

Children's health insurance benefit and fertility: Evidence from the State Children's Health Insurance Program

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Research highlight

Motivation

Analysis

Concluding remarks

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- Global fertility rate is on the decline.
- Policy makers are considering various avenues to address demographic shifts.
- Difference-in-difference based evaluation of the impact the State Children's Health Insurance Program (SCHIP) - on fertility rates in the United States.
- No discernible effect of SCHIP on fertility of women in the full sample.
- But significant positive impact of the program on the fertility of unmarried immigrant women.

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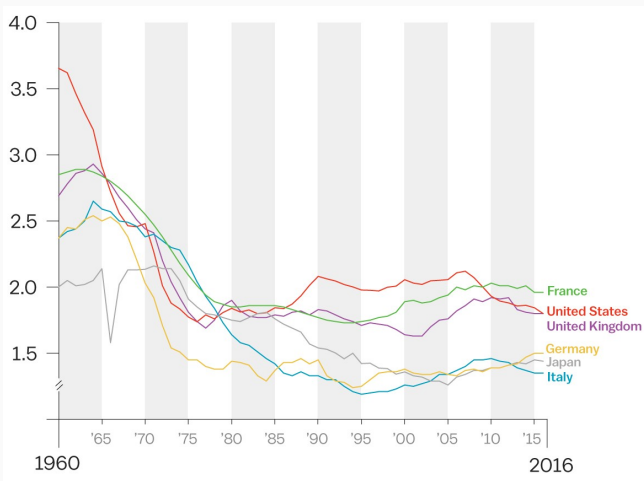
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Motivation

Declining fertility rates - International trends



The above figure is based on World Bank population data 1960-2015.

Socio-economic consequences of declining fertility

- Rapidly ageing population in many advanced economies (Katagiri, Konishi, & Ueda, 2019; *Journal of Monetary Economics*).
- Labor shortages, fiscal burden, and reduced innovations (Prettner, Bloom & Strulik, 2013; *Labour economics*; Aksoy, Basso, Smith, & Grasl, 2019; *American Economic Journal: Macroeconomics*).

Number of Countries with Government Goals for Fertility Policy

Year	Lower fertility	Maintain fertility	No intervention	Raise fertility	Number of Observations
1976	40	19	78	13	150
1986	54	16	75	19	164
1996	82	19	65	27	193
2005	78	31	47	38	194
2013	84	33	26	54	197

Source: The data is obtained from the UN World Population Policies database.

Note: The table shows the number of countries by type of policy adopted towards fertility. The data begins in 1976. Countries are categorized according to whether they had a policy to lower, maintain, or raise fertility or if they had no intervention to change fertility.

The above table has been extracted from Silva & Teneyro (2017; *Journal of Economic Perspectives*).

- Our primary objective is to test whether a large-scale public program targeted at child welfare directly influences fertility.
- SCHIP is a large public program with demonstrated (intended as well as spillover) effects:
 - Children's health insurance coverage (LoSasso & Buchmueller 2004).
 - Health outcomes (Davidoff, Kenney & Dubey 2005; Currie, Decker & Lin 2008).
 - Labour market outcomes (Tomohara & Lee 2007; Ghimire 2018).

What is SCHIP?

- Now known as CHIP.
- Benefit program - Provides health insurance coverage to uninsured children in low-income families who are not eligible for Medicaid.
- Implemented in all US states between 1997 and 2000.
- In 2016, 9.2 million individuals received insurance funded by CHIP.
- Total outlays for the program amount to approximately US\$ 15 billions in 2017.

Potential fertility implications

- Public policy and fertility: Policy interventions that aim to provide child care services tend to increase fertility (Hilgeman and Butts, 2009).
- SCHIP and health outcomes: SCHIP significantly increased insurance coverage rate among children (LoSasso and Buchmueller, 2004) and it decreased child mortality rate (Howell & Kenney 2012).
- SCHIP and fertility?: No existing evidence. Zavodny & Bitler (2010) study the effects of Medicaid expansions on fertility.

Conceptual framework

- The quantity-quality trade-off theory (Becker 1960; Becker & Lewis 1973; Becker & Tomes 1976).
- Limited parental resources: Increase in child quantity increases the marginal cost of family investments that influence child quality.
- Based on the model, large public programs that lowers children's health-related expenses may allow parents to afford to have more children, holding 'quality' constant.

Analysis

- Annual Social and Economic Supplement (ASEC) of the Current Population Survey (1997-2008).
- Women aged between 15 and 44.
- Outcome variable: Binary indicator for whether a woman has a child within last year.
- Key explanatory variable: Indicator for whether women had access to SCHIP.
- Additional covariates incorporate social and demographic information, labour market characteristics, state-specific political and macroeconomic indicators.

Identification strategy: difference-in-differences

$$Y_{ist} = \alpha + \beta_1 * (SCHIP)_{st} + X_{ist} * \gamma + Z_{st} * \delta + \eta_s + \lambda_t + \epsilon_{ist}$$

where Y_{ist} is a specific fertility measure pertaining to woman i in state s and year t ;

$SCHIP_{st}$ is state-time binary indicator for whether SCHIP is in place;

X_{ist} is a vector of woman's individual characteristics;

Z_{st} is a vector of state-level characteristics;

η_s represents state fixed effects;

λ_t denotes time-fixed effects;

β_1 represents the treatment effect of interest.

Cannot reject the null of no effect in combined, married only, and unmarried only samples.

Focusing on immigrant women

- Approximately 45 million immigrants in the US (13.7% of the total US population).
- US immigrants: Large macroeconomic, labour market, and human capital implications (Friedbergr & Hunt 1995; Peri 2016, *Journal of Economic Perspectives*).
- Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996: Implication for immigrants.
- 15 states including the District of Columbia (generous states) used state funds to include children of newly arrived immigrants in their SCHIP.

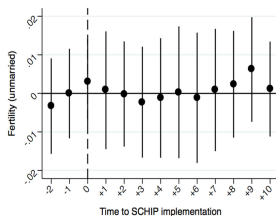
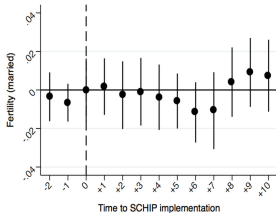
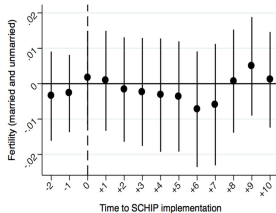
Immigrant women: Descriptive information

Summary statistics of immigrant women: ASEC Supplement of CPS 1997 to 2009

	All Immigrant women	Married	Not married
	(1)	(2)	(3)
New child	0.0701	0.0951	0.0321
Age	31.37	33.79	27.69
White	0.649	0.665	0.626
Black	0.094	0.066	0.135
Other	0.257	0.269	0.239
Hispanic	0.477	0.483	0.466
Married	0.603	-	-
Less than high school	0.317	0.290	0.357
High school	0.235	0.250	0.212
Some college	0.202	0.175	0.244
College	0.246	0.285	0.187
State unemployment rate	5.532	5.537	5.525
Governor is democrat	0.431	0.431	0.431
Survey year	2003.3	2003.4	2003.3
Number of children	1.225	1.643	0.590
Have other young children	0.0717	0.101	0.0274
Year of immigration	1990.8	1990.6	1991.0
Observations	82,862	50,829	32,033

Note: Sample includes foreign born women aged 15-44. CPS Sample weights applied.

Immigrants: Event study to check for policy endogeneity



Immigrants: results from DD

DD:	All	Married	Unmarried
SCHIP	0.0020 (0.0055)	-0.0110 (0.0082)	0.0131** (0.0051)
Observations	82,862	50,829	32,033
DDD:	All	Married	Unmarried
SCHIP	-0.0017 (0.0062)	-0.0135 (0.0097)	0.0154*** (0.0057)
Observations	532,669	257,152	275,517

Concluding remarks

Additional robustness checks & future plans

- Robustness checks
 - We ran additional analysis with women having at least one child.
 - Possibilities of outliers? Additional analyses on women aged 17-44.
 - Results hold for immigrant women.
- Use monthly CPS
 - For further data granularity.
 - Testing some additional mechanisms that can explain our findings.