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Women and Socioeconomic Change

Maria Stanfors, *Education, Labor Force Participation and Changing Fertility Patterns. A Study of Women and Socioeconomic Change in Twentieth Century Sweden*, Diss, Lund Studies in Economic History 22, Almqvist & Wiksell International, Stockholm 2003. 285 p.

The title of Maria Stanfors' doctoral thesis clearly states her mission to study three things: *Education, Labor Force Participation and Changing Fertility Patterns* in twentieth century Sweden. There is already a large literature on these three variables and their possible interrelationships. We know that fertility has declined, and that both women's labor force participation and educational level have risen. But, despite the many scholars who have worked on these issues, we still don't have a clear understanding of the connections. The problem is that we can tell a number of plausible stories about how the three variables are causally related. The result is too often a muddle in which everything causes everything else.

Stanfors' way of getting out of the muddle is a detailed story of changing women's behavior in Sweden in the twentieth century. The distinguishing features of her study are:

- (1) A balanced and insightful review of the relevant theoretical literature. While she clearly favors explanations that see women as rational decision makers, she considers and incorporates insights from structural, institutional, and feminist theories.
- (2) Careful empirical analyses of the models she develops from her reading of the theoretical literature. Her empirical work makes use of a number of data sources and demonstrates her facility with a variety of econometric techniques.
- (3) A clear setting of the analyses within the particular circumstances of Swedish economic history, especially the dramatic changes in economic structure and government policy that affected the opportunities presented to, and the incentives faced by, Swedes at various points in the twentieth century. She pays special attention to the decades in which changes were most profound – the 1920s, 1940s, 1960s, 1970s, and 1990s.

Half of the thesis is devoted to analyzing Swedish fertility in the twentieth century. The variable analyzed is the Total Fertility Rate (TFR), which is a synthetic measure that computes the number of children a group of women would have if they experienced the age-specific fertility rates relevant to a particular point in time. TFR has the advantage of not being affected by changes in the number of women of childbearing age. The pattern of the Total Fertility Rate in twentieth

century Sweden tells a dramatic story. The beginning of the century saw the last portion of the fertility part of the demographic transition – that secular decline in both birth rates and death rates that has accompanied modern economic growth in all societies lucky enough to undergo the transformation we often call modernization. The fertility transition in Sweden began in the late 19th century and was completed by the 1920s or 1930s.

After the demographic transition was accomplished, Swedish fertility history was characterized by a series of sharply marked cycles. It is this cyclical variation that is the focus of Stanfors' work. There were three distinct periods of high fertility, or baby booms – in the mid 1940s, mid 1960s and late 1980s, and one, or maybe two baby busts – in the 1970s and early 1980s and in the 1990s. Stanfors takes two approaches to explaining this fertility variation.

The first approach is a straightforwardly economic one. In Chapter 3, she develops a model of demand for children and estimates it using time series data. Her model is adapted from the New Home Economics approach in which the key variables are measures of the price of children (especially women's earnings and labor force participation) and income. The predictions are that higher women's wages (and/or higher labor force participation) cause reduced fertility whereas higher family income, generally proxied by men's earnings, causes lower fertility. These are the well-known substitution and income effects which have opposite signs.

Stanfors also considers, and adds to her model, variables suggested by the fertility model developed by Richard Easterlin. In the Easterlin relative income hypothesis model the variable of interest is the economic situation of people in their childbearing years relative to their aspirations. The operational variables of the Easterlin model are measures of relative cohort sizes. The model predicts that members of small birth cohorts have high relative incomes and respond with earlier marriage and higher fertility and that members of large cohorts have a difficult time as young adults and consequently lower fertility.

The model that Stanfors estimates includes both New Home Economic variables (relative female to male wage and a measure of male income) and Easterlin variables (cohort size). She finds that the relative wage has a large negative effect on fertility. She also finds that cohort size has the predicted sign but dismisses the variable because it is not statistically significant at what she considers an acceptable level. The model also includes two variables designed to measure the health of the economy and the vivacity of the labor market (job vacancies and investment ratio). The results demonstrate that good economic times make babies.

Later in Chapter 3, Stanfors breaks her time series at 1975, based on econometric tests for structural change. She then estimates the fertility model separately for the two periods. This exercise yields a particularly interesting result.

Before 1975, the effect of women's wages on fertility was negative. As predicted by the New Home Economics model, higher women's wages raised the price of children and led to lower fertility, that is, the substitution effect outweighed the income effect. But, after 1975, the relationship between women's wages and fertility reversed. Higher women's earnings were associated with higher fertility. Stanfors reasons that in modern Sweden, where women's wages are a large part of family income, the income effect now dominates the substitution effect. To this story she adds explanations that emphasize government policy. These include individual tax filing which reduces the effective tax rate on married women's earnings and welfare state provisions (e.g. allowances, leaves, and subsidies) that lower the price of children.

Stanfors' second approach to explaining fertility variation is presented in Chapter 4 where she takes a cohort approach and pays particular attention to age-specific fertility and differences by educational level. This is important because even though there was dramatic variation in period TFRs, there was little change in the completed fertility of successive cohorts of Swedish women after the two-child norm was established. Different cohorts changed their age pattern of fertility – sometime concentrating fertility within a few years at fairly young ages and sometimes postponing fertility to higher ages depending on economic, social, and political circumstances.

Chapter 4 also includes a fascinating discussion of occupational segregation and the effect of government policies on increasing female labor force participation while creating a "mommy track" that allowed women to combine employment with childcare responsibilities. Stanfors presents data showing that beginning in the late 1960s and the 1970s, the proportion of Swedish women in the labor force increased but their hours fell. Some of this was related to part time work, but the biggest cause was much higher absenteeism by women, especially mothers. Adjustments in family policy changed both the number and kinds of jobs women had and the possibilities for combining work and family life. The family policy that began developing in 1974 provided for leaves to take care of new children and sick family members. This policy, in the absence of substantial change in the sexual division of labor at home, made it easier for women to be employed but be absent from work to take care of family responsibilities. At the same time, state provision of health care, childcare, and elder care created demand for many more women workers – the so called "monetization of housework".

In Chapter 5, Stanfors turns her attention to a very specific way in which women's labor force behavior and childbearing are connected, that is part time work. She shows that although by the mid twentieth century a substantial number of women worked part time in order to combine work and family life, the extremely rapid increase in part time work began in the 1970s. Using data from Statistics Sweden, she demonstrates that there was a truly stunning increase in

part time work by Swedish women so that by the 1980s, nearly one-half of female labor force participants were employed part time. There has been a decline since then, but still over one-third of employed women are part timers.

Chapter 5 ends with an empirical analysis of the determinants of part time work by women who have recently given birth. The data come from the Swedish Family Survey of 1992/1993 and cover women born between 1949 and 1969. Stanfors runs a multinomial logit model to see which variables predict whether new mothers (15 months after childbirth) were working part time, full time, or not working for pay. She interprets her results as demonstrating the importance of changes in public policy in determining women's choices. She also finds evidence of an increasing bifurcation of employed women into two distinct groups. These are a career oriented group who worked full time before childbirth and returned to full time work afterward and a second group who are less career oriented and are more likely to be part timers.

Chapter 6 complements the earlier discussion of occupational segregation by examining educational segregation. Stanfors constructs indices of segregation for all levels of education and finds high levels of segregation throughout. So, even though Swedish women have surpassed Swedish men in their overall level of educational attainment, they are still disproportionately represented in those fields of study that are traditionally regarded as appropriate for women. For example, fewer girls than boys go on to study higher levels of mathematics and science despite the fact that girls earn higher grades than boys in these subjects.

Stanfors offers a number of explanations for the persistence of the high degree of educational segregation. Fundamentally she argues that girls and women make rational educational choices based on the characteristics of the labor market they experience. In many periods, demand for labor in traditional female jobs has expanded rapidly, and these jobs imposed fewer punishments on someone who wanted the flexibility to combine work and family. Women making educational choices see the highly segregated occupational structure and may expect to suffer discrimination if they make non-traditional choices.

Still, despite the continued high degree of educational and occupational segregation, Stanfors presents compelling evidence that more women are choosing to educate themselves for careers that have traditionally been held by men. In 1998/1999, women were 59 percent of first year law students and 56 percent of first year medical students. But, technology fields and engineering are almost as male dominated as ever.

The last chapter of the thesis is an interesting study of the age at which young Swedes leave the parental home. It is not as directly concerned with the issues of fertility, labor force participation and education as the other chapters, but there is a connection because most people make the residential transition to adulthood in the context of taking a job, attending school, or setting up an independent

household perhaps with a spouse or partner. There are gender differences in leaving home. Young women leave the parental home about one year earlier, and this difference has persisted for some time.

Stanfors searches for reasons for the gender difference in leaving home and, at the same time, demonstrates her facility with another econometric technique by estimating a proportional hazards model which is the appropriate tool for estimating transition probabilities. Her results do not show that family income or mother's employment predicts when children leave home. The clearest results are that children of divorce and children in large families leave home earlier. Where she finds gender differences, Stanfors speculates that a cause is the greater demand by parents for household services from daughters makes it less attractive for girls to remain in the parental nest.

Education, Labor Force Participation and Changing Fertility Patterns is a fine doctoral thesis that makes an important contribution to twentieth century Swedish economic history and demonstrates that Maria Stanfors is well prepared to continue to make important contributions in the future. She takes on big questions and advances our knowledge about their answers. The careful and sensitive explication of the relevant literature demonstrates her command of the material. She shows both a deep respect for and a healthy skepticism about theoretical models – using them but not being limited by them. She has found various data sources appropriate to the questions asked and displays facility with a variety of econometric techniques. She knows the institutions and the history within which the relationships she investigates evolve, and she writes in clear, straightforward prose. Like any valuable work in economic history it is both good economics and good history.

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