Does the Expansion of Medicaid Lead to Income Adjustment—Evidence from SIPP

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This study examines whether Medicaid expansion under the Affordable Care Act (ACA) led to strategic income reductions to qualify for coverage. Using monthly data from the Survey of Income and Program Participation (2013–2019) and a regression discontinuity design, this paper finds that childless households in expansion states with earnings just above the eligibility threshold reduced their lowest monthly earnings by 39 percentage points of the Federal Poverty Level (roughly $700 for a two-person household) relative to those just below. The effect intensified as the mandate penalty increased and diminished after its repeal. Evidence suggests earnings adjustments along both intensive and extensive margins. The paper reinforces the validity of using the lowest monthly earning to identify Medicaid eligibility and provides the first evidence of a substantial labor supply response to the ACA. (JEL I13, J22, I18, H31)

In 2024, the federal and state governments spent approximately $900 billion on Medicaid and the Children's Health Insurance Program (CHIP), providing coverage to roughly 80 million Americans (Sigritz 2024). Enrollment has increased by 20 million since 2014, largely due to the Affordable Care Act (ACA), which expanded Medicaid eligibility to adults with incomes up to 138 percent of the Federal Poverty Level (FPL) (KFF 2025). However, since Medicaid benefits increase individuals' income (income effect) and losing Medicaid generates an over 100 percent marginal tax rate (substitution effect), the expansion reduces individuals' labor supply. Reflecting these dynamics, the Congressional Budget Office (CBO) projected a reduction of 2.0 million full-time-equivalent workers by 2017 (Harris and Mok 2015). Despite extensive evidence documenting reductions in uninsurance rates (Guth, Garfield, and Robin 2020), empirical studies have found limited or null effects of Medicaid expansion on earnings, employment, or other labor market outcomes (Gooptu et al. 2016); (Kaestner et al. 2017);(Leung and Mas 2018);(Buchmueller, Levy, and Valletta 2021).

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One feature that distinguishes Medicaid from other means-tested transfer programs, including the Earned Income Tax Credit (EITC), Temporary Assistance for Needy Families (TANF) or the Supplemental Nutrition Assistance Program (SNAP), is its sharp discontinuity in marginal tax rates at the eligibility cutoff (Moffitt 2002). Using IRS tax return data, Saez (2010) shows that self-employed individuals report income at levels that maximize their EITC benefits. Theoretically, the Medicaid eligibility notch generates even stronger labor supply disincentives than those associated with the EITC. Building on this framework, Pei (2017) tests whether households with children temporarily reduce reported income (a dip and rebound strategy) to qualify for Medicaid, using data from two panels of the Survey of Income and Program Participation (SIPP). However, he finds no empirical evidence of such strategic behavior. One plausible explanation is that, prior to the ACA, Medicaid's eligibility threshold was so low that households could realistically reduce earnings enough to become eligible. Chetty et al. (2011) find that larger "kinks" in tax schedules lead to more income bunching in Denmark, but only in environments where adjustment costs are relatively low. Thus, by raising eligibility thresholds, ACA's Medicaid expansion may potentially reduce adjustment costs and make strategic income responses more feasible.

Motivated by the empirical findings of Saez, Pei, and Chetty et al., this paper examines two central questions. First, does expanding Medicaid eligibility reduce labor supply? Second, if so, why have prior studies failed to detect this response? To investigate these questions, the study uses a regression discontinuity (RD) design to test a novel behavioral hypothesis: the "dip-a-toe strategy," where applicants may qualify for Medicaid by submitting a single month of low reported income, even when annual income exceeds 138 percent of the federal poverty level (FPL). This study begins by using a new imputed measure of Medicaid eligibility based on states' expansion status, eligibility rules (MAGI, self-attestation, reasonable compatibility), household earnings, and household size. Drawing on a simple household utility framework, the paper derives and tests three reduced-form predictions. First, only households in expansion states reduces their lowest monthly earnings, whereas no such pattern should be observed in non-expansion states. Second, income adjustments should be more prevalent among childless adults, due to their greater access to public coverage, exposure to the mandate penalty, and lower adjustment costs. Third, earning adjustments should vary by household size and calendar year, reflecting heterogeneity in financial incentives under the ACA's individual mandate penalty.

The main finding shows that, on average, childless adults in expansion states reduced their lowest monthly earning by 39 percentage points of the FPL between 2014 and 2016, using the prior year's lowest monthly income as the running variable. This reduction, which is both economically meaningful and statistically significant, corresponds to approximately $670 in 2025 dollars. This effect is more than double the $300 quarterly earnings drop reported in Wisconsin by Dague, DeLeire, and Leininger (2017), and it contrasts sharply with the null labor supply effects in the Oregon Health Insurance Experiment (Baicker et al. 2014). One possible explanation for this discrepancy is the individual mandate penalty introduced by the ACA. While earlier studies (Pei 2017): (Dague, DeLeire, and Leininger 2017): (Baicker et al. 2014) emphasize Medicaid's benefit generosity, the ACA added a second incentive: a mandate penalty averaging 2.0 percent of annual income for each uninsured adult, which may have strengthened incentives for strategic earning adjustments. Because the penalty amount varies across years and by household size, it generates plausibly exogenous variation in incentives for earnings adjustment. These results align with (Lurie, Sacks, and Heim 2021), who find that the mandate penalty caused income bunching among single filers in non-expansion states, and with (Heim et al. 2021), who show that ACA marketplace subsidies led to bunching at subsidy eligibility thresholds.

This study uses data from the Survey of Income and Program Participation (SIPP), covering two panels: 2013–2016 and 2017–2019. The SIPP is well-suited for this analysis because, unlike the American Community Survey (ACS) or Current Population Survey (CPS), it provides monthly income data, allowing precise measurement of intra-year income changes. This feature has been used in prior research: Ham and Shore-Sheppard (2005) show that SIPP-based estimates of Medicaid crowd-out are smaller than those based on the CPS (Cutler and Gruber 1996). In addition, SIPP provides weekly hours worked and employment status. This allows the analysis to show that the "dip-a-toe strategy" affects labor supply along two distinct margins: temporary labor force exit (extensive margin) and reduced hours during the lowest-earning month (intensive margin). The observed 18 percentage point drop in employment rate is smaller than the findings of Garthwaite, Gross, and Notowidigdo (2014), who find 63 percent declines in unemployment among individuals who lost Medicaid in Tennessee. In addition to the effects of the individual mandate, this divergence may reflect strategic behavioral responses to Medicaid eligibility thresholds.

This paper contributes to three major areas of the literature. First, it presents visual and statistical evidence that Medicaid expansion reduces labor supply, particularly among childless adults who strategically lower their monthly earnings to fall below the eligibility cutoff. This behavioral response may help reconcile gaps between economic theory and empirical findings by highlighting the role of sample selection and unobserved earnings adjustment. Second, the paper validates and reinforces a revised approach to defining Medicaid eligibility, challenging the common 138% FPL threshold used in existing research. This methodological innovation not only improves identification in the post-ACA context but also has broader applicability to pre-ACA eligibility measurement and to other means-tested programs, including SNAP, TANF, and WIC. Third, it offers novel evidence that the ACA's individual mandate penalty affected both labor supply and Medicaid participation in expansion states[1], underscoring how government-designed incentives can influence labor supply and program participation decisions.

Section I provides background on Medicaid and the ACA expansion, reviews related literature, and introduces a simple behavioral model tailored to the Medicaid eligibility setting. Section II describes the data and empirical strategy. Section III presents the main results with the results of three predictions. Section IV investigates additional mechanisms and falsification tests. Section V concludes and discusses policy implications.

I. Background

a. History of Medicaid and Its Effect on Labor Supply

Drawing on classifications developed by Gruber (2003) and Buchmueller, Ham, and Shore-Sheppard (2016), this paper divides the history of Medicaid into three overlapping phases, defined by shifts in eligibility rules and target populations. A substantial body of empirical research shows that Medicaid improves long-run health outcomes for children (Wherry and Meyer 2016; Brown, Kowalski, and Lurie 2020; Goodman-Bacon 2021) and increase health care utilization and insurance coverage more broadly (Currie and Gruber 1996; Finkelstein et al. 2012). In contrast, evidence on the program's effects on labor supply remains mixed and inconclusive across all phases.

[1]Lurie, Sacks, Heim found bunching evidence from non-expansion states using tax filing data.

The first phase runs from the introduction of Medicaid under Title XIX of the 1965 Social Security Amendments through the mid-1980s. During this period, Medicaid eligibility was largely tied to participation in other means-tested transfer programs, including Aid to Families with Dependent Children (AFDC) and Supplemental Security Income (SSI). A notable exception was the medically needy program[2], which permitted certain individuals to qualify if their income net of medical expenses fell below state-specific thresholds (SSA, 2025). Blank (1989) constructs a state-level measure of average Medicaid value per household to estimate its impact on AFDC recipients' labor supply and finds no significant effect. In contrast, Moffitt and Wolfe (1992) use family-level Medicaid expenditures as a proxy for benefit generosity and find that more generous benefits are associated with higher AFDC participation and reduced employment.

Second, beginning in the mid-1980s, Congress expanded Medicaid eligibility for pregnant women, children, and parents with dependent children through a series of laws. However, evidence on the labor supply effects of Medicaid expansions remains inconclusive. Exploiting state and time variation in the generosity of Medicaid expansions, Yelowitz (1995) finds that expanded eligibility led to higher labor force participation and lower AFDC enrollment among ever-married women, using data from the Current Population Survey (CPS). In contrast, Ham and Shore-Sheppard (2005) find non-significant results using CPS data from 1988 to 1996 and challenge Yelowitz's key assumption that effects between Medicaid income limits and AFDC income limits have cancelled each other.

Third, following the failure of comprehensive federal health care reform in the mid-1990s, fourteen states, including Tennessee and Oregon, applied for Section 1115 waivers under the Social Security Act to expand coverage for childless adults or preserve federal funding (Riley 1995). Under the section, the Secretary of Health and Human Services may approve experimental, pilot, or demonstration projects, if states meet budget neutrality requirements (Hill 2018). Using variation from a Medicaid eligibility rollback in Tennessee between 2005 and 2006, Garthwaite, Gross, and Notowidigdo (2014) employ a difference-in-differences and triple-differences strategy and find that disenrollment increased employment by 63 percent among previously insured childless adults. In contrast, Baicker et al. (2014) analyze data from the 2008 Oregon Health

[2] To qualify for Medically needy program, individuals must be qualified for Medicaid under one of the mandatory or optional groups. The details of the optional groups can be found in this link: https://www.ssa.gov/policy/docs/progdesc/sspus/health-insurance-and-health-services.html#medicaid

Insurance Experiment and find that intent-to-treat estimates for labor market outcomes are neither statistically nor economically significant. Dague, DeLeire, and Leininger (2017) examine the 2009 opening and closure of Wisconsin's Medicaid program, BadgerCare Plus. Using a regression discontinuity design, they find a five-percentage-point drop in employment among childless adults who applied just before the closure announcement, compared to those who applied just after. Because Section 1115 waivers typically expire after five years, coverage for childless adults often lapsed following the conclusion of the demonstration period. In 2010, the Affordable Care Act (ACA) established a permanent expansion of Medicaid eligibility to a broader population of low-income adults.

b. The ACA expansion

The ACA[3] is a comprehensive health care reform that addresses multiple domains, including Medicaid, Medicare, the individual mandate, and private health insurance markets (Rep. Rangel 2010). This paper focuses on the ACA provisions most relevant to labor supply analysis: Medicaid expansion, eligibility determination rules, Health Insurance Marketplaces (individual exchanges) and associated subsidies, and the individual mandate and associated penalties. These components form the basis of the conceptual framework developed in the next section.

In 2010, the Affordable Care Act (ACA) required states to expand Medicaid eligibility to 133 percent of the Federal Poverty Level (FPL) for childless adults by 2014, with noncompliance risking the loss of all federal Medicaid funding. However, in 2012, the U.S. Supreme Court ruled that states have the discretion to decide whether and when to adopt the Medicaid expansion (Robert 2012). As of January 2014, 25 states and the District of Columbia had implemented the expansion, including six that expanded earlier. Fifteen more states adopted the expansion over the subsequent decade (KFF 2012). Table 1 presents the classification of states as expansion or non-expansion states, based on whether they maintained a consistent expansion status during the first study period. Because this study spans two sub-periods (2013–2016 and 2017–2019), the classification of expansion and non-expansion states varies slightly across these periods.

[3] The ACA has two parts: 1) the Patient Protection and Affordable Care Act; 2) the Health Care and Education Reconciliation Act

In addition, the ACA requires all states to adopt a uniform Modified Adjusted Gross Income (MAGI) standard for determining Medicaid eligibility, with exemptions primarily applying to elderly and disabled individuals[4] (Baumrucker et al. 2018). The MAGI method, derived from Adjusted Gross Income[5] (AGI), has two components: household size and household income. Household size is assessed on a case-by-case basis, reflecting each applicant's tax and family relationships. The income of each household member is included when calculating MAGI. Prior to the ACA, states had discretion over the amount of income that could be disregarded when determining eligibility (ASPE 2013b);(Ross et al. 2008). The ACA established a universal income disregard equal to 5 percent of the FPL, effectively raising the Medicaid eligibility threshold to 138 percent of the FPL.

Expansion and non-expansion states from 2013 to 2016	
Expansion States	Non-Expansion States
Arizona	Alabama
Arkansas	Florida
California	Georgia
Colorado	Idaho
Connecticut	Kansas
Delaware	Maine
Hawaii	Mississippi
Illinois	Missouri
Iowa	Nebraska
Kentucky	North Carolina
Maryland	Oklahoma
Massachusetts	South Carolina
Michigan	South Dakota
Nevada	Tennessee
New Jersey	Texas
New Mexico	Utah
New York	Virginia
North Dakota	Wisconsin
Ohio	Wyoming
Oregon	
Rhode Island	
Vermont	
Washington	
West Virginia	

Table 1: Expansion and Non-Expansion States, 2013–2016

Note: this table shows how expansion and non-expansions states are classified from the first survey period: 2013 to 2016. Seven states are excluded because they adopted Medicaid expansion during the first study period. Minnesota and the District of Columbia are also excluded due to above 138 percent of the Federal Poverty Level (FPL) eligibility thresholds. In the second study period (2017–2019), the classification is adjusted to reflect changes in Medicaid expansion status.

[4] The exemption also includes medically needy program, which I discussed in the background section.
[5] The calculation from AGI to MAGI: https://www.congress.gov/crs-product/R43861

Furthermore, to facilitate health insurance enrollment, the ACA established individual health insurance Marketplace, known as Exchanges, where households can purchase standardized plans categorized into four tiers: platinum, gold, silver, bronze[6] (Bernadette 2025). Households that file taxes and have incomes between 100% and 400% of the Federal Poverty Level (FPL) may qualify for a Premium Tax Credit (PTC) through the Marketplace[7], if they do not have access to employer-sponsored or public insurance[8] (Forsberg 2025). The PTC helps offset premium costs by covering the difference between the cost of the second lowest cost silver plan[9] (benchmark plan) and what the household is expected to contribute based on its income. However, even after applying the PTC, a 27-year-old individual earning $25,000 annually (214 percent of the FPL) would still pay approximately $1,116 per year in premiums for the least expensive bronze plan available on the exchange in 2014 (ASPE 2013a).

Lastly, beginning in 2014, the ACA mandated that all individuals maintain minimum essential health coverage, with limited exemptions[10] (Rosso 2020). To enforce this mandate, households were required to report their health insurance status when filing annual tax returns with the Internal Revenue Service (IRS). The IRS imposed a monthly penalty for non-coverage[11], calculated as the greater of (1.a) Percent or (1.b) Fixed amount, capped at the annual premium for the least expensive bronze plan[12]. Tax returns were not accepted by the IRS if filers failed to report their insurance status for the full year.

$$(1) \quad Penalty = \frac{uninsured\ month}{12} * Min[Max(Percent, Fixed\ amount), Bronze\ Cap]$$

$$(1.a) \quad \text{Percent} = \text{Percent\_rate} * \text{Max}(0\ , \text{MAGI Income} - \text{Filing Threshold})$$

[6] The type of plan is based on plan's cover share on service, with platinum pays the most for service. For people whose age under 30, they have one more choice: catastrophic. Details see: https://www.healthcare.gov/choose-a-plan/plans-categories/

[7] There are few exemptions: the cost of employer-sponsored health insurance is above 9.02% of annual income. Details see https://www.congress.gov/crs-product/R44425.

[8] Tax-filing households with incomes between 100 and 250 percent of the FPL who enroll in a silver-tier plan are also eligible for cost-sharing reductions (CSRs), which lower deductibles, copayments, coinsurance, and maximum out-of-pocket costs.

[9] The cost of premium from high to low generally follows platinum, gold, silver, bronze.

[10] The exception includes religious reason, hardship, special membership, incarceration, unlawful resident, coverage gap, filing threshold, living abroad. Details see: https://www.congress.gov/crs-product/R44438

[11] If the total non-coverage period is less than 3 months, no penalty is issued.

[12] This equation is inspired by Lurie, Sacks, and Heim in their 2021 paper.

$$(1.b)\ \text{Fixed amount} = \text{Min}(\text{uninsured adults} * \text{Flat Dollar amount}, 3 * \text{Flat Dollar amount})$$

The equation (1.a) calculates the penalty as a fixed percent of household income above the tax-filing threshold, where income is measured by MAGI[13]. The equation 1.b multiplies the number of uninsured adults by a flat dollar amount, counts children as 0.5 children, and caps the total at the equivalent of three uninsured adults. Table 2 illustrates how both the percent rate and flat dollar penalties increased incrementally over time until Congress enacted a reconciliation bill in 2017 that reduced the penalty to zero (Rep. Brady 2017).

Year	Flat Dollar Amount ($)	Percent of Annual Income (%)
2013	0	0
2014	95	1
2015	325	2
2016	695	2.5
2017	695	2.5
2018	695	2.5
2019	0	0
2020	0	0

Table 2: Mandate penalty from 2013 to 2020

Note: This table reports the statutory penalty amounts imposed under the ACA's individual mandate for each calendar year from 2013 to 2020. The total household penalty is calculated using Equation (1): the greater of a percentage of household income above the tax-filing threshold (Equation 1a) or a flat dollar amount per uninsured individual (Equation 1b), capped at the annual premium of the least expensive bronze plan. The final penalty is prorated by the number of uninsured months. From 2016 to 2018, the flat dollar amount remained constant due to minimal inflation. The penalty was reduced to zero beginning in 2019 by the Tax Cuts and Jobs Act of 2017.

c. Empirical Model

This section develops a conceptual framework to examine how Medicaid eligibility and the individual mandate penalty influence labor supply decisions. The model builds on theoretical foundations laid out by Saez (2010), Kleven and Waseem (2013), Kleven (2016), and the model

[13] This threshold varies by household type (single, joint) and age.

incorporates adjustment costs as formalized in Chetty et al (2011). Consider a quasi-linear utility function with isoelastic labor disutility:

$$(2) \qquad \mathrm{U} = z - T(z) - \frac{n}{1+\frac{1}{e}}\left(\frac{z}{n}\right)^{1+\frac{1}{e}} = (1-t)z - \frac{n}{1+\frac{1}{e}}\left(\frac{z}{n}\right)^{1+\frac{1}{e}}$$

Where z is the annual pre-tax earnings, t is the linear tax rate, and n is individual's productivity or ability. As noted by Saez (2010), the quasi-linear utility specification assumes a constant marginal utility of income, which implies that compensated and uncompensated labor supply elasticities coincide. Taking the first-order condition with respect to z yields: $z = n(1\text{-}t)^e$. When tax is 0, the earnings are the same as ability n.

Once the mandate penalty takes effect, the utility of an uninsured household in a non-expansion state with earnings slightly above the Medicaid threshold z* can be noted as:

$$(3.a) \qquad u_{uninsured} = (1-t)(z^* + \Delta z) - \frac{n^* + \Delta n}{1+\frac{1}{e}}\left(\frac{z^* + \Delta z}{n^* + \Delta n}\right)^{1+\frac{1}{e}} - f(z^* + \Delta z) - Loss$$

Where f(z*+Δz) represents the mandate penalty, which varies with income level, and "Loss" captures the expected utility cost of being uninsured, such as financial risk associated with foregone health care. The value of f(z) varies across years and by household size, consistent with Equation (1). If the household instead chooses to obtain health insurance, their utility is:

$$(3.b) \quad u_{inusred} = (1-t)(z^* + \Delta z) - \frac{n^* + \Delta n}{1+\frac{1}{e}}\left(\frac{z^* + \Delta z}{n^* + \Delta n}\right)^{1+\frac{1}{e}} - E(z^* + \Delta z, age,\ p) + Ins$$

Where $E(z^* + \Delta z^*, age, p)$ denotes the cost of obtaining health insurance, either through an employer-sponsored plan or via the ACA Marketplace, and "Ins" is a type of health insurance. The cost of health insurance depends on factors such as the individual's age, income, and the number of individuals purchasing insurance. However, in expansion states, households have an additional option: to reduce earnings slightly below $z*$ in order to qualify for Medicaid:

$$(3.c) \qquad u_{Medicaid} = (1-t)(z^*) - \frac{n^* + \Delta n}{1+\frac{1}{e}}\left(\frac{z^*}{n^* + \Delta n}\right)^{1+\frac{1}{e}} - A(z^* + \Delta z) + Medicaid$$

Where $A(z^* + \Delta z)$ represents the adjustment cost, defined as the opportunity cost and other costs that households must forgo to qualify for Medicaid benefits. Among insured households,

heterogeneity arises due to variation in the cost of employer-sponsored coverage and the perceived quality of alternative plans. When the cost of private coverage is low, or the plan quality exceeds Medicaid, Medicaid crowding out private health insurance is unlikely. However, for uninsured households (as depicted in Figure 1), it is utility-maximizing to reduce earnings and qualify for Medicaid (Equation 3.c), rather than incur the mandate penalty (Equation 3.a) or pay at least $1,000 for the lowest-cost Marketplace plan (Equation 3.b)

$$(4.a) \qquad f(z^* + \Delta z) + Loss + Medicaid \quad > A(z^* + \Delta z) = 0$$

$$(4.b) \qquad E(z^* + \Delta z, age,\ p) + Medicaid \quad > A(z^* + \Delta z) + Ins = Ins$$

Therefore, based on equation 4.a and 4.b, the first prediction is: households living in the expansion states reduce their earnings to receive Medicaid benefit, whereas households living in the non-expansion states do not alter their earning.

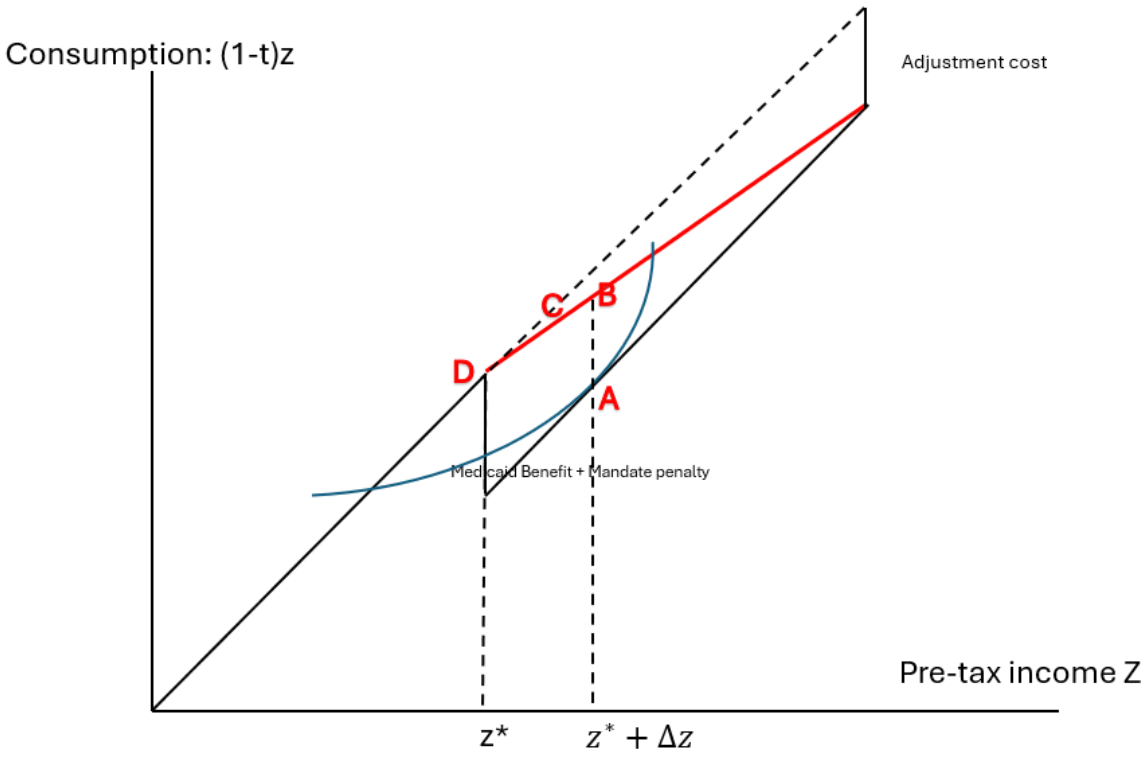

Figure 1: Strategic Earnings Adjustment in Response to Medicaid Eligibility Cutoff

Note: This figure depicts household utility as a function of income relative to the Medicaid eligibility threshold. The vertical line at z* denotes the cutoff for Medicaid eligibility. Point A represents a household with income just above the threshold that does not adjust earnings and is therefore ineligible for Medicaid, instead facing the individual

mandate penalty or private insurance premiums. Point D depicts a household with income below the threshold that receives Medicaid coverage. Points B and C represent households that engage in within-year income adjustments to qualify for Medicaid. Point B does so by reducing earnings in one month and increasing them in others, preserving total annual income but incurring an adjustment cost. Point C (between B and D) means that households also reduces income in one month but does not fully offset the loss, resulting in lower total income but smaller adjustment costs. The red segment B–C–D reflects utility-improving options relative to A. The wedge between A and B illustrates the financial disincentive to remain ineligible when the Medicaid benefit plus avoided penalty exceeds the earnings loss and adjustment cost.

Households with children are less likely to engage in strategic income adjustments for several reasons: First, in some states, families with children were already eligible for Medicaid prior to the ACA expansion, making additional income adjustments unnecessary [14] (KFF 2013). During the second phase of Medicaid's evolution, several states had already extended coverage to working parents with incomes above 138 percent of the FPL. In contrast, the income cutoff for childless adults remained effectively at 0%, with few exceptions under Section 1115 waiver programs. Most importantly, only households with children may retain Medicaid coverage under Transitional Medical Assistance[15] after their earnings exceed the threshold (Meidcaid.gov 2015). This provision allows such households to maintain coverage for up to two years, reducing the need for short-term adjustment. Second, childless households face fewer constraints in adjusting their earnings compared to households with children. For example, both adults in a childless two-person household may adjust income, whereas in a two-person household with a child, only one adult typically adjusts earnings, as the child is not part of the labor force. Third, the perceived value of Medicaid may be lower for households with children. Households with children have higher adult earnings, since children do not contribute income. As household income rises, access to employer-sponsored insurance becomes more common, and Medicaid's relative value declines. Lastly, the effective mandate penalty is greater for childless households, because children are typically eligible for public coverage through Medicaid or CHIP[16], which extends above 200 percent of the

[14] In facts, the ACA reduce Medicaid eligibility for some families living those states, so some of the Medicaid enrollees are kicked out in 2014 or 2015 if their income is higher than 138%.
[15] This is from the section1931 of the Assuring Coverage for Certain Low-Income Families Act in 1996.
[16] Some states include children in their Medicaid program, or separated CHIP program, or have both Medicaid and CHIP to cover children. However, separate CHIP program may charge premium. Details see table 1: https://files.kff.org/attachment/report-medicaid-and-chip-eligibility-enrollment-renewal-and-cost-sharing-policies-as-of-january-2016-findings-from-a-50-state-survey

FPL[17] (Heberlein et al. 2013). Therefore, the second prediction is that, in Medicaid expansion states, childless households are more likely to reduce their earnings to qualify for Medicaid.

If adjustment costs, the expected utility cost of being uninsured, and the value of Medicaid remain constant at the household level over time, then the mandate penalty becomes the primary time-varying incentive influencing behavior from 2013 to 2019, as reflected in Equation 4.a. Because the penalty is defined as the greater of the percent-based or flat dollar amount, households with income just above the threshold are typically subject to the flat dollar penalty[18]. For example, among households consisting of two uninsured childless adults, the flat dollar penalty rose from approximately 10% of median monthly earnings (0.8 percent of annual earnings) in 2014 to 75% of median monthly earnings (6.2 percent of annual earnings) in 2016[19]. In 2017, Congress enacted a tax reconciliation bill that set the mandate penalty to zero, effective in 2019. Accordingly, the third prediction is that the magnitude of earnings adjustments increases between 2014 and 2017, particularly as household size increases, and then declines sharply in 2019 following the elimination of the penalty.

II. Methodology and Data

This paper employs a regression discontinuity (RD) design, exploiting institutional features of how states verify Medicaid eligibility. To apply for Medicaid, households need to submit documents including residency, SSN, other government benefits, and income verification[20](USAGov 2025). One of the accepted income documents is the recent pay stub (earning), which has been used prior to the ACA (Pei 2017). After receiving self-attested income reports, state Medicaid programs verify the information against electronic data sources, including IRS records, Quarterly Wage Data, and various governmental or commercial databases[21] (Tsai 2024). If both the self-attested income and the electronic data fall below the eligibility threshold, the household is approved. If both exceed the threshold, or if self-attested income alone exceeds

[17] All states have more generous plans toward children, only one or two states have eligibility cutoff below 200% of FPL.
[18] The percent method needs to subtract the filing threshold.
[19] In 2014, the punishment amount is calculated by: (95*2)/(15,730*1.39) =0.87%. In 2016, the punishment is calculated by: (695*2)/(16,020*1.39) =6.24%
[20] This varies slightly states by states, but the income verification is required in all states. Details see: https://www.dhs.state.il.us/page.aspx?item=118578
[21] There are many different electric data sources. In reality, states use different data sources.

138% FPL, the application is rejected. If the self-attested income falls below the threshold while the electronic data slightly exceeds it, most states apply a "reasonable compatibility" rule, typically allowing a difference of up to 10% of the FPL (Brooks and Miskell 2016).

The existence of the reasonable compatibility rule complicates the commonly used 138% FPL threshold based on income (earnings plus benefits) found in much of the literature. In practice, earnings provide a more precise estimate of the effective Medicaid eligibility threshold, as they appear on pay stubs records[22]. For example, a household with monthly income equal to 145% of the FPL (comprised of 140 % in earnings and 5% in benefits) could be rejected, while another household with 150% income (135% earnings and 15% in benefits) could be approved, since only earnings are reflected in the submitted pay stub. Even if the self-attested income exceeds the electronic data by more than 10%, or if income source is missing, states have discretion to enroll the applicant, request a reasonable explanation, or require further documentation (Medicaid and CHIP 2012; Brooks and Miskell 2016). Based on the examples from CMS, reasonable explanations include unemployment, hour reductions, or overtime pay (Tsai 2024). In fact, Coutemanche, Marton, and Yelowitz (2019) find that some households with income above 138% FPL were enrolled in Medicaid after 2014. These institutional flexibilities justify using the lowest monthly earnings instead of total income as the running variable in the regression discontinuity design.

Since this sharp discontinuity on Medicaid at 138% of FPL was legislatively determined by Congress, it is reasonable to assume that households with earnings just above and below the cutoff are very similar. Because Medicaid eligibility can be determined using a single month of earnings, the data are collapsed to the person-year level. The exact specification of this RD is:

$$Y_i = \alpha + \beta(\mathrm{X_i} - 138) + \delta D_i + \theta(X_i - 138)D_i \quad + \varepsilon_i \tag{5}$$

Where Y_i is the outcome variable (the lowest month's earnings in calendar year t), $\mathrm{X_i}$ the running variable is lowest month's earnings in calendar year t-1, and $\mathrm{D_i}$ is an indicator function equal to 1 if $\mathrm{X_i}$ is greater than 138%, all expressed in FPL. The coefficient β captures the linear relationship between the prior and following year's lowest earnings, and θ captures the slope change after the

[22] There is a separate paper provides a detailed discussion of how earnings-based and income-based thresholds differ in Medicaid enrollment, with imputation process.

138% FPL threshold. The interest of estimate is δ, which identifies the earning change in lowest monthly earnings at the Medicaid eligibility cutoff.

The estimate is a local average treatment effect of Medicaid eligibility and the mandate penalty among households with earnings just above the eligibility cutoff. These households face stronger incentives to reduce earnings, given their low adjustment costs, high proportional mandate penalties[23], and relatively high valuation of Medicaid coverage. As household income rises, the availability of employer-sponsored insurance increases, and the relative value of Medicaid coverage declines, making earning adjustment less likely. Therefore, although earning adjustments could occur above the 138% threshold, using a large bandwidth to project trend may dilute the estimated effect by including households less responsive to the incentive. Based on the projected Medicaid enrollment described later in the section, this study selects a ±30 percentage point FPL bandwidth, and robustness checks are conducted using alternative bandwidth specifications.

The primary identification assumption is that, absent Medicaid expansion, the expected earnings in year t is continuous at the cutoff with respect to earnings in year t-1 for households in expansion states. A potential threat to this assumption is endogenous income manipulation: if households could perfectly adjust their reported earnings relative to the eligibility threshold, the discontinuity in outcomes may not reflect a causal effect of Medicaid access. To address this concern, the analysis includes two forms of validation. First, a McCrary (2008) density test is conducted in the empirical section to detect manipulation of the running variable. Second, institutional and informational frictions make precise targeting of the cutoff unlikely. The Medicaid income threshold is administratively complex, influenced by elements such as the 5% income disregard and variation in state-level implementation. As a result, the threshold is not consistently understood even among researchers studying the program. If the literature itself reflects uncertainty around the effective eligibility boundary, it is implausible that applicants, who often face informational and other constraints, could systematically manipulate earnings to fall just below it. This study also has on a second identification assumption related to the ACA's mandate penalty: in the absence of policy changes, the magnitude of earnings adjustments would remain

[23] For example, in 2016, two-person uninsured households with incomes between 139% and 174% of the FPL all faced a flat mandate penalty of $1,390. However, the penalty represented a larger share of income (1.2 percentage points more) for those at 139% FPL compared to those at 174%.

stable over time. Because variation in the penalty arises from federal legislation enacted by Congress, it offers a plausibly exogenous source of identifying variation.

The lowest monthly earnings data for each household are obtained from the Survey of Income and Program Participation (SIPP), a panel survey that collects monthly (weekly for some variables) information on income, benefits, employment, household structure, and program participation over a multi-year period (typically four years)(SIPP 2025). The survey includes approximately 50,000 households annually and oversamples low-income populations, making SIPP well-suited for studying means-tested programs. Unlike the ACS or CPS, SIPP's monthly income data allow precise identification of intra-year fluctuations, including the lowest-earning month that annual data cannot capture. Prior research finds that SIPP reports Medicaid participation more accurately than the CPS(Bitler, Currie, and Scholz 2003); (Card, Hildreth, and Shore-Sheppard 2004)).

In 2014, SIPP underwent a major redesign, shifting from a four-month survey interval to annual interviews conducted using an event history calendar format that reconstructs month-by-month sequences of income and employment. One goal of this redesign is to reduce seam bias that individuals are more likely to attribute changes within the period to the beginning the survey period (Moore 2008). Importantly, because this study focuses on the lowest monthly earnings within a calendar year, any residual seam bias is unlikely to affect the running variable.

The Medicaid eligibility imputation method is described in another paper[24], as this paper focuses on empirical findings related to earnings adjustment. However, this study imposes a few sample restrictions. First, households in which members move between expansion and non-expansion states during the survey period are excluded to avoid misclassification of policy exposure. Moves between states with the same expansion status are retained. This restriction affects approximately 2.5 percent of the sample and has no material effect on the results. Second, the analysis is restricted to households with the lowest month's earning below 300 percent of the FPL consistently, reflecting the population most likely to respond to Medicaid incentives. Including higher-income households introduces noise due to lower take-up rates, greater access to employer-sponsored insurance, and higher adjustment costs. As discussed below, Medicaid

[24] This paper is the second chapter of my dissertation. Chapter one compares the Medicaid enrollment rates using different eligibility cutoff standard.

enrollment declines to non-existence level once household earnings exceed 200 percent of the FPL. In addition, because households report negative earnings in the lowest earning's month[25], this study bottom coded negative earnings to -1 to prevent outliers distorting estimate values. As robustness checks, including cross-state movers, lowering the earnings cap to 250 percent of FPL, or bottom-coding to -10 does not alter the main results by more than 10 percent.

Another advantage of the SIPP is its panel structure, which allows for tracking households from 2013 to 2016 and from 2017 to 2019, capturing changes in Medicaid enrollment before and after the ACA expansion. The analysis excludes data from 2020 due to COVID-19-related disruptions and contemporaneous Medicaid policy changes that could confound interpretation. The inclusion of pre-expansion data enables validation of a key condition: that 138 percent of the lowest monthly earnings determines the Medicaid eligibility threshold. Because the SIPP does not distinguish between CHIP and Medicaid participation, households with children exhibit higher public insurance enrollment even prior to the ACA. Accordingly, the sample is stratified by household type: childless households versus those with at least one member under age 18. Due to distinct eligibility criteria and confounding with Medicare eligibility, the sample of Medicaid eligibility check is limited to individuals under age 65.

Figure 2 plots Medicaid enrollment rates for childless households in expansion states using a ±50 percentage point bandwidth around the Medicaid eligibility cutoff of 138% FPL. The running variable is the household's lowest monthly earnings in the current calendar year, and the outcome is an indicator for whether any household member was enrolled in Medicaid for at least one month. To eliminate potential carryover effects from prior eligibility, the sample is restricted to households whose earnings remained consistently above or below the threshold across two consecutive years. A clear discontinuity of 14.5 percentage points appears at the threshold, indicating a sharp drop in Medicaid enrollment immediately above the eligibility threshold. To the left of the threshold, enrollment rates gradually decline from 36% to 26% as income increases among eligible households. This decline likely reflects rising access to employer-sponsored insurance, a lower perceived value of Medicaid, or administrative burden. Extrapolating this trend suggests that Medicaid take-up converges to non-expansion levels by around 200% FPL (60 percentage higher than the cutoff), among eligible households. To the right of the threshold,

[25] Self-employed households might report negative earnings.

enrollment flattens around 11%, where individuals can receive through SSI. The sharp drop at the threshold confirms a hard eligibility cutoff, while the gradual slope to the left suggests declining Medicaid take-up even among eligible households. These patterns support the empirical strategy and justify using a ±30 percentage point bandwidth in the RD design.

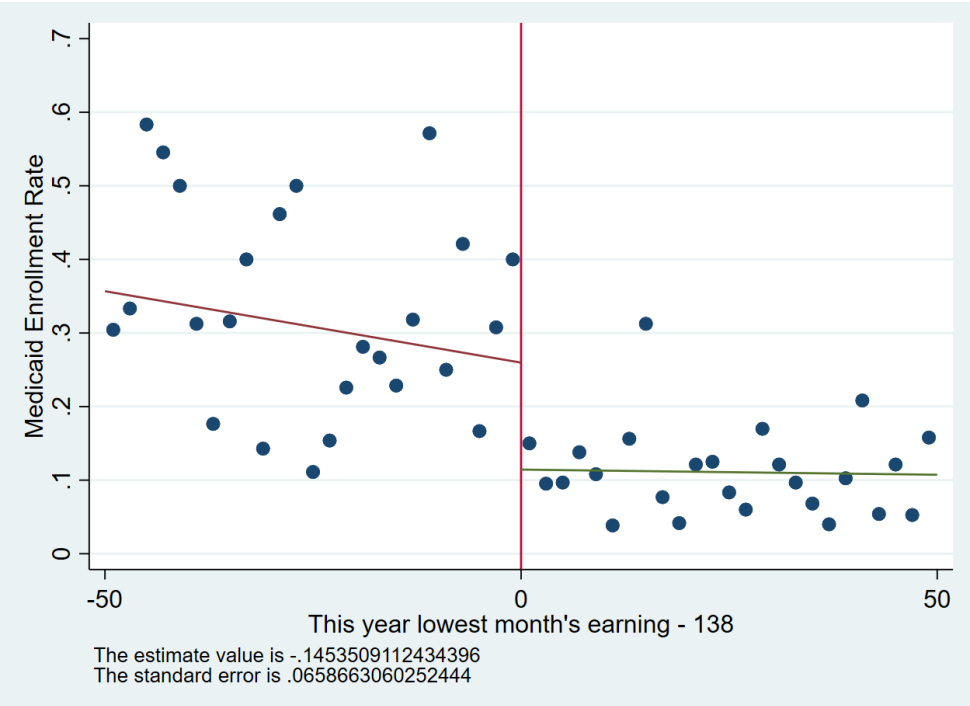

Figure 2: Medicaid Enrollment Rate for Childless Adults in Expansion States (2014–2016)

Notes: The running variable is the household's lowest monthly earnings in the current calendar year, centered at 138 percent of the Federal Poverty Level (FPL). The dependent variable is an indicator equal to one if the person was enrolled in Medicaid for at least one month during the year. The sample is restricted to childless adults whose earnings remained consistently above or below 138 percent of the FPL in both the current and previous year to avoid carryover effects from prior-year eligibility transitions.

In addition to the sharp discontinuity observed at the eligibility threshold, two supplementary tests help validate that 138 percent of the lowest earning represents the true Medicaid eligibility cutoff. First, Figure 3a examines Medicaid enrollment rates in 2013, the year prior to the ACA expansion. The difference in enrollment at the threshold is small and statistically insignificant, consistent with the absence of expansion in most states during that year. The slight higher observed rates may reflect early expansion efforts in six states via section 1115 program (Sommers et al. 2013). Second, Figure 3b presents Medicaid enrollment among childless adults in

non-expansion states from 2014 and 2016. Because these states did not implement the ACA Medicaid expansion, there should be no discontinuity in enrollment at the 138 percent FPL threshold. Consistent with this prediction, the figure shows no significant jump at the cutoff, and post-threshold enrollment rates resemble those in expansion states. Together, these results support the validity of using lowest monthly earnings at the 138% FPL threshold as the running variable in the identification strategy.

Figure 3a. Medicaid Enrollment Among Childless Adults in Expansion States in 2013

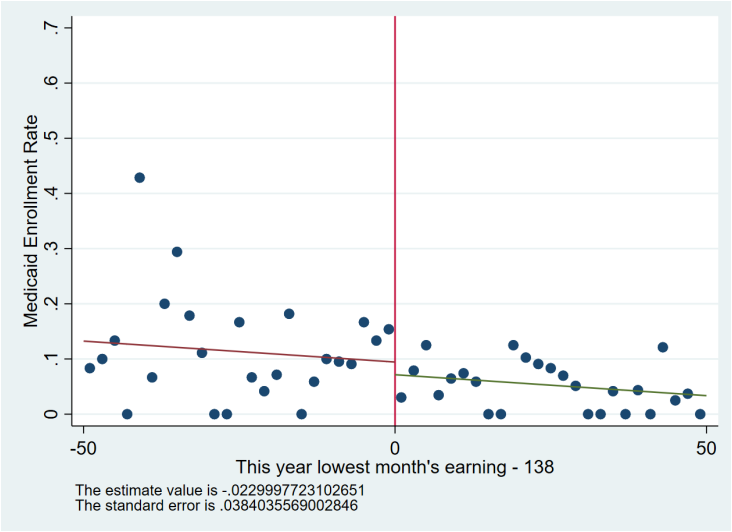

Figure 3b. Medicaid Enrollment among Non-expansion States Childless Adults in 2014-2016

Notes: The running variable is the household's lowest monthly earnings in the current calendar year, centered at 138% of the Federal Poverty Level (FPL). The dependent variable equals one if the individual was enrolled in Medicaid for at least one month during the year. **Figure 3a** shows enrollment rates in 2013 for childless adults in expansion states. The absence of a significant drop supports that 138% FPL was not an cutoff prior to the ACA expansion. **Figure 3b** includes childless adults in non-expansion states from 2014–2016 with earnings consistently above or below the threshold. No discontinuity appears, confirming that the 138% threshold functions as a valid running variable only in expansion states.

Figure 4a displays Medicaid enrollment rates for households with children in Medicaid expansion states during 2014–2016. A 13.5 percentage points drop in Medicaid enrollment is observed at the 138 percent FPL threshold, which is comparable in magnitude to the effect among childless households. However, Medicaid participation on both sides of the threshold is substantially higher among households with children. To the left of the threshold, where both children and adults are eligible for Medicaid, enrollment rates are approximately 15 percentage points higher than in the pre-expansion period (shown in Figure 4b). In contrast, to the right of the threshold, where only children remain eligible, enrollment rates remain largely unchanged from pre-expansion levels. This contrast reinforces the interpretation that the observed discontinuity is primarily driven by expanded eligibility for adults. Across the entire income range, enrollment declines as earnings increase, consistent with Prediction 2: as household income rises, preference for Medicaid weakens.

Figure 4a. Medicaid Enrollment Among Households with Children in Expansion States (2014–2016)

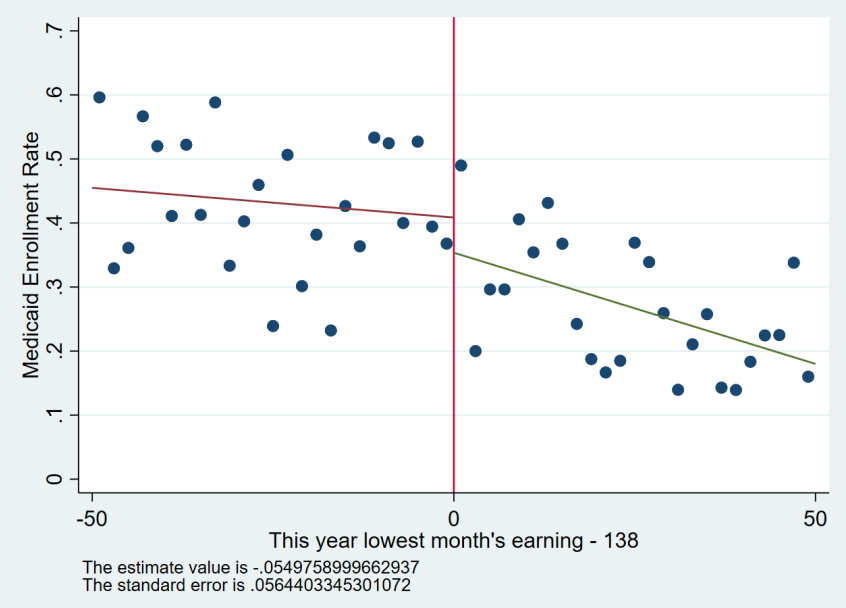

Figure 4b: Medicaid Enrollment Among Households with Children in Expansion States 2013

Notes: The running variable is the household's lowest monthly earnings in the current calendar year, centered at 138% of the Federal Poverty Level (FPL). The dependent variable equals one if the individual was enrolled in Medicaid for at least one month during the year. **Figure 4a** presents Medicaid enrollment for households with children in expansion states with earnings consistently above or below the threshold from 2014–2016. A 13.5 percentage point drop is observed at the 138% FPL threshold. Enrollment is higher on both sides of the threshold than for childless adults, but the discontinuity remains, indicating that take-up is driven by expanded adult eligibility. **Figure 4b** shows pre-expansion enrollment (2013) for households with children. Participation is relatively flat across the threshold, confirming that the discontinuity observed in Figure 4a is a post-expansion effect.

III. Main results

a. Summary statistics

Table 3a presents summary statistics for all individuals within ±30 percentage points of the 138 percent FPL threshold, using the prior year's lowest monthly earnings as the running variable. The sample includes approximately 4,000 individuals. Compared to the general U.S. population, this sample is younger and has higher rates of Medicaid enrollment, consistent with targeting low-income households. Education is categorized into four levels: (1) less than high school, (2) high school graduate, (3) college graduate, and (4) more than college. On average, individuals have educational attainment between high school and college in both expansion and non-expansion

states. The differences in Medicaid enrollment rates between expansion and non-expansion states reflect policy variation at the eligibility threshold. Other demographic characteristics, such as sex and race, are generally balanced across the threshold and should be interpreted as correlational rather than indicative of self-selection.

Table 3b presents summary statistics for childless adults within a ±30 percentage point bandwidth around the 138% FPL threshold, stratified by expansion and non-expansion states. The sample size declines to roughly 1,000 individuals in each group. The most notable difference is Medicaid enrollment: only 7 percent of childless adults in non-expansion states report Medicaid coverage, compared to 20 percent in expansion states. This disparity aligns with the expected effects of the ACA Medicaid expansion. However, the absence of a sharp enrollment jump at the threshold appears inconsistent with a strict eligibility cutoff. As discussed in previous sections, this pattern may reflect strategic earning adjustments by individuals attempting to qualify for coverage in expansion states.

	Below		Above		p-value
	Mean	SD	Mean	SD	
Panel A: Expansion States – 30% Window Around 138% FPL					
Age	32.123	21.682	31.497	21.272	0.353
Female	46.00%	0.498	49.60%	0.500	0.021
White	78.50%	0.411	83.60%	0.370	0.000
Education	2.219	0.980	2.278	0.989	0.098
Medi Enroll. Rate	45.20%	0.498	37.60%	0.485	0.000
Observations	2084		1993		
Panel B: Non-Expansion States – 30% Window Around 138% FPL					
Age	31.523	21.896	32.905	21.851	0.049
Female	46.90%	0.499	48.30%	0.500	0.379
White	72.10%	0.449	75.10%	0.433	0.035
Education	2.196	0.948	2.249	0.956	0.138
Medi Enroll. Rate	34.30%	0.475	26.30%	0.441	0.000
Observations	2053		1842		

Table 3a: Covariate Balance Around the Medicaid Eligibility Threshold (All Population)

	Below		Above		p-value
	Mean	SD	Mean	SD	
Panel A: Expansion States – 30% Window Around 138% FPL					
Age	54.203	15.993	52.723	16.924	0.163
Female	45.20%	0.498	52.10%	0.500	0.031
White	80.90%	0.394	84.60%	0.362	0.133
Education	2.459	0.980	2.535	0.970	0.232
Medi Enroll. Rate	20.70%	0.405	19.00%	0.393	0.525
Observations	518		447		
Panel B: childless adults Non-Expansion States – 30% Window Around 138% FPL					
Age	54.378	16.412	54.075	15.975	0.767
Female	48.90%	0.500	47.90%	0.500	0.763
White	72.30%	0.448	75.60%	0.430	0.232
Education	2.345	0.902	2.305	0.903	0.472
Medi Enroll. Rate	6.70%	0.250	7.50%	0.263	0.622
Observations	495		509		

Table 3b: Covariate Balance Around the Medicaid Eligibility Threshold (Childless Adults)

Notes: 3a and 3b: Sample includes adults within ±30 percentage points of the 138% Federal Poverty Level (FPL) threshold, based on the prior year's lowest monthly earnings. **Table 3a** presents all adults, and **Table 3b** presents childless adults, each stratified by expansion status. Each panel compares individuals just below and just above the Medicaid eligibility threshold. Means, standard deviations, and p-values from two-sided t-tests are reported. Medicaid enrollment indicates any participation during the current year. Education is coded on a four-point scale: (1) less than high school, (2) high school graduate, (3) some college, and (4) college or more.

b. Prediction 1 and 2 results

Figure 5 presents results related to the first prediction. In expansion states, there is no statistically or economically significant discontinuity in the lowest monthly earnings at the

Medicaid eligibility threshold, using the prior year's lowest monthly earnings as the running variable. The estimated discontinuity is −3.49 percentage points in FPL, and the relationship between last year's and this year's lowest earnings appears smooth and approximately linear on both sides of the threshold. At first glance, these findings appear inconsistent with the theoretical prediction. However, several factors may explain the gap between theory and empirical evidence. First, childless adults comprise only about one-quarter of the full sample. According to Prediction 2, this subgroup has stronger incentives to adjust earnings, so the treatment effect may be attenuated when estimated using the full population. Second, the study spans three years, and the first post-expansion year (2014) likely exhibited muted effects for two reasons. Some households may not have been aware of the mandate penalty until filing taxes for the 2014 tax year in 2015. In addition, the penalty in 2014 was relatively small and may have been outweighed by adjustment costs. These explanations are formally tested in subsequent sections

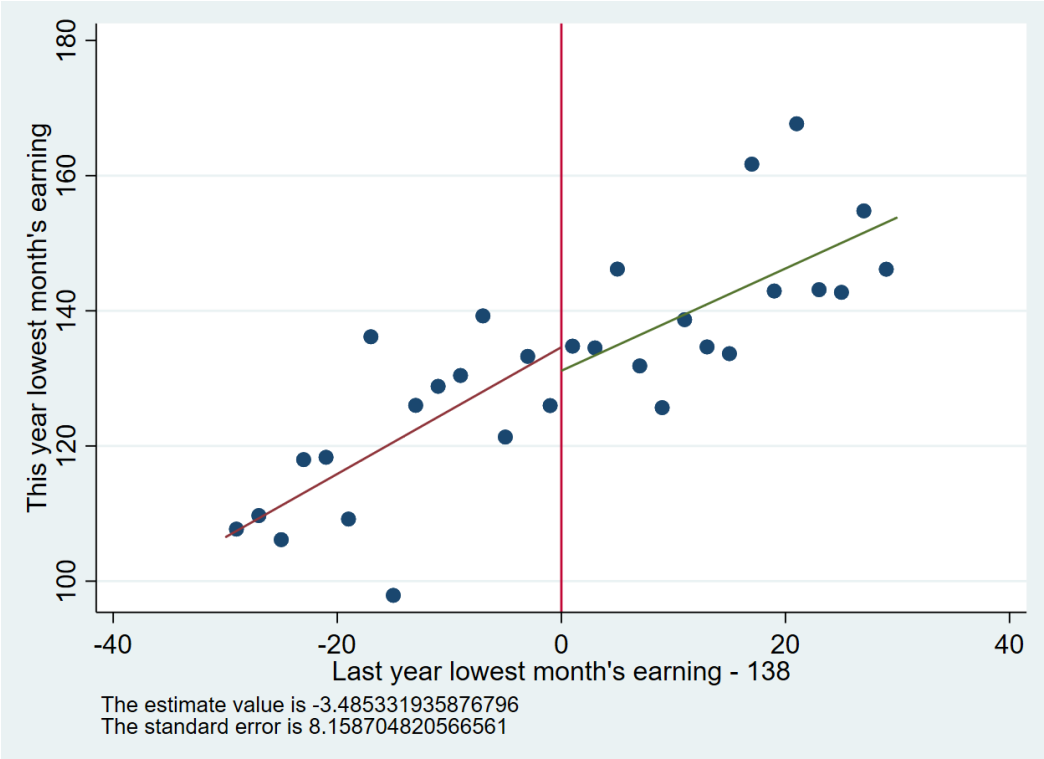

Figure 5: expansion states all population from 2013 to 2016

The running variable is the household's lowest monthly earnings in year t−1, centered at 138 percent of the Federal Poverty Level (FPL). The outcome variable is the household's lowest monthly earnings in year t. The sample includes all households in Medicaid expansion states within a ±30 percentage point bandwidth around the threshold. The estimated discontinuity at the cutoff is −3.49 percentage points in FPL(standard error = 8.16), suggesting no

statistically or economically significant drop. The figure illustrates a smooth and approximately linear relationship in lowest monthly earnings across years, with no evidence of strategic earning adjustment at the threshold in the full sample.

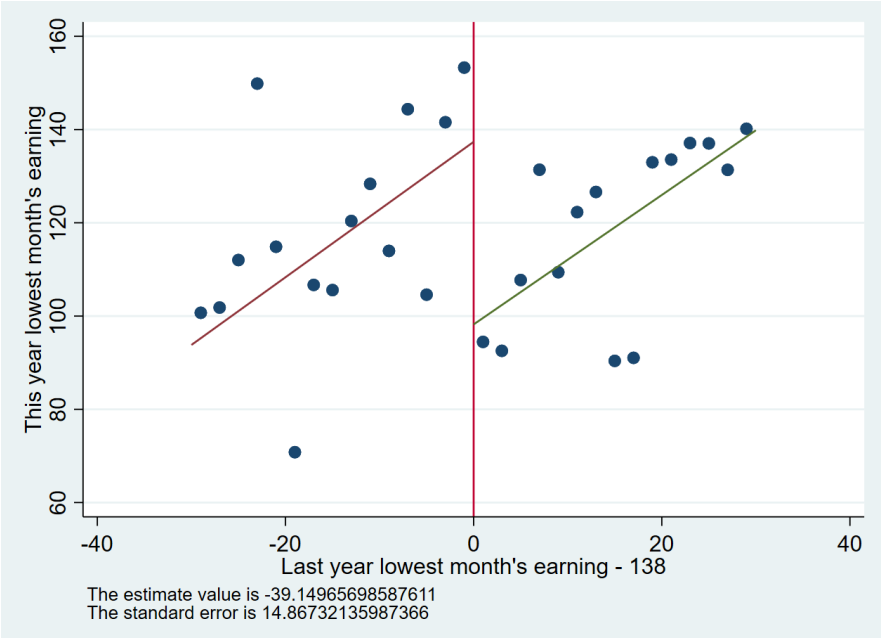

Figure 6a: Earnings Adjustment for Childless Adults in Expansion States

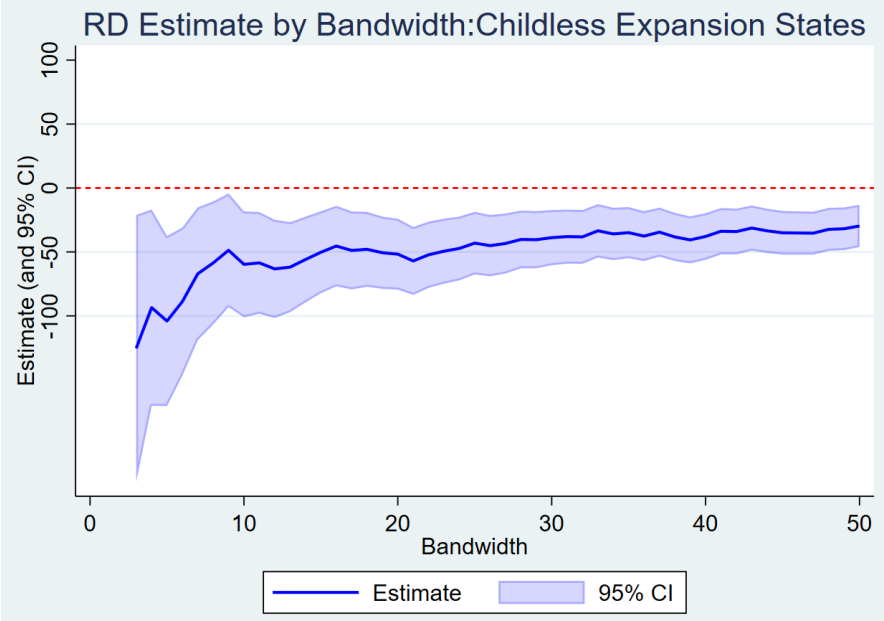

Figure 6b: RD Estimates by Bandwidth: Childless Adults in Expansion States

Note: **Figure 6a**: the running variable is the prior year's lowest monthly earnings, centered at 138% of the Federal Poverty Level (FPL). The outcome is the current year's lowest monthly earnings. The sample includes childless

households in expansion states within a ±30 FPL-point bandwidth. The estimated discontinuity at the cutoff is −39.15 percentage points (standard error = 14.87), indicating a statistically and economically significant reduction in earnings above the threshold. **Figure 6b**: This figure plots point estimates and 95% confidence intervals from local linear regression discontinuity models across varying bandwidths (in FPL percentage points). The running variable and outcome are as defined in Figure 6a. The effect remains stable and statistically significant across a wide range of bandwidths, confirming the robustness of the main result.

Figure 6a presents the main empirical result, focusing on earnings adjustments among childless households in Medicaid expansion states. Using last year's lowest monthly earnings as the running variable, the figure shows that households just above the 138% FPL threshold reduce their lowest earnings in the current year by 39 percentage points of the FPL (approximately 28 percent), compared to those just below the threshold. This large and statistically significant discontinuity supports the hypothesis that some households strategically reduce income to qualify for Medicaid.

Figure 6b tests the robustness of this result by varying the bandwidth of the RD design from ±3 to ±50 percentage points of the FPL around the cutoff. As more observations are included farther from the threshold, the effect becomes attenuated but remains statistically significant and visually clear, suggesting robustness to bandwidth choice. After adjusting for covariates including age group, sex, education, and race, the estimated earnings reduction decreases modestly from 39 to 35 percentage points, indicating that the discontinuity is not driven by observable differences in household characteristics. Subgroup analysis by age group shows that income adjustment increases with age, consistent with prior findings on retirement behavior and health insurance incentives (Nyce et al. 2013); Shoven and Slavov 2014; Dague, DeLeire and Leininger 2017).

Figure 7 displays earnings changes among households with children in expansion states. In contrast to childless adults, there is no discernible discontinuity at the threshold, even after adjusting for demographic controls. These households face different eligibility rules, higher adjustment costs, and have access to programs like CHIP and TMA, which may reduce incentives to adjust earnings. Table 4 presents all results from expansion states by household types.

Figure 7: earning difference for households with children in expansions states

Note: The running variable is the prior year's lowest monthly earnings, centered at 138% of the Federal Poverty Level (FPL). The outcome is the current year's lowest monthly earnings. The sample includes households with children in expansion states within a ±30 FPL-point bandwidth. The estimated discontinuity at the cutoff is 7.33 (standard error = 9.47), indicating a non-statistically and economically significant change in earnings above the threshold.

Table 4. RD Estimates by Household Type and Specification

	Childless (No Covariates)	Childless (With Covariates)	With Children (No Covariates)	With Children (With Covariates)
Slope	1.45**	1.33**	0.80**	0.78**
	(0.60)	(0.60)	(0.34)	(0.37)
Discontinuity Estimate	-39.15***	-35.02**	7.33	8.70
	(14.87)	(14.69)	(9.47)	(10.04)
Slope Change	-0.06	-0.10	-0.28	-0.32
	(0.87)	(0.86)	(0.57)	(0.58)
Age 40–64		-10.66		3.85
		(7.05)		(3.52)
Age 65+		-25.44***		-5.44
		(8.56)		(9.43)
Black		-8.39		-1.46
		(12.57)		(5.69)
Asian		6.83		-4.67
		(11.99)		(12.32)
Other races		2.09		-2.98
		(15.12)		(11.74)

Male		-2.81		7.38***
		(4.02)		(2.35)
High school		2.14		9.29**
		(8.59)		(4.32)
College		-2.04		11.46**
		(8.83)		(4.50)
Master or higher		9.06		5.10
		(10.49)		(6.45)
_cons	137.36***	147.29***	134.18***	126.88***
	(9.64)	(14.33)	(6.00)	(7.64)
Observations	936	936	3089	2039
R-squared	0.02	0.04	0.05	0.06

Clustered SEs by ssuid; cutoff = 138% FPL; bandwidth = ±30pp. Models 2 and 4 include covariates: age group (ref = under 40), race (ref = White), sex (ref = Female), and education (ref = Less than high school).
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This table presents regression discontinuity (RD) estimates of earnings adjustments around the Medicaid eligibility threshold at 138 percent of the Federal Poverty Line (FPL). The running variable is the individual's lowest monthly earnings in calendar year t–1, centered at the 138% FPL cutoff. The dependent variable is the individual's lowest monthly earnings in calendar year t. Covariates in Models 2 and 4 include age group (reference: under 40), race (reference: white), sex (reference: female), and education (reference: less than high school). Standard errors are clustered at the household level (SSUID). The sample includes individuals in Medicaid expansion states, and the estimation is restricted to a ±30 FPL point bandwidth around the cutoff.

c. Horizontal and vertical variation

Prediction 3 posits that the magnitude of earnings adjustments varies with the size of the individual mandate penalty. Based on the evolution of the penalty, the analysis is divided into three distinct periods: (1) 2013–2014, when the annual penalty was approximately 1 percent of income; (2) 2015–2016, when the penalty rose to 2.5 percent (effectively 3 percent for many households)[26]; and (3) 2018–2019, when the penalty was later eliminated. Although the $0 penalty officially took effect in 2019, the repeal was enacted in late 2017, potentially altering behavior in 2018 due to anticipatory effects and misinformation. Figure 8 presents the estimated earnings adjustments at the Medicaid eligibility threshold across these periods for childless households. The largest discontinuity occurs during 2015–2016, consistent with the highest penalty level. In 2017–2018, the magnitude of adjustment decreases, suggesting that as the net penalty cost shrinks, fewer households have incentives to adjust income. Notably, after 2017, even though reducing earnings

[26] Most households face flat dollar penalties if their income is slightly over 138% FPL.

to receive Medicaid no longer strictly dominates over other choices for all households, meaningful earning adjustments are still observed.

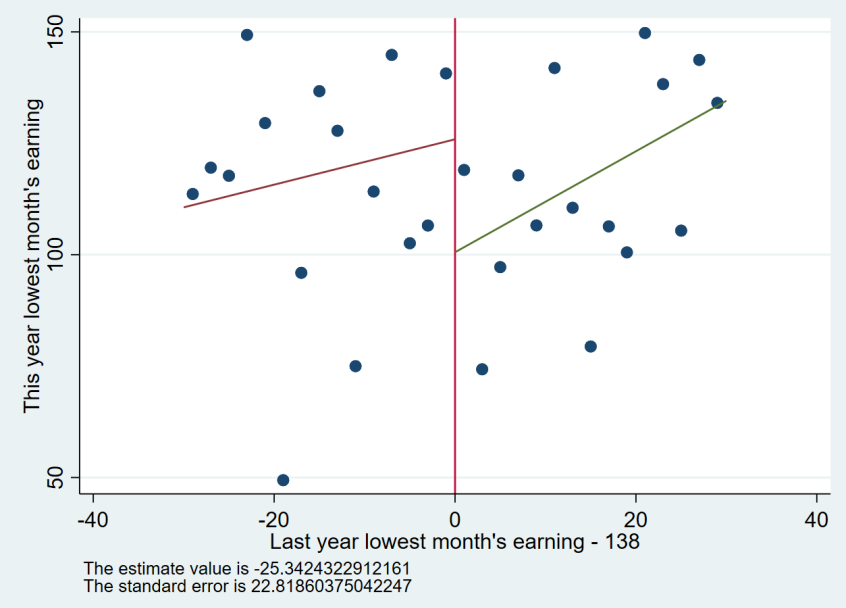

Figure 8a: Year 2014 Childless Households in Expansion States

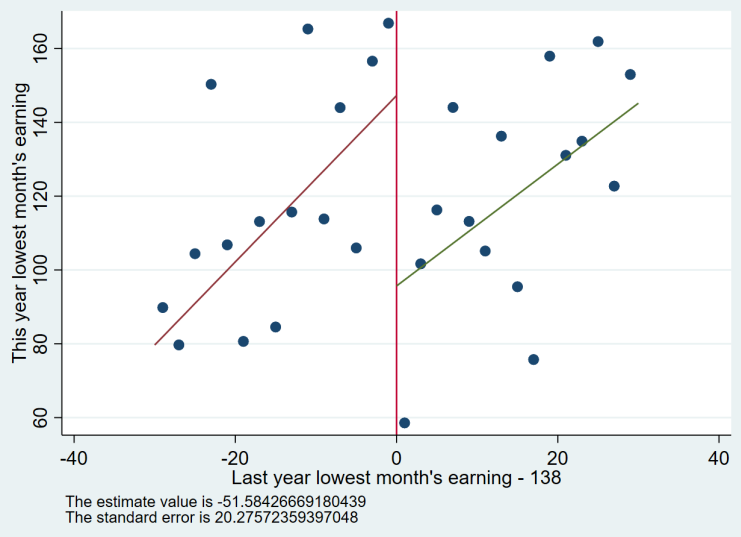

Figure 8b: Year 2015 and 2016 Childless Households in Expansion States

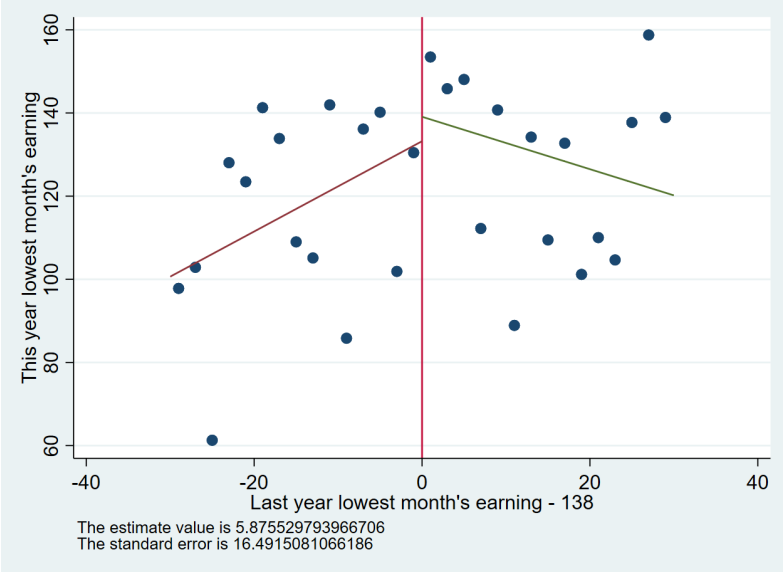

Figure 8c: Year 2018 and 2019 Childless Households in Expansion States

Figures 8a–8c show the estimated earnings adjustments for childless households in expansion states at the Medicaid eligibility threshold across different years with ±30 FPL point bandwidth. **Figure 8a** (2014) shows a large but imprecise earnings reduction of −25.34 percentage points (SE = 22.82), while **Figure 8b** (2015–2016) reveals a larger reduction of −51.58 percentage points (SE = 20.28), reflecting the higher mandate penalty. **Figure 8c** (2018–2019) shows a smaller and less statistically significant change (5.88 FPL points, SE = 16.49) as the penalty was eliminated. These results highlight the variation in earnings adjustments corresponding to changes in the penalty over time.

In addition to variation over time, the mandate penalty also varies with household composition. The penalty increases with the number of uninsured individuals in the household, creating stronger incentives for multi-person households to reduce earnings. In 2016, for example, the penalty was equivalent to 3 percent of annual income (at least 36 percent of mean monthly earnings) per uninsured adult. For a household with three uninsured members, the total penalty could exceed 100 percent of monthly earnings, making it utility-maximizing to forgo one month's earning to qualify for Medicaid coverage. By contrast, single-person households face much smaller financial penalties, reducing their incentive to engage in earning adjustments. This heterogeneity implies that estimates of earnings adjustment differ depending on whether the analysis is weighted by household or by person. For instance, a one-person household reducing income by 10 FPL points and a three-person household reducing income by 50 Percentage points would yield a 30-point average under household-level weighting, but a 40-point average under person-level weighting. Figure 9 illustrates this relationship, showing that the estimated earnings adjustment

decreases from –39 percentage points FPL to –28 percentage points FPL between 2014 and 2016 when using person-level weighting.

Figure 9: Childless households in expansions states by households from 2014 to 2016

Notes: The running variable is the household's lowest monthly earnings from the previous year, centered at 138% of the Federal Poverty Level (FPL). The outcome is the current year's lowest monthly earnings. The sample includes childless households in Medicaid expansion states, within a ±30 FPL point bandwidth around the eligibility threshold. The estimated discontinuity at the threshold is –27.76 percentage points (standard error = 13.70), indicating a statistically significant reduction in earnings just above the cutoff. The figure shows a clear reduction in earnings for households just above the eligibility threshold, but smaller than per person estimates.

IV. Robustness checks

The previous section presented estimates that accounted for covariates, examined both vertical and horizontal variation in treatment intensity, and assessed sensitivity to bandwidth choice. This section provides additional robustness checks: McCrary tests for bunching at the threshold, placebo tests using non-expansion states, and falsification tests among childless households in expansion states.

In support of the institutional arguments discussed earlier, Appendix Figure 1 presents results from the McCrary (2008) density test applied to the running variable (lowest monthly earnings)for childless adults between 2013 and 2015. The analysis finds no evidence of

manipulation or bunching around the eligibility threshold, reinforcing the assumption that earnings are not strategically reported to fall just below the Medicaid cutoff.

Prediction 1 also implies that no discontinuity in earnings should be observed among childless households in non-expansion states, which serves as a strong counterfactual. Because state Medicaid expansion decisions are plausibly exogenous to individual income behavior, the absence of discontinuity in these states strengthens the causal interpretation of results observed in expansion states. Figure 10a confirms this expectation: showing no visual or statistical evidence of an earnings adjustment around the threshold for childless adults in non-expansion states. Furthermore, Figure 10b shows that across a range of bandwidths (from 5 to 50 percentage points of the FPL) estimated discontinuities remain centered around zero and are statistically insignificant.

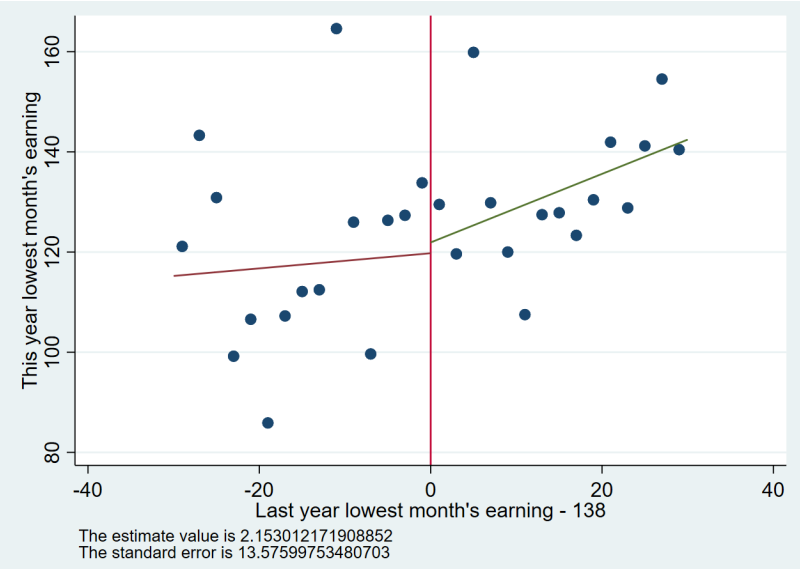

Figure 8a: Earning difference childless household from non-expansion states

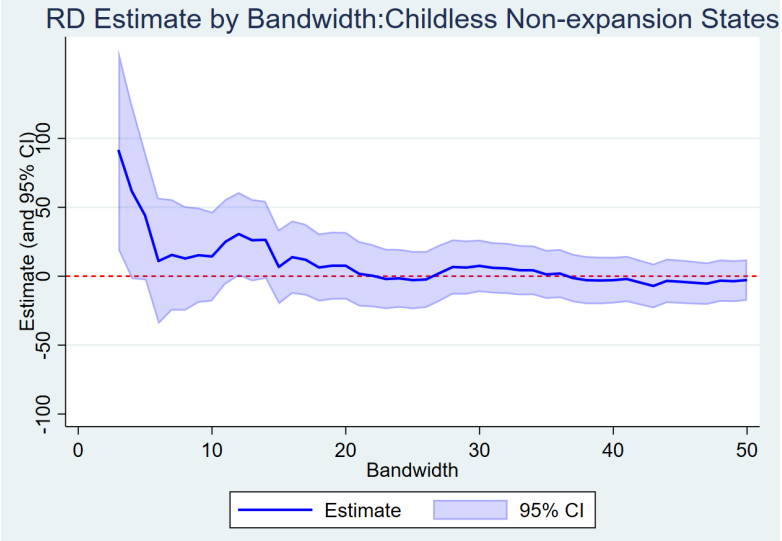

Figure 8b: Bandwidth variation among childless households in non-expansions states

Note: Figure 10a plots the relationship between current and prior year's lowest monthly earnings for childless households in non-expansion states, centered at the 138% FPL threshold. The estimated discontinuity is small and statistically insignificant (2.15 percentage points; SE = 13.58), suggesting no earnings adjustment at the threshold. **Figure 10b** shows RD estimates across bandwidths (±5 to ±50 FPL points) for the same sample. Point estimates remain centered around zero with wide confidence intervals, confirming no systematic response to Medicaid eligibility thresholds in non-expansion state

To further assess the validity of the estimated discontinuity at the Medicaid eligibility threshold, a series of 100 falsification tests were conducted. These tests re-estimated the regression discontinuity model at placebo cutoffs ranging from 90 to 190 percent of the Federal Poverty Level (FPL), using one-percentage-point increments. The sample includes childless adults in Medicaid expansion states between 2014 and 2016. Figure 11 displays the distribution of estimated effects across these placebo thresholds. The true estimate at the 138% FPL threshold, shown by the blue line, is more extreme than any of the placebo estimates. This result indicates a false-positive rate of less than 1%, strengthening the claim that the observed discontinuity reflects a genuine behavioral response to Medicaid eligibility rather than random variation.

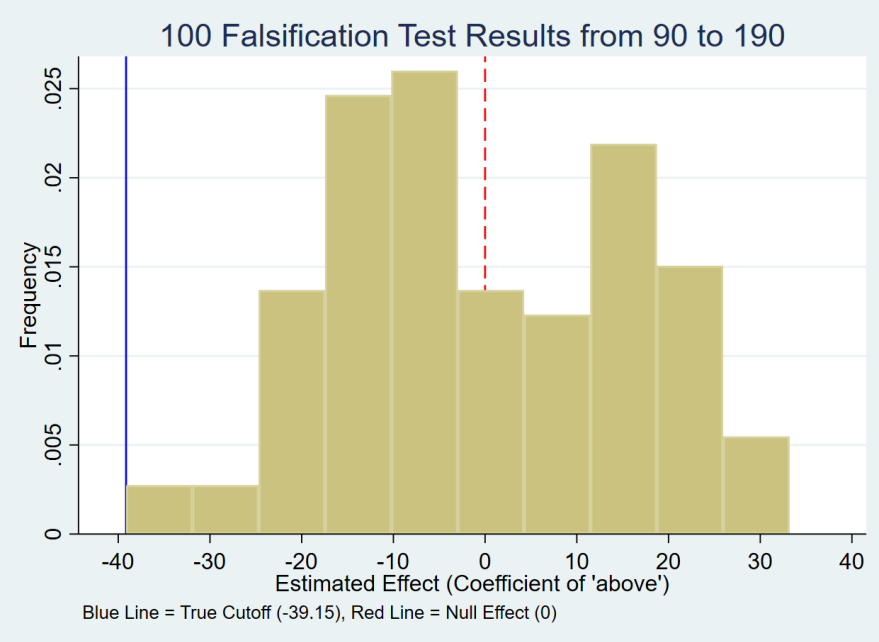

Figure 11: Placebo Estimates from Alternative Cutoffs (90%–190% FPL)

Note: This histogram displays the distribution of estimated discontinuities in lowest monthly earnings from 100 falsification tests using childless adults in Medicaid expansion states from 2014 to 2016. Each placebo test assigns a hypothetical cutoff between 90 and 190 percent of the Federal Poverty Level (FPL). The red dashed line indicates a null effect (0), and the blue line denotes the true Medicaid eligibility threshold at 138% FPL, where the actual estimate is –39.15 percentage points. The true effect is more extreme than any of the placebo estimates, indicating a false-positive rate below 1%.

V. Mechanism

Conditional on the finding that childless households adjust earnings to qualify for Medicaid, a natural follow-up question concerns the underlying mechanisms. Three possible explanations are considered. First, households might change their reported family structure to meet Medicaid eligibility requirements without altering actual earnings. For instance, prior work has shown that some employers drop dependent coverage while retaining self-coverage (Cutler and Gruber, 1996), suggesting the possibility that households may change reported composition to gain eligibility. If this were the primary mechanism, we would expect to observe a change in household size just above the eligibility threshold. However, no such pattern is detected in the data.

Second, earning adjustments may also occur along the extensive margin, with households temporarily forgoing an entire month of earnings to secure Medicaid coverage. This strategy is

particularly salient for households with multiple uninsured adults. In 2016, the mandate penalty per uninsured adult exceeded 36% of median monthly income. For a three-adult household, the total penalty could exceed total monthly earnings, making temporary non-employment a utility-maximizing response. Figure 12 supports this channel: among childless households in expansion states with positive monthly earnings in the prior year, the likelihood of unemployment defined as zero earnings in any month rises by 18.9 percentage points above the eligibility threshold during 2014–2016.

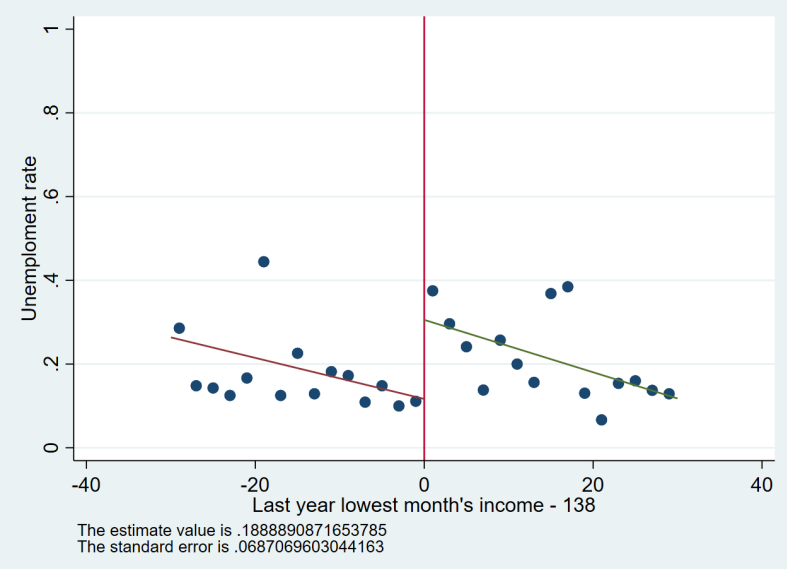

Figure 12: Extensive Margin Adjustment among Childless Adults (2014–2016)

Notes: The running variable is the household's lowest monthly earnings in the prior calendar year, centered at 138% of the Federal Poverty Level (FPL). The outcome variable is an indicator for reporting zero earnings in any month during the current year. The sample includes childless households in Medicaid expansion states between 2014 and 2016, within a ±30 FPL-point bandwidth. The estimated discontinuity at the threshold is 18.9 percentage points (standard error = 6.87), consistent with extensive margin labor supply adjustments in response to Medicaid eligibility incentives.

Third, households may reduce hours worked (intensive margin adjustment) to qualify for Medicaid. Among childless adults who remain employed and report no layoffs, average hours in the lowest-earning month fall by 25.9 hours at the eligibility threshold during 2015–2016, when the mandate penalty was highest. By contrast, no significant change in hours is observed in 2013–2014, when the penalty was relatively low, or in non-expansion states, where Medicaid was unavailable.

One question is whether these adjustments are primarily driven by self-employed individuals, who may have greater flexibility in reporting income and have exhibited such behavior in EITC (Saez 2010). Unfortunately, the survey lacks enough responses on self-employment status across all interviews, limiting the ability to isolate this subgroup. Nonetheless, the magnitude and timing of observed adjustments suggest that wage earners, particularly those earning near the minimum wage, are likely concentrated just above the eligibility threshold. Given the size of the penalty and the proximity of the Medicaid cutoff to minimum wage earnings, it is relatively convenient for wage earners to adjust earnings.

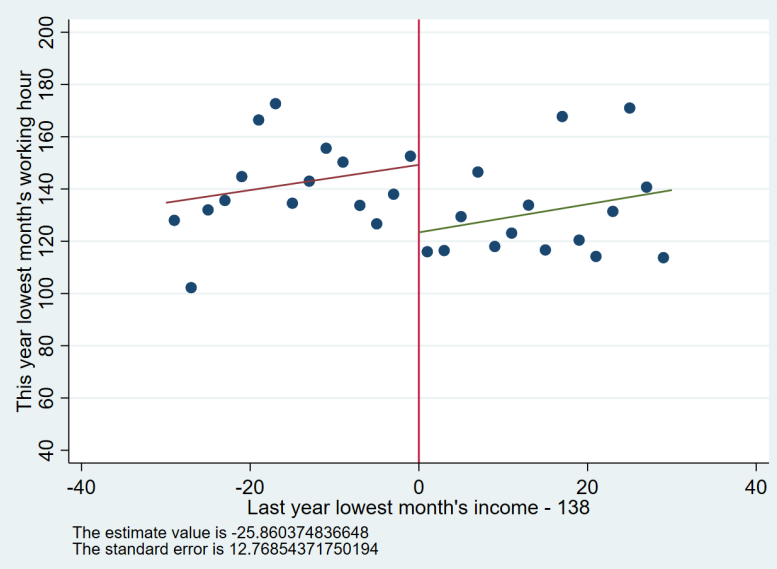

Figure 13: Intensive Margin adjustments in 2015 and 2016

Notes: The running variable is the household's lowest monthly earnings in the prior year, centered at 138% of the Federal Poverty Level (FPL). The outcome is total hours worked in the lowest-earning month in the current year. The sample includes employed childless adults in Medicaid expansion states who report no layoffs. The estimated discontinuity at the threshold is −25.86 hours (standard error = 12.77), indicating a significant reduction in work hours at the Medicaid eligibility cutoff.

Another question is whether childless households adjust earnings in more than one month. In Figure 1, Point B represents households that qualify for Medicaid by reducing income in one month and offsetting it with higher income in other months, while Point C reflects households that reduce income in just a single month. Both strategies yield higher utility than Point A, where households make no adjustment and remain uninsured. After excluding a few outliers (households with maximum earnings near 1,000 percent of the FPL), Figure 14 shows that the gap between the

highest and lowest monthly earnings narrows from 28 percent (39/138) to 9 percent (21/226). The median-month earnings fall roughly 27 percentage points above the lowest month, using the lowest month's income as the running variable. This pattern suggests that households do not adjust only one month's income. Instead, adjustments are distributed across months, with the lowest month falling below the threshold, potentially explaining why Pei (2017) finds limited effects outside of Transitional Medical Assistance

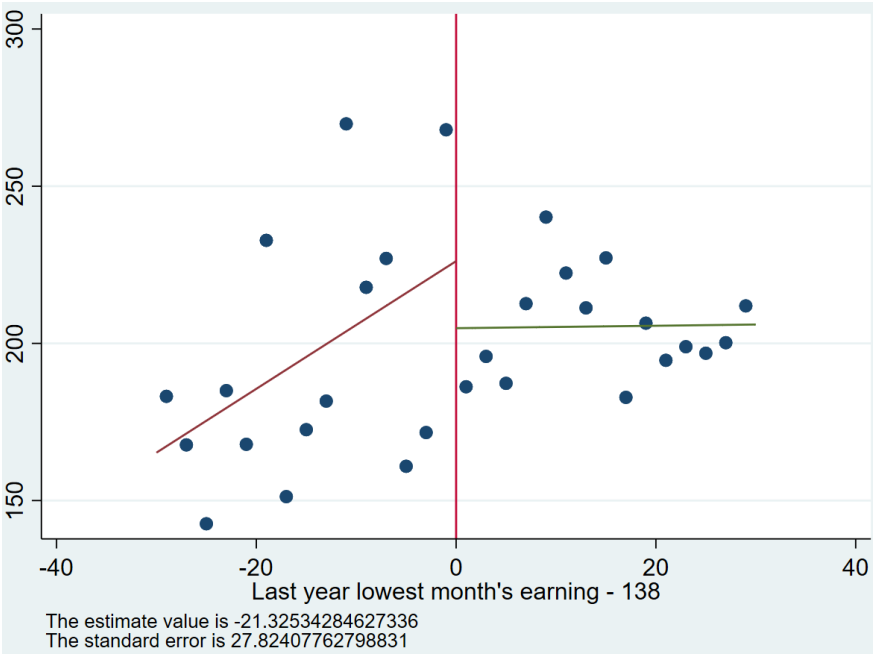

Figure 14: the highest month's earnings among childless adults 2014-2016

Notes: The running variable is last year's lowest monthly earnings, centered at 138% FPL. The outcome is the highest monthly earnings in the current year. Outliers above 1,000% FPL are excluded. The estimated drop (−21.3 points; SE = 27.8) suggests reduced income variability just above the cutoff, consistent with single-month adjustments for Medicaid eligibility.

VI. Conclusion and discussion

This paper examines how childless households in expansion states may strategically lower their earnings in a single month (a "dip-a-toe" strategy) to qualify for Medicaid. The main finding shows that childless adults in expansion states reduced their lowest monthly income by 39 percentage points of the FPL at the eligibility threshold, which is a large, statistically and economically significant adjustment. To our knowledge, this is the first paper to document a substantial labor supply response to Medicaid expansion, helping reconcile economic theory

(income and substitution effects) with prior empirical results. These findings differ from prior studies and underscore the importance of the new method introduced in a companion paper. The findings also raise concerns about the standard use of annual income at 138% FPL as a sharp eligibility cutoff. In this sample, households with the lowest monthly earnings just below 138% FPL often have median monthly income above 150% FPL, and total monthly income (including benefits) can approach 160% FPL. This suggests that studies using the 138% FPL threshold may face nontrivial selection bias. Future research should revisit existing work that uses the 138% threshold and consider alternative approaches based on the lowest observed earnings. More broadly, this method offers a framework to test whether other means-tested programs induce similar strategic income adjustments.

The strategy at the eligibility cutoff is primarily driven by the mandate penalty, as the magnitude of adjustments varies across years and household types. Although the penalty was reduced to $0 after 2018, its behavioral effects have not completely disappeared and should not be overlooked. Should future policies reintroduce penalties or apply them to other programs, individuals may again adapt behavior to avoid the costs, potentially producing unintended consequences.

The estimates represent local average treatment effects and therefore vary with the cutoff value, helping explain why the results differ from previous studies (Dague et al. 2017; Garthwaite, Gross, and Notowidigdo 2014; Baicker et al. 2016). If the eligibility cutoff is raised above 138% FPL, households are more likely to have access to private insurance and weaker preferences for Medicaid, so the estimated effect size would likely be smaller. This implies that future expansions of Medicaid to higher income thresholds may generate smaller labor supply responses. On the other hand, if the cutoff is lowered, the effect size is expected to increase. Although this study does not find clear evidence of earnings adjustments among households with children, the null result may reflect not only low penalties and high adjustment costs, but also differences in Medicaid eligibility rules. Future research could examine whether Medicaid eligibility induced earnings adjustments even prior to the ACA.

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Appendix Figure 1:

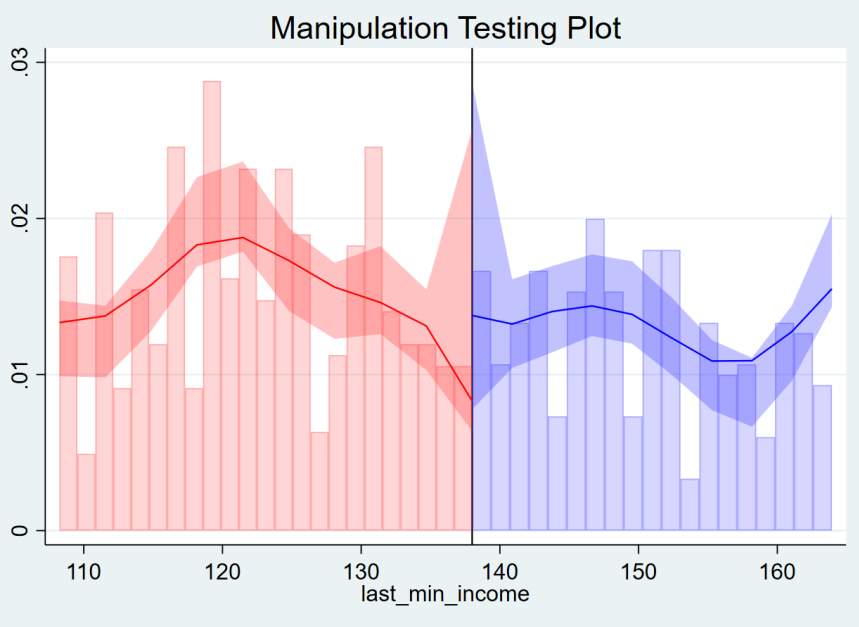

Figure 11: McCary density test with on Childless Adult