



Short birth intervals become less common in Sweden:

a decline of the speed-premium effect?

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Abstract:

Background: The so-called speed premium, introduced in Sweden in the 1980s and still in effect in 2018, grants some benefits regarding parental leave for parents that have two births within 2.5 years or shorter.

Previous research has shown a great increase in the prevalence of short birth intervals in the 1980s and 1990s associated with the introduction of this policy.

Research question: This study investigates if short birth intervals (<2.5 years) are still common in recent years as they became in the 1980s–1990s.

Data and methods: An event history analysis of the risk of giving birth stratified by time since the previous birth is presented for the period 1970–2017. A piecewise exponential model is estimated with register data on the birth history of native-born women. Separate results are shown by parity.

Results: The spike in short birth intervals seen in the 1980s–1990s has mostly disappeared in recent years. By the 2010s, the pattern of birth intervals is similar to that seen around the time of the introduction of the speed premium in the early 1980s.

Main conclusions: The speed-premium might have contributed to a higher prevalence of short birth intervals during a certain period, but the present results suggest that its effect on birth spacing is relatively small in recent years.

Keywords: birth intervals, speed-premium, Sweden



Introduction

Sweden has one of the most extensive systems of paid parental leave in the world, with sixteen months of paid leave per child. An important feature of this system is that benefits are largely proportional to work-related income. This entails that part-time work or no work between two births can reduce parental leave benefit associated with the subsequent child. In this context, legislation was introduced in 1980 that allowed parents to prevent such loss of benefits if the interval between two births was shorter than two years. That interval was increased to 2.5 years in 1986, the level still in effect in 2018. This special provision is often referred to in the literature as the “speed-premium” in the Swedish parental leave system.

Previous studies have documented that the introduction of the speed-premium has contributed to shorter birth intervals during the late 1980s and early 1990s (Hoem 1990; Andersson, Hoem & Duvander 2006). Birth rates increased significantly during that period among mothers with children in ages one and two, the group that could benefit from the speed-premium. Overall, birth intervals of 2.5 years or shorter became more common and longer birth intervals became relatively less common during that period.

This study uses more recent data to show that the upsurge in short birth intervals was largely restricted to the late 1980s and early 1990s. Short birth intervals have become increasingly less common since the mid-1990s. By the 2010s, the pattern of birth intervals is similar to that seen around the time of the introduction of the speed premium in the early 1980s. To contextualize the results, the next sections present a brief overview of the Swedish parental leave system. This is followed by a description of the data material and methods.

The parental leave system in Sweden

The legislation that sets the foundation for the contemporary Swedish system of parental leave was introduced in 1974. Among the rights granted to parents was paid parental leave for up to six months. The number of leave days has increased over time and it has been set at 16 months since 2002. The amount of leave is set per child and the parents decide how to divide the leave days between them with a few restrictions. In the current system, three months are reserved for each parent and they can choose how to divide the remaining ten months among themselves. Mothers claim the majority of days, although the share of days claimed by fathers has increased from 5 percent in 1980 to 28 percent in 2017 (Statistics Sweden 2018). Mothers also work part-time following a birth more often than fathers do. Around 4 out of 10 mothers who had a child

in ages one to five years worked part-time in 2017, but only about 1 in 10 fathers did so (Statistics Sweden 2018).

The benefit is largely proportional to one's work-related income in the period prior to the start of the leave. In 1974, the benefit was limited at 90 percent of one's income. Currently, parents are paid 80 percent of their income up to a relatively high ceiling. Parents that had low or no income before the start of the leave receive a low flat rate. In 2018, the ceiling was 29,000 kronor per month (about 2,800 euros) and the flat rate for parents with low or no income was 7,500 kronor per month (about 700 euros). The difference between those two figures, 21,500 kronor, indicates the uppermost value of the "premium" associated with a birth interval shorter than 2.5 years.

Data and methods

The study uses data on the total births that occurred in Sweden between 1970 and 2017 to native-born women between the ages of 15 and 45. Information comes from the administrative registers maintained by Swedish national bureau of statistics (Statistics Sweden 2003). The data is coded with month precision and the registers provide full birth histories that include children born since 1925.

Risks of second, third and fourth births stratified by time since the previous birth are estimated using event history techniques. A piecewise constant exponential model is used, a variant of the basic exponential model. The basic idea here is that birth rates are constant within time intervals (i.e., time since the previous birth) but they can vary across intervals. This model has been widely used in the demographic literature and has been described extensively elsewhere (Hoem 1993; Blossfeld et al. 2007; Allison 2010). Women enter the study when they reach the parity under study – e.g., after the birth of the first child, when studying risk of second birth. Women do not enter the study after multiple births, however, as that imply special circumstances for birth intervals. Women are right-censored at their first emigration, death or their 46th birthday.

Control variables include calendar year, age of the mother and time since the previous birth. Age is grouped in two-year intervals with the exception of the first interval (i.e., ages 15–17, 18–19, ..., 44–45). Number of years since the birth of the previous child is grouped into ten intervals: [0-1.5), [1.5-2), [2-2.5), [2.5-3), [3-4), [4-6), [6-8), and 8 or more years. This variable can also be seen as the age of the previous child. Between 1980 and 1985, the first two

duration intervals represent eligibility for the speed-premium. From 1986 to 2017, the first three intervals show eligibility for the premium.

Results

Fertility has shown a cyclical nature in Sweden. Periods of higher and lower fertility rates have replaced each other since the 1970s (see Figure 1). Economic cycles are one explanation to this variation, with female income positively associated with higher birth rates. Variations in the value of the parental leave benefit are another factor, as it increased over the late 1980s and declined over the mid-1990s (Andersson 2000). The introduction of the speed-premium itself can be an explanation for the peak of total fertility rates around 1990, as a shortening of birth intervals can lead to a temporary increase in total fertility rates.

Figure 2 shows the second birth rate by duration since the birth of the first child for the period from 1970 to 2017, standardized by age of the mother. For each year, rates are expressed as a ratio in relation to the birth rate at duration 3-4 years in that year. This allows a comparison over time of the relative weight of the birth rate at each duration that is free of the seasonal variations in general fertility levels shown in Figure 1. Moreover, since mothers with birth intervals of 3-4 years are not eligible for the speed-premium, this duration can be taken as a control group for the effect of the policy. The results in Figure 2 can be interpreted in a straightforward manner. For instance, in 1970, the birth rate at duration 2-2.5 years was 80 percent of the birth rate at duration 3-4 years. This is also equivalent to say that, in 1970, the birth rate of one-child mothers with a child aged 2-2.5 was 80 percent of the birth rate of one-child mothers with a child aged 3-4 years. Thus, birth intervals of 3-4 years were relatively more common than intervals of 2-2.5 years.

Between 1980 and 1985, women with births intervals shorter than 2 years became eligible for the speed-premium and there is a relative increase in the birth rate at duration 1.5-2 years. There is also some increase in birth rates at duration 0-1.5 years, but births are generally not very common at such short duration. Eligibility for the speed-premium increased to intervals shorter than 2.5 years in 1986 and there is an associated surge in the birth rate at duration 2-2.5 years from that year to around the mid-1990s. However, this pattern starts to reverse in the early to mid-1990s. By around 2010, the birth rate at durations 1.5-2 and 2-2.5 years are almost at their same relative levels as before the introduction of the speed-premium.

The reversal is not exclusive to the interval between the first and second child. Third and fourth birth rates show a similar pattern. Because there are fewer third and fourth births than second births, calendar year is grouped in three-year intervals to smooth the general trends. The third birth rate at durations 1.5-2 and 2-2.5 years increased from the early 1980s to the mid-1990s. It declined since then and, in recent years, it is at levels similar to that observed in the mid-1980s (Figure 3). The fourth birth rate at durations 1.5-2 and 2-2.5 increased until the late 1990s. The increase was even stronger than that for second and third birth rates. A decline in the fourth birth rate at short durations started around the early 2000s and, in recent years, they are also close to their levels in the mid-1980s.

Final remarks

In recent years, there has been an increased debate in Sweden about whether the speed-premium should continue or if it should be abolished (SOU 2017). The present results show that short birth intervals have become virtually as common as they were before the introduction of the policy. This can be a sign that the speed-premium play a small role on how parents space children today compared to previous decades. The results suggest that eventually abolishing the speed-premium might not have a large impact on how parents space births. Future studies can further the understanding of this question with additional data on the parents income in order to compute, for instance, trends in the share of parents that are actually benefited from the premium.

Figures and Tables

Figure 1 – Total fertility rate, Sweden, 1970–2017

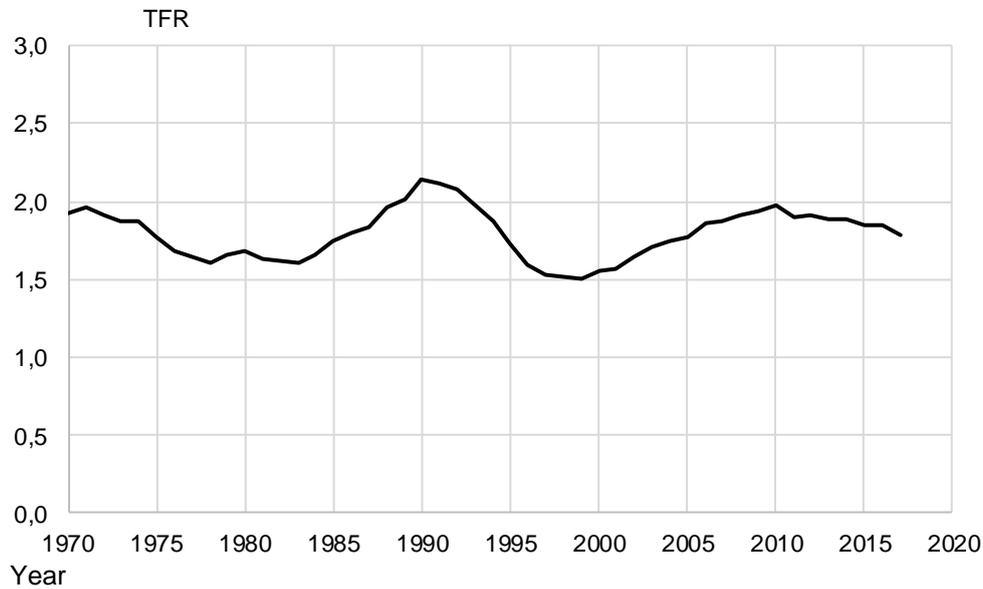


Figure 2 – Standardized second birth rates, by time since the birth of the first child, 1970–2017. Swedish women.

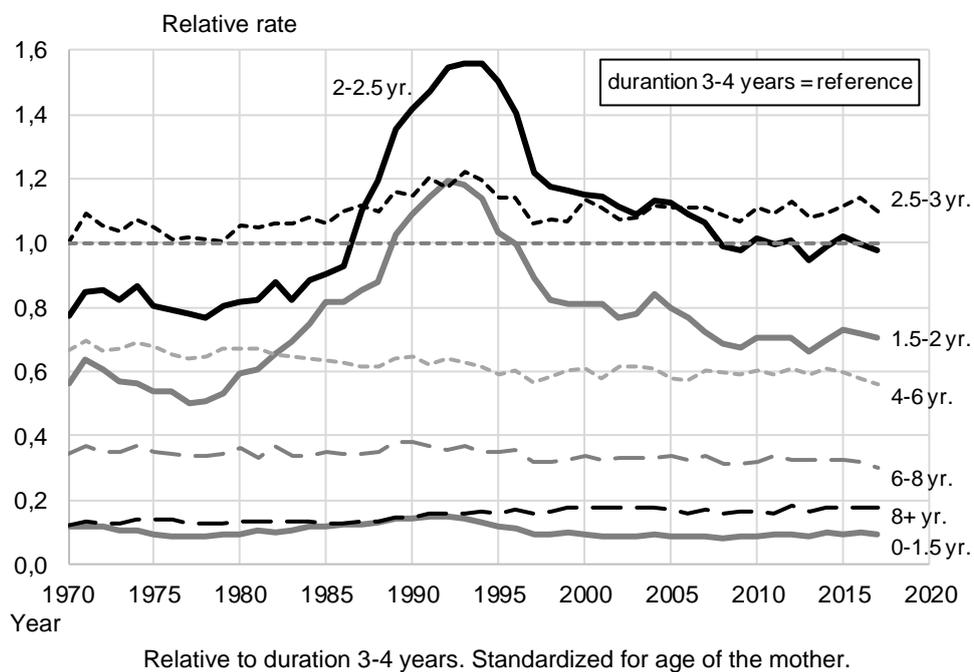


Figure 3 – Standardized third birth rates, by time since the birth of the second child, 1970–2017. Swedish women.

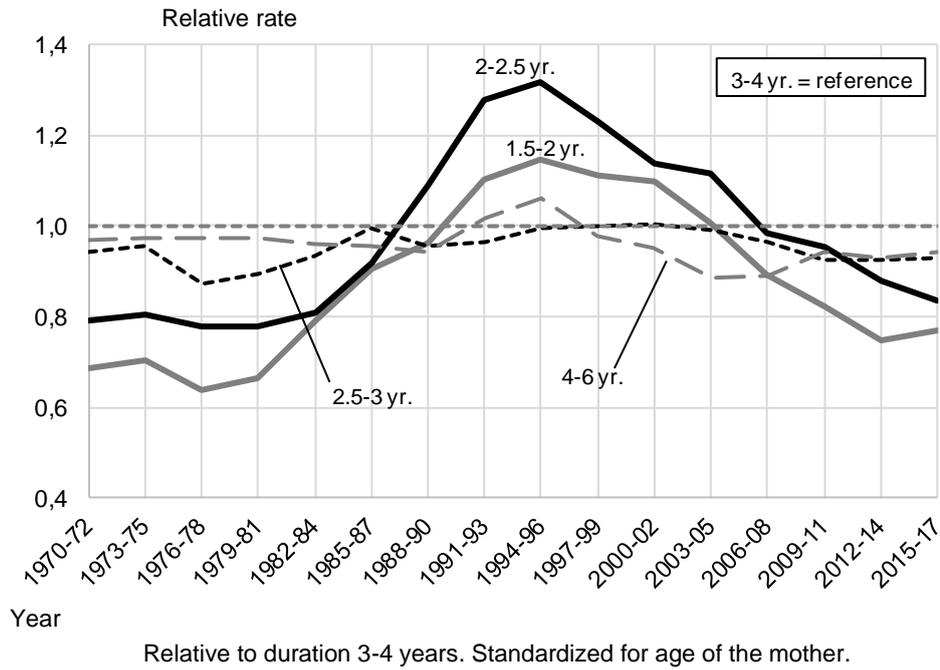
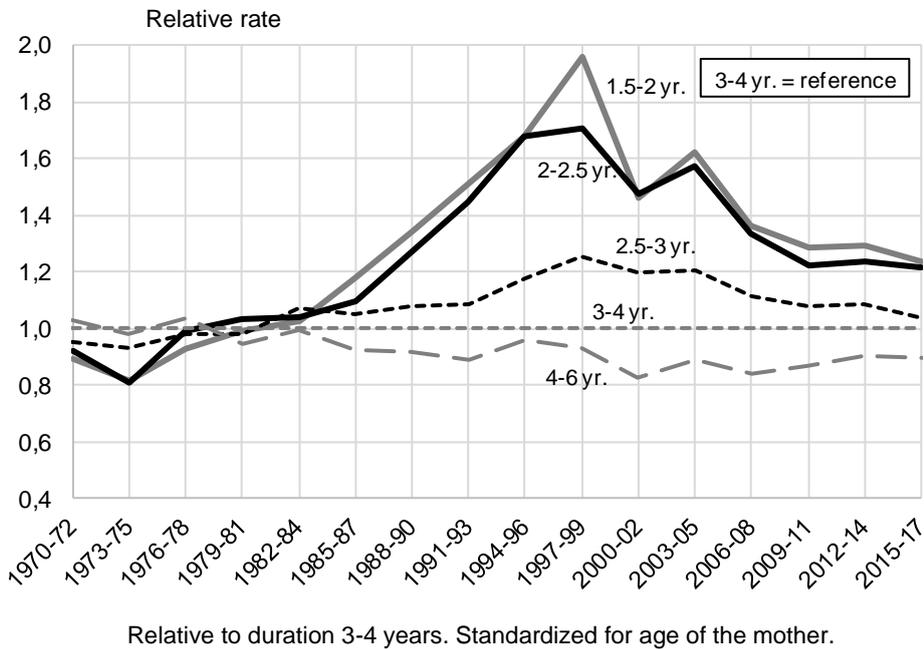


Figure 4 – Standardized fourth birth rates, by time since the birth of the third child, 1970–2017. Swedish women.



References

- Allison, P. D. (2010). *Survival analysis using SAS: a practical guide*. Second edition. Cary, NC: SAS Institute Inc.
- Andersson, G. (2000). "The impact of labour-force participation on childbearing behaviour: Pro-cyclical fertility in Sweden during the 1980s and the 1990s". *European Journal of Population*, 16(4), 293-333.
- Andersson, G., Hoem, J. M., & Duvander, A. Z. (2006). "Social differentials in speed-premium effects in childbearing in Sweden". *Demographic Research*, 14, 51-70.
- Blossfeld, H.-P., Golsch, K., & Rohwer, G. (2007). *Event history analysis with Stata*. New York: Lawrence Erlbaum.
- Hoem, J. M. (1990). "Social policy and recent fertility change in Sweden". *Population and Development Review*, 735-748.
- Hoem, J. M. (1993). "Classical demographic methods of analysis and modern event-history techniques". In *IUSSP: 22nd International Population Conference*, Montreal, Canada, Vol. 3, pp. 281–91.
- Statistics Sweden. (2003). *Access to microdata in the Nordic countries*. Örebro: Statistics Sweden.
- Statistics Sweden (2018). *Women and men in Sweden 2018: Facts and figures*. Stockholm: Statistics Sweden.
- SOU. (2017). *Jämställt föräldraskap och goda uppväxtvillkor för barn: en ny modell för föräldraförsäkringen*. Statens offentliga utredningar 2017:101. Stockholm: Wolters Kluwer.

Stockholm Research Reports in Demography
Stockholm University, 106 91 Stockholm, Sweden
www.su.se | info@su.se | ISSN 2002-617X



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