Forced to Choose?
Unemployment Insurance and the Medicaid Notch

Sungbin Park*

November 8, 2026
Click *here* for the latest version

Abstract

Medicaid eligibility rules may force some workers to choose between unemployment insurance (UI) benefits and health insurance coverage. Because Medicaid eligibility is based on income including UI benefits, some workers face a notch in loss of coverage if they claim UI. Exploiting the changing Medicaid eligibility of childless adults due to ACA expansions, I focus on the "notched" group and analyze UI take-up using the 2008–2018 Survey of Income and Program Participation. I find UI take-up falls by 19.6 percentage points among notched workers, 27 percent of their pre-expansion rate, while the comparison group, whose UI benefits do not increase income above the Medicaid eligibility threshold, shows no significant decline in UI take-up. The effect is stronger for workers whose predicted health care needs are higher. Removal of the notch produces symmetric effects. I estimate that 98,000 workers per year face the forced choice, that the average willingness to pay for Medicaid is at least $5,900 per unemployment spell, and that eliminating the notch would add about $104 million in UI spending and $171 million in Medicaid spending.

JEL codes: I38, I13, J65, H53

Keywords: benefits cliff, safety net interactions, program take-up, income testing, ACA expansion

*George Mason University, spark224@gmu.edu

1 Introduction

The U.S. social safety net comprises multiple programs whose eligibility rules were usually designed independently but can interact in practice. This paper asks how program rules affect claiming behavior of potential beneficiaries, focusing on the interaction of unemployment insurance (UI) and Medicaid. Medicaid eligibility requires income below a threshold, and the relevant income concept includes UI benefits. Unemployed workers eligible for UI may therefore face a binary trade-off: receive UI benefits (cash) and lose Medicaid eligibility, or forgo UI benefits to maintain Medicaid eligibility. This interaction creates a discontinuous drop in eligibility at the threshold, a "notch": a discrete loss of health insurance triggered by taking up UI.

This paper analyzes the impact of the notch on UI take-up behavior. To quantify the extent to which unemployed workers forgo UI in favor of remaining eligible for Medicaid, I first classify individuals into income groups that distinguish workers exposed to the notch (the "notched" group), for whom the decision to take up UI changes Medicaid eligibility, from those who are not exposed. Because these groups may differ in other, potentially unobserved ways, I use an additional source of variation: the extension of Medicaid eligibility to previously ineligible groups through the Affordable Care Act (ACA) Medicaid expansion. Utilizing these sources of variation, I conduct difference-in-differences and triple differences models using methods that handle staggered timing of the expansion.

To implement this design, I use the Survey of Income and Program Participation (SIPP) for 2008–2018 reference years, which report monthly UI take-up, Medicaid enrollment, income, and work history. Income groups are assigned using tax-unit income, excluding means-tested transfers. I calculate UI benefits based on state UI laws and work history following Kuka and Stuart (2025), which I extend to later years for part of my analysis. The sample consists of 7,058 observations of UI-eligible, childless adults aged 26–64. Because childless adults were ineligible for Medicaid before the ACA, the sample yields clean identification at the Medicaid eligibility cutoff.

Focusing on this UI-eligible subpopulation that becomes eligible for Medicaid in the expansion states, I find that UI take-up declines by 19.6 percentage points (SE 0.091) for the

notched group, approximately a 27 percent reduction relative to a pre-expansion baseline take-up of 73 percent, while the comparison income groups show no significant decline. The triple difference confirms the differential at -22.4 percentage points (SE 0.096). Analyzing worker characteristics, I find that higher health care needs predict forgoing UI behavior within the notched group. In an extension, I study two instances where the notch was removed (treatment reversals), finding increases in UI take-up with magnitudes similar to my main estimates.

Notched UI forgoers who are enrolled in Medicaid have eligible weekly UI benefits averaging $409.4. The revealed value of Medicaid inferred from forgone benefits is at least $5,885 over the unemployment spell. In a back-of-the-envelope calculation of the cost of the notch, if UI benefits are excluded from the Medicaid income definition, about 98,000 UI-eligible childless unemployed workers a year in expansion states would be released from the choice situation, at a cost of $104.2 million (95% CI 9.4 to 199.0) to state UI budgets and $170.8 million in Medicaid spending, of which the federal share at 90 percent is $153.7 million.

This paper contributes to three strands of literature. The first is the literature on safety-net program interactions with UI, such as Disability Insurance (DI) (Lindner, 2016; Mueller, Rothstein and Von Wachter, 2016), and Temporary Assistance for Needy Families (TANF) (Leung and O'leary, 2020). More broadly, prior work has examined how the design of one safety-net program affects participation in another. For example, Yelowitz (1995) studies the interaction between Medicaid and Aid to Families with Dependent Children (AFDC), exploiting a policy change that raised the Medicaid eligibility threshold above the AFDC eligibility threshold. While this work examines the effects on AFDC participation and labor force participation, it does not consider whether including UI benefits in Medicaid's income test affects UI take-up. This paper addresses this gap by examining how the interaction between Medicaid eligibility rules and UI benefits influences UI participation.

The second strand is the literature on income eligibility for Medicaid. The literature finds adjustment of earnings to stay eligible for Medicaid, exploiting state variation in parental Medicaid earnings limits (Hamersma, 2013), the ACA-introduced premium tax credit eligibility (Kucko, Rinz and Solow, 2017), and the ACA Medicaid eligibility threshold and lowest monthly earnings rule (Li, 2025). This paper contributes to the literature by showing

a direct proxy of income adjustment through non-take-up of UI.

The third strand is the literature on UI take-up. Despite UI benefits' replacement rates set around 50%, take-up among UI-eligible workers remains relatively low, around 50%, and the gap between eligibility and receipt has widened over time, declining from 44% to 36% to 28% from 1980 to 2008 to 2019 (O'Leary, Spriggs and Wandner, 2022). Prior work seeks to explain the low take-up by focusing on differences by race/ethnicity (Meyer, Mittag and Wu, 2024; Kuka and Stuart, 2025), the characteristics of UI (benefit amount and potential duration) and taxation on UI benefits (Anderson and Meyer, 1997), or difficulties in application (Ebenstein and Stange, 2010). This paper contributes to the literature by introducing a previously unexplored mechanism through interaction with Medicaid eligibility.

Overall, the paper's findings suggest the importance of analyzing safety-net programs together, not in isolation. Including UI benefits in the Medicaid eligibility income rule forces some group of unemployed workers to choose between cash UI benefits and Medicaid eligibility.

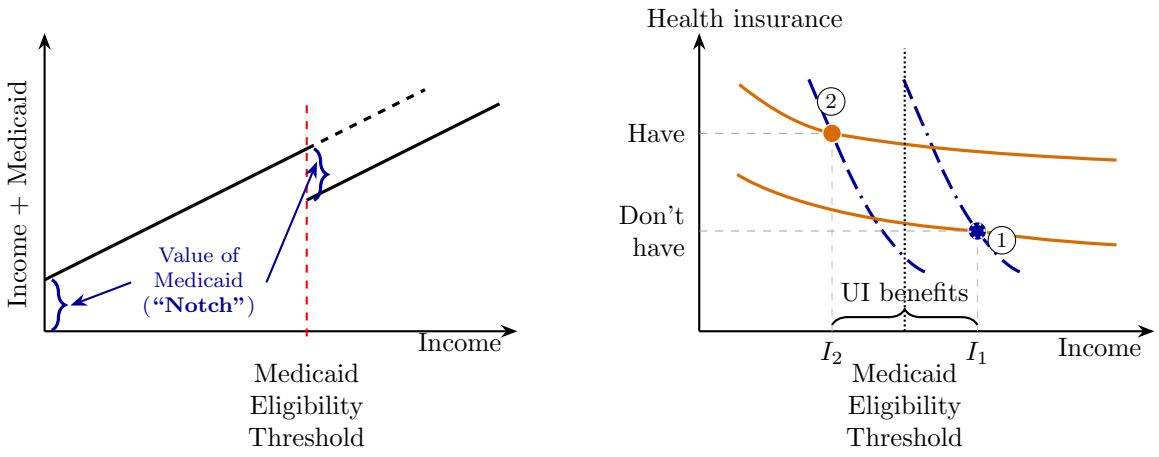
The paper proceeds as follows. Section 2 describes the conceptual framework of the study design. Section 3 outlines the methods: the sources of variation, empirical strategy, threats to identification, robustness checks, and mechanism analysis. Section 4 describes the data and sample, the key variables for the main and mechanism analysis. Section 5 presents the results on program take-up and robustness, the mechanism related to health care needs, evidence from reversals of the treatment, the implied value of Medicaid, and the costs of the notch. Section 6 concludes.

2 Conceptual Framework

Figure 1 illustrates the concept of the notch and choices around the notch. Panel (A) plots income plus the value of Medicaid against income. Below the Medicaid eligibility threshold, the graph starts with the value of Medicaid and increases at 45°. At the threshold, as individuals lose Medicaid eligibility, the line abruptly drops by the value of Medicaid, namely the "notch." Then the graph continues increasing at 45° along the income axis.

Panel (B) plots indifference curves between health insurance and (non-health insurance)

Figure 1: Medicaid Notch and Choice Around the Notch



(A) Medicaid Notch (B) Choices of Two Consumers

income. The graph shows how workers' preferences over health insurance and income may drive their choices between Medicaid coverage and unemployment insurance benefits. Assume two utility-maximizing individuals with the same potential UI benefit (UIB) and same non-UIB income such that their total income would cross the threshold with UI but not without it. The feasible choice set for both workers consists of point ① and point ② with coordinates of (I_1, Don't have) and (I_2, Have), respectively; as my data analysis will show, the choice involves a large jump in income for notched workers. One worker has a lower marginal rate of substitution of health insurance for income and would choose point ①, taking the UIB and waiving the Medicaid eligibility, while the other worker who values health insurance more highly on the margin chooses point ②, forgoing the UIB to retain health insurance coverage.

Following the logic of revealed preference, a notched worker i forgoes UI if and only if their valuation of Medicaid V_i minus the cost of enrolling in Medicaid m_i exceeds the net value of the UI claim, which is the potential unemployment benefit b_i minus the costs of claiming it κ_i:

$$UI_i^* = 0 \quad \Longleftrightarrow \quad V_i - m_i > b_i - \kappa_i, \tag{1}$$

where UI_i^* is the observed take-up decision, $V_i - m_i$ is the net value of enrolling in Medicaid. Both m_i and κ_i can include administrative barriers, information asymmetry, and psycho-

logical costs like stigma. Equation (1) implies bounds on V_i: for forgoers, like the worker choosing point ② in Figure 1 Panel (B), $V_i - m_i > b_i - \kappa_i$; for UI claimants, such as a worker choosing ①, $V_i - m_i < b_i - \kappa_i$.

3 Empirical Strategy

This section describes the empirical strategy used to estimate how the inclusion of UI benefits in the Medicaid eligibility income calculation affects UI take-up. The identification strategy exploits two sources of variation: UI-eligible workers' income positions relative to the Medicaid eligibility threshold and the introduction of Medicaid eligibility for childless adults through the ACA expansion. I discuss the identifying assumptions and potential threats to identification, along with the robustness checks used to assess the validity of the estimates. I explain the estimation strategy to investigate whether heterogeneity in health care needs predicts workers' responses to the implicit tax created by the notch.

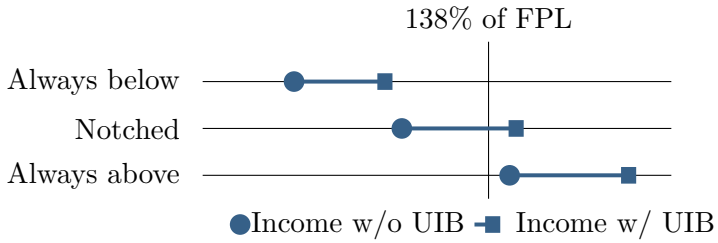
3.1 Sources of Variation

In order to identify the behavioral effect of the Medicaid notch, I use two sources of variation. The first is a worker's income position relative to the threshold. As illustrated in Figure 2, I classify UI-eligible workers by their income with and without the potential UI benefit: "always-below" (UI benefits would not push income above the Medicaid eligibility threshold), "notched" (UI benefits would push income above the threshold if taken), and "always-above" (income is above the threshold regardless of UI take-up). Only workers whose income excluding UI lies below the threshold but whose income including UI would exceed it face the cash-versus-coverage choice. The notched group is therefore the locus of the implicit-tax mechanism, while the always-below and always-above groups serve as comparison populations whose Medicaid eligibility is unaffected by UI take-up. The Medicaid eligible income definition follows Modified Adjusted Gross Income (MAGI). Income groups are defined in the same way in the pre- and post-ACA periods at 138% of FPL.

The second source of variation is the Affordable Care Act (ACA) Medicaid expansion, which extended Medicaid coverage to childless adults. After the expansion, non-elderly

Figure 2: Classification of UI-Eligible Workers

(A) Distribution of worker classifications



(B) Definition of worker classifications

		Income w/o UI	Income w/ UI	UI take-up	Medicaid elig.
Always below		≤138% FPL	≤138% FPL	0/1	1
Notched	UI forgoer	≤138% FPL	>138% FPL	0	1
	UI claimant	≤138% FPL	>138% FPL	1	0
Always above		>138% FPL	>138% FPL	0/1	0

Notes: Binary numbers in UI take-up and Medicaid eligibility indicate no (0) and yes (1). Notation "0/1" represents both are possible.

adults with income below 138% of the federal poverty level (FPL) became eligible in the expansion states and may face the notch when taking up UI. Further details on the Medicaid expansion are provided in Subsection 4.2.

3.2 Program Take-up

To identify the causal effect of the inclusion of UI benefits in Medicaid eligibility income (MAGI) calculation on UI take-up, I employ the variation that introduces the Medicaid eligibility income threshold for the first time to the sample: ACA Medicaid expansion. I first estimate the ACA Medicaid expansion's effect on UI take-up separately within each income-position group $g \in \{\text{Always below, Notched, Always above}\}$.

$$UI_{ist} = \beta_{dd}^{g} \cdot ACA_{st} + \mathbb{X}_{ist} \cdot \alpha + \mu_s + \tau_{t \in T} + u_{ist} \quad \text{for } ist \in g, \tag{2}$$

where UI_{ist} is UI take-up for the UI eligible worker i in state s in time t. ACA_{st} is an indicator for expansion state s in post-expansion time t. $\mathbb{X}_{ist}$ is a vector of covariates including age, sex, race/ethnicity, education, private health insurance, and replacement rate. The set of

covariates varies by specification. μ_s and $\tau_{t\in T}$ are state and year fixed effects, respectively, and are included in all specifications.[1] Standard errors are clustered at the state level. Observations are weighted by SIPP weights.

To account for the staggered expansion, I estimate Equation (2) using the two-stage difference-in-differences (2SDID) (Gardner et al., 2024). The first stage controls for fixed effects and covariates on untreated (never and not-yet) observations. Then, the fitted values are extrapolated to the entire sample. The second stage regresses the difference between observed and the extrapolated or fitted values on the variable of interest, ACA_{st}, so that the coefficient estimated represents how much of the variation left unexplained by the fixed effects and covariates is accounted for by the treatment.

The difference-in-differences estimates for each group separately are not sufficient on their own, because the expansion does two things at once: it extends coverage, and it creates the notch for the notched income group only. The always-below and always-above groups can be exposed to coverage and to state-level shocks, but not to the notch, so I employ a triple difference design that compares UI take-up behavior across income groups to isolate the notch. Implementing the triple difference using 2SDID, I again define treatment as becoming first eligible for Medicaid, thus the first stage sample is $ACA_{st} = 0$, as in the difference-in-differences estimates for each group. The triple difference is the difference of the two (notched vs. other) group-specific difference-in-differences estimates. The first stage in Equation (3a) absorbs state and year fixed effects, a notched indicator, notched-by-state and notched-by-year fixed effects, covariates, and covariates interacted with notched indicator, so all controls are permitted a separate association with claiming inside and outside the notched group:

$$\begin{aligned} UI_{ist} = {} & Notched_{ist} \cdot \mathbb{X}_{ist} \cdot \alpha_1 + \alpha_2 \cdot Notched_{ist} + \mathbb{X}_{ist} \cdot \alpha_3 \\ & + Notched_{ist} \cdot \mu_s + Notched_{ist} \cdot \tau_{t\in T} + \mu_s + \tau_{t\in T} + \nu_{ist}, \text{ if } ist \notin \{ACA_{st}\}, \end{aligned} \tag{3a}$$

where $Notched_{ist}$ is an indicator for worker i in state s in time t in the notched group, and

[1] I do not employ a regression discontinuity design despite the income cutoff because the running variable is not continuous at the cutoff for the population of interest. Workers in the notched group face a discrete choice between income levels that differ by the amount of the UIB as shown in Figure 1 panel (B). For most notched workers, UIB is large relative to their non-UI income; for many, non-UI income is zero. Figure 4 panel (B) in Section 4 shows the size of the resulting jump directly.

other notations are the same as in Equation (2).

The second stage then includes the triple difference interaction with the notched indicator as well as ACA_{st}, as shown in Equation (3b):

$$UI_{ist} - \widehat{UI}_{ist} = \beta_{ddd} \cdot ACA_{st} \cdot Notched_{ist} + \beta_{dd} ACA_{st} + \varepsilon_{ist}, \tag{3b}$$

where $\widehat{UI}_{ist}$ is the prediction from Equation (3a) extrapolated to all observations, and $UI_{ist} - \widehat{UI}_{ist}$ is the outcome "residualized" based on estimations from the first stage using never or not-yet ACA sample. β_{ddd} is the additional impact of ACA Medicaid expansion on the notched group compared to the always-below and -above groups. The same method is applied to Medicaid take-up, with an indicator for the always-below group in place of the notched indicator; those estimates are in the Appendix.

The identifying assumption is that, absent expansion, UI take-up among notched workers would have followed the same path as among those not exposed to the notch. To examine the assumption in the pre-period (and to examine the evolution in the post-period), I replace ACA_{st} in the second stage with indicators for years relative to each state's expansion, from six years before to five years after, with the years two and later pooled into a single "2+" bin because the late post-expansion years rest on a different set of states. There is no baseline period in the event study using 2SDID, and all pre-expansion coefficients are estimated. The triple difference also relaxes the identifying assumption. It only requires that the gap between positions would have evolved in parallel, so that any unobserved covariate in the treated states must affect notched workers differently from other income groups to bias the estimate.

3.3 Threats to Identification and Robustness Checks

A potential concern about the identification strategy is that Medicaid expansion could shift the sample composition by changing labor supply behavior (Garthwaite, Gross and Notowidigdo, 2014; Buchmueller, Levy and Valletta, 2021). I address this possibility by checking changes in the characteristics of workers in the sample associated with expansion. I estimate Equation (2), replacing the dependent variable with characteristics. Appendix Fig-

ure B1 reports the coefficients on ACA by putting each demographic characteristic, and income-position indicators. This composition check shows that expansion is associated with no significant changes in characteristics of the sample, with an exception of private health insurance.

Another concern is that expansion and non-expansion states differ in covariates, as I show in Section 4. To account for these differences, I use inverse probability weighting (IPW). I first estimate the probability from a logit that a worker with certain demographic characteristics, private insurance, and a replacement rate lives in a state that ever expands, using 2008-2013 observations, pre-expansion. From the logit regression, I predict the propensity score ($\hat{p}$), separately for the notched group and for the comparison positions. I calculate the inverse probability weight (IPW) as

$$w_i = \begin{cases} 1/\hat{p}_i & \text{if } i \text{ lives in an expansion state,} \\ 1/(1-\hat{p}_i) & \text{if } i \text{ lives in a non-expansion state.} \end{cases} \tag{4}$$

The weights are calculated separately for the notched group and the other group (always-below or -above). Appendix Table B3 shows the logit coefficients. The coefficients differ across the two groups. Finally, I estimate the regression weighted by the product of the SIPP weight and the IPW.

As robustness checks, I estimate the UI take-up behavior with a set of alternative samples: the sample with a fully observed 4-5 quarters of work history, excluding the later expansion states from the comparison group, and an alternative sample including parents (still focusing on those who first become Medicaid-eligible following the expansion). I also estimate with using alternative estimators to handle the staggered treatment.

3.4 Mechanism: Health Care Needs

The simple conceptual framework depicted in Figure 1 panel (B) suggests that the notched worker would choose to forgo UI to retain health insurance if they place a higher marginal value on health insurance than cash. In such cases, those with greater health care needs would be more likely to forgo UI. Because these preferences are unobserved, I construct

proxies for health care needs using the Behavioral Risk Factor Surveillance System (BRFSS) data described in Section 4.4. My approach is to regress each of the twelve BRFSS-based measures of health care needs (HN) on variables common to the BRFSS and the SIPP: age, sex, race and ethnicity, education, marital status, income category (the eight intervals provided in the BRFSS), any health coverage, state, and year. I then predict $\widehat{HN}$ for every SIPP observation. The thirteenth measure, the age 55–64 indicator, is taken directly from the SIPP. Each $\widehat{HN}$ is standardized within income group (demeaned and divided by its standard deviation within the always-below, notched, and always-above groups) and enters the UI take-up equation as a continuous interaction with the expansion.

For each $\widehat{HN}$ separately and for each income group, I estimate the following model using 2SDID:

$$\begin{aligned} UI_{ist} = \alpha_s + \tau_{t\in T} + \theta_1 \widehat{HN}_{ist}\, Expand_s + \theta_2 \widehat{HN}_{ist}\, Post_t \\ + \mathbb{X}_{ist}\,\beta + \left(\widehat{HN}_{ist} \cdot \mathbb{X}_{ist}\right)\lambda + \varepsilon_{ist} \text{ if } ist \notin \{ACA_{st}\} \end{aligned} \tag{5a}$$

$$UI_{ist} - \widehat{UI}_{ist}(0) = \gamma\, ACA_{st} + \varphi\, \left(ACA_{st} \times \widehat{HN}_{ist}\right) + \eta_{ist}, \tag{5b}$$

where Equation (5a) is fitted on the untreated observations and $\widehat{UI}_{ist}$ is its prediction for all observations, $Expand_s$ is an indicator for ever-expansion states, $Post_t$ is an indicator for post-expansion times, $\mathbb{X}$ is the full set of covariates (as in column (4) of Table 2), and the main effect of $\widehat{HN}$ is omitted. α_s and $\tau_{t\in T}$ are state and year effects. γ is the effect of the ACA on UI take-up with $\widehat{HN}$ at its mean, and φ is how that effect differs for a worker with a one-standard-deviation higher predicted need. My hypothesis predicts $\varphi < 0$ for the notched.

4 Data

This section describes the data and sample, the key variables, the income distribution around the threshold, the summary statistics, and the BRFSS data used to predict health care need. Further detail on variable construction is in Appendix A.

4.1 Main Data Source and Sample Restrictions

The analysis uses the Survey of Income and Program Participation (SIPP), a household-based longitudinal survey conducted by U.S. Census Bureau (2008–2025). The SIPP provides monthly information on employment status, Medicaid enrollment, UI take-up, detailed income, and demographic characteristics, following individuals for up to 48 months per panel. I pool the 2008, 2014, and 2018–2019 annual panels, covering reference years 2008–2018.

The monthly frequency and longitudinal structure of the SIPP are essential to the research design. Medicaid eligibility is determined by Modified Adjusted Gross Income (MAGI) in the current month, which includes UI benefits received in the same month. Consequently, a worker's income position relative to the Medicaid eligibility threshold, and thus their classification as a notched income group, can vary from month to month, as can UI receipt, Medicaid coverage, and income. The longitudinal data also provide the quarterly work histories preceding job separation needed to determine UI eligibility and calculate potential benefits.

The SIPP underwent a survey redesign beginning with the 2014 panel with a major change in the frequency of interview waves. The survey redesign also coincides with the period surrounding the first Medicaid expansion, potentially confounding changes in survey measurement with treatment effects. I address this concern using year fixed effects and triple differences. Further details are discussed in Appendix A.1.

I exclude 2019 and subsequent years during the pandemic from the main analysis sample because 2019 data were collected in 2020 and because of the continuous enrollment of Medicaid under the Families First Coronavirus Response Act (FFCRA) that suspended Medicaid disenrollment from March 2020 to March 2023. For an extension, I use the continuous enrollment provision to estimate the effect of removing the notch in Subsection 5.3, as the provision effectively severed the link between UI receipt and Medicaid coverage.[2]

My main analysis focuses on unemployed workers who are eligible for regular state UI,

[2]An additional complication during the Covid period comes from pandemic UI programs from March 2020 until June to September 2021. Federal Pandemic Unemployment Compensation was excluded from MAGI but could have affected job-finding behavior and, consequently, the composition of the UI-eligible sample. Benefits under the other two programs Pandemic Unemployment Assistance and Pandemic Emergency Unemployment Compensation were included in MAGI, but these programs do not affect the analysis sample as they are regular state UI ineligible.

childless civilians, and aged 26–64. UI eligibility is calculated based on state UI laws and work history following Kuka and Stuart (2025): non-quit job separations or looking for work, observed past the state UI disbursement waiting week, and unemployment duration within regular state potential benefit duration. Childless adults are ineligible for Medicaid pre-ACA, which gives a clean identification of the 138% cutoff, and results including parents who were previously Medicaid-ineligible show similar results (Table 3). Age is restricted to avoid dependent coverage and Medicare effects.

The sample includes only regular state UI eligibles whose unemployment duration is shorter than the potential benefit duration (PBD) (usually at 26 weeks), and does not account for the extended PBD through Emergency Unemployment Compensation (EUC), which switched on between 2008 and 2013, or Extended Benefits (EB), which switches on based on each state's unemployment rate. The UI take-up behavior and characteristics of the long-term unemployed from EUC or EB during the extension periods are significantly different from those whose unemployment duration is within state-specific regular PBD (Appendix Table A1). I restrict unemployment duration to be shorter than regular state PBD because the SIPP does not contain direct information on the start date of UI take-up or on benefit exhaustion.

Observations within unemployment spells reporting any lump-sum payment are excluded from the sample because the 2014 and later panels do not record the month of the lump-sum receipt; instead, the monthly values carry the annual amount at one twelfth, while the MAGI rule counts such payments only in the month it is received. This procedure can lead to mismeasurement of the income group, so I exclude them from all panels.

I also drop Supplemental Security Income (SSI) and Disability Insurance (DI) recipients. SSI recipients are generally automatically enrolled in Medicaid, and SSDI eligibility requirements conflict with UI eligibility in terms of being (un)able to work. Additionally, unemployed workers already Medicaid-eligible under their own state's pre-expansion limit are excluded. Further excluded are those whose unemployment duration is less than the state waiting week, and whose spousal employment or other covariates are unobserved.

Appendix Table A2 reports the change in sample size associated with each of these restrictions for both analysis windows. The final sample is 7,058 observations over 2008-

2018, and 8,031 through 2024.

4.2 Key Variables

I define UI take-up (UI) as an indicator for reporting a positive amount of regular, government-provided unemployment compensation in the month. Medicaid take-up ($Medicaid$) equals one if the respondent indicates public health insurance coverage in the month.[3] The SIPP does not distinguish Medicaid, and some respondents may report Marketplace coverage as public health insurance coverage (U.S. Census Bureau, 2020). However, for this measurement error to systematically bias the estimated coefficients, such misclassification would have to arise differentially for notched workers at the moment of expansion.

The income concept used for determining Medicaid eligibility is Modified Adjusted Gross Income (MAGI). MAGI is computed over a tax unit, which could be the personal, family, or household income. Since the survey does not contain information about the tax unit, I compute own personal income if single and own plus spouse income if married. Means-tested transfers are subtracted, since Temporary Assistance for Needy Families (TANF) and general assistance are excluded from MAGI. The resulting calculated MAGI is INC.

To identify the population that faces choices between UI and Medicaid since the Medicaid expansion, I define three income groups: "always-below," "notched," and "always-above," as described in Subsection 3.1. Assigning income position requires a UI benefit amount for every worker, including non-claimants. Therefore, I calculate the simulated benefits based on state UI eligibility requirements and an individual's base period (4-5 quarters) pre-separation work history,[4] weekly benefit formulas, minimum and maximum benefits, following Kuka (2020) and Kuka and Stuart (2025). For an extension, I extend the period of the calculator up to 2024. The calculator returns for each worker a regular state UI eligibility indicator, potential weekly benefit amount, and potential benefit duration (PBD), from which I construct the

[3] My extended sample analysis using parents may include State Children's Health Insurance Program (S-CHIP) take-up.

[4] For the main analysis, I impute the earliest quarterly work history for those whom I cannot observe all five quarters pre-separation. Table 3 re-estimates the main specification on the fully observed subsample.

monthly eligible UI benefit (UIB) the worker would receive if they claimed.[5,6] The resulting MAGIs with and without UIB are defined as in Equation (6):

$$INC^{w/oUIB} = \begin{cases} INC & \text{if } UI = 0 \\ INC & \text{if } UI = 1 \end{cases} \tag{6a}$$

$$INC^{w/UIB} = \begin{cases} INC & \text{if } UI = 0 \\ INC + UIB & \text{if } UI = 1 \end{cases} \tag{6b}$$

The calculated incomes with and without UIB ($INC^{w/UIB}, INC^{w/oUIB}$) are then compared against the yearly federal poverty level (FPL) for the unit size. The expansion sets the Medicaid eligibility threshold at 138 percent of the Federal Poverty Level (FPL) for childless adults. This threshold is binding for observations in expansion state-time, so that the interaction between UI and Medicaid is triggered for the first time for them. For the analysis, this 138 percent FPL threshold is applied uniformly to all states and periods to build measures for the comparison group. Using two income concepts ($INC^{w/UIB}, INC^{w/oUIB}$), three income groups are defined as in Equation (7):

$$Below_{ist} \text{ (Always-below)} = INC_{ist}^{\text{w/ UIB}} \leq 138\% \cdot FPL_{it} \tag{7a}$$

$$Notched_{ist} \ = INC_{ist}^{\text{w/o UIB}} \leq 138\% \cdot FPL_{it} < INC_{ist}^{\text{w/ UIB}} \tag{7b}$$

$$Above_{ist} \text{ (Always-above)} = INC_{ist}^{\text{w/o UIB}} > 138\% \cdot FPL_{it} \tag{7c}$$

Further details about the distribution of UIB and its relationship with 138 percent of FPL are described in Appendix Subsection A.4. Statutory weekly benefit limits vary widely across

[5]UI rules are applied using the state of the pre-separation workplace, while Medicaid rules are applied using the current state of residence. This paper constructs simulated UI eligibility and benefits accounting for them, but the two differ for a small share of observations.

[6]UI recipients in the SIPP report the benefit amount. However, I use the calculated eligible UIB in lieu of reported amounts to avoid the measurement error as documented in Meyer, Mok and Sullivan (2015) and Meyer and Mittag (2019). Previous literature also uses state-year average or maximum benefit amounts (Chetty, 2008; Kroft and Notowidigdo, 2016) or state-specific formulas based on work history (Cullen and Gruber, 2000; Anderson and Meyer, 2006; Kuka, 2020; East and Simon, 2020; Birinci and See, 2023; Kuka and Stuart, 2025).

states (in 2014, the maximum averages $424.59 and ranges from $235 to $679) (Appendix Figure A1. The monthly value of 138% of the income-to-FPL is about $1,340 to $1,400 for a single adult and $1,800 to $1,900 for a married couple over 2014–2018, so a typical benefit can by itself lift income across the threshold (Appendix Figure A2). Splitting the distribution by income group (Appendix Figure A3), UIB lies well below the threshold for the always-below, is centered around the threshold for the notched, so that the benefit decides which side of the cutoff they are on, and lies below the threshold for the always-above, whose position is set by other income such as a spouse's earnings.

Finally, the variable ACA_{st} indicates expansion state s in post-expansion time t. The expansion varies across states and over time as in Figure 3 and Appendix Table A3. The first expansion was in 2014, and I define the variable *Expand* as ever-expanding states through 2018. In the main analysis, I include the states that expanded after 2018 as never-expanding states; as a robustness check, I exclude later expansion states. The pre-expansion Medicaid income thresholds (if they exist) are listed in Appendix Table A4.

Pre-expansion Medicaid eligibility thresholds are used to identify workers who were already eligible before the expansion. I exclude these workers from the main sample and focus on them to study the reversal of the notch in Subsection 5.3. The timing of the Medicaid expansion and the pre-expansion Medicaid income thresholds are from the Kaiser Family Foundation.

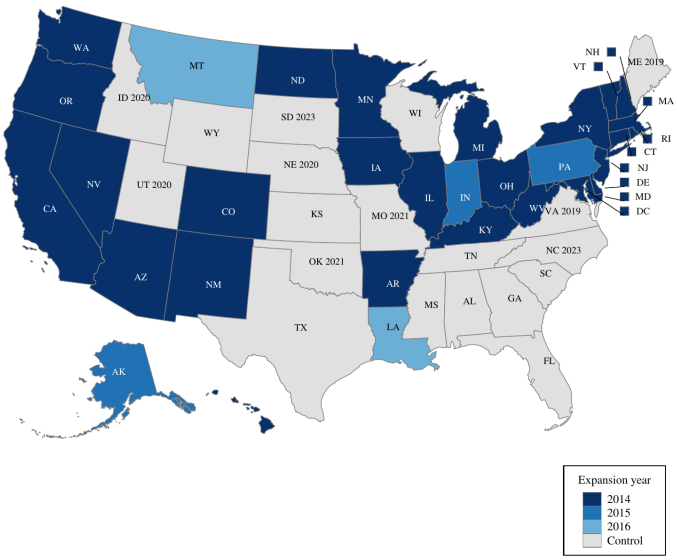
Covariates include age, sex, race and ethnicity, education, private health insurance coverage, and the replacement rate. The replacement rate is the potential weekly benefit divided by pre-separation base period weekly earnings.

4.3 Income Distribution and Descriptive Statistics

Throughout the main analysis period, there are 2,544 always-below (36 percent of the UI-eligible), 2,469 notched (35 percent), and 2,045 always-above (29 percent) observations, so 35 percent of UI-eligible unemployed workers face the notch.

Figure 4 shows how the income-to-FPL ratio is distributed. Panel (A) plots the reported income-to-FPL distribution before (in shaded bars) and after expansion (in empty bars) in the expansion states for the childless adult sample. Reported income includes UIB for the UI

Figure 3: ACA Medicaid expansion as of 2018



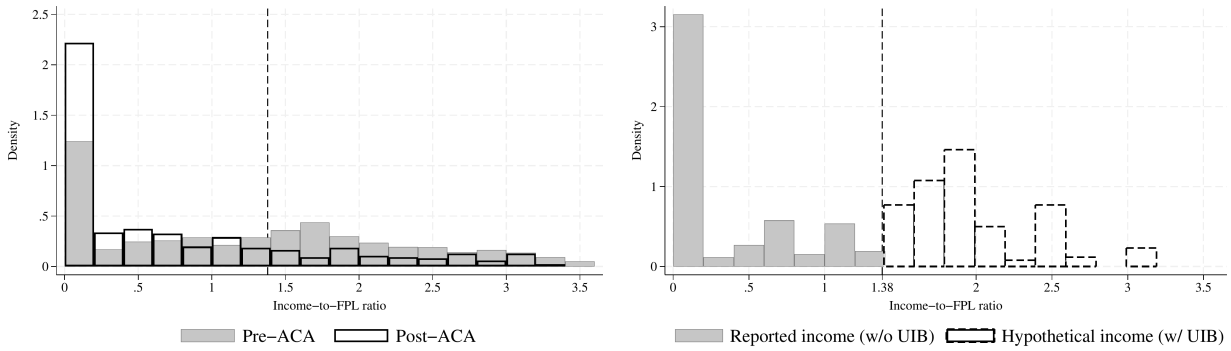
Notes: State-time-varying ACA Medicaid expansion. Expansion dates are listed in Appendix Table A3.

claimants and not for non-claimants. Before the policy, the reported income distribution is rather smooth around the 1.38 line, while there is missing mass after the policy. The excess mass is not stacked just below the 1.38 threshold but is at the income level of zero.

Panel (B) restricts to notched non-crossers (UI forgoers) in expansion state-times and overlays reported income ($INC^{w/oUIB}$) in shaded bars and income with UI benefit ($INC^{w/UIB}$) in dashed empty bars. The $INC^{w/oUIB}$ lies entirely below the threshold while the $INC^{w/UIB}$ lies above it by design. The horizontal gap between them is the size of the UIB. These figures shed light on two important features: (1) the possibility of adjusting income by not taking up UI and (2) the discrete jump in the income level by the UI benefits.

Table 1 reports means of covariates and characteristics, including unemployment duration, UIB, pre-separation weekly wage, and UI replacement rate, by income group and for expansion and non-expansion states. The table is restricted to 2008–2013 in non-expansion states and to months before expansion in expansion states, so its observation counts are smaller than the totals above. As income group is by construction a function of earnings, eligible UI benefits, and tax-unit income, always-above workers are older, far more likely to be married with a working spouse, and more educated. The empirical strategy does not require the groups to be similar in levels, but only that their claiming would have evolved in

Figure 4: Income distribution



(A) Reported income, pre- and post-ACA (B) Notched UI forgoer

Notes: Panel (A) plots the distribution of reported tax-unit income-to-federal poverty level, before and after expansion, among ever-expansion states. Panel (B) restricts to notched UI forgoers in expansion state-months and overlays $INC^{w/oUIB}$ with hypothetical $INC^{w/UIB}$. The vertical line marks 138% FPL. Observations are weighted by SIPP weights.

parallel absent the expansion.

Expansion and non-expansion states differ in composition. Appendix Table B1 reports balance with and without inverse probability weighting (IPW). Using SIPP weights alone, the share of always-below, notched, non-Hispanic Black, university education, and private health insurance coverage differ significantly between expansion and non-expansion states, while under IPW, only the Hispanic share exceeds a normalized difference of 0.1.

4.4 Health Care Needs: BRFSS Data

Workers anticipating greater health care needs may value health insurance more than additional income through UIB and choose to forgo UI and remain below the Medicaid eligibility threshold, as discussed in Section 2. Measuring health care needs using SIPP health questionnaires has limitations: questions on health conditions exist only for the 2014 panel and later, there are no variables that record diagnoses, and health care usage variables may be a function of (public) health insurance (DeLeire et al., 2013). I therefore proxy health care needs, except for the age 55–64 indicator, by predicting from the Behavioral Risk Factor Surveillance System (BRFSS) and assigning the predicted values to every observation of the main sample, as described in Subsection 3.4.

I restrict the BRFSS sample to respondents aged 26–64 who report being out of work for

Table 1: Covariates, non-expansion (2008–2013) and expansion states (pre-ACA), by income group

	Non-expansion states, 2008–2013			Expansion states, pre-ACA		
	Below	Notched	Above	Below	Notched	Above
Unemployment duration (weeks)	13.54	14.12	14.22	14.42	14.50	14.30
Weekly UI benefit	209.1	318.2	284.5	187.1	392.5	328.6
Pre-separation weekly wage	516.2	965.3	827.8	484.3	1084.5	993.0
UI replacement rate	0.473	0.414	0.414	0.450	0.434	0.418
Age	43.28	44.62	49.15	42.92	44.64	50.11
Female	0.298	0.304	0.442	0.327	0.341	0.434
Hispanic	0.131	0.117	0.109	0.202	0.124	0.097
Non-Hispanic White	0.584	0.685	0.730	0.594	0.746	0.786
Non-Hispanic Black	0.256	0.138	0.129	0.147	0.088	0.038
Non-Hispanic Asian	0.011	0.030	0.010	0.034	0.020	0.058
Other race	0.019	0.031	0.022	0.023	0.022	0.021
< High school	0.132	0.082	0.044	0.138	0.076	0.045
High school	0.338	0.320	0.314	0.397	0.213	0.267
Some college	0.408	0.360	0.374	0.352	0.407	0.348
University	0.081	0.157	0.162	0.090	0.203	0.229
> University	0.042	0.080	0.105	0.024	0.101	0.111
Married	0.198	0.336	0.923	0.236	0.227	0.908
Spouse worked this month	0.042	0.160	0.846	0.032	0.122	0.825
Private health insurance	0.065	0.173	0.642	0.139	0.271	0.630
Observations	1,002	700	690	1,223	1,516	1,142

Note: Sample = UI-eligible childless adults aged 26 to 64. Income position is assigned on the tax unit MAGI against 138% of FPL. Non-expansion states are restricted to 2008–2013, and expansion states to their months before expansion. "Spouse worked this month" variables impute 0 for single adults. Observations are weighted by SIPP person weight.

less than a year, able to work, and having no children in the household during 2008–2018, resulting in 55,014 observations. I focus on thirteen measures of health care needs (HN) including five binary indicators of self-reported health (health worse than good, health poor, more than seven days of poor physical health, 20 or more days of poor mental health, and 20 or more days on which health kept the respondent from usual activities), severe obesity (BMI of 40 or above), age between 55 and 64 (directly measured from the SIPP), and six ever-diagnosed indicators (diabetes, heart attack, coronary heart disease, stroke, any of those four, and asthma). Self-reported health measures are known to predict health care use among Medicaid-eligible adults (Wherry, Burns and Leininger, 2014). Appendix Table B4 compares the means and standard deviations of the BRFSS measures and of the predicted measures in the SIPP.

The descriptive statistics of predicted health care needs variables by income group are in Appendix Table B2 , in the same samples as Table 1. The always-below and notched workers have similar predicted needs, and both are higher than the always-above on the five self-reported health measures. The characteristics and diagnosis measures vary less across income groups, except that always-above group is more likely to be aged 55–64. Within each group the levels are close across the two sets of states.

5 Results

This section reports the findings in the following subsections: the estimated effects of the ACA Medicaid expansion on program take-up, mechanism by health care needs, the reversal of the notch, the implied value of Medicaid coverage, and a back-of-the-envelope calculation of the social and economic costs of the notch.

5.1 Program Take-up

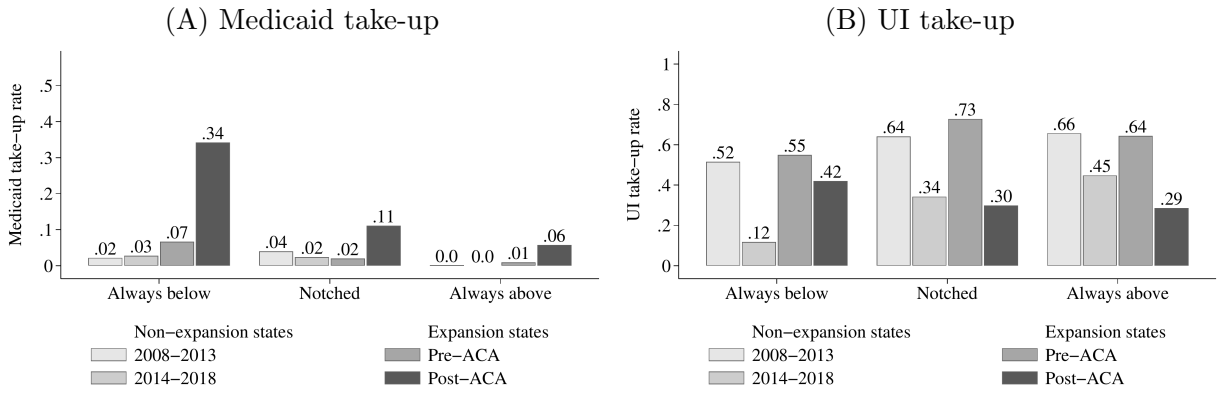
Figure 5 shows the average rate of program take-up by income group, by ever-expansion state, and by time period. The income groups are defined against the threshold of 138% of FPL as defined in Equation (7). Panel (A) shows Medicaid enrollment by income group. In post-ACA expansion states the enrollment rises for all groups but much more so for those who are always-below and somewhat more for the notched group, reaching 0.34 for always-below workers against 0.06 for always-above workers, up from 0.07 and 0.01 before expansion. The increase among the always-above may capture the measurement error in reporting ACA Marketplace as public health insurance, as mentioned in Subsection 4.2.[7]

Panel (B) of Figure 5 shows UI take-up. Among notched workers in expansion states, take-up falls from 0.73 before expansion to 0.30 afterwards, a decline of 43 percentage points. Take-up also declines among the always-below and always-above groups, from 0.55 to 0.42 and from 0.64 to 0.29, respectively. The notched group experiences the largest decline in the expansion states. However, take-up also declines across all income groups in non-

[7]The low overall enrollment rate of Medicaid is consistent with evidence from Virginia job losers' Medicaid enrollment rate following the 2019 ACA Medicaid expansion (Heim et al., 2024).

expansion states. To account for these secular trends and other covariates, while absorbing time-invariant state characteristics and common year effects, I estimate the difference-in-differences, accounting for the staggered expansion as described in Subsection 3.2.

Figure 5: Medicaid and UI take-up by income group and expansion state



Notes: Income groups are defined based on a counterfactual threshold of 138% FPL.

The estimated impact of including UI benefits in MAGI on UI take-up from Equation (2) is provided in Table 2. Columns contain different specifications. The preferred specification is column (4) with the full set of covariates, but results are robust across specifications. Among notched workers, whose simulated benefit would carry their income over the threshold, UI take-up falls by 19.6 percentage points (SE 0.091) when expansion switches the notch on. Relative to the expansion state's pre-ACA mean among the notched, the coefficient represents a 27 percent decrease in UI take-up.

Among always-below workers, whose Medicaid eligibility is not affected by UI benefit, take-up increases by 14.7 percentage points (SE 0.076), significant at the 10 percent level. The positive estimate for always-below workers may reflect an administrative spillover from Medicaid enrollment to UI take-up: a cross-program referral could increase UI take-up even among individuals whose Medicaid eligibility is unaffected by UI receipt. Among always-above workers, who are never eligible for Medicaid, UI take-up decreases by 8.9 percentage points but is statistically insignificant. IPW in column (5) makes the coefficients for the always-below and always-above groups larger and increases their standard errors, while the notched coefficient and standard error change little (−0.219, SE 0.092). The triple difference estimated from Equation (3) is statistically significant at -0.224 (SE 0.096), and it is stable

Table 2: Estimated effects of ACA Medicaid expansion on UI take-up

	(1)	(2)	(3)	(4)	(5)	Observations
DiD: Always below	0.156*	0.149**	0.148*	0.147*	0.167*	2544
	(0.084)	(0.076)	(0.075)	(0.076)	(0.099)	
DiD: Notched	-0.191*	-0.197**	-0.197**	-0.196**	-0.219**	2469
	(0.108)	(0.095)	(0.091)	(0.091)	(0.092)	
DiD: Always above	-0.097	-0.086	-0.088	-0.089	-0.093	2045
	(0.137)	(0.151)	(0.150)	(0.151)	(0.168)	
Notched vs. Other (DDD)	-0.223**	-0.224**	-0.225**	-0.224**	-0.242**	7058
	(0.102)	(0.098)	(0.096)	(0.096)	(0.120)	
State and year FE	Yes	Yes	Yes	Yes	Yes	
Demographics		Yes	Yes	Yes	Yes	
Private insurance			Yes	Yes	Yes	
Replacement rate				Yes	Yes	
Inverse-prob. weights					Yes	

Note: Sample = UI-eligible childless adults aged 26 to 64. Income position is assigned on the tax unit MAGI against 138% FPL. Estimation method = 2SDID. The Medicaid estimates are in Appendix Table B6. Observations are weighted by SIPP weights in columns (1-4). Standard errors are clustered on state. *** p < 0.01, ** p < 0.05, * p < 0.10.

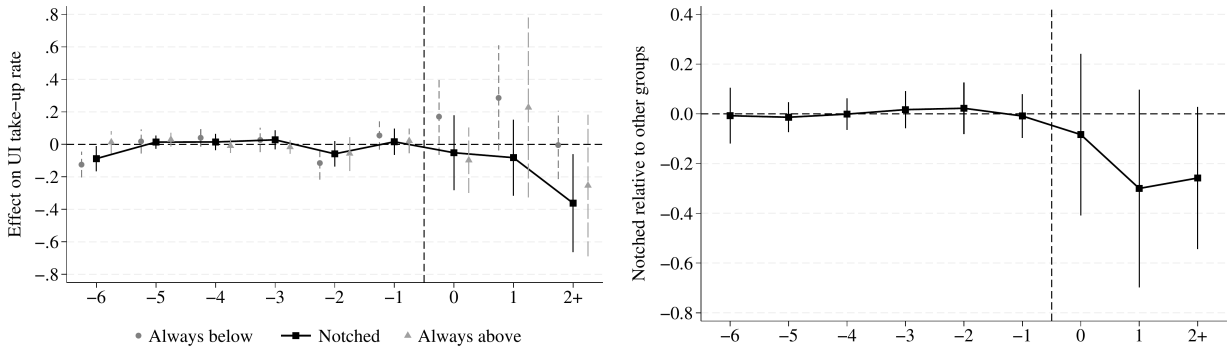
across the four control sets and with IPW, ranging from -0.242 to -0.223.

Figure 6 plots the event study of UI take-up. None of the pre-expansion coefficients is statistically different from zero for any of the three income groups, and they show no trend over the six years before expansion. Post-expansion coefficients for the notched group are negative throughout and imprecise in the first two years, and become significant in the pooled "2+" period.[8]

The UI take-up results are robust to alternative samples. Table 3 reports results from alternative samples based on specification (4). Restricting to observations with a fully observed base period of four to five quarters increases the magnitude of the estimated impact of Medicaid eligibility for the notched group (-0.359) and the triple difference (-0.363). The estimates are larger in magnitude than in the main analysis sample, in the direction that classical measurement error in the assigned benefit predicts. Dropping the nine states that

[8]Estimates using Medicaid enrollment as the dependent variable in Equation (3), in Appendix Table B6, show that coverage among always-below workers rises significantly with expansion in all specifications, as is the triple difference comparing the always-below group to always-above (excluding the notched, some of whom have income above the threshold). The event study in Appendix Figure B2 shows no pre-trend for any income group, and the post-expansion coefficients of the below group are positive.

Figure 6: Event studies for UI take-up



(A) Difference-in-differences by income group (B) Triple differences

Notes: Estimation method = 2SDID. Panel (A) estimates Equation (2) for UI take-up by income group. Panel (B) reports the interacted event-year coefficients from the triple-difference specification. Vertical lines are 95% confidence intervals from standard errors clustered on state. The dashed vertical line marks the expansion year (relative year of 0). Relative years two and later are pooled into the "2+" bin. Observations are weighted by SIPP weights.

expanded after 2018 (Idaho, Maine, Missouri, Nebraska, North Carolina, Oklahoma, South Dakota, Utah, and Virginia) from the comparison group changes estimated coefficients only slightly. Including the subset of parents who were previously Medicaid-ineligible results in lower and the estimates.

Estimates of Equation (2) based on alternative methods to handle staggered treatment are provided in Appendix Figure B3: imputation estimator of Borusyak, Jaravel and Spiess (2024) (BJS), extended two-way fixed effects (ETWFE; Wooldridge, 2025), the group-time estimator of Callaway and Sant'Anna (2021) (CSDID), and stacked difference-in-differences. The estimates are qualitatively similar across estimators. The notched group shows a negative effect of similar magnitude in every case. The estimates are most precise for 2SDID, BJS, ETWFE, and stacked DiD, which use all untreated observations as comparisons, and least precise for CSDID, which compares each cohort with never-treated states in relatively small cells and has the widest confidence intervals.

5.2 Mechanism: Health Care Needs

According to the conceptual framework depicted in Figure 1 panel (B), health care needs may be a factor shaping V_i in Equation (1): workers who expect to need more care would place

Table 3: Robustness of the UI take-up results

	(1) Main	(2) Full base period	(3) Excl. later expansion	(4) Parents included
Always below	0.147*	0.176	0.128*	0.145**
	(0.076)	(0.150)	(0.078)	(0.074)
Notched	−0.196**	−0.359***	−0.175**	−0.143*
	(0.091)	(0.125)	(0.085)	(0.081)
Always above	−0.089	−0.167	−0.073	−0.077
	(0.151)	(0.198)	(0.152)	(0.104)
Triple difference	−0.224**	−0.363**	−0.182*	−0.149
(Notched vs. Other)	(0.096)	(0.166)	(0.094)	(0.094)
Observations (all groups)	7,058	3,393	6,336	9,451

Note: Specification (4) of Table 2. Column (2) restricts to observations in which every base-period quarter falls inside the respondent's panel, so that no work history is carried back from the earliest observed quarter. Column (3) drops the nine states that expanded Medicaid after December 2018. Column (4) adds workers with a dependent child, which the main analysis excludes. Estimation method = 2SDID. Standard errors are clustered on state and observations are weighted by SIPP weights. *** p < 0.01, ** p < 0.05, * p < 0.10.

a higher value on Medicaid and be more likely to forgo UI. Table 4 reports the estimated φ from Equation (5b) by income group for each of the thirteen $\widehat{HN}$ measures. The mean and standard deviation of each predicted measure by income group in all analysis periods are in Table B5.

For the notched, the coefficient on the interaction term, φ, is negative in 11 of the 13 measures and significant at the 10 percent level in nine: more than seven days of poor physical health, health poor, 20 or more days of limited activity, 20 or more days of poor mental health, age 55 to 64, diabetes, coronary heart disease, stroke, and any of the four diagnoses. Severe obesity and asthma are the main exceptions with positive and statistically insignificant coefficients. The magnitudes of the negative effects are often substantial. For instance, one standard deviation higher predicted probability of having been diagnosed with stroke (a standard deviation of about 0.02 among the notched, Appendix Table B5) is thus associated with a 21.9 percentage point larger decline in UI take-up among notched workers.

The comparison groups show weaker relationships in Table 4. For the always-below, φ is negative in nine measures but significant at the 10 percent level in only two (poor physical days and limited activity). For the always-above, none of the estimates is statistically signif-

Table 4: Estimated impact of predicted health care need on UI take-up

	Below ACA × $\widehat{HN}$	Notched ACA × $\widehat{HN}$	Above ACA × $\widehat{HN}$
Self-Reported Health:			
More than 7 poor physical days	-0.141*	-0.295***	-0.061
	(0.070)	(0.070)	(0.138)
Health < good (fair or poor, prob.)	-0.066	-0.078	-0.026
	(0.085)	(0.083)	(0.158)
Health poor	-0.070	-0.204***	-0.034
	(0.084)	(0.070)	(0.157)
Health limited activity ≥ 20 days	-0.143*	-0.339***	0.089
	(0.078)	(0.093)	(0.132)
Poor mental health ≥ 20 days	-0.063	-0.186*	0.157
	(0.113)	(0.098)	(0.145)
Characteristics:			
Severe obesity, BMI≥40	-0.104	0.133	0.138
	(0.082)	(0.136)	(0.150)
Age 55–64	0.058	-0.189**	0.031
	(0.081)	(0.093)	(0.122)
Diagnosis:			
Diabetes	0.003	-0.143*	0.015
	(0.125)	(0.076)	(0.122)
Heart attack	-0.009	-0.104	-0.048
	(0.088)	(0.112)	(0.172)
Coronary heart disease	0.094	-0.157*	0.033
	(0.090)	(0.087)	(0.117)
Stroke	-0.098	-0.219**	-0.018
	(0.062)	(0.086)	(0.129)
Any of diabetes, heart attack, CHD, stroke	0.014	-0.160**	-0.037
	(0.111)	(0.078)	(0.109)
Asthma	-0.016	0.008	0.111
	(0.083)	(0.140)	(0.105)
Observations	2,544	2,469	2,045

Notes: Each cell is the coefficient φ from Equation (5b), the change in the effect of the ACA per one standard deviation increase in the standardized predicted measure, estimated separately for each predicted measure and income group by 2SDID. Standard errors in parentheses are clustered on state. The mean and standard deviation of each predicted measure by income group are in Table B5. Probabilities are predicted from the BRFSS, except for the age 55–64 indicator. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

icant. The patterns suggest that the impact of the notch on UI take-up is more pronounced among those whose predicted health care needs are higher.

5.3 Evidence from Reversal of Treatment

Further support for the interpretation that the estimated effect of the notch on UI take-up is causal comes from an analysis of two cases when the notch was removed. The first is the Medicaid continuous enrollment requirement under the Families First Coronavirus Response Act (FFCRA) from March 2020 to March 2023, when coverage could not be lost, and claiming UI was therefore unrelated to Medicaid eligibility. Using an extended sample for 2008–2024, I estimate the coefficients on the expansion effect in the years outside (2008–2019, 2024) and during the continuous enrollment period (2020–2023), by income group.

Table 5 reports the estimated results. For notched workers, the effect of ACA Medicaid expansion on UI take-up is −0.203 (SE 0.100) outside the continuous enrollment years, while the coefficient becomes tiny and statistically insignificant during those years. The difference is significant at the 10 percent level. UI take-up also rises during the FFCRA years among always-above workers (0.206). The extended years coincide with the federal pandemic UI expansions, which are not counted in Medicaid-eligible income and may have raised UI take-up in every group, so the increase among the notched cannot be attributed to the removal of the notch alone.

Table 5: Expansion effects outside and during FFCRA continuous enrollment, 2008–2024

	Always below	Notched	Always above
ACA expansion, outside FFCRA years	0.121	−0.203**	0.100
	(0.077)	(0.100)	(0.193)
ACA expansion, during FFCRA years	0.139	0.010	0.206**
	(0.091)	(0.115)	(0.092)
Difference (during − outside)	0.019	0.214*	0.106
	(0.118)	(0.129)	(0.205)
Observations	2,810	2,788	2,433

Note: Specification (4) of Table 2. Each column is a separate 2SDID estimate over 2008–2024 in which the expansion indicator is interacted with an indicator for the FFCRA continuous enrollment period (2020 to 2023). The first two rows are the expansion effect outside and during that period, and the difference is the effect during minus outside the period, computed as a linear combination of the two coefficients with its standard error. Standard errors are clustered on state. Observations are weighted by SIPP weight. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The second case of notch removal concerns a group that the main sample excludes: workers who were already Medicaid-eligible under their own state's pre-expansion threshold.

For them, the threshold was usually lower than 138 percent FPL, so the expansion raised the threshold. Where a worker already faced a notch under the state's own lower threshold, raising the threshold to 138 percent FPL could remove the notch, and claiming UI is expected to rise, as receiving UI would no longer move their income above the Medicaid eligibility threshold.

Table 6 splits those observations by what the expansion did to the notch they faced. There are two cases: staying always-below before and after the expansion, and moving from the notched group to always-below after the ACA raises the threshold. Since it is rare for childless adults to be eligible for Medicaid before the ACA,[9] this analysis uses a sample with parents included.

Table 6: UI take-up among workers whose Medicaid eligibility thresholds increase

	Non-/Pre-ACA Mean	Post-ACA Mean	DiD (SE)	Observation
No notch in either period	0.475	0.241	0.078	1,307
(Always-below → Always-below)			(0.063)	
Notch removed	0.578	0.348	0.175**	1,504
(Notch → Always-below)			(0.087)	
Triple Difference			0.097	2,811
(Notch removed − No notch)			(0.117)	

Note: The observations the pre-expansion-eligibility restriction removes, split by what raising the limit to 138% FPL did to the notch they faced. Pre-expansion thresholds are in Appendix Table A4. The sample includes both parents and childless adults. Columns (1-2) are weighted means of UI take-up, pooling the non-ACA states and the expansion states before the ACA in column (1). Column (3) reports the 2SDID estimate using the specification of column (1) of Table 2. Standard errors are in parentheses. Observations are weighted by SIPP weights. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

The UI take-up increases by 17.5 percentage points (SE 0.087) for the notch removed group, which is 30 percent relative to the non/pre-expansion mean of 0.578. On the other hand, there is a 7.8 percentage point (SE 0.063) and statistically insignificant increase in UI take-up for the group who have been continuously eligible for Medicaid in both periods, regardless of UI take-up. Although the difference is not statistically significant, the pattern is also consistent with the mechanism, showing the opposite sign from the main notched estimate, even with a different sample.

[9] Appendix Table A4 shows pre-expansion Medicaid eligibility thresholds for childless adults and parents

Both cases show that UI take-up rises where the notch is removed, and the magnitude is approximately symmetric to the main estimate of −0.196 from Table 2 column (4).

5.4 The Implied Value of Medicaid

Equation (1) implies that the value of Medicaid is at least the value of UI benefits for UI forgoers, abstracting from the costs of claiming the programs. Forgoers who retain Medicaid eligibility reveal a valuation of Medicaid including the value of current access to Medicaid as well as its option value. Table 7 compares notched UI forgoers with notched UI claimants in expansion state-months after the expansion.

Table 7: Descriptive statistics among notched UI forgoers and claimants in ACA state-time

	(1)	(2)	(3)
	UI Forgoers	Claimants	Difference
UI take-up	0	1	
Weekly UI benefit ($)	409.4	454.1	44.7**
	(74.2)	(111.6)	(18.0)
Unemployment duration (weeks)	14.4	12.8	−1.6
	(6.3)	(6.1)	(1.1)
Value over mean unemployment duration ($)	5,885	5,804	

Note: Sample is restricted to the main sample of childless adults in the notched group in ACA state-time. Columns (1-2) are SIPP-weighted means with standard deviations in parentheses beneath; in column (3) the difference, (2) claimants minus (1) forgoers, is reported with its standard error in parentheses. Value over mean duration is the weekly UI benefit times the mean unemployment duration (incomplete spell). Observations = 130 for forgoer, 59 for claimants. Observations are weighted by SIPP weights. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

UI claimants have a higher eligible weekly UI benefit than forgoers, $454.1 against $409.4, and the difference is statistically significant. On the other hand, unemployment durations do not statistically differ between these two groups. Under the revealed preference framework, the average spell value (forgone UI benefits) of Medicaid is estimated to be on average at least $5,885 among UI forgoers with Medicaid-eligibility and at most $5,804 among UI claimants.

These estimates are larger than previous literature estimating the value of Medicaid. Finkelstein, Hendren and Luttmer (2019) estimate that Oregon Health Insurance Experiment recipients valued a dollar of Medicaid spending at between $0.50 and $1.20, which ranges

between $1,800 and $4,320 when applied to Medicaid spending. Ericson, Jaspersen and Sydnor (2025) bound willingness to pay between $1,021 and $2,585 annually, the upper end applying to the most liquidity-constrained.

Several factors complicate this comparison with the previous value estimates and push in different directions. First, UI is time-limited, typically lasting up to 26 weeks, whereas Medicaid eligibility can continue beyond the UI spell, so the spell-worth value understates the value of annual coverage. Second, other social safety net programs, such as SNAP, also have income eligibility criteria. Combined with the fact that UI benefits can move the income-to-FPL ratio to much higher than a marginal value around the 138 percent FPL, forgone benefits can also represent the value of other programs as well as Medicaid, which would overstate the value of Medicaid. For instance, the average monthly spending on SNAP per participant is around $200 between 2014–2018 (U.S. Department of Agriculture, Economic Research Service, 2026), implying the value around $650 during an unemployment spell. Finally, the population facing this choice consists of workers who, as suggested in Section 5.2, respond more strongly where predicted health care need is higher, so the value revealed here may exceed the average value in the general population.

5.5 Policy Simulation: Excluding UI Benefits from the Medicaid Income Definition

To gauge the aggregate implications of the notch, I consider a counterfactual in which UI benefits are not counted in MAGI, so that claiming UI is no longer tied to Medicaid eligibility for the notched. Table 8 reports back-of-the-envelope calculations for the ACA expansion state-years, averaged per year over 2014–2018. About 98,000 UI-eligible childless adults aged 26 to 64 are notched each year, of whom 67,021 do not claim UI and 30,900 claim it. Applying the estimated 19.6 percentage point effect to this population implies 19,193 additional UI claimants a year (95 percent CI: 1,727, 36,658). Multiplying by the average benefits paid per initial claim in expansion states ($20,637 million over 3,801,972 initial claims in 2018 (DOLETA, 2026), or $5,428 per claim) gives an additional state UI spending of $104.2 million (CI 9.4 to 199.0).

On the Medicaid side, I use the Medicaid take-up rates after the expansion in expansion states, 34 percent for the always-below (Figure 5) and 11 percent for the notched UI forgoers. The additional enrollees are the forgoers who would newly enroll, 34 percent of them, against the 11 percent of notched UI forgoers already enrolled, plus the claimants who would enroll at a 34 percent take-up, 26,440 in total. At $6,459 per enrollee-year (KFF, 2026), assuming full-year enrollment, eliminating the notch would cost $170.8 million, of which $153.7 million is borne by the federal government at the 90 percent federal share, as a result of simultaneous enrollment of UI and Medicaid.

Table 8: Counterfactual: UI benefits excluded from the Medicaid income definition

	Workers per year	Cost ($ million)
Notched workers in expansion states	97,921	
UI forgoers	67,021	
UI claimants	30,900	
Potential additional UI claimants	19,193	
95% CI	[1,727, 36,658]	
Additional state UI spending		104.2
95% CI		[9.4, 199.0]
Additional Medicaid enrollees	26,440	
Additional Medicaid spending		170.8
federal share (90%)		153.7

Note: Averages per year over 2014–2018 for the ACA expansion state-times. Benefits per initial claim are the 2018 average from DOLETA and Medicaid spending per enrollee-year is from KFF, both in nominal dollars of the years reported. The Medicaid take-up rates are 34 percent for the always-below and 11 percent for the notched UI forgoers in expansion states after the expansion.

These figures rest on strong assumptions. The effect of removing the notch is assumed to be equal in magnitude to the effect of introducing it. The Medicaid take-up rates are taken from the always-below group and notched UI forgoers after the expansion, enrollment is assumed to last the full year, and the benefits per claim are the 2018 statewide average. They also ignore any labor-supply response and any change in other program spending.

6 Conclusion

This paper documents an important but understudied interaction between unemployment insurance and Medicaid. Including UI benefits in the Medicaid income definition forces low-income unemployed workers to choose between two social insurance programs. Because Medicaid eligibility depends on income including UI benefits, receiving UI can push a worker's income above the 138% FPL threshold and result in loss of health insurance coverage. Alternatively, a worker may choose to forgo UI and thereby retain Medicaid eligibility, but the income loss is large for most workers.

I find that the ACA Medicaid expansion, which introduced the notch to childless adults for the first time, decreases UI take-up by 19.6 percentage points (about 27 percent compared to the pre-ACA mean) for the notched group after the expansion, with no significant reduction for the comparison groups. The estimated triple difference is -0.224 (SE 0.096). The behavioral response to the notch is larger when predicted health care needs are higher. In cases of treatment reversal, where the notch is removed, UI take-up rises by similar amounts (0.175–0.214). Workers who forgo UI in favor of Medicaid coverage reveal an average value of retaining Medicaid eligibility of at least $5,885 per unemployment spell. Simulating policy under which Medicaid eligibility income definition excludes UI benefits, I find that about 19,200 additional workers a year would take up UI and about 26,400 additional workers would take up Medicaid in ACA expansion states, at costs of $104.2 million for UI and $170.8 million for Medicaid per year.

Several limitations should be noted. Although Medicaid eligibility is based on current monthly MAGI, there may be delays in the Medicaid application or registration process, as individuals may enroll not immediately but only when they need care, thus Medicaid may have an option value even in the absence of enrollment. Post-expansion cells are thin for UI-eligible childless adults becoming newly Medicaid-eligible, following the restructuring of the SIPP panel in 2014. There are also other means-tested programs that have income limits near the Medicaid cutoff, although not precisely at 138 percent FPL, so a worker crossing the threshold may lose more than Medicaid alone, in which case the estimated value of Medicaid captures the combined loss.

The analysis in this paper may have implications for Medicaid work requirements. Conventional wisdom would predict that a Medicaid work requirement could lower the fiscal burden of government from both Medicaid and UI benefits. However, my analysis suggests that, because searching for work does not meet the work requirement, some workers who would have forgone UI may claim UI once the work requirement disenrolls them from Medicaid. In this case, the work requirement for Medicaid eligibility could lower federal spending on Medicaid, but could raise the state costs of UI.

The paper also has implications for program design. The ACA Medicaid expansion was intended to cover health insurance for low-income adults, including the unemployed. By counting UI benefits in the Medicaid eligibility income definition, however, it forced a choice between two programs for a large group of workers. Understanding such interactions matters for designing a safety net that delivers income and health insurance to the same people at the same time.

References

Anderson, Patricia M, and Bruce D Meyer. 1997. "Unemployment insurance takeup rates and the after-tax value of benefits." *Quarterly Journal of Economics*, 112(3): 913–937.

Anderson, Patricia M, and Bruce D Meyer. 2006. "Unemployment insurance tax burdens and benefits: Funding family leave and reforming the payroll tax." *National Tax Journal*, 59(1): 77–95.

Birinci, Serdar, and Kurt See. 2023. "Labor market responses to unemployment insurance: The role of heterogeneity." *American Economic Journal: Macroeconomics*, 15(3): 388–430.

Borusyak, Kirill, Xavier Jaravel, and Jann Spiess. 2024. "Revisiting Event-Study Designs: Robust and Efficient Estimation." *Review of Economic Studies*, 91(6): 3253–3285.

Buchmueller, Thomas C, Helen Levy, and Robert G Valletta. 2021. "Medicaid expansion and the unemployed." *Journal of Labor Economics*, 39(S2): S575–S617.

Callaway, Brantly, and Pedro HC Sant'Anna. 2021. "Difference-in-differences with multiple time periods." *Journal of econometrics*, 225(2): 200–230.

Chetty, Raj. 2008. "Moral hazard versus liquidity and optimal unemployment insurance." *Journal of political Economy*, 116(2): 173–234.

Cullen, Julie Berry, and Jonathan Gruber. 2000. "Does unemployment insurance crowd out spousal labor supply?" *Journal of labor Economics*, 18(3): 546–572.

DeLeire, Thomas, Laura Dague, Lindsey Leininger, Kristen Voskuil, and Donna Friedsam. 2013. "Wisconsin experience indicates that expanding public insurance to low-income childless adults has health care impacts." *Health affairs*, 32(6): 1037–1045.

DOLETA. 2026. "Unemployment Insurance Weekly Claims Data." Accessed: 2026-10-01.

East, Chloe N, and David Simon. 2020. "How Well Insured are Job Losers? Efficacy of the Public Safety Net." National Bureau of Economic Research.

Ebenstein, Avraham, and Kevin Stange. 2010. "Does inconvenience explain low take-up? Evidence from unemployment insurance." *Journal of Policy Analysis and management*, 29(1): 111–136.

Ericson, Keith Marzilli, Johannes G Jaspersen, and Justin R Sydnor. 2025. "Moral hazard under liquidity constraints." National Bureau of Economic Research.

Finkelstein, Amy, Nathaniel Hendren, and Erzo FP Luttmer. 2019. "The value of Medicaid: Interpreting results from the Oregon Health Insurance Experiment." *Journal of Political Economy*, 127(6): 2836–2874.

Gardner, John, Neil Thakral, Linh T Tô, and Luther Yap. 2024. "Two-Stage Differences in Differences."

Garthwaite, Craig, Tal Gross, and Matthew J Notowidigdo. 2014. "Public health insurance, labor supply, and employment lock." *Quarterly Journal of Economics*, 129(2): 653–696.

Hamersma, Sarah. 2013. "The effects of Medicaid earnings limits on earnings growth among poor workers." *The BE Journal of Economic Analysis & Policy*, 13(2): 887–919.

Heim, Bradley, Ithai Lurie, Elena Patel, and Shanthi Ramnath. 2024. "Medicaiding Coverage Volatility for Displaced Workers: Evidence from the 2019 Virginia Medicaid Expansion." *FRB of Chicago Working Paper*, No. 2023–41.

KFF. 2026. "Medicaid Spending per Enrollee (Full or Partial Benefit) by Enrollment Group." *KFF State Health Facts*, Accessed: 2026-10-01.

Kroft, Kory, and Matthew J Notowidigdo. 2016. "Should unemployment insurance vary with the unemployment rate? Theory and evidence." *The Review of Economic Studies*, 83(3): 1092–1124.

Kucko, Kavan, Kevin Rinz, and Benjamin Solow. 2017. "Labor Market Effects of the ACA's Tax Notch." U.S. Census Bureau, CARRA 2017-03.

Kuka, Elira. 2020. "Quantifying the benefits of social insurance: unemployment insurance and health." *Review of Economics and Statistics*, 102(3): 490–505.

Kuka, Elira, and Bryan A Stuart. 2025. "Racial inequality in unemployment insurance receipt." *Journal of Public Economics*, 247: 105401.

Leung, Pauline, and Christopher O'leary. 2020. "Unemployment insurance and means-tested program interactions: Evidence from administrative data." *American Economic Journal: Economic Policy*, 12(2): 159–192.

Li, Mingjian. 2025. "Does the Expansion of Medicaid Lead to Income Adjustment—Evidence from SIPP."

Lindner, Stephan. 2016. "How do unemployment insurance benefits affect the decision to apply for social security disability insurance?" *Journal of Human Resources*, 51(1): 62–94.

Meyer, Bruce D., and Nikolas Mittag. 2019. "Using Linked Survey and Administrative Data to Better Measure Income: Implications for Poverty, Program Effectiveness, and Holes in the Safety Net." *American Economic Journal: Applied Economics*, 11(2): 176–204.

Meyer, Bruce D, Nikolas Mittag, and Derek Wu. 2024. "Race, ethnicity, and measurement error." National Bureau of Economic Research.

Meyer, Bruce D, Wallace KC Mok, and James X Sullivan. 2015. "Household surveys in crisis." *Journal of Economic Perspectives*, 29(4): 199–226.

Mueller, Andreas I, Jesse Rothstein, and Till M Von Wachter. 2016. "Unemployment insurance and disability insurance in the Great Recession." *Journal of Labor Economics*, 34(S1): S445–S475.

O'Leary, Christopher J, William E Spriggs, and Stephen A Wandner. 2022. "Equity in unemployment insurance benefit access." Vol. 112, 91–96, American Economic Association 2014 Broadway, Suite 305, Nashville, TN 37203.

U.S. Census Bureau. 2008–2025. "Survey of Income and Program Participation (SIPP), 2008-2020 Panels." https://www.census.gov/programs-surveys/sipp.html.

U.S. Census Bureau. 2016. "2014 Survey of Income and Program Participation Users' Guide." U.S. Department of Commerce, Economics and Statistics Administration, Washington, DC. Section 2.2.3, Reference Periods; program screener questions.

U.S. Census Bureau. 2020. "2018 Survey of Income and Program Participation Users' Guide." U.S. Department of Commerce.

U.S. Department of Agriculture, Economic Research Service. 2026. "Supplemental Nutrition Assistance Program (SNAP): Key Statistics and Research." *https://www.ers.usda.gov/topics/food-nutrition-assistance/supplemental-nutrition-assistance-program-snap/key-statistics-and-research*, Updated August 31, 2026.

Wherry, Laura R, Marguerite E Burns, and Lindsey Jeanne Leininger. 2014. "Using Self-Reported Health Measures to Predict High-Need Cases among Medicaid-Eligible Adults." *Health services research*, 49(S2): 2147–2172.

Wooldridge, Jeffrey M. 2025. "Two-Way Fixed Effects, the Two-Way Mundlak Regression, and Difference-in-Differences Estimators." *Empirical Economics*, 69(5): 2545–2587.

Yelowitz, Aaron S. 1995. "The Medicaid notch, labor supply, and welfare participation: Evidence from eligibility expansions." *Quarterly Journal of Economics*, 110(4): 909–939.

A Data Appendix

A.1 The 2014 Redesign

I pool the 2008, 2014, and 2018-2019 annual panels. The panels differ in how monthly information is collected. The 2008 panel interviewed respondents every four months about the preceding four months. From the 2014 panel onward the SIPP interviews once a year with a reference period of the preceding calendar year, using an event history calendar to reconstruct event (Medicaid take-up, employment status, UI take-up, etc.) spells and monthly status for each month of the year (U.S. Census Bureau, 2016).

The redesign has two implications for my study. First, monthly coverage and program receipt from 2014 onward are retrospective reconstructions over a year-long recall window, so reporting error concentrates transitions at the seam between reference years. Because a seam falls in the same calendar month for every respondent in a panel, it is common to all states and income positions and is removed by the year fixed effects. Second, the change of instrument falls close to the first expansion date in January 2014. The change is also national and therefore absorbed by year fixed effects, and identification comes from differences in expansion timing across states. Appendix Figure B1 shows that the income position or the composition of demographics does not statistically differ before and after the policy.

The redesign also changes how some income is recorded within the year, and the distinction between what is collected monthly and what is allocated monthly matters for this paper because the two enter the design in different places. Program receipt are collected monthly throughout the panels. Since 2014 panel, income sources collected annually are allocated evenly across the twelve months of the reference year (U.S. Census Bureau, 2016). The consequence is confined to the income measure that assigns position, not to the outcomes: within-spell variation in measured income is smaller from 2014 onward than the 2008 panel's four-month recall produces, while variation in take-up is not affected by the allocation. The remedy is to use the calculated benefit and to remove only the respondent's own UI and transfers from the tax-unit income, as described in Section efdata:vars.

A.2 Sample Restriction

Table A1: Person-months within and beyond the regular PBD, before the duration restriction

	$\leq$ PBD	$>$ PBD	t	SMD
Program take-up and UIB				
UI take-up	0.572	0.692	7.35***	0.25
Medicaid take-up	0.044	0.046	0.28	0.01
Unemployment duration (weeks)	14.11	47.78	70.54***	2.53
	(6.23)	(17.80)		
Weekly UIB	292.65	282.82	-2.42**	-0.08
	(127.41)	(118.21)		
Pre-separation weekly wage	863.59	740.09	-4.34***	-0.17
	(849.51)	(531.76)		
UI replacement rate	0.432	0.447	3.18***	0.11
	(0.138)	(0.128)		
Income group				
Always-below	0.364	0.385	1.24	0.04
Notched	0.349	0.338	-0.65	-0.02
Always-above	0.287	0.277	-0.71	-0.02
Characteristics				
Age	45.52	47.30	4.62***	0.16
	(11.30)	(10.67)		
Female	0.363	0.406	2.54**	0.09
Hispanic	0.138	0.143	0.41	0.02
Non-Hispanic White	0.678	0.669	-0.52	-0.02
Non-Hispanic Black	0.134	0.125	-0.79	-0.03
Non-Hispanic Asian	0.031	0.038	1.13	0.04
Other race	0.019	0.024	1.36	0.04
$<$ High school	0.094	0.104	1.04	0.04
High school	0.294	0.283	-0.66	-0.02
Some college	0.362	0.397	2.06**	0.07
University or more	0.164	0.161	-0.23	-0.01
Married	0.436	0.432	-0.27	-0.01
Spouse worked this month	0.306	0.291	-0.93	-0.03
Private health insurance	0.325	0.268	-3.65***	-0.12
Observations	7,058	6,622		

Notes: Table compares characteristics of observations whose unemployment duration not exceed the regular state potential benefit duration (PBD) (main sample) with those whose duration exceeds the regular PBD but within the weeks provided by EB and EUC. Means are weighted by the SIPP person weight, with standard deviations in parentheses for continuous variables. t is the t-statistics, and SMD is standardized mean difference. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table A2: Sample construction

	2008–2018	2008–2024
UI-eligible unemployed observations	29,475	32,389
less claims reporting a lump sum	1,608	1,646
less workers with a dependent child	12,086	13,130
Childless UI-eligible unemployed observations	15,781	17,613
less months past the regular entitlement	7,225	7,737
less SSI recipients	30	41
less SSDI recipients	29	51
less already eligible under the state's pre-expansion limit	775	899
less pre-expansion limit not readable	2	7
less months within the state waiting week	613	786
less controls unobserved	49	61
Analysis sample	7,058	8,031

Note: Restrictions applied in the order shown. First row: unemployed civilian adults aged 26–64 with no weeks worked, non-quit separation, monetarily UI-eligible under the state rules. The pre-expansion limit is read month by month for states not treated in the window and frozen a year before expansion for states treated in it.

A.3 ACA Medicaid Expansion Dates and Pre-Expansion limits

Table A3: ACA Medicaid expansion dates by state

Expansion date	States
January 2014	Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Hawaii, Illinois, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Nevada, New Jersey, New Mexico, New York, North Dakota, Ohio, Oregon, Rhode Island, Vermont, Washington, West Virginia
Apr 2014	Michigan
Aug 2014	New Hampshire
Jan 2015	Pennsylvania
Feb 2015	Indiana
Sep 2015	Alaska
Jan 2016	Montana
Jul 2016	Louisiana
After the analysis window	
Jan 2019	Maine, Virginia
Jan 2020	Idaho, Utah
Oct 2020	Nebraska
Jul 2021	Oklahoma
Oct 2021	Missouri
Jul 2023	South Dakota
Dec 2023	North Carolina
Not expanded	Alabama, Florida, Georgia, Kansas, Mississippi, South Carolina, Tennessee, Texas, Wisconsin, Wyoming

Note: The nine states expanding in 2019 or later contribute only untreated months to the main estimates.

Table A4: Pre-expansion Medicaid income thresholds

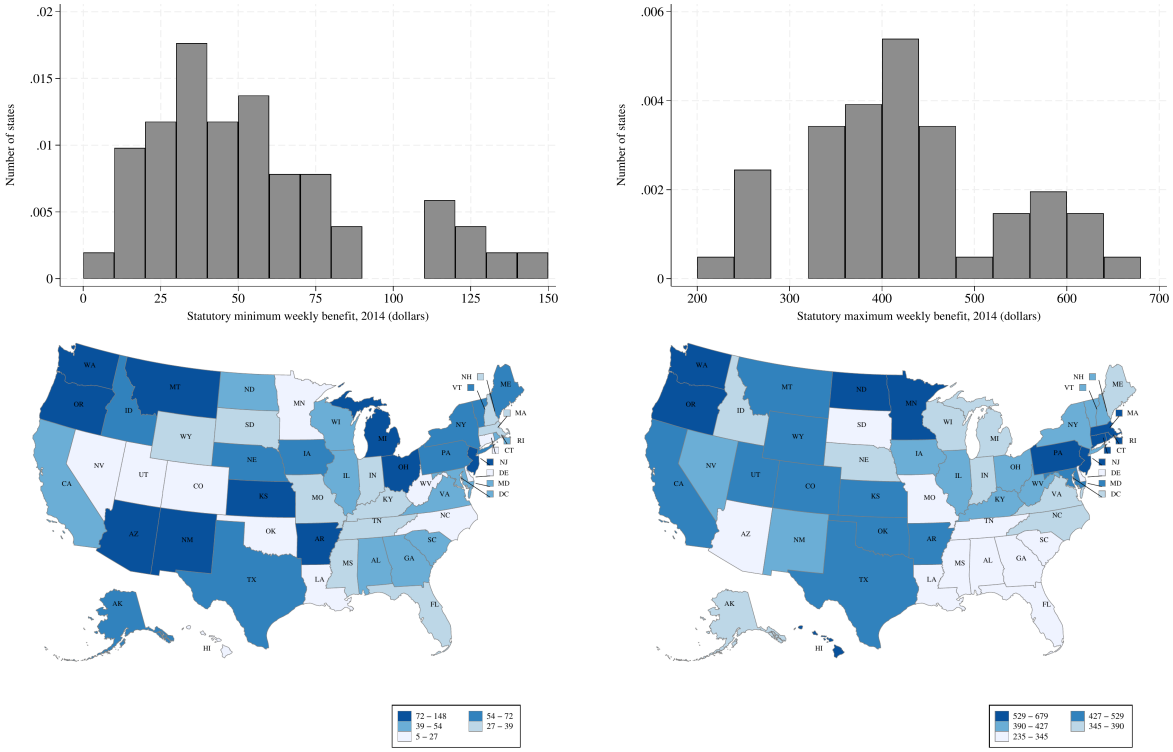
State	Parents	Childless	Read at	State	Parents	Childless	Read at
Alabama	16-26	0	consistent	Montana	51	0	Jan 2015
Alaska	128	0	Sep 2014	Nebraska	55-63	0	consistent
Arizona	106	100	Jan 2013	Nevada	84	0	Jan 2013
Arkansas	16	0	Jan 2013	New Hampshire	47	0	Aug 2013
California	106	0	Jan 2013	New Jersey	200	0	Jan 2013
Colorado	106	20	Jan 2013	New Mexico	85	0	Jan 2013
Connecticut	191	70	Jan 2013	New York	150	100	Jan 2013
Delaware	120	110	Jan 2013	North Carolina	43-52	0	consistent
District of Columbia	206	211	Jan 2013	North Dakota	57	0	Jan 2013
Florida	32-59	0	consistent	Ohio	96	0	Jan 2013
Georgia	35-53	0	consistent	Oklahoma	43-53	0	consistent
Hawaii	138	100	Jan 2013	Oregon	39	0	Jan 2013
Idaho	26-42	0	consistent	Pennsylvania	38	0	Jan 2014
Illinois	139	0	Jan 2013	Rhode Island	181	0	Jan 2013
Indiana	24	0	Feb 2014	South Carolina	67-100	0	consistent
Iowa	80	0	Jan 2013	South Dakota	50-56	0	consistent
Kansas	31-38	0	consistent	Tennessee	80-134	0	consistent
Kentucky	57	0	Jan 2013	Texas	17-28	0	consistent
Louisiana	24	0	Jul 2015	Utah	42-68	0	consistent
Maine	105-206	0	consistent	Vermont	191	160	Jan 2013
Maryland	122	0	Jan 2013	Virginia	29-52	0	consistent
Massachusetts	133	0	Jan 2013	Washington	71	0	Jan 2013
Michigan	64	0	Apr 2013	West Virginia	31	0	Jan 2013
Minnesota	215	75	Jan 2013	Wisconsin	100-200	0-100	consistent
Mississippi	26-46	0	consistent	Wyoming	50-59	0	consistent
Missouri	22-39	0	consistent				

Note: Percent of FPL (Kaiser Family Foundation). The table reports values as of 12 months before expansion for expansion states, as they could change the thresholds after 2008. Non-expansion states have consistent thresholds throughout 2008–2018. 0 means no monetary eligible income threshold

A.4 UI Benefits and the Medicaid Eligibility Threshold

The statutory weekly benefit limits by state differ widely (Appendix Figure A1): the minimum averages $53.92 (range $5–$148) and the maximum $424.59 (range $235–$679) in 2014.

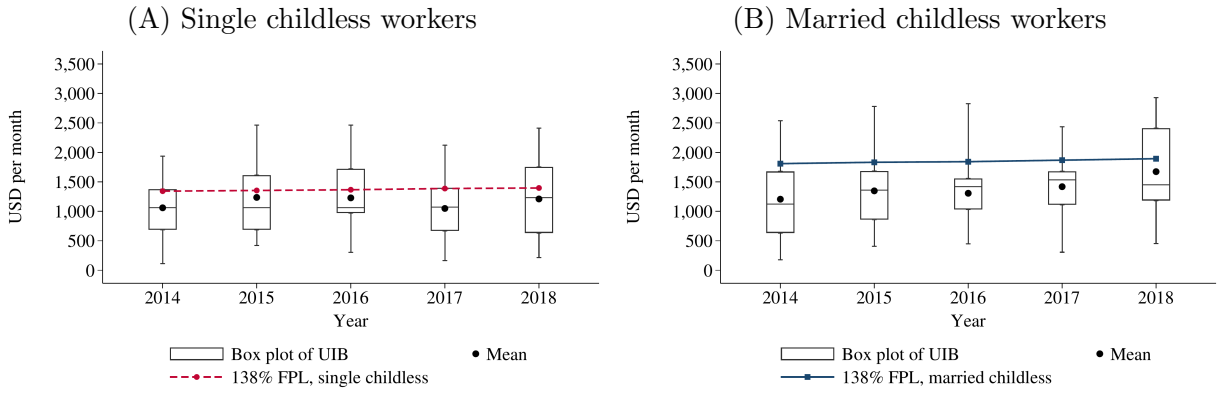
Figure A1: Statutory weekly benefit limits by state, 2014



Notes: Minimum (left) and maximum (right) weekly benefit, no dependents. The minimum averages $53.92 ($5–$148) and the maximum averages $424.59 ($235–$679).

UI benefits alone can push income above the Medicaid eligibility threshold. Appendix Figure A2 plots the distribution of monthly UIB (eligible weekly benefit amount × 4.3) against 138% of FPL per month for single and married childless workers. The Federal Poverty Level varies by household size and adjusts yearly by inflation, and workers may have non-labor income or spousal income. .

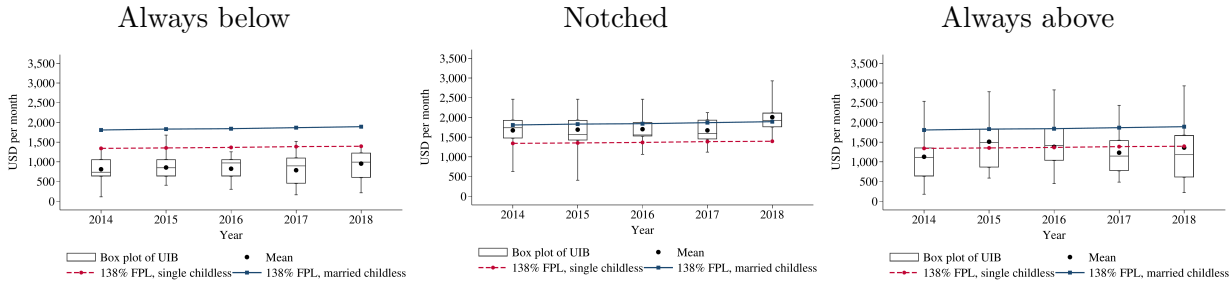
Figure A2: UI benefits and the Medicaid eligibility threshold



Notes: Boxplot of the distribution of monthly UIB (= eligible weekly benefit amount × 4.3) relative to 138% of FPL per month.

The calculated UI benefits by income group are in Appendix Figure A3. By design, the always-below group's UI benefits are below the 138 percent of FPL threshold. The UIB is distributed around the threshold level for the notched group. For the always-above group, UIB is distributed not above the 138 percent of FPL, but other income sources including spousal income can move this group of workers' income up.

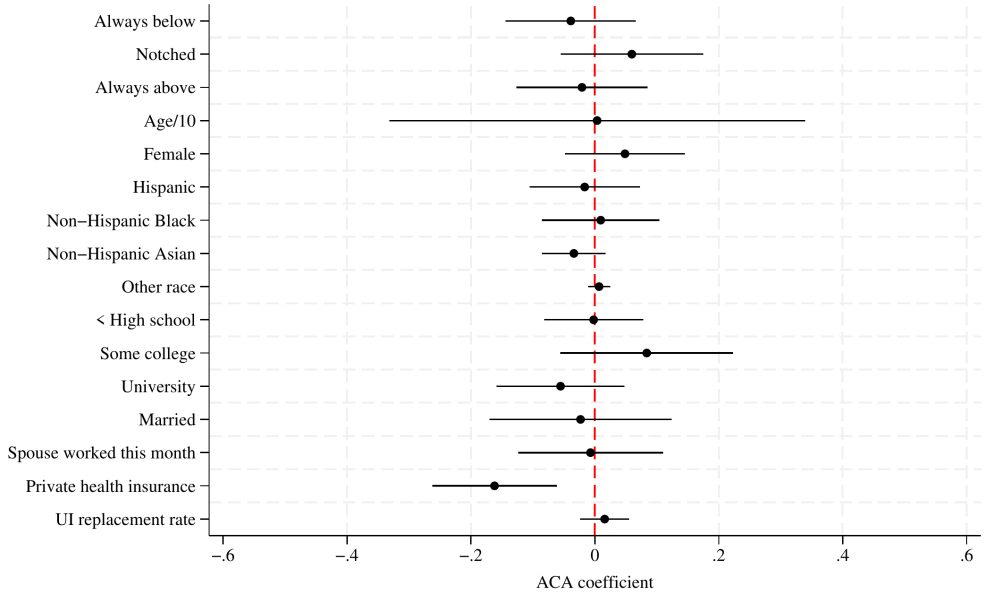
Figure A3: Medicaid eligibility thresholds and calculated UIB, by income group



Notes: The graphs plot both single and married childless adults' UIB distribution and 138% of FPL level overlaid, but separately by income group.

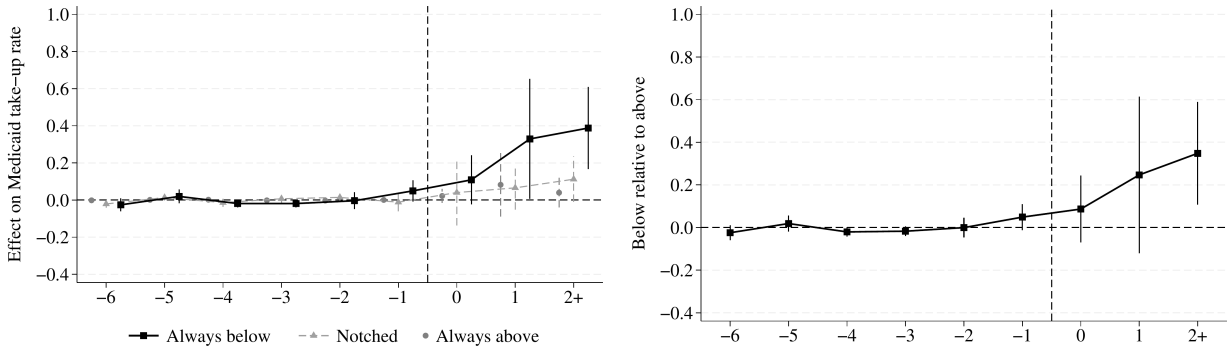
B Supplementary Figures and Tables

Figure B1: Compositional change at expansion



Notes: Each row is a separate regression in which the named variable is the outcome. Each is estimated by 2SDID on the 7,058 person-month estimation sample, with the effect of the ACA expansion indicator, and state and year fixed effects. Horizontal lines are 95% confidence intervals based on state clustered standard errors, and the dashed vertical line indicates zero. Observations are weighted by SIPP weights.

Figure B2: Event studies for Medicaid take-up



(A) Difference-in-differences by income group (B) Triple differences (Below vs. Other)

Notes: Estimation method = 2SDID. Panel (A) estimates Equation (2) for Medicaid take-up. Panel (B) reports the interacted event-year coefficients from the triple-difference specification contrasting the always-below and always-above groups. Vertical lines are 95% confidence intervals from standard errors clustered on state. The dashed vertical line marks the expansion year (relative year of 0). Event years two and later are pooled into the "2+" bin. Observations are weighted by SIPP person weights.

Table B1: Covariate balance between expansion and non-expansion states

	SIPP weight				SIPP weight × IPW			
	Non-exp. mean	Expansion mean	Diff.	Norm. diff.	Non-exp. mean	Expansion mean	Diff.	Norm. diff.
Always below	0.436	0.323	-0.113**	-0.235	0.376	0.364	-0.012	-0.025
Notched	0.279	0.388	0.110**	0.234	0.334	0.350	0.016	0.034
Always above	0.285	0.289	0.004	0.008	0.290	0.285	-0.004	-0.009
Income (w/o UI)-to-FPL ratio	1.167	1.258	0.092	0.039	1.227	1.239	0.012	0.005
Age/10	4.508	4.576	0.068	0.061	4.516	4.586	0.069	0.062
Female	0.343	0.375	0.032	0.066	0.359	0.366	0.008	0.016
Hispanic	0.132	0.142	0.010	0.030	0.165	0.126	-0.038	-0.109
Non-Hispanic Black	0.192	0.101	-0.091***	-0.259	0.131	0.143	0.011	0.033
Non-Hispanic Asian	0.021	0.036	0.015	0.090	0.031	0.030	-0.001	-0.007
Other race	0.019	0.018	-0.001	-0.005	0.024	0.016	-0.008	-0.054
< High school	0.098	0.091	-0.007	-0.025	0.086	0.092	0.006	0.022
Some college	0.361	0.362	0.001	0.002	0.351	0.371	0.020	0.042
University	0.137	0.179	0.042**	0.116	0.181	0.159	-0.022	-0.059
Married	0.444	0.432	-0.013	-0.025	0.442	0.434	-0.009	-0.017
Spouse worked this month	0.311	0.303	-0.009	-0.019	0.313	0.300	-0.013	-0.028
Private health insurance	0.289	0.345	0.056**	0.120	0.339	0.318	-0.021	-0.044
UI replacement rate	0.434	0.431	-0.003	-0.020	0.432	0.431	-0.001	-0.007
Drawn from the 2014 panel	0.203	0.230	0.027	0.065	0.218	0.235	0.017	0.041
Observations	2666	4392			2666	4392		

Note: Means of each covariate in states that expanded Medicaid by December 2018 and in states that did not, over the estimation sample. The left block weights by the SIPP person weight alone; the right block multiplies it by the inverse probability of expansion-state residence, as in Equation (4). Columns (3) and (7) are the difference in means, from a regression of the covariate on the expansion indicator with standard errors clustered on state; columns (4) and (8) are the normalized difference. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table B2: Predicted health care need by income group, Non- and Pre-ACA: mean (SD)

	Non-expansion States, 2008–2013			Expansion States, Pre-ACA		
	Below	Notched	Above	Below	Notched	Above
Self-reported health:						
More than 7 poor physical days	0.231	0.230	0.169	0.223	0.218	0.150
	(0.068)	(0.069)	(0.058)	(0.067)	(0.068)	(0.053)
Health fair or poor	0.309	0.295	0.188	0.303	0.270	0.164
	(0.097)	(0.090)	(0.076)	(0.098)	(0.086)	(0.071)
Health poor	0.081	0.081	0.038	0.075	0.070	0.033
	(0.045)	(0.041)	(0.025)	(0.043)	(0.034)	(0.022)
Health limited activity $\geq$ 20 days	0.119	0.117	0.076	0.119	0.113	0.066
	(0.040)	(0.041)	(0.029)	(0.044)	(0.044)	(0.027)
Poor mental health $\geq$ 20 days	0.233	0.206	0.112	0.232	0.215	0.109
	(0.057)	(0.058)	(0.032)	(0.061)	(0.063)	(0.038)
Characteristics:						
Severe obesity, BMI$\geq$40	0.052	0.056	0.060	0.047	0.046	0.049
	(0.019)	(0.022)	(0.023)	(0.015)	(0.017)	(0.019)
Age 55–64 (indicator, SIPP)	0.190	0.214	0.346	0.203	0.239	0.377
Diagnosis:						
Diabetes	0.096	0.105	0.119	0.092	0.089	0.106
	(0.067)	(0.070)	(0.072)	(0.067)	(0.061)	(0.064)
Heart attack	0.040	0.042	0.047	0.033	0.037	0.041
	(0.037)	(0.033)	(0.042)	(0.028)	(0.032)	(0.032)
Coronary heart disease	0.040	0.045	0.043	0.034	0.041	0.038
	(0.037)	(0.037)	(0.036)	(0.030)	(0.036)	(0.027)
Stroke	0.026	0.029	0.026	0.026	0.025	0.022
	(0.019)	(0.020)	(0.021)	(0.020)	(0.017)	(0.016)
Any of the above	0.150	0.166	0.178	0.147	0.148	0.163
	(0.098)	(0.098)	(0.101)	(0.095)	(0.091)	(0.086)
Asthma	0.143	0.151	0.127	0.154	0.162	0.133
	(0.037)	(0.043)	(0.036)	(0.044)	(0.040)	(0.034)
Observations	1,002	700	690	1,223	1,516	1,142

Notes: Mean and standard deviation of the predicted measure $\widehat{HN}$ in the SIPP estimation sample, by income group, weighted by SIPP weights. Non-expansion states are restricted to 2008–2013, and expansion states to their months before expansion, as in Table 1. Probabilities are predicted from the BRFSS, except for the age 55–64 indicator, which is taken from the SIPP.

Table B3: Logit for the probability of living in a state that ever expands

	(1) Notched	(2) Always below or above
Age	0.011**	-0.003
	(0.005)	(0.003)
Female	-0.115	0.087
	(0.106)	(0.069)
Hispanic	0.288*	0.498***
	(0.173)	(0.116)
Non-Hispanic Black	-0.449***	-0.721***
	(0.154)	(0.098)
Asian or other race	-0.308	0.732***
	(0.202)	(0.157)
< High school	-0.050	-0.059
	(0.186)	(0.121)
Some college	0.332***	-0.124*
	(0.111)	(0.075)
University	0.625***	0.228**
	(0.140)	(0.108)
Married	-0.614***	0.085
	(0.142)	(0.106)
Spouse worked this month	-0.014	0.038
	(0.172)	(0.107)
Private health insurance	0.679***	0.187**
	(0.126)	(0.085)
UI replacement rate	2.052***	-0.286
	(0.392)	(0.267)
Observations	2207	3994

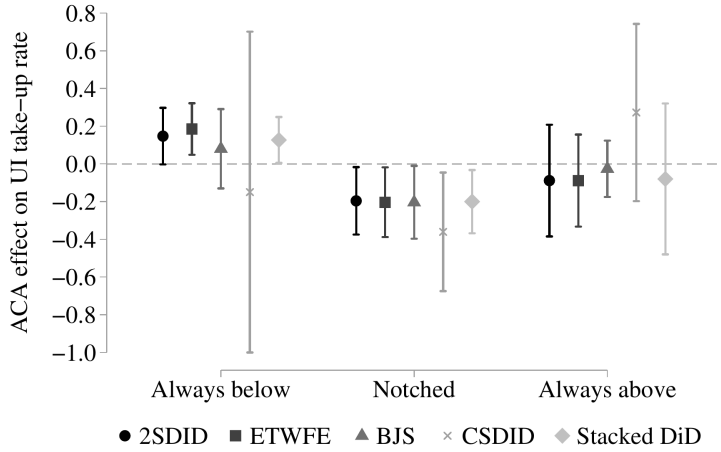
Note: The score behind column (5) of Table 2 and the right-hand block of Table B1. The outcome is an indicator for living in a state that expands Medicaid by December 2018. Sample period = 2008-2013. Coefficients estimated for the two different samples. Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table B4: Fit of the predicted health need: BRFSS and SIPP means and standard deviations

	BRFSS (binary)		SIPP (propensity)	
Outcome	Mean of HN	SD of HN	Mean of $\widehat{HN}$	SD of $\widehat{HN}$
Physical health bad $>$ 7 days	0.185	0.388	0.217	0.074
Health fair or poor	0.225	0.418	0.262	0.106
Health poor	0.051	0.220	0.068	0.043
Diabetes	0.098	0.297	0.101	0.069
Heart attack	0.035	0.183	0.038	0.033
Coronary heart disease	0.031	0.172	0.040	0.034
Stroke	0.023	0.150	0.026	0.019
Any of the four	0.146	0.354	0.158	0.097
Asthma	0.144	0.351	0.147	0.041
Severe obesity, BMI $\geq$ 40	0.055	0.228	0.050	0.018
Mental health bad $\geq$ 20 days	0.153	0.360	0.191	0.075
Activity limited $\geq$ 20 days	0.093	0.290	0.116	0.049

Note: HN means and SDs are weighted by BRFSS survey weights, and $\widehat{HN}$ means and SDs are weighted by the SIPP weights.

Figure B3: Alternative staggered difference-in-differences estimators



Notes: ETWFE: Extended two-way fixed effects; BJS: Borusyak, Jaravel, and Spiess; CSDID: Callaway and Sant'Anna. Each panel re-estimates the effect of the ACA expansion on UI take-up, separately for always-below, notched, and always-above workers, with five estimators for staggered adoption. Markers are point estimates and vertical bars are 95 percent confidence intervals from state clustered standard errors. All models include controls as in Table 2 column (4). In ETWFE model, controls are not interacted with cohort and year due to the small cell size. CSDID compares each cohort with never-treated states and estimates the doubly robust inverse-probability-weighted (dripw). Stacked DiD regresses the outcome on the treatment and the controls with cohort-by-state and cohort-by-year fixed effects. All estimators use the SIPP weights.

Table B5: Predicted health care need by income group, full analysis sample: mean (SD)

	Below	Notched	Above
Self-reported health:			
More than 7 poor physical days	0.234	0.226	0.160
	(0.072)	(0.071)	(0.057)
Health fair or poor	0.311	0.278	0.171
	(0.099)	(0.089)	(0.073)
Health poor	0.081	0.075	0.035
	(0.045)	(0.039)	(0.023)
Health limited activity $\geq$ 20 days	0.127	0.120	0.073
	(0.049)	(0.047)	(0.031)
Poor mental health $\geq$ 20 days	0.234	0.211	0.110
	(0.060)	(0.062)	(0.036)
Characteristics:			
Severe obesity, BMI$\geq$40	0.050	0.051	0.053
	(0.018)	(0.019)	(0.021)
Age 55–64 (indicator, SIPP)	0.217	0.231	0.382
Diagnosis:			
Diabetes	0.098	0.095	0.111
	(0.072)	(0.065)	(0.068)
Heart attack	0.036	0.038	0.041
	(0.032)	(0.033)	(0.036)
Coronary heart disease	0.036	0.041	0.038
	(0.034)	(0.036)	(0.030)
Stroke	0.027	0.027	0.024
	(0.020)	(0.019)	(0.019)
Any of diabetes, heart attack, CHD, stroke	0.153	0.153	0.166
	(0.101)	(0.094)	(0.092)
Asthma	0.150	0.159	0.131
	(0.042)	(0.044)	(0.034)
Observations	2,544	2,469	2,045

Notes: Mean and standard deviation of the predicted measure $\widehat{HN}$ in the full SIPP analysis sample, 2008–2018, by income group, weighted by SIPP weights. These are the means and standard deviations used to standardize $\widehat{HN}$ within each income group in Table 4. Probabilities are predicted from the BRFSS, except for the age 55–64 indicator, which is taken from the SIPP.

Table B6: Estimated effects of ACA Medicaid expansion on Medicaid take-up

	(1)	(2)	(3)	(4)	(5)	Observations
DiD: *Always below*	0.250***	0.258***	0.250***	0.250***	0.292***	2544
	(0.050)	(0.052)	(0.051)	(0.051)	(0.081)	
DiD: Notched	0.086*	0.085*	0.079*	0.078*	0.071	2469
	(0.040)	(0.037)	(0.037)	(0.037)	(0.038)	
DiD: Always above	0.049	0.046	0.046	0.046	0.047	2045
	(0.031)	(0.030)	(0.029)	(0.029)	(0.027)	
Below vs. Above (DDD)	0.208***	0.212***	0.204***	0.204***	0.245***	4589
	(0.063)	(0.061)	(0.059)	(0.059)	(0.089)	
State and year FE	Yes	Yes	Yes	Yes	Yes	
Demographics		Yes	Yes	Yes	Yes	
Private insurance			Yes	Yes	Yes	
Replacement rate				Yes	Yes	
Inverse-prob. weights					Yes	

Note: Sample and specifications as in Table 2. Estimation method = 2SDID. The outcome is Medicaid take-up, and the triple differences contrast the always-below group with the notched group and with the always-above group. Column (5) repeats the analysis with inverse probability weights. Observations are weighted by SIPP weights in columns (1-4). Standard errors are clustered on state. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.