Early Effects of the 2010 Affordable Care Act Medicaid Expansion on Labor Market Outcomes

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Abstract

We test for early labor market effects in terms of eased job-lock from the Affordable Care Act Medicaid expansion of January 2014 that targeted non-elderly low-income adults. An expansion of health insurance options not tied to employment could increase job turnover among newly eligible low-income populations, enabling them to move to preferred jobs (measured here as higher wage jobs). We use a differences-in-differences (DD) strategy, comparing rates of job turnover and wages, after the policy implementation relative to the outcomes before the implementation, among the treatment group (low-educated populations in Medicaid expansion states) relative to the control group (similar individuals in non-expansion states). We use educational level rather than income to define groups because of the potential endogeneity of income, but caution that since education is only a crude proxy for Medicaid eligibility, measurement error may affect our results. However, we also use alternative estimation strategies and find our conclusions are unchanged. We examine triple-differences (DDD) models with an additional within-state control group of those who have higher education. We also find our results are unchanged when we use potentially endogenous measures of income; in future drafts we plan to instrument for actual eligibility with a simulated policy measure, and to use a one year lagged income measure. We conduct tests to verify that our relevant DD and DDD comparisons satisfy the common trends assumption before proceeding with our analysis, using Current Population Survey (CPS) Basic Monthly data from January 2005 through August 2014. We use these data because of large sample sizes and quick release dates. However, the CPS Basic Monthly data do not contain information on health insurance status itself. We find no statistically significant evidence that the ACA Medicaid expansion increased job turnover rates or affected wages in either our base DD or DDD models. We caution that these are early results, and come from a data set in which we cannot estimate insurance impacts to estimate the elasticity of job transition with respect to health insurance.

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I. Introduction

The Patient Protection and Affordable Care Act (ACA) of 2010 is projected to extend health insurance coverage to 32 million people (CBO, 2012). The ACA expands the number with health insurance through many features including ones that encourage employer-sponsored insurance (ESI), as exemplified by the (currently postponed) introduction of an employer mandate. The predominant ways the ACA currently expands insurance options are not tied to one's own employment, as they occur through Medicaid expansion, subsidized Marketplace insurance plans, and coverage for young adults through parental employer policies. These new health insurance options could potentially affect the behaviors of workers and employers, leading to consequences for labor market outcomes.

The purpose of this paper is to analyze the early effects of the 2014 ACA Medicaid expansion on "job lock", a phenomenon in which individuals are less likely to move to preferred jobs (possibly measured as higher wage jobs) because of the traditional tie between employment and health insurance. The 2014 Medicaid expansion varies by state, enabling a more robust study design than otherwise. Before the ACA, Medicaid eligibility for childless low-income adults (and less so for parents) was extremely limited. The ACA initially intended to expand Medicaid to all non-elderly Americans with household incomes less than 138% of the federal poverty level (FPL). In June 2012 the U.S. Supreme Court ruled the ACA's Medicaid expansion to be unconstitutionally coercive of states' rights, and as of June 10, 2014 27 states decided to expand Medicaid for 2014, 21 states have decided not to implement the expansion, and three states are still debating whether to expand Medicaid (Kaiser Family Foundation, 2014). This state-by-state variation in Medicaid expansion for 2014 provides us with a potential source of variation to identify causal impacts of Medicaid on labor market outcomes.

We use Current Population Survey (CPS) Basic Monthly data collected by the United States Bureau of Labor Statistics as the main data source for testing the job-lock impacts of Medicaid expansions. Due to its large sample size and almost immediate release of data, the CPS Basic Monthly dataset is a valuable data source for timely analysis of labor market behavior. The CPS Basic Monthly dataset includes rich information on point-in-time job characteristics as well as demographic, geographic (state) and socioeconomic characteristics of individuals.

The implementation of the ACA will have significant impacts on the welfare of Americans, and these impacts could extend beyond access to health insurance and health care. In our paper we test the potential for effects on job transitions from one particular ACA provision, the Medicaid expansion. A large literature exists on the impact of health insurance on job-lock and labor markets in general, and several new papers find varying results from recent state Medicaid expansions prior to the ACA (Dague et al., 2014; Garthwaite et al., 2014; and Baicker et al., 2014).

By reducing job-lock, health insurance not tied to employment could increase job mobility and increase wages (Monheit and Cooper, 1994; and Gruber and Madrian, 2004). While the theory of job-lock release applies to those with ESI as a counterfactual, our data set does not contain information on health insurance held during 2013.[2] Moreover, those who held ESI in 2013 are not necessarily the group whose counterfactual insurance status in 2014 would involve ESI as there is substantial movement from year to year in insurance status. On the other hand, those eligible for Medicaid benefits may not display signs of released job lock after insurance

[2] Prior papers show evidence of non-trivial ESI prevalence among low-income adults. For example, Hamersma and Kim (2009) show using Survey of Income and Program Participation data from the 1996 and 2001 panels that the rate of ESI in own name is 38.4% among men below 100% FPL, 29.8% among married women below 100%FPL, and 28.3% among unmarried women below 100% FPL among working parents aged 20-54 years. We find in ASEC CPS data from years prior to 2013 that the rates are somewhat lower among childless adults, and that there has been a secular decline in ESI during the recessionary years, but that ESI rates are nonetheless still non-trivial for low-income adults.

expansions if their labor market behavior is largely independent of health insurance. For example, they may have a low marginal willingness to pay for health benefits and/or not work for employers who offer health insurance. This is consistent with recent evidence observed through an experimental design in Oregon (Baicker et al., 2014) where Medicaid expansion has little effect on work behavior, although other estimates point to much larger labor market reactions to Medicaid expansions (Garthwaite et al., 2013). Given the theoretical ambiguity and conflicting evidence from past Medicaid expansions, our research will provide timely and preliminary information on how the ACA's Medicaid expansions affect labor market outcomes and can help inform discussions related to future steps in implementation of the ACA.

This paper makes contributions to two strands of the literature. The first strand is the literature on job lock and other labor market effects of insurance expansion in general. The second strand is the growing body of literature that analyzes the effects of the ACA implementation. Our preliminary analysis of the early effects of the Medicaid expansion prepares us to evaluate the first-year effects more rigorously when the full-year 2014 data on labor market and insurance outcomes from the post-implementation period become available.

II. Prior Literature

Many prior papers estimate effects of job lock but find mixed results (See Gruber and Madrian (2004), Fairlie et al. (2013), and Bailey and Chorniy (2014) for comprehensive literature reviews). Three prior papers are particularly relevant to our work because they use expansions in Medicaid-related public health insurance to investigate job lock; all three find evidence of released job lock following the insurance expansions. Bansak and Raphael (2008) found that the Children's Health Insurance Program (CHIP) expansion of Medicaid or Medicaid-

like programs to children lead to reduced job lock among their parents. Hamersma and Kim (2009) find that the expansions in Medicaid to parents after welfare reform of 1996 lead to reduced job lock in one population (unmarried mothers) but not in others (married mothers and fathers). Dave et al. (2013) examine the case of pregnancy-related Medicaid expansions of the late 1980s and early 1990s, finding that transitions out of current jobs occur with the receipt of new Medicaid insurance. However, Dave et al. (2013) only study transitions out of employment, rather than between jobs, which is relevant as the period studied is pregnancy and childbirth. Thus, there is evidence that health insurance has inhibited job movement among those adults affected directly or indirectly by prior Medicaid expansions.

Previous studies on the effects of public insurance expansion on labor market outcomes in general and specifically on job-lock have mainly focused on the expansion to subpopulations other than low-income childless adults, those targeted by the ACA Medicaid expansion. The subpopulations studied in the literature include single mothers (Moffitt and Wolfe, 1992; Meyer and Rosenbaum, 2001) and pregnant women (Dave et al., 2013), and these studies reported mixed findings. In particular, Moffitt and Wolfe (1992) used data from the 1984 wave of the Survey of Income and Program Participation (SIPP) and found that single mothers were more likely to reduce labor supply and increase participation in welfare (Aid to Families with Dependent Children, AFDC) when welfare offered greater expected Medicaid benefits. In addition, Meyer and Rosenbaum (2001) concluded that the increases in female labor supply observed from data in the March CPS supplements between 1984 and 1996 were a result of a concurrent policy implementation—the Earned Income Tax Credit (EITC)—rather than the increases in Medicaid eligibility income thresholds. Dave et al. (2013) used CPS March supplement data from 1986 to 1997 and found analogous results in the labor supply decisions of

pregnant women (between 18 and 39 years of age) eligible for Medicaid benefits; they estimated a 6% to 7% (13% to 16% among unmarried women with less than a high school degree) decline in labor supply among pregnant women associated with a 20 percentage point increase in Medicaid coverage.

More recent studies investigate the impact of health insurance coverage on the labor supply decisions of low-income childless adults and the general low income population (see Garrett and Kaestner (2014), and Dave et al. (2013), for reviews of these papers). Garthwaite et al. (2014) analyzed the effects of abrupt disenrollment of low- to moderate-income adult Medicaid recipients in Tennessee. The authors found that both job search behavior and employment increased tremendously after the disenrollment. They concluded that the ACA may reduce the labor supply of low-income adults, and their estimates have been influential in projections of the employment effects of the ACA. Dague et al. (2014) found a negative effect - between 0.9 to 7.2 percentage points in a differences-in-differences specification and between 6.1 to 10.6 percentage points in a regression discontinuity specification - of Wisconsin's BadgerCare Plus Core Plan's health insurance expansion on the labor supply of eligible childless adults (childless adults under 200% of the Federal Poverty Line, FPL). Despite the differences in the range of the estimates under two different identification strategy specifications, significant declines in labor supply were observed. However, since Dague et al. (2014) studied a Section 1115 program specific to the state of Wisconsin, stricter institutional rules regarding when the eligible population in Wisconsin can enter or exit the insurance program could create a “lock-in” enrollment effect. This can overstate the effects on labor markets relative to the ACA Medicaid expansions where the eligible population can transition between private and Medicaid coverage based on changes in their eligibility status.

In contrast to the statistically significant findings in Dague et al. (2014) and Garthwaite et al. (2014), Baicker et al. (2014) report that Medicaid coverage of traditionally uninsured adults in Oregon did not result in any significant reductions in labor supply. Moreover, the magnitude of the statistically insignificant point estimates are small, suggesting that Medicaid coverage is associated with a 1.6 percentage point decline in employment and a statistically insignificant reduction of $195 in annual income, both of which represent 3% (Baicker et al., 2014). Baicker et al.'s (2014) intent to treat (ITT) model estimates meet the gold standard for evaluation since it is based on results from the Oregon Health Insurance trial, in which low-income adult applicants - with incomes at or below the FPL and assets of $2000 - were chosen randomly from a lottery and assigned to control and treatment groups conditional on household size.

The credibility of the research design and the findings of Baicker et al. (2014) suggest that quasi-experimental designs may overstate the effects of health insurance coverage on labor supply. However, Baicker et al.'s (2014) experiment is specific to the Oregon population; state and regional differences may therefore drive some of the trends in labor supply among the low-income population who have recently become eligible for health insurance under the ACA. Our work adds to the literature by being the first to consider the early effects of the ACA Medicaid expansion in terms of eased job-lock and wages.

III. Conceptual Framework

The availability of Medicaid, an insurance option that is not tied to employment, may enable workers to switch to jobs that offer a better productivity match (as measured by higher wages) but do not provide health insurance. This type of transition would be less likely to occur in labor markets that have high rates of unemployment and low demand for labor. Higher wages could also result because of the extra wage compensation that an employer who does not provide

health insurance is able to give their worker. These theories apply to the extent that the worker would have been in a job that provided ESI absent the Medicaid expansion. We also expect that the effects on labor market outcomes are larger among those with higher health insurance demand, such as those who are older, given the correlation between age and health. General equilibrium effects may also be present in large-scale public health insurance expansions. Employers may increase their demand for Medicaid eligible workers, in the face of an employer mandate that would hold them responsible for health insurance provision to higher income workers, leading to higher job turnover. This would occur under the assumption that workers do not bear the full cost of their employer provided benefits.

In summary, we expect to find that Medicaid expansion reduces job lock, thereby increasing job transitions and increasing reported wages. To the extent that ESI is not relevant for the job markets of those affected by Medicaid expansions, or that the demand for health insurance is low for other reasons, we would be less likely to find these effects. We are also less likely to find the expected result of released job lock in job markets that are less flexible and characterized by low demand for labor.

IV. Data

Our main data source is CPS Basic Monthly data, which interviews around 60,000 households each month to collect basic demographic and labor force status information. The rotational structure of the CPS interviews households monthly for four months, then ceases to interview the household for eight month, and finally returns to the same households for four additional months of monthly interviews. These Basic Monthly data become publicly available approximately one month after the interviews, making it a valuable real-time resource for studying labor market results of the ACA.

Our outcome variables are a measure of job transitions, and the weekly wage at the current job. Job transitions are captured by a job change variable available in the CPS, which indicates whether workers stay employed by the same employer or changed employers between two consecutive months. Prior studies that use this variable include Bailey and Chorniy (2014) and Fairlie et al. (2013). The weekly wage is asked only of those in the "outgoing rotation group" of the CPS, which represent about one quarter of all respondents in a given month. For descriptive purposes, we also use the monthly family income variable in the CPS (asked of everyone), to estimate the fraction of FPL that is represented by the respondent's family income.[3] Table 1 shows descriptive statistics of the CPS Basic Monthly data from January 2005 through August 2014. The data set consists of 8,559,950 person-month observations for most variables. The number of valid observations is lower for job transitions (4,206,703) as this measure is available only for the subset of individuals who were employed in the month prior to the survey. Only about one third of these individuals (1,425,723) are asked the question about the weekly wage. About one tenth of our sample has less than high school completion and about one third have only a high school diploma.

We supplement the CPS data with information on the status of state Medicaid expansion decisions for 2005-2014, which we obtain through the Kaiser Family Foundation website as well as our own investigation of news reports and legislative records that adds details of income thresholds used by states over time and for different adult populations.

V. Identification Strategy

[3] In future drafts we will use a version of this data set that is linked to previous Annual Social and Economic Supplement (March) of the CPS in order to have measures of family size, family income, and prior year annual earnings and health insurance, for those individuals who can be matched across years.

Starting in January 2014, Medicaid was expanded to non-elderly individuals with household incomes less than 138 percent—including an income disregard—of the Federal Poverty Level (FPL) in 27 states (Kaiser Family Foundation, 2013).[4] In the 24 states that decided not to implement the Medicaid expansions, individuals with household incomes less than 100 percent of the FPL but above any existing state Medicaid income eligibility standard are ineligible for either Medicaid or for premium subsidies through the Marketplace.[5]

Using current income to measure eligibility poses problems because income may have responded to the policy through labor supply changes. For example, someone whose earnings placed them at 140% of FPL prior to 2014 in an expansion state may have retired early because of the possibility of receiving Medicaid and earn far less than 138% FPL in 2014. Similarly, someone with 95% FPL in 2013 in a non-expansion state may now work longer hours and earn more than 100% or 138% FPL, thereby qualifying for Exchange subsidies in that state.

To overcome endogeneity in current income to define the treatment group, we utilize education status as a proxy for Medicaid eligible individuals. This is similar to other work that faces endogeneity problems in identifying treatment and control groups based on income or wage, or does not have access to income data (such as Currie and Gruber (2001) in the case of Medicaid expansions on birth certificate outcomes, or Simon and Kaestner (2004) in the case of minimum wage laws and health insurance). We use the logic that education status is likely to be exogenous to Medicaid policy (at least in the short run) but that those with low education are more affected by Medicaid expansions, relative to those with higher education.

[4] Among the 27 states, Michigan implemented the ACA expansion in April 2014, and New Hampshire implemented the expansion in July 2014.

[5] An exception is Wisconsin, which amended its Medicaid state plan and existing Section 1115 waiver to cover adults up to 100% FPL in Medicaid but did not adopt the expansion (Kaiser Family Foundation, 2014). We include Wisconsin as an expansion state in our analysis.

In Table 2, we show that a larger share of non-elderly adults in the CPS who have at most a high-school diploma have family incomes below 138% of the FPL (between 23 and 20 percent, depending on the year) than do those in higher educational categories (between 10 to 12 percent, depending on the year).[6] We use non-elderly adults (aged 19 to 64 years) with a high school diploma or less as our main study sample. We examine the behavior of our study sample who reside in states that expanded Medicaid (treatment group), compared to our control group of non-elderly individuals with low-education status who reside in states that decided not to implement the expansion. We also use another level of difference to estimate a triple-differences (DDD) specification where we compare the behavior of our study sample (low-educated non-elderly adults), to non-elderly adults with higher educational status—more than high school diploma. We find that this DDD estimate leads to the same conclusion as our DD model. We also find that the conclusion does not change when we compare the behavior of childless low-educated non-elderly adults in expansion states to low-educated non-elderly parents; one might expect that childless adults would display more of the hypothesized effects of job lock release since parents have had access to Medicaid at more generous levels than childless adults, prior to 2014. The fact that our results are qualitatively the same reduce concerns that are results are affected by the particular choice of educational status as the proxy for control and treatment groups.

Before turning to our DD analysis, we provide results of tests of the assumption that prior to the policy change, the control group and treatment group (low-educated individuals in states with and without expansions) followed time trends that were not statistically different in relevant

[6] In unreported results, we confirm that our results using educational categories hold when we use the potentially endogenous (but more accurate as a measure of Medicaid eligibility) current income measure for defining the treatment and control groups. We have also instrumented for Medicaid eligibility that is calculated from current income using a simulated eligibility measure, and find results are not qualitatively different from the ones presented here.

outcomes in years prior to 2014. We find that these conditions are satisfied for the most part; there are some marginally significant effects, but the implied percent effects are extremely small (close to one thousandth of a percent effect).

Our empirical specification for the DD (estimated only among those aged 19-64 with low –education status) takes the form:

$$[1]\ Y_{igst} = \alpha + \beta \text{Post} + \gamma\ MedicaidState_g + \eta(Post_t * MedicaidState_g) + \mathbf{X}_{igst}\boldsymbol{\beta} + \tau_t + \zeta_s + \varepsilon_{igst},$$

where Y_{igst} represents job transition (an indicator variable for the month in question) and logged weekly wages that month for individual *i* in the treatment (or control) group *g*, state *s*, and time *t*. $Post_t$ represents a dummy for the period after the ACA Medicaid Expansion enactment (January 2014). $MedicaidState_g$ represents a dummy for being in a state that expanded, and the interaction of $Post_t$ and $MedicaidState_g$ captures the average effect of the policy. Individual-level control variables, $\mathbf{X}_{igst}$, include demographic characteristics such as age, gender, marital status, educational attainment (indicator for high school diploma vs. high school dropout), and race/ethnicity. We include year-specific and month-specific fixed effects in τ_t. We also include state fixed effects, state monthly unemployment rates, and state linear time trends, ζ_s. Because of the inclusion of year and state fixed effects, the terms *Pos*t and *MedicaidState* on their own are written out only for expositional reasons in Equation [1]—during estimation, they are subsumed in the state and year fixed effects. We cluster standard errors at the level of the state and use a linear probability model as our main specification for its ease of interpretation and computation of marginal effects of interacted variables.

Our main model [1] also includes an indicator for presence of a state-level Medicaid expansion prior to January 2014, which takes a value of 1 if individuals reside in states that have

a Medicaid program for childless adults through 1115 waiver or a market-based Medicaid plan if the program (or plan) is neither closed nor capped. This variable takes a value of 0 once the ACA Medicaid expansion took effect in January 2014. The state expansions are rather heterogeneous and, on average, are much weaker than the ACA expansion; thus, we expect them to have less of an effect and indeed they consistently show no statistically significant effects in our models. The study period ranges from January 2005 to the latest month of available data (currently, August 2014). In sub analysis, we stratify the sample by age and by parental status to observe heterogeneity of the results.

Last, we construct a triple-differences estimate (DDD) and use higher educated groups as a further control group. We estimate Model 2 on the overall CPS Basic monthly sample from 2005-2014 (August 2014).

$$[2]\ Y_{igst} = \alpha + \gamma\, Post_t + \eta(MedicaidState_g * Post_g) + \rho\big(MedicaidState_g * Post_t * LowEdAdult_i\big) + \phi(LowEdAdult_i * Post_t) + \omega\big(MedicaidState_g * LowEdAdult_i\big) + \lambda(LowEdAdult_i) + \mathbf{X}_{igst}\boldsymbol{\beta} + \tau_t + \zeta_s + \varepsilon_{igst}$$

where Y_{igst} represents outcomes for individual *i* (can be childless adult or a parent) in the treatment (or control) group *g*, state *s*, and time *t*. The outcome variable, Y_{igst}, includes job switch, and log of weekly wages. $Post_t$ represents a dummy for the period after the ACA enactment. $MedicaidState_g$ represents a dummy for residing in a state that expanded Medicaid benefits in 2014, $LowEdAdult_i$ represents a dummy variable to indicate if individual *i* has low education, and the triple interaction of $Post_t$, $MedicaidState_g$, and $LowEdAdult_i$ captures the average effect of the policy. Interactions between $Post_t$, and $MedicaidState_g$; $LowEdAdult_i$ and

$MedicaidState_{g;}$ and $LowEdAdult_i$ and $Post_t$ act as controls for unobserved factors. Individual-level control variables, $\mathbf{X}_{igst}$, include demographic characteristics such as age, gender, marital status, educational attainment, and race/ethnicity. It also includes an age variable, its squared term, and monthly state unemployment rate to control for the state of the economy.

In unreported preliminary results, we also investigated the use of an instrumental variables strategy, in which we impute Medicaid eligibility due to the expansion using point-in-time income measures, and instrument for it with a simulated eligibility measure based on the fraction of individuals in their age and race/ethnic group who would be eligible if they lived in a certain state and month (following Currie and Gruber 2001). Because of the binary nature of the 2014 Medicaid expansion (all states either expanding or not, and if expanding, using similar income threshold (138%FPL), we find that this analysis does not provide added insight beyond the identification provided through DD or DDD methods above and have not included it in this version of the paper. Future versions will also use data from the ASES component of the CPS to estimate models restricted to those who held ESI in prior years and to create treatment and control groups based on prior year income.

VI. Results

Validity of Identifying DD Assumption on Less-Educated, Non-elderly Adults

Before proceeding to our main analysis, we first verify that time trends in outcomes prior to the Medicaid expansion are graphically similar between the treatment and control groups as would be appropriate for the DD analysis; we also conduct tests of statistical differences in these trends. This specification controls for all variables included in the main DD regression.

Figure 1a shows that the pre-trends of the outcomes are visually similar between the treatment and control groups (those in states that expanded vs. did not expand) among those with less education (high school diploma or less). The differences in the trends of the probability of job switch between the treatment and control groups are statistically insignificant (Appendix Table 1a). However, an extremely small (less than $3/1000^{th}$ of a percent of the base value), but statistically significant at the 10 percent significance level difference exists in logged weekly wages where the less-educated, non-elderly population earned a very trivial amount less in weekly wages in Medicaid expanding states prior to expansion relative their counterfactuals in non-Medicaid expanding states. Given the weakness of the statistical evidence and the small magnitude, we interpret this as largely showing that time trends were very similar for the treatment and control groups, prior to the policy.

We also verify that pre-trends for the Medicaid expansion analysis are graphically and statistically similar between the treatment and control groups for both the low-educated childless adult and the parental population separately. Figures 1b and 1c show that the pre-trends of the outcomes are similar between the treatment and control groups (those in states that expanded vs. did not expand) among childless adults and parents with less education (high school diploma or less) respectively. Appendix Table 1b and 1c show that the corresponding differences in trends between the treatment and control groups are very small and statistically insignificant for all outcomes, except that the pre-trends of logged weekly wages are not statistically the same prior to the policy, for the parental population. This estimate is extremely small (less than 6/1000 percent of the base value) although it is statistically significant at the 5% level.

DD Results

The 2014 Medicaid expansions primarily impact childless adults, since low-income parents and pregnant women were able to receive some state-level benefits to qualify for Medicaid benefits prior to the ACA Medicaid expansion implementation. Therefore, we construct DD estimates outlined in Model 1 for the less-educated (high school diploma or less) for the non-elderly population as a whole, and then for non-elderly childless adult and the non-elderly parental populations separately.

First, Table 3a displays the difference-in-differences (DD) estimates for less educated non-elderly adults. The expansion displays no statistically significant impact on the labor market outcomes we study. The (statistically not different from zero) magnitudes of the job switching point estimate is consistent with the likelihood of a job switch in Medicaid expanding states reduced by 0.10 percentage points (4.8 percent) in Medicaid expanding states, along with a 95% confidence interval of an increase of 0.1 to a decrease of 0.3 percentage points. The effects on log weekly wages are also statistically insignificant. These coefficients are consistent with weekly wages reduced by 0.57 percent in Medicaid expanding states; the associated confidence intervals are also large and include 0. Thus, in both cases, the point estimates are wrong-signed relative to our hypothesis as well as being statistically insignificantly different from zero.

Table 3b estimates the corresponding Model 1 for those with higher education. This could be viewed as a placebo test as we expect many fewer in our high-education sample are affected by Medicaid policy relative to those in our low-education sample. We find no statistically significant effects of Medicaid policy in this population, which is reassuring given the lack of findings for the lower educated sample.

In Tables 4a and 5a, we rerun Model 1 on the childless adult population and the parental population separately (among those with low education). Most results are statistically insignificant in these models. As one exception, we find a marginally significant result consistent with that job switching *reducing* significantly (at the 10 percent significance level) for the parental population by 0.4 percentage points (19%). Since our hypothesis is that Medicaid expansion would ease job lock, the negative coefficient for the parental population is an unexpected result. Tables 4b and 5b show the DD estimates for non-elderly childless adults with high education, and non-elderly parents with high education. The results of Tables 4b and 5b—placebo tests corresponding to our estimates on the less educated childless adult and parental population in Table 4a and 5a—show no statistically significant effects. The results in Tables 4b and 5b are also consistent with the results Table 3b which did not separate out the childless adults and the parents.

DDD Results

Before we estimate a triple-differences model, we compare whether the differences in time trends between the low-educated sample and the higher-educated sample changed differently between Medicaid-expansion states and non-expansion states before the Medicaid expansion. The results in Appendix Table 2 shows statistically significant differences in the changes in trends in job switching and in log weekly wages with magnitudes of 5 percent and 1 percent. Even though the differences in changes in trends in job switching and log weekly wages are significant only at the 10% significance level, we emphasize that the pre-trends are not ideal for interpreting the results of the DDD strategy. The baseline DDD estimates in Table 6 show a statistically significant result, but opposite in sign to the expected direction. The difference in job switching between the less educated (high school diploma or less) population relative to the more

educated (more than high school diploma) population reduced significantly at the 5% significance level for states expanding Medicaid in 2014 by 0.3 percentage points. However, the baseline DDD estimates in Table 6 shows that differences in logged weekly wages between the less educated and more educated in states that expanded Medicaid were not statistically significantly different from differences in states that did not expand Medicaid for the non-elderly population. In the additional rows in Table 6, we show separately estimated DDD models among those of different ages. In the estimate for 19-34 yr olds, we find a marginally significant negative effect on wages of 0.4 percent. This is again opposite to our expected findings. We find no statistically significant results for the older population.

VII. Discussion and Conclusion

In this paper, we estimate the early labor market consequences of the 2014 Medicaid expansion using CPS Basic Monthly data, which offer large samples and timely access but are limited because they do not contain health insurance information. Because of the possible endogeneity of actual income, we use educational category as a proxy for Medicaid expansion. However, this results in measurement error that could affect our results. However, we also use alternative estimation strategies and find our conclusions are unchanged. We examine triple-differences (DDD) models with an additional within-state control group of those who have higher education. We also find our results are unchanged when we use potentially endogenous measures of income; in future drafts we plan to instrument for actual eligibility with a simulated policy measure, and to use a one year lagged income measure.

Our results indicate no evidence of strong effects from ACA Medicaid expansions on our hypothesis of released job-lock or our associated hypothesis of higher wages. Most of the outcomes we study show no statistically significant changes in either DD or DDD models. There are some instances of small and marginally statistically significant effects, but in all cases those are of the opposite sign than expected. Our estimates are consistent with evidence from the closest experimental variation in Oregon that show no statistically significant effects on labor market outcomes from Medicaid. However, while the Oregon experiment estimates are related to actual receipt of Medicaid whereas ours is only an "intent to treat" estimate as we do not have health insurance information.

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Summary Tables, Results Tables, and Figures:

Table 1. Descriptive Statistics—Current Population Survey, Non-Elderly Adults Aged 19-64

	Mean	Std. Dev.	N
Demographic Characteristics			
Age	41.6	12.88	8,559,940
Indicator: male	0.483	0.499	8,559,940
Indicator: white	0.708	0.455	8,559,940
Indicator: African-American	0.094	0.292	8,559,940
Indicator: Hispanic	0.124	0.3297	8,559,940
Outcome variables			
Indicator: switched a job this month	0.021	0.144	4,206,703
Weekly wages	825.472	601.384	1,425,723
Education Level			
Indicator: High School Drop Out	0.101	0.302	8,559,940
Indicator: High School Diploma	0.295	0.456	8,559,940
Indicator: High School Diploma or Less Education	0.396	0.489	8,559,940
Indicator: More than a High School Level of Education	0.604	0.489	8,559,940
Income			
Yearly Family Income	40,000 TO 49,999	3.9412	8,559,940

Note: Sample estimates from the CPS Basic Monthly data from January 2005 to August 2014.

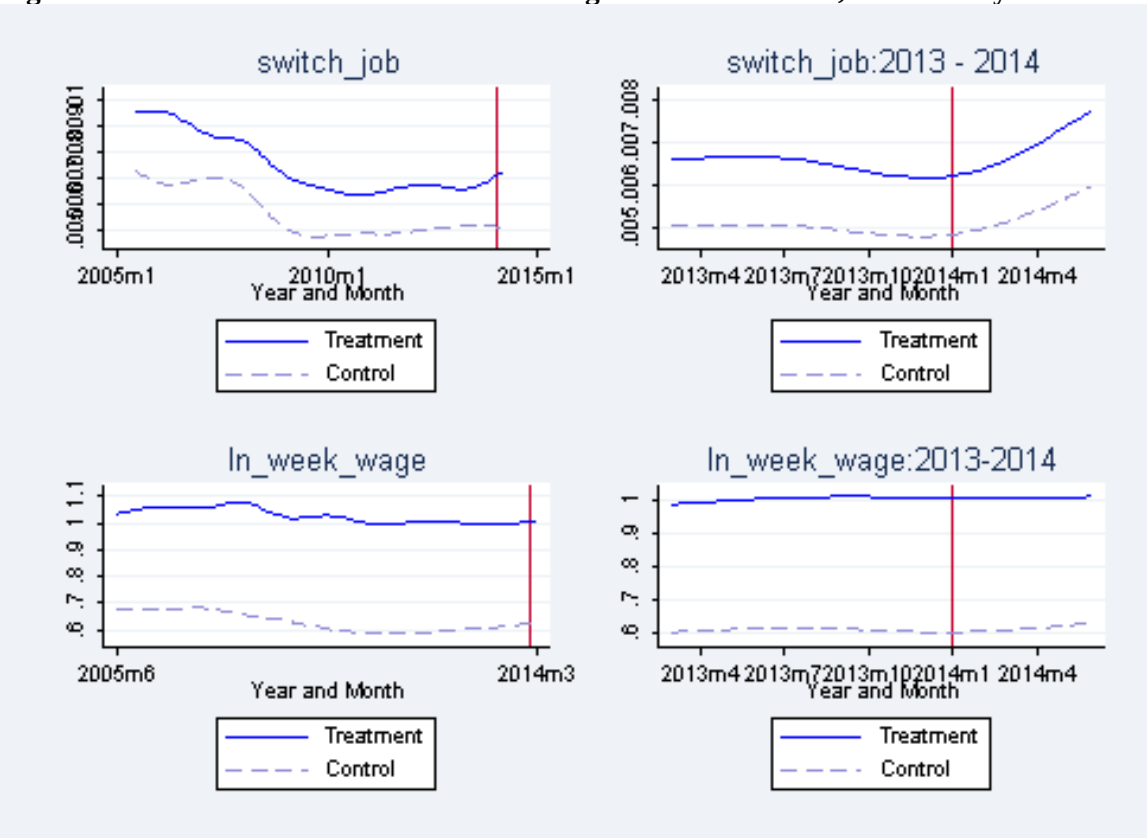
Table 2: Correspondence Between Educational Level and Income, Non-Elderly Adults in CPS Basic Monthly, January 2005-August 2014

	High School Drop outs	High School Diploma	High School Diploma or Less	More than High School	High School Drop outs	High School Diploma	High School Diploma or Less	More than High School
Year	Income: At or Below 100%FPL				Income: Below 138%FPL			
2005	0.221	0.089	0.124	0.061	0.377	0.173	0.227	0.115
2006	0.207	0.086	0.118	0.057	0.357	0.162	0.215	0.107
2007	0.197	0.084	0.113	0.055	0.343	0.156	0.205	0.102
2008	0.190	0.080	0.108	0.053	0.335	0.151	0.198	0.098
2009	0.204	0.086	0.117	0.058	0.355	0.163	0.213	0.107
2010	0.215	0.096	0.126	0.066	0.365	0.179	0.226	0.121
2011	0.212	0.102	0.130	0.068	0.366	0.185	0.230	0.123
2012	0.213	0.098	0.127	0.065	0.362	0.180	0.225	0.119
2013	0.208	0.097	0.124	0.063	0.355	0.176	0.219	0.115
2014	0.199	0.093	0.118	0.062	0.350	0.173	0.216	0.113

(1): The values of the cells show the fraction of those in a certain educational group whose income is below 100% or 138% of FPL. The CPS Monthly data do not contain household size, thus we make the following simplifying assumption for our calculations when taking reported monthly income and translating it into fraction of FPL for the relevant year.

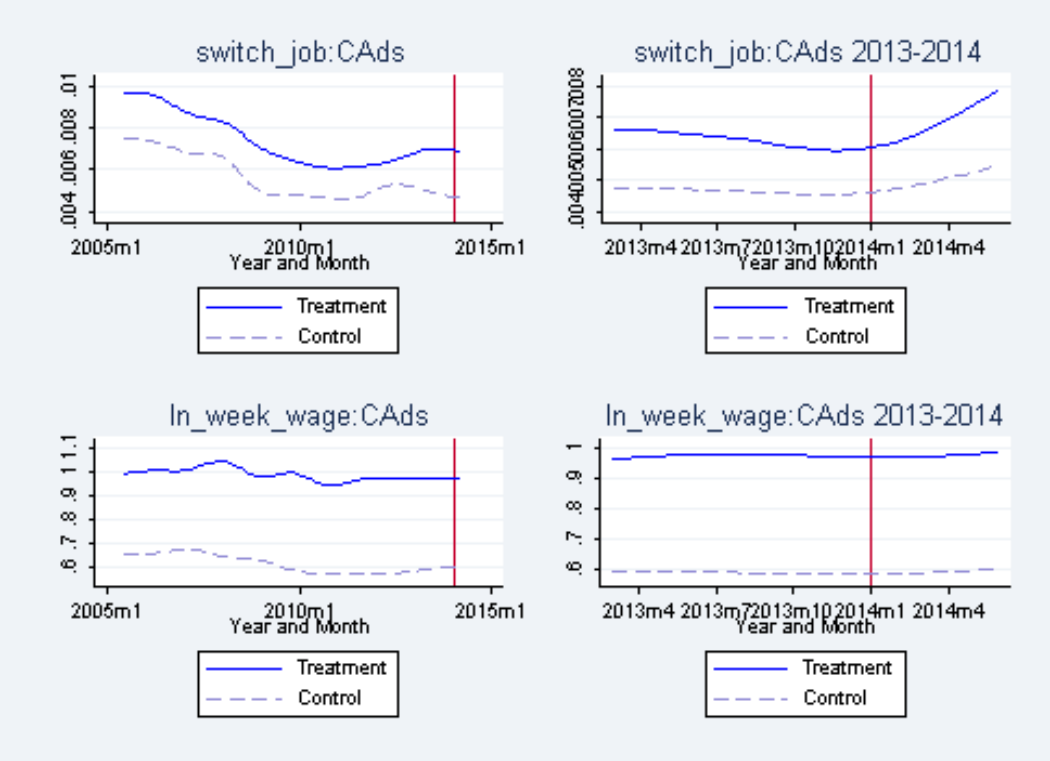
Childless adults are assumed to have household size of 1 while married parents are assumed to have household size of 3.
(2) The third column, High School Diploma or Less, is a combination of the first two columns, in each of the two panels of this table.

Figure 1a: Trends in Outcome Variables among the Less-Educated, Non-Elderly Adults



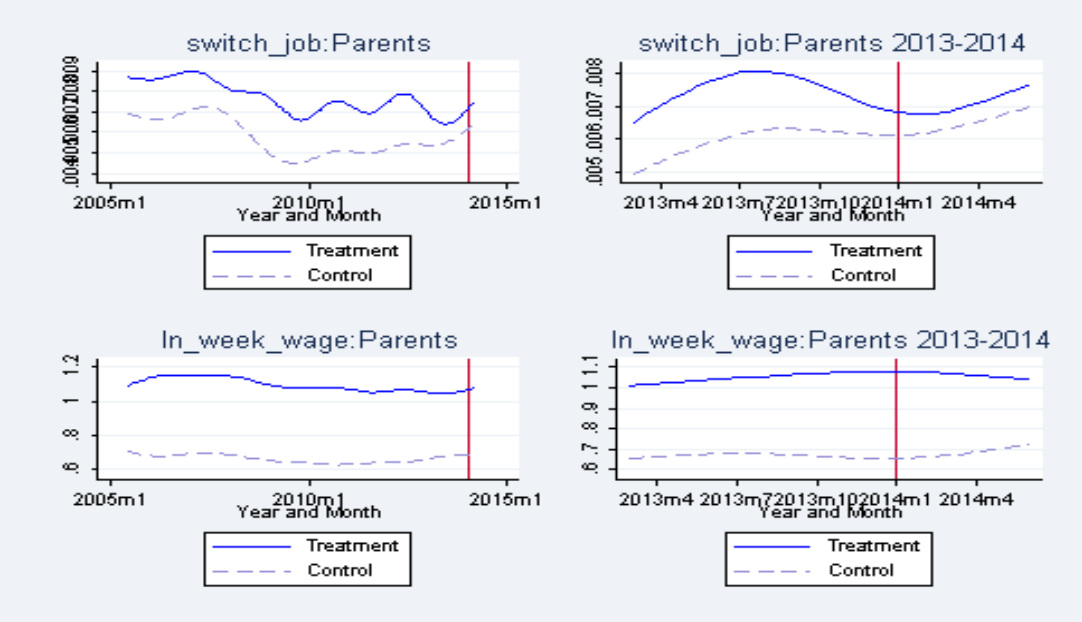
Note:
(1) Solid line represents treatment states (states expanding Medicaid coverage in 2014)
(2) Dashed line represents control states (states not expanding Medicaid coverage in 2014)
(3) Vertical solid line – Implementation of 2014 ACA Medicaid expansion in January 2014
(4) Less Educated is defined as High School Diploma or Less
(5) Graphs on the left column shows trends in outcome variables switch_job and ln_week_wage from 2005 till August 2014
(6) Graphs on the right column show trends in outcome variables switch_job and ln_week_wage from 2013-2014. It specifically looks at the trends observed in CPS Basic Monthly data between the year before implementation (January 2013) up till the latest month of CPS Basic data (August 2014).

Figure 1b: Trends in Outcome Variables among the Less-Educated, Childless Adults



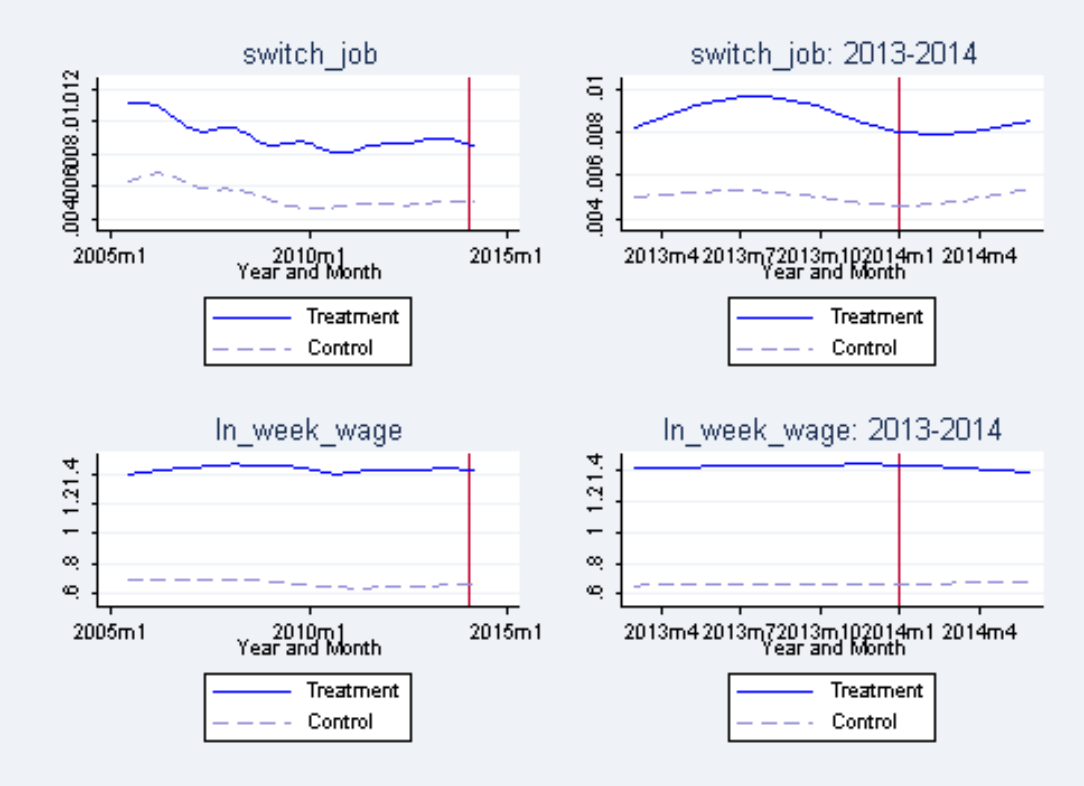
Note:
see Notes to Figure 1a

Figure 1c: Trends in Outcome Variables among the Less-Educated, Parents



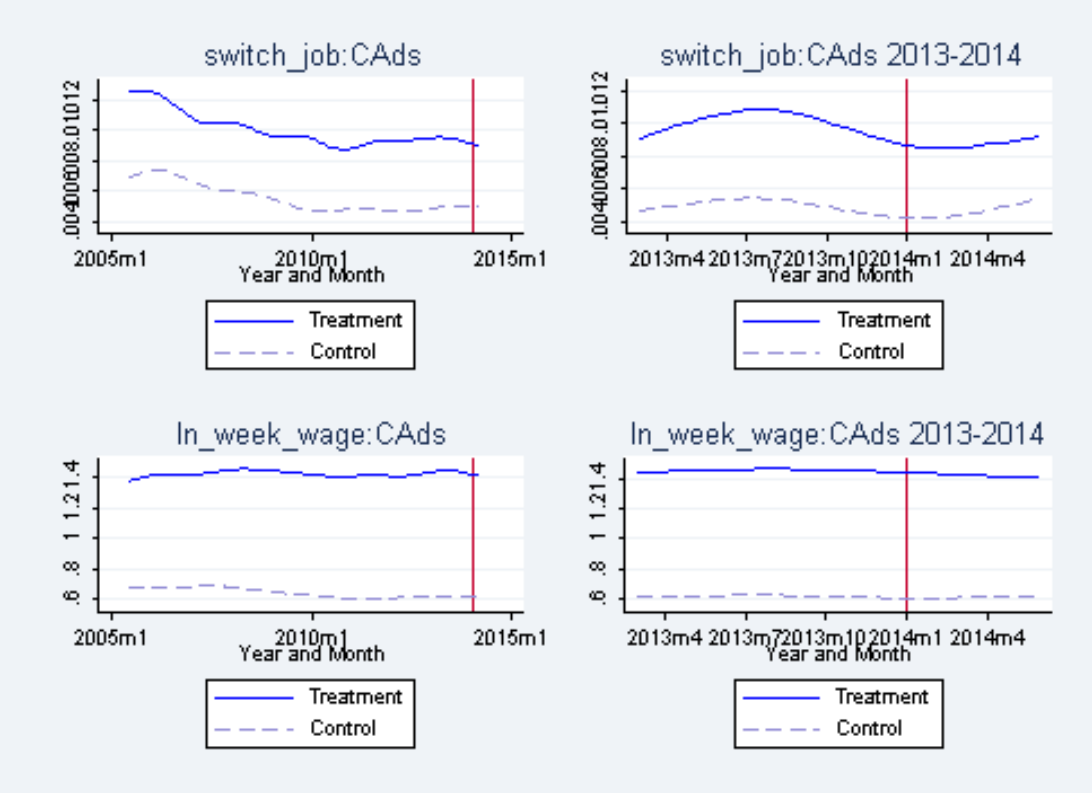
Note:
See Notes to Figure 1a

Figure 2a: Trends in Outcome Variables among the More-Educated, Non-Elderly Adults



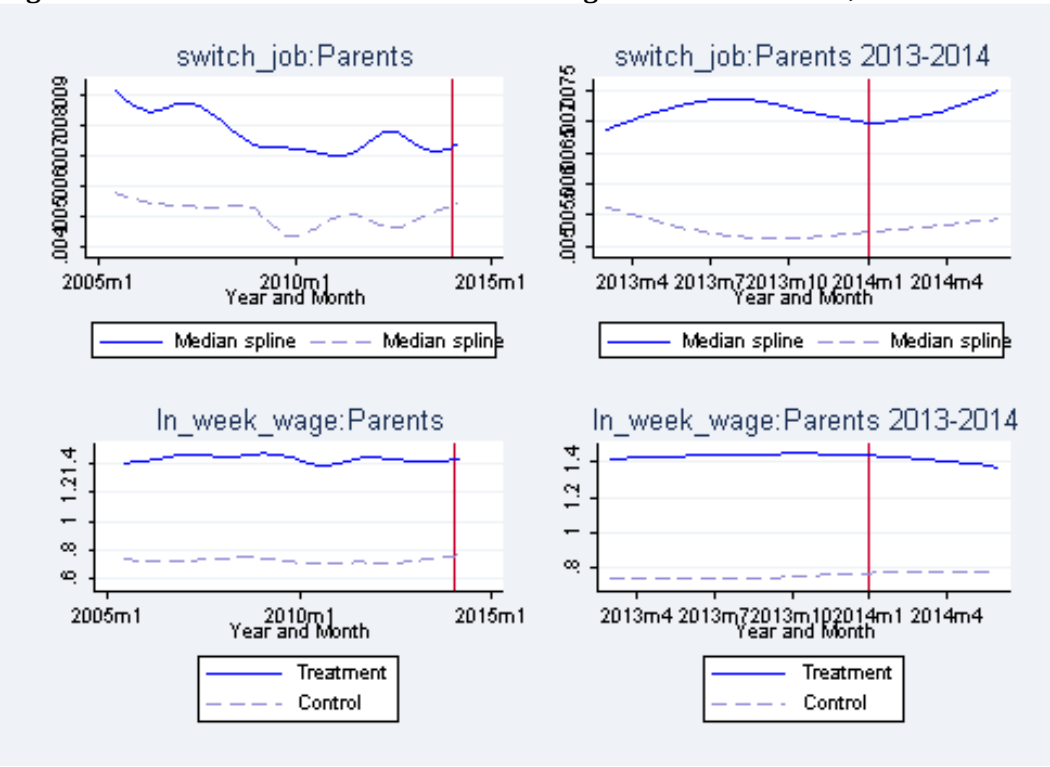
Note:
(1) Solid line represents treatment states (states expanding Medicaid coverage in 2014)
(2) Dashed line represents control states (states not expanding Medicaid coverage in 2014)
(3) Vertical solid line – Implementation of 2014 ACA Medicaid expansion in January 2014
(4) More Educated is defined as more than High School Diploma, Less Educated defined as High School Diploma or less
(5) Graphs on the left column shows trends in outcome variables switch_job and ln_week_wage from 2005 till August 2014
(6) Graphs on the right column shows trends in outcome variables switch_job and ln_week_wage from 2013-2014. It specifically looks at the trends observed in CPS Basic Monthly data between the year before implementation (January 2013) up till the latest month of CPS Basic data (August 2014).

Figure 2b: Trends in Outcome Variables among the More-Educated, Childless Adults



Note:
See Notes to Figure 2a

Figure 2c: Trends in Outcome Variables among the More-Educated, Parents



Note:
See Notes to Figure 2a

Table 3a. Effect of ACA Medicaid Expansion among Non-elderly Adults (HS Diploma or Less Education)

	Indicator: job switch	Indicator: Log of weekly wages
ACA Medicaid Expansion Effect	-0.0010	-0.0057
(2014 January-August)	(0.0001)	(0.0100)
ACA Medicaid Expansion Effect (19-34 year olds) [(6)]	-0.001	-0.008
(2014 January-August)	(0.0024)	(0.0174)
ACA Medicaid Expansion Effect (58-64 year olds) [(7)]	0.001	-0.004
(2014 January-August)	(0.0022)	(0.0229)
Baseline Average in Medicaid Expanding State	0.021	6.201
Baseline Average in Non-Medicaid Expanding State	0.023	6.169
Post 2014 Average in Medicaid Expanding State	0.022	6.269
Post 2014 Average in Non-Medicaid Expanding State	0.024	6.256
Number of Observations	1,455,563	506,842

Notes: (1) Cells of the table contain coefficients and standard errors in parentheses. Coefficients in the first row are from the interaction of a dummy variable for treatment group (less-educated, non-elderly individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (2) Data: CPS Basic Monthly data from January 2005 to August 2014. The population is 19-64 years old with education level of a high school diploma or less. (3) Dependent variables—column 1: indicator variable that equals 1 if individual switches jobs during the current month and 0 otherwise; and column 2: log of weekly wages. (4) Other regressors are age, gender, race/ethnicity, marital status, monthly state unemployment rate, year-specific fixed effects, month-specific fixed effects, state fixed effects, and state-specific linear trends. (5) Means of dependent variables are obtained for treatment and control groups before and after the ACA Medicaid expansion. (6) Coefficients in the third row are from the interaction of a dummy variable for treatment group (less-educated 19-34 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014) in the regressions that use a sub-population of less-educated 19-34 year old individuals. (7) Coefficients in the third row are from the interaction of a dummy variable for treatment group (less-educated 58-64 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014) in the regressions that use a sub-population of less-educated 58-64 year old individuals.

Table 3b. Effect of ACA Medicaid Expansion among Non-elderly Adults (More than HS Diploma)

	Indicator: job switch	Indicator: Log of weekly wages
ACA Medicaid Expansion Effect	-0.000265	0.006
(2014 January-August)	(0.0009)	(0.0090)
ACA Medicaid Expansion Effect (19-34 year olds) [6]	-0.001	0.002
(2014 January-August)	(0.0019)	(0.0128)
ACA Medicaid Expansion Effect (58-64 year olds) [7]	-0.001	-0.006
(2014 January-August)	(0.0021)	(0.0310)
Baseline Average in Medicaid Expanding State	0.021	6.614
Baseline Average in Non-Medicaid Expanding State	0.021	6.526
Post 2014 Average in Medicaid Expanding State	0.020	6.682
Post 2014 Average in Non-Medicaid Expanding State	0.020	6.607
Number of Observations	2,751,140	918,881

Notes: (1) Cells of the table contain coefficients and standard errors in parentheses. Coefficients in the first row are from the interaction of a dummy variable for treatment group (more-educated, non-elderly individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (2) Data: CPS Basic Monthly data from January 2005 to August 2014. The population is 19-64 years old with education level of more than a high-school diploma. (3) Dependent variables—column 1: indicator variable that equals 1 if individual switches jobs during the current month and 0 otherwise; and column 2: log of weekly wages. (4) Other regressors are age, gender, race/ethnicity, marital status, monthly state unemployment rate, year-specific fixed effects, month-specific fixed effects, state fixed effects, and state-specific linear trends. (5) Means of dependent variables are obtained for treatment and control groups before and after the ACA Medicaid expansion. (6) Coefficients in the first row are from the interaction of a dummy variable for treatment group (less-educated, 19-34 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (7) Coefficients in the first row are from the interaction of a dummy variable for treatment group (less-educated, 58-64 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014).

Table 4a. Effect of ACA Medicaid Expansion among Non-elderly Childless Adults (HS Diploma or Less Education)

	Indicator: job switch	Indicator: Log of weekly wages
ACA Medicaid Expansion Effect	0.001	-0.001
(2014 January-August)	(0.0015547)	(0.0097848)
Baseline Average in Medicaid Expanding State	0.020	6.231
Baseline Average in Non-Medicaid Expanding State	0.022	6.192
Post 2014 Average in Medicaid Expanding State	0.021	6.282
Post 2014 Average in Non-Medicaid Expanding State	0.026	6.281
Number of Observations	913,761	321,956

Notes: (1) Cells of the table contain coefficients and standard errors in parentheses. Coefficients in the first row are from the interaction of a dummy variable for treatment group (states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-May, 2014). (2) Data: CPS Basic Monthly data from January 2005 to August 2014. The population is non-elderly childless adults (19-64 years old) with education level of a high school diploma or less. (3) Dependent variables—column 1: indicator variable that equals 1 if individual switches jobs during the current month and 0 otherwise; and column 2: log of weekly wages. (4) Other regressors are age, gender, race/ethnicity, marital status, monthly state unemployment rate, year-specific fixed effects, month-specific fixed effects, state fixed effects, and state-specific linear trends. (5) Means of dependent variables are obtained for treatment and control groups before and after the ACA Medicaid expansion.

Table 4b. Effect of ACA Medicaid Expansion among Non-elderly Childless Adults (More than HS Diploma)

	Indicator: job switch	Indicator: Log of weekly wages
ACA Medicaid Expansion Effect	-0.00036	0.001
(2014 January-August)	(0.0012)	(0.0106)
Baseline Average in Medicaid Expanding State	0.017	6.724
Baseline Average in Non-Medicaid Expanding State	0.019	6.616
Post 2014 Average in Medicaid Expanding State	0.018	6.813
Post 2014 Average in Non-Medicaid Expanding State	0.019	6.705
Number of Observations	1,686,368	574,223

Notes: (1) Cells of the table contain coefficients and standard errors in parentheses. Coefficients in the first row are from the interaction of a dummy variable for treatment group (states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-May, 2014). (2) Data: CPS Basic Monthly data from January 2005 to August 2014. The population is non-elderly childless adults (19-64 years old) with education level of more than a high school diploma. (3) Dependent variables—column 1: indicator variable that equals 1 if individual switches jobs during the current month and 0 otherwise; and column 2: log of weekly wages. (4) Other regressors are age, gender, race/ethnicity, marital status, monthly state unemployment rate, year-specific fixed effects, month-specific fixed effects, state fixed effects, and state-specific linear trends. (5) Means of dependent variables are obtained for treatment and control groups before and after the ACA Medicaid expansion.

Table 5a. Effect of ACA Medicaid Expansion among Non-elderly Parents (HS Diploma or Less Education)

	Indicator: job switch		Indicator: Log of weekly wages
ACA Medicaid Expansion Effect	-0.004	*	-0.013
(2014 January-August)	(0.0024)		(0.0161)
Baseline Average in Medicaid Expanding State	0.022		6.184
Baseline Average in Non-Medicaid Expanding State	0.023		6.157
Post 2014 Average in Medicaid Expanding State	0.022		6.262
Post 2014 Average in Non-Medicaid Expanding State	0.024		6.242
Number of Observations	541,802		184,886

Notes: (1) Cells of the table contain coefficients and standard errors in parentheses. Coefficients in the first row are from the interaction of a dummy variable for treatment group (states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (2) Data: CPS Basic Monthly data from January 2005 to August 2014. The population is non-elderly parents (19-64 years old) with education level of a high school diploma or less. (3) Dependent variables—column 1: indicator variable that equals 1 if individual switches jobs during the current month and 0 otherwise; and column 2: log of weekly wages. (4) Other regressors are age, gender, race/ethnicity, marital status, monthly state unemployment rate, year-specific fixed effects, month-specific fixed effects, state fixed effects, and state-specific linear trends. (5) Means of dependent variables are obtained for treatment and control groups before and after the ACA Medicaid expansion.

Table 5b. Effect of ACA Medicaid Expansion among Non-elderly Parents (More than HS Diploma)

	Indicator: job switch	Indicator: Log of weekly wages
ACA Medicaid Expansion Effect	-0.0000517	0.012
(2014 January-August)	(0.0014466)	(0.0113537)
Baseline Average in Medicaid Expanding State	0.023	6.550
Baseline Average in Non-Medicaid Expanding State	0.023	6.470
Post 2014 Average in Medicaid Expanding State	0.022	6.610
Post 2014 Average in Non-Medicaid Expanding State	0.022	6.547
Number of Observations	1,064,772	344,658

Notes: (1) Cells of the table contain coefficients and standard errors in parentheses. Coefficients in the first row are from the interaction of a dummy variable for treatment group (more-educated, non-elderly individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (2) Data: CPS Basic Monthly data from January 2005 to August 2014. The population is non-elderly parents (19-64 years old) with education level of more than a high school diploma. (3) Dependent variables—column 1: indicator variable that equals 1 if individual is switching jobs during the current month and 0 otherwise; and column 2: log of weekly wages. (4) Other regressors are age, gender, race/ethnicity, marital status, monthly state unemployment rate, year-specific fixed effects, month-specific fixed effects, state fixed effects, and state-specific linear trends. (5) Means of dependent variables are obtained for treatment and control groups before and after the ACA Medicaid expansion. (6) Coefficients in the third row are from the interaction of a dummy variable for treatment group (more-educated 19-34 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (7) Coefficients in the third row are from the interaction of a dummy variable for treatment group (more-educated 58-64 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014)

Table 6. DDD- Effect of ACA Medicaid Expansion On the Difference Between Non-elderly Less Educated (HS Diploma or HS Drop Out) Adults Relative to Non-Elderly, More Educated (More than High School Diploma) Adults in Medicaid Expanding States Relative to Non-Medicaid Expanding States

	Indicator: job switch		Indicator: Log of weekly wages	
ACA Medicaid Expansion Effect	-0.003	**	-0.029	
(2014 January-August)	(0.0011)		(0.0188)	
ACA Medicaid Expansion Effect (19-34 year olds) [(6)]	-0.003		-0.041	*
(2014 January-August)	(0.0022)		(0.0228)	
ACA Medicaid Expansion Effect (58-64 year olds) [(7)]	-0.002		(0.017)	
(2014 January-August)	(0.0024)		(0.0358)	
Baseline Mean Difference (childless adults-parents): Medicaid Expanding States	0.000369		-0.413	
Baseline Mean Difference (childless adults-parents): Non-Medicaid Expanding States	0.0016779		-0.357	
Post Policy Mean Difference (childless adults-parents): Medicaid Expanding States	0.001389		-0.413	
Post Policy Mean Difference (childless adults-parents): Non-Medicaid Expanding States	0.0038985		-0.352	
Number of Observations	4,206,703		1,425,723	

Notes: (1) Cells of the table contain coefficients and standard errors in parentheses. Coefficients in the first row are from the interaction of a dummy variable for treatment group (less-educated non-elderly individual in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (2) Data: CPS Basic Monthly data from January 2005 to August 2014. The population is non-elderly adults (19-64 years old) with education level of more than a high school diploma. (3) Dependent variables—column 1: indicator variable that equals 1 if individual switches jobs during the current month and 0 otherwise; and column 2: log of weekly wages. (4) Other regressors are age, gender, race/ethnicity, marital status, monthly state unemployment rate, year-specific fixed effects, month-specific fixed effects, state fixed effects, and state-specific linear trends. (5) Means of dependent variables are obtained for treatment and control groups before and after the ACA Medicaid expansion. (6) Coefficients in the 3rd row are from the interaction of a dummy variable for treatment group (less-educated, 19-34 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014). (7) Coefficients in the 3rd row are from the interaction of a dummy variable for treatment group (less-educated 58-64 year old individuals in states that participated in the 2014 ACA Medicaid expansion) and a dummy variable for the period after the Medicaid expansion (January-August, 2014).

Appendix:

Appendix Table 1a: Test for Equality of Pre-Reform Trends among Non-elderly Adults (with HS Diploma or Less) Between Medicaid Expanding States and Non Medicaid Expanding States

	Indicator: job switch	Indicator: Log of weekly wages	
Interaction of time trend and a dummy variable for treatment group	-0.000002	-0.0002	*
	(0.00001)	(0.0001)	
Baseline Average in Medicaid Expanding State	0.657	6.201	
Baseline Average in Non-Medicaid Expanding State	0.662	6.169	
Number of observations	1,360,979	472,206	

Notes: (1) Data: CPS Basic Monthly data from January 2005 to December 2013, which is prior to the implementation of the ACA Medicaid expansion in Jan 2014. (2) Cells of the table contain: coefficients, and standard errors in parentheses. Coefficients are from the interaction of a dummy variable for treatment group and a linear measure for time trend (number of months since January 2005), which shows whether there was a different time trend for the control vs. the treatment group in the period prior to policy enactment. (3) Other regressors are a linear time trend, a dummy variable for the treatment group, and all other explanatory variables included in our main specification.

Appendix Table 1b: Test for Equality of Pre-Reform Trends among Non-elderly Childless Adults (with HS Diploma or Less) Between Medicaid Expanding States and Non Medicaid Expanding State

	Indicator: job switch	Indicator: Log of weekly wages
Interaction of time trend and a dummy variable for treatment group	-0.000006	-0.0001
	(0.00001)	(0.0001)
Baseline Average in Medicaid Expanding State	0.020	6.231
Baseline Average in Non-Medicaid Expanding State	0.022	6.192
Number of observations	852,921	299,375

Notes: (1) Data: CPS Basic Monthly data from January 2005 to December 2013, which is prior to the implementation of the ACA Medicaid expansion in Jan 2014. (2) Cells of the table contain: coefficients, and standard errors in parentheses. Coefficients are from the interaction of a dummy variable for treatment group and a linear measure for time trend (number of months since January 2005), which shows whether there was a different time trend for the control vs. the treatment group in the period prior to policy enactment. (3) Other regressors are a linear time trend, a dummy variable for the treatment group, and all other explanatory variables included in our main specification.

Appendix Table 1c: Test for Equality of Pre-Reform Trends among Non-elderly Parents (with HS Diploma or Less) Between Medicaid Expanding States and Non Medicaid Expanding State

	Indicator: job switch	Log of weekly wages	
Interaction of time trend and a dummy variable for treatment group	0.000004	-0.0004	**
	(0.00002)	(0.0002)	
Baseline Average in Medicaid Expanding State	0.022	6.184	
Baseline Average in Non-Medicaid Expanding State	0.023	6.157	
Number of observations	508,058	172,831	

Notes: (1) Data: CPS Basic Monthly data from January 2005 to December 2013, which is prior to the implementation of the ACA Medicaid expansion in Jan 2014. (2) Cells of the table contain: coefficients, and standard errors in parentheses. Coefficients are from the interaction of a dummy variable for treatment group and a linear measure for time trend (number of months since January 2005), which shows whether there was a different time trend for the control vs. the treatment group in the period prior to policy enactment. (3) Other regressors are a linear time trend, a dummy variable for the treatment group, and all other explanatory variables included in our main specification.

Appendix Table 2: Test for Equality of Pre-Reform Trends among Less Educated (High School Diploma or Less), Non-elderly Adults Relative to More Educated (More than High School Diploma) Non-elderly Adults, in States with and Without Medicaid Expansions

	Indicator: job switch		Indicator: Log of weekly wages	
Interaction of time trend and a dummy variable for treatment group	-0.00002	*	-0.0004	*
	(0.00001)		(0.0002)	
Baseline Mean Difference (less educated – more educated): Medicaid Expanding States	0.000369		-0.413	
Baseline Mean Difference (less educated – more educated): Non-Medicaid Expanding States	0.0016779		-0.357	
Number of observations	3,916,172		1,322,906	

Notes: (1) Data: CPS Basic Monthly data from January 2005 to December 2013, which is prior to the implementation of the ACA Medicaid expansion in Jan 2014. (2) Cells of the table contain: coefficients, and standard errors in parentheses. Coefficients are from the interaction of a dummy variable for treatment group and a linear measure for time trend (number of months since January 2005), which shows whether there was a different time trend for the control vs. the treatment group in the period prior to policy enactment. (3) Other regressors are a linear time trend, a dummy variable for the treatment group, and all other explanatory variables included in our main specification