

# **The effect of a negative shock to fertility preferences on subsequent childbearing, schooling, and earnings**

Kandice Kapinos, Abt Associates; Olga Yakusheva, Marquette University

## **Abstract**

The negative economic consequences of teenage fertility outcomes have been well-documented. Studies show that teen health behaviors are highly susceptible to peer influences, however, and estimating causal peer effects is challenging. This study utilizes a young woman's exposure to a friend's teen childbirth as a shock to her fertility preferences to investigate how peer effects in teen pregnancy translate into longer term effects on subsequent fertility, human capital accumulation, and labor market outcomes. Using Add Health data, we find that women who were exposed to an exogenous shock of a friend's teen childbirth were 6.2 ( $p < 0.05$ ) percentage points less likely to have a teen childbirth themselves, and that effect persisted into mid-twenties with a 7.1 ( $p < 0.05$ ) percentage point reduction in the probability of having a child. These effects were similar for Black and non-Black women, although Black women were also slightly less likely to drop out of high school.

## **Extended Abstract**

### Introduction

Teenage childbearing is associated with a host of negative economic consequences for teenage mother (Angrist and Evans 1996; Chevalier and Viitanen 2003; Levine and Painter 2003). Children born to teen mothers are more likely to have poor health outcomes, reduced educational attainment, and they are more likely to be incarcerated as adults (Martin et al 2010; Mathews and MacDorman 2010); moreover the daughters of teen mothers are more likely to become teen mothers themselves thus propagating this vicious cycle. (Manlove et al 2008; Hoffman and Scher 2008) Currently, the US has the highest rates of teenage childbearing of all developed countries (United Nations, 2010), with approximately one third of a million adolescent girls in the US will having a child before the age of 20 (Martin et al. 2010). Although most of these pregnancies are unplanned, nearly a quarter of all teen childbirths results from pregnancies that were planned. (Harrison et al. 2012)

In order to address this alarming trend, a broad spectrum of public policy interventions has been designed to reduce the rates of teen childbearing and range from redesigning welfare programs to reduce the economic benefit of childbearing (Moffitt, 1998, 2003; Kearney, 2004; Grogger and Karoly, 2005), expanding family planning services (Kearney and Levine, 2009), abortion restrictions (Joyce, Kaestner, and Colman, 2006) to teen pregnancy prevention education (Kearney and Levine, 2012). The literature suggests that less generous welfare benefits and greater access to family planning services reduce teen birth rates, but most other policy interventions seem to have little or no statistically significant impact (Moffitt, 1998, 2003; Kearney, 2004; Grogger and Karoly, 2005; Joyce, Kaestner, and Colman, 2006; Guldi, 2008; Kearney and Levine, 2012).

Policies aimed at reducing the expected economic benefit of childbearing are grounded in the classic economics models of fertility, human capital, and labor supply, which purport that an exogenous shock to childbearing preferences will result in a new utility-maximizing equilibrium characterized by reduced fertility, increased schooling, and increased labor market participation and earnings. (Becker, 1965; T. P. Schultz, 1969; Nerlove and Schultz, 1970; and Sanderson and Willis, 1971). However, the causal effect of

a change in preferences is difficult to measure empirically because fertility preferences are unobserved and endogenously determined. (Trent, 1994; Trusty, 1998) Studies show that having higher preferences for childbearing is associated with reduced educational and labor market expectations, and that much of the variation in the actual fertility, human capital, and labor market choices can be attributed to variation in these a priori expectations. (Yakusheva, 2009; Trent, 1994; Trusty, 1998) This endogeneity will bias the magnitude of the estimate of the causal effect of a change in fertility preferences upward thus overstating the effectiveness of public policies targeting childbearing preferences.

Two recent studies examine teen fertility effects of a change in childbearing preferences using arguably exogenous shocks to childbearing preferences. Using aggregate data on viewership and teen birth rates, Kearney and Levine (2014) examine the effect of a popular reality television show portraying the lives of teen mothers and find a 5.7 percentage point reduction in teen birth rates during the 18 month period following the introduction of the show. Yakusheva and Fletcher (2014) conduct an individual-level study and use the miscarriage of a close friend's pregnancy as a natural experiment; they find that exposure to teen childbearing of close friends reduces the probability of a teen childbirth by 6 percentage points. The study also shows that this reduction operates through changing a teen girl's beliefs regarding early childbearing.

Drawing upon the Yakusheva and Fletcher (2014) study, we utilize a young woman's exposure to teen childbirths of a close friends as a shock to her fertility preferences, and estimate the effect on her subsequent fertility, human capital accumulation, and labor market outcomes.

#### Method and data

We utilize close friends' miscarriages as a source of quasi-exogenous variation in exposure to friends' fertility, to account for unobserved peer selection. In essence, we limit our sample to young women whose friends either had a teen birth or miscarried a teen pregnancy and examine differences in their own fertility, human capital, and labor market outcomes into their early-to-mid-twenties.

We use the National Longitudinal Study of Adolescent Health (Add Health) survey data that is drawn from a nationally representative sample of adolescents in grades 7-12 during the 1994-1995 school year (the Core sample). Our analytic sample is restricted to female adolescents with at least one friend who reported a teenage pregnancy that ended in either miscarriage or a live childbirth ( $n = 665$ ). Women with friends whose pregnancies ended in an elective abortion were excluded. Approximately 23 percent ( $n = 152$ ) of the friends' pregnancies ended in miscarriage.

To ensure that our estimates are not confounded by friends' childbirths that occur subsequent to woman's own fertility realization, we use a dyadic approach where each observation is duplicated according to the friend count and only observations with a friend's fertility realization preceding own fertility are included. The dyadic sample has 1,176 woman-friend observations.

We use linear and multinomial logistic regressions for the woman's outcome variable (teen birth, number of children, educational achievement, employment status, and earnings) on a friend's prior childbirth (teen miscarriage is omitted), conditional on a wide set of socioeconomic, demographic, and school characteristics. Estimates are adjusted for the survey design and weighted to prevent putting undue emphasis on individuals with multiple friends or fertility events. Racial differences are examined by including interaction effects between the peer childbirth variable and race.

## Results

We find that women who were exposed to an exogenous shock of a friend's teen childbirth were 6.2 ( $p < 0.05$ ) percentage points less likely to have a teen childbirth themselves, and that effect persisted into mid-twenties with a 7.1 ( $p < 0.05$ ) percentage point reduction in the probability of having a child. While the rates of high school graduation were unaffected, exposure to the negative fertility shock was associated with a 12.9 ( $p < 0.01$ ) percentage point increase in the probability of having post-secondary education and an over two-fold increase in earnings among fully-employed women (coefficient in the log earnings regression, 1.63 ( $p < 0.10$ )). These effects were similar for Black and non-Black women, although Black women were also slightly less likely to drop out of high school and they were more likely to be fully employed by the mid-twenties as a result of exposure to the negative fertility shock.

## Conclusion

These results support the notion that policy interventions aimed at reducing the expected utility of childbirth may be an effective way of reducing the rates of teen childbearing and improving schooling and labor market outcomes of young women, especially women from underprivileged backgrounds.