

Social Class, Income, and the Timing of Childbearing: Sweden 1920-2010

Martin Dribe
Centre for Economic Demography
Department of Economic History
Lund University
Martin.Dribe@ekh.lu.se

Christopher D. Smith
Centre for Economic Demography
Lund University

Abstract (150 words)

The aim of this paper is to study socioeconomic differences in the timing of childbearing from the end of the first demographic transition to present times. We use longitudinal micro-level data on birth histories, occupation and income for individuals and couples in a regional sample in Sweden, 1920-2010. Using discrete-time event-history models we estimate the association between social class/income and parity-specific duration to next birth. Preliminary results indicate pronounced changes in the class and income differentials in the timing of births. For second births a more or less perfect gradient evolves over time with the highest classes (richest) having the shortest duration (highest fertility), and the lower classes (poorest) the longest (lowest fertility). For durations to higher-order births, a J-shaped pattern emerges for income, with the richest and poorest having the shortest durations, and the medium-income groups having the longest. The pattern for class are similar, but not as accentuated.

Extended abstract (without references)

The study of socioeconomic status and fertility has a long tradition in both economics and demography. Theories have been developed to explain both positive and negative associations between socioeconomic status and fertility, as well as how these have changed over time from before the demographic transition to present times. Most of the research based on micro-level data in Western countries have dealt with fertility differentials either during the first demographic transition, around the turn of the 20th century, or in the relatively recent past (post 1970). Few studies have looked at how the timing of fertility over the reproductive period has been associated with different aspects of socioeconomic status during the period in-between. This has created a gap in our knowledge of important fertility determinants during a period when married women entered the labor force en masse as well as attended school and university in increasing numbers. During this period there were also major changes in both marriage patterns and fertility levels. Many of the theories surrounding the association between socioeconomic status and fertility behavior are predicated on the growing importance of women in the labor market. This shift is theorized to influence fertility behavior due to increased couple income but also the increased opportunity-costs women encountered when entering into childbearing. This change may have unique effects on fertility differentials by socioeconomic status. One on hand, income effects suggests families with the most resources may have the lowest need for mother's employment and income, so their fertility may be most resistant to this change. Alternatively, as a result of marital homogamy, many of these women may also have some form of high education, and therefore forgoing employment for this group may represent the greatest potential unrealized gain.

Additionally, the relationship between fertility and socioeconomic status has also become increasingly less stable or at least non-linear in recent years. A unique development is women with higher education levels exhibiting increased levels of childbearing in international as well as, to some extent, Swedish contexts. This appears to be a relatively recent phenomenon that has primarily focused on education rather than other measures of socioeconomic status.

The aim of this paper is to study the association between two dimensions of socioeconomic status and the timing of fertility, using a unique regional sample of Swedish longitudinal population register data, spanning the entire period from 1920 to 2010. We study fertility timing through parity-specific analysis of the duration to the next birth, using discrete-time event-history models. We follow a common approach in demography by considering socioeconomic status as a composite measure with several important components, most notably social class, education, and income. These dimensions are partly overlapping but also partly distinctive. Social class is related to income, but not perfectly so. Some individuals in lower classes may well out-earn some individuals in higher classes, some high earners have only basic education while some with academic degrees only have medium earnings, and high social class is not necessarily a function of high education. Studies on demographic differentials by different measures of socioeconomic status have also often found independent associations between the different dimensions. While there has been a lot of research on the association between education and fertility, especially in contemporary contexts, not as much has been done on the association with income and social class. In this paper we focus on social class and income as two distinct dimensions of socioeconomic status.

Data and methods

Data come from the Scanian Economic-Demographic Database (SEDD) housed at the Centre for Economic Demography, Lund University. SEDD consists of individual-level longitudinal information on family and socioeconomic attainment for individuals in the 5-parish region (Halmstad, Hög, Kågeröd, Kävlinge and Sireköpinge) and the port town Landskrona, from 1920-2011. Data for the time period of 1920-1968 have been collected from archival sources and then been linked to nation-wide data for the period 1968-2011, maintained by Statistic Sweden. The links have been made based on unique personal numbers introduced in 1947. Among those who are residing or have ever resided in the sampled region, the multigenerational register links them and their partner with their children regardless of where in Sweden they reside. For these analyses, we sample women aged 15-50 who are married with at least one

child who were born in the previous eight years during this period of time. We focus on this subsample to identify those women who are viably at risk of having a childbirth. In addition, we look at the timing of first births in two different ways, following married women from the time of marriage to first birth, and following all women from age 15 to their first birth.

We derive the social class position from occupation using HISCLASS, which is based on skill level, degree of supervision, and whether manual or non-manual, and is expected to capture differences in life chances more broadly, related both to economic power and prestige. Here, we take the highest HISCLASS value reported in the couple, as this best captures the family class position and the long-term economic prospects. We employ a 6-category system that includes: high-class/managerial, lower white collar workers, skilled workers, lower-skilled workers, unskilled workers, and farmers.

Individual incomes for men and women are available from 1950 until 2011. We use total couple income and create deciles from the entire data sample. Women's share of the household income is constructed from tax records for the years 1950 into the present day. This value is the proportion of the total couple income comes from women's reported total income.

We descriptively compare the average births across years by HISCLASS and income decile groupings. Next, we explore the relationship between the likelihood of having a birth and HISCLASS occupational position and income deciles using discrete time logistic regression with clustered standard errors for individual ID's. These results are also stratified by the following years: 1920-1949 (HISCLASS only), 1950-1968, 1969-1999 and 2000 onwards. These results are stratified by parity (marriage to first birth, first to second birth and higher-order births). As the two-child norm remains strong in Sweden, there might be a selection effect into the higher parity births with a different association between socioeconomic status and fertility.

$$\frac{p(x)_{it}}{1 - p(x)_{it}} = \alpha_{it} + X_{it}\beta + \varepsilon_i$$

Preliminary results (1930-2011, 2nd births and higher-order births)

Odds ratios from a series of logistic regressions on the likelihood of having a second child by time period are presented in Figure 1. In the period between 1930 and 1949, there is little evidence of class differences in the duration to the second birth. The first evidence of class differences in the duration to second birth does not emerge until 1950-1969, in which high-class and farmer couples have 50% and 150% greater odds of having a second child compared to skilled workers. High-class couples are more likely to realize the two-child norm than couples in other occupational classes. Interestingly, this predates married women's largescale movement into the labor market, which might suggest the middle and lower classes are practicing a quantity-quality tradeoff, while the households with more resources do not constrain themselves. This is in-line with the earlier formulations on the relationship between socioeconomic status and fertility that predicts a positive association.

The positive association between class and duration to second birth strengthens into the following time period as high-class and farmer couples are both twice as likely to have a second birth, as well as white-collar and lower-skilled workers who are also significantly more likely to have a second child in any given year. A more stepwise pattern emerges in the final time period from 2000 onwards. High-class and white-collar couples continue to have greater likelihood of having a second birth, while unskilled workers are now *less* likely to have a second child. The development of a J-shaped distribution in the most recent time period is, arguably, the result of efforts to mediate the role of worker and mother, thereby reducing the opportunity-cost of childbearing, over the last half-century. The farmer class, whose representation has shrunk to about 0.1% of the sample, represent too small a category to obtain a meaningful result.

Figure 2 shows results from a similar analysis, but focused on higher-parity births rather than the duration from first to second birth. In the earliest period, the unskilled are twice as likely to have a higher parity birth as skilled workers. This elevated childbearing among the lowest class may come from the tail-end of the fertility transition when these households valued the quantity of children over the perceived quality of children. The other categories during this time period, however, are not significantly different

from the skilled workers in regards to higher parity births. From 1950 to 1969, there is no evidence of class differences in higher-order fertility. Though the highest class may be more likely to have a second child, they are no more likely to have a higher order birth.

From 1969 to 1999 and then from 2000 onwards, only those from the two highest social classes appear to be more likely to have a higher parity birth. They are 75% and 45% more likely to have a higher parity birth compared to skilled workers, respectively. The unique patterns observed in Figures 1 and 2 show that the process of selection into having a second child differs from that of having a higher parity birth. That being said, high-class couples have shown a consistent preference for a second child as well as higher order children from 1969 onwards.

Figures 3 and 4 present results for couple income. Compared to the 5th income decile for women, there is limited evidence of income-based fertility differences from 1950 to 1968. Though the 2nd income decile is 46% more likely to have a second child, neither the 1st nor the 3rd differs from the reference group, making it difficult to derive any firm conclusions as to this relationship. This lack of a relationship during this time period speaks to the family's desire for two children within a household. It appears that families are not making any quantity-quality tradeoff decisions, at least as it relates to short-term income.

From 1968 to 1999, the highest income decile was 30% more likely to have a second child than the fifth decile, which bears similarities to the finding from Figure 2 that the highest occupational and managerial class were also more likely to have a second child. Otherwise, there is a relatively flat relationship between income and a second birth across income classes, save for the sixth decile who has a 14% lower odds. Despite this generally flat distribution, a J-shaped distribution begins to emerge, with the highest income earners being more likely to have a second child, during this time period. From 2000 onwards, a J-shaped distribution takes shape, with the highest three income deciles being significantly more likely to have a second birth, and the lowest two deciles being significantly less likely to have a birth than the reference category.

Figure 4 presents these results for higher parity births. In this analysis, an observable pattern between income decile and a higher parity birth is evident from the earliest time period, with the lowest and highest categories twice as likely to have another birth. This U-shaped distribution becomes more pronounced in the 1969 to 1999 and 2000 and later time periods. In the final time period, those in the bottom and top two distributions were significantly more likely to have a birth. Those in the lowest income strata may have had a higher likelihood of additional children due to the lowered opportunity-costs they face when considering additional children. At the other end of the income spectrum, the available resources have seemingly always enabled the highest earners to have more children. This brings into question the role of progress in gender equity in leading this group to have more children, as might be the explanation if only the later time periods were considered. However, the relative increase in the likelihood of higher parity births among the 8th and 9th income deciles over the time period could be the result of increasing role compatibility between mother and worker. Families in income decile 8 and 9 clearly have resources available to them, but considering the absolute difference in average income of income deciles 8, 9 and 10, there is a large gap between them and the highest earners. The family-friendly policies, therefore, may help these groups realize their fertility ambitions, and possibly copying the preferences exhibited by those in decile 10.

Figure 1. Transition to second birth by HISCLASS category (Ref: skilled worker) by time period

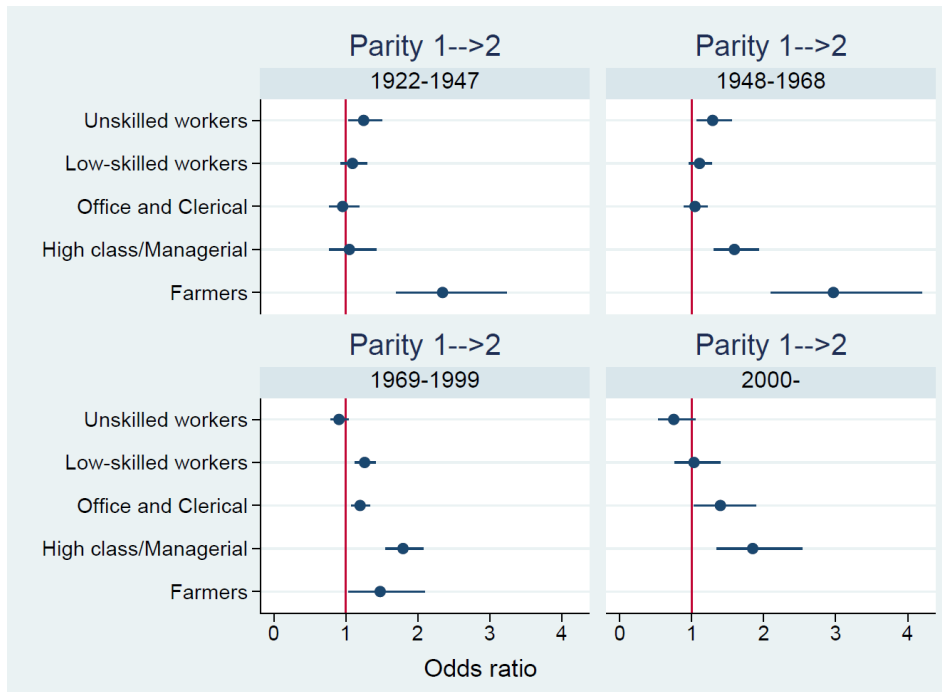


Figure 2: Odds of a higher parity birth by HISCLASS category (Ref: skilled worker) by time period

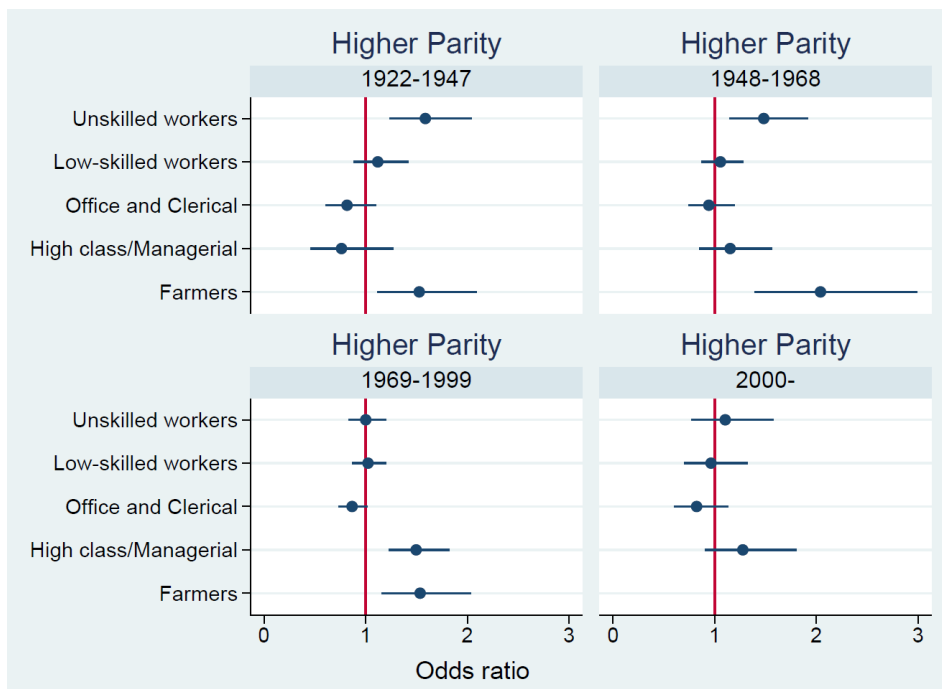


Figure 3: Likelihood of a parity 1 to 2 birth by income decile category (Ref: 5 decile) by time period

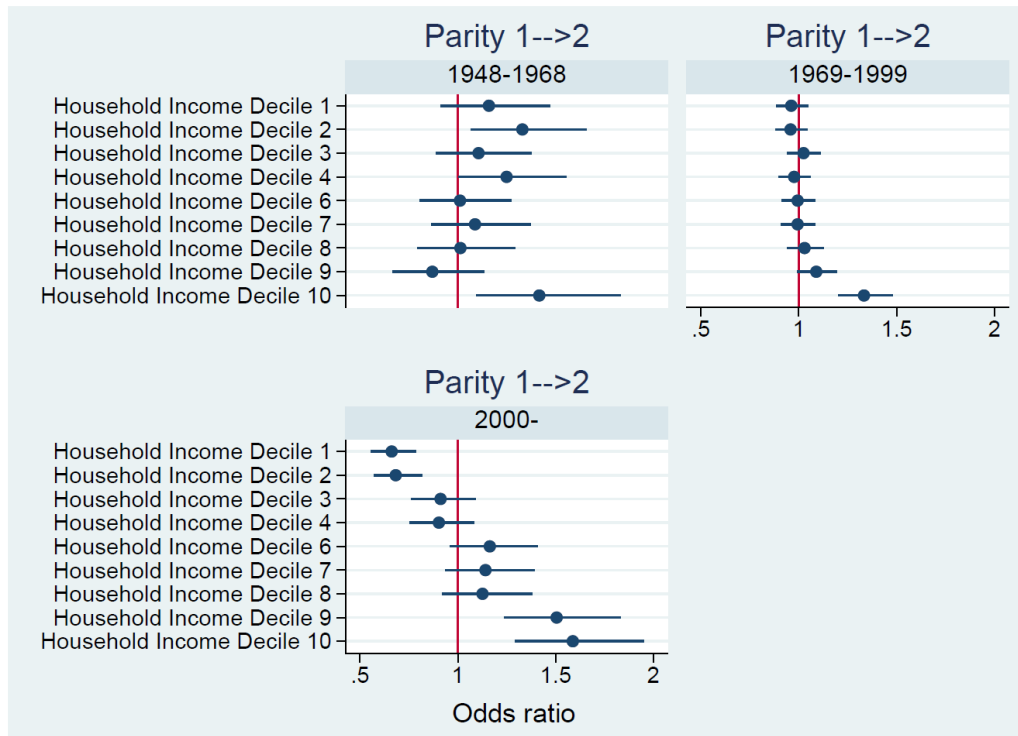


Figure 4. Transition to higher parity birth by income decile category (Ref: Decile 5) by time period

