

Chapter 12

EDUCATION AND COMPLETED FERTILITY IN NORWAY

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1. INTRODUCTION

Increased education levels and decreased overall fertility seems to be an empirical regularity in most OECD countries (Council of Europe, 2001; OECD, 2001a). Micro-based studies in various other countries as well also report a negative relationship between women's education and fertility (see for instance, Gardner, 1973; Rindfuss et al., 1980; Schultz, 1993; and Weinberger et al., 1989). One explanation for the negative correlation between education and fertility is the time-use and opportunity costs. Economic theory acknowledges the importance of parental time, especially the mother's time in the upbringing of children (see for instance, Becker, 1965; Schultz, 1973, Gronau, 1973). The trade-off between fertility and labour market work is an important and widely accepted economic explanation of the observed negative association between women's education and total fertility. An increase in the education increases the wages and employment opportunities of a woman, inducing substitution out of time intensive activities such as children (see Moffitt, 1984; Birdsall, 1988; Becker, 1991; Schultz, 1993; Bloemen and Kalwij, 2001). Economists have estimated strong negative effects of women's wages on fertility (see for instance, Heckman and Walker, 1990b; Merrigan and St.-Pierre, 1998).

The Scandinavian countries have not experienced the same dramatic drop in total fertility over the last decades as compared to most other OECD countries. At the same time, female labour force participation and average education levels are high in Scandinavia. Some recent empirical studies using Scandinavian data suggest a positive association between education and third birth of married women, given that they already have got two children (see Hoem and Hoem, 1989; Kravdal, 1992; Ronsen, 1998; Naz, 2000). However, the positive association between education and third birth does not imply that females' education increases completed fertility as there is evidence that the percentages of childless women and women with only a

single child are higher for those who have the longest schooling (see for instance, Lappegård, 1999). A higher proportion of childless women and women with only a single child may offset the positive association between education and third birth observed in previous studies. Therefore, to evaluate the relationship between females' education and total fertility, it is important to look at childlessness together with the total number of children given that one gets children at all.

The first objective of this chapter is to investigate the association between completed fertility and education of married women in Norway. Empirical evidence suggests that women with high education tend to marry men with even higher education (see, for instance, Winch, 1958; Vandenberg, 1972). This is referred to as positive assortative mating in the marriage market (see Becker, 1991). Assortative mating implies that the education of the husbands ought to be taken into account when measuring the association between women's education and fertility. Due to assortative mating two kinds of indirect effects of females' education can take place. First, marrying a man with higher education and correspondingly higher income works as an income effect (similar to the effect of a labour-free income), which may affect fertility positively. Empirical studies verify the positive association between husbands' income and fertility (see for instance; Heckman and Walker, 1990a, 1990b; Merrigan and St.-Pierre, 1998). Second, assortative mating may also affect fertility through specialisation. The literature on household economics suggests that a large part of the gains from marriage stem from specialisation between husband and wife: the husband specialises in the labour market while the wife is specialising in household production.¹ There is ample evidence for specialisation within the household. Married men work longer hours in the market and have substantially higher wages than unmarried men. Moreover, married women have lower wages and work more at home than unmarried women (see Gronau, 1986; Daniel, 1992; Korenman and Neumark, 1992). We may also expect that increased husband's education implies more specialisation within the family, leading to a reduction of the opportunity cost of bearing children for women. We first estimate the gross effect of females' education on fertility. Thereafter, we decompose this effect into a "husband effect" and a "net effect".

In Western countries child bearing is not confined to marriage, but rates of fertility within marriage is higher than those outside the marriage. The opportunity cost of children may be different for married and unmarried women. Thus, the second objective of this chapter is to analyse and discuss the difference in completed fertility for married and unmarried women.² The fact that married women get more children than unmarried ones needs no further explanation. We find that education is positively correlated with fertility for married women but negatively for unmarried ones, and this is perhaps more of a puzzle. We argue that in Scandinavia both married and unmarried women are to a large extent insured against what can be called direct costs of giving birth (e.g. costs of medical care, day-care subsidies, public schooling), while they are not insured against more indirect losses, for instance against foregone career opportunities, or the less tangible emotional costs. Single women can be expected to suffer a larger career loss from childbirths as compared with married or cohabitating women, for several reasons. First, married women may have supportive husbands, implying that for married women career and