

Female Relative Income and Continued Childbearing in Sweden (1968 to 2009)

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Abstract

This paper continues a previous one on the relationship between household income and continued childbearing in Sweden from 1968 to 2009. In that paper we found some evidence suggesting that female income share may not be negatively related with continued childbearing as suggested by some New Home Economics models. Indeed, we have found that the risk of continued childbearing is usually slightly higher when the woman earns more than her partner. Our purpose is to go deeper in the analysis and check how the association varies over time, across social strata, and between married and cohabiting couples. We also want to consider different theoretical approaches in order to get plausible explanations about the empirical association between female income share, continued childbearing and measures of fathers' involvement in childcare activities that may be affecting the way couples are dealing with the opportunity costs of children. The study will be conducted with registered based longitudinal data covering all Swedish couples living in Sweden at some point after 1968. Income figures are given annually and we have the proportion of that income that comes from parental leave benefits.

1. Introduction

This study follows the line of a previous paper on the relationship between household income and continued childbearing. In that paper, we showed what seems to be an emerging positive association between parental income and the risk of having another child which becomes more apparent in the period from 1990 to 2009. As a continuation of that line of research we want to consider how the relative income of the spouses within the couple is affecting the risk of continue childbearing.

In a result that may be at odds with the predictions of New Home Economic models, in which the opportunity costs of childbearing were mainly driven by the potential earnings of the mother, we have found so far that the share of the household income held by the woman is positively related with the probability of continue childbearing. Those results must be taken into perspective and the aim of this paper is to go further on that relationship.

The parental leave system in Sweden is aimed to reduce the opportunity cost of children and it is designed to promote the involvement of both fathers and mothers in childrearing. Compatibility between work and family should ease the negative impact of female potential earnings in the determination of the cost of children, but it is not very clear why we may see a positive association between female income share and continued childbearing.

An important feature to consider is the negative correlation between income held by the woman and total income received by the couple. Households in which the woman is the primary earner are

more likely to be at lower deciles of the income distribution. Therefore we want to see how the correlation varies across the social strata.

Regarding the theoretical aspect of the problem, we have formulated a set of hypothesis contrasting predictions from common preference models and bargaining perspective. We expect to be able at least to reject some of these hypotheses with empirical evidence. We also take into consideration the particular settings of the Swedish welfare system that may play a role in the interpretation of the theories.

2. Theoretical Background

We will take childbearing as an outcome that comes from a joint decision made by couples in which each member has a strong, but not indisputable, veto power (see Thomson and Hoem, 1998). Unwanted births will be assumed as irrelevant for the purpose of this analysis considering the availability of contraceptive options in Sweden.

To consider the association between the relative income of the members of a couple and their fertility outcomes we require a theoretical framework for household decision making. In the classical new home economics model (see Becker 1965; Gronau 1977) all household members are assumed to have a common utility function. Another interpretation leading to the same results is that one altruistic member, the head, has an exclusive right to decision making. Division of labor in such a context is determined by specialization according to comparative advantages, usually implying that men specialize in market work, and women in housework and child care, at least in relative terms. Opportunity costs of children tend to be related mainly to the potential earnings of the mother since specialization predicts greater involvement of women in child care and other related housework.

The dominance of the common preference model until the 1980s was in many ways related to the evolution of the family in the developed world (see Lundberg and Pollak 1996). Although that model may have been relevant analyzing the classical male breadwinner model (Butz and Ward 1979; Freedman and Thornton 1982) it is clearly an untenable assumption in contemporary two-earner models such as Sweden, where most women are active in the labor market and household chores are shared more equally than before. In fact, in Sweden today parenthood does not seem to strengthen a traditional division of labor to the same extent as it did in the past (Dribe and Stanfors, 2009).

Many shortcomings of the common preference household utility approach have been highlighted by Chiappori, such as the failure to explain “how a pair of single preferences aggregate into a unique common utility by marriage (or disaggregate through divorce)” (1992:440). Even the Beckerian models of the marriage market assume that a household is the result of an agreement between two parties that can reject that agreement in case of better alternatives (Becker, 1993). The problem is that the prospect of union dissolution could alter the preferences of the household members, breaking the idea of common utility maximization. Despite of immediate gains, specialization may not be the best long term strategy when the possibility of divorce is included. As stated by Lundberg and Pollak (1996), the analysis of divorce requires a framework in which individual utility functions have an important role within the household.

But there is also another element of the common preference model that was challenged which is the income pooling assumption. Studies have shown that it is not irrelevant in terms of demand patterns which member of the couple is bringing the money (Lundberg and Pollak, 1996; Phipps and Burton, 1998). Although some studies such as Phipps and Burton (1998) found that income pooling

hypothesis cannot be rejected for certain goods such as housing, the hypothesis was rejected in areas related to childcare, which the authors refer to the idea of gendered spheres of responsibility (Lundberg and Pollak, 1993; for an alternative view see Browning, Chiappori and Lechene, 2010). Some studies on developing countries have also discussed whether social transfers directed to the mothers are more effective when it comes to improve the children wellbeing (Hoddinot and Haddad, 1995).

To allow for different utility functions for spouses in a couple various bargaining models have been applied often using insights from game theory (Manser and Brown 1980; McElroy and Horney 1981; Chiappori 1992; Konrad and Lommerud 1995; 2000). According to these approaches the maximization process begins by bargaining and negotiation among the members to decide the use of common resources.

Certain models of bargaining families take divorce at the threat point (Manser and Brown, 1980; McElroy and Horney, 1981). The alternative scenario of not being a member of the household is taken as a measure of the bargaining power in household decisions. The member with the lower relative gains from the couple has the strongest leverage. Individual potential earnings in the labor market are usually taken as an indication of wellbeing outside the couple. It might be argued that individuals with relatively low potential for earnings could have other qualities that are valued in the marriage market and then be able to find another mate with minimal losses. The latter possibility is very difficult to test, so potential income seems a lot more practical. To make those things operational to empirical studies some observable variables must be considered instead of the unobservable potential income. Actual earnings and education are the usual candidates.

Concerning fertility, the share of household income that is held by the woman can have several consequences. In the classical male breadwinner context it was assumed to be the main determinant of the cost of children and therefore its impact was expected to be negative. Despite the gender neutral design of the parental leave system, women still take most of the responsibilities related to childrearing in Sweden (Gustafsson and Kjulin, 1993; Sundström and Duvander, 2002; Meyer, 2007) which may indicate that even in an institutional setting aimed at easing the compatibility between work and family, which also pretends to promote greater involvement of fathers in childcare, the opportunity cost of childbearing that are not fully compensated by the system are biased toward the mothers. From a bargaining perspective, however, we should consider the option that as the female income share increases, fathers would take a bigger share of childcare responsibilities. In such scenario, female income share does not have to be negatively associated with childbearing but we should expect it to be positively associated with some indicators of fathers' involvement in childrearing such as proportion of earnings coming from parental leave benefits.

Another set of bargaining theories focus on the already mentioned concept of separate spheres of influence. In these sort of bargaining models the threat point is not divorce but a non cooperative voluntary contribution equilibrium defined by traditional gender roles in which household public goods are underprovided (Lundberg and Pollak, 1993). If childbearing remains within the female sphere, then an increase in the relative earnings of the mother may have an impact on childcare related expenditures. A positive association between childbearing and female income share would not be unlikely under these circumstances.

In the aforementioned separate spheres bargaining model presented by Lundberg and Pollak (1993), there is no need to consider preferences or productivity, but socially sanctioned allocation of marital responsibilities in order to determine the assignment of public goods within the household.

Preferences could be introduced as a variation of the model. Then, a positive association between female income share and childbearing could emerge because women tend to prefer larger families. Indeed, the Eurobarometer Survey 2006 shows that the personal ideal number of children in Sweden is slightly higher for women in all age groups; on average Swedish women would want to have 2.64 children while Swedish men would prefer 2.39 (see Testa, 2006). Since that situation is not universal across European countries, we cannot make a direct link with traditional gender roles. In any case, the basis for such preference does not matter here. The empirical consequence, from a bargaining perspective, would be again an increased probability of childbearing associated with female relative income, while the relationship with fathers uptake of parental leave will be unclear (it is also possible that such preference were also affected by the expected role of the father in childcare).

3. Hypotheses

The first hypothesis to test is the income pooling assumption in a context in which opportunity cost of childbearing could be shared or compensated. The latter part of the sentence is a strong assumption in its own right but it serves the purpose of this analysis. This would work as some sort of null hypothesis since this is what we expect to reject. Under these assumptions, relative income of the spouses should be irrelevant in childbearing decisions.

If the null hypothesis is rejected, then we have two main scenarios. Female income share may be either positively or negatively associated with fertility.

We will tag the second hypothesis as the traditional specialization case. Under this model women take the bulk of the cost in childbearing and we would expect a negative association between their income share and the number of children. In the common preference model, maximization of the joint utility will push the head of the household to curtail fertility as the opportunity costs increase. The same result would yield if women use their increased bargaining power to reduce fertility in order to avoid bearing with the costs.

Now we must deal with the possibility of a positive association between mothers' income and childbearing. Two scenarios should be considered depending whether fathers tend to take greater responsibilities in childcare when the female income share rises.

The third hypothesis is about bargaining and compensation. We consider a scenario in which participation of fathers in childcare also rises with female income share. Such compensation should be different from the gender neutral model exposed in the null hypothesis, but also sufficient to reverse the case presented in the second hypothesis. Differences in preferences for children may play a role here. The idea is that women want not only more children but also more involved fathers.

Finally, a fourth hypothesis would say that women just want more children regardless of what fathers do, and a greater income allows them to overcome the veto of their partner. It can be related with the spheres of influence model. Controlling a greater share of household income would assure women that more income will be devoted to childcare related activities and made them more favorable to continue childbearing.

To summarize...

- Hypothesis 1: income pooling.
- Hypothesis 2: traditional specialization.

- Hypothesis 3: Bargaining compensation
- Hypothesis 4: Spheres of influence.

Besides the main hypotheses mentioned, there are other theories than can be tested, such as the skill premium hypothesis proposed by Martínez and Iza (2004). According to these authors, an increase in the skill premium would reduce the relative price of unskilled childcare services. Skilled mothers will find it relatively easy to afford childcare services. That would suggest that the positive effect of female income share should be higher for high income couples as the women are expected to be more skilled.

4. Previous Research

This is a study about fertility and household economics in Sweden. The main lines of research within the areas have gone around the impact of changing gender roles, the increasing participation of women in education and the labor force (Stanfors, 2003), the allocation of time (Dribe and Stanfors, 2009), and the impact of social policies promoting compatibility between work and family, particularly the use of childcare facilities and parental leave benefits.

Policy changes have followed and in some cases even promote social changes. Since 1971, income taxation in Sweden is based on the individuals instead of households, which tends to promote married women participation in the labor force. The institutional system made it possible for women to combine work and family. Compatibility of family and work was also enhanced by rules concerning leave days for childcare and the right to take part time jobs. Dribe and Stanfors (2008) have shown that the relationship between employment and childbearing has become increasingly positive, while education has become less a negative factor for women.

Despite the gender neutral design of the parental leave system, and the political incentives put in place to promote equality, most of childrearing tasks are still taken by women (Sundström and Duvander, 2007; Meyer 2007; Duvander, Lappegård and Andersson, 2010), but the participation of fathers is high by international standards and has been increasing. Some of the changes are quite recent. According to Dribe and Stanfors (2008), at the beginning of the 1990s, parenthood had no effect on the time men spent in paid work, but it was an important negative impact for women. A decade later, both mothers and fathers reduce their time in paid work after parenthood, even though the effect is still larger for women. Swedish fathers are increasingly undertaking a larger share of caring, while women have been taking a greater involvement in labor market, including postponement of motherhood and reducing intervals between births (Dribe and Stanfors, 2008).

The role of childcare facilities has been studied by Andersson, Duvander and Hank (2004). They found that regional variations in childcare characteristics are not affecting continued childbearing, which they consider may be the result of a high average standard.

5. Data and Methods

We have register-based information covering the all individuals in the birth cohorts 1942 to 1989 who resided in Sweden at any time from 1968 onwards, as it is provided by Statistics Sweden.

For this study we have taken two main samples which are both divided in subsamples as well. All samples only consider couples in which both members were born in Sweden. The first sample follows 502,402 married couples in their first partnership from 1968 to 1989. The second one is a sample of

516,240 heterosexual couples (married or cohabiting without being formally married) who are in their first partnership, over twenty years from 1990 to 2009.

The reason to split the population in two is based on the availability of data. From 1990 onwards the Swedish population registers record non-marital cohabitation when there are common children. Information on non-marital cohabitation is scarce prior to that date and hence it is not possible to construct a consistent sample covering the whole period of study. All other variables except for partnership are equally defined in both samples.

Our intention is to run discrete probability models to test the association between female income share and continued childbearing. These models should be run across different social strata to test whether the association is dependent on the relative income of the household or not. Another issue that may deserve checking is the possible difference between married and cohabiting couples, which can be tested only after 1990.

To contrast the hypotheses we basically need to test the following:

- If the relationship is linear
- If the relationship is independent of social status
- If the relationship is associated with fathers uptake of parental leave

6. References

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