance the downturn in the subsequent generations size with migration.

Source: Mc Donald P. (2000) Gender equity, social institutions and the future of fertility.

Figure 3.1 shows the total fertility rate for Swedish-born women and the different groups of foreign-born women. Women born in the Nordic countries, EU countries and those countries with a high level of development (countries with a high HDI) in general have fertility rates on the same level as Swedish-born women. Women born in remaining Europe (outside EU and outside Nordic countries) the fertility rate has been higher than the replacement fertility rate in recent years. Women born in countries with a medium level of development have an even higher fertility rate and the very highest fertility rate belongs to women born in countries with low levels of development (countries with low HDI).

Figure 3.1
The Total Fertility Rate for Swedish-born women and different groups of foreign-born women 1980-2007. Children per woman.



Increases and decreases in the fertility rate

Childbearing in Sweden is characterised by strong variations from one period of time to another. As shown in Figure 3.1, the increases and decreases apply to the Swedish born as well as the foreign born. A study of these variations by parity showed that women born in Sweden and the Nordic countries has similar increases and decreases over time. The birth of the third child did not decrease for women born outside of the Nordic countries to the same extent as women born in Sweden or the Nordic countries during 1990s[7].

There are several explanations for fluctuations in fertility over time. Participation in work life, education and economic situation are some of the factors which have been shown to affect childbirth. Studies show that those who are not established in the labour market have less propensity to have a first child compared to more established persons and this applied to the Swedish born as well as the foreign born[8] [9]. The connection to the labour

[7] Andersson (2001) *Childbearing patterns of foreign-born women in Sweden*
[8] Andersson (2005) *Labour-market status and first-time parenthood: The experience of immigrant women in Sweden, 1981-97.*

market has been shown to bear especially great significance for the downturn in first child births. The relation between labour market status between the second and third childbirth(s) is not as strong but studies anyway show a similar pattern for the Swedish born and most groups of the foreign born[10].

External social factors such as family policy and the state of the economy also affect the propensity to have children. One example is the speed premium that was introduced in the 1980s and that meant that parents maintained the same compensatory rate of parental leave as with earlier children if the subsequent child was born within 36 months. The speed premium conferred an increased the tempo of childbearing for women born in Sweden and the Nordic countries. In contrast, immigrants from non-Nordic countries have not been affected to the same extent by the introduction of the quickness premium[11].

[9] SCB (2008) *Work and childbirth – Comparisons of native and foreign born women and men.*
[10] Andersson (2007) *Childbearing dynamics of couples in a universalistic welfare state: the role of labor-market status, country of origin, and gender.*
[11] Andersson (2005) *Social differentials in speed-premium effects on childbering in Sweden.*

4. Development among the Swedish born

The total fertility rate describes childbearing as a whole. It states nothing about the development for the different parities (first child, second child, etc.). The next chapter describes the development of the four first parities for the Swedish born. Five different cohorts are studied: born 1960-64, 1965-69, 1970-74, 1975-79, and 1980-84. The development is studied through calculations of the intensity rate of the children's birth orders. Read more about the Intensity rate in the Section *How the statistics are produced* in Chapter *Facts about the statistics* The next Chapter compares the development for Swedish-born women to the development for the different groups of foreign-born women.

Development of the first birth

Figure 4.1 shows the age-specific intensity rate (number of children born per childless woman) for the first child for different Swedish-born cohorts. Younger cohorts have lower first birth intensities in younger ages compared to older cohorts. One explanation is the strained economic situation in the 1990s that made it especially difficult for younger men and women to establish themselves in the labour market. An increasing number went on to higher education and postponed having children. The strained economic situation primarily affected those born at the end of the 1960s and later. However, they have compensated for the postponement through increased intensities in older ages.

The postponement of childbearing seems to have slowed to a stop with the cohort born in 1980-84. They have their first child with the same intensity as the cohort born between 1975-79. A return to increased first birth intensities in younger ages is not clear as yet.

The postponement of childbearing does not seem to confer an increased final childlessness because it is compensated for by increased childbearing in later years. Statistics Sweden's projection assumes that the percentage of childless women born in the 1970s and 1980s is the same as for women born in the 1960s despite that they started their childbearing later[12]. Figure 4.2 compares the percentage of childless at different ages for women born in 1960, 1965, 1970, and 1975. The figure illustrates a clear tendency that childlessness for cohort 1975 approaches the level of earlier cohorts.

[12] SCB (2008) *The future population of Sweden 2008–2050*

Figure 4.1
Number of first-born children per childless woman by age. Swedish-born women.

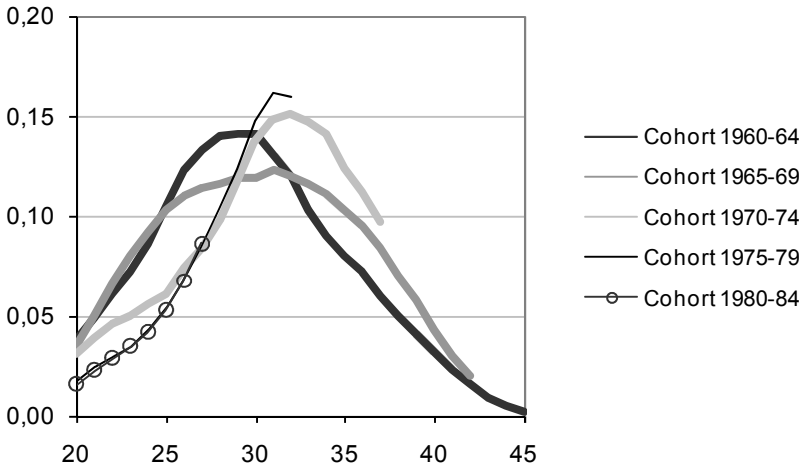
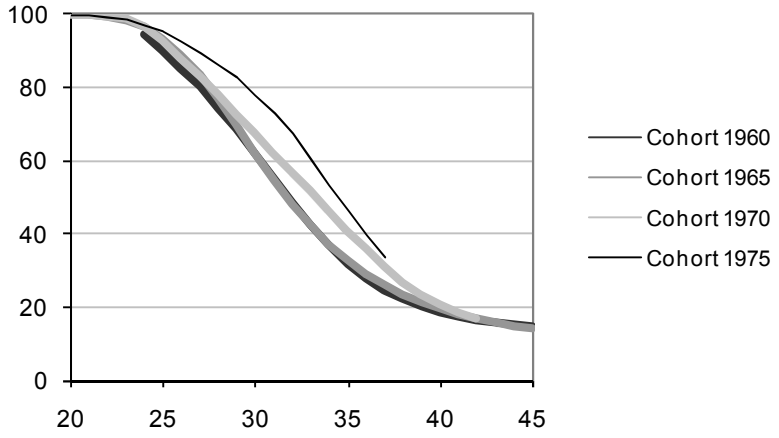


Figure 4.2
Percentage of women who have not yet given birth to a child, by age Swedish-born women



Development of the second birth

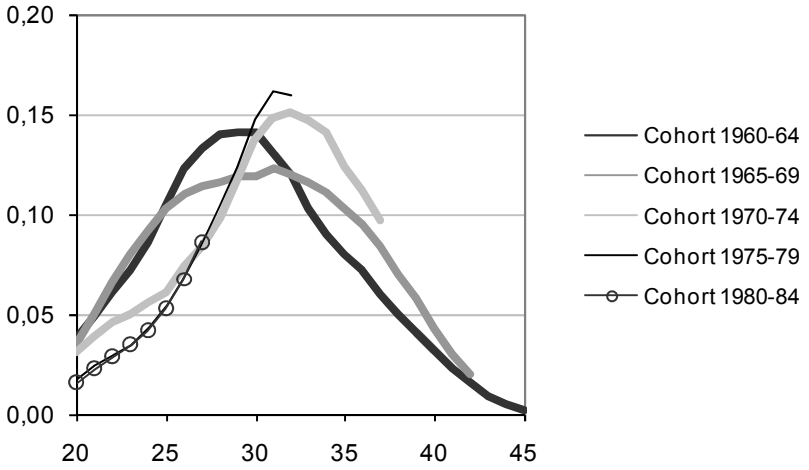
The two-child norm is strong in Sweden. Most women and men want to have two children. This is how it has been for the past few decades. Surveys from the 1980s and 1990s show that a large percentage saw two children as the ideal[13]. A survey among Swedish university students in 2004 showed that a majority of both women and men wanted to have two to three children[14].

As shown in Figure 4.3, the second child intensity for Swedish-born women decreased slightly in younger ages. This is compensated for by increased

[13] Statistics Sweden (2001) *Why are so few children born?*
[14] Lampic C. et. Al. (2006) *Fertility awareness, intentions concerning childbearing, and attitudes toward parenthood and among female and male academics.*

intensity at older ages. According to Statistics Sweden's projection the percentage having their second child is not assumed to decrease[15].

Figure 4.3
Number of second-born children per woman with one child by age of mother. Swedish-born women.



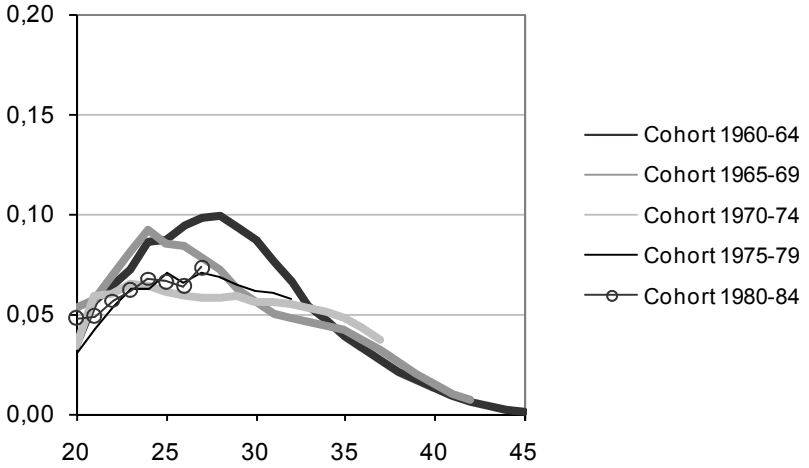
Development of the third child

The propensity to have a third child varies more in relation to economic status than the second child. Studies show that women with higher incomes have a greater propensity to have a third child than women with lower incomes. The positive effect of women's incomes can also be seen in the propensity to have a second child, although this is not as strong[16].

Significantly fewer have a third child than those that have a second. Approximately 30 percent of Swedish-born women recently ending their childbearing years (women born in 1962 who were 45 in 2007) had given birth to at least three children. This can be compared to 73 percent having had at least two children. According to Statistics Sweden's Population Projection, the percentage of women that will have a third child will decrease[17]. Figure 4.4 also shows the decreased third birth intensities for cohorts born after 1965. This is probably a consequence of the postponement of childbearing. If childbearing starts late, then it is difficult to manage time for the third child.

[15] SCB (2008) *The future population of Sweden 2008–2050*
[16] National Social Insurance Board (2003) *When can we afford another child?*
[17] SCB (2008) *The future population of Sweden 2008–2060*

Figure 4.4
Number of third-born children per woman with two children by age of mother. Swedish-born women.

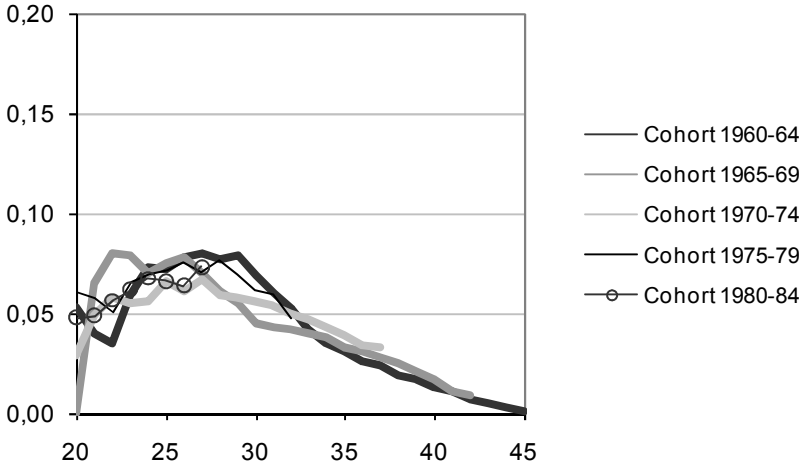


Development of the fourth child

Very few have a child with a birth order of four or higher. Barely 9 percent of Swedish-born women recently ending their childbearing years (women born in 1962 who were 45 in 2007) had given birth to at least four children.

In contrast to the third birth intensities, there are no clear tendencies for the decrease in fourth birth intensities for latter-born cohorts (see Figure 5.5). There seems to be a group of "child-inclined" women in each cohort.

Figure 4.5
Number of fourth-born children per woman with three children by age of mother. Swedish-born women.



5. Development of the foreign born

This Chapter compares the fertility development of the different groups of the foreign born with the development of the Swedish born. Comparisons are made for every birth order of children, for four different cohorts: 1960-64, 1965-69, 1970-74, and 1975-79. Comparisons are done with lifetime analyses[18] that are standardised for women's ages[19]. Swedish-born women function as the reference group and relative risks of having the first, second, third and fourth child is shown for each cohort. A description of the data material forming the basis for analyses is available in Section *Data material* in Chapter *Facts about statistics*. As a reminder of the level of fertility of the group, as described in Chapter 3, every section begins with a description of the development of the total fertility rate.

Born in Nordic countries (outside Sweden)

As shown in Figure 5.1, the total fertility rate is slightly higher for women born in Nordic countries compared to Swedish-born women. This group was dominated earlier of women born in Finland. It is clearly still the most common country of origin but no longer as outstanding (see Figure 2.4). Women born in Finland belong to the group with the lowest fertility rate while women born in Denmark and Norway have a slightly higher fertility rate.

Figure 5.1
Total fertility rate for women born in Sweden and women born in Nordic countries 1980–2007. Children per woman 1980–2007.

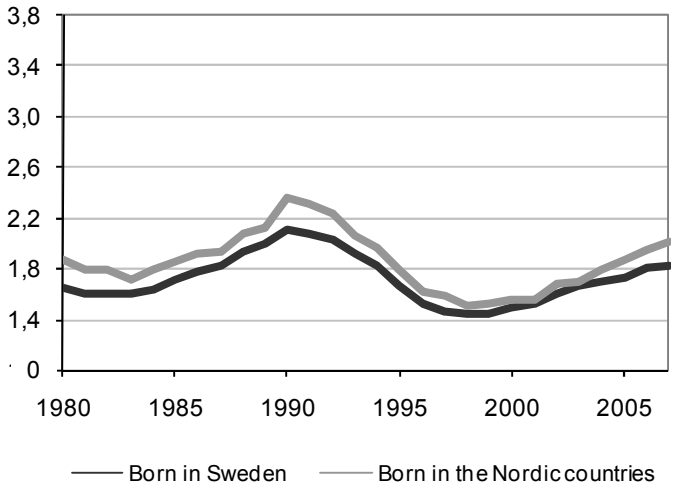


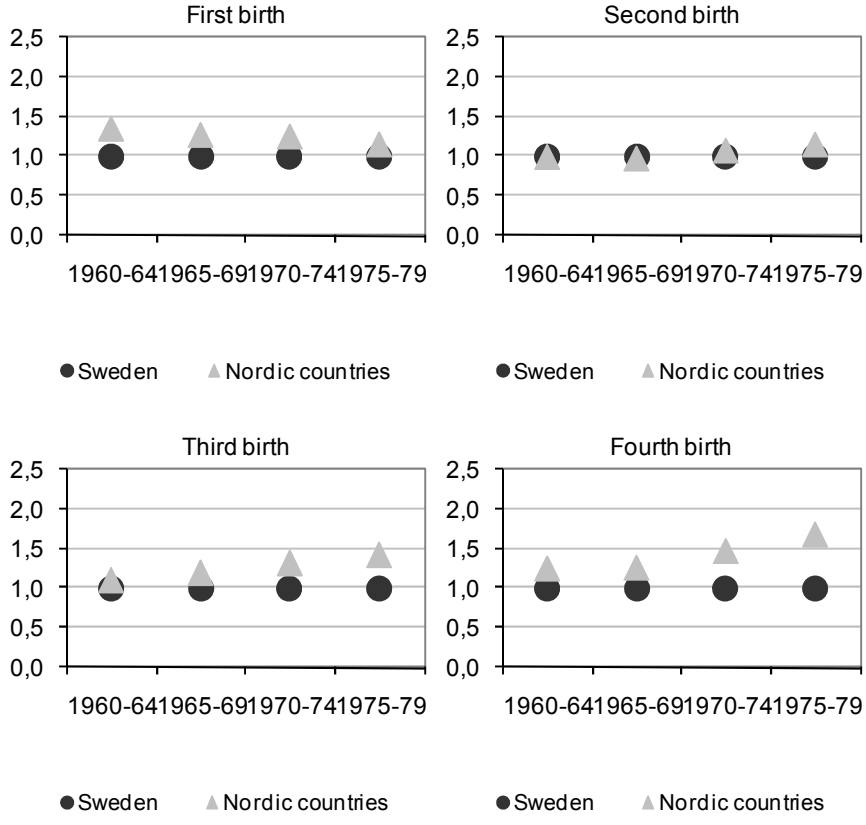
Figure 5.2 shows the relative risks of having the first, second, third, and fourth child for women born in the Nordic countries compared to Swedish-born women. The risks are standardized for women's ages.

[18] More on survival analyses is available in Section *Statistical methods for analysis* in Chapter *Facts about statistics*
[19]

There appears to be a declining trend for latter-born cohorts with regard to the first child. Earlier cohorts had higher risks in having a first child than the Swedish born, but as of the cohort born in 1975-79 the differences ceased. As regards the transition from the first to the second child there are no differences. In the higher parities, especially for the fourth child, those born in the Nordic countries again have slightly higher risks.

The total image for women born in the Nordic countries is that they have slightly greater propensities to have children than the Swedish born women but the differences are relatively small.

Diagram 5.2
Relative risks of having children for different cohorts by birth order for women born in Nordic countries compared to women born in Sweden. Standardised for women's ages.



The relative risks are also presented in Tables 2-5 in the Table Appendix

Born in EU countries (outside Sweden and Nordic countries)

The total fertility rate has during recent years been slightly lower for women born in EU countries compared to Swedish-born women (see Figure 5.3). The single largest country of origin in this group is Poland where nearly one third of the EU country group are born. The fertility rate for Polish-born women in Sweden decreased dramatically in the beginning of the 1990s, from 2.4 children per woman to a lowest point of 1.3 children per woman by

the end of the 1990s. This has probably contributed to the decrease for this group on the whole.

Figure 5.3
Total Fertility Rate for women born in Sweden and women born in EU countries 1980–2007. Children per woman.

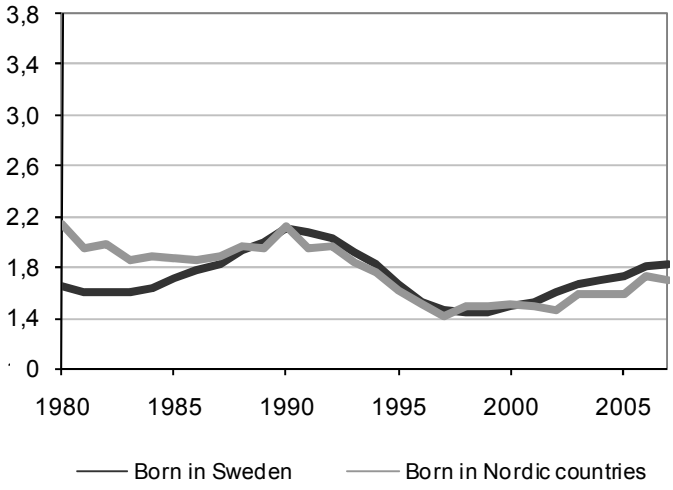
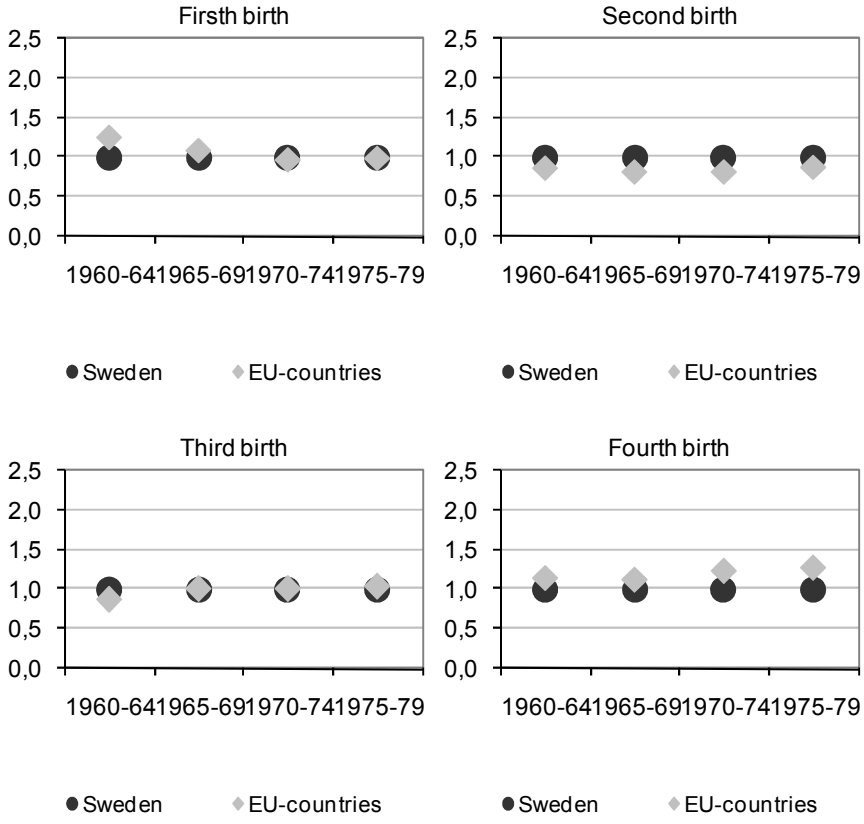


Figure 5.4 shows the relative risks in having a first, second, third, and fourth child for women born in EU countries compared to women born in Sweden. The risks show that there are great similarities between Swedish-born women and women born in EU countries. The only point of distinction is the relative risk of having a second child. With regard to that women born in EU countries have slightly lower risks. There is possibly a trend to reduced risks in having a first child for latter-born cohorts and a slightly greater risk in having a fourth child compared to the Swedish born.

Figure 5.4
Relative risks of childbearing for different birth cohorts by birth order for women born in EU countries compared to women born Sweden. Standardised for women's ages.

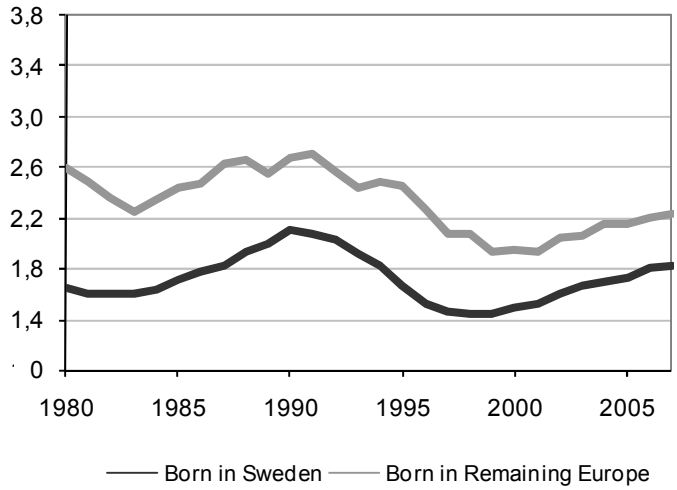


The relative risks are also presented in Tables 2-5 in the Table Appendix

Born in remaining Europe (outside Nordic countries and EU)

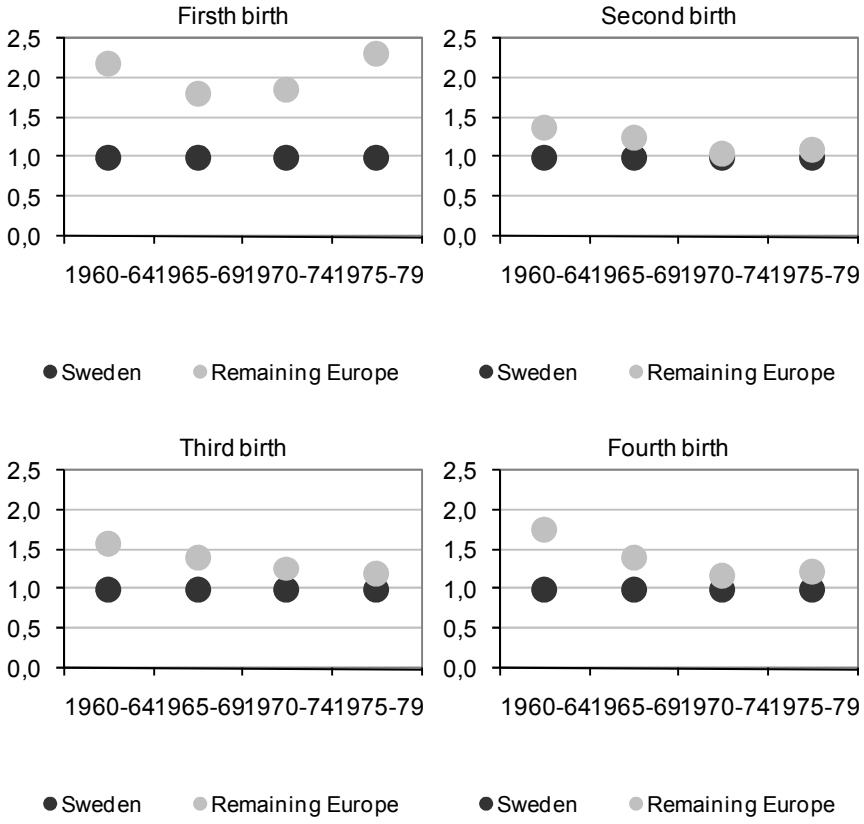
As Figure 5.5 shows, the total fertility rate is higher for women born in remaining parts of Europe compared to Swedish-born women. It seems as though the differences have decreased in recent years. In part, this can be due to changes in the group's composition. Many in this group were born in Turkey earlier but now the group is dominated by women born in countries that belonged to the former Yugoslavia. Women born in Turkey have a higher fertility than women from former Yugoslavian countries, even though the fertility among the Turkish-born women has decreased steadily since the 1980s.

Figure 5.5.
Total Fertility Rate for women born in Sweden and women born in the remaining Europe 1980–2007. Children per woman.



In studying the relative risks of having a first, second, third, and fourth child, it seems as though women born in the remaining countries of Europe approach the childbearing patterns of Swedish-born women. As indicated in Figure 5.6 the difference between the childbearing propensities of Swedish-born women and women born in remaining Europe are not especially large for the youngest cohort born 1975-79. For women born in the youngest cohort, one exception is the relative risk for having a first child. Here the difference is expected to increase. This can be due to differences in the composition of the group in the different cohorts. The overall image of the childbearing development in the group remaining Europe is that the differences have decreased quite a bit for the latter-born cohorts.

Figure 5.6
Relative risks of having children for different cohorts by birth order for women born in remaining countries of Europe compared to women born in Sweden. Standardised for women's ages.



The relative risks are also presented in Tables 2-5 in the Table Appendix

Born in high HDI countries outside Europe

Women born in countries outside Europe with high levels of development have in recent years had fertility rates at the level of Swedish-born women (see Figure 5.7). Women born in countries with a high HDI are a relatively small group in Sweden, where the single largest country is Chile followed by South Korea. Women born in Chile have fertility rates very close to the fertility rate of Swedish-born women while the fertility rates of women born in South Korea is slightly lower. Women from South Korea are a special group. Many have come to Sweden as adoptive children.

Figure 5.7
Total Fertility Rate for women born in Sweden and women born in high HDI countries 1980–2007. Children per woman.

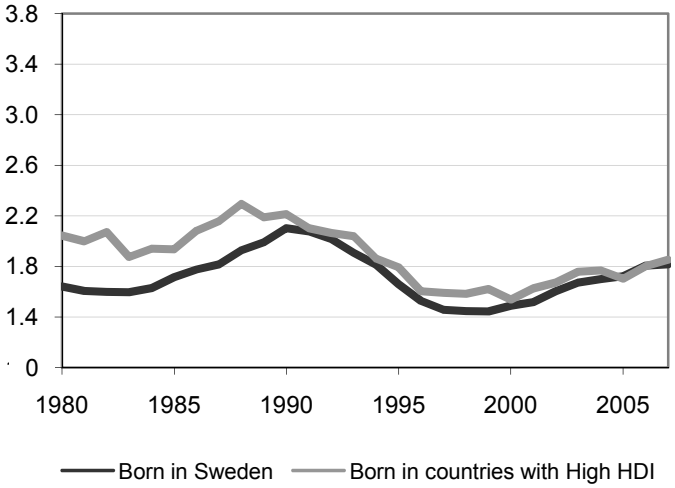
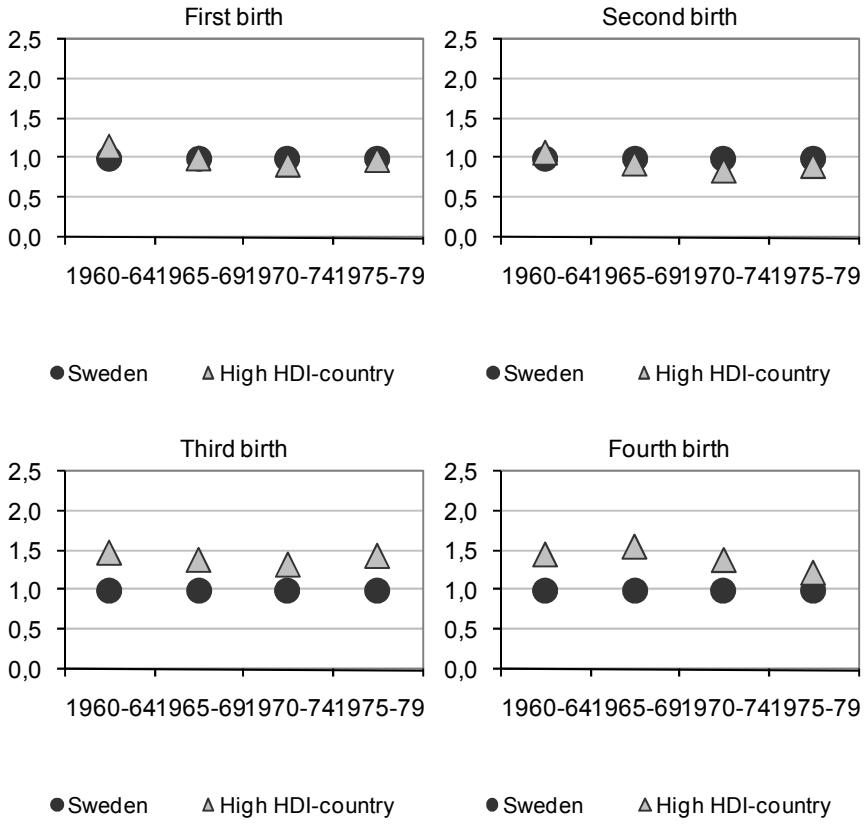


Figure 5.8 confirms the similarity in childbearing patterns among women born in countries with high HDI and Swedish-born women. The differences are relatively small. Women born in countries with a high HDI have a slightly smaller propensity to have a second child compared to Swedish-born women. This applies to the latter-born cohorts at least. In contrast, it seems that mothers to two children born in countries with a high HDI have a slightly greater propensity to having a third child. On the whole, the development for women born in high HDI countries tends toward a downturn for latter-born cohorts but as a whole the childbearing pattern in the group seems to be like that of the Swedish born.

Figure 5.8

Relative risks of childbearing for different birth cohorts by birth order for women born in countries with high HDI compared to women born in Sweden. Standardised for women's ages.



The relative risks are also presented in Tables 2-5 in the Table Appendix.

Born in medium HDI countries outside Europe

For a long time there was a very large difference in the total fertility rate for Swedish-born women and women born in countries outside Europe with a medium level of development. As shown in Figure 5.9 there are still clear differences between both these groups but the differences have decreased. Women born in medium HDI countries are a heterogenous group with large differences in fertility patterns within the group. The biggest country of origin in this group is Iraq with high fertility levels. In 2007 women in Sweden born in Iraq had had a total fertility rate of 3.2 children. This can be compared to Iran, the next biggest country of origin in this group with a low fertility rate of 1.4 children per woman. In recent years the percentage of Iraqi-born women increased while the percentage of Iranian-born women has decreased.

Figure 5.9
Total Fertility Rate for women born in Sweden and women born in medium HDI-countries 1980–2007. Children per woman.

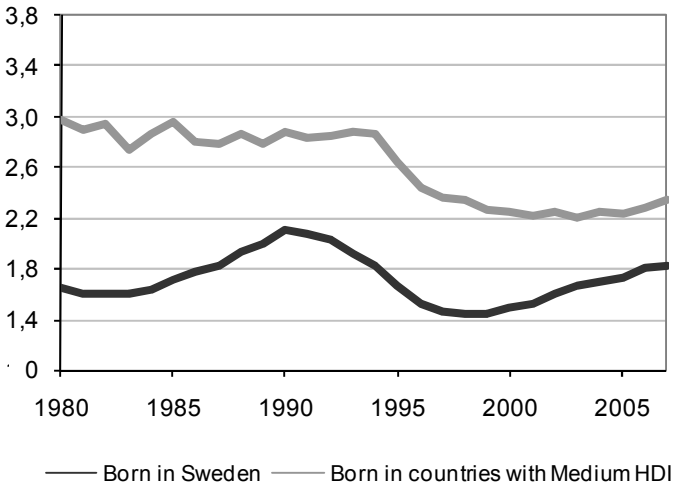
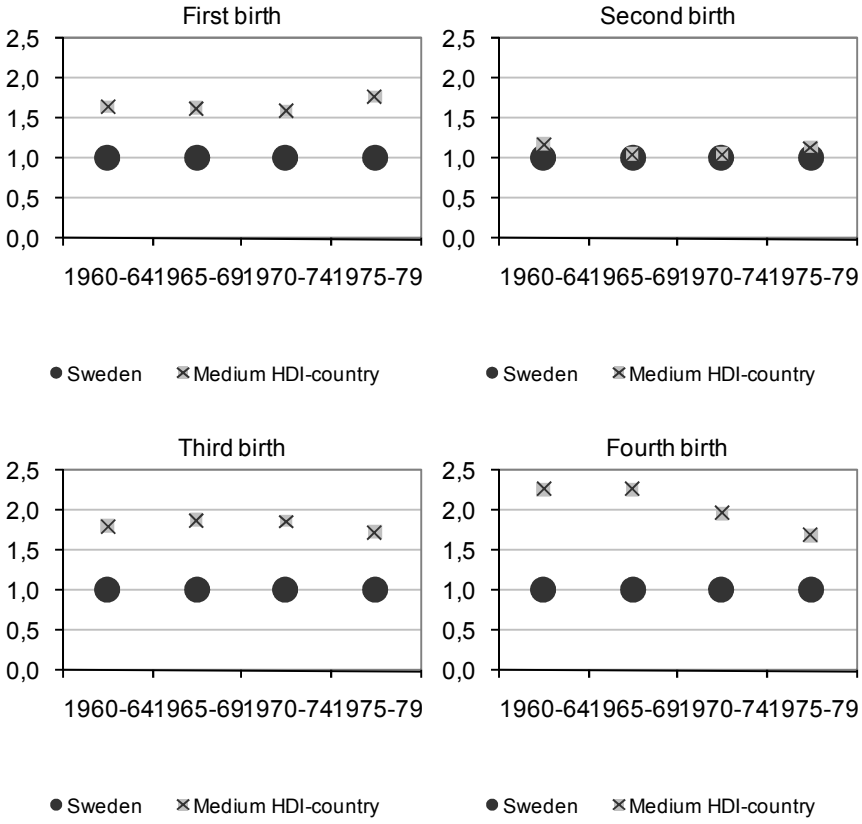


Figure 5.10 clearly shows that women born in medium HDI countries have a greater propensity to have all children except the second. The differences for having a third and fourth child however seem to decrease for latter-born cohorts, which indicates that women born in medium HDI countries approach the childbearing pattern of Swedish-born women.

Figure 5.10
Relative risks of childbearing for different birth cohorts by birth order for women born in medium HDI countries compared to women born in Sweden. Standardised for women's ages.



The relative risks are also presented in Tables 2-5 in the Table Appendix

Born in low HDI countries outside Europe

Women born outside Europe in countries with a low level of development are a small group in Sweden and before 1990 the number of women in childbearing years was so small that the total fertility rate was not able to be calculated. This group has the highest total fertility rate. Similar to the group with a medium HDI, this is a heterogenous group with differences in fertility rates within the group. The most common country of origin in the group is Somalia with a high fertility rate (3.9 children per woman) while the next most common country of origin is Ethiopia, where the fertility rate is not as high (2.2 children per woman). The percentage of women born in Ethiopia has decreased while the percentage of women born in Somalia has increased. This is probably one of the explanations for the increase in the total fertility rate in the beginning of the 1990s, which we can see in Figure 5.11.

Figure 5.11
Total Fertility Rate for women born in Sweden and women born in low HDI-countries 1980–2007. Children per woman.

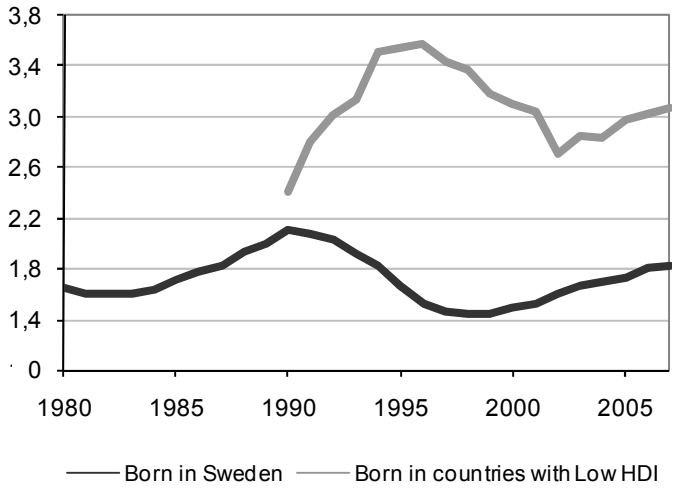
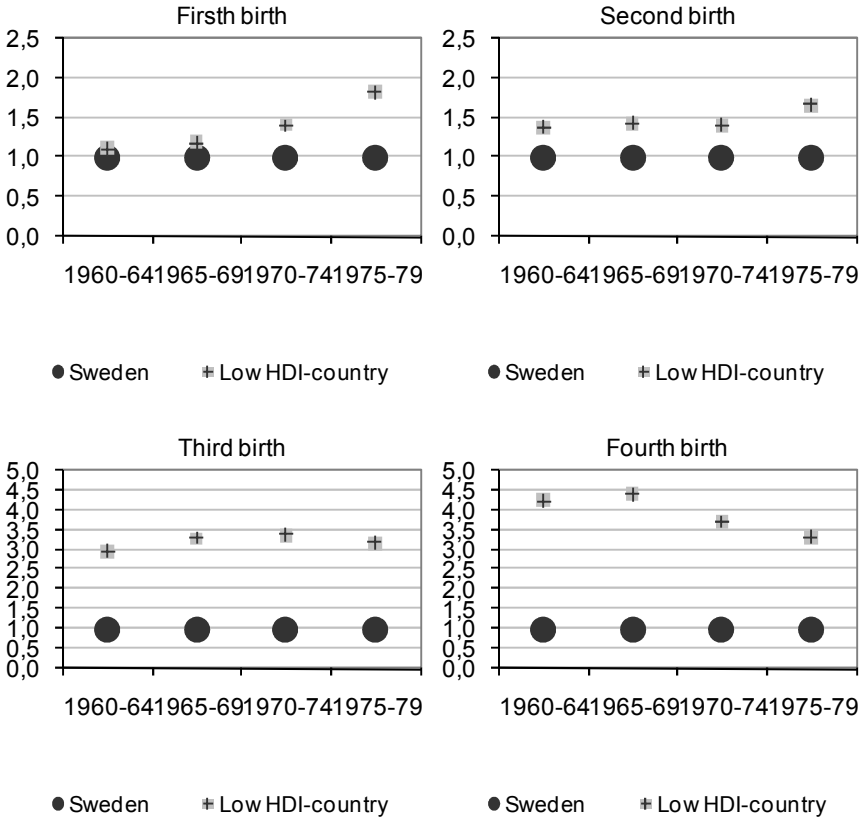


Figure 5.12 shows the relative risks for having the first, second, third, and fourth child for women born in countries with a low HDI compared to women born in Sweden. It is clear that the propensity to have children is greater among women born in countries with lower levels of development compared to those of Swedish-born women. This applies for all birth orders of children. The propensity to have a first and second child has increased with latter-born cohorts. This is probably explained by the recent increase of women born in Somalia. The differences are very large with regard to the third and fourth child among Swedish-born women and those born in countries with a low HDI. The risk of having a third child is nearly three times as high for women born in countries with a low HDI. A downward trend for fourth child births can be noted for latter-born cohorts.

On the whole there are large differences in childbearing for this group compared to the Swedish born and the differences seem not to decrease especially much for latter-born cohorts.

Figure 5.12
Relative risks of childbearing for different birth cohorts by birth order for women born in low HDI countries compared to women born in Sweden. Standardized for women's ages.



The relative risks are also presented in Tables 2-5 in the Table Appendix

6. Significance of time in Sweden

Earlier Swedish studies have shown that most immigrants have a high fertility for a short time after immigration to Sweden[20]. The high fertility for a short time after immigration is often interpreted as an effect of women having waited to have children until after immigrating. They then try to catch up in their delayed childbearing. Another explanation is that many immigrants come to Sweden to start families and so they start their childbearing a short time after immigrating to Sweden.

This Chapter studies how childbearing is affected by time since immigrating to Sweden. There is also an investigation of how much the differences among Swedish-born women and the different groups of foreign-born women with regard to their propensity to have children can be explained by the foreign born women's higher risks for having children a short time after immigration to Sweden.

Foreign-born women have been divided into the following five categories depending on time spent in Sweden: Childhood in Sweden, in Sweden for 9 years or more, 6-8 years, and 0-2 years. Women who immigrated and who came to Sweden before the age of 15 belong to the category of Childhood in Sweden. Swedish-born women function as a reference group.

The analyses are performed exactly as were the ones in the previous Chapter by using survival analyses where conditions are standardized for women's ages[21].

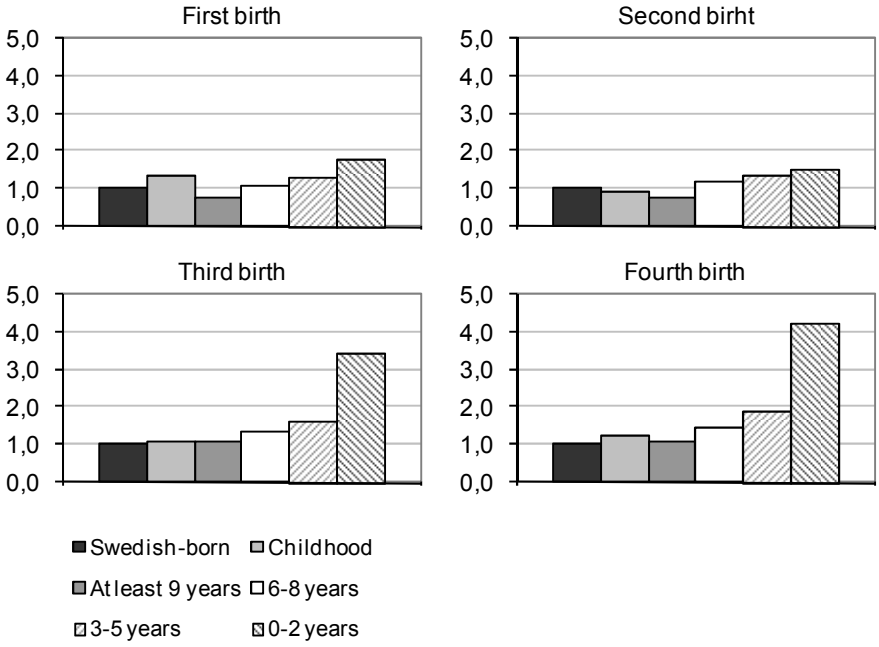
Born in the Nordic Countries

Figure 6.1 shows the relative risks for women born in the Nordic countries of having a first, second, third, and fourth child depending on the residence time since immigrating to Sweden. The Figure shows that women born in the Nordic countries who have lived in Sweden for less than two years have a greater risk of having children. This applies to all birth orders of children studied. Second birth intensities are least affected by time since immigration to Sweden. In contrast the risks of having a third and fourth child are distinctly greater for those who have recently immigrated compared to Swedish-born women. Women born in a Nordic country who have spent all or part of their childhood in Sweden have an increased risks of having a first, as well as third and fourth child.

[20] See for example Andersson (2001) *Childbearing patterns of foreign-born women in Sweden.*

[21] The standardisation for ages of earlier children in the models for the first, second, third and fourth child was also tried. The result show that a short time in Sweden especially increases the risk of having the second, third, and fourth child when the earlier child is older than age 4.

Figure 6.1
Relative risks of childbearing for women born 1960–1979 by birth order and by time since immigration to Sweden. Nordic-born women compared to Swedish-born women. Standardised for women's ages.



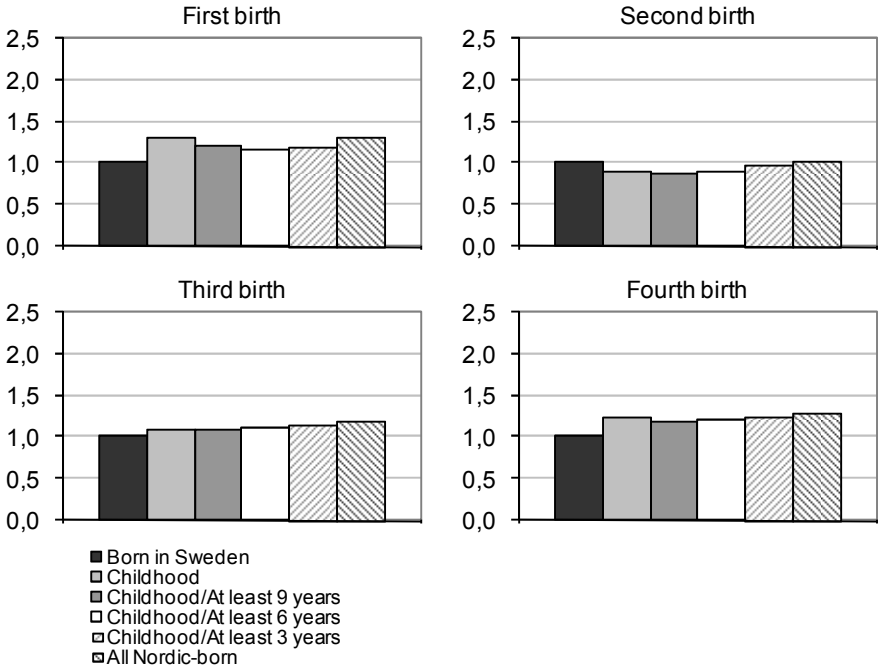
The relative risks are also presented in Tables 6-9 in the Table Appendix

In figure 5.2 of Chapter 5 it was shown that Nordic-born women had higher risks of having a third child compared to the Swedish-born. To what extent are these risks due to Nordic-born women having their third child a short time after immigrating to Sweden?

Figure 6.2 compares the relative risks of having children for Nordic-born and Swedish-born women. The Swedish-born women are, as usual, the reference category (first stack). Stack number two (light grey) shows the relative risks for Nordic-born women when only including those who have lived in Sweden since childhood. Later inclusions are made by group. Stack number three (dark grey) shows the relative risks for those who have lived in Sweden since childhood or for at least nine years. The next stack (white) includes those who have lived in Sweden for 6-8 years. Now the Swedish-born women can be compared to those who have either been in Sweden since childhood or at least 9 or 6-8 years. The next stack is for those who have been in Sweden for more than 3 years and the last stack is finally for all, hence even for those who have lived in Sweden for a short time (0-2 years).

The conclusion for the third child is that the greater risks for Nordic-born women are not exclusively due to the increased risks associated with the short time since immigrating to Sweden. Risks can be seen to increase for each of the groups included.

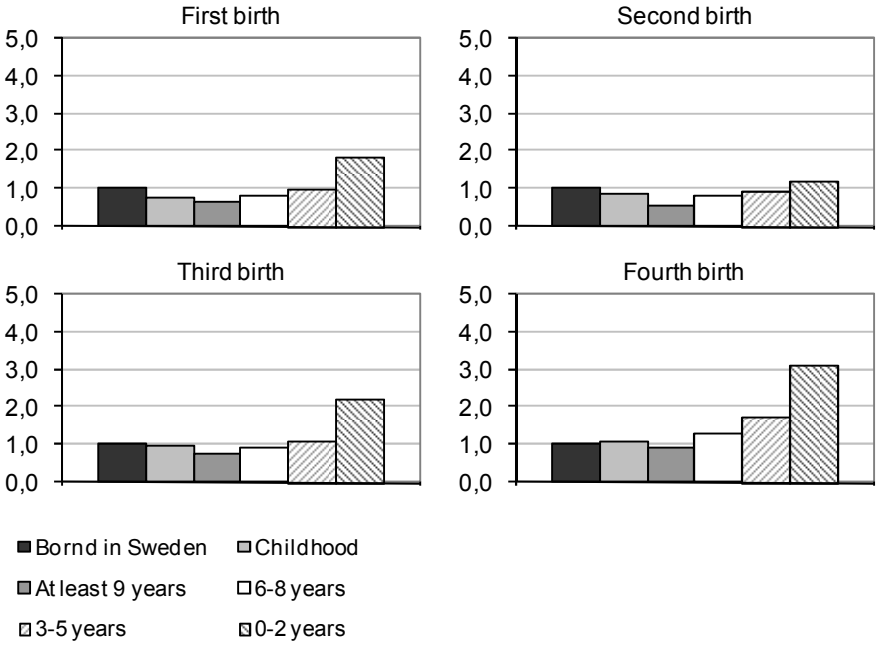
Figure 6.2
Relative risks of childbearing for women born 1960–1979 by birth order. Different groups of Nordic-born women (by time in Sweden) compared to Swedish-born women. Standardised for women's ages.



Born in EU countries (outside Sweden and Nordic countries)

As was the case with Nordic-born women, those who recently immigrated from an EU country have a greater risk for having children compared to Swedish-born women. On the other hand, women who have lived in Sweden for at least 3 years have in principle no greater risk of having children. Unlike Nordic-born women, women born in EU countries whose childhoods were spent in Sweden do not have a significantly higher risk of having children.

Figure 6.3
Relative risks of childbearing for women born 1960–1979 by birth order and by time since immigration to Sweden. Women born in EU countries compared to women born in Sweden. Standardised for women's ages.

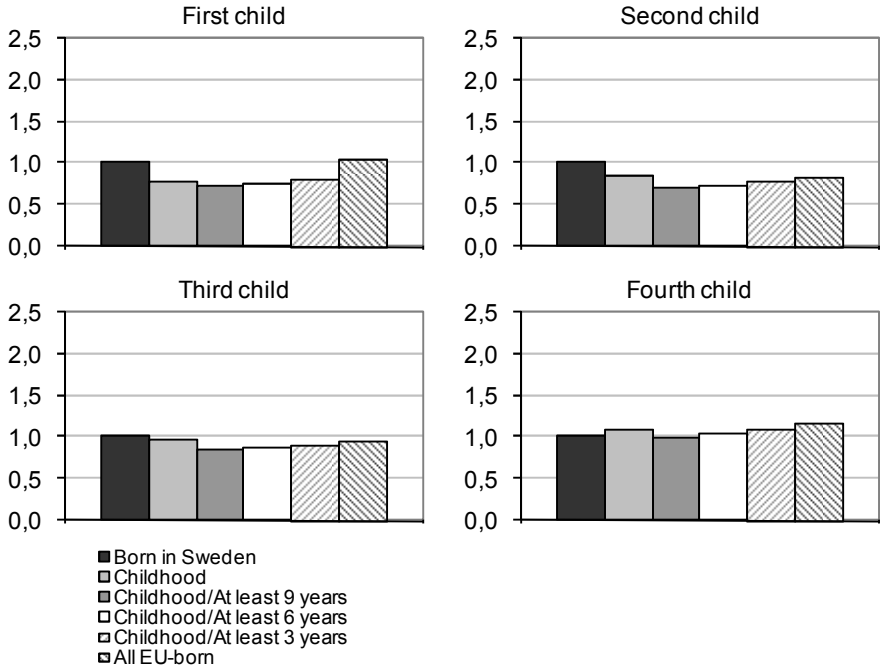


The relative risks are also presented in Tables 6-9 in the Table Appendix

Just as was done with Nordic-born women, groups are included based on how long they have lived in Sweden and risks for having children are compared with the Swedish born. The first stack as usual indicates the risk for Swedish-born women. Stack number two (light grey) shows the relative risks for women born in an EU country who have lived in Sweden since childhood. The next stack includes those who have lived in Sweden at least 9 years and then those who have lived in Sweden for 6-8 years are included. The next stack in the line includes all women born in EU countries that have been in Sweden since childhood as well as those who had immigrated for at least 3 years ago. The next stack includes those who recently immigrated to Sweden, in other words all the women born in EU countries.

As was seen with Nordic-born women, it would not seem as though the "migration effect" has especially great significance for the relative risks of having children for women born in EU countries. Migration effect refers to increased risks for having children during the short time after immigrating to Sweden. It is however worth noting that without a "migration effect" the women born in the EU would have a lower risk of having the first child than the Swedish born.

Figure 6.4
Relative risks of childbearing for women born 1960–1979 by birth order. Different groups of women born in EU countries (by time in Sweden) compared to women born in Sweden. Standardised for women's ages.

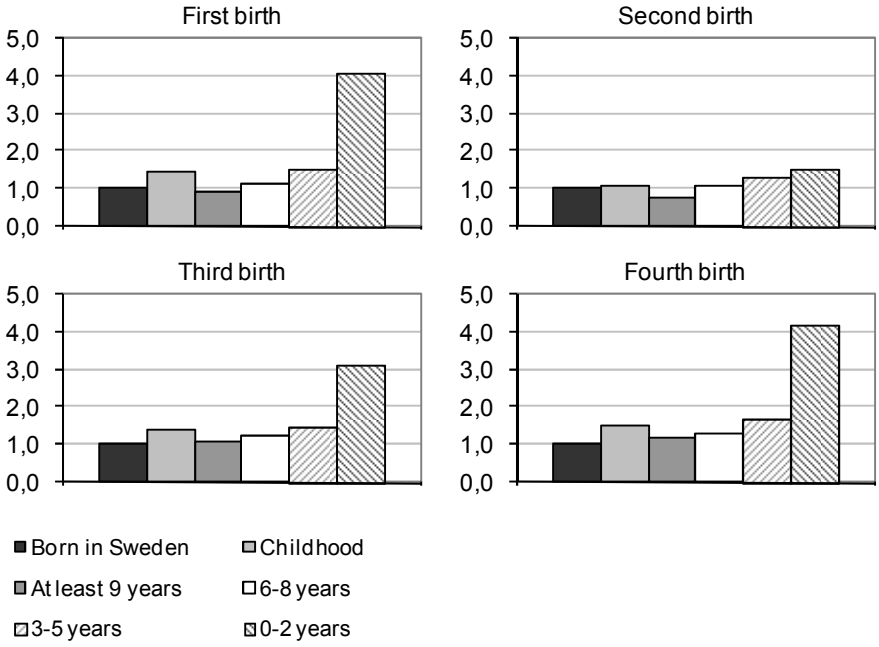


Born in remaining Europe (outside Nordic countries and EU)

As Figure 6.5 shows, the relative risks of having a first child are tangibly greater for those who have recently immigrated to Sweden from a country included in the "remaining Europe" group. Increased risk of having a first child for newly arrived immigrants applies to a greater extent to women from remaining Europe than to women from Nordic countries, EU countries and high HDI countries. The relation between starting a family and migration is thought to be strong for this group. As is the case with other groups studied, the second child risk is least affected by time since immigrating to Sweden.

Women who came to Sweden sometime during their childhood have a higher risk than Swedish-born women of having all children except the second. At least as regards the third and fourth children, it appears as though Turkish-born women who spent childhoods in Sweden account for much of the higher relative risks. If they are excluded from the model then no bigger risks remain for those who remain in this group.

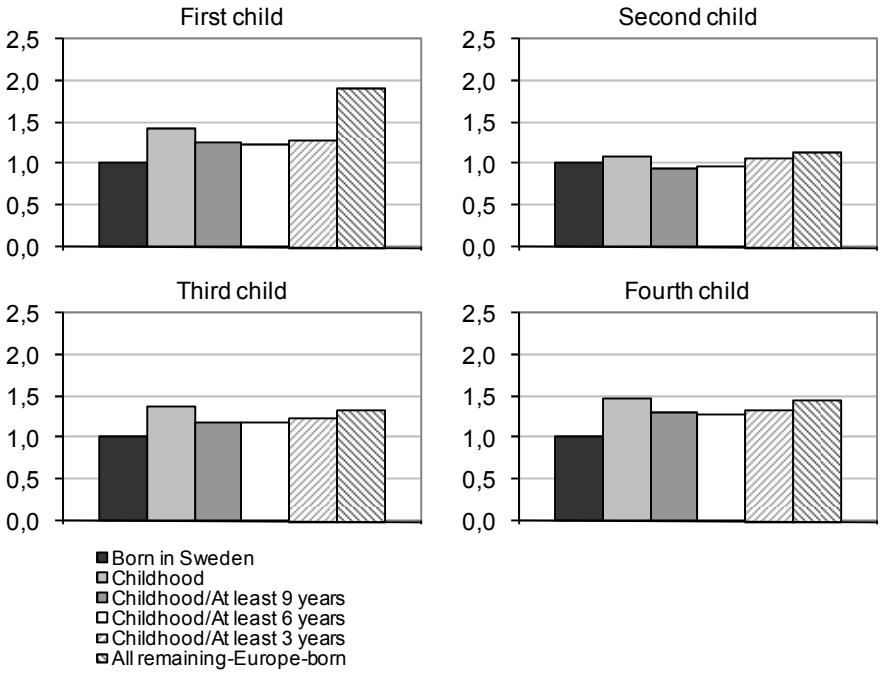
Figure 6.5
Relative risks of childbearing for women born 1960–1979 by birth order and by time since immigration to Sweden. Women born in the remaining Europe compared to women born in Sweden. Standardised for women's ages.



The relative risks are also presented in Tables 6-9 in the Table Appendix

In Figure 6.6 the significance of the "migration effect" on childbearing is investigated. It can be seen that this has a relatively large effect on the first child. When those who have lived in Sweden for 0-2 years are included in the model a fairly strong increase in relative risk results compared to the Swedish born. Even if the recently immigrated women from the countries remaining in Europe do not account for the entire difference among Swedish-born women and women born in the countries remaining in Europe, they do account for a fairly large part at least with regard to the first child.

Figure 6.6
Relative risks of childbearing for women born 1960–1979 by birth order. Different groups of women born in remaining Europe-countries (by time in Sweden) compared to women born in Sweden. Standardised for women's ages.

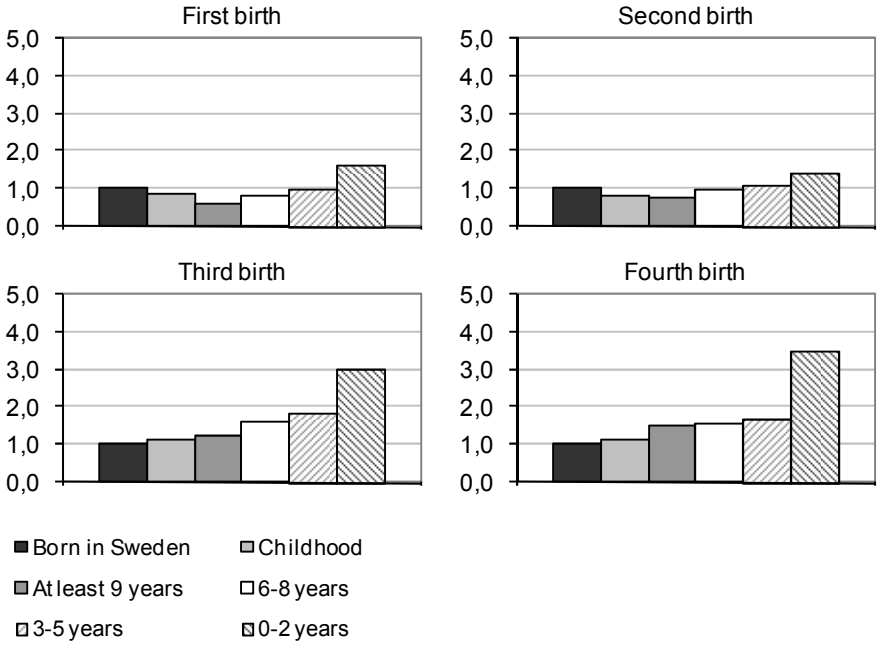


Born in countries outside Europe with high HDI

Women born in high HDI countries that have been in Sweden for two years at the most have an increased risk of having children, as do the other groups. However they do not have equally large risks of having the first child as do women from the remaining countries of Europe. The relation between migration and starting a family would appear not to be as strong in this group.

Women born in high HDI countries who came to Sweden in their childhoods have a slightly lower risk of having a first and second child compared to the Swedish born. In contrast, they have a slightly higher risk of having a third child.

Figure 6.7
Relative risks of childbearing for women born 1960–1979 by birth order and by time since immigration to Sweden. Women born in the remaining Europe compared to women born in Sweden. Standardised for women's ages.

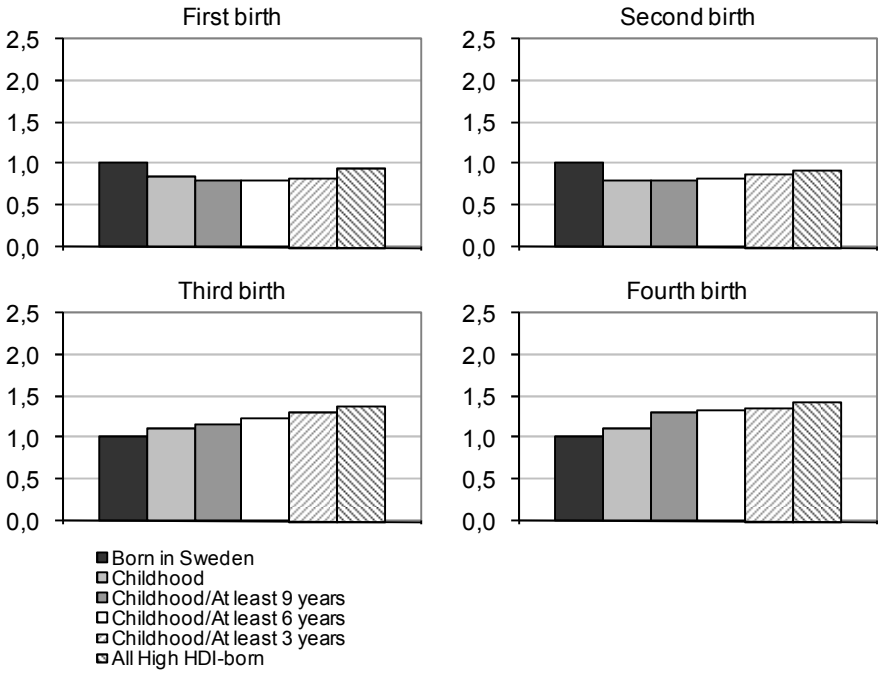


The relative risks are also presented in Tables 6-9 in the Table Appendix

Figure 6.8 investigates the affect on childbearing among the recently immigrated. As usual, only those who spent their childhoods in Sweden are included first. Then groups are included based on how long they have lived in Sweden.

The migration effect is not thought to have great significance for the relative risks of women born in high HDI countries. However they do seem to have a heightening effect on the birth of the first child. Without the "migration effect" women from high HDI countries would have a lower risk of having their first child compared to the Swedish born.

Figure 6.8
Relative risks of childbearing for women born 1960–1979 by birth order. Different groups of women born in high HDI countries countries (by time in Sweden) compared to women born in Sweden. Standardised for women's ages.

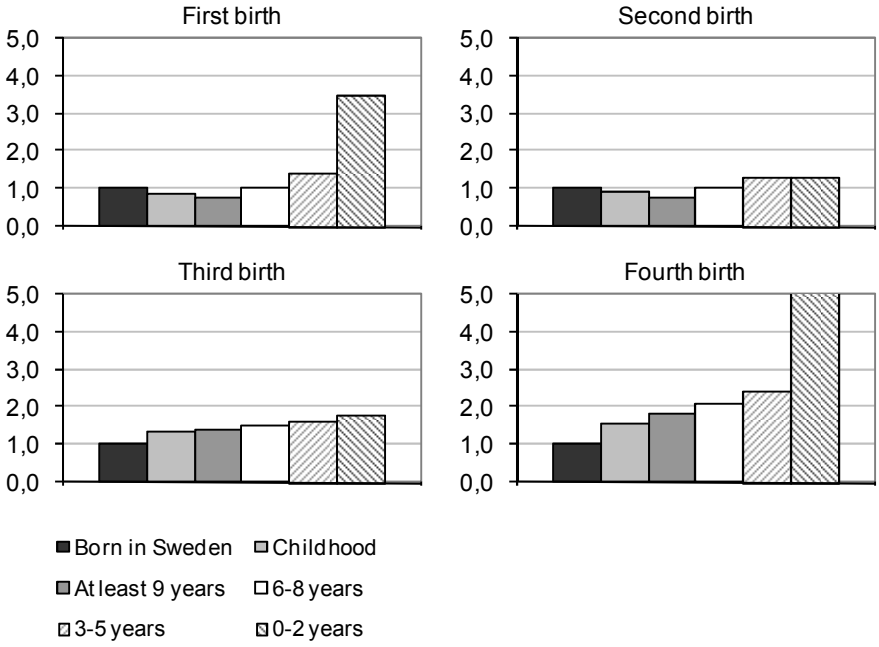


Born in countries outside Europe with medium HDI

As was the case with the group from the remaining countries of Europe, women born in countries with a medium level of development has a strong propensity for having the first child soon after immigrating to Sweden (see Figure 6.9). Many are thought to start their families in connection to their immigration. Third and fourth child risks also are high for those who have lived for 0-2 years in Sweden.

On the other hand, those who have spent all or some of their childhoods in Sweden have a lower risk of having their first and second child compared to the Swedish born. The converse applies for the third child and fourth child.

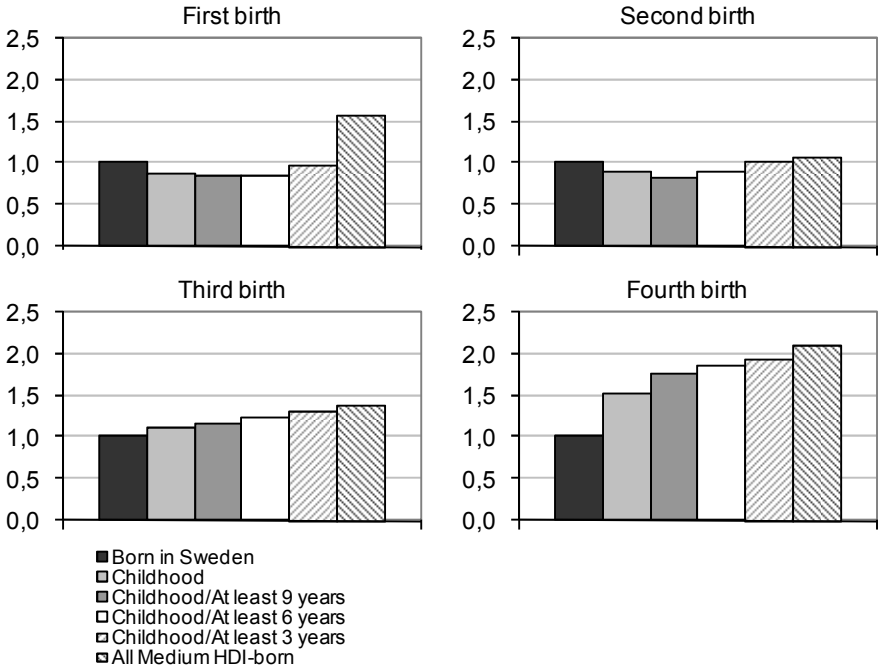
Figure 6.9
Relative risks of childbearing for women born 1960–1979 by birth order and by time since immigration to Sweden. Women born in medium HDI countries compared to women born in Sweden. Standardised for women's ages.



The relative risks are also presented in Tables 6-9 in the Table Appendix

Figure 6.10 bears witness to the strong "migration effect" as regards the first child. When those who recently immigrated are included (the last stack) the relative risks are raised. The increased risks for those who recently immigrated account for the entire difference with regard to the birth of the first child between the Swedish-born women and those born in medium HDI countries. Regardless of time spent in Sweden, all groups contribute to increase the risks for the third and fourth child.

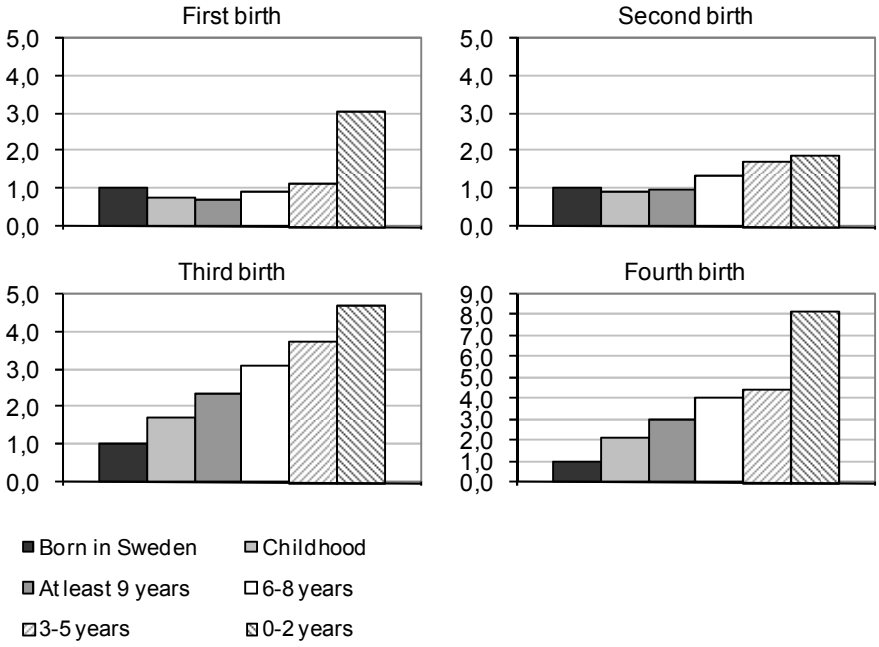
Figure 6.10
Relative risks of childbearing for women born 1960–1979 by birth order and by time since immigration to Sweden. Women born in low HDI countries compared to women born in Sweden. Standardised for women's ages.



Born in countries outside Europe with low HDI

The large risks for the third and fourth child are most significant for women born in low HDI countries. The risks are higher independent of the time since immigrating. Those who have recently immigrated actually have the highest risks but those who have spent all or part of their childhoods in Sweden have significantly greater risks. In contrast, women who spent their childhoods in Sweden have slightly lower relative risks for having their first child. However those who have recently immigrated to Sweden clearly have a higher risk for having a first child compared to the Swedish born. This group also seems to have a significant connection between immigration and starting a family.

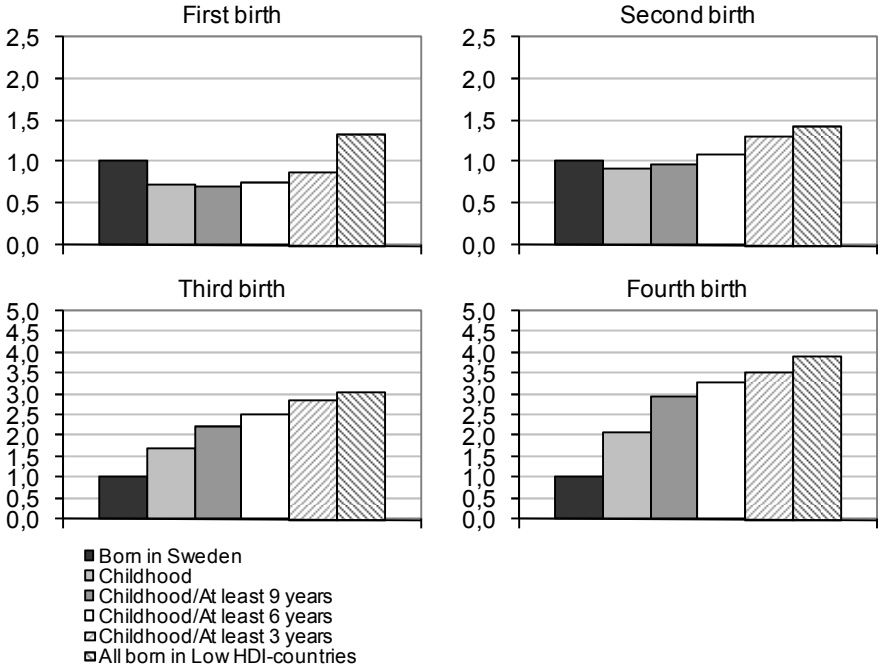
Figure 6.11
Relative risks of childbearing for women born 1960–1979 by birth order and by time since immigration to Sweden. Women born in low HDI countries compared to women born in Sweden. Standardised for women's ages.



The relative risks are also presented in Tables 6-9 in the Table Appendix

Just as was the case with women born in low HDI countries, it is the increased risks for those who have recently immigrated that account for the entire difference between the Swedish born and those born in a low HDI country as regards the first child. Figure 6.12 states clearly how relative risks are calculated compared to the Swedish-born as more groups are included by the length of their time in Sweden. All groups contribute to the higher risks of having the third and fourth child, regardless of how long they have spent in Sweden, also those who immigrated to Sweden during their childhood.

Figure 6.12
Relative risks of childbearing for women born 1960–1979 by birth order. Different groups of women born in low HDI countries countries (by time in Sweden) compared to women born in Sweden. Standardised for women's ages.



7. Conclusions

The purpose of this study is to analyse the fertility pattern of women born in Sweden and women born abroad. Sweden's foreign-born population is increasing and expected to continue increasing. This means that the foreign-born women's childbearing has an ever-greater impact on childbearing in the country as a whole. An analysis of foreign-born women's childbearing offers better knowledge about how childbearing in Sweden can be thought to develop in the future.

Statistics Sweden reports an annual projection of Sweden's population with assumptions about the development of childbearing, mortality and migration. Because the level of the total fertility rate varies between Swedish-born women and foreign-born women separate assumptions for separate groups in the population projection have been made since 2008.

The foreign-born women are grouped into the following six different groups: Nordic country aside from Sweden, EU country aside from the Nordic countries, Europe aside from EU and Nordic countries and countries outside Europe with high, medium and low levels of development based on the UN Human Development Index (HDI). This is the same breakdown used by Statistics Sweden in the population projection.

To study the fertility development of the different groups total fertility rate comparisons were made in addition to parity-specific analyses. The parity-specific analyses compared the propensity for having a first, second, third and fourth child. These analyses were done with survival analyses.

The results of these analyses show that women born in the Nordic countries, EU countries and countries with a high HDI have a fertility pattern that is generally similar to that of Swedish-born women. There are only some small differences among these groups. For example, Nordic-born women and those from countries with high HDI have a slightly higher propensity to have a third and fourth child than Swedish-born women. Women born in EU countries have a smaller propensity for having a second child compared to the Swedish born.

Results for women born in the remaining countries of Europe show that latter-born cohorts have become more similar to the childbearing pattern of the Swedish born. Regarding the cohort born 1975-79 there remain only small differences in the propensity for having children compared to the Swedish born.

Even women born in medium HDI countries are thought to become more similar to the childbearing pattern of the Swedish born. Despite this, the differences are still relatively large even for the latter-born cohorts.

The remaining group, women born outside Europe in low HDI countries, have higher fertility levels than the Swedish born. This group shows no direct tendency in approaching the level of patterns for Swedish born

women. This can probably be explained by the recent increase of Somali-born women that make up an ever greater part of this group. Somali-born women have high fertility.

It should be noted that the results as regards the propensity to have a second child indicate a very strong two-child norm among the Swedish born. It is only women from low HDI countries who have a greater propensity for having a second child. The remaining groups have the same or smaller propensity.

How childbearing is affected by time spent in Sweden since immigration has also been studied. Foreign-born women have been divided into the following five categories depending on time spent in Sweden: Childhood in Sweden, in Sweden for 9 years or more, 6-8 years, and 0-2 years. The results show that the propensity for having children is greater for those who have been in Sweden for 0-2 years. This applies to all birth orders of children, but to a less extent for the second child. The effect is significantly greater for women who immigrated from remaining countries of Europe and from medium to low HDI countries. This can be due to other categories of immigrants that come from these country groups. These are quite extensively asylum seeking immigrants and family member immigrants. Asylum seeking immigrants wait until after immigration is completed before having children, and in this way have a high fertility a short time after immigrating to Sweden. Immigrants coming to Sweden due to family ties can also be thought to be subject to a strong "migration effect" because they often come to Sweden to start families.

Women born in countries with medium to low HDI have a greater propensity for having the first child. This is wholly explained by the "migration effect". Recently immigrated women account for the high first birth fertility for these country groups.

Most country groups have a greater propensity for having the third and fourth child compared to the Swedish born. This is not explained by the "migration effect" only. Even those who have been in Sweden for more than two years have a greater risk of having a third and fourth child. This also applies to those who come to Sweden during their childhood (except for women from EU countries). An explanation for this propensity of having a third and fourth child can be that they begin childbearing earlier than Swedish-born women. Women who immigrated during their childhood have lower average ages at the time of the first child's birth compared to the Swedish born (see Table 7.1). A greater propensity to have a third and fourth child among foreign-born women may also be explained in part by cultural differences.

Table 7.1
Mean age at first birth for women born in Sweden and women born in different country groups who came to Sweden in their childhood(s). Women born 1960–79.

Country group	Average age when first child is born
Swedish-born persons	26.6
Born in the Nordic Countries	24.6
Born in EU Countries	25.5
Born in remaining countries of Europe	23.5
Born in countries with a high HDI	25.8
Born in countries with a medium HDI	24.6
Born in countries with a low HDI	24.7

The total image of the fertility pattern for the foreign born is in any case such that the development tends towards a tangible homogeneity. One reason for this can be the Swedish social insurance system. The parental leave system in Sweden is strongly connected to income and gainful employment and immigrants with residence permits are guaranteed the same rights. This can contribute toward a homogenous childbearing pattern. Studies also show that socioeconomic characteristics affect both the Swedish born and the foreign born in a similar manner[22] [23] [24].

Another basis for the fertility pattern of foreign-born women becoming more like that of Swedish-born women can be due to the fertility development in the world as a whole, having reduced childbearing in many places.

[22] Andersson (2005) *Labour-market status and first-time parenthood*
[23] SCB (2008) *Work and childbirth*
[24] Andersson (2007) *Childbearing dynamics of couples in a universalistic welfare state: the role of labor-market status, country of origin and gender.*

Table Appendix

Table 1
Countries included in the different country groups

Country groups and countries	Country groups and countries
Sverige	**Remaining Europe (cont.)**
	Liechtenstein
Nordic Countries	Makedonia
Denmark	Moldavia
Finland	Monaco
Iceland	Montenegro
Norway	Russia
	San Marino
EU Countries	Switzerland
Belgium	Serbia
Bulgaria	Serbia and Montenegro
Cyprus	Turkey
Gdansk	Ukraine
Estonia	Belarus
France	
Greece	**High HDI**
Ireland	Antigua and Barbuda
Italy	Argentina
Latvia	Australia
Lithuania	Bahamas
Luxembourg	Bahrain
Malta	Barbados
Holland	Bermuda
Poland	Brazil
Portugal	Brunei
Romania	Chile
Slovakia	Costa Rica
Slovenia	United Arab Emirates
Spain	Hongkong
Great Britian and Northern Ireland	Israel
Czeck Republic	Japan
Czeckoslavakia	Canada
East Germany (DDR)	South Korea
Germany	Cuba
Hungary	Kuwait
Austria	Libia
	Free Federation of Malaysia
Remaining Europe	Malaysia
Albania	Mauritius
Bosnia and Hercegovina	Mexico
Jugoslavia	New Zealand
Croatia	Oman

Table 1 (cont.)
Countries included in the different country groups

Country group and countries	Country group and countries
High HDI (cont.)	**Medium HDI (cont.)**
Panama	Haiti
Quatar	Honduras
Saint Kitts and Nevis	India
Saudi Arabia	Indonesia
Seychelle Islands	Iraq
Singapore	Iran
Taiwan	Jamaica
Tonga	Jordan
Trinidad and Tobago	Cambodia
Uruguay	Cameroon
USA	Cape Verde
	Kazakhstan
Medium HDI	Kenya
Algeria	China
The Arabic Republic of Egypt	Kyrgyzstan
Armenia	Kiribati
Azerbaijan	Kongo
Bangladesh	North Korea
Bhutan	Laos
Bolivia	Lesotho
Botswana	Lebanon
Colombia	Liberia
The Comoros	Madagascar
Djibouti	The Maldives
Dominica	Morocco
Dominican Republic	Mauritania
Ecuador	Micronesia
Egypt	Mongolia
Equatorial Guinea	Myanmar
El Salvador	Namibia
Fiji	Nepal
The Philippines	Nicaragua
French Morocco	Pakistan
Gabon	Palestine
Gambia	Papua Nya Guinea
Gaza	Paraguay
Georgia	Peru
Ghana	Saint Lucia
Grenada	Saint Vincent and the Grenadines
Guatemala	Solomon Islands
Guyana	Samoa

Table 1 (cont.)
Countries included in the different country groups

Countrnt.y group and countries	Country group and countries
Mediuml HDI (cont.)	**Low HDI (cont.)**
São Tomé and Principe	Mocambique
Sikkim	Niger
Soviet Union	Nigeria
Sri Lanka	Rwanda
Sudan	Senegal
Surinam	Sierra Leone
Swaziland	Somalia
South Afrika	Tanzania
South Yemen	Chad
Syria	Zambia
Tajikistan	Zanzibar
Thailand	
Togo	
Tunisien	
Turkmenistan	
Uganda	
Uzbekistan	
Venezuela	
Vietnam	
Vietnam	
West Bank	
Western Samoa	
Yemen	
Zimbabwe	
East Timor	
Low HDI	
Afghanistan	
Angola	
Benin	
Burkina Faso	
Burundi	
Central African Republic	
Ivory Coast	
Eritrea	
Ethiopia	
Guinea	
Guinea-Bissau	
Congo	
Malawi	
Mali	

Table 2
Relative risks of having the first child by country group

Variable	Relative risks			
	Cohort			
	1960–64	1965–69	1970–74	1975–79
Country group				
Sweden	1	1	1	1
Nordic Countries	1.34*	1.26*	1.24*	1.14*
EU Countries	1.26*	1.09*	0.97*	0.99
remaining Europe	2.17*	1.81*	1.86*	2.30*
high HDI	1.16*	1.01	0.93*	0.99
medium HDI	1.64*	1.63*	1.60*	1.77*
low HDI	1.11*	1.19*	1.41*	1.83*
Age				
16-19	0.12*	0.09*	0.13*	0.09*
20-24	0.50*	0.59*	0.57*	0.41*
25-29	1	1	1	1
30-34	0.91*	1.01	1.59*	1.74*
35-39	0.46*	0.69*	1.25*	..
40-	0.13*	0.28*	..	..

* Estimate is significant at the 5 percent level

Table 3
Relative risks of having the second child by country group

Variable	Relative risks			
	Cohort			
	1960–64	1965–69	1970–74	1975–79
Country group				
Sweden	1	1	1	1
Nordic Countries	0.98	0.96*	1.06*	1.14*
EU Countries	0.87*	0.82*	0.82*	0.88*
remaining Europe	1.37*	1.25*	1.06*	1.11*
high HDI	1.08*	0.94*	0.85*	0.91*
medium HDI	1.19*	1.05*	1.05*	1.14*
low HDI	1.38*	1.43*	1.41*	1.67*
Age				
16-19	0.19*	0.19*	0.24*	0.27*
20-24	0.62*	0.69*	0.79*	0.67*
25-29	1	1	1	1
30-34	0.95*	0.89*	1.18*	1.19*
35-39	0.49*	0.62*	1.06*	..
40-	0.11*	0.23*	..	..

* Estimate is significant at the 5 percent level

Table 4
Relative risks of having the third child by country group

Variable	Relative risks			
	Cohort			
	1960–64	1965–69	1970–74	1975–79
Country group				
Sweden	1	1	1	1
Nordic Countries	1.11*	1.20*	1.32*	1.42*
EU Countries	0.88*	1.01	1.01	1.04
remaining Europe	1.59*	1.40*	1.26*	1.19*
high HDI	1.48*	1.39*	1.33*	1.44*
medium HDI	1.81*	1.89*	1.87*	1.73*
low HDI	2.96*	3.29*	3.37*	3.17*
Age				
16-19	0.21*	0.28*	0.61*	0.43*
20-24	0.71*	0.94*	0.94*	0.79*
25-29	1	1	1	1
30-34	0.74*	0.70*	0.95*	0.95*
35-39	0.33*	0.46*	0.80*	..
40-	0.08*	0.18*	..	..

* Estimate is significant at the 5 percent level

Table 5
Relative risks of having the fourth child by country group

Variable	Relative risks			
	Cohort			
	1960–64	1965–69	1970–74	1975–79
Country group				
Sweden	1	1	1	1
Nordic Countries	1.25*	1.26*	1.47*	1.68*
EU Countries	1.14*	1.12	1.23*	1.27*
remaining Europe	1.76*	1.41*	1.18*	1.22*
high HDI	1.45*	1.55*	1.38*	1.22*
medium HDI	2.26*	2.27*	1.97*	1.69*
low HDI	4.24*	4.41*	3.71*	3.31*
Age				
16-19	0.24	0.49	0.79	0.81
20-24	0.70*	0.93	0.93	0.76*
25-29	1	1	1	1
30-34	0.69*	0.67*	0.87*	0.87*
35-39	0.32*	0.44*	0.64*	..
40-	0.09*	0.21*	..	..

* Estimate is significant at the 5 percent level

Table 6
Relative risks of having a first child by country group and time in Sweden

		Relative risks				
		Cohort				
		1960–64	1965–69	1970–74	1975–79	1960–79
Sweden		1	1	1	1	1
Nordic Country	Childhood	1.37*	1.23*	1.20*	1.23*	1.31*
	9-	0.74*	0.74*	0.87*	0.78	0.75*
	6-8	0.95	0.98	1.11	0.99	1.04
	3-5	1.35*	1.28*	1.23*	1.06	1.31*
	0-2	2.07*	1.80*	1.55*	1.20*	1.78*
EU	Childhood	1.01	0.80*	0.74*	0.78*	0.77*
	9-	0.69*	0.64*	0.60*	0.57*	0.63*
	6-8	0.88*	0.80*	0.74*	0.69*	0.78*
	3-5	1.07*	1.05	0.96	0.91*	0.99*
	0-2	2.27*	2.07*	1.65*	1.50*	1.82*
Remaining Europe	Childhood	1.67*	1.47*	1.27*	1.59*	1.41*
	9-	0.68*	0.75*	0.79*	1.22*	0.88*
	6-8	1.12	1.00	1.11*	1.65*	1.12*
	3-5	1.59*	1.34*	1.55*	2.08*	1.51*
	0-2	4.68*	3.77*	4.12*	4.93*	4.08*
high HDI	Childhood	0.95	0.89*	0.86*	0.95	0.83*
	9-	0.73*	0.59*	0.53*	0.62*	0.61*
	6-8	0.84*	0.80*	0.77*	0.63*	0.78*
	3-5	1.08	1.04	0.93*	0.84*	1.00
	0-2	1.76*	1.71*	1.58*	1.41*	1.64*
medium HDI	Childhood	1.04	0.99	0.92*	1.02	0.85*
	9-	0.76*	0.74*	0.77*	0.86*	0.75*
	6-8	0.89*	0.93*	1.03*	1.35*	0.99
	3-5	1.25*	1.32*	1.42*	1.69*	1.39*
	0-2	2.99*	3.33*	3.59*	4.37*	3.51*
low HDI	Childhood	1.01	0.59*	0.65*	1.05	072*
	9-	0.72*	0.69*	0.67*	0.74*	0.68*
	6-8	0.68*	0.89	1.04*	1.17*	0.91*
	3-5	0.87	0.96	1.29*	1.83*	1.17*
	0-2	2.09*	2.58*	3.54*	4.05*	3.08*
Age						
16-19		0.12*	0.09*	0.13*	0.09*	0.11*
20-24		0.50*	0.59*	0.57*	0.42*	0.53*
25-29		1	1	1	1	1
30-34		0.92*	1.03*	1.59*	1.73*	1.26*
35-39		0.48*	0.73*	1.29*	..	0.77*
40-		0.14*	0.30*	..	..	0.21*

* Estimate is significant at the 5 percent level

Table 7
Relative risks of having a second child by country group and time in Sweden

		Relative risks				
		Cohort				
		1960–64	1965–69	1970–74	1975–79	1960–79
Sweden		1	1	1	1	1
Nordic Country	Childhood	0.89*	0.84*	0.94*	1.05	0.90*
	9-	0.68*	0.81*	0.88*	0.77	0.74*
	6-8	1.10*	1.15*	1.27*	1.07	1.17*
	3-5	1.30*	1.32*	1.32*	1.23*	1.33*
	0-2	1.56*	1.47*	1.41*	1.50*	1.51*
EU	Childhood	0.92*	0.82*	0.81*	0.85*	0.83*
	9-	0.55*	0.55*	0.53*	0.62*	0.54*
	6-8	0.81*	0.79*	0.85*	0.77*	0.81*
	3-5	1.04	0.96	0.91*	0.83*	0.95*
	0-2	1.21*	1.19*	1.15*	1.19*	1.18*
Rem, Europe	Childhood	1.08*	1.13*	1.12*	1.06	1.07*
	9-	0.63*	0.71*	0.72*	0.91*	0.74*
	6-8	1.42*	1.09*	0.99	1.19*	1.08*
	3-5	1.66*	1.39*	1.18*	1.28*	1.29*
	0-2	2.09*	1.94*	1.33*	1.04	1.53*
high HDI	Childhood	0.98	0.83*	0.80*	0.81*	0.80*
	9-	0.79*	0.74*	0.70*	0.71	0.74*
	6-8	1.09	0.93	0.89	0.94	0.98
	3-5	1.10*	1.11*	1.04	1.25*	1.11*
	0-2	1.58*	1.45*	1.18*	1.23*	1.41*
medium HDI	Childhood	1.07	0.97	0.88*	0.97	0.89*
	9-	0.84*	0.71*	0.69*	0.81	0.73*
	6-8 år	1.12*	0.98	0.97	1.09*	1.01
	3-5 år	1.32*	1.27*	1.32*	1.39*	1.30*
	0-2 år	1.42*	1.30*	1.31*	1.24*	1.29*
low HDI	Childhood	0.94	0.92	0.80*	1.18*	0.93*
	9-	0.98	1.06	0.91	0.93	0.97*
	6-8	1.35*	1.29*	1.21*	1.77*	1.32*
	3-5	1.47*	1.70*	1.87*	2.03*	1.74*
	0-2	1.86*	1.88*	1.96*	2.10*	1.91*
Age						
16-19		0.18*	0.19*	0.24*	0.27*	0.21*
20-24		0.62*	0.69*	0.78*	0.66*	0.69*
25-29		1	1	1	1	1
30-34		0.96*	0.91*	1.20*	1.20*	1.04*
35-39		0.50*	0.64*	1.09*	..	0.67*
40-		0.12*	0.24*	..	..	0.16*

* Estimate is significant at the 5 percent level

Table 8
Relative risks of having a third child by country group and time in Sweden

		Relative risks				
		Cohort				
		1960–64	1965–69	1970–74	1975–79	1960–79
Sweden		1	1	1	1	1
Nordic Country	Childhood	0.97	1.12*	1.13*	1.39*	1.08*
	9-	1.00	0.99	1.30*	0.76	1.05
	6-8	1.18*	1.40*	1.43*	1.08	1.33*
	3-5	1.50*	1.59*	1.73*	1.34	1.61*
	0-2	2.89*	3.75*	3.60*	3.09*	3.41*
EU	Chidhood	0.89	1.03	0.94*	1.22*	0.98
	9-	0.69*	0.79*	0.71*	0.73*	0.73*
	6-8	0.91	1.04	0.87	0.81	0.93
	3-5	0.98	1.16	1.35*	0.82	1.10*
	0-2	1.88	2.23*	2.85*	1.79*	2.19*
remaining Europe	Chidhood	1.24*	1.43*	1.72*	1.29*	1.39*
	9-	1.13*	1.05	1.03*	0.97	1.04*
	6-8	1.69*	1.27*	1.05*	1.12	1.20*
	3-5	1.90*	1.52*	1.38*	1.26*	1.46*
	0-2	4.31*	3.08*	2.36*	2.40*	3.11*
high HDI	Chidhood	1.11*	1.19*	1.16*	1.22*	1.12*
	9-	1.24*	1.16*	1.23*	1.35*	1.20*
	6-8	1.40*	1.60*	1.82*	1.88*	1.60*
	3-5	1.81*	1.92*	1.58*	1.66*	1.84*
	0-2	2.65*	2.83*	3.42*	2.95*	2.99*
medium HDI	Chidhood	1.49*	1.51*	1.44*	1.43*	1.36*
	9-	1.33*	1.39*	1.47*	1.64*	1.38*
	6-8	1.63*	1.94*	2.02*	1.78*	1.78*
	3-5	2.16*	2.31*	2.24*	1.72*	2.08*
	0-2	3.63*	4.05*	3.67*	2.93*	3.60*
low HDI	Chidhood	0.99	1.58*	1.71*	2.20*	1.70*
	9-	2.14*	2.28*	2.54*	3.02*	2.33*
	6-8	3.15*	3.26*	3.45*	3.20*	3.06*
	3-5	3.47*	4.40*	4.24*	3.66*	3.77*
	0-2	4.88*	5.58*	5.35*	3.60*	4.71*
Age						
16-19		0.18*	0.26*	0.54*	0.40*	0.31*
20-24		0.69*	0.91*	0.90*	0.77*	0.81*
25-29		1	1	1	1	1
30-34		0.75*	0.72*	0.97*	0.96*	0.80*
35-39		0.34*	0.48*	0.82*	..	0.47*
40-		0.08*	0.19*	..	..	0.12*

* Estimate is significant at the 5 percent level

Table 9
Relative risks of having a fourth child by country group and time in Sweden

		Relative risks				
		Cohort				
		1960–64	1965–69	1970–74	1975–79	1960–79
Sweden		1	1	1	1	1
Nordic Countries	Chidhood	1.16*	1.28*	1.34*	1.44*	1.24*
	9-	1.08	1.01	1.15*	1.47	1.07*
	6-8	1.38*	1.30	1.79*	1.09	1.43*
	3-5	1.80*	1.89*	1.88*	1.59	1.88*
	0-2	4.30*	2.72*	5.82*	4.58*	4.24*
EU	Chidhood	1.03	1.03	1.18	1.26*	1.09
	9-	0.94	0.76*	1.01	1.02	0.88
	6-8	1.35*	1.51*	1.01	0.86	1.30*
	3-5	1.49*	2.07*	1.64*	1.47	1.73*
	0-2	2.97*	3.56*	2.98*	2.58*	3.12*
remaining Europe	Chidhood	1.50*	1.53*	1.42*	1.34	1.48*
	9-	1.49*	1.10	0.90*	0.93	1.18*
	6-8	1.57*	1.20	1.14*	1.30	1.28*
	3-5	2.15*	1.69*	1.42*	1.18	1.67*
	0-2	5.24*	3.78*	3.50*	2.77*	4.17*
high HDI	Chidhood	0.98	1.23*	1.09	0.98	1.11
	9-	1.38*	1.66*	1.50*	1.56	1.48*
	6-8	1.35*	1.95*	1.67*	1.11	1.56*
	3-5	1.75*	1.67*	1.64	0.97	1.69*
	0-2	2.79*	2.65*	5.46*	3.63*	3.48*
medium HDI	Chidhood	1.55*	1.58*	1.56*	1.46*	1.55*
	9-	1.75*	1.97*	1.70*	1.66*	1.81*
	6-8	2.21*	2.35*	2.07*	1.55*	2.09*
	3-5	2.64*	2.74*	2.28*	1.49*	2.42*
	0-2	5.37*	5.35*	4.76*	3.86*	5.09*
low HDI	Chidhood	0.62*	1.04	2.37*	2.59*	2.10*
	9-	2.71*	2.98*	3.13*	2.85*	2.99*
	6-8	4.40*	5.06*	3.57*	3.46*	4.00*
	3-5	5.31*	5.28*	4.44*	3.12*	4.49*
	0-2	8.60*	9.31*	7.57*	6.27*	8.18*
Age						
16-19		0.20*	0.38	0.56	0.67	0.42*
20-24		0.68*	0.85*	0.86*	0.75*	0.76*
25-29		1	1	1	1	1
30-34		0.70*	0.70*	0.89*	0.88*	0.76*
35-39		0.34*	0.48*	0.67*	..	0.44*
40-		0.10*	0.23*	..	..	0.14*

* Estimate is significant at the 5 percent level

Facts about statistics

Scope of the statistics

The information used for calculations were collected from the Multi-Generational Register and the Historical Population Register. The Historical Population Register has information about who has lived in Sweden at the turn of the new year for every year 1968-2007. A more detailed description of the Historical Population Register is available in Statistics Sweden's report Historical Population Register (Background facts for population and welfare statistics 2005:4).

The Multi-Generational Register contains connections between children and parents (biological and adoptive parents). The population consists of persons registered in Sweden since 1961, born in Sweden since 1932 or later as well as the parents to these persons. A more detailed description of the Multi-Generational Register is available in the Statistics Sweden report Multi-Generational Register – A description of content and quality.

Definitions and explanations

Country group breakdown

Foreign-born women are a heterogenous group. Immigration to Sweden however take places from almost 200 different countries which makes it impossible to handle a country-based analysis. The foreign-born women are grouped into the following six different groups: Nordic country aside from Sweden, EU country aside from the Nordic countries, Europe aside from EU and Nordic countries and countries outside Europe with high, medium and low levels of development based on the UN Human Development Index (HDI).

HDI measures the welfare level of different countries and is based on life expectancy of the population, Gross Domestic Product (GDP) per capita and level of education. Countries are divided into three groups: Highly developed countries (high HDI country), Medium level of development in country (medium HDI country) and low level of development in country (low HDI country). The index is calculated and updated annually by the UN. In this study the breakdown from 2007 was used. This is the same breakdown as was used in Statistics Sweden's population projection.

The HDI is used to divide countries into different groups since migration patterns are expected to be different based on the country's level of economic development.

For a further description of those countries that are included in the different groups see Table 1 in the Table Appendix.

How the statistics are produced

Data material

The analysis is based on the register data containing information about demographic events in the entire population from 1976-2007. Data material also contains information about women who had emigrated from Sweden up to and including the date of emigration. Some who emigrate from Sweden re-immigrate again but only the first instance of immigration is included. The women were studied up to their 45th birthday or until they die, emigrate or until the end of 2007 depending on which ever event occurred first. Women who immigrated after the age of 35 have been excluded from the study. For every individual in the data material there is information for each year about their age, time spent in Sweden, and childbearing by parity (birth order).

Women who have had twins at their first childbirth (the first and second children are twins) have been excluded from the study with regard to the second child. Women who have had twins at their second childbirth (the second and third children are twins) have been excluded from the study with regard to the third child.

The following variables are included in the analysis:

Dependent variables:
This study examines the transition from not having children to having a first child, the transition from the first to the second child, the transition from the second to the third child and finally from the third to the fourth child.

Information about childbearing comes from the Historical Population Register.

Independent variables:
• Time in Sweden
- Childhood in Sweden
- In Sweden more than 9 years
- 6–8 years in Sweden
- 3–5 years in Sweden
- 0–2 years in Sweden

Information about Time Spent in Sweden is a calculation of information from the Historical Population Register, where the occasion of immigration is recorded. Women who immigrated and who came to Sweden before the age of 15 belong to the category of Childhood in Sweden".

• Women's ages
  - 16–19 years
  - 20–24 years
  - 25–29 years
  - 30–34 years
  - 35–39 years
  - 40–45 years

The age indicated is the age by the end of the present year.

The table below shows the number of persons included in the study by cohort, country-group and number of those who have children

Number of women in the study by cohort and country-group

Parity	Cohort							
Country group	1960–64		1965–69		1970–74		1975–79	
	Number	Have children	Number	Have children	Number	Have children	Number	Have children
First child								
Sweden	249 608	210 248	265 021	221 315	249 984	188 681	220 400	112 882
Nordic Countries	13 241	7 066	12 361	6 605	9 162	3 866	7 403	1 878
EU Countries	6 012	3 865	7 391	4 522	9 066	4 358	10 465	3 131
Remaining Europe	3 793	3 032	5 101	4 090	7 110	5 256	8 532	5 274
High HDI	3 323	1 921	4 715	2 801	6 995	3 761	5 908	2 026
Medium HDI	8 293	6 307	12 257	9 430	17 478	11 750	21 088	10 881
Low HDI	984	678	2 039	1 488	2 884	1 854	3 373	1 651
Second child								
Sweden	207 427	175 386	218 056	181 350	186 094	139 611	111 672	60 187
Nordic Countries	7 519	5 517	6 957	5 149	4 064	2 730	2 039	999
EU Countries	4 533	3 230	5 136	3 548	4 835	2 948	3 450	1 507
Remaining Europe	3 929	3 352	5 453	4 529	6 191	4 679	5 606	3 468
High HDI	2 383	1 791	3 131	2 256	3 919	2 461	2 136	1 057
Medium HDI	8 155	6 578	11 208	8 801	13 351	9 513	11 838	6 753
Low HDI	890	742	1 825	1 553	2 185	1 694	1 920	1 336
Third child								
Sweden	175 994	70 558	182 165	62 727	140 519	37 644	60 782	11 751
Nordic Countries	5 689	2 298	5 296	1 983	2 824	896	1 045	246
EU Countries	3 388	1 054	3 717	1 072	3 096	715	1 580	291
Remaining Europe	3 990	2 094	5 233	2 305	4 961	1 781	3 610	928
High HDI	2 035	878	2 337	863	2 545	786	1 097	302
Medium HDI	7 613	3 704	9 733	4 671	10 226	4 393	7 168	2 364
Low HDI	919	618	1 795	1 202	1 862	1 193	1 457	761
Fourth child								
Sweden	71934	18518	64468	14426	38876	7174	12315	1875
Nordic Countries	2383	710	2047	555	936	229	266	58
EU Countries	1126	287	1107	227	760	147	316	59
Remaining Europe	2337	943	2484	785	1888	448	978	187
High HDI	927	264	894	266	826	193	324	61
Medium HDI	4141	1734	5038	2054	4716	1613	2524	657
Low HDI	744	437	1347	827	1294	708	812	371

Statistical methods for analysis

Intensity rate

The fertility of an age group of women given *parity p* and *age x* is usually measured by fertility rate by parity:

$$\mu_x^{p+1} = B_x^{p+1} / M_x^p \qquad \text{(intensity rate)}$$

B_x^{p+1} is the number of children born with *birth order p+1* born to women of *ages x* (by end of present year) and in *parity p*. M_x^p is average time lived by women at *age x* with *number of children p*. The measurement relates the number of children born by *birth order p+1* to the number of women at *age x* bearing the risk of bearing children of *birth order p+1*.

A woman's parity refers to the number of living children she has given birth to.

Survival analyses

This study examines the transition from not having children to having a first child, the transition from the first to the second child, the transition from the second to the third child and finally from the third to the fourth child. A good method of analysis for this is survival analysis. Survival analyses examine a transition between two states, such as from the state of "childless" to the state "one child". Those who are in the "childless" state are at risk of having their first child. When they have had their first child they are no longer at risk of having their first child. On the other hand, they are at risk for another state, namely the transition from having "one child" to "two children".

One advantage with life time analyses is that the method gives consideration to how these events can happen at different times and with varying exposure times. Another advantage with the method is that it considers that some individuals who e.g. are at risk for having their first child yet remain childless for the entire period of study. These are referred to as censured in the survival analyses model. A third advantage is that the model considers the time variations for covariants, i.e. variables that can change over time. The Cox proportional hazard model was selected and estimated by the PROC PHREG in SAS procedure[25].

The results of the survival analyses are presented as relative risks. If the relative risk for a group is 1.5 then this means that it is 1.5 times as big a risk that the event occur to that group compared to the reference group.

The relative risks say nothing about how many will get their first, second, third, and fourth child in the different groups. The relative risks rather express how quickly one can have children. A greater relative risk for having

[25] Read more about the PROC PHREG-procedure in Allison Paul D. (1995) *Survival Analysis Using SAS: A Practical Guide.*

the first child compared to the reference group can be interpreted as one becoming a mother in younger years.

The reliability of the statistics

The data material used as the basis for this study is Statistics Sweden's Historical Population Register. The register is based on information from the population records. Deficiencies in reporting emigration can result in overcoverage if the migration is not reported. Studies conducted indicate that the register contains persons who no longer live in the country. Deficiencies in reporting can result in undercoverage. If one person immigrates to Sweden and is not socially registered then undercoverage arises.

The register information for the foreign-born can sometimes be erratic. To a certain extent these persons could have had children outside of Sweden without it being noted in the Swedish registers. There is no way to check how large an error of this kind may be. But to reduce the risk for error, women who immigrate after the age of 35 are excluded from the study.

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