Money, Policy and Norms: 
Childbearing Behavior of Swedish Students 
in the 1980s and 1990s

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MONEY, POLICY AND NORMS:

CHILDBEARING BEHAVIOR OF SWEDISH STUDENTS IN THE 1980s AND 1990s*

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Abstract: The longer period spent in education is assumed to be one of the main reasons behind the postponement of first birth. The postponement of childbearing until after education has been explained by both the poor economy of students and by the normative sequencing of life events, where completion of education is expected to precede family formation. As previous studies have shown that both policy and income have an influence on childbearing decisions, the focus of this paper will be on economic factors and its impact on the interrelationship between study enrollment and childbearing in Sweden. By means of longitudinal data on individual childbearing and study activity between 1984 and 1999 we detect whether the relative propensity of female students to become a parent or to have another child has been affected by a student financial aid reform in 1989. We also examine whether changes in the student financial aid system have had an effect on female enrollment. Finally, we investigate whether female students’ relative childbearing risks change when we control for their earned income. The results show that the reform in 1989 had no noticeable impact on students’ childbearing behavior nor on mothers’ propensity to enroll in education. However, first birth risks among female students in all age groups are clearly affected by their low income, which indicates that the postponement of childbearing until after finishing education, at least to some degree, is a matter of economic resources.

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1. INTRODUCTION

The massive educational expansion was one of the most fundamental social changes in Europe at the end of the 20th century. Both the number of students and the years spent in higher education increased substantially. In an international comparison, Sweden has the highest percentage attaining tertiary education of all countries in Europe (OECD 2006). What also distinguishes Sweden is that Swedish students are relatively old. They have one of the highest average ages when entering university and they also leave university at a high age; the median age for completing a first degree is 28 years and one in three students is above age 30 (Statistics Sweden 2009a: SOU 2003:130). Even though many students are in the “childbearing ages”, students have lower fertility than any other group at the same ages.

The low fertility of students has often been taken as evidence of norms about the necessity of getting established in adulthood in other ways before having children, which is often considered the last and major transition towards adulthood (for a discussion on the normative sequencing of life events see, for example, Marini 1984). However, the association may also be reduced to economic arguments as students’ low or non-existent earnings are generally not perceived as compatible with the establishment of a family with children. In the case of Sweden, low earnings also entail a low parental-leave benefit. Students that have not worked before enrollment, and others with weak labor market attachment, are not eligible for the earnings-related parental leave benefit and instead receive a benefit at a low flat rate.1 In 1999 only 3.6 percent of all mothers on parental leave, and 0.7 percent of the fathers, received parental leave benefits at this low flat rate, which shows how strong the norm “first-job-then-children” really is (Ds 2001:57).2 The postponement of childbearing until after education could accordingly be seen both as a consequence of economic necessity and a result of social norms regarding the “right” sequencing of life events. As the parental leave system strongly reinforces the social norm that one should complete education and enter the labor market before having children, at the same time as the parental leave legislation is influenced by societal norms, the influence of money, policy and norms is highly intertwined.

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1 At the time period studied in this paper the flat rate was 60 SEK/day (about 6 €). Since then the amount has been raised to 180 SEK/day.
2 This percentage refers to Swedish-born parents. Among foreign-born parents the share receiving parental insurance at the low flat level is much higher.
The aim of this study is to examine the impact of economic and policy factors on the interrelationship between study enrollment and childbearing in Sweden, and whether financial aspects are sufficient to explain the low fertility of students. By means of longitudinal data on individual childbearing and study activity between 1984 and 1999 we will study various aspects of this interrelationship. To begin with, we will detect whether the relative propensity of female students to become a parent or to have another child has been affected by changes in the student financial aid system. We will also examine whether changes in the student financial aid system have had an effect on mothers’ propensity to enroll in education. Finally, we look at the importance of earned income by investigating whether controlling for income alters female students’ relative propensity to have a(nother) child. Given that childbearing risks strongly differ by age, we will examine whether the impact of student financial aid and income differs by age group.

As the Nordic countries in general, and Sweden in particular, often are taken as a reference when discussing the possible impact of various family policies on fertility behavior, it is valuable to complement previous demographic research with a study that specifically addresses the circumstances for students. Our findings will give some indication of the importance of economic factors and whether moderate changes in the student financial aid system may matter for childbearing decisions. If this is not the case, we may have to rely on normative factors as a residual explanation of the childbearing behavior of students. Our study will also contribute to a more nuanced understanding of the potential effects of social policy reforms on family behavior. As the possibility of stimulating an earlier onset of childbearing sometimes is suggested as a remedy for falling fertility in Europe (see for example Skirbekk, Kohler and Prskawetz 2004 and Lindh 2008) exploring childbearing behavior of students is highly relevant.

The paper begins with a background overview of childbearing trends in Sweden and the Swedish student financial aid system. After that follows a theoretical discussion on the interrelationship between social policy, enrollment and childbearing. Thereafter, we present the data and methods we use before moving on to our empirical results. Finally, our main findings are summarized and discussed along with some suggestions for future research.
2. BACKGROUND

2.1. Childbearing trends in Sweden
As most European countries, Sweden has experienced a postponement of parenthood in recent decades and the mean age at first birth has reached 29 years for women and 31 years for men (Statistics Sweden 2009b). Despite the higher ages at first birth, the Total Fertility Rate (TFR) in Sweden is currently one of the highest in Europe. However, as illustrated in Figure 1, Sweden has experienced strong fluctuations in its fertility levels in recent decades. Like in other European countries, fertility rates decreased during the 1960s and 1970s. During the economic upturn in the late 1980s fertility increased considerably and in 1990 and 1991 it even exceeded the replacement level. Thereafter followed an economic crisis and a subsequent dramatic drop in TFR, which in 1999 reached 1.50 – the lowest fertility ever registered in Sweden. One of the most important factors contributing to the fall in fertility during the 1990s was young people’s weak attachment to the labor market and the dramatic rise in student enrollment which, given the low fertility of students, had quite a substantial impact on aggregate fertility levels (Hoem 2000). When the economy recovered, fertility levels began to rise as well and in 2008 the TFR reached 1.91 (Statistics Sweden 2009c).

Comparative research shows that entering parenthood while still in education is more common in Sweden and the other Nordic countries than elsewhere in Europe (Billari and Philipov 2004), which most likely is related to the higher ages of students and the relatively generous family policy. Although students without previous work experience are excluded from the income related parental leave insurance, students have access to subsidized public child care and child benefits (for an overview of students’ rights to various benefits see for example Björnberg, Ölafsson and Eydal 2006). It is difficult to find statistics on how many students have children but figures indicate that about a third of all females enrolled in an university education have children. Fewer male students have children, about 13 percent (SOU 2003:130). Nonetheless, the share becoming a parent while being enrolled is still very small.

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3 Among students in adult education programs (Komvux), the share having children is even higher. It is estimated that 50 percent of the female students and 27 percent of the male students in adult education are parents (2003:130).
2.2. Student financial aid in Sweden

In Sweden, university studies are free of charge and the state offers fairly generous financial assistance consisting of grants and loans. Students below age 54 enrolled in higher education are entitled to student financial assistance for a maximum of 12 semesters\(^4\). This aid consists of a non-repayable grant plus a loan to be repaid with low interest. Student financial assistance was initiated as early as 1919 and was then a loan that had to be paid back within ten years. In 1957, all students admitted to an education became eligible to a non-repayable study grant. In 1965, a student financial aid system was implemented that broadly is the same as Sweden has today. All students, regardless of their parents’ financial situation, became entitled to student financial aid, consisting of both grants and loans. The aim was to increase social mobility and ensure that young people were financially independent of their parents. Ten years later, adults were given the opportunity to study at high school level and an adult financial aid system was introduced, which meant that adult students could receive financial

\(^4\) 240 weeks.
assistance at the same level as if they had obtained unemployment benefit (CSN 2008a; SOU 2003:130; Eurydice 1999).  

In 1989, a student financial aid reform, which consequences we will examine in this study, took place. In this reform the regulations for repayment of loans were changed, the non-repayable grant was raised substantially, and the financial assistance for studying abroad was enhanced. However, the possibility to obtain an additional loan if you had children was eliminated (CSN 2008a). This meant that for students with no children or one child the economic situation was improved after the reform, but for students with more than one child the financial aid was reduced. The removal of the child supplement has later been pointed out as detrimental to students’ possibilities to start a family by a government committee on childbearing in Sweden (Ds 2001:57).

Figure 2. Student grants, loans and child supplements for parents with one, two and three children, per month, in prices of 2007, Sweden 1980-2008.

Source: CSN (2008b)

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5 The adult student aid was removed in 2001.
In 2002, the Swedish government initiated a comprehensive review of the economic and social situation of students and how the student financial aid system interacts with the social insurance system and other welfare benefits. One aim was to look into what possibilities there were to facilitate the economic situation for students with children. The starting points for the commission included that life-long learning should be facilitated, the student financial aid system should work well with the social insurance system, the system should contribute to gender equality, and finally, the system should benefit childbearing (SOU 2003:130).

In 2006, an extra child supplement for students was reintroduced in order to support children in economically disadvantaged families and make it easier for parents to enroll in education (Ds 2004:33). The policy reversal indicates that policy makers believed that the removal of the previous child supplement in 1989 involved negative consequences for students as parents. Just like the previous child supplement, the supplement introduced in 2006 is calculated on the number of children, but unlike the previous benefit the new supplement is a grant given to the student and not a loan. During the first semester after the introduction as many as 62,500 students received this supplement. More women than men received it: 21 percent of the female university students and 6 percent of the male students received the supplement. The average age of the children to those students was 8.3 years, which implies that most student parents had their child(ren) well before (re-)enrollment. About half of the students with children are above age 35 (CSN 2008b).

More than 80 percent of all students in Sweden receive some kind of student financial aid. Even though the student financial aid offered is quite generous compared to many other countries, it is considerably lower than an average worker’s wage (for a detailed comparative overview of financial support for students in higher education in Europe, see Eurydice 1999). As Figure 3 clearly shows, the gap between an average worker’s wage and the student financial aid has increased since the early 1990s. While workers’ wages have increased rapidly, the student financial aid has remained at the same level. According to calculations by Swedbank (a Swedish bank), a single student that receives both study grant and study loan has, after all “necessary” expenses have been paid, about 200 SEK (€ 20) left each month. This calculation assumes that the student receives housing allowance, which only about 14 percent of all students do. If the student does not receive housing allowance he or she is likely to run at a loss. To support a child on this income is of course difficult unless the student has a partner with a well-paid job. In 2007, 60 percent of all students worked extra to make ends
meet, and 25 percent received financial support from their parents or other relatives. Among the youngest students, this share was higher than among the older ones (Statistics Sweden 2007).

Figure 3. Student financial aid per month as compared to an average workers monthly wage\(^6\) before tax, in prices of 2007, Sweden 1980-2008.

![Graph showing student financial aid compared to average workers' wage from 1980 to 2008.](image)

Source: CSN (2008b) and Statistics Sweden (2009d)

### 3. EDUCATION AND CHILDBEARING

Education and childbearing are dynamically interactive processes that mutually influence each other. A number of features of the educational system, such as its structure and flexibility, have an impact on this relationship (Hoem et al. 2006). The interplay between education and childbearing is also shaped by other institutional factors, such as family policy, as well as by cultural and ideational factors. At the individual level, individual abilities, preferences, values and attitudes, social class, and parental resources may simultaneously have an influence on decisions about both education and family formation (Billari and Philipov 2004).

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\(^6\) From 1994, the average worker's wage is based on both part time and full time employees, which means that the real increase in wages has been even higher.
The emergence of the welfare state is considered a key factor behind the “institutionalization” of the life course, in particular when it comes to educational trajectories and the transition to parenthood. Consequently, differences in welfare regime setups could explain international differences in young adults’ behavior in the transition to adulthood (Mayer and Müller 1986). Family policies signal which kind of behavior is expected, or at least supported by the state, and do therefore reflect societal norms that they are to create or maintain (Neyer and Andersson 2008; McDonald 2000). There is an ongoing interplay between social development, normative development, and policy responses. If policies do not correspond to existing norms and the way that people want to live their lives it could have an inhibiting effect on fertility. For example, the low fertility in Germany and other countries with a male-breadwinner, female-housewife model has been explained by the conflict between the social development, where more and more young women is attaining higher education, and family policies that do not facilitate mothers’ employment (Neyer 2003). In Sweden, family policy is mainly directed towards the compatibility of family life and labor force participation, and the fact that the parental leave benefit is calculated on the individual’s prior earnings is a strong incentive to get established on the labor market before having a child. Accordingly, policies, as well as norms, maintain a sequencing of life events where finishing education precedes family formation. Given the social development where young adults complete their education and get established on the labor market increasingly later in life, these are central causes behind the postponement of childbearing. A postponement that in some cases conflicts with people’s desire to have children before getting too old, and, considering that fecundity declines with age, may also have an inhibiting effect on fertility.

Clearly, educational attainment and enrollment play a central role in shaping the timing of transition to motherhood. For example, women with higher education have their first child at a higher age than other women. However, it is important to distinguish between achieved educational level and enrollment. Comparative research have indicated that it is educational enrollment, and time spent in education, rather than the achieved educational level itself that is significant for the timing of the transition to motherhood (Billari and Philipov 2004; Kravdal 1994; Blossfeld and Huinink 1991). Few women choose to have children while still being students and the extended periods spent in education is considered one of the main reasons behind the increasingly higher ages at first birth.

\[7\] To be entitled to the earnings-related parental insurance one has to work for a minimum of 240 days before the birth of the child.
Furthermore, in Sweden, and the other Nordic countries, having started work speed up the transition to first birth. In contrast, in Southern Europe entering the labor market postpone first motherhood (Billari and Philipov 2004). Not only is the timing of completing education and entering the labor market significant for childbearing behavior, also the level of income matters. Several studies have shown that in Sweden, the higher the individual income level the higher is the propensity to give birth. The positive correlation between income and first birth is somewhat stronger for women than for men, which most likely is associated with the fact that women still use about 80 percent of the parental leave days (Andersson and Scott 2005, 2007; Duvander and Olsson 2001; Andersson 2000).

The importance of economic factors and family policy for childbearing decisions is also highlighted in a survey carried out by Statistics Sweden in 2002. According to this survey, the share of students who responded that the economic situation to a very high extent affected their attitude towards having children (while being a student) was as high as 77 percent. Another 15 percent replied that it influenced their attitude towards children to a high extent. The share of students who responded that the social insurance system to a high or very high extent affected their attitude towards having children was 64 percent (SOU 2003:130). The significance of economic certainty as a prerequisite for becoming a parent in Sweden is further underlined by a longitudinal study by Bygren, Duvander and Hultin (2006).

Just as income is more important for women’s childbearing propensities, completing education before having children seem more significant for women than for men. According to a Swedish survey carried out by Löfström (2003), the share of women that considered it important to complete their studies before having children was higher than among men. Moreover, Löfström’s survey shows no evidence of a de-standardization of life courses, as the share of young adults considering completing education before childbearing important was noticeably higher in the 1990s than in the 1980s. This trend could be related to the economic crises in Sweden in the 1990s. It could also be evidence of a general tendency among young adults in an uncertain environment to postpone irreversible decisions associated with major change and risk.

Evidently, attitudinal surveys as well as actual behavior reveal that the norm that one should complete education and establish oneself on the labor market before having children is very
strong in Sweden. However, it is not clear to what extent this norm is upheld by sheer economic factors and the aspiration for economic certainty and to what extent it is related to non-economic factors such as the external normative pressure about the sequencing of life events. Neither do we know how easily the interrelationship between education and childbearing is changed by social policy reforms and how people respond to changes in the educational system. Previous research shows that the impact of social policy reforms varies. The introduction of the speed premium of the Swedish parental leave system, for example, had a clear impact on the spacing of childbearing (Andersson, Duvander and Hoem 2006; Hoem 1993), while other reforms, such as the increase in the ceiling of the Swedish temporary parental insurance benefit (Eriksson 2009), had no noticeable effect on behavior. In this study we examine whether the student financial aid reform in 1989 had an impact on students’ childbearing behavior. We will also have a look at whether female enrollment, in particular that of mothers, was affected by the reform. The interrelationship between enrollment and childbearing is further explored by looking at the significance of earned income, to find out whether the depressed fertility of students primarily depend on their student status or by their low earnings, which often is associated with it.

4. DATA AND METHODS

Given the complexity of family policies and the quantity of political and socio-economic factors that may have impact on various areas of an individual’s life, it is of course difficult to measure the true effect of a particular policy or event on individual behavior. To reduce the complexity, without eliminating the dynamics and interaction with other factors, it may be useful to focus on “critical junctures” (Neyer and Andersson 2008). A critical juncture is a point in time when a significant change occurs that is likely to have an effect on, in this case, childbearing behavior. It could be the introduction or elimination of a policy, or a major raise or drop in benefit levels. These changes occur rather rapidly and can be relatively clearly marked in time. However, we still need to consider the time period prior to the critical juncture given that the development in childbearing behavior after the change has to be assessed in relation to the situation before the change. Moreover, people may anticipate the change and adapt their behavior accordingly or the change may be gradual, which of course makes it more difficult to detect a possible effect. In our example, 1989 can be considered a
critical juncture in terms of policy development, and we note that this juncture only applies to those enrolled as students. In order to explore whether this “critical juncture” had an effect on childbearing behavior we need longitudinal data that contain individual life-course behavior and link it to the relevant juncture (Neyer and Andersson 2008).

The data used in this study are derived from the Swedish population register system. The raw data set is provided by Andersson (2000). We analyze data on childbearing histories of all women born in Sweden in 1945 or later which are linked to information about their annual income, study activity and age. The income variable is based on earned taxable income the preceding year of being under risk of childbirth, and is given in earning deciles of women. Income replacements during sickness or parental leave are also included in the income variable. The study variable shows whether or not an individual has received any kind of student financial aid (study grant and/or study loan) during the year. Calendar year is included as another variable with single-year periods from 1984 to 1999.

For first births, age is a single-year variable. Since we know that first birth patterns differ considerably for younger and older women, models for women at ages 20-29 and 30-44 are estimated separately. As it is the interplay between enrollment in higher education and childbearing we are interested in, women below 20 are not included. For second and third births, age is given in groups of ages, from the category 20-22 years to that of 38-44. This is to make the data more manageable. For such births we also control for the additional effect of time since the previous births, i.e., age of the youngest child (with categories 0, 1, 1.5, 2, 2.5, 3, 4, 5, 6-7, and 8-9 years). Since Swedish registry data do not contain information about cohabitation status of individuals we have no information about earnings of any partner (or even the existence of such persons) unless they are married or already have a child together. This means that for first births we can only get a picture of a woman’s own earnings and study activity and how these affects her childbearing. Our data on second and third births are also based on characteristics of women only. For this reason, the true effect of study activity on childbearing may partially be masked by various unobserved household characteristics, such as partner’s income (Andersson 2000).

To sum up, we study the effect of a number of variables on birth risks among students and non-students. We do this by estimating intensity-regression (or proportional-hazards) models.
The observation window opens at the beginning of the observation period (1984) or when the woman turns 20, and closes either at the time of birth of a child, at age 44, in case of emigration or death, or at the end of the observation period (1999). Our estimates are computed by means of a software called EvHA, developed at the Max Planck Institute for Demographic Research. Given the size of our data set, basically any estimated difference in risk level is statistically significant, for that reason we do not provide any figures on variances or significance levels.

5. EMPIRICAL RESULTS

5.1. Effects of the 1989 student financial aid reform

5.1.1. Women’s first birth risks

Our empirical evidence show no clear effect of the reform in 1989 on students’ relative first birth risks. Considering that the total amount a student with one child received hardly changed after the reform, this result is not entirely surprising. Among students in the youngest and oldest cohort the trend in childbearing risks the years following the policy change is almost identical as that of the non-students (see Figure 4-5), while the childbearing risks for students in the age groups 25-29 and 30-35 decline slightly after 1989 as compared to the risks of non-students in the same ages. Still, this decline seems to have started before the reform was implemented. Over the entire period 1984 to 1999, there is a slight decrease in first birth risks among students as compared to non-students. This decrease may be a reflection of the increasing difficulties young adults face trying to enter the labor market and an increasing aim for a stable economic situation before having children. The result is also consistent with Löfström’s study (2003), which showed that completing education before having children was more important for young people in the 1990s than in the 1980s.
Figure 4. Relative first childbearing risks of students versus non-students, by age-group, standardized for single-year age (separate model for each age group)

Not standardized for income

Figure 5. Relative first childbearing risks of students versus non-students, by age-group, standardized for single-year age (separate model for each age group)

Standardized for income
5.1.2. Women’s second and third birth risks

Moving on to higher parities, both second and third birth risks among students, as compared to birth risks among non-student mothers, remained fairly stable throughout the whole period (Figure 6-9). The only discrepancy is a dip in fertility among students in 1987 that we so far have found no logic explanation for; there was no relevant change in neither family policy nor educational policy at this time. The student aid reform in 1989 does not seem to have had any noticeable effect on neither second nor third birth risks of students. This holds for all age groups. For a student with three children who obtained full student grants, loans and child supplements, the reform implied approximately 2000 SEK less to live on each month (converted into prices of 2007, which equals about 200 €). Perhaps the fact that the child supplement was just a loan mattered. Since the student grant was raised with about 2000 SEK (in prices of 2007) at the same time, students who did not take a loan were better off after the reform, regardless of the number of children.
Figure 6. Relative second childbearing risks of students versus non-students, by age-group, standardized for single-year age and time since previous birth

Not standardized for income

Figure 7. Relative second childbearing risks of students versus non-students, by age-group, standardized for single-year age and time since previous birth

Standardized for income
Figure 8. Relative third childbearing risks of students versus non-students, by age-group, standardized for single-year age and time since previous birth

Not standardized for income

Figure 9. Relative third childbearing risks of students versus non-students, by age-group, standardized for single-year age and time since previous birth

Standardized for income
5.1.3. Enrollment trends

We now turn to enrollment trends and the possible effects of the financial aid reform on women’s and in particular mothers’ study enrollment. As mentioned above, enrollment is here defined as receiving any kind of student financial aid during the calendar year. As illustrated in Figures 10-12, enrollment increased during the 1990s among both mothers and childless women and in all age groups. Among childless women aged 20-24, enrollment increased from about 20-30 percent in 1989 to more than 60 percent at the end of the decade (Figure 10). The share of women with one or two children enrolled in education at any time during a year increased as well, but the rise is more evenly distributed over the study period. Just like among childless women in the older age groups (above 30), the increase in enrollment began a year or two later than the increase for the younger childless women. Still, the increase in enrollment among mothers is quite remarkable. Among women under 30 with one child, the share being enrolled has increased from just above 5 percent in the early 1990s to more than 20 percent at the end of the same decade (Figure 11). Among mothers under 30 with two children the percentage enrolled has increased from less than 5 percent to nearly 20 percent during the period (Figure 12).

The dramatic increase in enrollment among young childless women (and men) began right after the reform in 1989 and could possibly be related to the substantial rise of the non-repayable grant. This trend was reinforced by the economic recession in Sweden that began about two years later. The enrollment trends among mothers during the years following the reform in 1989 do not reveal any negative effects of the removal of the possibility to obtain an additional loan on mothers’ willingness to study. However, we do not know whether more mothers would have chosen to study during the recession years if the additional loan had not been taken away.
Figure 10. Percentage of childless women receiving any student financial aid during the year, by age group and calendar year, Sweden 1984-1999

Figure 11. Percentage of women with one child receiving any student financial aid during the year, by age group and calendar year, Sweden 1984-1999
5.2. Enrollment, earnings and fertility

As visible in Figure 4 above, the negative effect of being a student on first birth risks strongly differs by age. The older the student is the weaker is the negative effect of being a student on birth propensities. Controlling for income changes the picture somewhat (Figure 5). The difference in first birth risks between students and non-students becomes much smaller after we add the income variable. This means that part of the reduced fertility of students is due to their lower incomes. The extent to which income affects the relative birth risk is partly dependent on age. When we control for income, students above 30 show about the same relative risk of giving birth as non-students (Figure 5). First birth risks of students in the oldest age group (36-44) are even slightly higher than that of non-students. Most likely, students above 36 have worked before entering education and could therefore be entitled to the earnings-related parental leave insurance. It is also likely that older women have a partner with a steady income. Another explanation may be that there is no time for further postponement of entry into motherhood for women in this age group. The fact that controlling for income reduces the negative effect of being a student shows that the financial situation is important for students’ childbearing decisions.
The negative effect of being a student on second and third birth risks is much weaker compared to first birth risks (Figure 6 and 8). But just like first birth risks, the negative effect of being a student on second and third birth risks is stronger among the younger age groups. Unlike for first births, the effect of being a student on second and third birth risks remains negative for all age groups even after controlling for income (Figure 7 and 9). Overall, controlling for income makes much less difference for second and third birth risks than for first birth risks. These are results that fit well with previous findings on the association between income and childbearing risks at higher parities in Sweden (see e.g. Andersson 2000 and Hoem and Hoem 1989). The weaker association may partly be explained by the so-called speed premium in the Swedish parental leave insurance, which means that for subsequent births parents have the right to keep an earlier level of income replacement if the next child is born within a period of 30 months. Furthermore, the strong two-child norm implies that once the first child is born the second child most often follows more or less “automatically” and economic factors thus have a relatively weak impact on second birth risks. Seemingly, this applies to students as well.

6. DISCUSSION

In this study, we have shown that the student-benefit reform in 1989 did not have a noticeable impact on female students’ subsequent childbearing behavior. Nor does the propensity, among those women who already had children, to enter or to continue education seem to have been affected by the reform. Among childless women however, there was a dramatic increase in enrollment right after the reform, but to what extent this is related to the rise in study grant and to what extent it is related to the parallel increase in unemployment is difficult to say. All the same, it seems as the negative effect of the reform may not have been as severe as some Swedish policy-makers seem to believe. However, this should not be taken as an argument for economic factors being insignificant for students’ childbearing decisions. Since the non-repayable grant was raised substantially at the same time as the possibility to obtain an additional loan was removed, the economic consequences of the reform were mixed and supposedly of crucial negative importance only for a small number of families with low

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8 Before 1986 this period was 24 months.
incomes and at least two children (or families with one child, planning for a second one in the near future).

Moreover, the answer to our next question, on the importance of earned income for childbearing risks, is pointing in another direction. Our analysis shows that first birth risks among female students in all age-groups are clearly affected by income, which indicates that the postponement of childbearing until after finishing education, at least to some extent, is a matter of economic constraints. For second and third birth risks, controlling for income makes less difference. The weaker impact of economic factors on birth risks at higher parities is in line with previous studies and apparently this applies to students too. Not surprisingly, also the negative effect of being a student is weaker for second and third birth risks than for first birth risks. Given that these students already have children, they are more likely to have a somewhat stable economy and, for example, be eligible for the earnings related parental leave insurance than childless students. Besides, since these students already have entered parenthood, and in that respect also obtained adult status, the student status and “student life style” is probably less of an obstacle for them than for the childless students.

Another associated finding is that the impact of being a student on the propensity to become a mother, or to have another child, strongly differs by age. The negative effect of being a student on birth risks is much stronger among the younger age groups at all parities, in particular when it comes to first birth risks. Most likely, students in the older age groups more often have worked before entering education and are therefore entitled to earnings-related parental leave benefit, and/or have a partner with a steady income. In addition, being an older student, with previous labor market experience, make these students already established in adulthood. Another explanation may be that fertility is not affected because there simply is no time for further postponement of entry into motherhood for these women.

In sum, even though the strength of association differs by income, parity and age there is a consistent and stable negative effect of being a student on childbearing risks, which indicates that combining studies and parenthood is perceived as difficult or undesirable. The outcome may be that either study (and consequently the entrance into qualified work life) or childbearing is postponed or forfeited. The various negative effects of these phenomena are frequently discussed in academia as well as in the public debate. Not only has the period spent
in education been extended, it has also become more difficult for young people to enter and getting established on the labor market, which in turn has an impact on other areas in life. Postponed entry to the labor market may have negative consequences not only for society but also for the individual who is unable to start an independent life with, for example, a separate household and family formation. Those who still choose to have children, despite not being established on the labor market, run the risk of ending up in a difficult economic situation. Moreover, their interrupted or postponed studies may later become an obstacle for entering the labor market. While the increasing delay of first births may be positive for some reasons, such as parents being more mature and having a stable economy, it is also problematic from a demographic and a medical perspective. Given that fecundity declines with age, the need for assisted reproduction increases, which is costly and also associated with health hazards for mothers and children. Postponement of childbearing is also likely to lead to a higher level of childlessness in society, and many people will not be able to have as many children as they would like to.

One possible option to inhibit further postponement of childbearing would be to raise the minimum benefit level of the parental insurance for students. This may have positive consequences from a medical and demographic perspective and could be beneficial for women in particular, given that more women study and that women’s fecundity declines more rapidly with advancing age than men do. At the individual level it would increase the choice capacity of students and perhaps enable them to combine studies with parenthood. Since students in general have more flexible working hours than employees this may be a favorable alternative for some students. Moreover, having children before entering the labor market means that childbearing will not collide with the early intensive, and many times insecure, years as a new employee. It would also benefit the employers who will not have to deal with finding a substitute while the employee is on parental leave. On the negative side, raising the minimum benefit for students may weaken the dual earner model as well as the economic incentive for paid work. It may also extend young adults’ educational period and delay their establishment on the labor market. As earnings-related benefits have been shown to be an important factor contributing to the relatively low levels of child poverty in Sweden (see for example Ferrarini 2003), raising the minimum benefit for students could also entail higher levels of child poverty.
To further investigate how students’ childbearing behavior is influenced by economic factors, it would be useful to separate students that are entitled to the earnings-related parental leave insurance from those who are not. This would provide a greater clarity on student parents’ economic prospects and so their incentive for having children. For more in-depth knowledge about the sequencing of life events during the transition to adulthood and the role of norms in such life course dynamics we need qualitative data, such as in-depth interviews. An additional question is why so many young adults, in particular women, choose to enroll in education after they had children. Did they work before they had a child (to qualify for the income related parental insurance)? Do they find it easier to combine parenthood with studies than work? Or did having children somehow motivate them to (re)enter university? Yet another suggestion for future research based on qualitative data is to study at a longer period of time and also investigate the possible effect on childbearing of the child supplement introduced in 2006. Even though not a very large amount of money, the existence of a child supplement for students signals that society supports a sequencing of life events where childbearing precedes the completion of education. A signal that in turn could influence the established norms.

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## APPENDIX

**Table 1. Relative risk of first birth for students versus non-students, by age-group, standardized for the effect of calendar year and single-year age (separate model for each age group)**

<table>
<thead>
<tr>
<th></th>
<th>20-24</th>
<th>25-29</th>
<th>30-35</th>
<th>36-44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-students</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Students</td>
<td>0.31</td>
<td>0.43</td>
<td>0.65</td>
<td>0.90</td>
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</tbody>
</table>

**Table 2. Relative risk of first birth for students versus non-students, by age-group, standardized for the effect of calendar year, single-year age and income (separate model for each age group)**

<table>
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<th>30-35</th>
<th>36-44</th>
</tr>
</thead>
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<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Students</td>
<td>0.46</td>
<td>0.64</td>
<td>0.91</td>
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**Table 3. Relative second childbearing risks of students versus non-students, by age-group, standardized for single-year age and time since previous birth**

<table>
<thead>
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<th>30-33</th>
<th>34-37</th>
<th>38-44</th>
</tr>
</thead>
<tbody>
<tr>
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<td>1</td>
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</tr>
<tr>
<td>Students</td>
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<td>0.56</td>
<td>0.62</td>
<td>0.65</td>
<td>0.66</td>
<td>0.71</td>
</tr>
</tbody>
</table>

**Table 4. Relative third childbearing risks of students versus non-students, by age-group, standardized for single-year age and time since previous birth**

<table>
<thead>
<tr>
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<th>30-33</th>
<th>34-37</th>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Students</td>
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<td>0.62</td>
<td>0.68</td>
<td>0.71</td>
<td>0.72</td>
<td>0.78</td>
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