Fertility Response to the Tax Treatment of Children

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Abstract

This paper uses variation in the child tax subsidy implicit in US personal income taxation over time and across states to estimate the effect of a decrease in the cost of raising a child on fertility. In a sample of women age 20 to 44 from the Panel Study of Income Dynamics surveyed between 1985 and 2012, we estimate that a $1,000 increase in the child tax subsidy increases the probability of having a child in the next two years by 0.4 percent (a 2.8 percent increase). This estimated effect for the full sample is not statistically different than zero. However, there are larger, statistically significant fertility effects for low-income, married women in their 30's. The evidence suggests that not all child tax subsidy changes are equally salient as the fertility response is driven by increases to the Earned Income Tax Credit and the value of the personal exemption and not by increases to the Child Tax Credit.

JEL Codes: J13, H24

I Introduction

Since Becker (1960) many papers have explored the link between the cost of raising a child and fertility. Classical economic theory suggests that as the cost of raising a child increases, including the opportunity cost, the demand for children will decrease. Alternatively, a reduction in the cost of raising a child from a government subsidy to parents should increase the demand for children. However, there is only a very small literature that attempts to estimate the magnitude of the fertility response in the United States, with mixed findings.

As reviewed in Lopoo and Raissian (2012) there are many government programs that give implicit child subsidies in the United States, despite not having an explicit pro-natalist policy. Whittington, Alm, and Petters (1990) use child subsidy variation from changes to the personal deduction in the personal income tax to estimate the fertility elasticity and found very large and statistically significant effects.[1] Crump, Goda, and Mumford (2011) revisit this analysis by correcting model misspecification and show that the long-run effect of child tax benefits in the U.S. on fertility is much smaller, not statistically different than zero, and primarily operating through the timing of births. Baughman and Dickert-Conlin (2003) find that the the Earned Income Tax Credit (EITC) expansions in the 1990s had no statistically significant effects on fertility except for a small increase for married non-white women and a small decrease for married white women who already have children.[2]

In this paper, we use state and federal personal income tax changes to identify the fertility response to a change in the child subsidy. Our approach is to restrict the variation in the child tax subsidy to change in the state or federal tax code, holding all characteristics of the household fixed. Rather than focus on a single tax provision, like the EITC or the personal deduction as in the prior literature, we use changes to child tax subsidy resulting from

[1] They estimate that a $100 increase (in 2010 dollars) in the value of the subsidy would increase the general fertility rate by between 3 to 6 percent. Other papers use similar aggregate time-series data to estimate the effect of child tax benefits on fertility (e.g. Georgellis and Wall (1992), Zhang, Quan, and van Meerbergen (1994), Gauthier and Hatzius (1997), Huang (2002)) and generally find a positive but small effect.

[2] There is a literature that exams the fertility response to child subsidies in other countries including citeasnounLaroque:2005, Milligan (2005), Parent and Wang (2007), Cohen, Dehejia, and Romanov (2007) where the pro-natalist policy is generally explicit and thus not a good comparison for the U.S. experience.

changes in the overall tax structure. We calculate all the ways in which state and federal tax codes treat taxpayers differently depending on the number of children. This includes the EITC and personal deduction as in the prior literature, but also includes many other deductions and credits including the child tax credit and the additional child tax credit.

We find that the tax subsidy for having a child does not seem to cause a significant fertility response, but some subgroups of the US population do have a positive and economically significant fertility response to the child tax subsidy including married women in low-income households. The remainder of the paper is as follows: Section II outlines the data used in the analysis and the use of the TAXSIM model to calculate state and federal tax changes, Section III discusses the papers methodology, Section IV presents the results, and Section V concludes.

II Data

We use a sample of women from the Panel Study of Income Dynamics (PSID) surveyed from 1985 to 2011. The PSID is a longitudinal data set the began with a representative set of households in 1968 and followed these households, their descendants, and refresher samples. We restrict the sample to women between the ages of 20 and 44. We remove teenage women because they have a much lower likelihood of filing their taxes. Restricting the sample to women age 44 or less is standard in the fertility literature as there are so few women who give birth past the age of 44 due to biological factors. The PSID only included Hispanic households beginning in the early 1990s so we include only black and white women in our sample. In all, there are 52,344 observations and 7,013 individual women included in the sample.

As shows in Table 1, the women included in this sample have a 14.0% chance of having a child within two years of when they are observed in the data. Family Income is given in thousands of real dollars. About 56 percent the women in the data are married and 42

percent are black. The average woman has one child and about 80 percent of the sample is participating in the labor force.

From one year to the next, the mean change in the child tax subsidy due to changes in the tax structure is approximately $70 for the full sample and about $50 for low income women . However, it is possible for some individuals to experience negative changes in the child tax subsidy while others in the sample see changes that are substantially larger than the mean. The construction of this variable is detailed in the following section.

III Estimation Strategy

The following equation represents the main linear regression specification of the paper:

$$ChdNxt2Yr_{ist} = \beta \Delta TaxSubsidy *_{ist} + \gamma X_{ist} + \tau_t + \sigma_s + \epsilon_{ist} \quad (1)$$

Where $ChildNext2Yr_{ist}$ is an indicator for having a child in the next two years. We do not look for an immediate response to a child tax subsidy as it takes at least nine months to observe a fertility change. The lag on this response is up to two years because family units need time to respond to tax incentives and most of the response would be from observing the result of filing taxes for the previous tax year and the corresponding tax returns. X_{ist} is a vector of control variables including race, age, employment status, number of dependent children, as well as dummy variables controlling for income bins, level of education, and religion. Also included in X_{ist} is the level of tax subsidy for period $t-1$ that was calculated using the individual's observables from period t. τ_t represents year dummy variables and σ_t represents state dummy variables.

The main covariate of interest is constructed using tax liability data from the NBER TAXSIM calculator. TAXSIM calculates federal and state tax liability for every women in the sample using tax year, state, marital status, number of dependents, number of dependent children, own wage, and spouse wages. We then increase the number of dependent children

by one (and therefore the total number of dependents is also increased by one) for each women in the sample and calculate what her tax liability would be if she had an additional child. The difference between the two tax liabilities in the same tax year define the child tax subsidy in that year.

These calculations are then repeated for the next tax year, holding all characteristics constant, including state, marital status, number of dependents, number of dependent children, own wage, and spouse wage. In doing so, the only way for the tax liability in the second year to be different than the tax liability in year $t-1$ is if the state or federal tax treatment of the individual changed. We once again calculate the tax liability and child tax subsidy, this time for year t.

The difference between the child tax subsidy in year t and the child tax subsidy in year $t-1$ (assuming year t characteristics) is what will henceforth be referred to as the change in tax subsidy* (ΔTax Subsidy*) as this is not the observed value. Table 2 provides an example of these tax calculations.

IV Results

The results in Table 3 presents the fertility effects of changes in the child tax subsidy for the full sample and Table 4 produces similar results by household income. Column (1) presents the results when only our demographic controls are included in the regression. The result remains robust as we include state and year fixed effects. Column (4) presents the results of our main regression specification that was outlined in the previous section. Across specifications, there is not a statistically significant effect of tax subsidy changes on fertility. This pattern continues in Table 5 in which the sample is broken into sub-groups based on marital status, child parity, race, the age of the mother, and year of the change. For women with above median income, there is no statistically significant fertility effect regardless of specification. When the same heterogeneity is explored in Table 6, there is a positive and

statistically significant effect of increasing the child tax subsidy on fertility for women age 30-39 with below median household income as well as for women age 40-44 with above median household income. The coefficient of interest is that corresponding to the change in tax subsidy, 0.046 and 0.038 respectively, and both are statistically significant at the 5% level. As the dependent of variable of interest is an indicator for whether the individual gave birth in the two years following the change in tax subsidy, a $1000 increase in the change in tax subsidy leads to a 4.6 percentage point increase in fertility for low income women age 30-39. As presented in Table 1, about 10 percent of women in this subgroup have a child in the next two years from the time of observation. These women have an average child tax subsidy of $750 and an average change in the subsidy of $50.

Tables 7 and 8 contain the results of a falsification exercise in which the same analysis that was done in Table 6 was repeated for the two sub-groups that displayed a statistically significant fertility response. The difference in this analysis is in the method of constructing the change in tax subsidy variable. Instead of using the change in tax subsidy from $t-1$ to t keeping individual and family characteristics from t fixed, the variable used here calculates the change in tax subsidy from $t+4$ to $t+5$ while once again keeping individual and family characteristics from t fixed. The idea behind this placebo test is that state and year level changes to the structure of the tax code that affect the child tax subsidy in the future should have no effect on fertility in the period before those changes occur. We also use the characteristics from t so that previous effects of tax changes on fertility are not affecting the calculation and we are comparing families that are similar beforehand who could be observationally different by $t+4$ and $t+5$. We would not expect the tax subsidy changes of the future to influence fertility responses in the current period. The two regressions of particular interest are Table 7, Panel 1, Column (4) and Table 8, Panel 2, Column (4) as these correspond to the responsive sub-groups in Table 6. Women with below median income and age 30 to 39 pass this falsification exercise as the subsidy changes of the future no longer

have a positive fertility effect and the coefficient (-0.005) is now negative and statistically insignificant. The result for above median income women age 40-44 is not as robust as the coefficient (0.019) still has about half of the explanatory power of the corresponding value in Table 6 (0.38).

Table 9 presents the effect of the changes in the child tax subsidy over time for women ages 30-39 broken down by income group. L2ΔTaxSubsidy* and L4ΔTaxSubsidy* are the two year and four year lagged values of ΔTaxSubsidy* and the goal of this analysis is to determine how the fertility response changes over time. The results here suggest that the positive effect of the subsidy change is canceled out by a negative effect of changes two years prior. In other words, if you experience a positive subsidy change today, you are more likely to have a child in the next two years, but holding your change in tax subsidy from this period constant, if you previously received a positive shock to your child tax subsidy, you are less likely to have a child in the next two years.

Table 10 dis-aggregates the change in the subsidy into changes due to earned income tax credit changes and changes due to child tax credit changes. In this analysis, the coefficient for ΔTaxSubsidy* should be interpreted as the fertility response to a $1000 increase in the tax subsidy that is not being driven by changes in the earned income tax credit or child tax credit. The coefficients on ΔEITCSubsidyStar and ΔCTCSubsidyStar represent the fertility effects corresponding to the difference in all other changes and changes in the EITC and CTC, respectively. For the low income women ages 30-39, it seems that most of the fertility effect is being driven by changes in the EITC and all other changes except those to the child tax credit although the coefficients are not statistically significant. On the other hand, for women ages 40-45 who are above median income, the response is not being driven by changes to the EITC or the CTC, but rather, they are due to changes in the standard exemption and other areas of the tax code.

V Conclusion

Overall, the tax subsidy for having a child does not seem to have a significant fertility response, but some subgroups of the US population do have a positive and economically significant fertility response to the child tax subsidy. Specifically, women between the ages of 30 and 39 with a total family income of less than about $30,000 are most responsive to the child tax subsidy. This result is robust to falsification exercises and there does not seem to be a significant difference between subsidy changes driven by either the EITC and CTC relative to those driven by all other changes in the tax code.

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Tables

Table 1: Summary Statistics

	Full Sample		Low Income, Age 30-39	
	Mean	Std. Dev.	Mean	Std. Dev.
ChdNxt2Yr	0.14	0.35	0.10	0.30
Family Income	40,773	51,396	15,035	10,595
Tax Subsidy ($1000's)	1.19	1.11	0.75	1.03
ΔTax Subsidy* ($1000's)	0.07	0.20	0.05	0.19
Married	0.56	0.50	0.32	0.47
Labor Force Part.	0.79	0.41	0.74	0.43
No. Children	1.43	1.28	1.84	1.42
Black	0.42	0.49	0.61	0.49
High School	0.40	0.49	0.46	0.50
Some College	0.27	0.44	0.25	0.43
Bachelors+	0.20	0.40	0.08	0.28
Age 20-29	0.34	0.34	0.00	0.00
Age 30-39	0.45	0.45	1.00	0.00
Age 40-44	0.20	0.20	0.00	0.00
Observations	52,344		11,716	

Note: Data used in the analysis is from the Panel Study of Income Dynamics (PSID) surveyed from 1985 to 2011. The PSID is a longitudinal data set the began with a representative set of households in 1968 and followed these households, their descendants, and refresher samples. The sample is restricted to women between the ages of 20 and 44. The PSID only included Hispanic households beginning in the early 1990s so only black and white women are included in the sample.

Table 2: Change in Subsidy Example

	Observed		Star	
	$t-1$	t	$t-1$	t
Year	1993	1994	1993	1994
Income	13,000	14,000	14,000	14,000
Dependent Children	1	2	2	2
Tax Liability	-1328.32	1997.60	-1260.26	1997.60
Tax Liability (w/ one add. child)	-1399.56	1997.60	-1260.26	1997.60
Tax Subsidy	71.24	0	0	0
ΔTaxSubsidy	-71.24		0	

Note: The stylized example above illustrates how the main covariate of interest in this analysis, ΔTaxSubsidy*, is constructed and how it differs from the observed ΔTaxSubsidy. When calculating ΔTaxSubsidy*, on must first calculated the child tax subsidy in period t. Then the tax subsidy for $t-1$ is calculated using the individual's characteristics from period t. Thus, ΔTaxSubsidy* is the difference between these to values. Characteristics are fixed at t so that the change in the subsidy is driven by structural changes in the tax code andwe avoid overstating changes due to individual choices that are endogenous to fertility decisions.

Table 3: Fertility Effects of Tax Subsidy Changes

ChdNxt2Yr	(1)	(2)	(3)	(4)
ΔTaxSubsidy*	-0.005	-0.005	0.003	0.004
	(0.009)	(0.009)	(0.010)	(0.010)
Observations	52,344	52,344	52,344	52,344
R-squared	0.078	0.083	0.105	0.110
Used in each section:				
Demographic Controls	Y	Y	Y	Y
State FE	N	Y	N	Y
Year FE	N	N	Y	Y

Note: ChdNxt2Yr is a dummy variable that indicates whether woman, i, had a child in the two years after period t. ΔTaxSubsidy* is the difference in the child tax subsidy in period t and the subsidy in period $t-1$ using only individual characteristics from period t in both subsidy calculations. Demographic controls include total dependent children and the level of the child tax subsidy in period $t-1$ as well as dummy variables for age, income bins, race, education, labor force participation, and religion. Robust standard errors are presented in parentheses and are clustered at the state level. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.

Table 4: Fertility Effects of Tax Subsidy Changes by Income

ChdNxt2Yr	(1)	(2)	(3)	(4)
Below Median Income				
ΔTaxSubsidy*	0.004	0.005	0.007	0.008
	(0.016)	(0.016)	(0.016)	(0.016)
Observations	26,172	26,172	26,172	26,172
R-squared	0.053	0.063	0.075	0.084
Above Median Income				
ΔTaxSubsidy*	-0.004	-0.003	0.008	0.010
	(0.012)	(0.012)	(0.016)	(0.016)
Observations	26,172	26,172	26,172	26,172
R-squared	0.108	0.114	0.139	0.144
Used in each section:				
Demographic Controls	Y	Y	Y	Y
State FE	N	Y	N	Y
Year FE	N	N	Y	Y

Note: ChdNxt2Yr is a dummy variable that indicates whether woman, i, had a child in the two years after period t. ΔTaxSubsidy* is the difference in the child tax subsidy in period t and the subsidy in period $t-1$ using only individual characteristics from period t in both subsidy calculations. Demographic controls include total dependent children and the level of the child tax subsidy in period $t-1$ as well as dummy variables for age, income bins, race, education, labor force participation, and religion. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.

Table 5: Heterogeneity of Fertility Effects

	ChdNxt2Yr	Observations
Full Sample	0.004	52,344
	(0.010)	
Marital Status:		
Married	0.023	29,492
	(0.021)	
Single	0.004	36,522
	(0.010)	
Number of Children:		
No Children	0.021	15,822
	(0.015)	
One or More Children	-0.003	36,522
	(0.020)	
Race:		
Black	0.009	22,165
	(0.023)	
White	0.006	30,179
	(0.013)	
Age of Mother:		
Age 20-29	-0.001	17,924
	(0.028)	
Age 30-39	0.010	23,431
	(0.013)	
Age 40-44	0.025	10,389
	(0.015)	
Year:		
1985-1993	-0.002	20,316
	(0.014)	
1994-2003	-0.002	17,036
	(0.022)	
2004-2012	0.009	14,992
	(0.018)	

Note: All regressions include state fixed effects, year fixed effects and demographic controls. ChdNxt2Yr is a dummy variable that indicates whether woman, i, had a child in the two years after period t. ΔTaxSubsidy* is the difference in the child tax subsidy in period t and the subsidy in period $t-1$ using only individual characteristics from period t in both subsidy calculations. Demographic controls include total dependent children and the level of the child tax subsidy in period $t-1$ as well as dummy variables for age, income bins, race, education, labor force participation, and religion. Robust standard errors are presented in parentheses and are clustered at the state level. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.

Table 6: Heterogeneity of Fertility Effects by Income

ChdNxt2Yr	Below Median Income	Above Median Income	Observations
Full Sample	0.008	0.010	52,344
	(0.016)	(0.016)	
Marital Status:			
Married	0.020	0.025	29,492
	(0.028)	(0.029)	
Single	-0.016	0.005	22,852
	(0.027)	(0.015)	
Number of Children:			
No Children	0.006	0.005	15,822
	(0.024)	(0.024)	
One or More Children	0.023	-0.003	36,522
	(0.028)	(0.025)	
Race:			
Black	0.022	-0.028	22,165
	(0.045)	(0.028)	
White	-0.004	0.034	30,179
	(0.017)	(0.021)	
Age of Mother:			
Age 20-29	0.019	0.032	17,924
	(0.043)	(0.035)	
Age 30-39	0.046**	-0.008	23,431
	(0.022)	(0.022)	
Age 40-44	-0.004	0.038**	10,389
	(0.022)	(0.018)	
Year:			
1985-1993	0.006	0.009	20,316
	(0.027)	(0.019)	
1994-2003	0.015	0.035	17,036
	(0.024)	(0.031)	
2004-2012	-0.000	0.001	14,992
	(0.029)	(0.032)	

Note: All regressions include state fixed effects, year fixed effects and demographic controls. ChdNxt2Yr is a dummy variable that indicates whether woman, i, had a child in the two years after period t. ΔTaxSubsidy* is the difference in the child tax subsidy in period t and the subsidy in period $t-1$ using only individual characteristics from period t in both subsidy calculations. Demographic controls include total dependent children and the level of the child tax subsidy in period $t-1$ as well as dummy variables for age, income bins, race, education, labor force participation, and religion. Robust standard errors are presented in parentheses and are clustered at the state level. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.

Table 7: Falsification Test of Fertility Effects by Income for Women Age 30-39

ChdNxt2Yr	(1)	(2)	(3)	(4)
Below Median Income				
ΔTaxSubsidy*	0.001	0.002	-0.005	-0.005
	(0.021)	(0.022)	(0.021)	(0.022)
Observations	11,669	11,669	11,669	11,669
R-squared	0.019	0.036	0.023	0.039
Above Median Income				
ΔTaxSubsidy*	0.003	0.004	-0.005	-0.002
	(0.017)	(0.017)	(0.020)	(0.021)
Observations	11,663	11,663	11,663	11,663
R-squared	0.086	0.098	0.095	0.107
Used in each section:				
Demographic Controls	Y	Y	Y	Y
State FE	N	Y	N	Y
Year FE	N	N	Y	Y

Note: ChdNxt2Yr is a dummy variable that indicates whether woman, i, had a child in the two years after period t. ΔTaxSubsidy* is the difference in the child tax subsidy in period $t+4$ and the subsidy in period $t+3$ using only individual characteristics from period t in both subsidy calculations. Demographic controls include total dependent children and the level of the child tax subsidy in period $t-1$ as well as dummy variables for age, income bins, race, education, labor force participation, and religion. Robust standard errors are presented in parentheses and are clustered at the state level. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.

Table 8: Falsification Test of Fertility Effects by Income for Women Age 40-44

ChdNxt2Yr	(1)	(2)	(3)	(4)
Below Median Income				
ΔTaxSubsidy*	-0.006	-0.001	-0.015	-0.010
	(0.021)	(0.022)	(0.021)	(0.022)
Observations	5,188	5,188	5,188	5,188
R-squared	0.014	0.031	0.025	0.041
Above Median Income				
ΔTaxSubsidy*	-0.000	-0.001	0.018	0.019
	(0.007)	(0.007)	(0.012)	(0.012)
Observations	5,187	5,187	5,187	5,187
R-squared	0.018	0.028	0.023	0.032
Used in each section:				
Demographic Controls	Y	Y	Y	Y
State FE	N	Y	N	Y
Year FE	N	N	Y	Y

Note: ChdNxt2Yr is a dummy variable that indicates whether woman, i, had a child in the two years after period t. ΔTaxSubsidy* is the difference in the child tax subsidy in period $t+4$ and the subsidy in period $t+3$ using only individual characteristics from period t in both subsidy calculations. Demographic controls include total dependent children and the level of the child tax subsidy in period $t-1$ as well as dummy variables for age, income bins, race, education, labor force participation, and religion. Robust standard errors are presented in parentheses and are clustered at the state level. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.

Table 9: Impulse Response by Income for Women Age 30-39

ChdNxt2Yr	(1)	(2)	(3)	(4)
Below Median Income				
ΔTaxSubsidy*	0.039	0.034	0.045	0.038
	(0.030)	(0.030)	(0.033)	(0.033)
L2ΔTaxSubsidy*	-0.042	-0.041	-0.064*	-0.067*
	(0.028)	(0.029)	(0.035)	(0.036)
L4ΔTaxSubsidy*	0.011	0.011	0.023	0.019
	(0.024)	(0.024)	(0.029)	(0.029)
Observations	8,839	8,839	8,839	8,839
R-squared	0.058	0.078	0.064	0.084
Above Median Income				
ΔTaxSubsidy*	-0.003	-0.002	0.015	0.014
	(0.018)	(0.018)	(0.028)	(0.029)
L2ΔTaxSubsidy*	-0.021	-0.021	-0.053**	-0.055**
	(0.018)	(0.019)	(0.024)	(0.024)
L4ΔTaxSubsidy*	0.014	0.013	-0.022	-0.024
	(0.025)	(0.025)	(0.031)	(0.030)
Observations	8,837	8,837	8,837	8,837
R-squared	0.104	0.117	0.114	0.128
Used in each section:				
Demographic Controls	Y	Y	Y	Y
State FE	N	Y	N	Y
Year FE	N	N	Y	Y

Note: ChdNxt2Yr is a dummy variable that indicates whether woman, i, had a child in the two years after period t. ΔTaxSubsidy* is the difference in the child tax subsidy in period t and the subsidy in period $t-1$ using only individual characteristics from period t in both subsidy calculations. L2ΔTaxSubsidy* and L4ΔTaxSubsidy* are the two year and four year lagged values of ΔTaxSubsidy*. Demographic controls include total dependent children and the level of the child tax subsidy in period $t-1$ as well as dummy variables for age, income bins, race, education, labor force participation, and religion. Robust standard errors are presented in parentheses and are clustered at the state level. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.

Table 10: Fertility Effects by Income with Disaggregated Subsidy

ChdNxt2Yr	Full Sample	Age 30-39	Age 40-44
Below Median Income			
ΔTaxSubsidy*	0.002	0.040	-0.006
	(0.022)	(0.028)	(0.037)
ΔEITCSubsidyStar	0.039	0.041	0.016
	(0.029)	(0.037)	(0.060)
ΔCTCSubsidyStar	-0.077	-0.065	-0.021
	(0.047)	(0.055)	(0.050)
Observations	26,172	11,716	5,232
R-squared	0.084	0.057	0.081
Above Median Income			
ΔTaxSubsidy*	0.014	-0.001	0.037*
	(0.016)	(0.022)	(0.020)
ΔEITCSubsidyStar	-0.022	-0.080	-0.020
	(0.049)	(0.078)	(0.058)
ΔCTCSubsidyStar	-0.021	0.007	0.009
	(0.022)	(0.029)	(0.017)
Observations	20,228	11,706	9,180
R-squared	0.118	0.135	0.097

Note: In this analysis, the coefficient for ΔTaxSubsidy* should be interpreted as the fertility response to a $1000 increase in the tax subsidy that is not being driven by changes in the earned income tax credit or child tax credit. The coefficients on ΔEITCSubsidyStar and ΔCTCSubsidyStar represent the fertility effects corresponding to the difference in all other changes and changes in the EITC and CTC, respectively. Demographic controls include total dependent children and total dependent elderly relatives as well as dummy variables for age, education, labor force participation, and religion. Robust standard errors are presented in parentheses and are clustered at the state level. The symbols *, **, *** represent statistical significance at 10, 5 and 1 percent respectively.