CESifo WORKING PAPERS

7242
2018

September 2018

The Effects of the 2010 Affordable Care Act Dependent Care Provision on Family Structure and Public Program Participation among Young Adults

Pinka Chatterji, Xiangshi Liu, Barış Yörük

CESifo

Impressum:

CESifo Working Papers
ISSN 2364-1428 (electronic version)
Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH
The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute
Poschingerstr. 5, 81679 Munich, Germany
Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de
Editors: Clemens Fuest, Oliver Falck, Jasmin Gröschl
www.cesifo-group.org/wp

An electronic version of the paper may be downloaded
· from the SSRN website: www.SSRN.com
· from the RePEc website: www.RePEc.org
· from the CESifo website: www.CESifo-group.org/wp

CESifo *Working Paper No. 7242*
Category 3: Social Protection

The Effects of the 2010 Affordable Care Act Dependent Care Provision on Family Structure and Public Program Participation among Young Adults

Abstract

We use difference-in-difference methods and data from the 2008 Survey of Income and Program Participation to test whether the ACA dependent care provision is associated with family structure and public program participation among young adults. Findings indicate that implementation of the provision is associated with 10 and 15 percent reductions in the likelihoods of being married and cohabitating, respectively, and a 6 percent increase in the likelihood of being single. The provision is associated with a 12 percent reduction in being a single parent, as well as reductions in young adults' participation in SNAP, TANF and WIC.

JEL-Codes: I110.

Keywords: affordable care act, ACA, dependent care, health insurance, family structure, public program participation, marriage, fertility, cohabitation.

*Pinka Chatterji**
Department of Economics
University at Albany, SUNY
USA – Albany, NY 12222
pchatterji@albany.edu

Xiangshi Liu
Department of Economics
University at Albany, SUNY
USA – Albany, NY 12222
berylthy@gmail.com

Barış K. Yörük
Department of Economics
University at Albany, SUNY
USA – Albany, NY 12222
byoruk@albany.edu

*corresponding author

8/21/18

1. Introduction

Marriage is a dwindling institution in the US. In 2016, about half of US adults were currently married, compared to a rate of 72 percent in 1960, when marriage was at its peak. Among young adults, the median age of first marriage has been increasing steadily, rising from 20.3 for women and 22.8 for men in 1960, to 27.4 for women and 29.5 for men in 2016 (Parker & Stepler, 2017). Changes in marriage have been taking place against a backdrop of many other demographic shifts in US households, including rising rates of divorce, cohabitation, and non-marital childbearing, and increasing SES-related disparities in demographic outcomes (Stevenson & Wolfers, 2007; Lundberg, Pollack & Stearns, 2016; Kennedy & Fitch, 2012; Pew Research Center, 2010). These demographic trends are important to the economy for a variety of reasons, one of which being that changing demographics have important implications for public programs such as the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and the Temporary Assistance for Needy Families (TANF) program, since eligibility for these programs is based in part on family size, structure, and composition (USDA, 2018; USDHHS, 2018).

Economists have identified some of the broad sets of factors that underlie recent demographic trends, including advances in birth control, improvements in household technologies, and changes in the economic prospects of men and women, which vary by education (Goldin & Katz, 2002; Christensen, 2012; Stevenson & Wolfers, 2007; Lundberg, Pollack & Stearns, 2016). Some research has focused on estimating the effects of specific public policies in shaping demographic trends through their influence on the costs and benefits of marriage and childbirth. These policies include unilateral divorce laws, laws regarding minimum age of marriage and age of majority, the Earned Income Tax Credit (EITC), policies related to welfare, and child support/paternity establishment laws (Blau & van der Klaauw, 2013; Bitler et

al., 2004; Kaestner et al., 2003; Herbst, 2011; Blank et al., 2009; Rossin-Slater, 2017; Christensen 2012; Goldin & Katz 2002).

In this paper, we test whether a recent, national policy related to health insurance -- the 2010 Affordable Care Act dependent care provision -- may have affected young adults' family structure, as well as their participation in three public programs that have eligibility requirements related to family size and structure – WIC, SNAP, and TANF. The dependent care provision mandated that virtually all private health insurance plans that offer dependent coverage must allow young adults to stay on their parents' health insurance plans until the age of 26. An estimated 5.5 million young adults aged 19-25 years old gained insurance coverage due to the ACA dependent care provision between October 2010 and September 2015 (US DHHS, 2015). Prior studies show that, in addition to increasing insurance coverage rates, the ACA dependent care provision also expanded health care access, improved some health outcomes, and had little or no effects on labor market outcomes among young adults (Antwi, Moriya & Simon, 2013, 2015; Amuedo-Dorantes & Yaya, 2016; Colman & Dave, 2015; Bailey & Chorniy, 2016; Heim et al, forthcoming). Until recently, however, we have had little information on whether the provision has affected demographic outcomes and participation in public programs with eligibility requirements related to family structure.

The ACA dependent care provision opens up a new source of health insurance coverage for young adults who have a privately insured parent. This new availability of coverage may affect young adults' costs and benefits associated with decisions about marriage and living arrangements, as well as decisions about childbearing. This is particularly true for women, who are more likely than men to obtain private health insurance coverage by being a dependent on another person's plan (Simpson & Cohen, 2017). Through changes in family structure, the

dependent care provision also may have affected participation in safety net programs, such as TANF, SNAP, and WIC. While the ACA dependent care provision may affect demographic and safety net outcomes in this manner, the provision also may indirectly affect these outcomes through other channels such as labor market outcomes, health, and health care access.

We use difference-in-difference (DD) methods and data from the 2008 Survey of Income and Program Participation (SIPP) to test whether the ACA dependent care provision is associated with family structure and public program participation among young adults. Our findings suggest that the ACA dependent care provision is associated with 10 percent and 15 percent reductions in the likelihoods of being married and of cohabitating, respectively, among young adults. The provision is associated with a 6 percent increase in the likelihood of being single. The ACA dependent care provision reduced the likelihood that the young adult had his/her own child in the household by about 6 percent, and is associated with a 12 percent reduction in the likelihood that the young adult is a single parent. We also find that the dependent care provision is associated with reductions in SNAP, WIC, and TANF participation.

2. Background

Direct and indirect effects of the ACA dependent care provision on demographic outcomes

Economic theory developed by Becker (1973, 1976, 1991) provides insights into how public policies related to health insurance might influence demographic outcomes such as marriage, cohabitation, and childbearing. Becker (1976) proposes a framework in which individuals consider the benefits and costs of marriage when deciding whether marriage is worthwhile. Individuals marry/stay married when their utility from marriage exceeds utility gained from being/becoming single. The benefits of marriage include the gains from specialization within marriage, with (traditionally) women specializing in home production and

men specializing in market-based work (Becker 1973, 1974; Lundberg et al. 2016). Benefits of marriage also come from complementarity of spouses' time, and risk-pooling (Stevenson & Wolfers, 2007).

In our context, one benefit of marriage is the opportunity to obtain private health insurance coverage by becoming a dependent on a spouse's health insurance plan. Based on the Kaiser Family Foundation 2016 Employer Health Benefits Survey, almost all firms that offer health benefits provide coverage for spouses, although a small percentage of firms have eligibility restrictions for spouses who have an offer of coverage from another source (Kaiser Family Foundation, 2016). After the ACA dependent coverage provision became law, this benefit of marriage is likely to become less valuable for young adults who have a privately insured parent, since now young adults can obtain private insurance from a parent instead of from a spouse. For these young adults, the direct effect of the provision may be a reduction in the gains from marriage. The ACA provision therefore may reduce the incentive to marry among single adults, and increase the incentive to separate/divorce among married young adults. These effects may be stronger for women than for men, since women are more likely to be a dependent on a spouse's health insurance plan. As of 2015, among those aged 19-64 years old, 35 percent of women and 44 percent of men had private insurance through their own employer, while 24 percent of women and 16 percent of men had coverage as a dependent on another person's employer-based plan (Kaiser Family Foundation, 2016).

The direct effect of the ACA provision on cohabitation is ambiguous. Becker (1976) treats marriage and cohabitation the same way since both involve sharing a household. This assumption is not appropriate for health insurance since unmarried couples, unlike married couples, typically cannot receive employer-sponsored health insurance coverage from their

partners. The Kaiser Family Foundation 2016 Employer Health Benefits Survey indicates that among firms that offer family coverage, 27 percent offer coverage to opposite sex unmarried partners and 32 percent offer coverage to same-sex unmarried partners (Kaiser Family Foundation, 2016). Thus, it is not clear how the dependent care provision may affect rates of cohabitation. If we assume that unmarried partners cannot get health insurance from each other, the direct effect may be a reduction in cohabitation if single adults view cohabitation as a pathway to marriage, and the benefits of marriage are now lower. Co-habitation tends to be a pathway to marriage for college graduates, but it more often serves as a substitute for marriage for the less educated (Lundberg, Pollack & Stearns, 2016). On the other hand, the direct effect of the ACA provision on cohabitation may be positive if young adults who would have married for health insurance now choose to cohabit instead and stay on their parent's health insurance plan.

Prior state laws further complicate our predictions regarding the signs of these direct effects. Prior to the ACA, 37 states already had passed laws that required insurance companies to cover young adults up to varying ages, but most of these laws only applied to certain groups of young adults, typically those who were unmarried, financially dependent on parents, and/or students (NCSL, 2017). Some single or cohabiting young adults, for example, lived in states that already had prior state dependent care laws that allowed *unmarried* young adults to stay on their parents' health insurance plan until a certain age. For these single or cohabiting young adults, the ACA provision actually may increase their propensity to marry, since now they can maintain parental coverage when married. In addition, some prior state laws required young adults to live in parents' households to stay on their health insurance plans. For young adults in these states, the ACA provision may encourage both cohabitation and marriage since young adults are no longer restricted to live with their parents to maintain health insurance coverage. In general,

then, we would expect a more mixed pattern of findings for marriage and cohabitation among young adults living in states that had prior dependent coverage laws.

Becker (1991) argues that consumer theory is also useful in understanding individuals' choices about childbearing. Families determine both the quantity of children, as well as their quality (e.g. the amount of resources spent on children). Demand for children depends on their relative price as well as on family income. The quantity and quality of children interact with each other in determining the costs associated with having children. For example, holding other factors constant, an exogenous increase in child quantity (the number of children) raises the cost of child quality, because now the family must spend quality resources on a larger number of children (Becker, 1991). The higher cost of quality reduces the level of quality demanded, thus reducing the cost of child quantity and leading to a further increase in child quantity. In this way, a policy change that may be expected to lead to only a small increase in child quantity actually could lead to a larger increase in child quantity due to the interaction between quality and quantity (Becker, 1991).

The dependent care provision expands access to contraceptives and prenatal care since young adults can now obtain these services through their parents' insurance plans. Young adults may have fewer children if they have access to more effective contraceptive methods, or they may use contraceptives more, now that they have access to private health insurance. On the other hand, young adults may be induced to have more children if they now can cover their pregnancy-related health care using parent's insurance. These kinds of direct effects should be concentrated among females (Abramowitz, 2016; Heim et al., 2018). It is important to note that even relatively small effects of the dependent care provision on childbearing through access to health care ultimately could lead to sizeable effects on childbearing because of the linkage

between child quantity and quality described above. The dependent care provision also may affect marriage, cohabitation, and family structure through ACA-induced changes in labor market outcomes, educational choices, health, and living arrangements. These indirect effects could work in either direction, making the directions of the indirect effects of the ACA dependent care provision on demographic outcomes hard to predict.

The dependent care provision may indirectly affect participation in safety net programs through its effects on marriage, childbearing, family structure, and other channels. In this paper, we examine effects on three safety net programs – SNAP, WIC, and TANF – because of their size and because their eligibility requirements are linked to family size and structure. Young adults from low-income families are more likely to participate in safety net programs -- and they also are less likely to have a privately insured parent and thus be affected by the dependent care provision – compared to young adults from more advantaged backgrounds. Nevertheless, based on our analyses of 2008-2013 data from the American Community Survey, we estimate that about 41 percent of low-income, middle-aged parents (defined as householders aged 35-64 years old, living with at least one biological/step/adopted child, with an income to FPL ratio lower than 200%) are currently privately insured. This suggests that the dependent care provision is likely to affect outcomes among less advantaged young adults (at least to some extent) as well as more advantaged young adults.

Prior empirical research on health insurance policies and demographic outcomes

Only a few papers have focused on the effects of health insurance-related policies on marriage, childbearing, and family structure, and these studies have focused on Medicaid. Yelowitz (1997), for example, studies Medicaid expansions in the 1980's and 1990's. These expansions increased the income eligibility threshold for Medicaid beyond that of AFDC,

effectively removing the requirement that a child had to live in a single parent or cohabiting household to qualify for Medicaid. The findings, based on 1989-1994 data from the Current Population Survey (CPS), suggest that extending Medicaid eligibility to all children in a household increases the probability of marriage by 1.7 to 2.0 percentage points. The magnitude of the effect becomes somewhat smaller once selection into the sample through childbearing is considered, suggesting that the Medicaid expansions may have increased childbearing as well (Yelowitz, 1997).

More recently, DeLeire et al. (2011) study the same Medicaid expansions and their effects on birth rates. They use birth certificate data to measure the number of births in each state in each year, and a simulated Medicaid eligibility rate to capture the exogenous portion of changes in Medicaid eligibility within states over time. Their findings indicate that there are no robust, statistically significant associations between changes in Medicaid eligibility and fertility. Similarly, Bitler & Zavodny (2010) find little evidence that Medicaid expansions during the 1980's and 1990's are associated with overall birth rates.

The ACA dependent care provision differs from public health insurance expansions in several ways. First, the ACA provision affects a more advantaged group – young adults with a privately insured parent – while public health insurance expansions of the 1980's and 1990's primarily targeted low-income, unmarried mothers. Second, the ACA does not require plans to cover the maternity benefits of young adult dependents (Andrews, 2017; Waldrop, 2016), while Medicaid provides comprehensive coverage for prenatal care and childbirth with little or no cost-sharing. On the other hand, private insurance is often viewed as being higher quality than public insurance, and does not carry the stigma of Medicaid. Finally, the ACA dependent care provision does not cover the children of dependent young adults (grandchildren of the insurance

policy holder), while Medicaid does offer coverage to low-income children. Once young adults become dependents on their parents' health insurance plans, however, it is possible that some plans may voluntarily cover grandchildren.[1]

The ACA dependent care provision and its effects on demographic outcomes

The ACA mandated that as of September 23, 2010, all private health insurance plans must cover dependent children (including medical, behavioral and pharmacy benefits) until age 26. The federal law applies until the day before the young adult turns 26, but some plans may choose to cover young adults until the end of the month or year in which they turn 26, or until the young adult turns 27 (United Healthcare, 2010; Andrews, 2017). Young adults must receive the same level of coverage and the same price as their parents receive. Health coverage provided to a young adult through a parent's insurance is exempt from federal taxes until the young adult turns 27 for parents who have access to tax-free benefit options (IRS, 2010). The ACA provision applies to all young adults up to age 26, regardless of whether or not young adults: live with their parents; are classified as dependents on their parents' tax returns; are married; are currently in school or the military; or can access health insurance through a state exchange. Initially, the ACA dependent care provision did not cover young adults who had an offer of employer-sponsored health insurance, but, starting in 2014, even this restriction was lifted. Many insurance companies began voluntarily enrolling young adults during the time period when the ACA had been passed (March 2010), but the provision had not yet gone into effect (Goldman, 2013; CMS, 2017). Public awareness of this provision was high, with 70 percent of the public having knowledge of the provision one month after the ACA was passed (Goldman, 2013).

[1] See http://www.personalhealthinsurance.com/does-health-insurance-cover-grandchildren/ and http://time.com/money/4063510/add-grandchildren-to-health-insurance/.

Three recent papers focus on the effects of the ACA dependent care provision on marital status (Abramowitz, 2016), childbearing (Heim et al., 2018), and the role of contraception in these relationships (Abramowitz, 2017) among young adults. Abramowitz (2016) uses difference-in-difference (DD) methods and data from the 2008-2013 American Community Survey. She finds that the dependent care provision reduced the likelihood of getting married in the year prior to the survey year by .53 percentage point during the period between the passage of the ACA and the date when the dependent care provision became effective (the enactment period), and by .56 percentage point between the effective date and the end of the study period (the implementation period). The magnitudes of these effects are 8.8 and 9.3 percent decreases compared to mean marriage rates in the treatment group during the pre-policy period (Abramowitz, 2016). Abramowitz (2016) also finds that the dependent care provision is associated with increased likelihood of getting divorced during the implementation period, and a reduction in co-habitation during the enactment and implementation periods.

Heim et al. (2018) use similar methods, but they draw on panel U.S. tax data from 2008-2013, and they examine the effects of the dependent care provision on childbearing. Using US tax records, they match young adult women (aged 24-29 years old) to their parents. They are able to limit the sample to young adult females whose parents participated in a retirement plan – these parents are likely to have private health insurance coverage. Using DD methods, these authors also find that the dependent care provision reduced the likelihood of having a child by 0.5 percentage points, a 6.5 percent decrease. This effect is driven by unmarried women and women who are not attending post-secondary school.

In order to better understand the role of access to contraception as a mechanism leading from the ACA dependent care provision to fertility outcomes, Abramowitz (2018) estimates the

effect of the ACA dependent care provision not only on fertility but also on use of various kinds of contraception, women's efforts to become pregnant, and abortion. She uses DD methods and recent data from the ACS and the National Survey of Family Growth. The findings suggest that the dependent care provision is associated with a 10-12 percent reduction in the probability of having given birth in the past 12 months among women aged 20-25 years old. The pattern of results in this paper suggests that one important pathway linking the dependent care provision to fertility changes may be use of long-term hormonal contraceptives. The analysis of the NSFG data in Abramowitz (2018) suggests that the dependent care provision increased use of this type of contraceptive, and reduced abortions, which is consistent with the idea that the provision reduced fertility by expanding insurance coverage for contraceptives.

In this paper, we build on these studies by testing whether the ACA dependent care provision affected young adults' public program participation, as well as family structure. There are many recent studies on the take-up of food assistance programs, and on the effects of food assistance programs on food insecurity, and other outcomes (Gunderson et al. 2011; Hoynes & Schanzenbach, 2015; Bitler et al., 2016). We know less, however, about how nonfood policies may affect eligibility and take-up of food assistance programs (Schmidt et al., 2016). Since 2000, participation in SNAP has increased by 171 percent and the inflation-adjusted cost of the program has increased by 286 percent (Ziliak, 2016). These substantial increases are due to adverse economic conditions, but also to changes in public policies affecting the generosity of SNAP benefits and eligibility. Little is known about how public policies related to health insurance may indirectly affect SNAP; the results from this study are highly policy relevant in this regard.

In the case of WIC, understanding how the ACA dependent care provision affects participation has policy implications for the cost and size of the WIC program. In addition, this analysis has policy implications for the dependent care provision itself, which was not targeted at pregnant women and infants. As mentioned previously, the provision does not require plans to cover the maternity benefits of young adult dependents (Andrews et al., 2017; Waldrop 2016). Recent studies, however, suggests that the ACA dependent care provision is associated with a shift from Medicaid coverage to private insurance coverage of births to young adults under age 26 (Antwi et al. 2016; Daw & Sommers, 2018). Findings from our study add to this intriguing line of research, which suggests that the dependent care provision may have shifted childbirth expenses and possibly other costs as well from the public to the private sector.

Finally, the TANF program assists needy families with children. If the dependent care provision affects childbearing, it may affect TANF participation through this route. TANF eligibility is not directly linked to the marital status of the adults in the household, but eligibility can be affected by the relationship between the adults and children in the household. Eligibility rules vary by state, but, at least in some states, if parents in blended families are unmarried, the male earner's income is not included when considering income eligibility. Similarly, some states exclude a step-parent's income when determining eligibility (Moffitt et al., 2009). If the dependent care provision affects decisions about marriage and cohabitation in families with children, this route is another way in which the provision could affect TANF participation.

To our knowledge, there is no prior work on how public policies related to health insurance affect participation in food assistance and other safety net programs. This paper contributes to this broader topic of study, in addition to adding to the growing literature on the effects of the ACA dependent care provision.

3. Data

Data for this study come from the 2008 panel of the Survey of Income and Program Participation (SIPP). The SIPP is a longitudinal, nationally-representative household survey which includes extensive information on household composition, economic outcomes, health insurance, demographics, and participation in government programs. The entire sample is interviewed every 4 months, which is called a wave. Most SIPP questions involve asking the respondent to report information for every month of the four months prior to the interview month (termed "reference months") (SIPP Users' Guide, Chapter 2). Thus, person-month information is available for the entire study period for many variables which are important for this study, such as program participation. The 2008 SIPP panel includes more than 50,000 households.

During the first wave of the 2008 SIPP, the interviewer attempts to collect information for all household members 15 years old or older. After the first wave, the household roster is updated to include any new members. One household member, usually the owner or renter of the residence, is considered the reference person for the household. The SIPP keeps track of the relationships of all other individuals in the household to the reference person (SIPP Users' Guide, Chapter 2). This is particularly useful for this study since it allows us to determine whether a young adult is living with a spouse or an unmarried partner. Also, we can pair young adults with their biological, step and adoptive children, and examine young adults' family structures. The SIPP compiles a complete roster of all people living or staying in the sampled household; any individual who is a usual resident in the household is considered a household member. Notably, the SIPP continues to follow household members aged 15 and older if they move away from the household, and collects data on all eligible members of the movers' new

households as well (SIPP Users' Guide, Chapter 2). Thus, young adults and their biological children can be matched even if they are not living together in the current month.

In this study, we draw on data from the 2008 SIPP core survey. The 2008 SIPP included 16 waves, with the first wave starting in May 2008 and the last wave ending in November 2013. Depending on the wave and the rotation group, some information collected is based on reference months prior to the enactment of the ACA, while other information is based on reference months after the ACA was passed. We pool data from all 16 waves of 2008 SIPP panel. The analysis is conducted at the person-month level. Our analysis sample includes 2008 SIPP respondents aged 23-30 years old at the time of the interview, excluding 26-year-olds (N = 439,783 person-months observations; 20,625 individuals). Respondents aged 26 at the time of the interview are excluded since for these respondents, insurance companies vary in terms of when the dependent is considered to have aged out of the coverage.

To capture marital status, we use binary indicators of the following, all of which pertain to the current month: (1) whether or not the young adult is married; (2) whether or not the young adult is divorced or separated; (3) whether or not the young adult is living with an unmarried partner (cohabiting) and has never been married; and (4) whether or not the young adult is single (never married and not living with an unmarried partner).[2] We use the following binary measures to capture family structure: (5) whether or not the young adult is living with at least one own child in the household; and (6) whether or not the young adult is a single parent (residing with at least one own child, and not married or living with an unmarried partner).

To measure safety net program participation, we created three binary indicators of whether the young adult is: (7) covered by food stamps (SNAP); (8) covered by WIC; and (9)

[2] In the SIPP 2008 Panel, only opposite-sex marriages are included as married. For consistency across measures, we only consider heterosexual cohabitation as cohabitation. Including respondents living with a same sex partner does not change our findings. These results are available upon request.

covered by TANF. SNAP provides food assistance based on household size and resources, income, employment and immigration status (USDA, 2017a). WIC is a nutritional assistance program for low-income, pregnant, postpartum, and breastfeeding women and children up to age 5 who meet income eligibility guidelines and are considered to be at nutritional risk (USDA, 2017b). For both programs, income eligibility is based on the household's income and size; thus, parental income would affect eligibility for young adults living at home. In the SIPP, information was collected on whether women aged 15 to 45 with at least one child under age 5 received WIC benefits during the reference period; if they did, information was collected on whether they received WIC in each month of the reference period. Information was collected on whether all SIPP respondents 18 years old and over received Food Stamps during the reference period, and, if so, whether they received it in every month of the reference period.

Table 1 shows weighted sample means for the analysis sample. In the sample, about 36 percent of observations are married, 5 percent are divorced/separated, 10 percent lived with an unmarried partner, 55 percent are single, and 35 percent lived with at least one of their own children in the household. Participation in SNAP, TANF and WIC were about 14, 1 and 4 percent respectively.

4. Methods

We use a DD approach to examine the effect of the ACA dependent care provision on young adults' family structure and program participation. The treatment group is comprised of young adults aged 23-25 – these individuals are covered by the ACA dependent care provision. The comparison group is comprised of young adults aged 27-30 years old – these young adults are not covered by the ACA dependent care provision since they are older than 26 years old. In sensitivity checks, we experiment with broader and narrower treatment and comparison groups.

Following Antwi et al. (2012), we divide the post policy period into two parts: the first part, the "enactment period (Post_ACA1)", approximately represents the time period between when the ACA was passed (March 2010) and when the dependent care provision became effective (September 2010); the second part, the "implementation period (Post_ACA2)", represents the time period between when the dependent care provision became effective (October 2010) and the end of our data (November 2013). During the enactment period (Post_ACA1), even though the dependent care provision had not yet become effective, many insurance companies had started to enroll young adults in anticipation of the policy change.

We estimate the following general specification:

$$Outcome_{ijt} = \beta_0 + \beta_1\ Age23\text{-}25_{ij} + \beta_2 Post\_ACA1_t + \beta_3 Post\_ACA2_t + \beta_4 Age23\text{-}25_{ij} * Post\_ACA1_t$$
$$\beta_5 Age23\text{-}25_{ij} * Post\_ACA2_t + \alpha' State_j + \lambda' Month_t * Year_t + \delta' X_{ijt} + \gamma' Y_{jt} + \omega' State_j * t + u_{ijt} \quad (1)$$

The analysis is conducted at the person-month level, and the analysis samples are limited to young adults who are either in the treatment group or the comparison group. Data used in the study span the time period from May 2008 to November 2013. The pre period spans May 2008 to February 2010, the enactment period (Post_ACA1) spans March 2010 to September 2010, and the implementation period (Post_ACA2) spans October 2010 to November 2013.

The dependent variable in Equation (1) is an outcome measure for young adult i, living in state j, in month t. On the right hand side of Equation 1, the model includes an indicator for whether the young adult is aged 23-25 years old (Age23-25); an indicator for whether the SIPP interview took place in a month in which the ACA has passed but the dependent care provision was not yet in effect (Post_ACA1, an indicator for March 2010 to September 2010); an indicator for whether the SIPP interview took place in a month in which the ACA dependent care provision was in effect (Post_ACA2, an indicator for October 2010 to November 2013);

interaction terms between Age23_25 and each of the two Post_ACA indicators ($Age23\text{-}25_{ij}$* $Post\_ACA1_t$ and $Age23\text{-}25_{ij}$* $Post\_ACA2_t$); state fixed effects ($State_j$); interview month by interview year fixed effects ($Month_t$ * $Year_t$); a vector of characteristics of the young adults ($X_{ijt,}$) and state time-varying characteristics (Y_{jt}).

The state fixed effects are included to capture time-invariant characteristics of states, while the interview month by year fixed effects are included to capture time-varying events that affect all young adults' outcomes. The vector of young adult characteristics includes dummy indicators for female (male as the baseline), age, and indicators for race/ethnicity (African-American, Latino and Asian with non-Latino white as the baseline). The state time-varying characteristic is the age-specific state-specific unemployment rate for the age groups 16-20, 21-25 or 26-30 (depending on the young adult's age).[3] We also include state-specific linear time trends in all models, which capture unmeasured state-level, time-varying factors.

The estimated coefficients of greatest interest in Equation (1) are β_4 and $\beta_{5,}$ which are the DD estimates of the effect of the ACA dependent care provision on outcomes among young adults. The DD estimates capture the pre-post policy change in outcomes among young adults targeted by the policy change, differencing out the same pre-post policy change in outcomes among young adults slightly older/younger and thus not targeted by the policy, and adjusting for other potentially confounding characteristics and trends. Although our dependent variables are binary, we estimate Equation 1 using linear probability models (LPM) with survey weights to

[3] We calculated these unemployment rates using the American Community Survey (ACS) for the age groups age 16-20, age 21-25 and age 26-30. Using age-specific state-specific unemployment rates addresses the possibility that unmeasured trends specific to certain age groups within young adults may confound our findings. Estimating the models with state monthly unemployment rates instead of age-specific yearly state unemployment rates did not appreciably affect the findings.

make interpretation of interaction terms straight-forward (Karaca-Mandic et al., 2012).[4] In the main findings, we estimate robust standard errors accounting for clustering on age, since the treatment group classification is based on age. As a sensitivity check, we also cluster on age/year, but we prefer to cluster on age only in the main findings (a more conservative approach) since it is likely that regressors and errors in a single age category may be correlated across years (Cameron & Miller, 2015). Clustering on age yields seven clusters. Cameron & Miller (2015) point out that when the number of clusters is small, the critical values used for hypothesis testing should be based on a *t*-distribution with degrees of freedom equal to the number of clusters minus l. Thus, the critical values used for our hypothesis testing are based on a *t*-distribution with 6 degrees of freedom (Barbaresco et al., 2015). Since there remains a risk of over-rejection of the null hypothesis, even with this adjustment, we also implement the wild cluster bootstrapping approach proposed by Cameron & Miller (2015) as a sensitivity check.

The DD model is based on the assumption that trends in outcomes among young adults aged 23-25 would have been similar to those of young adults aged 27-30 if the ACA policy had not been enacted. Figures 1-4 shows trends in the marital status outcome variables before and after passage of the ACA. In Figure 1, we see that although the levels are quite different, trends in the percentage of young adults who are married look very similar before the passage of the ACA in March 2010. Between March 2010 (when the ACA was passed) and October 2010 (when the young adult provision went into effect), there appears to be a slight decrease in the likelihood of marriage among 23-25 year olds vs. 27-30 year olds. This downward trend appears to accelerate after October 2010 among 23-25 year olds, while the rate of marriage among 27-30 year olds stays stable after October 2010. This figure is consistent with Figure 2, which shows

[4] We use the person weight variable called "wpfinwgt." This is the appropriate weight to use in our case because we are essentially stacking a set of weighted cross-sections of data from the 2008 SIPP panel.

that the trend in being single appears parallel between the 23-25 year old and 27-30 year old groups prior to the passage of the ACA, but after the ACA was passed, the rate of being single increases among the 23-25 year old group relative to the 27-30 year old group. This visual evidence suggests that the ACA induced young adults to stay single, although we caution that other factors may confound these relationships.

Figure 3 shows a murky pattern for trends in cohabitation. There is more volatility, and there appears to be a sharp downward trend in cohabitation among 23-25 year olds vs. 27-30 year olds prior to the passage of the ACA. After the passage of the ACA, there is a further, sharp downward trend among the 23-25 year olds vs. the 27-30 year olds but the rates bounce around in both groups after the dependent care provision went into effect after October 2010. It is hard to draw any conclusions from this graph. In Figure 4, there is no obvious differing trend in divorce/separation before and after the ACA was passed in the treatment vs. comparison groups.

In Figure 5, the trend in having a child in the household is flat in both age groups before the passage of the ACA, and then there is a sharp downward trend among the 23-25 year olds vs. the 27-30 year olds between March 2010 and October 2010. After October 2010, the rates appear to stabilize in both groups. On the other hand, the trend in being a single parent is volatile both before and after the ACA was passed (Figure 6). Figures 7-9 show trends in SNAP, TANF and WIC participation. SNAP participation is similar in the treatment and comparison groups prior to the passage of the ACA, but participation seems to accelerate more quickly in the comparison group vs. the treatment group after the ACA is passed (Figure 7). Trends in TANF and WIC participation are volatile because the sample sizes grow small on a quarter by quarter basis (Figures 8-9).

While the common trends assumption that underlies the DD method cannot be tested directly, we can test whether trends in outcomes differed between the treatment group (23-25 year olds) vs. the comparison group (27-30 year olds) before the ACA policy went into effect. To do so, we limit the samples to the pre-policy period and estimate a version of Equation 1 that includes an interaction term between a linear time trend and Age23_25 (the interaction terms between age group and the post-policy period are not included since the model does not include data from the post-policy period). Appendix Table 1 shows these findings – the interaction term is not statistically significant in any of the models. Overall, the figures and Appendix Table 1 provide us with some confidence in the assumption of similar trends between 23-25 year olds and the comparison group, 27-30 year olds, in the absence of the policy change.

5. Results

Table 2 shows DD results for the marriage and cohabitation outcomes. The dependent care provision is not associated with the probability of being married during the enactment period, but it is associated with a statistically significant, 2.4 percentage point reduction in the likelihood a young adult is currently married during the implementation period. The magnitude of this effect is a about a 9 percent reduction in marriage measured at the treatment group pre-policy mean of .258. This finding is similar to the 9 percent reduction in marriage reported by Abramowitz (2016), but she finds effects in both the enactment and implementation time periods. The dependent care provision is not associated with being divorced or separated, but it is associated with 1.7-2.0 percentage point reductions in cohabitation, which represent about 16 and 18 percent reductions at the treatment group pre-policy mean of .109. The results in Table 2 also indicate that the dependent care provision is associated with a 3.4 percentage point and a 4.6 percentage point increased likelihood of being single during the enactment and implementation

periods, respectively. These effects correspond to 6 and 8 percent increases at the pre-policy treatment group mean of 0.596.

Table 3 shows findings from models of family structure. Implementation of the provision is associated with a 1.6 percentage point decline in having at least one own child in the household, which is a 6 percent decline at the sample treatment group pre-period mean of 0.258. Although our measure in the SIPP is not refined enough to capture having a new birth, the magnitude of this effect is very close to what Heim et al. (2018) report for the effect of the dependent care provision on having a new child. The implementation of the dependent care provision is associated with a 1.0 percentage point decline in the probability that the young adult is a single parent, which is a 14 percent reduction at the sample treatment group pre-period mean of 0.071. This effect on being a single parent may operate through the provision's effects on marriage patterns, childbearing patterns, or both.

Finally, in Table 4, we test whether the dependent care provision is associated with participation in the safety net programs SNAP, TANF and WIC. We find statistically significant, negative associations between the dependent care provision and participation in all three of these programs during the implementation period of the policy. Relative to the pre-policy period treatment group mean, the implementation of the dependent care provision reduces participation in SNAP by 15 percent, participation in participation in TANF by 25 percent, and participation in WIC by 27 percent. These large magnitudes suggest that while some effects on public program participation may operate through changes in marital status and childbearing induced by the dependent care provision, other indirect pathways are likely to play a role, such as changes in labor market outcomes and living arrangements induced by the dependent care provision.

We conducted a number of sensitivity checks of the main findings. The results from these checks are shown in Appendix Tables 2-4. These checks included: (1) dropping respondents from states with prior state laws covering young adults over age 26 (Panel A); (2) dropping respondents from states with prior state laws that required young adults to live with a parent to obtain dependent coverage (Panel B); (3) estimating un-weighted models (Panel C); (4) using broader treatment and comparison groups (age 19-25 vs. age 27-33) (Panel D); (5) using narrower treatment and comparison groups (age 24-25 vs. age 27-29) (Panel E); and (6) clustering standard errors by age-year instead of by age (Panel F). In Appendix Table 5, we also show findings based on wild cluster bootstrapping of the standard errors. In general, for most sensitivity checks, the overall pattern of findings persists, and in many cases, becomes stronger in terms of statistical significance. One exception is sensitivity checks based on more narrow definitions of the treatment and comparison groups – in some cases, these findings become smaller in magnitude.

6. Discussion and Conclusions

The ACA dependent care provision was intended to address a persistent public policy and public health problem – the high rate of un-insurance among young adults. Since young adults now can get access to dependent health insurance from their parents, not just from a spouse, the dependent care provision can affect demographic outcomes such as marital status and cohabitation, and can impact safety net programs whose eligibility is based in part on family size, composition and structure. The results of this paper indicate that the provision is associated with decreased likelihood that young adults get married or live with an unmarried partner, and an increased probability of being single. We also find that the dependent care provision is associated with a reduction in the probability of having one's own child living in the household,

which is likely to indicate reductions in childbearing. Moreover, the provision is associated with a decrease in probability of single parenting and decreased use of safety net programs among young adults. We cannot directly test whether the ACA dependent care provision discourages childbearing, since we do not have detailed information about fertility or pregnancy history.

References

Abramowitz, J. (2016). "Saying, "I Don't": The Effect of the Affordable Care Act Young Adult Provision on Marriage." Journal of Human Resources 51:933-960.

Abramowitz, J. (2018). "Planning Parenthood: The Affordable Care Act Young Adult Provision and Pathways to Fertility." Journal of Population Economics 31(4): 1097-1123.

Ameudo-Dorantes, C & Yaya, M.E. "The impact of the ACA's extension of coverage to dependents on young adults' access to care and prescription drugs." Southern Economic Journal 83(1): 25-44.

Andrews, M. (August 6, 2012). "Parents' insurance covers children up to age 26 — but not for pregnancy." Washington Post. Available at: https://www.washingtonpost.com/national/health-science/parents-insurance-covers-children-up-to-age-26--but-not-for-pregnancy/2012/08/06/2b59f160-6a2c-11e1-acc6-32fefc7ccd67_story.html?utm_term=.48a81e996790. Accessed 2/17.

Antwi, Y.A., Ma, J. Simon, K. & Carroll, A. (2016). "Dependent coverage under the ACA and Medicaid coverage for childbirth." The New England Journal of Medicine, January 14, 2016.

Antwi, Y.A., Moriya, A.S. & Simon, K. (2013). "Effects of federal policy to insure young adults: evidence from the 2010 Affordable Care Act's dependent coverage mandate." American Economic Journal: Economic Policy 2013; 5: 1-28.

Akosa Antwi, Yaa & Moriya, Asako S. & Simon, Kosali I., (2015). "Access to health insurance and the use of inpatient medical care: Evidence from the Affordable Care Act young adult mandate," Journal of Health Economics, vol. 39(C), pages 171-187.

Bailey, J. & Chorniy, A. (2016). "Employer-provided health insurance and job mobility: Did the Affordable Care Act reduce job lock?" Contemporary Economic Policy 34(1): 173-183.

Barbaresco, S., Courtemache, C. & Qi, Y. (2015). "Impacts of the Affordable Care Act's dependent care provision on health-related outcomes among young adults." Journal of Health Economics 40: 54-68.

Becker, G.S. (1991) *A Treatise on the Family*. Harvard University Press: Cambridge, MA.

Becker, G.S. (1973). A theory of marriage: Part I. Journal of Political Economy 81(4): 813-846.

Becker, G.S. (1974). A theory of marriage: Part II. Journal of Political Economy 82(2 Part 2): S11-S26.

Becker, G.S. (1976). *The Economic Approach to Human Behavior*. The University of Chicago Press, Chicago IL.

Bitler 2016

Bitler, M.P & Zavondy, M. (2010). "The effect of Medicaid eligibility expansions on fertility." *Social Science and Medicine* 71(5): 918-924.

Blank R.M., Charles, K.K. & Sallee, J.M. (2009). "A cautionary tale about the use of administrative data: Evidence from age of marriage laws." *AEJ: Applied Economics*; 1:2: 128-149.

Blau, D.M. & van der Klaauw, W. (2013). "What determines family structure?" *Economic Inquiry* 51(1): 579-604.

Cameron, A.C. & Miller, D.L. (2015). "A practitioner's guide to cluster-robust inference." *Journal of Human Resources*, *50*: 317-370.

Christensen, F. (2012). "The pill and partnerships: the impact of the birth control pill on contraception." *Journal of Population Economics* 25:29-52.

Colman, G. & Dave, D. (November 2015). "It's about time: Effects of the Affordable Care Act dependent care mandate on time use." National Bureau of Economic Research Working Paper 21725.

Center for Medicare and Medicaid Services (CMS). "Young adults and the affordable care act: Protecting young adults and eliminating burdens on families and business." Accessed 2/17.

Daw, J.R. & Sommers, B.D. (2018). Association of the Affordable Care Act dependent coverage provision with prenatal care use and birth outcomes. JAMA 319(6): 579-587.

DHHS, https://www.benefits.gov/benefits/benefit-details/613, Accessed 8/2018.

Deleire T., Lopoo L.M. & Simon, K.I. (2011). "Medicaid expansions and fertility in the United States." *Demography* 48(2): 725-47.

Goldin, C. & Katz, L.F. (2002). "The power of the pill: Oral contraceptives and women's career and marriage decisions." *Journal of Political Economy* 110(4): 730-770.

Goldman, T.R. (2013). "Progress report: The Affordable Care Act's extended dependent coverage provision." Health Affairs Blog, November 30, 2016.

Gruber, J. & Madrian, B.C. (March 2002) Health insurance, labor supply, and job mobility: A critical review of the literature. NBER Working Paper 8817.

Gundersen, C., Smeeding, T.M. & Ziliak, J.P. (Eds.) Stanford University Press: Stanford, CA, 2016, pp. 18-48.

Heim, B, Lurie, I. & Simon, K. (August 2018). The impact of the Affordable Care Act young adult provision on childbearing: Evidence from tax data. *Demography* 55*:* 1233-1243.

Heim, Bradley T., Ithai Z. Lurie, and Kosali Simon. (Forthcoming). "Did the Affordable Care Act Young Adult Provision Affect Labor Market Outcomes: Analysis Using Tax Data." *Industrial and Labor Relations Review*.

Herbst, C.M. (2011). "The impact of the EITC on marriage and divorce: Evidence from flow data." *Population Research and Policv Review* 30: 101-128.

Holohan, J & Kenney, G. (June 2008). Health insurance coverage of young adults: Issues and broader considerations. The Urban Institute, Timely Analysis of Immediate Health Policy Issues.

Hoynes & Schanzenbach 2015

Internal Revenue Service (IRS) (April 27, 2010). "Tax-free employer-provided health coverage now available for children under age 27." www.irs.gov, Accessed 2/17.

Kaiser Family Foundation, 2016

Kaestner et al. 2003

Karaca-Mandic, P., Norton, E., & Dowd, B. (2012). Interaction terms in nonlinear models. Health Services Research 47(1): 255-274.

Kennedy, S. & Fitch, C.A. (2012). "Measuring cohabitation and family structure in the United States: Assessing the impact of new data from the Current Population Survey." *Demography* 49(4): 1479-1498.

Lundberg S., Pollack, R.A. & Stearns, J. (2016). "Family inequality: Diverging patterns in marriage, cohabitation, and childbearing." *Journal of Economic Perspectives* 30(2): 79-102.

Moffitt, RA, Reville, R.T., Winkler, A.E. & Burstain, J. February 2009. "Cohabitation and marriage rules in state TANF programs." Available at: https://aspe.hhs.gov/system/files/pdf/75971/index.pdf.

National Council of State Legislatures (NCSL) (2017). http://www.ncsl.org/research/health/dependent-health-coverage-state-implementation.aspx#1

Parker, K. & Stepler, R. (2017). "A US marriage rate hovers at 50%, education gap in marital status widens." Pew Research Center. Available at: http://www.pewresearch.org/fact-tank/2017/09/14/as-u-s-marriage-rate-hovers-at-50-education-gap-in-marital-status-widens/

Pew Research Center, "The decline of marriage and the rise of new families." (2010) Available at: http://pewsocialtrends.org.

Rodean, J. (September 2012). Health insurance coverage of young adults aged 19-25. 2008, 2009 and 2011. American Community Survey Briefs, Available at: https://www.census.gov/prod/2012pubs/acsbr11-11.pdf.

Rossin-Slater, M. (2017). "Signing up new fathers: Do paternity establishment initiatves increase marriage, parental investment and child wellbeing?" *AEJ: Applied Economics*, 9(2): 93-130.

Schmidt et al. 2016
Stevenson, B. & Wolfers, J. (2007). Marriage and divorce: Changes and their driving forces. *Journal of Economic Perspectives* 21(2): 27-52.

Simpson, J.L & Cohen, R.A. (January 2017). "The association of marital status and offers of employer-based health insurance for employed women aged 27-64: United States, 2014-2015." NCHS Data Brief No. 268.

SIPP Users' Guide, Chapter 2. Available at: http://www.census.gov/programs-surveys/sipp/methodology/users-guide.html. Accessed 12/2014.

Tahirih Justice Center. Understanding State Statutes on Minimum Marriage Age and Exceptions (2016) Available at: http://www.tahirih.org/pubs/understanding-state-statutes-on-minimum-marriage-age-and-exceptions/ Accessed 04/2017.

UnitedHealthcare, (September 2010), Coverage for dependents to age 26.

USDA, https://www.fns.usda.gov/, Accessed 8/2018.

US DHHS, "Health insurance coverage and the Affordable Care Act." ASPE Data Point, September 22, 2015.

Waldrop, S.A. (July 13, 2016). Who can you add to your health plan? Available at: http://www.insure.com/health-insurance/who-can-you-add-to-your-health-plan.html. Accessed 2/17.

Yelowitz, A.S. (1998) "Will extending Medicaid to two-parent families encourage marriage?" The Journal of Human Resources 33(4): 833-864.

Ziliak, J.P. "Why are so many Americans on Food Stamps? The role of the economy, policy and demographics." In SNAP Matters: How Food Stamps affect health and wellbeing. Bartfeld, J.,

Table 1: Weighted sample means			
	Analysis sample	Treatment Age 23-25	Comparison Age 27-30
Marriage & cohabitation			
Married	0.355	0.220	0.453
	(0.479)	(0.414)	(0.498)
Divorced/separated	0.051	0.028	0.067
	(0.219)	(0.164)	(0.251)
Co-habiting	0.097	0.095	0.099
	(0.296)	(0.293)	(0.299)
Single	0.545	0.683	0.444
	(0.498)	(0.465)	(0.497)
Family structure			
Living with at least one own	0.350	0.230	0.437
child	(0.477)	(0.421)	(0.495)
Single parent	0.087	0.082	0.090
	(0.281)	(0.274)	(0.287)
Public program participation			
SNAP	0.139	0.133	0.144
	(0.346)	(0.340)	(0.351)
TANF	0.009	0.009	0.008
	(0.093)	(0.095)	(0.092)
WIC (among females)	0.042	0.047	0.039
	(0.201)	(0.212)	(0.194)
	(N=225,933)	(N=93,255)	(N=132,678)
Control variables			
Age 23	0.140	0.334	
	(0.347)	(0.412)	
Age 24	0.140	0.334	
	(0.347)	(0.412)	
Age 25	0.140	0.333	
	(0.347)	(0.411)	
Age 27	0.142		0.244
	(0.349)		(0.430)
Age 28	0.147		0.253
	(0.354)		(0.435)
Age 29	0.150		0.258
	(0.357)		(0.437)
Age 30	0.142		0.245
	(0.349)		(0.430)
Female	0.501	0.499	0.503

	(0.500)	(0.500)	(0.500)
White	0.605	0.611	0.601
	(0.489)	(0.488)	(0.490)
African-American	0.127	0.130	0.124
	(0.333)	(0.337)	(0.330)
Latino	0.192	0.187	0.195
	(0.394)	(0.390)	(0.396)
Asian	0.045	0.039	0.049
	(0.297)	(0.194)	(0.215)
Other	0.032	0.033	0.031
	(0.176)	(0.178)	(0.174)
State-year unemployment rate	0.142	0.142	
for age group 21-25	(0.029)	(0.029)	
State-year unemployment rate	0.101		0.101
for age group 26-30	(0.024)		(0.204)
N individuals	20,625	11,717	12,963
N observations	439,783	184,662	255,121

Notes: Weighted sample means and standard deviations are reported.

Table 2: Marriage and Cohabitation				
	Married	Divorced/separated	Cohabiting	Single
Enactment effect	-0.005	-0.012	-0.017*	0.034***
	(0.009)	(0.008)	(0.008)	(0.007)
Implementation effect	-0.024***	-0.001	-0.020**	0.046***
	(0.006)	(0.003)	(0.007)	(0.010)
N	439783	439783	439783	439783
Pre-policy, Treatment	0.258	0.034	0.109	0.596
Pre-policy, Comparison	0.474	0.071	0.090	0.360
Post-policy 1, Treatment	0.233	0.030	0.086	0.647
Post-policy 1, Comparison	0.450	0.078	0.087	0.380
Post-policy 2, Treatment	0.196	0.024	0.079	0.698
Post-policy 2, Comparison	0.442	0.063	0.083	0.407

Notes: Table shows DD findings from a linear probability model with robust standard errors clustered on state. Table shows estimated coefficients on $Age23\text{-}25_{ij}$* $Post\_ACA1_t$ ("enactment effect") and $Age23\text{-}25_{ij}$* $Post\_ACA2_t$ ("implementation effect") from Equation 1. Full set of not shown covariates: age, gender, race/ethnicity, age-specific year-state urates, year*month fixed effect, state fixed effect and state linear trend. Row 6-11 report weighted sample means of both treatment and comparison groups for the periods before ACA enactment (May 2008-Feb 2010), after enactment but before implementation, and after implementation. The signs *, ** and ***denote statistical significance at 10, 5 and 1 percent.

Table 3: Family Structure		
	At least one own child in the HH	Single parent
Enactment effect	-0.020	-0.003
	(0.013)	(0.004)
Implementation effect	-0.016**	-0.010***
	(0.005)	(0.002)
N	439783	439783
Pre-policy, Treatment	0.258	0.071
Pre-policy, Comparison	0.453	0.058
Post-policy 1, Treatment	0.237	0.071
Post-policy 1, Comparison	0.449	0.061
Post-policy 2, Treatment	0.213	0.071
Post-policy 2, Comparison	0.426	0.068

Notes: Table shows DD findings from a linear probability model with robust standard errors clustered on state. Table shows estimated coefficients on $Age23\text{-}25_{ij}$* $Post\_ACA1_t$ ("enactment effect") and $Age23\text{-}25_{ij}$* $Post\_ACA2_t$ ("implementation effect") from Equation 1. Full set of not shown covariates: age, gender, race/ethnicity, age-specific year-state urates, year*month fixed effect, state fixed effect and state linear trend. Row 6-11 report weighted sample means of both treatment and comparison groups for the periods before ACA enactment (May 2008-Feb 2010), after enactment but before implementation, and after implementation. The signs *, ** and ***denote statistical significance at 10, 5 and 1 percent.

Table 4: Public Program Participation			
	SNAP	TANF	WIC
Enactment effect	-0.007	-0.003	-0.010
	(0.008)	(0.002)	(0.006)
Implementation effect	-0.017***	-0.003**	-0.007**
	(0.003)	(0.001)	(0.002)
N	439783	439783	225933
Pre-policy, Treatment	0.117	0.012	0.026
Pre-policy, Comparison	0.118	0.010	0.019
Post-policy 1, Treatment	0.133	0.009	0.021
Post-policy 1, Comparison	0.142	0.010	0.021
Post-policy 2, Treatment	0.142	0.008	0.023
Post-policy 2, Comparison	0.158	0.008	0.020

Notes: Table shows DD findings from a linear probability model with robust standard errors clustered on state. Table shows estimated coefficients on $Age23\text{-}25_{ij}$* $Post\_ACA1_t$ ("enactment effect") and $Age23\text{-}25_{ij}$* $Post\_ACA2_t$ ("implementation effect") from Equation 1. Full set of not shown covariates: age, gender, race/ethnicity, age-specific year-state urates, year*month fixed effect, state fixed effect and state linear trend. Row 6-11 report weighted sample means of both treatment and comparison groups for the periods before ACA enactment (May 2008-Feb 2010), after enactment but before implementation, and after implementation. The signs *, ** and ***denote statistical significance at 10, 5 and 1 percent.

Figure 5: Percentage of Young Adults Living with at Least One Own Child

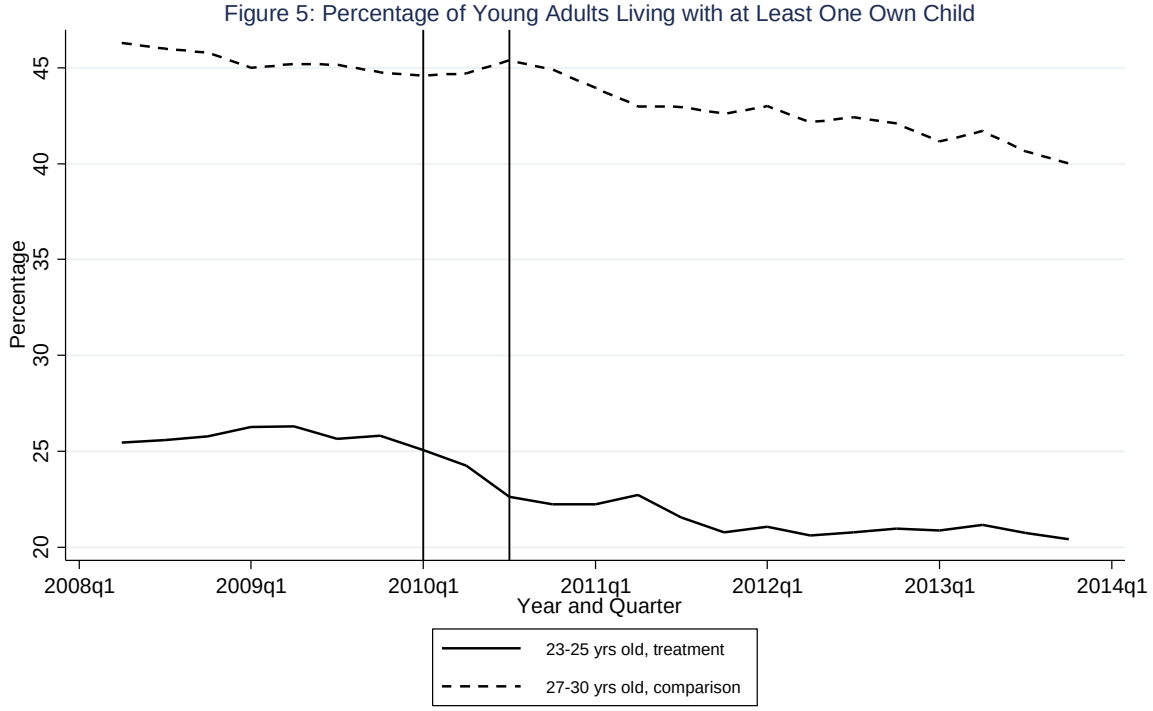
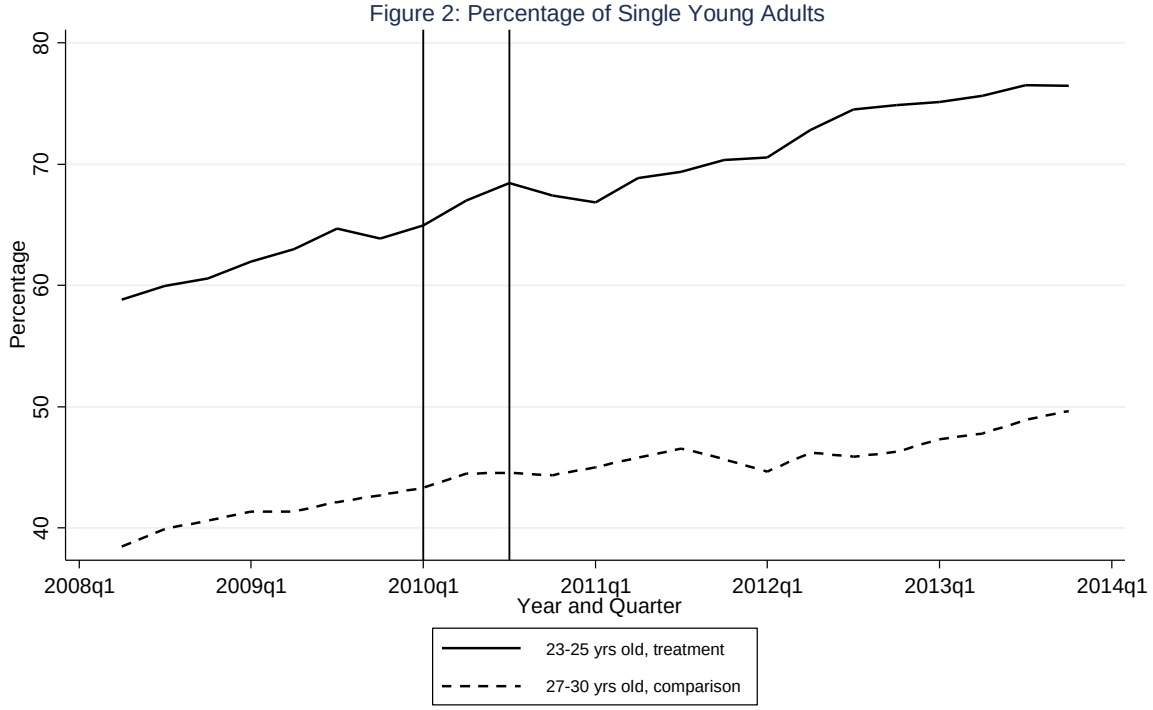


Figure 2: Percentage of Single Young Adults



Notes: Sample weighted estimates from 2008 SIPP panel, using data from May 2008 to November 2013. The first vertical line indicates the first quarter of 2010 when the ACA was passed, and the second vertical lineindicates the third quarter of 2010 when the dependent coverage mandate was implemented. The estimate for a quarter averages reported as of the three interview months contained in that quarter.

Figure 3: Percentage of Never-married Young Adults Living with Unmarried Partner

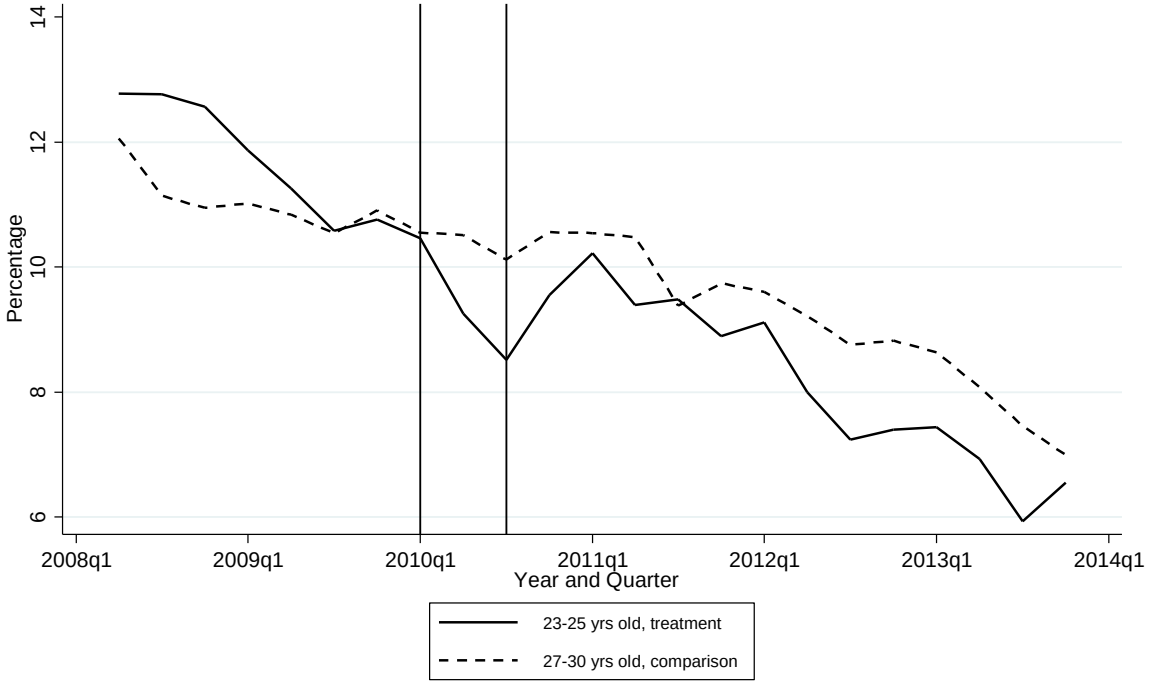
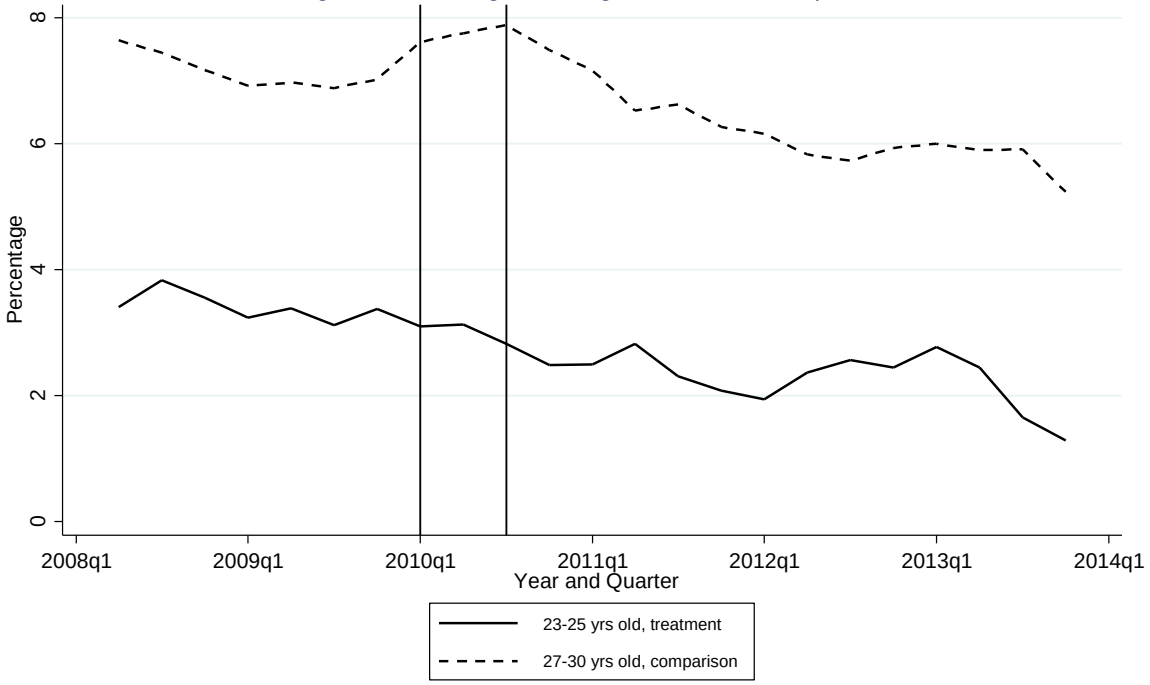


Figure 4: Percentage of Young Adults Divorced/Separated



Notes: Sample weighted estimates from 2008 SIPP panel, using data from May 2008 to November 2013. The first vertical line indicates the first quarter of 2010 when the ACA was passed, and the second vertical lineindicates the third quarter of 2010 when the dependent coverage mandate was implemented. The estimate for a quarter averages reported as of the three interview months contained in that quarter.

Figure 5: Percentage of Young Adults Living with at Least One Own Child

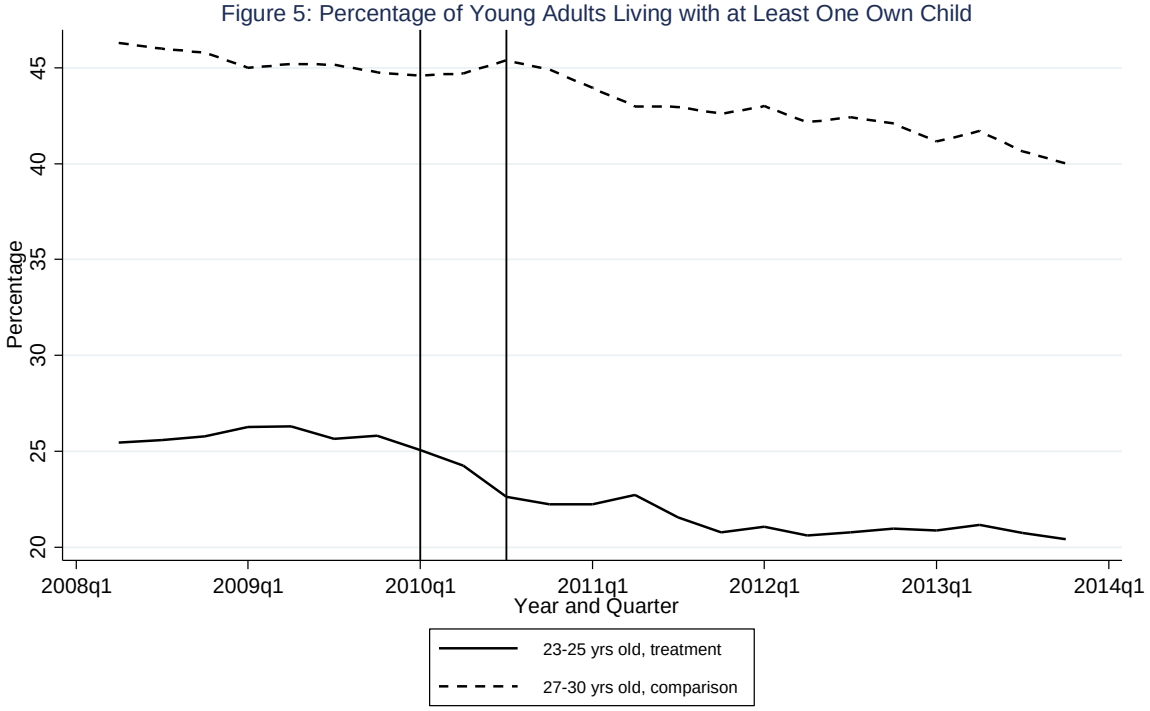
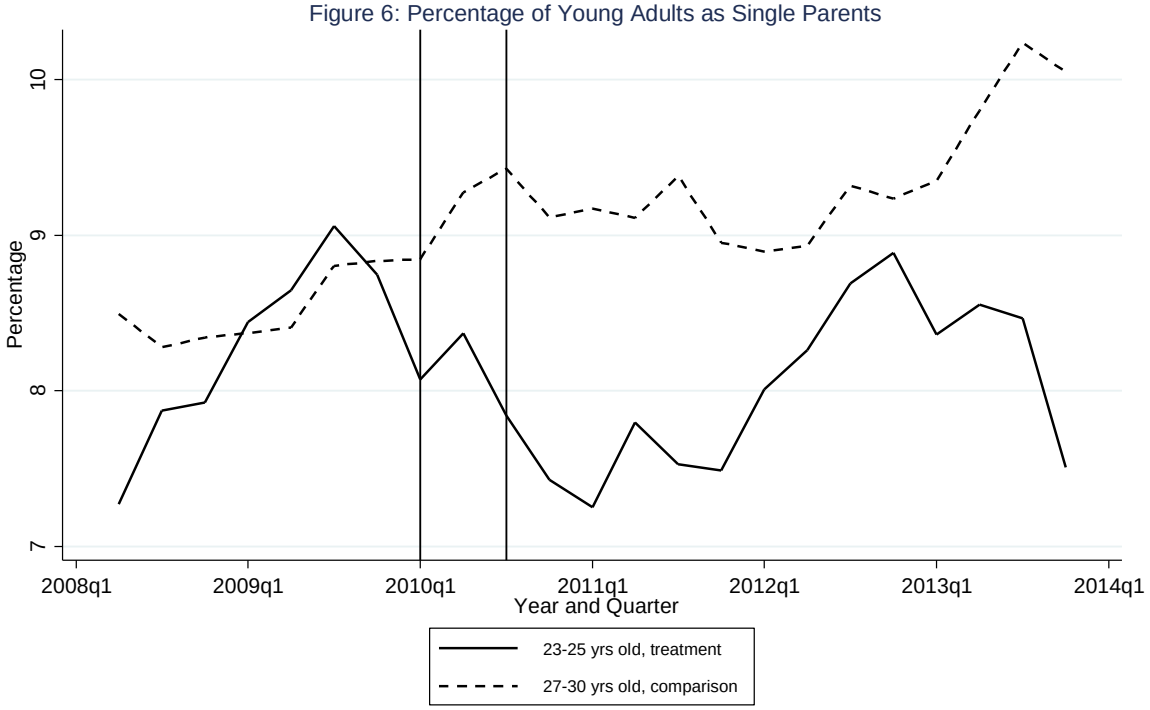


Figure 6: Percentage of Young Adults as Single Parents



Notes: Sample weighted estimates from 2008 SIPP panel, using data from May 2008 to November 2013. The first vertical line indicates the first quarter of 2010 when the ACA was passed, and the second vertical lineindicates the third quarter of 2010 when the dependent coverage mandate was implemented. The estimate for a quarter averages reported as of the three interview months contained in that quarter.

Figure 7: Percentage of Young Adults Covered by SNAP

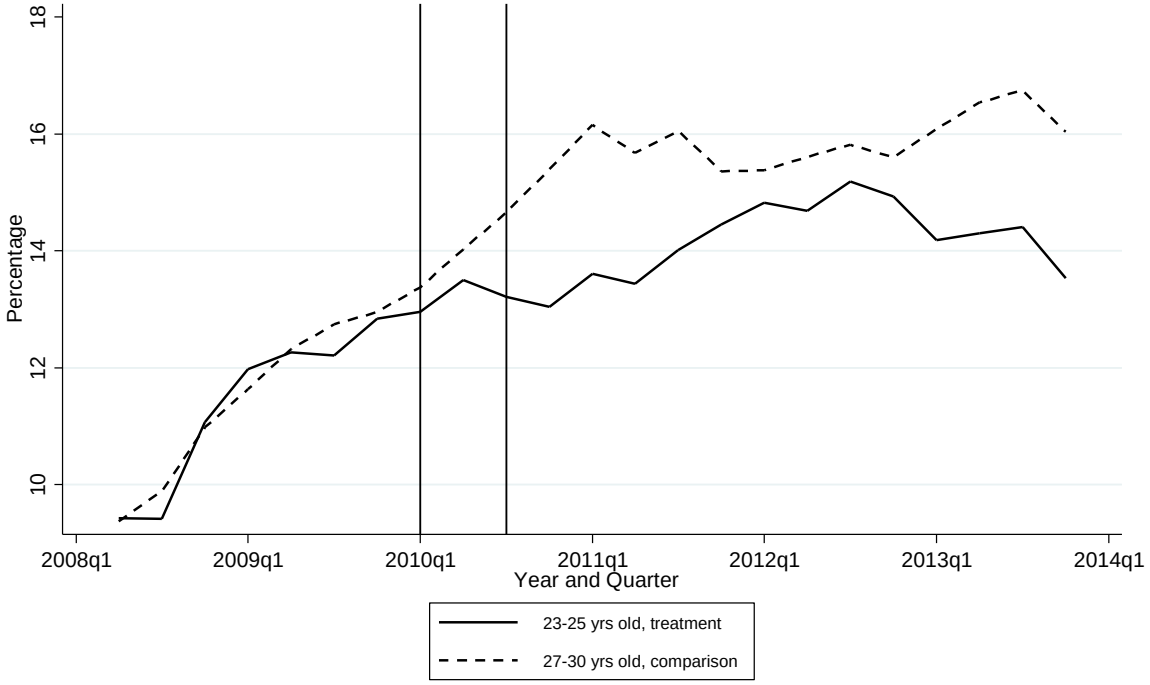
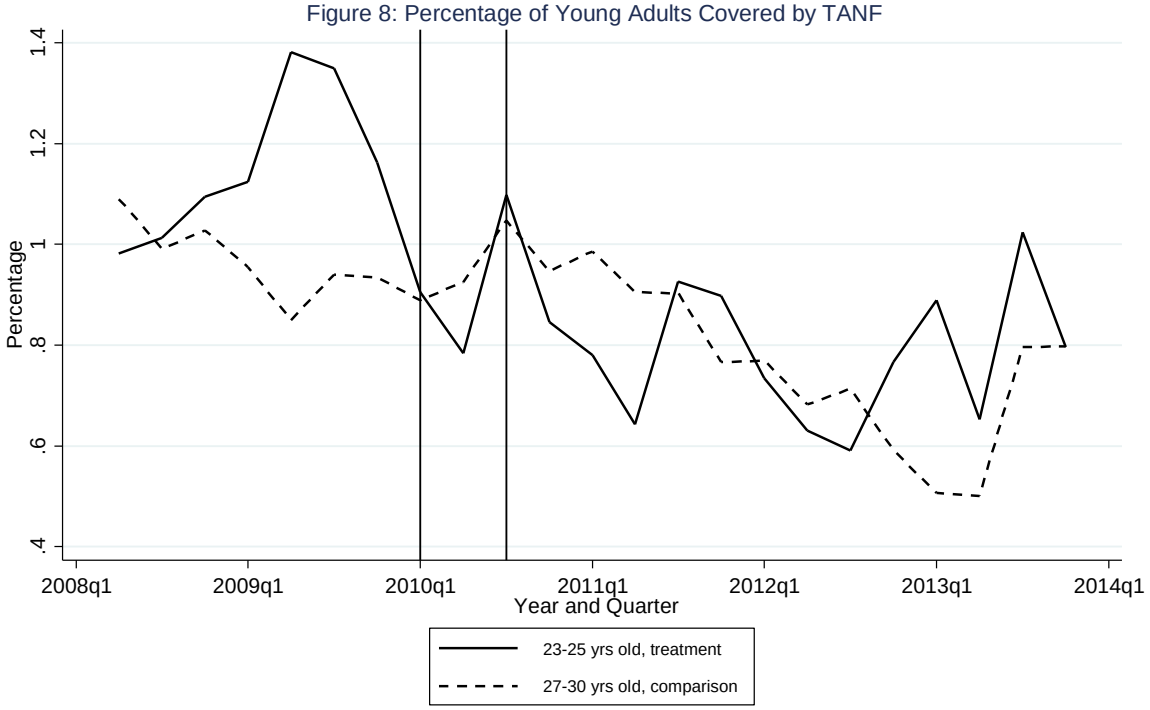
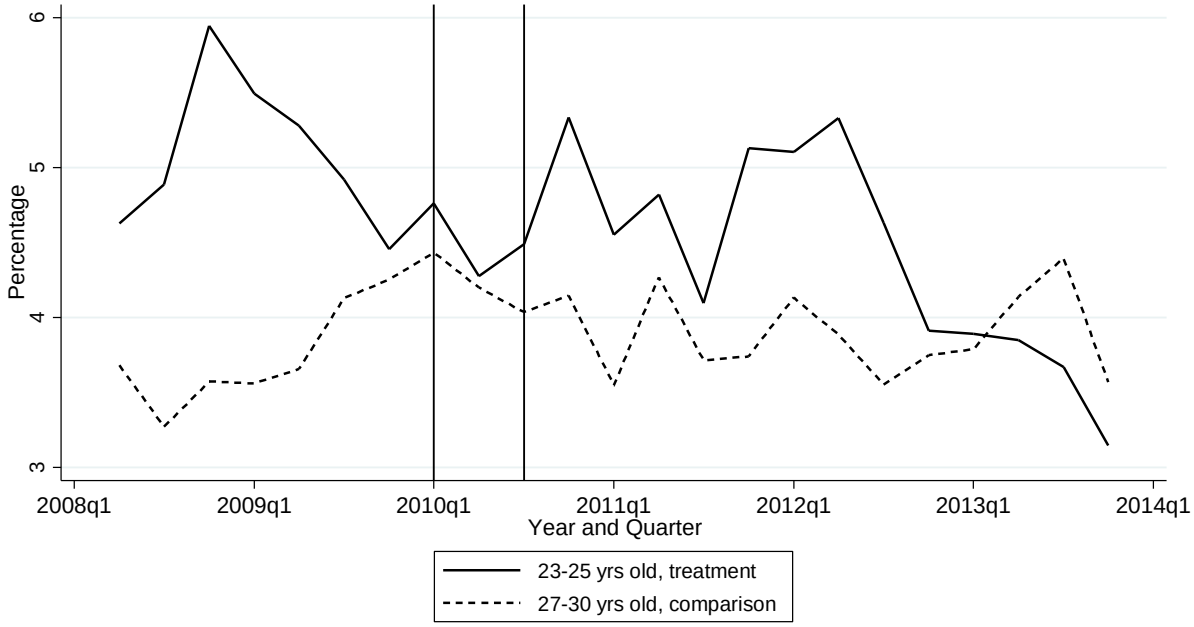


Figure 8: Percentage of Young Adults Covered by TANF



Notes: Sample weighted estimates from 2008 SIPP panel, using data from May 2008 to November 2013. The first vertical line indicates the first quarter of 2010 when the ACA was passed, and the second vertical lineindicates the third quarter of 2010 when the dependent coverage mandate was implemented. The estimate for a quarter averages reported as of the three interview months contained in that quarter.

Figure 9: Percentage of Female Young Adults Covered by WIC



Notes: Sample weighted estimates from 2008 SIPP panel, using data from May 2008 to November 2013. The first vertical line indicates the first quarter of 2010 when the ACA was passed, and the second vertical line indicates the third quarter of 2010 when the dependent coverage mandate was implemented. The estimate for a quarter averages reported as of the three interview months contained in that quarter.

Appendix Table A1: Tests for differences between treatment and comparison groups in pre-policy period trends				
Panel A: Marriage and cohabitation	Married	Divorced /separated	Co-habitation	Single
Treatment*Linear trend	-0.0008	-0.0003	1.70e-08	0.0011
	(0.0008)	(0.0007)	(0.0011)	(0.0016)
N	168252	168252	168252	168252
Panel B: Family structure	At least one own child in the HH	At least one biol. child aged 0-1 in the HH	At least one biol. child older than 1 in the HH	Single parent
Treatment*Linear trend	-0.0006	-0.0018	0.0011	-0.0003
	(0.0005)	(0.0011)	(0.0007)	(0.0006)
N	168252	168252	168252	168252
Panel C: Public program	SNAP	TANF	WIC	
Treatment*Linear trend	-0.0008	-0.0003	-0.0010	
	(0.0012)	(0.0003)	(0.0006)	
N	168252	168252	87008	

Appendix Table 2: Sensitivity checks – Marriage and Cohabitation			
	Married	Co-habitation	Single
A: Drop states with prior state laws covering young adults over age 26			
Enactment effect	-0.003	-0.021*	0.035**
	(0.010)	(0.009)	(0.010)
Implementation effect	-0.030**	-0.024**	0.051***
	(0.009)	(0.008)	(0.012)
N of obs	345440	345440	345440
B: Drop states with prior state laws that had residency requirements			
Enactment effect	-0.004	-0.023**	0.034**
	(0.011)	(0.008)	(0.010)
Implementation effect	-0.020*	-0.030***	0.049***
	(0.009)	(0.006)	(0.011)
N of obs	351986	351986	351986
C: Un-weighted models			
Enactment effect	0.001	-0.016*	0.026***
	(0.010)	(0.007)	(0.005)
Implementation effect	-0.014**	-0.024***	0.038***
	(0.004)	(0.006)	(0.008)
N of obs	439783	439783	439783
D: Broader treatment group (age 19-25) and comparison group (age 27-33)			
Enactment effect	-0.009	-0.014***	0.029***
	(0.007)	(0.004)	(0.005)
Implementation effect	-0.020**	-0.022***	0.039***
	(0.009)	(0.005)	(0.011)
N of obs	908157	908157	908157
E: Narrower treatment group (age 24-25) and comparison group (age 27-29)			
Enactment effect	-0.002	-0.022*	0.031**
	(0.008)	(0.010)	(0.010)
Implementation effect	-0.017*	-0.018	0.035**
	(0.007)	(0.010)	(0.011)
N of obs	311984	311984	311984
F: Models clustered by age-year dummy			
Enactment effect	-0.004	-0.017**	0.034***
	(0.007)	(0.008)	(0.008)
Implementation effect	-0.023***	-0.020***	0.045***
	(0.007)	(0.006)	(0.008)
N of obs	439783	439783	439783

Appendix Table 3: Sensitivity check - Family structure			
	At least one own	At least one biol.	Single parent
	child in the HH	child aged 0-1 in the HH	
A: Drop states with prior state laws covering young adults over age 26			
Enactment effect	-0.018	-0.018*	0.035**
	(0.011)	(0.009)	(0.010)
Implementation effect	-0.014**	-0.022***	0.051***
	(0.004)	(0.004)	(0.012)
N of obs	345440	345440	345440
B: Drop states with prior state laws that had residency requirements			
Enactment effect	-0.022*	-0.019*	0.034**
	(0.010)	(0.008)	(0.010)
Implementation effect	-0.021***	-0.022***	0.049***
	(0.005)	(0.003)	(0.011)
N of obs	351986	351986	351986
C: Un-weighted models			
Enactment effect	-0.018*	-0.015*	0.026***
	(0.008)	(0.007)	(0.005)
Implementation effect	-0.011**	-0.021***	0.038***
	(0.004)	(0.004)	(0.008)
N of obs	439783	439783	439783
D: Broader treatment group (age 19-25) and comparison group (age 27-33)			
Enactment effect	-0.018**	-0.010*	-0.003
	(0.008)	(0.006)	(0.003)
Implementation effect	-0.020**	-0.014***	-0.011***
	(0.007)	(0.003)	(0.003)
N of obs	908157	908157	908157
E: Narrower treatment group (age 24-25) and comparison group (age 27-29)			
Enactment effect	-0.007	-0.019	0.001
	(0.016)	(0.014)	(0.005)
Implementation effect	-0.013**	-0.024**	-0.009**
	(0.005)	(0.006)	(0.003)
N of obs	311984	311984	311984
F: Models clustered by age-year dummy			
Enactment effect	-0.019*	-0.019**	-0.003
	(0.010)	(0.007)	(0.004)
Implementation effect	-0.014***	-0.021***	-0.010***
	(0.005)	(0.004)	(0.003)
N of obs	439783	439783	439783

Appendix Table 4: Sensitivity checks - Public Program Participation			
	SNAP	TANF	WIC
A: Drop states with prior state laws covering young adults over age 26			
Enactment effect	-0.009	-0.005*	-0.016**
	(0.008)	(0.002)	(0.004)
Implementation effect	-0.017***	-0.004***	-0.009***
	(0.003)	(0.001)	(0.001)
N of obs	345440	345440	177005
B: Drop states with prior state laws that had residency requirements			
Enactment effect	-0.008	-0.004*	-0.015**
	(0.007)	(0.002)	(0.005)
Implementation effect	-0.022***	-0.002*	-0.010***
	(0.003)	(0.001)	(0.001)
N of obs	351986	351986	180280
C: Un-weighted models			
Enactment effect	-0.009	-0.003	-0.010
	(0.008)	(0.002)	(0.006)
Implementation effect	-0.019***	-0.003*	-0.008***
	(0.003)	(0.001)	(0.002)
N of obs	439783	439783	225933
D: Broader treatment group (age 19-25) and comparison group (age 27-33)			
Enactment effect	-0.007	-0.003**	-0.005
	(0.005)	(0.001)	(0.004)
Implementation effect	-0.020***	-0.003***	-0.014***
	(0.004)	(0.001)	(0.002)
N of obs	908157	908157	463384
E: Narrower treatment group (age 24-25) and comparison group (age 27-29)			
Enactment effect	-0.005	-0.002	-0.012
	(0.009)	(0.003)	(0.008)
Implementation effect	-0.016***	-0.002	-0.004**
	(0.002)	(0.001)	(0.001)
N of obs	311984	311984	160230
F: Models clustered by age-year dummy			
Enactment effect	-0.007	-0.003*	-0.010**
	(0.007)	(0.002)	(0.005)
Implementation effect	-0.017***	-0.003**	-0.007**
	(0.004)	(0.001)	(0.003)
N of obs	439783	439783	225933

Appendix Table 5: Wild cluster bootstrapping (unweighted models)			
	Married	Co-habitation	Single
Enactment effect	0.001	-0.016*	0.026***
	(0.010)	(0.007)	(0.005)
	[0.822]	[0.128]	[0.000]
Implementation effect	-0.014**	-0.024***	0.038***
	(0.004)	(0.006)	(0.008)
	[0.048]	[0.002]	[0.000]
N	439783	439783	439783
	At least one own	At least one biol.	Single parent
	child in the HH	child aged 0-1 in the HH	
Enactment effect	-0.018*	-0.015*	0.026***
	(0.008)	(0.007)	(0.005)
	[0.080]	[0.162]	[0.322]
Implementation effect	-0.011**	-0.021***	0.038***
	(0.004)	(0.004)	(0.008)
	[0.052]	[0.028]	[0.042]
N	439783	439783	439783
	SNAP	TANF	WIC
Enactment effect	-0.009	-0.003	-0.010
	(0.008)	(0.002)	(0.006)
	[0.310]	[0.190]	[0.170]
Implementation effect	-0.019***	-0.003*	-0.008***
	(0.003)	(0.001)	(0.002)
	[0.002]	[0.176]	[0.002]
N	439783	439783	225933

Note: Table reproduces unweighted estimates, standard errors and asterisks shown in Appendix Table 2,3 and 4 Panel C. The p-values using an alternative approach, the wild cluster bootstrap method, are reported in the Appendix Table 3, brackets under the standard error (generated using STATA package "clustse"). Number of bootstrap replications is 1000. Models are clustered by age.