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THE EFFECT OF DISENROLLMENT FROM MEDICAID ON EMPLOYMENT, INSURANCE COVERAGE, HEALTH AND HEALTH CARE UTILIZATION

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ABSTRACT

This study examines the effect of a Medicaid disenrollment on employment, sources of health insurance coverage, health, and health care utilization of childless adults using longitudinal data from the 2004 Panel of the Survey of Income and Program Participation. From July through September 2005, TennCare, the Tennessee Medicaid program, disenrolled approximately 170,000 adults following a change in eligibility rules. Following this eligibility change, the fraction of adults in Tennessee covered by Medicaid fell by over 5 percentage points while uninsured rates increased by almost 5 percentage points relative to adults in other Southern states. There is no evidence of an increase in employment rates in Tennessee following the disenrollment. Self-reported health and access to medical care worsened as hospitalization rates, doctor visits, and dentist visits all declined while the use of free or public clinics increased. The Tennessee experience suggests that undoing the expansion of Medicaid eligibility to adults that occurred under the Affordable Care Act likely would reduce health insurance coverage, reduce health care access, and worsen health but would not lead to increases in employment.

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I. Introduction

The 2010 Affordable Care Act (ACA) led to substantial increases in the percentage of Americans with health insurance coverage. In large part, this increase was the result of an increase in Medicaid coverage (Frean et al. 2017). The ACA gave states the option of increasing Medicaid eligibility to all individuals up to 133% of the Federal Poverty Line (FPL) and states that expanded eligibility received an increased level of Federal funding for their "expansion" populations. The expansion in Medicaid eligibility under the ACA primarily affected adults and in particular adults without dependent children as these individuals were typically only eligible at low levels of income prior to the ACA.

As of July 2017, Medicaid and CHIP covered more than 74 million low-income adults and children, an increase of over 17 million since implementation of the ACA (CMS 2017) with most of this increase coming from adults. However, the Medicaid expansion under the ACA has been controversial. In 2017, several bills were debated in Congress that would have eliminated the enhanced Federal funding for expansion populations, changed the Federal funding formula to one in which states were given a per-capita allotment, and reduced the growth rate in Federal Medicaid contributions to one below the expected growth in medical spending. The combination of these changes led the Congressional Budget Office (CBO) to predict Medicaid enrollment to be reduced and eligibility among adults to be eliminated or scaled back (CBO 2017).

In this paper, I examine the effects of a contraction in adult Medicaid eligibility that occurred prior to the ACA when Tennessee discontinued its adult expansion of its Medicaid program, called TennCare, in the middle of 2005. In particular, I use the 2004 Panel of the Survey of Income and Program Participation (SIPP) to compare changes in sources of health insurance,

employment outcomes, and measures of health and health care utilization among adult residents of Tennessee relative to adult residents of other Southern states over a time period spanning the TennCare disenrollment.

I find that, following the change in rules that reduced adult Medicaid eligibility in Tennessee in 2005, the fraction of adults in Tennessee covered by Medicaid fell by over 5 percentage points and uninsured rates increased by almost 5 percentage points. The difference between these two changes is due to an increase in Medicare coverage in Tennessee (as "duals", individuals eligible for both Medicare and Medicaid, lost their Medicaid coverage); there was no change in rates of private health insurance coverage. There is no evidence of an increase in employment rates following the TennCare disenrollment, though there was a small increase in reported work-preventing disabilities and a small shift from full-time to part-time work in the initial months of disenrollment. Self-reported health and access to medical care worsened as hospitalization rates, doctor visits, and dentist visits all declined while, at the same time, there were increases in the use of free or public health clinics.

In terms of sources of health insurance coverage, the experience in Tennessee following TennCare disenrollment is broadly consistent with that of other states following Medicaid expansion or contraction, with a notable exception of Garthwaite et al. (2014) which reports an increase in private insurance coverage following the TennCare disenrollment. Similarly, the results showing reduced access to health care and worse self-reported health is consistent with both the previous literature on Medicaid expansion and with that reported in Tello-Trillo (2016) for the TennCare disenrollment specifically. While the previous literature of the effect of Medicaid eligibility on labor supply has been mixed, my results are in stark contrast with the very large labor supply effects found by Garthwaite et al. (2014).

The divergent results for employment across studies using different Census surveys suggests a substantial amount of uncertainty over what the impact of the TennCare disenrollment was on employment and other labor market outcomes. In my view, since the results in this study based on the SIPP more closely align with the relatively modest labor supply effects found in the previous literature (e.g., Dague et al. 2017 and Baicker et al. 2014), it seems likely that the TennCare disenrollment led to, at most, modestly sized increases in employment.

II. Background

In 1994, Tennessee implemented a novel public health insurance expansion that offered subsidized Medicaid coverage to individuals up to 400% of the Federal Poverty Line who were either "uninsured" or "uninsurable." The TennCare expansion covered both parents and childless adults, with childless adults comprising 60% of the expansion group (Moreno and Hoag 2001).[1] By comparison, most states at this time did not cover childless adults at income levels near or above the Federal Poverty Level (Kaiser Family Foundation 2005).

In response to a looming fiscal crisis, following the election of a new Governor, and after substantial debate, in 2005 TennCare stopped covering adults who didn't qualify for traditional Medicaid, effectively disenrolling the expansion group. This disenrollment led to a reduction in program rolls of over 170,000 individuals including adults in the "uninsured" and "uninsurable" categories and roughly 30,000 individuals who were dually eligible for Medicaid and Medicare, though these individuals continued to be eligible for Medicare (for details, see

[1] Moreno and Hoag (2001) conducted a survey of TennCare enrollees and reported that 27.7% of the adult expansion group was married adults with children. The fraction of the expansion group that was childless adults was collected in the survey, but not reported in the original study. The study authors graciously retrieved the archived data from this survey and provided this calculation to me in an email on May 8, 2018.

Farrar et al. 2007). Disenrollment began in July 2005 and continued through September 2005. Both parents and childless adults who were enrolled in program were disenrolled (Kaiser Family Foundation 2005; Families USA 2007). In addition, benefit caps, including caps on the numbers of physician visits, outpatient visits, inpatient hospital stays, and pharmacy prescriptions, were imposed on individuals remaining on TennCare (Kaiser Family Foundation 2005; Emerson et al. 2012).

III. Previous Literature

Previous studies of the effects of expanded Medicaid coverage for adults have been primarily concerned with three questions. First, the extent to which expansions in Medicaid eligibility lead to expansions in health insurance coverage as opposed to crowding-out private coverage. Second, whether Medicaid expansions lead to improvements in health care access and health. And third, whether Medicaid expansions lead to reduced labor supply. A recent and comprehensive review of this literature is in Buchmueller et al. (2016).

A substantial body of research has shown that adult Medicaid expansions have led to reductions in the fractions of adults who are uninsured and improvements in access to health care. However, a large literature also exists examining the potential displacement, or "crowd-out" of private insurance coverage by expansions in Medicaid eligibility. Excellent reviews of the crowd-out literature are in Gruber (2003); Davidson et al. (2004); Blewett and Call (2007); and Gruber and Simon (2008). While the range of crowd-out rates found in the existing literature both is large and remains the subject of debate, two important estimates are frequently cited: the (approximate) 50% crowd-out rate found in the seminal Cutler and Gruber (1996) paper covering the Medicaid expansions of the late 1980s and early 1990s and the 25% - 50% range arrived at in an influential review by the CBO (2007).

Interestingly, the few papers using panel data to estimate the crowd-out rate tend to find lower estimates than those using repeated cross-sectional data. For example, using the 1990 SIPP, Blumberg et al. (2000) estimates that 4% of newly eligible children lost private coverage and, using administrative panel data, Dague et al. (2014) found that between 4% and 18% of newly eligible adults lost private coverage.

Uninsured adults have been found to forgo care and, in particular for uninsured adults with chronic conditions, to have poor health outcomes (Institute of Medicine 2009). Correspondingly, there is substantial research showing that adult expansions in Medicaid eligibility can improve access to health care (e.g., Finkelstein et al. 2012; Sommers et al. 2017; DeLeire et al. 2013; Burns et al. 2014) and also evidence that Medicaid expansion can improve health (e.g., Finkelstein et al. 2012) and reduce mortality (Sommers et al. 2012; Currie and Gruber 1996). However, not all studies find improvements in health and mortality (Baicker et al. 2013; Kaestner 2016; Black et al. 2017).

A number of previous studies have examined the impacts of the TennCare contraction in 2005 on health and on access to health care. Both Tello-Trillo (2016) and Tarazi (2017) use data from the Behavior Risk Factor Surveillance System and the National Health Interview System to examine the impact of the Medicaid disenrollment on access to care and self-reported health and both find that the disenrollment worsened access to medical care, decreased primary care physician visits, worsened self-reported health, and led to a shift of care from primary care towards emergency department visits. Emerson et al. (2012) found that the disenrollment led to an increase in the number of uninsured ambulatory-care sensitive ER visits. Similarly, Ghosh and Simon (2015) used the state-impatient databases and found that the TennCare contraction decreased the share of hospitalizations covered by Medicaid, increased the share of hospitalizations for which the patient was uninsured, and increased uninsured hospitalizations

originating from emergency room visits. While the payor-mix of ER visits changed, Heavrin et al. (2011) showed that the TennCare disenrollment did not lead to an overall increase in ER visits.

Because Medicaid is a means-tested program, it can provide a disincentive to work, or to increase hours, if these additional earnings would make an individual ineligible for the program. Economic theory predicts that means-tested cash and in-kind transfer programs generally should reduce labor supply, and extensive empirical research typically has shown that such programs do indeed have the hypothesized effect (e.g., Moffitt 2002). However, the literature on Medicaid's effect on the labor supply of low-income adults is mixed. While some work finds strong work disincentives (Ellwood and Adams 1990; Moffitt and Wolfe 1992; Dave et al. 2015; Kim 2016; Dague et al. 2017), other papers find weaker disincentives or even positive incentives (Yelowitz 1995; Montgomery and Navin 2000; Ham and Shore-Sheppard 2005; Hamersma and Kim 2009; Hamersma 2013; Strumpf 2011; Baicker et al. 2014). The wide range of estimates arising from the existing literature suggests effects may depend upon populations studied or on the sources of data used in the analysis.

Two recent papers have focused on the labor supply responses of the 2005 TennCare disenrollment. Garthwaite et al. (2014) use data from the Annual Social and Economic Supplement to the Current Population Survey (March CPS) and find both large reductions in Medicaid coverage and large increases in the employment rates of childless adults relative to parents in Tennessee following this change in eligibility rules. These results are very large and consistent with a 60-percentage point reduction in employment stemming from the availability of public insurance. Ham and Ueda (2017) replicate the Garthwaite et al. (2014) estimate of the labor supply response to the TennCare disenrollment, but find that the large labor supply responses are found only in the March CPS. When they use either all the months of the CPS or the American Community Survey, they find

much smaller, and sometimes negative, estimates of the labor supply response to the TennCare disenrollment. In a related paper, Argys et al. (2017) uses data from the Federal Reserve Bank of New York's Consumer Credit Panel and finds that the TennCare disenrollment led to a large decline in credit risk scores, which is inconsistent with an increase in employment. These findings suggest that even estimates of the labor supply response to a specific policy change and population can be heterogeneous with respect to the data set used.

A number of studies have examined the interaction between adult Medicaid expansions and enrollment in the Supplemental Security Income Program (SSI), a disability program that is also means tested. In addition to providing a cash benefit, adults in SSI are eligible for Medicaid. Being eligible for Medicaid without having to go through the difficult process of applying for disability should reduce the benefit SSI and reduce applications and enrollment. These studies, including Yelowitz (1998, 2000), Baicker et al. (2014), Maestas et al. (2014), Garthwaite et al. (2014), Burns and Dague (2017), and Soni et al. (2017), have generally found that expanded Medicaid eligibility for adults has led to reduced SSI caseloads.

This study contributes to the literatures on the effects of Medicaid disenrollment on employment, insurance coverage, and health and health care utilization in three ways. First, I use a single data set, the SIPP, to study all three sets of outcomes. Second, this study is the first to use a panel survey to study the Tennessee disenrollment, which enables me to follow individuals over time as they are disenrolled from Medicaid and to control for unobserved and time-invariant characteristics of individuals that might be associated both with Medicaid disenrollment and with employment and health outcomes. Finally, as the existing literature is comprised of a wide range of estimates of the effect of Medicaid on labor supply, additional estimates from new data sources are needed.

III. Data and Measures

The data for this study come from the 2004 panel of the SIPP, a product of the U.S. Census Bureau. The 2004 SIPP collects monthly data on sources of income, employment, and sources of insurance coverage for a representative sample of U.S. households in 12 interviews, or "waves." Waves are spaced at four-month intervals and, in each interview, households are asked about the current (interview) month and for each of the three preceding months. Interviews are staggered over households so that approximately one-fourth of households in the sample are interviewed each month. Because of budget cuts, the 2004 SIPP severely reduced its sample size beginning in wave 9 (Killion 2009). For this reason, I restrict my analysis to waves 1-8. Because of the well-known issues related to seam bias (see Burkhead and Coder 1985; Coder et al. 1987; Moore 2008), I restrict my main analyses to responses in the interview month. Thus, the period I consider is January 2004 through August 2006. I also restrict the sample to households who responded to each of the wave 1 through wave 8 interviews.

The sample is further limited to adults between the ages of 18 and 64 who resided in Tennessee or in other states in the Southern Census region (Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, District of Columbia, West Virginia, Alabama, Kentucky, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas) as of the fourth interview (which occurred between January and April 2004).

In addition to data collected in the "core survey" which is administered every wave, additional data is collected periodically in topical module surveys. I use data from the topical modules administered during waves 3 and 6, which

collected data on self-reported health and health care utilization. These two topical modules were administered from July 2004 through December 2004 and from July 2005 through December 2005 respectively.

In total, the study sample includes 18,269 individuals with responses to the core surveys (representing 136,388 observations) and 18,187 individuals with responses to the topical module surveys (representing 36,374 observations).

The main outcomes used in the analysis include measures of (a) sources of health insurance coverage, (b) employment, and (c) health and health care utilization. Sources of health insurance coverage are asked about for each household member in each reference month in the core survey. Sources include Medicare, Medicaid, and private health insurance.[2] Individuals for whom no source of health insurance coverage is reported are consider uninsured. Individuals can report more than one source of coverage in a month. I force the measures to be mutually exclusive and exhaustive using the following ordering: Medicaid, Medicare, and private insurance. For example, individuals with both Medicaid and Medicare coverage in a month are coded as having Medicaid coverage.

Employment status is also asked of each individual in each month in the core survey. I code individuals as employed if they report having a job for at least one week in the reference month. Employed individuals are coded as full-time if they worked 35 hours in each week that they worked at a job, and are otherwise coded as part-time. Individuals are coded as having a work-preventing disability if

[2] The survey also asks for the source of private health insurance including a current employer, a former employer, union, Tricare/Champus, ChampVA, Military/VA, privately purchased (non-group), or other. I do not separate analyze these sources of private health insurance coverage, though in unreported analyses I did separate private health insurance into group policies owned by the individual, group policies owned by someone else, and non-group policies. Trends in these categories did not differ from the overall trends in private coverage.

they report having a health or condition preventing them from working at a job or business.

Health and health care utilization measures are taken from the topical modules administered in waves 3 and 6. Self reported health is reported for each individual on a 5-point Likert scale. I recode these responses into a binary variable that equals one if self-reported health is "excellent" or "very good" and equals zero otherwise. Health care utilization measures refer to 12 months prior to the interview and respondents are asked whether they had any hospital stays of at least one night, the number of nights spent in hospitals, the number of doctors visits, the number of dentists visits, whether used any prescription medication, whether they had any visits to the emergency room, and whether they had any visits to a free clinic or a public health department.

Table 1 reports summary statistics on the health insurance and employment measures and Table 2 reports summary statistics on the health and health care utilization measures. These statistics are reported for the sample overall and separately for Tennessee versus other Southern states and separately for the January 2004 – June 2005 period and the July 2005 – August 2006 period.[3]

IV. Methods

As discussed above, TennCare disenrolled its expansion group between July and September 2005. I therefore consider July 2005 through August 2006 to be the "post-disenrollment" period, though in some specifications I separately consider July through September 2005 to be an "implementation" period. In all specifications, January 2004 through June 2005 is the "pre-disenrollment" period.

[3] Summary statistics are further broken out between parents and childless adults in Appendix Tables 1 and 2.

I estimate individual-level fixed effects models of the following form in order to capture the effect of the TennCare disenrollment on health insurance coverage, employment, and health and health care access outcomes:[4]

(1) $$Y_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 (Post \times TN)_{it} + \varphi_i + \varepsilon_{it}$$

where:

Y_{it} is the outcome (source of health insurance coverage, employment, health, or medical care access) for individual *i* in month *t*,

$Post_{it}$ is an indicator for months between July 2005 and August 2006,

TN_i is a time-invariant indicator for whether the individual resided in Tennessee (as opposed to in another Southern state) in wave 4, and

φ_i is an individual fixed effect.

I also estimate a slightly more flexible model in which I allow for a different effect in the implementation period, July 2005 through September 2005:

(2) $$Y_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 Imp_{it} + \beta_3 (Post \times TN)_{it} + \beta_4 (Imp \times TN)_{it} + \varphi_i + \varepsilon_{it}$$

where:

Imp_{it} is an indicator for months between July 2005 and September 2005, and

$Post_{it}$ is an indicator for months between October 2005 and August 2006.

Finally, I also estimate a flexible model in which I allow for a full set of month indicators and Tennessee by month interactions.

(3) $$Y_{it} = \beta_0 + \sum \beta_j Month_{it} + \sum \gamma_j (Month \times TN)_{it} + \varphi_i + \varepsilon_{it}$$

where:

[4] In all models, I cluster standard errors at the state level.

$Month_{it}$ is a set of binary month variables for months between February 2004 and June 2006.[5]

Because of the timing of the topical module surveys, I slightly redefine the definitions of the pre- and post-disenrollment periods when estimating the models for outcomes that come from the wave 3 and wave 6 topical modules. In particular, in these models the observations from wave 6 (July 2005 – December 2005) are in the post-disenrollment period and the observations from wave 3 (July 2004 – December 2004) are in the pre-disenrollment period.

The TennCare enrollment statistics do not break-out enrollment of adults by parental status (e.g., Bureau of TennCare 2005, 2006), so it is unknown what fraction of the disenrollment affected childless adults as opposed to parents from administrative data. However, as discussed above, surveys show that approximately 60 percent of the adult TennCare expansion group in the years preceding disenrollment was comprised of childless adults and the remaining 40 percent were parents (Moreno and Hoag 2001). In addition, discussions in the contemporaneous policy literature (Kaiser Family Foundation 2005, Families USA 2007) strongly suggest that the disenrollment affected parents as well as childless adults. Thus, it is reasonable to suspect that approximately 60 percent of the disenrolled population was childless adults and the remainder was parents. For this reason, I also estimate equation (1) stratifying adults by parental status (where parents are defined as adults living with a dependent child under the age of 18) because it is possible that childless adults were affected to a relatively greater degree. I also test for differences between parents and childless adults by

[5] When estimating equation (3), I do not restrict the sample to survey responses in the interview month only. I do not make this restriction in this case because the SIPP sample is not necessarily balanced across groups stratified by interview month within wave. Imposing the restriction, while accounting for seam bias, yields noisy monthly estimates. This issue also requires me to shorten the post-disenrollment period to June 2006 when estimating equation (3).

estimating a version of equation (1) with an additional interaction term for the individual being a childless adult:

$$(4) \qquad Y_{it} = \beta_0 + \beta_1 Post_{it} + \beta_2 (Post \times TN)_{it} + \beta_3 (Childess \times Post \times TN)_{it} + \varphi_i + \varepsilon_{it}$$

where:

Childless$_i$ is a time-invariant indicator for the individual not living with a dependent child under the age of 18 in wave 4.

Given that the TennCare disenrollment affected both parents and childless adults and because other contemporaneous TennCare reforms, such as benefit caps, affected all groups, I cannot reasonably assume that only childless adults were affected by the reforms. Thus, I am not using parents as a control group for childless adults in this analysis, but rather am comparing effect sizes across these two potentially affected groups of adults.

I use residents of other Southern states as controls for residents of Tennessee. The validity of these models requires assuming that the error terms are uncorrelated with the interaction term between the post-disenrollment period indicator and the indicator for Tennessee. While this "common trends" assumption is not testable, following common practice I assess whether there are common trends in the outcomes between Tennessee and other southern states in the pre-disenrollment period. I find no evidence of differential trends in the pre-period and report the results of these tests for the outcomes covered by Medicaid, uninsured, and employed, in Appendix Table 3.

V. Results

In this section, I report the results of the individual fixed effects models of the effect of the TennCare disenrollment on health insurance coverage, employment, health, and healthcare utilization outcomes.

A. Health Insurance Coverage Outcomes

I consider four health insurance outcomes: Medicaid, Uninsured, Private Insurance, and Medicare. I report estimates of both equations (1) and (2) in Table 3 and report the results of equation (3) graphically in Figures 1 through 4.

The results show that changes in TennCare eligibility rules led to a large decline in Medicaid enrollment among adults in Tennessee relative to adults in other Southern states and that this disenrollment resulted in an almost as large loss of insurance coverage. A small fraction of dual eligible individuals transitioned into being solely covered by Medicare and there was no net migration into private coverage, implying that there was no crowd-out of private insurance from the TennCare expansion

For each outcome reported in Table 3, the first column considers the post-period to be July 2005 – August 2006 while the second column allows for a different effect in the implementation period (July 2005 – September 2005). Following the TennCare disenrollment, the share of adults covered by Medicaid fell by 5.4 to 5.9 percentage points, and the share uninsured increased by 4.7 to 5.1 percentage points. The difference between the size of these two effects is mostly explained by a small, 0.6 to 0.8 percentage point, increase in Medicare coverage. There was no economically of statistically meaningful change in the share of adults covered by private insurance following disenrollment.

The implied number of adults affected by the TennCare disenrollment, based on these estimates, is very close to that reported around the time of the disenrollment in the policy literature (Farrar et al. 2007). Using the survey

weights, the coefficient on Medicaid from Column (1) of Table 3 implies that approximately 200,000 adults were disenrolled from TennCare. The coefficient on Medicare from Column (7) suggests that approximately 30,000 adults moved from Medicaid to Medicare (presumably because they were dual eligibles). These implied numbers are very close to the numbers reported in the literature. For example (Farrar et al. 2007) reports that 170,000 thousand adults in the "uninsured" and "uninsurable" expansion category and 38,000 dual-eligible adults were disenrolled from TennCare in 2005.[6]

Figure 1 displays the estimated shares of adults, aged 18 to 64, in Tennessee and in other Southern states enrolled in Medicaid in each month from January 2004 through June 2006 based on estimates of equation (3). The two vertical lines in the figure indicate the months July and September 2005, the beginning and end of the implementation period in the main models. As evident in the figure, there was a large, roughly 6-percentage point decline in Medicaid enrollment among adults in Tennessee beginning in July 2005 and no visible decline in other Southern states.

Figure 2 displays the estimated shares of adults without any source of health insurance coverage in Tennessee and in other Southern states. The share of adults who were uninsured in Tennessee increased roughly 5 percentage points beginning in July 2005. As with Medicaid, there was no decline in the share that was uninsured in other Southern states.

[6] Summing the survey weights for adults between the ages of 18 and 64 in Tennessee in wave 1, reference month 4, of the 2004 SIPP yields a population estimate of 3,662,348. According to the 2003 Tennessee Statistical Abstract, the population of Tennessee in that year was 5,989,309 and 63% of the Tennessee Population was between 18 and 64, yielding a population estimate of 3,773,265. Multiplying 3,662,348 by the coefficient on Medicaid from Table 3, Column 1 of 0.0537 yields 199,668. Multiplying 3,662,348 by the coefficient on Medicare from Table 3, Column 7 of 0.0083 yields 30,397.

Figures 3 and 4 show the estimated shares of adults in Tennessee and in other Southern states with any form of private health insurance and with Medicare, respectively. Adults in Tennessee did not see an increase in private insurance following July 2005. By contrast, the share of adults covered by Medicare increased by a small amount beginning in July 2005.

B. Employment Outcomes

I consider four binary employment outcomes: an indicator for whether the individual had a job for at least one week during the month, whether the individual worked full-time (worked 35 hours or more per week), whether the individual worked part-time (worked less than 35 hours), and whether the individual reports that health or a condition prevents work (a work-preventing disability). I report estimates of both equations (1) and (2) for these outcomes in Table 4 and report the results of equation (3) graphically in Figures 5 through 8.

The results show that changes in TennCare eligibility rules did not lead to any economically or statistically meaningful increase in employment among adults in Tennessee relative to adults in other Southern states. However, during the implementation period, but not thereafter, there was a small shift from full-time to part-time employment. There also was a small increase in the share of adults reporting a work-preventing disability following the TennCare disenrollment.

As reported in Table 4, following the TennCare disenrollment the share of adults in Tennessee who were employed increased by at most a statistically insignificant 0.2 percentage points. The results also suggest that the share working full-time decreased 0.6 to 0.8 percentage points while the share working part-time increased by a similar amount. However, the estimates also indicate

that the shift from full-time to part-time occurred during the "implementation" period. There is a small, but statistically meaningful, increase in the share of adults in Tennessee reporting a work-preventing disability of 0.2 to 0.25 percentage points.

The zero or very small (and statistically insignificant) employment effects are substantially smaller than those found by Dague et al. (2017) and by Garthwaite et al. (2014). The effects on disability are broadly consistent with the evidence on SSI and DI found by Garthwaite et al. (2014), Maestas et al. (2014), and Burns and Dague (2017).

Figure 5 displays the estimated shares of adults that were employed in each month from January 2004 through June 2006 in Tennessee and in other Southern states. The employment rate in Tennessee is consistently about 3 percentage points lower that the employment rate in other Southern states. Other than the level difference, both employment rates track each other closely and there is no noticeable change in the employment rate of adults in Tennessee following July 2005.

Figures 6 and 7 display the estimated shares of adults in Tennessee and in other Southern states that were employed full-time and that were employed part-time, respectively. As with employment, there is little evidence that these shares changed following July 2005.

Figure 8 displays the estimated shares of adults in Tennessee and in other Southern states that report having a work-preventing disability. The fraction of adults in Tennessee reporting a work-preventing disability is higher than in other Southern states both before and following the TennCare disenrollment. However, there is a small increase in this share in Tennessee following July 2005. This results is consistent with those reported in the previous literature.

C. Health and Health Care Access

As discussed above, measures of self-reported health and health care utilization come from topical module surveys, which are administered in wave 3 (July 2004 through December 2004) and wave 6 (July 2005 through December 2005). The outcomes I examine include: a binary indicator of whether the individual self-reports their health to be "excellent or very good," an indicator of having had a hospitalization in the past 12 months, hospital days over the past 12 months, number of doctor visits, number of dentist visits, an indicator for having used any prescription medication, an indicator for any visits to a free clinic or public health department, and an indicator for any emergency room visits.

Table 5 reports the estimates of the impact of the TennCare disenrollment on health and health care utilization. The results suggest that the self-reported health of adults worsened and that they experienced a changing pattern of healthcare utilization following the TennCare disenrollment. These changes may not be solely due to disenrollment, however, as there were other TennCare benefit changes implemented at the same time as the disenrollment. These included caps on the number of physician visits, the number of outpatient visits, and the number of prescriptions (Kaiser Family Foundation 2005, Emerson et al. 2012).

The results show that the fraction of adults in Tennessee reporting that their health was excellent or very good fell 1.8 percentage points following the TennCare disenrollment, suggesting that the actual or perceived health of adults worsened following Medicaid disenrollment. The fraction with any hospitalization decreased fell 1.2 percentage points though total reported hospital days did not change. The number of visits to the doctor decreased by 0.74 visits (or by 14 percent) and the number of visits to the dentist decreased by 0.19 visits (also by 14 percent). The fraction reporting any use of prescription medication did not change. These results, taken together, are consistent with much of the previous literature indicating that Medicaid coverage increases access to medical

care including preventive care such as dentist visits. However, as there is little evidence of a change in hospital days, it also suggests that individuals with major acute illnesses may have been less affected.

There is also evidence that the decline in access to medical care among adults in Tennessee were partially offset by an increase in the share of adults that received care in a free clinic or public health facility (a 1.4 percentage point increase). However, similar to the findings of Heavrin et al. (2011), there is no evidence that the share that received care in an emergency room changed following the TennCare disenrollment.

D. Childless Adults versus Parents

As discussed above, about 60 percent of the TennCare expansion group was comprised of childless adults and the remainder was parents (Morano and Hoag 2001). In this section, I report results that stratified between parents and childless adults. Two previous studies of the 2005 TennCare disenrollment used parents as a control group for childless adults in a "triple difference design" (Garthwaite et al. 2014; Tello-Trillo 2016). I do not do this both because of the strong suggestion from the contemporaneous policy literature that parents as well as childless adults were disenrolled from TennCare, and because the other program reforms such as benefit caps would have effected those adults remaining in TennCare.

Table 6 reports estimates of the impact of the TennCare disenrollment on sources of health insurance coverage, based on equation (1), separately for childless adults and parents. It also reports difference in these impacts using estimates from the fully-interacted model, equation (4).

Both the share of childless adults and the share of parents in Tennessee with Medicaid coverage fell in the post-disenrollment period, though the share of childless adults fell by a larger amount (a 6.0 percentage point decline among childless adults versus a 4.7 percentage point decline among parents). These estimates imply that 65 percent of the individuals disenrolled from TennCare were childless adults and 35 percent were parents – percentages that are reasonably close to the pre-disenrollment distributions reported in Moreno and Hoag (2001).

Similarly, the both the share of childless adults and the share of parents in Tennessee who were uninsured increased in the post-disenrollment period, though again the increase was slightly larger among childless adults. There was a 4.8 percentage point increase in the uninsured rate among childless adults versus a 4.6 percentage point increase among parents. The shares on Medicare increased by small amounts for both childless adults (a 0.7 percentage point increase) and parents (a 0.3 percentage point increase), while the shares privately insured did not change for either childless adults or parents.

The declines in fractions of parents and childless adults on Medicaid and the increases in the fractions uninsured can be seen in Figures 9 and 10, which show the estimated trends in Tennessee and in other Southern states. The shares among both parents and childless adults were fairly stable over the entire time period in other Southern states, while both childless adults and parents in Tennessee had roughly similar percentage point decreases in the shares covered by Medicaid and similar percentage point increases in the shares uninsured.

Table 7 reports estimates, based on equation (1), of the impact of the TennCare disenrollment on employment outcomes separately for childless adults and parents. Neither childless adults nor parents had increases in their employment rates in Tennessee in the post-disenrollment period. However, among parents there was a small shift from full-time work to part-time work as

the share working full-time decreased 0.7 percentage points and the share working part-time increased 0.8 percentage points. The difference between childless adults and parents in the changes in these shares is not statistically significant, however. By contrast, the increase in work-preventing disability in Tennessee in the post-disenrollment period occurred only among childless adults, who saw a 0.5 percentage point increase in this share.

Table 8 reports estimates of the impact of the TennCare disenrollment on health and health care utilization outcomes separately for childless adults and parents. Looking across all health and health care utilization outcomes, there is no consistent pattern of results by parental status. For some outcomes we observe changes for childless adults but not parents, for other outcomes we observe changes for parents but not for childless adults. Other outcomes have similar changes for both parents and childless adults.

The results show that fewer childless adults in Tennessee reported that their health was excellent or very good (a decline of 4.1 percentage points following the TennCare disenrollment), and there was no change among parents. The fraction with any hospitalizations decreased among parents (and fell 2.8 percentage points) but not among childless adults. Total reported hospital days and the fraction using prescription drugs did not change for either childless adults or for parents. Doctor visits and dentist visits declined for both childless adults and parents by roughly a similar amount. The use of free clinics or public health facilities increased for both groups, but increased by more among childless adults (1.8 percentage points) than among parents (0.8 percentage points). Use of the ER increased among childless adults but decreased among parents.

E. Sensitivity Checks

In this section I discuss the results of a number of sensitivity checks on the main analysis. First, I vary the set of control states used in the analysis. As discussed above, the main analysis uses all states in the U.S. Census Southern region (Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, District of Columbia, West Virginia, Alabama, Kentucky, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas) as controls for Tennessee. As a sensitivity check, I first remove Texas and Florida (the two largest Southern states in terms of population) and second remove Washington D.C., Delaware, and Maryland. I report the results based on these alternative samples for my main outcomes of interest (Medicaid, Uninsured, and Employment) in the first two columns for each outcome in Table 9. The results show that there is very little change in the estimated effect of the TennCare disenrollment on sources of health insurance coverage or employment when I alter the set of states used as controls.

In a second sensitivity check, I restrict the sample to individuals who did not move across states in the first four waves of the survey. Since I measure state residency in the fourth wave, this ensures that residents of Tennessee receive the full treatment effect of being potentially eligible for TennCare in the pre-disenrollment period. As reported in the third column for each outcome in Table 9, this restriction does not affect the estimates.

Finally, sample attrition and moving across states is commonplace in the SIPP. The survey is designed to follow individuals and household if they move and reweights observations to deal with non-random attrition (U.S. Census Bureau 2008). However, in this analysis, differential attrition or moving between residents of Tennessee and of other Southern states could be an issue, especially if these differences were the result of the changes to the TennCare program.

To explore this possibility, I examine differential attrition and differential rates of moving across state lines between Tennessee and other Southern states

(see Appendix Table 4). Tennessee had higher rates of attrition than other Southern states between wave 1 and wave 2. However, thereafter, Tennessee had slightly lower rates of attrition so that by wave 3 there was no statistically differences in cumulative attrition rates between Tennessee and other Southern states and by wave 8 there was no difference at all in cumulative attrition rates. There is no evidence that in the SIPP residents of Tennessee move at greater rates than residents of other Southern states.

VII. Discussion and Conclusion

In this paper, I examine the effects of an eligibility contraction that occurred when Tennessee discontinued its expansion of TennCare in 2005. I find that following the change in rules that reduced Medicaid eligibility in Tennessee over the period July to September 2005, the fraction of adults in Tennessee covered by Medicaid fell by 5 percentage points while uninsured rates increased by almost 5 percentage points. There is no evidence of an increase in employment rates following disenrollment though there is evidence that disenrollment led to a small increase in reported work-preventing disabilities and a shift from full-time to part-time work. Self-reported health and access to medical care worsened as hospitalization rates, doctor visits, and dentist visits all declined. At the same time, there were increases in the use of free clinics public health facilities.

In terms of the effects of the TennCare disenrollment on health insurance coverage, my results are consistent with those found in the previous literature on the effects of Medicaid expansions generally (e.g., Sommers et al. 2017) but differs from Garthwaite et al. 2014 in that I find no offsetting increases in private health insurance coverage. Similarly, the results showing reduced access to health care and worse self-reported health are both consistent with the previous

literature generally and with that found in Farrar et al. (2007), Families USA (2007), Tello-Trillo (2016), and Ghosh and Simon (2015). While the previous literature of the effect of Medicaid on labor supply has been mixed, my results are in stark contrast with those found by Garthwaite et al. (2014) in that I find no evidence that the TennCare disenrollment led to an increase in employment.

Recent policy discussions in Congress have involved changes to the Federal financing of Medicaid that likely would have resulted in substantial numbers of individuals, in particular childless adults, losing Medicaid coverage (CBO 2017). This findings of this study suggest that such a disenrollment would likely lead to a substantial increase in the uninsured rate, worsening health and access to health care, and no increased in employment.

The divergent results for employment across studies using different Census surveys suggests that the reliability of the estimates of the effect of TennCare on employment in either study could be questioned. However, as noted above, Ham and Ueda (2017) also find that the estimates of the employment effects following TennCare disenrollment are highly sensitive to the choice of data set. It may not only be differences in data that matter. This study uses panel data methods that can control for compositional changes in sample, while the repeated cross-sectional methods employed in previously studies cannot. At a minimum, the results presented in this paper indicate that there is a substantial amount of uncertainty over what the impact of the TennCare disenrollment was on employment outcomes. However, in my view, since the results in this study more closely align with the modest labor supply effects found in Dague et al. (2017) and in Baicker et al. (2014), it seems likely that the TennCare disenrollment led to either no change in employment of childless adults or, at most, modestly sized increases in employment.

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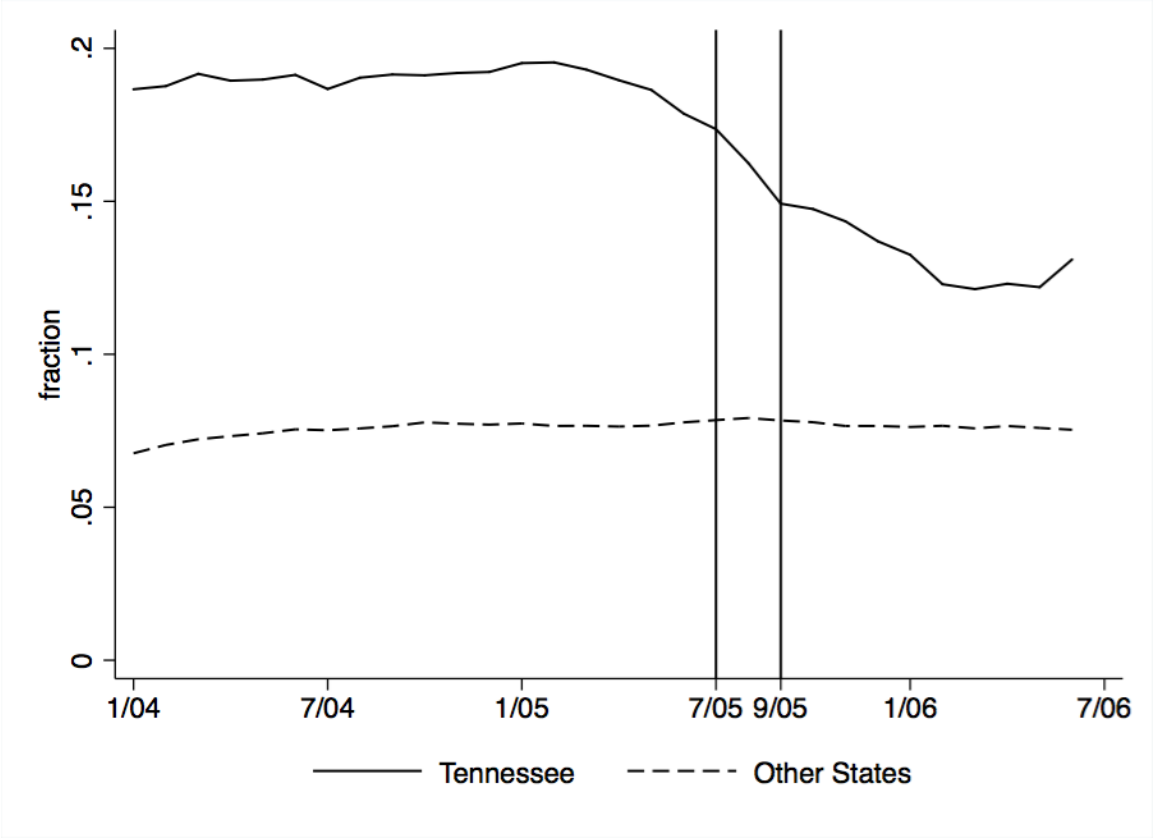
Figure 1. Fraction of Adults with Medicaid Coverage, Tennessee vs. Other Southern States

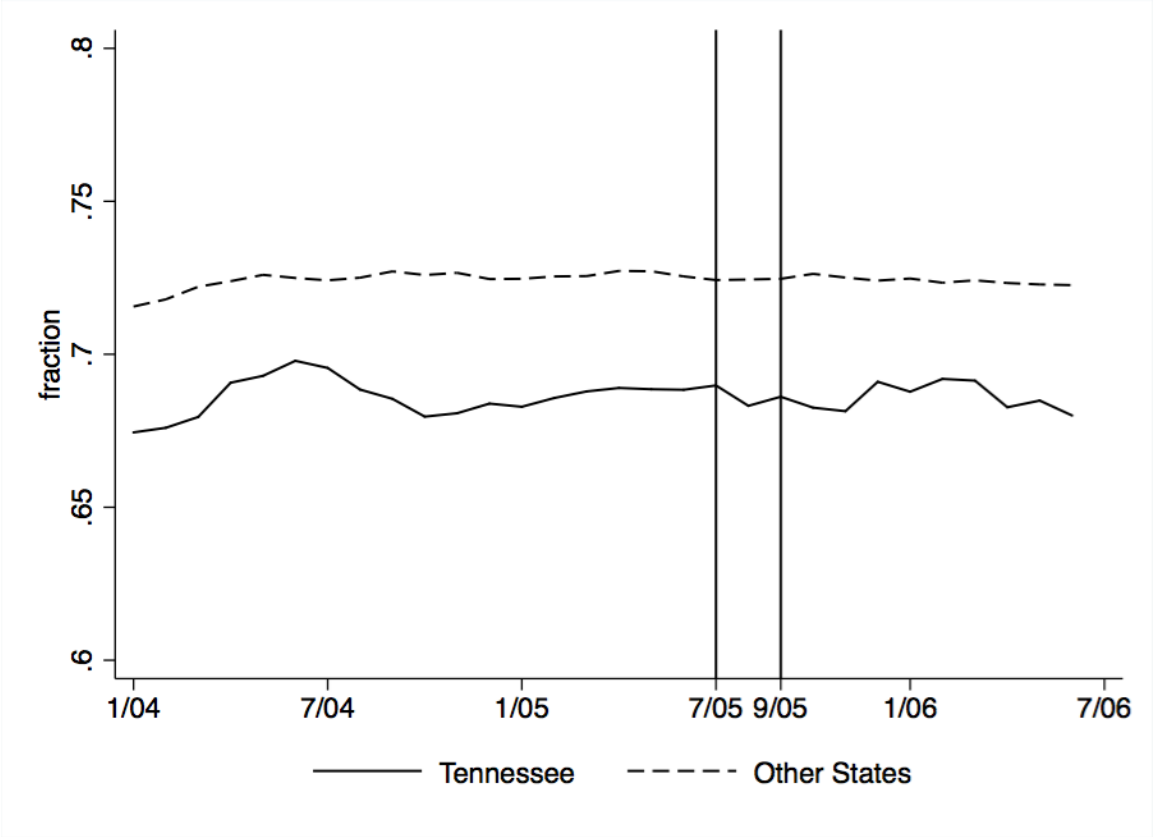


Notes: Monthly rates estimated from an individual-fixed effects model using data on adults ages 18 to 64 from the 2004 Panel of the SIPP (see text). The two vertical lines indicate the months when TennCare disenrollment was initiated (July 2005) and completed (September 2005). Individuals reporting both Medicare and Medicaid coverage, or both Private coverage and Medicaid coverage, are coded as having Medicaid coverage.

Figure 2. Fraction of Adults who were Uninsured, Tennessee vs. Other Southern States

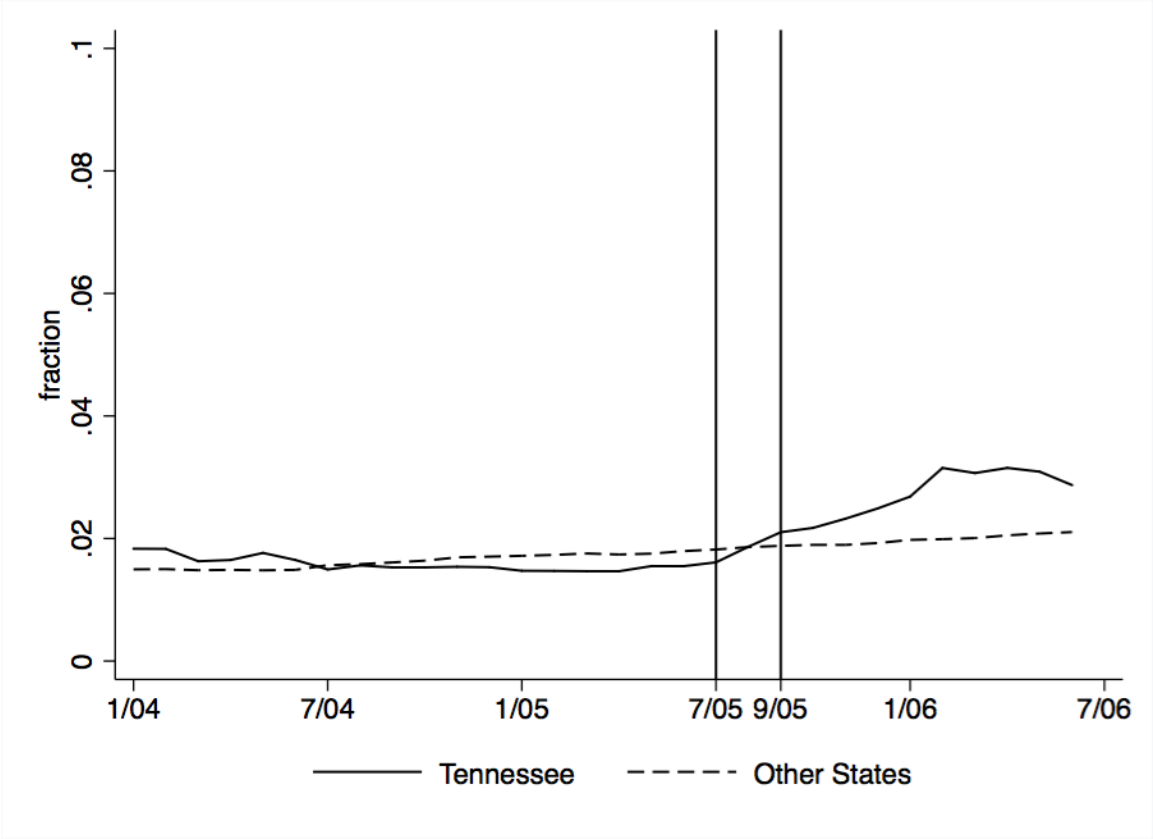
Notes: See notes for Figure 1.

Figure 3. Fraction of Adults with Private Insurance, Tennessee vs. Other Southern States



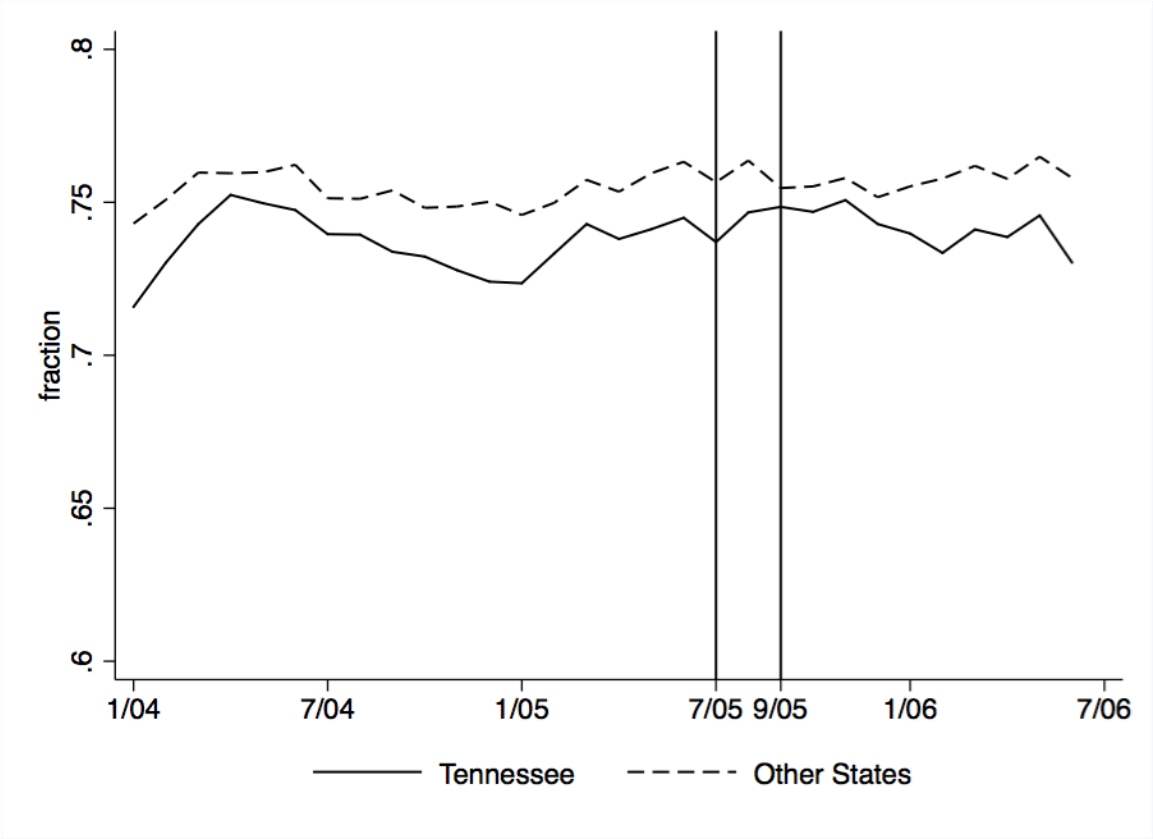
Notes: See notes for Figure 1.

Figure 4. Fraction of Adults with Medicare Coverage, Tennessee vs. Other Southern States



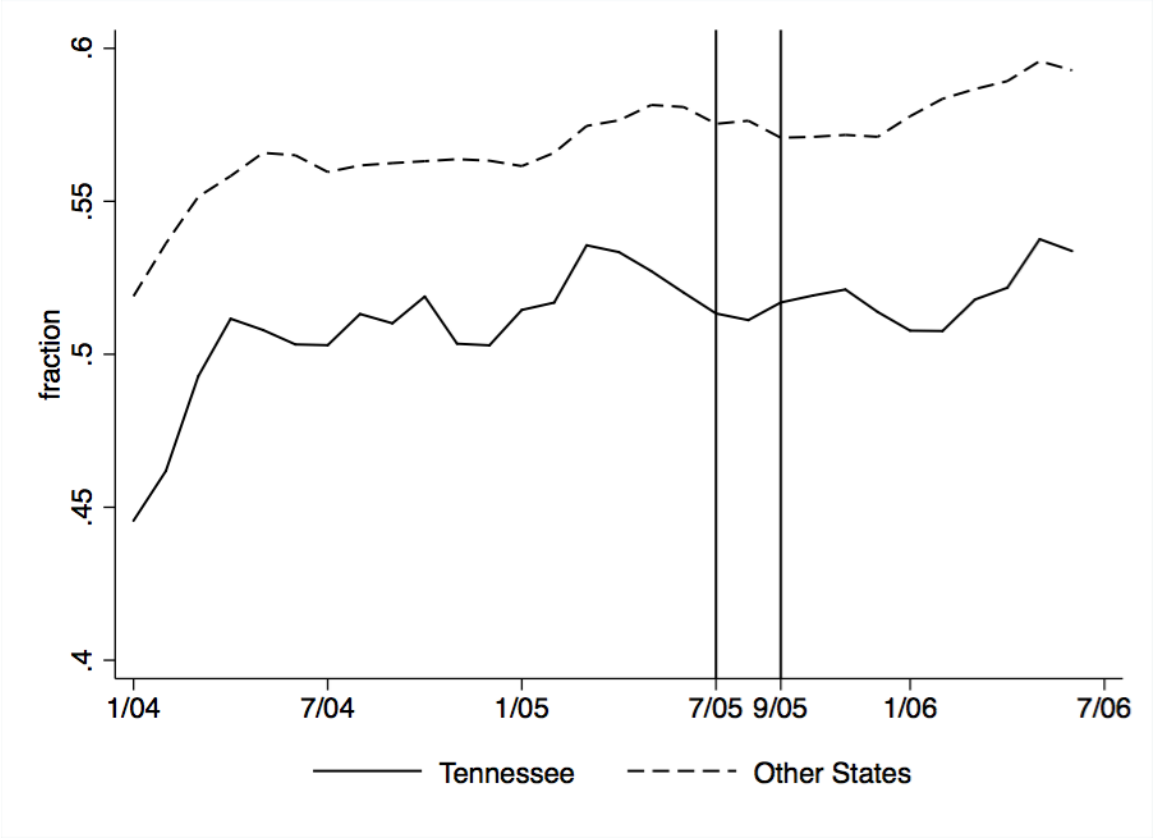
Notes: See notes for Figure 1.

Figure 5. Fraction of Adults who were Employed, Tennessee vs. Other Southern States



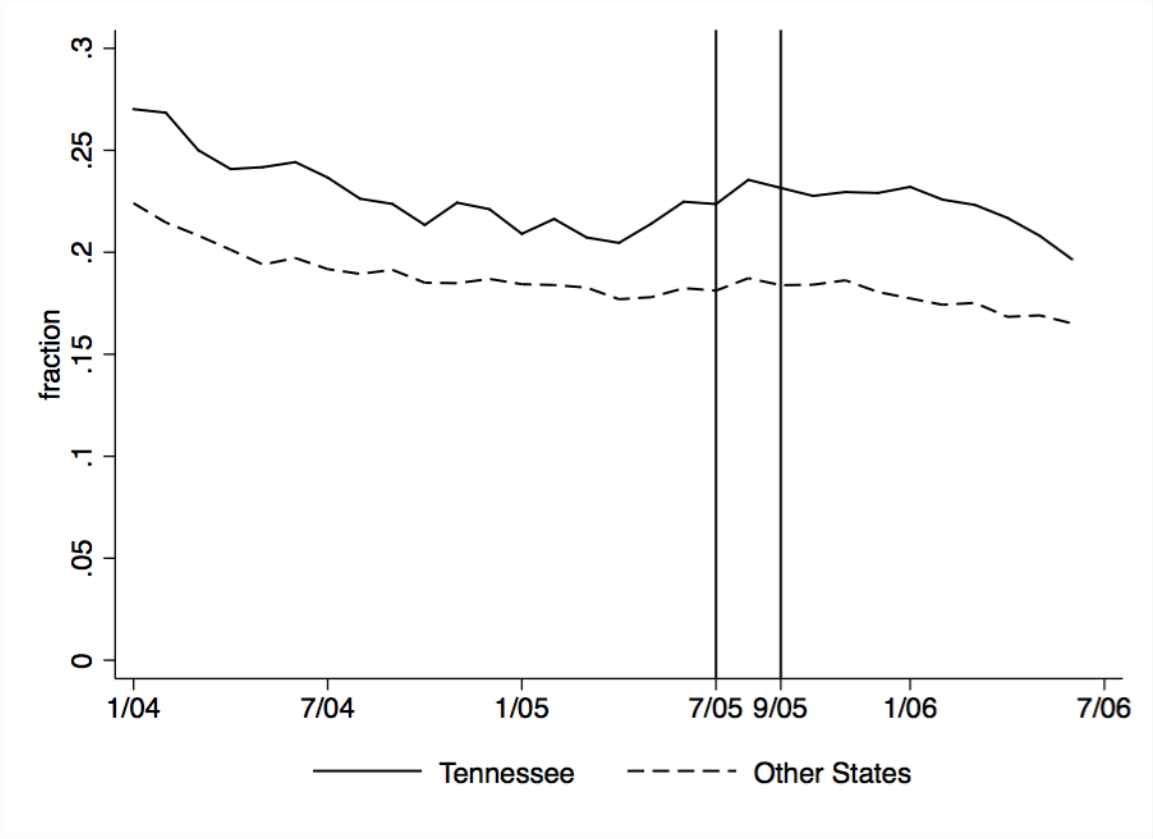
Notes: See notes for Figure 1.

Figure 6. Fraction of Adults who were Employed Full-time, Tennessee vs. Other Southern States



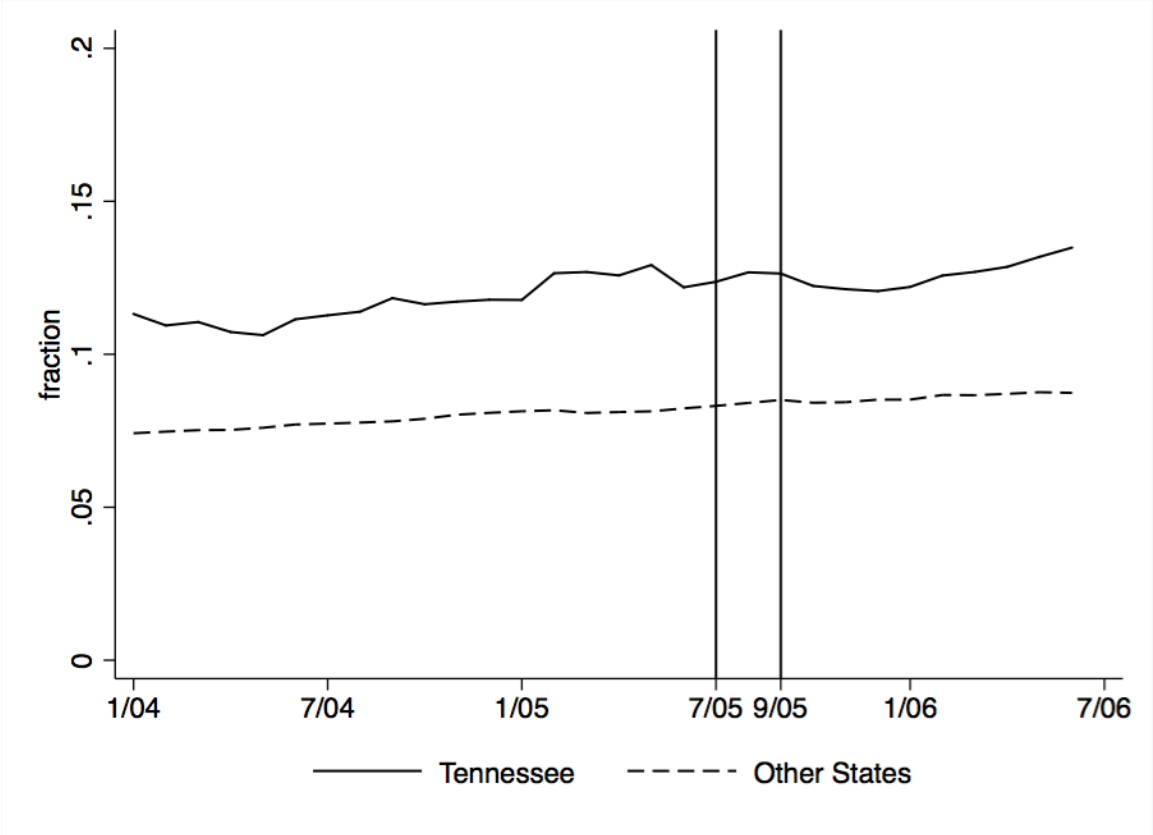
Notes: See notes for Figure 1.

Figure 7. Fraction of Adults who were Employed Part-time, Tennessee vs. Other Southern States



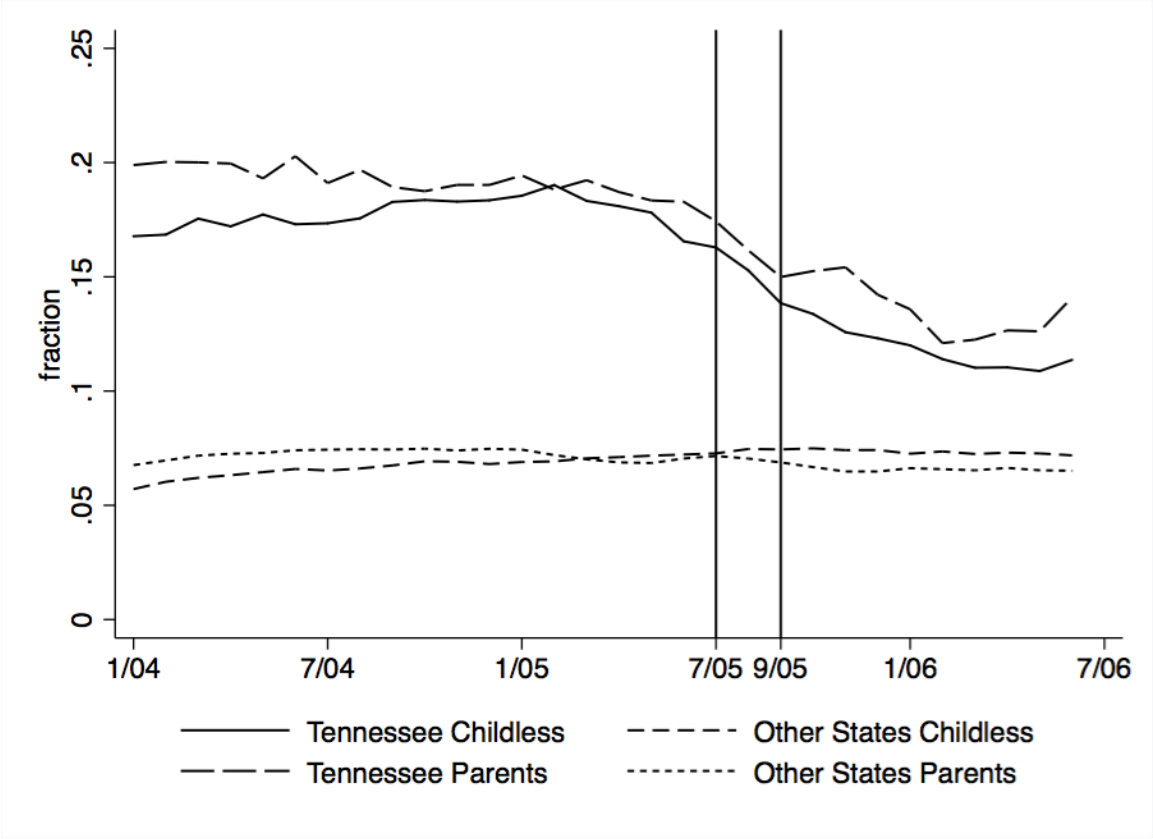
Notes: See notes for Figure 1.

Figure 8. Fraction of Adults who were Disabled, Tennessee vs. Other Southern States



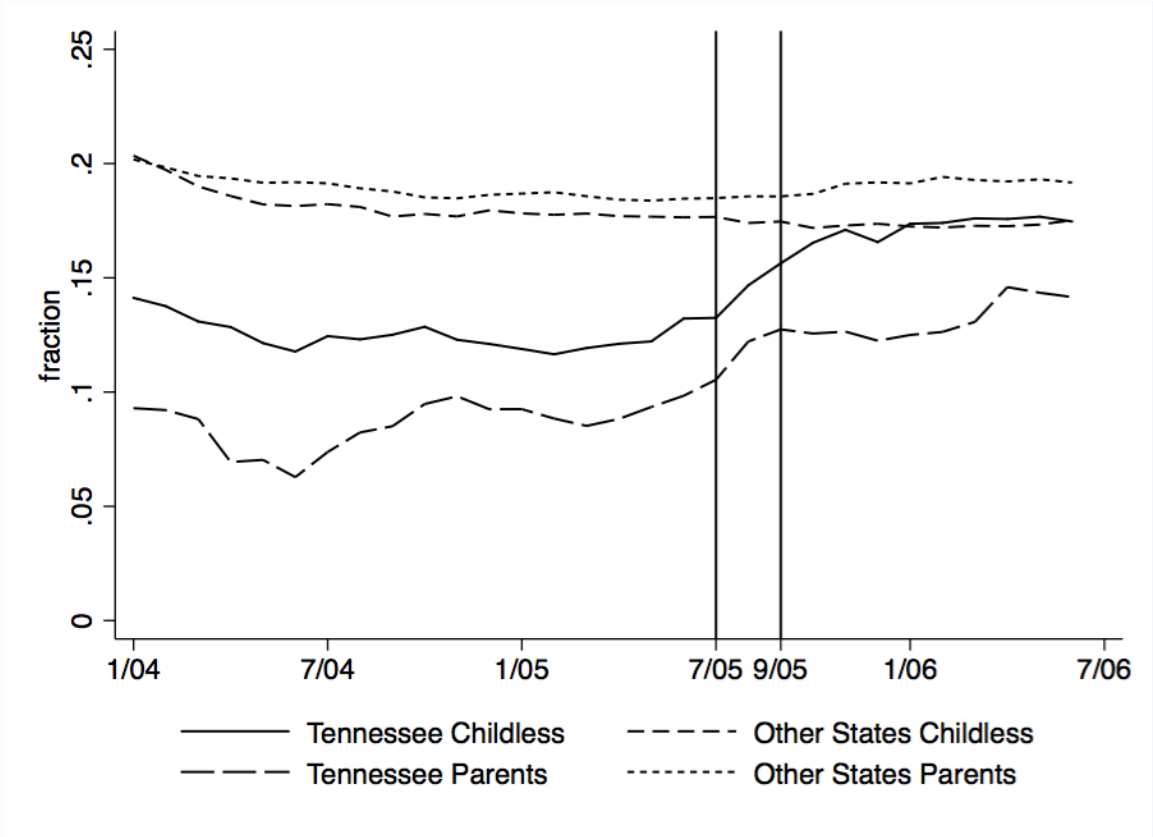
Notes: See notes for Figure 1.

Figure 9. Fraction of Adults with Medicaid Coverage by Presence of Dependent Children, Tennessee vs. Other Southern States



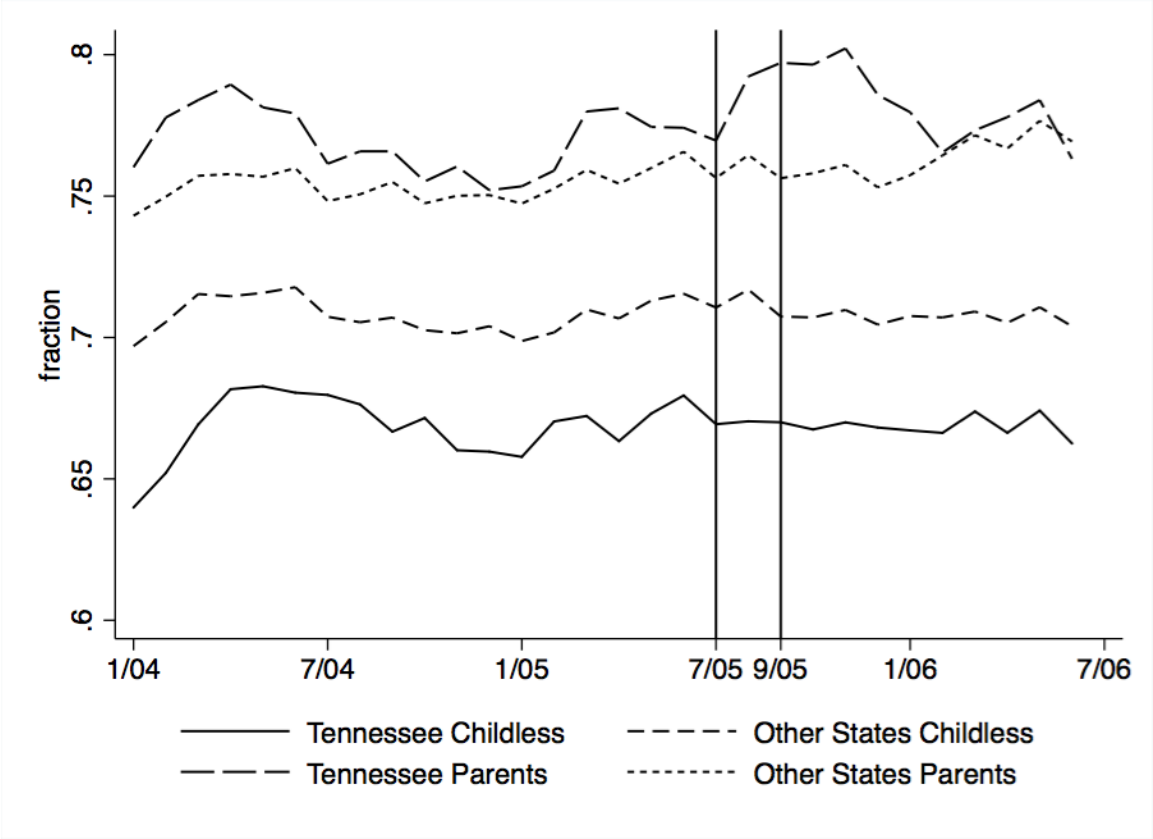
Notes: See notes for Figure 1.

Figure 10. Fraction of Adults who were Uninsured by Presence of Dependent Children, Tennessee vs. Other Southern States



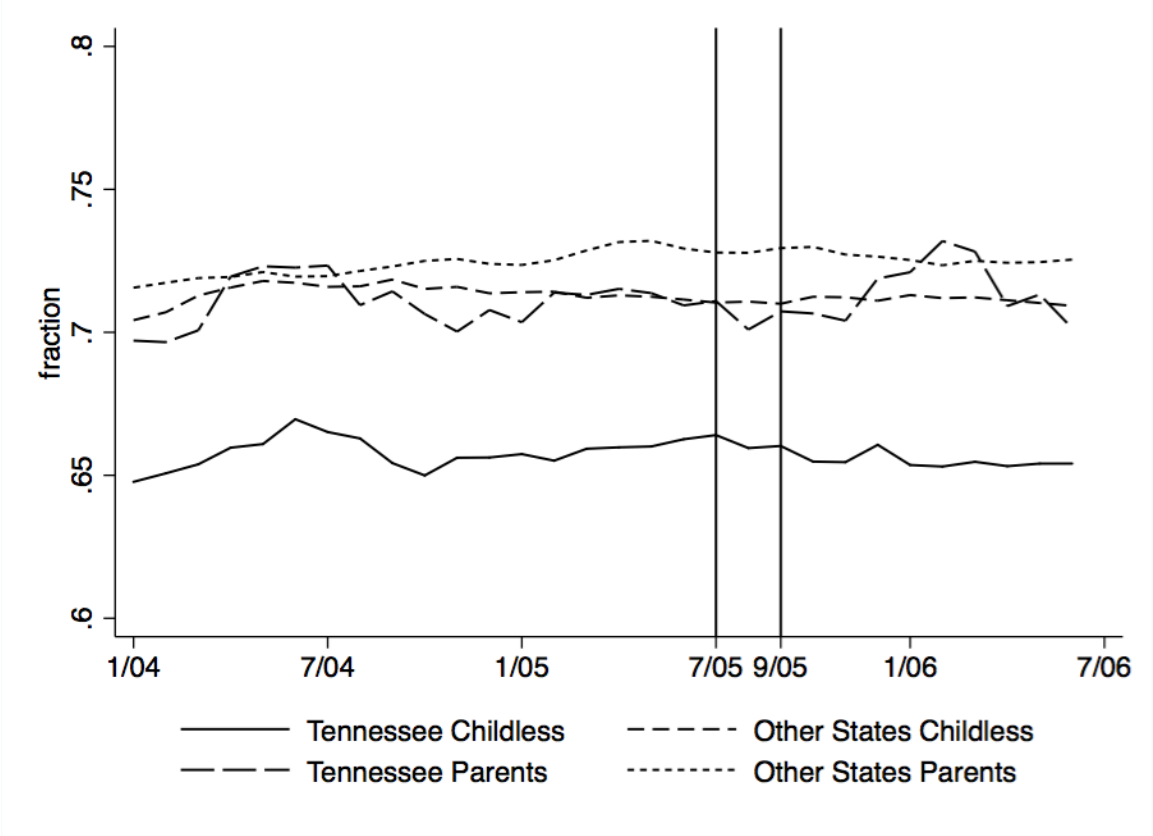
Notes: See notes for Figure 1.

Figure 11. Fraction of Adults who were Employed by Presence of Dependent Children, Tennessee vs. Other Southern States



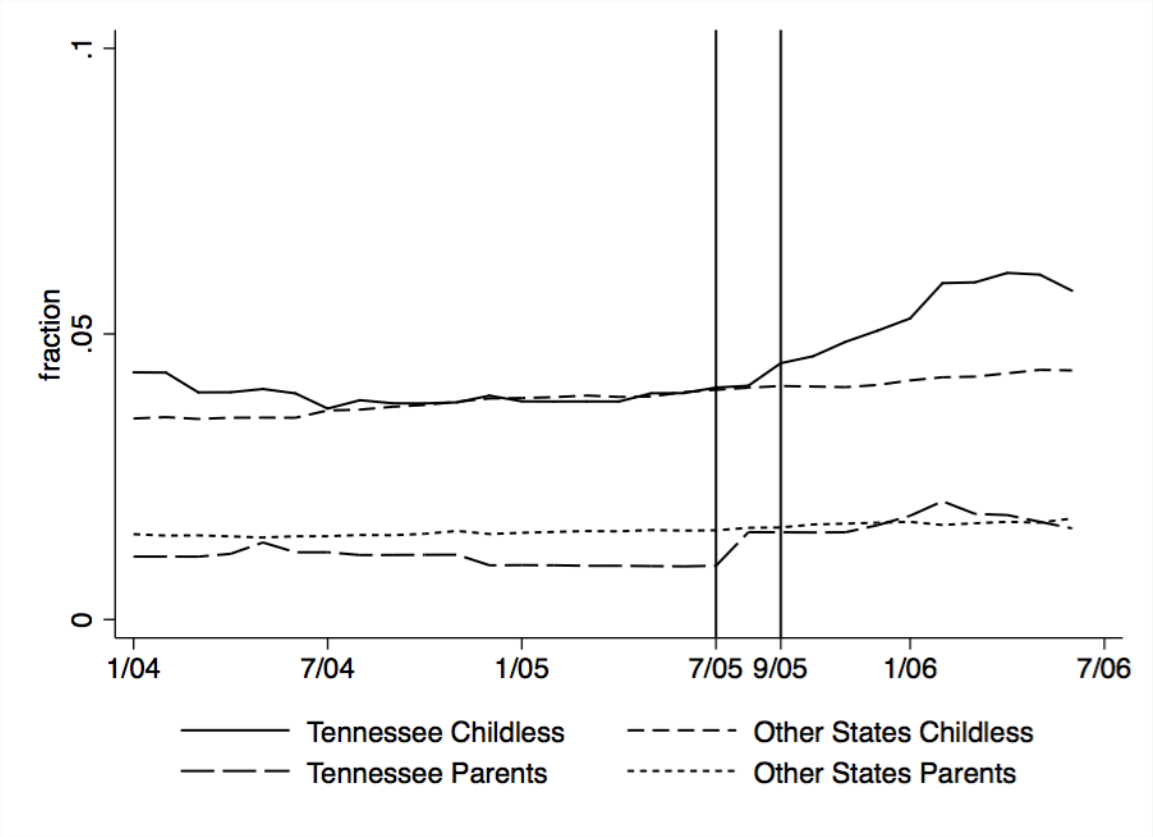
Notes: See notes for Figure 1.

Appendix Figure 1. Fraction of Adults with Private Insurance by Presence of Dependent Children, Tennessee vs. Other Southern States



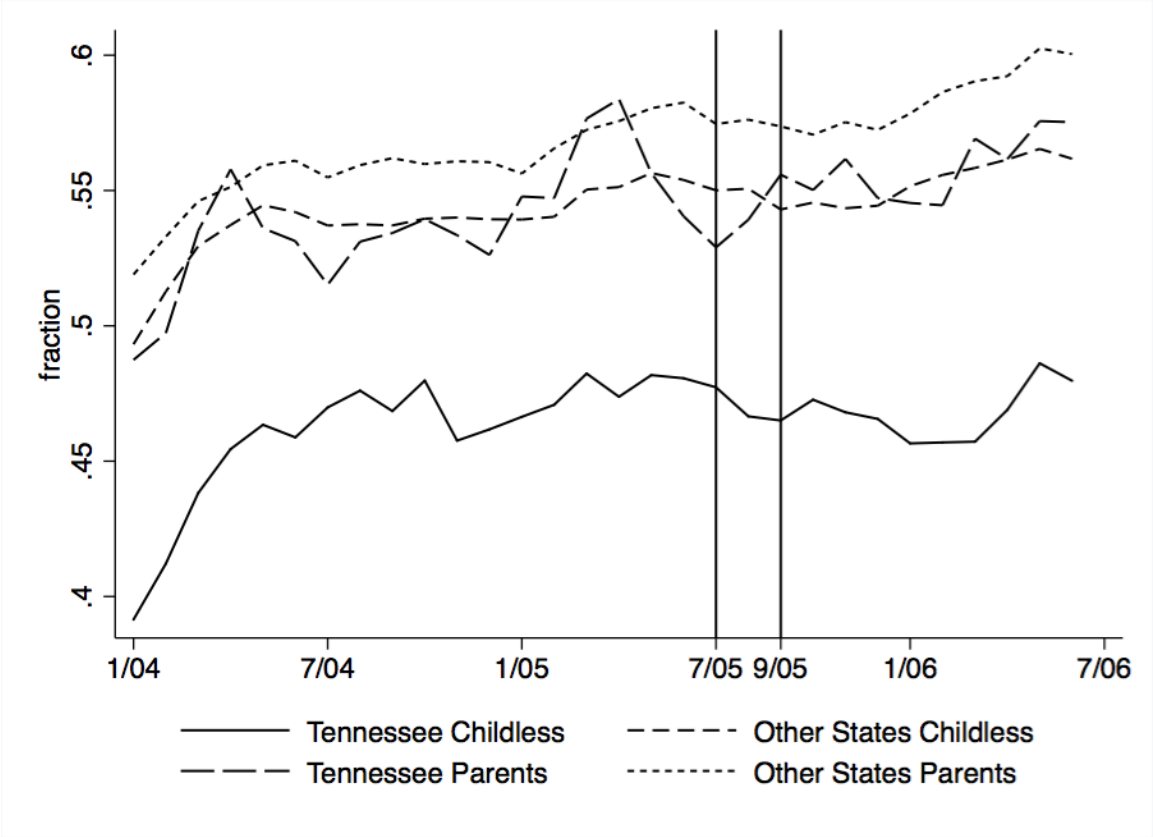
Notes: See notes for Figure 1.

Appendix Figure 2. Fraction of Adults with Medicare Coverage by Presence of Dependent Children, Tennessee vs. Other Southern States



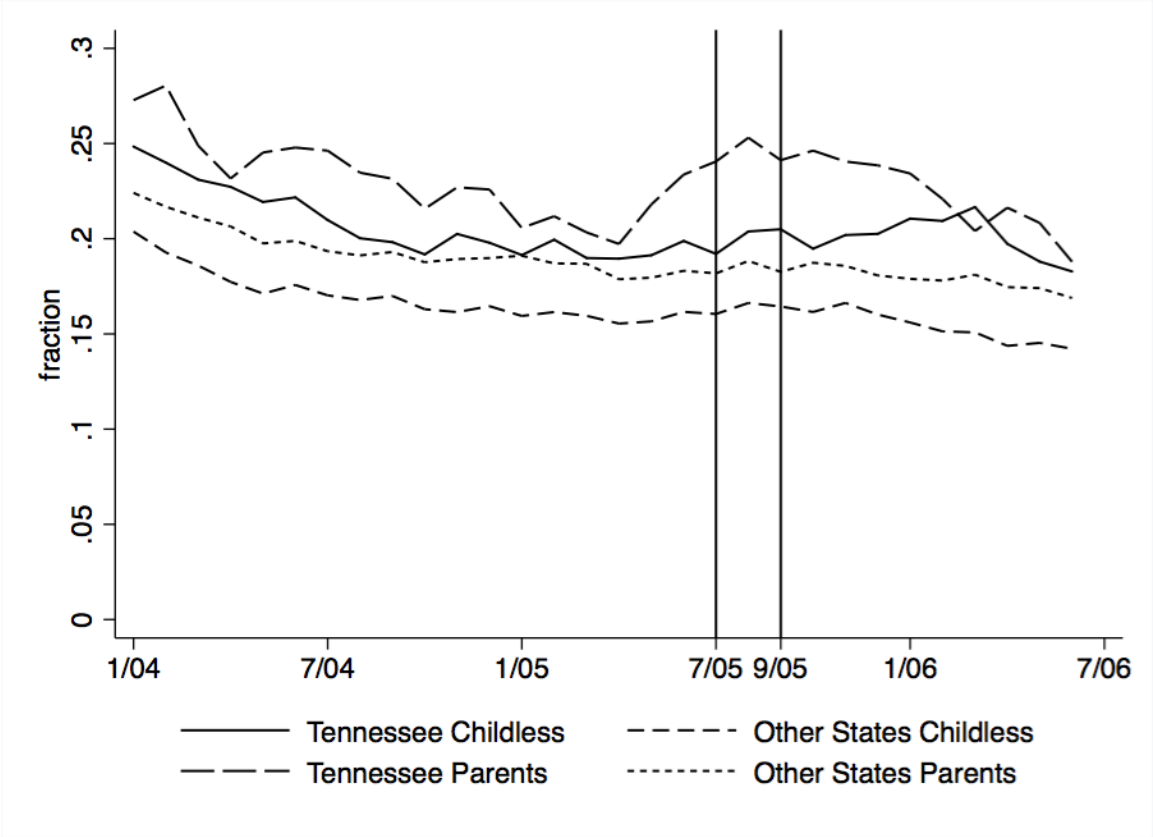
Notes: See notes for Figure 1.

Appendix Figure 3. Fraction of Adults who were Employed Full-time by Presence of Dependent Children, Tennessee vs. Other Southern States



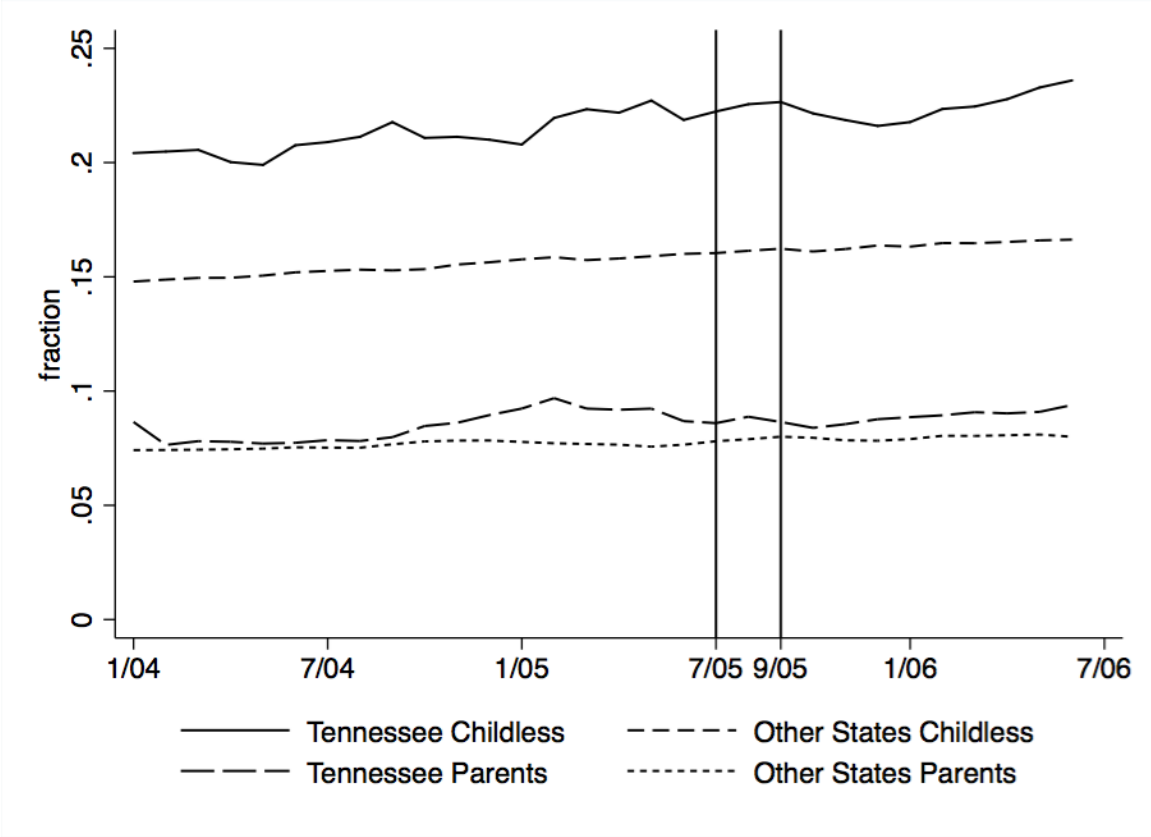
Notes: See notes for Figure 1.

Appendix Figure 4. Fraction of Adults who were Employed Part-time by Presence of Dependent Children, Tennessee vs. Other Southern States



Notes: See notes for Figure 1.

Appendix Figure 5. Fraction of Adults who were Disabled by Presence of Dependent Children, Tennessee vs. Other Southern States



Notes: See notes for Figure 1.

Table 1

Summary Statistics, Health Insurance, Employment, and Demographics

	All States	Tennessee		Other States	
	All Periods	Pre-period	Post-period	Pre-period	Post-period
Insurance Coverage					
Medicaid	0.073	0.175	0.119	0.067	0.070
Uninsured	0.185	0.112	0.147	0.189	0.187
All Private	0.724	0.700	0.709	0.728	0.723
Medicare	0.018	0.014	0.024	0.016	0.019
Employment Outcomes					
Employed	0.758	0.742	0.749	0.759	0.758
Employed Fulltime	0.571	0.519	0.532	0.566	0.582
Employed Parttime	0.187	0.223	0.217	0.193	0.176
Work-preventing Disability	0.081	0.110	0.115	0.077	0.082
Demographics					
Male	0.481	0.486	0.490	0.478	0.483
Age 18 - 30	0.261	0.273	0.268	0.254	0.268
Age 31 - 45	0.363	0.339	0.354	0.364	0.363
Age 46 - 55	0.235	0.233	0.224	0.240	0.231
Age 56 - 64	0.141	0.155	0.154	0.142	0.138
Graduate Degree	0.079	0.073	0.075	0.080	0.079
College Degree	0.168	0.157	0.156	0.170	0.168
Some College	0.366	0.344	0.342	0.368	0.366
High School Degree	0.872	0.848	0.849	0.875	0.870
Non-Hispanic White	0.665	0.822	0.827	0.659	0.651
Non-Hispanic Black	0.182	0.128	0.128	0.184	0.187
Non-Hispanic Other Race	0.028	0.025	0.025	0.028	0.028
Hispanic	0.125	0.025	0.020	0.129	0.133
Married	0.589	0.596	0.602	0.591	0.586
Number of Observations	136,388	5,287	4,211	71,382	55,508
Number of Individuals	18,269	1,267		17,002	

Notes: The pre-period is January 2004 - September 2005 and the post-period is October 2005 - August 2006. The sample includes adults between the ages of 18 and 64 living in southern states.

Source: 2004 Panel of the Survey of Income and Program Participation, Waves 1 - 8.

Table 2

Summary Statistics, Health and Health Care Utilization

	All States	Tennessee		Other States	
	All Periods	Pre-period	Post-period	Pre-period	Post-period
Health Outcomes					
Excellent / Very Good Health	0.617	0.531	0.517	0.619	0.625
Any Hospitalizations	0.085	0.105	0.093	0.085	0.084
Hospital Days	0.490	0.443	0.414	0.512	0.477
Doctors Visits	4.205	5.376	4.781	4.084	4.216
Dentist Visits	1.205	1.319	1.112	1.209	1.200
Any Rx	0.498	0.563	0.576	0.490	0.497
Any Free Clinic	0.020	0.011	0.025	0.020	0.020
Any ER Visits	0.009	0.012	0.011	0.010	0.008
Number of Observations	36,374	1,244	1,244	16,943	16,943
Number of Individuals	18,187	1,244		16,943	

Notes: The pre period is July 2004 - December 2004 and the post period is July 2005 - December 2005. The sample includes adults between the ages of 18 and 64 living in southern states.

Source: 2004 Panel of the Survey of Income and Program Participation, Topical Modules 3 and 6.

Table 3

Individual-Level Fixed Effects Models: Health Insurance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Medicaid		Uninsured		Private		Medicare	
Tenn X Post	-0.0543**	-0.0589**	0.0471**	0.0515**	0.0015	-0.0005	0.0056**	0.0079**
	(0.0023)	(0.0022)	(0.0031)	(0.0035)	(0.0031)	(0.0032)	(0.0006)	(0.0007)
Tenn X Imp		-0.0367**		0.0304**		0.0092**		-0.0029**
		(0.0031)		(0.0024)		(0.0030)		(0.0005)
Post Period	0.0024*	0.0019	-0.0066**	-0.0065*	0.0007	0.0007	0.0034**	0.0039**
	(0.0014)	(0.0014)	(0.0030)	(0.0033)	(0.0032)	(0.0034)	(0.0006)	(0.0007)
Implementation Period		0.0046**		-0.0068**		0.0008		0.0015**
		(0.0019)		(0.0024)		(0.0025)		(0.0005)
Constant	0.0739**	0.0739**	0.1866**	0.1866**	0.7235**	0.7235**	0.0159**	0.0159**
	(0.0006)	(0.0006)	(0.0012)	(0.0012)	(0.0013)	(0.0013)	(0.0002)	(0.0002)
Mean of dependent variable in Tennessee in pre-period	0.175		0.112		0.700		0.014	
N	136,388							
R-Squared	0.0023	0.0025	0.0008	0.0009	0.0001	0.0001	0.0011	0.0015

Notes: In all columns, the pre period is January 2004 - June 2005. In columns (1), (3), (5), and (7), the post period is is July 2005 - August 2006. In columns (2), (4), (6), and (8), the implementation period is July 2005 - September 2005 and the post period is is October 2005 - August 2006. The sample includes adults between the ages of 18 and 64 living in southern states. Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p<0.10.

Table 4

Individual-Level Fixed Effects Models: Labor Market Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Employment		Full-time		Part-time		Disabled	
Tenn X Post	-0.0001	0.0018	-0.0083*	-0.0063	0.0083*	0.0080	0.0021**	0.0025**
	(0.0027)	(0.0031)	(0.0042)	(0.0042)	(0.0047)	(0.0047)	(0.0009)	(0.0010)
Tenn X Imp		-0.0068**		-0.0161**		0.0093*		0.0005
		(0.0031)		(0.0055)		(0.0052)		(0.0017)
Post Period	0.0027	0.0031	0.0222**	0.0236**	-0.0196**	-0.0205**	0.0074**	0.0080**
	(0.0025)	(0.0028)	(0.0037)	(0.0037)	(0.0040)	(0.0042)	(0.0009)	(0.0010)
Implementation Period		0.0010		0.0169**		-0.0159**		0.0049**
		(0.0027)		(0.0052)		(0.0043)		(0.0017)
Constant	0.7560**	0.7560**	0.5593**	0.5593**	0.1967**	0.1967**	0.0779**	0.0779**
	(0.0010)	(0.0010)	(0.0015)	(0.0015)	(0.0017)	(0.0017)	(0.0004)	(0.0004)
Mean of dependent variable in Tennessee in pre-period	0.742		0.519		0.223		0.110	
N	136,388							
R-Squared	0.0001	0.0001	0.0013	0.0014	0.0011	0.0011	0.0011	0.0011

Notes: In all columns, the pre period is January 2004 - June 2005. In columns (1), (3), (5), and (7), the post period is is July 2005 - August 2006. In columns (2), (4), (6), and (8), the implementation period is July 2005 - September 2005 and the post period is is October 2005 - August 2006. The sample includes adults between the ages of 18 and 64 living in southern states. Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p<0.10.

Table 5

Individual-Level Fixed Effects Models: Health and Health Care Utilization

	(1) Excellent/ Very Good Health	(2) Any Hospitalization	(3) Hospital Days	(4) Doctor Visits	(5) Dentist Visits	(6) Any Rx	(7) Any Free Clinic	(8) Any ER Visits
Tenn X Post	-0.0181*	-0.0116**	0.0023	-0.7408**	-0.1908**	0.0029	0.0140**	0.0010
	(0.0086)	(0.0022)	(0.0450)	(0.1245)	(0.0150)	(0.0105)	(0.0019)	(0.0011)
Post Period	0.0031	-0.0012	-0.0349	0.1573	-0.0051	0.0104	-0.0003	-0.0017
	(0.0086)	(0.0022)	(0.0450)	(0.1245)	(0.0150)	(0.0105)	(0.0019)	(0.0011)
Constant	0.6149**	0.0863**	0.5116**	4.1535**	1.2130**	0.4930**	0.0195**	0.0103**
	(0.0041)	(0.0010)	(0.0212)	(0.0587)	(0.0071)	(0.0049)	(0.0009)	(0.0005)
Mean of dependent variable in Tennessee in pre-period	0.531	0.105	0.443	5.376	1.319	0.563	0.011	0.012
N				36,374				
R-squared	0.0001	0.0001	0.0001	0.0004	0.0006	0.0004	0.0003	0.0002

Notes: The post period includes July 2005 - December 2005 (wave 6) and the pre period includes July 2004 - December 2004 (wave 3). Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p < 0.10.

Table 6

Individual-Level Fixed Effects Models: Health Insurance

	(1)	(2)	(3)	(4)	(5)	(6)
		Medicaid			Uninsured	
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	-0.0596**	-0.0465**	-0.0131**	0.0479**	0.0460**	0.0018
	(0.0017)	(0.0043)	(0.0039)	(0.0036)	(0.0032)	(0.0031)
Post Period	0.0075**	-0.0049**	0.0123**	-0.0104**	-0.0010	-0.0093**
	(0.0014)	(0.0020)	(0.0018)	(0.0034)	(0.0030)	(0.0028)
Constant	0.0703**	0.0791**		0.1844**	0.1899**	
	(0.0006)	(0.0008)		(0.0014)	(0.0013)	
Mean of dependent variable in Tennessee in pre-period	0.171	0.179		0.131	0.084	
N	80,406	55,982		80,406	55,982	
R-Squared	0.0036	0.0020		0.0012	0.0007	
	(7)	(8)	(9)	(10)	(11)	(12)
		Private			Medicare	
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	0.0046	-0.0029	0.0075	0.0072**	0.0034**	0.0038**
	(0.0035)	(0.0052)	(0.0061)	(0.0010)	(0.0004)	(0.0011)
Post Period	-0.0017	0.0042	-0.0060*	0.0047**	0.0017**	0.0030**
	(0.0035)	(0.0037)	(0.0032)	(0.0010)	(0.0004)	(0.0011)
Constant	0.7221**	0.7256**		0.0233**	0.0053**	
	(0.0014)	(0.0016)		(0.0004)	(0.0002)	
Mean of dependent variable in Tennessee in pre-period	0.675	0.735		0.023	0.001	
N	80,406	55,982		80,406	55,982	
R-Squared	0.0001	0.0001		0.0014	0.0007	

Notes: The pre period is January 2004 - June 2005 and the post period is July 2005 - August 2006. Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p<0.10.

Table 7

Individual-Level Fixed Effects Models: Labor Market Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)
		Employment			Full-time	
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	0.0013	-0.0020	0.0033	-0.0042	-0.0143**	0.0101
	(0.0052)	(0.0039)	(0.0079)	(0.0065)	(0.0033)	(0.0070)
Post Period	-0.0005	0.0073**	-0.0079	0.0183**	0.0279**	-0.0095**
	(0.0039)	(0.0023)	(0.0046)	(0.0051)	(0.0030)	(0.0044)
Constant	0.7410**	0.7779**		0.5519**	0.5700**	
	(0.0016)	(0.0010)		(0.0021)	(0.0012)	
Mean of dependent variable in Tennessee in pre-period	0.707	0.793		0.486	0.567	
N	80,406	55,982		80,406	55,982	
R-Squared	0.0001	0.0003		0.0009	0.0020	
	(7)	(8)	(9)	(10)	(11)	(12)
		Part-time			Disabled	
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	0.0055	0.0123**	-0.0068	0.0033**	0.0004	0.0029*
	(0.0060)	(0.0047)	(0.0060)	(0.0012)	(0.0011)	(0.0016)
Post Period	-0.0189**	-0.0206**	0.0017	0.0101**	0.0034**	0.0067**
	(0.0049)	(0.0038)	(0.0039)	(0.0012)	(0.0011)	(0.0016)
Constant	0.1890**	0.2079**		0.1051**	0.0384**	
	(0.0020)	(0.0016)		(0.0005)	(0.0004)	
Mean of dependent variable in Tennessee in pre-period	0.221	0.226		0.154	0.047	
N	80,406	55,982		80,406	55,982	
R-Squared	0.0010	0.0011		0.0016	0.0004	

Notes: The pre period is January 2004 - June 2005 and the post period is July 2005 - August 2006. Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p<0.10.

Table 8

Individual-Level Fixed Effects Models: Health and Health Care Utilization

	(1)	(2)	(3)	(4)	(5)	(6)
	Excellent/Very Good Health			Any Hospitalization		
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	-0.0412**	0.0158	-0.0570**	-0.0005	-0.0280**	0.0275**
	(0.0082)	(0.0110)	(0.0078)	(0.0028)	(0.0051)	(0.0064)
Post Period	0.0013	0.0057	-0.0044	0.0020	-0.0058	0.0078
	(0.0082)	(0.0110)	(0.0078)	(0.0028)	(0.0051)	(0.0064)
Constant	0.5770**	0.6693**		0.0873**	0.0850**	
	(0.0039)	(0.0052)		(0.0013)	(0.0024)	
Mean of dep var	0.481	0.607		0.106	0.103	
N	21,332	15,042		21,332	15,042	
R-Squared	0.0004	0.0002		0.0001	0.0007	
	(7)	(8)	(9)	(10)	(11)	(12)
	Hospital Days			Doctor Visits		
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	0.0149	-0.0150	0.0299	-0.6250**	-0.9123**	0.2873
	(0.0610)	(0.0470)	(0.0677)	(0.1712)	(0.1203)	(0.1771)
Post Period	-0.0716	0.0178	-0.0894	0.2001	0.0958	0.1043
	(0.0610)	(0.0470)	(0.0677)	(0.1712)	(0.1203)	(0.1771)
Constant	0.6008**	0.3832**		4.5274**	3.6155**	
	(0.0287)	(0.0222)		(0.0807)	(0.0568)	
Mean of dep var	0.541	0.295		5.733	4.842	
N	21,332	15,042		21,332	15,042	
R-Squared	0.0002	0.0001		0.0004	0.0005	

Notes: The post period includes July 2005 - December 2005 (wave 6) and the pre period includes July 2004 - December 2004 (wave 3). Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p < 0.10.

Table 8 (continued)

Individual-Level Fixed Effects Models: Health and Health Care Utilization

	(13)	(14)	(15)	(16)	(17)	(18)
		Dentist Visits			Any Rx	
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	-0.2081**	-0.1654**	-0.0427*	0.0020	0.0042	-0.0022
	(0.0125)	(0.0252)	(0.0229)	(0.0100)	(0.0121)	(0.0062)
Post Period	-0.0015	-0.0103	0.0089	0.0113	0.0091	0.0022
	(0.0125)	(0.0252)	(0.0229)	(0.0100)	(0.0121)	(0.0062)
Constant	1.2230**	1.1985**		0.5328**	0.4357**	
	(0.0059)	(0.0119)		(0.0047)	(0.0057)	
Mean of dep var	1.287	1.367		0.606	0.498	
N	21,332	15,042		21,332	15,042	
R-Squared	0.0006	0.0004		0.0005	0.0003	
	(19)	(20)	(21)	(22)	(23)	(24)
		Any Free Clinic			Any ER Visits	
	Childless Adults	Parents	Difference	Childless Adults	Parents	Difference
Tenn X Post	0.0184**	0.0077**	0.0107**	0.0043**	-0.0038**	0.0081**
	(0.0019)	(0.0028)	(0.0027)	(0.0017)	(0.0010)	(0.0020)
Post Period	-0.0006	0.0001	-0.0007	-0.0012	-0.0025**	0.0013
	(0.0019)	(0.0028)	(0.0027)	(0.0017)	(0.0010)	(0.0020)
Constant	0.0186**	0.0207**		0.0105**	0.0100**	
	(0.0009)	(0.0013)		(0.0008)	(0.0005)	
Mean of dep var	0.013	0.009		0.010	0.014	
N	21,332	15,042		21,332	15,042	
R-Squared	0.0006	0.0001		0.0001	0.0005	

Notes: The post period includes July 2005 - December 2005 (wave 6) and the pre period includes July 2004 - December 2004 (wave 3). Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p < 0.10.

Table 9

Sensitivity Checks for Individual-Level Fixed Effects Models: Health Insurance and Employment

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Medicaid			Uninsured			Employment	
Tenn X Post	-0.0530**	-0.0547**	-0.0564**	0.0424**	0.0474**	0.0443**	0.0039	0.0002	0.0011
	(0.0029)	(0.0024)	(0.0013)	(0.0020)	(0.0033)	(0.0030)	(0.0029)	(0.0030)	(0.0024)
Post Period	0.0017	0.0028*	0.0024*	-0.0018	-0.0068*	-0.0064*	-0.0012	0.0025	0.0017
	(0.0018)	(0.0014)	(0.0013)	(0.0020)	(0.0032)	(0.0030)	(0.0026)	(0.0027)	(0.0024)
Constant	0.0821**	0.0747**	0.0738**	0.1588**	0.1920**	0.1862**	0.7516**	0.7529**	0.7581**
	(0.0007)	(0.0006)	(0.0005)	(0.0008)	(0.0013)	(0.0013)	(0.0010)	(0.0011)	(0.0010)
Control states	No FL or TX	No DC, DE, MD	All	No FL or TX	No DC, DE, MD	All	No FL or TX	No DC, DE, MD	All
Movers	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
Mean of dependent variable in Tennessee in pre-period		0.175			0.112			0.742	
N	102,324	125,532	133,732	102,324	125,532	133,732	102,324	125,532	133,732
R-squared	0.0034	0.0025	0.0025	0.0010	0.0009	0.0008	0.0001	0.0001	0.0001

Notes: The pre period is January 2004 - June 2005 and the post period is July 2005 - August 2006. Standard errors are clustered at the state level and are reported in parentheses. In columns (3), (6), and (9), the sample is restricting to individuals who did not move across state lines in waves 1 through 4. ** p<0.05; * p < 0.10.

Appendix Table 1

Summary Statistics, Health Insurance, Employment, and Demographics

States	All	Tennessee				Other States			
Adults	All	Childless Adults		Parents		Childless Adults		Parents	
Period	All	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Insurance Coverage									
Medicaid	0.073	0.171	0.117	0.179	0.124	0.064	0.072	0.071	0.069
Uninsured	0.185	0.131	0.165	0.084	0.122	0.185	0.179	0.195	0.199
All Private	0.724	0.675	0.682	0.735	0.747	0.727	0.721	0.728	0.725
Medicare	0.018	0.023	0.036	0.001	0.007	0.024	0.027	0.006	0.007
Employment Outcomes									
Employed	0.758	0.707	0.711	0.793	0.803	0.744	0.742	0.780	0.781
Fulltime	0.571	0.486	0.502	0.567	0.576	0.559	0.574	0.576	0.595
Parttime	0.187	0.221	0.209	0.226	0.227	0.186	0.168	0.204	0.186
Disability	0.081	0.154	0.162	0.047	0.050	0.103	0.111	0.038	0.041
Demographics									
Male	0.481	0.506	0.514	0.456	0.456	0.495	0.502	0.452	0.456
Age 18 - 30	0.261	0.264	0.260	0.286	0.280	0.249	0.262	0.261	0.277
Age 31 - 45	0.363	0.206	0.219	0.530	0.544	0.231	0.233	0.559	0.550
Age 46 - 55	0.235	0.282	0.274	0.163	0.153	0.294	0.285	0.161	0.155
Age 56 - 64	0.141	0.248	0.247	0.021	0.023	0.226	0.221	0.019	0.019
Graduate Degree	0.079	0.077	0.079	0.067	0.070	0.083	0.082	0.077	0.074
College Degree	0.168	0.155	0.154	0.161	0.160	0.167	0.165	0.175	0.172
Some College	0.366	0.332	0.326	0.362	0.365	0.371	0.370	0.364	0.361
High School	0.872	0.825	0.826	0.882	0.883	0.884	0.880	0.863	0.857
White	0.665	0.826	0.831	0.815	0.822	0.680	0.675	0.628	0.617
Black	0.182	0.132	0.128	0.123	0.128	0.191	0.193	0.173	0.179
Other Race	0.028	0.025	0.025	0.025	0.025	0.030	0.030	0.025	0.026
Hispanic	0.125	0.017	0.016	0.036	0.025	0.099	0.102	0.173	0.178
Married	0.589	0.500	0.513	0.733	0.727	0.484	0.476	0.748	0.743
Observations	136,388	3,138	2,495	2,149	1,716	42,083	32,690	29,299	22,818
Individuals	18,269	513		754		6,897		10,105	

Notes: The pre-period is January 2004 - September 2005 and the post-period is October 2005 - August 2006. The sample includes adults between the ages of 18 and 64 living in southern states.

Source: 2004 Panel of the Survey of Income and Program Participation

Appendix Table 2

Summary Statistics, Health Variables

States	All	Tennessee				Other States			
Adults	All	Childless Adults		Parents		Childless Adults		Parents	
Period	All	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Health Outcomes									
Excellent / Very Good Health	0.617	0.481	0.439	0.607	0.629	0.582	0.586	0.673	0.679
Any Hospitalizations	0.085	0.106	0.107	0.103	0.072	0.086	0.087	0.083	0.078
Hospital Days	0.490	0.541	0.487	0.295	0.308	0.602	0.528	0.382	0.404
Doctors Visits	4.205	5.733	5.260	4.842	4.089	4.465	4.629	3.537	3.628
Dentist Visits	1.205	1.287	1.060	1.367	1.187	1.223	1.217	1.191	1.176
Any Rx	0.498	0.606	0.620	0.498	0.514	0.530	0.537	0.432	0.439
Any Free Clinic	0.020	0.013	0.030	0.009	0.017	0.019	0.018	0.021	0.021
Any ER Visits	0.009	0.010	0.012	0.014	0.008	0.011	0.009	0.010	0.007
Number of Observations	36,374	742	742	502	502	9,924	9,924	7,019	7,019
Number of Individuals	18,187	742		502		9,924		7,019	

Notes: The pre period is July 2004 - December 2004 and the post period is July 2005 - December 2005. The sample includes adults between the ages of 18 and 64 living in southern states.

Source: 2004 Panel of the Survey of Income and Program Participation, Topical Modules 3 and 6.

Appendix Table 3

Sensitivity Checks for Individual-Level Fixed Effects Models: Common Trends Test

	(1) Medicaid	(2) Uninsured	(3) Employment
Time	-0.0001	-0.0012**	0.0004**
	(0.0002)	(0.0002)	(0.0001)
Time * Implementation Period	0.0002	0.0012	-0.0003
	(0.0009)	(0.0008)	(0.0005)
Time * Post Period	0.0008**	0.0002	-0.0003
	(0.0004)	(0.0004)	(0.0002)
Time * Tennessee	0.0001	0.0013*	-0.0007
	(0.0007)	(0.0007)	(0.0005)
Time * Imp * Tennessee	0.0027	0.0119**	-0.0141**
	(0.0034)	(0.0034)	(0.0027)
Time * Post * Tennessee	-0.0012	0.0005	-0.0023**
	(0.0017)	(0.0014)	(0.0011)
Constant	0.7569**	0.1967**	0.0703**
	(0.0021)	(0.0021)	(0.0013)
Mean of dependent variable in Tennessee in pre-period	0.170	0.116	0.740
N		127,604	
R-squared	0.0001	0.0015	0.0026

Notes: The pre period is January 2004 - September 2005 and the post period is October 2005 - August 2006. Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05; * p < 0.10.

Appendix Table 4

Individual-Level Fixed Effects Models: Attrition and Moving

	(1)	(2)
		Move
	Attrit	States
Wave 3	0.0524**	0.0051**
	(0.0031)	(0.0009)
Wave 4	0.0870**	0.0083**
	(0.0032)	(0.0009)
Wave5	0.1245**	0.0115**
	(0.0034)	(0.0010)
Wave 6	0.1523**	0.0169**
	(0.0035)	(0.0011)
Wave 7	0.1770**	0.0200**
	(0.0035)	(0.0012)
Wave 8	0.1948**	0.0232**
	(0.0036)	(0.0012)
Tennessee X Wave 2	0.0185**	-0.0010
	(0.0080)	(0.0018)
Tennessee X Wave 3	0.0046	-0.0019
	(0.0091)	(0.0025)
Tennessee X Wave 4	0.0066	0.0008
	(0.0099)	(0.0031)
Tennessee X Wave 5	0.0052	0.0000
	(0.0106)	(0.0033)
Tennessee X Wave 6	0.0034	0.0046
	(0.0110)	(0.0041)
Tennessee X Wave 7	0.0071	-0.0003
	(0.0113)	(0.0040)
Tennessee X Wave 8	0.0000	-0.0006
	(0.0115)	(0.0042)
Constant	0.0975**	0.0063
	(0.0020)	(0.0005)
F-stat (p-value)	0.9600	0.3200
	(0.4580)	(0.9470)
N	172,361	
R-squared	0.0252	0.0034

Notes: F-stat is from a joint test that all of the interaction terms are zero. Standard errors are clustered at the state level and are reported in parentheses. ** p<0.05.