Has the Child Tax Credit Increased Fertility in the United States?

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1 Introduction

Can a government increase fertility by subsidizing families with children? This is an important policy question for countries that face very low fertility, many of which have recently adopted explicitly pronatalist policies. In the United States, fertility is not a major policy concern, and the government has never adopted a policy with the intention of inducing fertility. Even without explicit intent, however, the U.S. government provides significant monetary subsidies to families with children through the tax system. In particular, a new program, the Child Tax Credit, provides useful variation in the tax subsidy for a child that can be used to estimate the fertility response to tax breaks for children.

The tax system in the United States provides substantial preferential treatment to filers with dependent children. First, each dependent claimed on a tax return reduces taxable income via the dependent exemption. Next, the Child Care Tax Credit allows families to reduce tax liability if they spend money on child care services. The Earned Income Tax Credit (EITC) implicitly subsidizes children because families with children receive a much higher wage subsidy than those without. The birth (or adoption) of a child may also make one eligible for head-of-household filing status, which generally lowers tax liability.[1]

Finally, a newer, relatively transparent and economically significant policy is the Child Tax Credit (CTC), which took affect in 1998. At its inception, the CTC provided a credit against tax liability of up to $500 for each dependent child under the age of 17. The amount of the credit and the rules regarding refundability have fluctuated since then. In 2003, the maximum value was raised to $1000 per child, which is where it currently stands. In general, to receive the full amount of the credit, a filer must have tax liability exceeding the value of the credit, and the filer's income must not be too high.

[1] A few smaller provisions also exist. See Ellwood and Liebman (2001) for a discussion of the policies, their relative magnitude and empirical incidence.

Is this financial incentive enough to create a noticeable change in fertility? To some, $1000 may seem a small incentive. The USDA estimates that the average middle-income couple spends about $10,000 a year to raise a child (USDA 2005). Thus, as a rough estimate, a middle-income family that receives the full $1000 subsidy experiences a 10% reduction in the monetary price of raising a child. This seems large enough to have an effect, but it remains a question to be answered with data. In the balance of this paper, I seek an empirical answer to this question using microdata from the United States.

This research has direct policy implications along two dimensions. First, many nations are currently experiencing very low fertility, and governments are explicitly attempting to raise fertility with incentives similar to the CTC. The research community is divided in its opinion on whether or not these programs have an effect. Empirical analysis of the CTC contributes to our knowledge of the efficacy of fertility incentives, even though the CTC was not designed as a pronatalist policy. Second, there exists almost no research on the consequences of the CTC, which is now a very large program. It is currently larger than the Earned Income Tax Credit, with a federal outlay of $58 billion in 2005 (Steuerle and Bell 2006). Any program of that magnitude warrants the attention of researchers. It is important to know if the CTC induces a behavioral response, or if it only acts as a transfer from those without children to those with children.

2 Methodology

One line of theory regarding fertility is traced to Becker (1960). In Becker's view, children are a "good", and as such, the classical tools of microeconomics apply to the analysis of the demand for children. According to Becker, there is a price that describes the full cost, in terms of time, money and other opportunity costs, of bearing an additional child. Within this framework, it is straightforward to analyze how the Child Tax Credit might influence fertility: it directly and explicitly lowers the monetary cost associated with a child. This theoretical approach gives ground to the empirical estimation that follows.

The Child Tax Credit creates a natural experiment because some people are eligible for the credit and others are not. People who do not earn enough money to have any positive tax liability cannot receive the CTC because it is non-refundable, under most circumstances. The CTC is also not available to the those with very high income. It phases out, beginning at around $100,000 of adjusted gross income. This creates "treatment" and "control" groups based on income. Within the treatment group, the potential tax value of an additional child fluctuates over time due to changes in the value of the Child Tax Credit. This natural experiment allows a traditional "difference-in-difference" estimation process. In particular, I regress fertility in a given year on an estimate of the change in taxable income that a family would experience if they had an additional child in a

given year, plus a set of control variables.

Existing research on the influence of tax policy on the fertility in the United States suffers from several limitations. The most heavily cited work is Whittington, Alm and Peters (1990), which finds that the value of the dependent exemption is positively correlated with aggregate fertility. They rely on a time series approach that lacks a control group, making it difficult to assert a causal relationship. Baughman and Dickert-Conlin (2002) study the effect of the EITC and find mixed results, but they rely on an estimation technique that leaves little variation in the value of the EITC. The work most similar to my efforts is Milligan (2005), which analyzes a program similar to the CTC that was introduced in Quebec as part of a pronatalist political campaign.

Analysis of the CTC represents a methodological improvement over this body of research because the program provided a cleaner natural experiment. Both low and high income individuals act as a control group. With two control groups, validity tests become feasible. The CTC also provides substantial variation in the tax value of a child. Finally, unlike the policy in Canada, the CTC was not intentionally pronatalist, and it was therefore not accompanied by a set of other policies that may have influenced fertility.

3 Preliminary Results

In the first phase of empirical work, I have used the March Current Population Survey from 1990-2005 to estimate fertility and the tax value of having a child. To estimate the tax value of an additional child, I use the TAXSIM program available from the National Bureau of Economic Research. The sample of CPS data spans several changes in the Child Tax Credit.

Preliminary regression results show a strong positive relationship between fertility and tax value. For example, in a sample of married women, a $1000 increase in the tax value of having a child is associated with a 10% rise in the probability of having a child. As one would expect, the response is muted for single women without children.

These results are very preliminary. A variety of robustness checks and improvements in the imputation of tax and fertility variables from the CPS are underway. One considerable outstanding issue is the appropriate lag structure for estimation.

Nevertheless, preliminary results suggest that an empirical correlation does exist. If so, then this research stands to make an important contribution to our understanding of how the government may influence fertility, whether it intends to or not.