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Differential fecundity and child custody

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ABSTRACT

Despite U.S. child custody laws favoring joint custody since the mid 1970s, mother sole custody is still the main custody arrangement. This paper proposes that differences in fecundity between men and women play a role in accounting for this fact. Men are more likely to have more children after a divorce because they are fertile for more years than women. This acts as an incentive for couples to agree on mothers' sole custody. I build a general equilibrium model of endogenous marriage, divorce and remarriage with differential fecundity between women and men where couples choose custody allocation. Custody depends on the fecundity differential and father's time spent with children. I calibrate my model to be consistent with observed U.S. child custody arrangements and marriage statistics and using changes over time in assisted reproductive technology (ART) and father's time spent with children I quantify the effect of the fecundity differential on child custody. Results show that if assisted reproductive technology was not available, the current share of couples with joint custody would be 15.67% lower. Considering that fathers' time with children has also changed over time, I find that a reduction in the fecundity differential accounts for an increase in the share of couples with joint custody of 4%.

1. Introduction

Child custody laws changed in most U.S. states in the mid 1970s towards favoring joint custody. Until then, sole custody was assigned to the mother by default upon divorce. While uptake of joint custody has increased due to the change in the law, a large number of women are still the main custodians of children. Halla (2013) reports that in 1995 on average 75% of divorced mothers were the sole custodians of children. By 2008, (Cancian et al., 2014) found for Wisconsin that the share of equal physical custody, where the child spends the same amount of time in each household, was 27%, increasing from 5% in 1994. Thus mothers are still the main carers of children after divorce. The current paper addresses the following question: To what extent can biological differences in fecundity between men and women explain the persistence in mothers' sole custody?

To provide an answer, I build a model economy of endogenous marriage across different age cohorts allowing for divorce and remarriage where parents decide whether to have joint or mother sole custody in case of divorce. When deciding on custody allocation, preferences for children are equal for men and women. However, the probability of having a new child as well as remarriage opportunities will be different across gender due to differential fecundity. Moreover, agents differ in the utility they receive from having joint custody, which is increasing in the husband's education. These factors will be taken into account when deciding child custody allocation.

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The mechanism by which fecundity differences can determine child custody allocations is the following: Men can have children for a longer time span than women. Upon divorce, they can marry a younger woman who is more likely to have children. However, being divorced with children reduces the remarriage probability as children from the previous marriage are costly for the new marriage.[1] Meanwhile, older women have a lower probability of having children which lowers the value of remarriage. Anticipating this, the couple can decide on leaving the children with the mother. This mechanism is consistent with observed marriage outcomes after divorce: Men are more likely to form new households than women (Furstenberg et al., 1983 and Manning and Smock, 2000) and they tend to remarry younger women than the first time around who are a priori more fertile (Gelissen, 2004 and Shafer, 2009).

I also consider another channel that could potentially affect child custody allocation: fathers' time spent with children. Custody is likely to reproduce the pattern of child care involvement of parents (Kelly, 1994; Kelly and Rinaman, 2003 and Cochran, 1985), thus, if fathers spent a low amount of time on child care during marriage, this would be the same after divorce, making joint custody less likely. It is also possible that fathers decide to spend more time with children during marriage knowing that it will affect their chances of getting child custody. However, modeling this decision is out of the scope of this paper. Instead, I model fathers' time investment in children in an ad-hoc way by allowing utility of joint custody to vary over couples according to the husband's education. More educated fathers spend more time with children during marriage, thus these couples get more utility under joint custody than couples with less educated men.

I calibrate my model to match U.S. data on marriages, divorces, remarriages, and the most recent data on child custody arrangements. In order to test the quantitative importance of fecundity differences I carry out two counterfactual experiments. In the first one, I consider how the emergence of assisted reproductive technology (ART) in the mid 1970s has helped reduce the natural decline of women's fecundity by age. I find that a reduction in the fecundity differential driven by ART increases the share of couples with joint custody by 15.67%. In the second experiment, I consider the effect of an increase in fathers' time spent with children on custody. Fathers' time with children was relatively constant over time and across education until the 1990s where it started to increase, in particular for more educated fathers (Ramey and Ramey, 2010). Results show that a reduction in the fecundity differential over time leads to an increase of 4% in the share of couples with joint custody when the change in fathers' time is controlled for.

The current paper can be placed within an important strand of literature where macroeconomic models are used to analyze family decisions, see Greenwood et al. (2017) for a review. In particular, it is related to papers that interact fecundity differentials and economic outcomes. Siow (1998) explores how differentials in fecundity interact with marriage, labor and financial markets to affect gender roles. He can account for several differences between women and men in labor participation, time rearing children and age of marriage among others. However, different to my paper the allocation of child custody is not considered. Díaz-Giménez and Giolito (2013) find that fecundity differentials are sufficient to account for the age distributions of ever and never married men and women, the probabilities of marrying a younger bride and a younger groom, and for the distribution of age at first birth observed in the U.S.

Moreover, the paper adds to the literature on child custody. There is research on the allocation of child custody and custody support payments in the context of optimal contracts. Weiss and Willis (1985) present a model of optimal marriage contracts in which couples decide on the allocation of resources within marriage and the terms of a settlement (transfers and child custody) in the event of divorce. Rasul (2006) and Francesconi and Muthoo (2003) present a model where spouses decide ex ante the allocation of the child in case of divorce. Exploiting time variation across U.S. states on the introduction of family laws favoring gender neutral child custody (i.e. joint custody), (Halla, 2013) studies the effects of the change in law towards joint child custody on marriage rates, divorce rates, fertility and female labor force participation.

The remainder of the paper is organized as follows. In Section 2, I introduce the model environment and the value functions and in Section 3, the equilibrium is defined. In Section 4, I present the benchmark economy. I introduce the parameters and I calibrate the model to match the U.S. data. Section 5 presents the counterfactual experiments. Finally, Section 6 concludes.

2. Environment

The economy is populated by overlapping generations of individuals who live for two periods as children and three as adults: young (age 1), middle (age 2) and old (age 3).[2] Children take no decisions. There is mass one of women and men of each generation. There are N educational types and individuals differ in their education. Let education be denoted by h where $h \in H = \{1, 2, \ldots, N\}$. Education determines productivity, which it is denoted by $x \in X = \{x_1, \ldots, x_N\}$, and $z \in Z = \{z_1, \ldots, z_N\}$, for women and men respectively. The initial distribution of single young women by educational type is given by $\Omega_1(H)$ and the distribution of single young men by educational type is given by $\Theta_1(H)$.

Marriage market There is a marriage market where matching is one to one and matches across individuals' education levels are random. Matches only occur among young and middle aged non-married adults — never married and divorced. Individuals can match across age cohorts. The probability of matching with someone from their cohort is given by the number of non-married individuals of their cohort over the number of non-married of any cohort. This is $\Omega_i/(\Omega_1 + \Omega_2)$

[1] see Cherlin and Fusternberg (1994); Coleman and Ganong (1990); White and Booth (1985).

[2] Notation is based on Aiyagari et al. (2000).