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Home Delinquency Rates Are Lower Among ACA Marketplace Households: Evidence From a Natural Experiment

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Evidence presented in this brief suggests that households gaining private health insurance under the Patient Protection and Affordable Care Act (ACA) are significantly less likely to fall behind on rent and mortgage payments than are those that remain uninsured. This finding is based on an analysis of administrative tax data from roughly 5,000 low- and moderate-income (LMI) tax filers living in states that did not expand Medicaid. We believe this study to be the first quasi-experimental analysis linking the new ACA insurance exchanges to household finances.

Proponents of the ACA had hoped that the law would, among other things, make insurance more affordable for households lacking access to coverage through their employers. Expanded insurance access was expected to reduce the share of households that experience financial devastation following a serious medical diagnosis.¹ Yet, despite enormous political interest in the ACA, empirical research that documents the act's effects on financial outcomes is just beginning to emerge.² Moreover, research in this area has focused primarily on Medicaid expansions rather than on the private insurance market.

This brief presents results from preliminary analyses on a large and representative sample of LMI households. The analyses seek to address this gap.³ The research is part of a broader research agenda assessing the relationship between the ACA and the financial security of LMI households. The brief first provides an overview of the insurance landscape of LMI households following the implementation of the ACA. Then, it presents results from a quasi-experimental analysis, which identifies a plausible causal link between expanded access to private insurance and improved household financial well-being for people living near the federal poverty line (FPL).

Consistent with research on Medicaid expansions, our data signal that medical bills from an unexpected health event consume fewer of the resources of people

with coverage. In turn, a higher level of liquid assets is associated with the lower rate at which households become delinquent on housing payments. Surprisingly, we also find that the majority of uninsured LMI filers would qualify for Medicaid or subsidized coverage but do not receive it. Put together, our findings spotlight a substantial opportunity to improve the financial stability of LMI households through assisted enrollment in the ACA's health insurance programs.

Background: The ACA and the Medicaid Coverage Gap

An important goal of the ACA is to reduce the share of uninsured Americans by increasing access to quality health-insurance coverage. Two key aspects of the law—the expansion of Medicaid and the provision of subsidies to purchase private insurance—specifically target the LMI population.⁴

Prior to passage of the ACA, Medicaid was primarily a program for children, pregnant women, older adults, and the disabled living in LMI households. States typically did not offer Medicaid to childless adults and offered it only to parents with incomes that were well below the poverty line.

With the ACA's passage, Medicaid's focus broadened to include able-bodied LMI adults. Through large federal subsidies, the ACA encourages states to expand Medicaid to the adult population earning up to 138% of the FPL. As of 2016, 31 states (and Washington, DC) had expanded Medicaid and 19 states had not. In states that expanded Medicaid, adults earning up to 138% of the FPL qualify for Medicaid; those earning between 138% and 400% of the FPL are eligible for financial assistance in purchasing qualified private insurance.⁵

The ACA also codified the construction of a private insurance Marketplace, sometimes called the



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“Marketplace” or the “Exchange,” where people who earn too much to qualify for Medicaid can purchase quality health insurance directly from private insurance companies. To encourage diverse enrollment (particularly from young and healthy people) and to provide an affordable insurance option for LMI households lacking access to employer-sponsored coverage, the federal government heavily subsidizes the out-of-pocket costs and premiums of LMI participants.

In particular, participants with incomes between 100% and 250% of the FPL qualify for “cost-sharing reductions.”⁶ These are subsidies that reduce out-of-pocket costs, such as from deductibles and copayments, paid when health care services are used. According to the Kaiser Family Foundation’s calculator, cost-sharing reductions would reduce the out-of-pocket maximum from \$6,850 to \$2,250, on average, for a 30-year-old single adult earning just over 100% of the FPL in 2016 (or about \$12,000).⁷ The federal government pays these subsidies directly to the insurer, and the enrollee does not have to refund the subsidy if his/her projected income at the time of enrollment differs from actual income at the end of the year.

The ACA also subsidizes the insurance premiums of participants with incomes between 100% and 400% of the FPL.⁸ Premium subsidies, which the Internal Revenue Service usually pays in advance to insurers, reduce the monthly premium owed by the participant. Premium subsidies are often referred to as “tax credits,” since they must be reconciled for any difference between projected income at the time of enrollment and actual income on tax forms filed the following year.

Premium subsidies decline as income rises. According to the Kaiser Family Foundation,⁹ a 30-year-old single adult earning just over 100% of the FPL would have paid an average monthly premium of \$20 (\$244 per year) after subsidies in 2016. Without the subsidies, that same participant would have paid about \$265 per month for the same plan (\$3,186 per year). That equates to 27% of the participant’s annual income.

Because Medicaid eligibility thresholds for adults remain so low in states that did not expand Medicaid, a substantial share of LMI households are in what is commonly called the “coverage gap.” As visually represented in Figure 1, the coverage gap includes adults who earn too much to qualify for Medicaid but too little to qualify for Marketplace insurance subsidies, which begin at 100% of the FPL. Since the ACA was originally designed under the assumption that states would expand Medicaid to people earning up to 138% of the FPL, some households were left in insurance limbo when states chose not to expand Medicaid. Health insurance is usually unaffordable for people in the coverage gap.¹⁰ Adults in the coverage gap who are unable to obtain insurance through an employer or a family member often

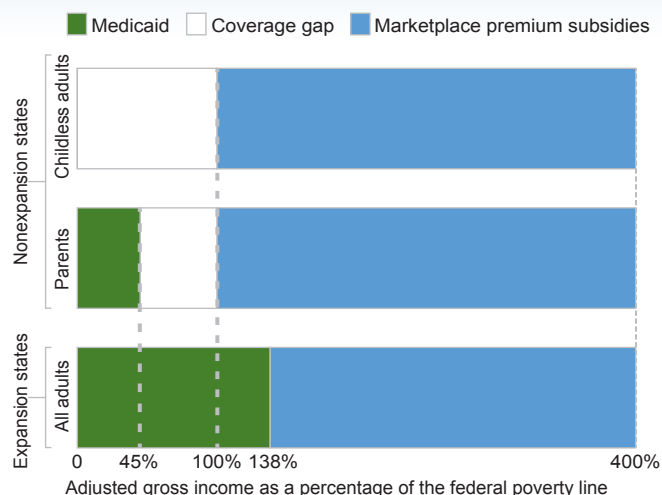


Figure 1. Who qualifies for Medicaid and Marketplace subsidies? States that did not expand Medicaid have different thresholds for parents. This figure shows the average threshold for parents in 2016 for states that did not expand Medicaid (45% of the federal poverty line), calculated using data from the Kaiser Family Foundation.

go uninsured or purchase “catastrophic” (low-premium, high-deductible) plans. The Kaiser Family Foundation estimates that 2.6 million Americans are living in the coverage gap.¹¹

Sample

Analyses presented in this brief use the tax records and survey responses of a large sample of LMI households over the 3-year period (2014–2016) following Medicaid expansion and the opening of the health insurance Marketplace. Data come from the Refund to Savings Initiative, an ongoing partnership among Washington University in St. Louis, Duke University, and Intuit, Inc.¹² Tax data come from filers who use TurboTax Freedom Edition online tax-preparation software to prepare their tax returns and who consent to the use of their anonymized data for research. In the period covered by the brief, the software was offered for free to tax filers who had adjusted gross income of less than \$31,000, who qualified for the Earned Income Tax Credit, and/or who were active-duty members of the military with adjusted gross income of less than \$62,000.¹³

The analyses in this brief are based on precise income data from Intuit’s TurboTax Freedom Edition administrative tax records for the 2014, 2015, and 2016 tax seasons and from the Household Financial Survey for those years. Immediately following the tax-filing process, participants were invited to complete the survey and were offered small financial incentives for completion. The Household Financial Survey includes a wide array of questions about filers’ assets, liabilities, financial behaviors, use of social services, experiences of hardship, and health insurance status. The survey is not a longitudinal instrument that captures data from the same respondents in each survey (though some tax filers may take the survey in multiple years), but the compositions

Table 1. The Share of LMI Households That Are Uninsured Has Fallen Dramatically Since 2014

Insurance status	2014	2015	2016
Employer	27	27	28
Family and student	14	18	15
VA, Medicare, and other	10	9	9
Marketplace	5	8	9
Medicaid	11	19	22
Uninsured	33	19	17
Total	100	100	100

Note. LMI = low- and moderate-income; VA = Department of Veterans Affairs. Sampling weights are used ($n = 47,317$). The table presents the percentage of low- and moderate-income households by insurance status and year.

of the samples are similar across survey years. The analytic sample includes 7,605 participants from the 2014 tax season, 19,825 from the 2015 tax season, and 19,887 from the 2016 tax season. The sample consists of participants who were U.S. citizens aged 19 to 64 at the time of data collection and for whom both administrative and survey data are available.¹⁴

Access to administrative tax data greatly facilitates an analysis of the ACA, since eligibility for Medicaid and Marketplace subsidies is based entirely on a household's modified adjusted gross income. We merge individual-level tax data with corresponding federal poverty guidelines and Kaiser Family Foundation data detailing the Medicaid thresholds for parents and childless adults in each state and for each year. From this combined information, we generate a precise measure of an individual's position relative to the FPL and eligibility status for health care programs.

Since these data come from a survey of online tax filers, the sample distribution skews toward younger adults. However, we correct for this skew using sampling weights and, when applicable, demographic controls. Sampling weights based on the demographic characteristics of the American Community Survey sample are applied wherever statistics are intended to be representative of the national LMI population between the ages of 19 and 64.¹⁵ Using regression analysis (not shown), we confirm that all findings summarized in this brief are robust to the inclusion of controls for income, age, race, number of dependents, college completion, gender, marital status, employment status, and student status.

Our data set has a few drawbacks. First, there could be a degree of misreporting, particularly for certain variables. For example, some participants might not know the type of health insurance they have and so may report that they have private insurance but actually are covered by employer-sponsored insurance. Other self-reported variables, such as a household's total medical expenditure, are continuous and therefore subject to greater measurement error than are categorical variables. Nonetheless, our concerns about measurement error are attenuated by the high degree of correlation among variables that are reported on both the survey and the tax form. Certain survey questions may lend

themselves to multiple interpretations, however.¹⁶ For example, we measure the prevalence of a recent medical shock using a positive response to a fairly subjective question: "In the last 6 months, have you or has any member of your household (the people on your tax form) had an unexpected major out-of-pocket medical expense (e.g., from hospitalization or emergency room visit)?" Fortunately, we expect our key outcome variable (rent/mortgage hardship) to be fairly precisely measured, since it is binary and generated from a straightforward question: "Was there a time in the past 6 months when you or someone in your household did not pay the full amount of the rent or mortgage because you could not afford it?"¹⁷ Second, there is a gap of 2 to 4 months in the data set between the point when income was measured (at the end of the prior year) and when insurance status was reported (at tax time of the current year). Incomes may have changed for some participants during this gap. Finally, as is often the case with survey data, there might be an unknown degree of nonresponse bias. If it is present, it could affect both the types of participants who respond to the survey and the questions to which they elect to respond.

Insurance After ACA Implementation

Medicaid expansion and subsidized Marketplace insurance have produced a sharp drop in the portion of LMI households that are uninsured. Estimates from our weighted sample show a decline in the rate of uninsured LMI households since early in 2014, the year in which the ACA Marketplaces opened: The rate dropped from 33% in 2014 to 17% in 2016 (Table 1). Much of the reduction stems from growth in the portion of LMI households enrolled in Medicaid, up 11 percentage points over the 2014-2016 period. This shift represents a doubling in the proportion of LMI households covered by Medicaid.

As expected, however, Medicaid growth has been uneven

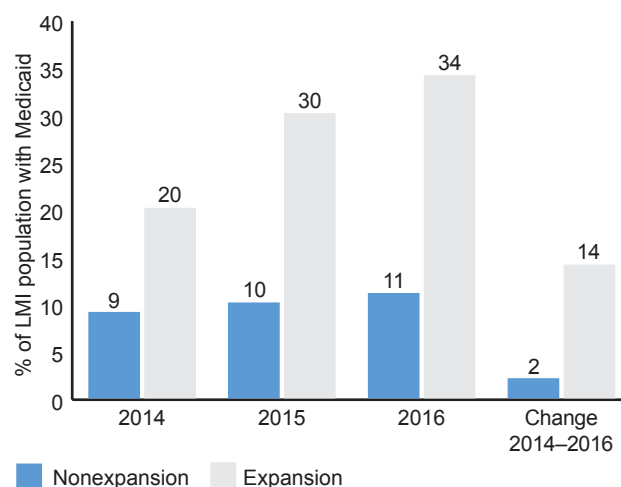


Figure 2. Growth in Medicaid coverage is owed to expansion states. The figure shows the percentage of low- and moderate-income households with Medicaid coverage, by state expansion status and year. Sampling weights are used ($n = 47,317$).

Table 2. A Third of Uninsured Respondents Live in the Coverage Gap (n = 7,366)

The percentage of uninsured respondents that...	2014	2015	2016
Are currently living in the coverage gap ^a	33	32	33
Would qualify for Medicaid if their state expanded Medicaid	49	46	40

Note. Sampling weights are not used.

^aThe coverage gap refers to the income levels that are greater than the eligibility ceiling for Medicaid but less than the eligibility floor for subsidized Marketplace insurance.

across states. This trend is documented in Figure 2, which presents results from our weighted sample: 34% of LMI households in states that have expanded Medicaid were covered by it in 2016, up from 20% in 2014 (the year when most expansion states first expanded Medicaid). By comparison, just 11% of LMI households in nonexpansion states were covered in 2016, and that is about the same proportion covered in 2014 (9%).

In 2016, about 33% of uninsured respondents lived in the coverage gap between eligibility for Medicaid and eligibility for subsidized coverage through the Marketplace (Table 2).¹⁸ These respondents are uninsured tax filers who have incomes below 100% of the FPL and who live in one of the 19 states that did not expand Medicaid to cover people making at least 100% of the FPL. If these states expand Medicaid in the future, all adults earning up to 138% of the FPL would be eligible. Therefore, about 40% of uninsured respondents would have qualified for Medicaid had all states fully expanded.

Importantly, statistics in Table 3 suggest that the majority (60%) of the uninsured LMI households in our sample currently qualify for either Medicaid or subsidized Marketplace insurance in each of the states where they live. In particular, as of 2016, 34% of uninsured filers qualified for Medicaid, and 26% qualified for Marketplace subsidies. Given the terms of access to TurboTax Freedom Edition software, participation in our survey is largely restricted to filers in households with incomes below \$31,000, and the vast majority of our respondents have incomes below 250% of the FPL. This means that participants would have qualified for those Marketplace plans with relatively generous subsidy schedules. These statistics indicate that, if our sample is representative of the uninsured LMI population, a substantial portion of uninsured LMI households in the United States were not uninsured because of cost burdens alone.^{19, 20} Instead, many could lack the motivation or inertia needed to sign up or be unaware of the existence of Medicaid or federal subsidies for Marketplace insurance, of the cost of insurance through these programs, and/or of their eligibility status.²¹

Our analysis suggests that nearly all LMI households in our sample could be insured by closing the coverage gap in states that did not expand Medicaid as well as the gaps in inertia and awareness—gaps evident in all states.

Table 3. The Majority of Uninsured Respondents Currently Qualify for Low-Cost Insurance (n = 7,366)

The percentage of uninsured respondents that...	2014	2015	2016
Currently qualify for Medicaid	24	25	34
Currently qualify for subsidized Marketplace insurance	33	30	26
Total	57	54	60

Note. Sampling weights are not used.

Measuring the prevalence and causes of uninsurance in the LMI population since ACA implementation is particularly important given the growing evidence, presented in the next section, that health insurance coverage offers some protection against financial distress.

The Effect of Marketplace Coverage on Housing Instability

To what extent does health insurance coverage affect financial outcomes? Although seemingly simple, this question is surprisingly difficult to answer. A simple comparison of the financial outcomes of people who have insurance with those of people who lack coverage is not particularly informative in situations where the same factors that affect a household's financial well-being also affect a household's health insurance status. For example, unobservable characteristics like a person's ability to plan for the future might also drive those with good budgeting habits to purchase insurance. If that's so, the savings behaviors of insured households would be better than those of uninsured counterparts. However, it would be inappropriate to attribute this difference to insurance status rather than to planning and budgeting habits.

In recent work, researchers have used experimental and quasi-experimental designs to tackle this causality problem. In those studies, people are randomly assigned to receive health insurance, and assignment is based on factors that are not correlated with their financial outcomes. Finkelstein et al. use data from a Medicaid lottery offered to low-income adults in Oregon in 2008.²² Results from this randomized, controlled experiment suggest that Medicaid access lowers out-of-pocket medical spending and reduces the number of medical bills sent to collection. Changes in certain states' thresholds for Medicaid eligibility have enabled other quasi-experimental studies, which indicate that increased eligibility is associated with declines in rates of bankruptcy, the incidence of unpaid bills, and the amount of debt sent to third-party collection agencies.²³ Similarly, Barcellos and Jacobson observe a decline in the reported difficulty of paying bills at age 65, the threshold at which one qualifies for Medicare.²⁴

Although there are many ways of measuring financial distress, we focus on self-reported difficulties in making rent or mortgage payments on time. The immediate

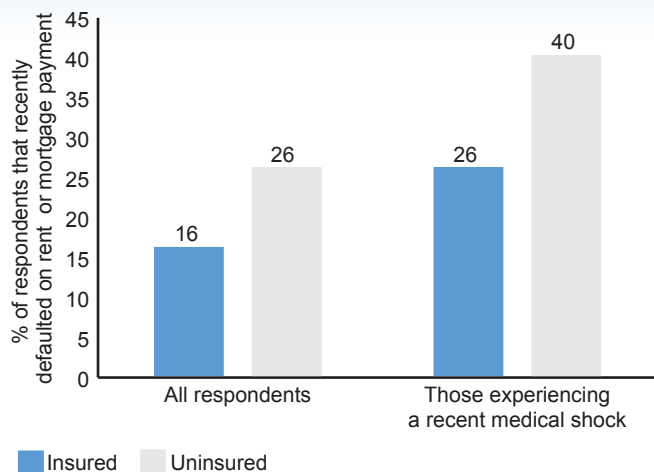


Figure 3. Rent and mortgage hardship appears linked to health insurance coverage. Percentage of respondents that became delinquent on a rent or mortgage payment in the last 6 months. Sample not weighted ($n = 31,604$). Sample includes 2015 and 2016 respondents with incomes between 0 and 200% of the federal poverty line. Sample excludes respondents with access to alternative forms of insurance, such as through an employer.

financial benefits of health insurance come mainly in the form of protection against catastrophic medical expenses.²⁵ Although a family might be able to endure mild illness without insurance, a chronic problem like diabetes or a severe disease like cancer could quickly exhaust the savings and other resources of an uninsured household. Facing a high-cost medical shock without insurance may force a household to skip essential payments like those for rent or a mortgage, though doing so can lead to homelessness. We contend that financial distress is likely to be most visible in missed housing payments as opposed to other, lighter, and more common indicators of liquidity problems such as missing a utility bill or credit card payment.²⁶ Simply put, our expectation is that increased access to health insurance coverage will manifest in a reduced propensity to be delinquent on essential housing payments.

In a sense, rent/mortgage hardship for the LMI population is analogous to bankruptcy for a wealthier population in that both problems are indicative of a household experiencing extreme illiquidity. As such, this analysis may be thought of as an extension of other work looking at the relationship between health insurance and bankruptcy in the general population, including non-LMI households. Indeed, bankruptcy is extremely rare among LMI households (affecting just 1% of our sample in a given year). This is likely due to bankruptcy's legal cost, restrictions on repeat occurrence, and the implications for future credit access.²⁷

By contrast, as is documented in Figure 3, rent/mortgage hardship appears to be fairly common among LMI households in our sample. It also appears to be correlated with health insurance coverage: 16% of insured respondents and 26% of uninsured ones report rent/mortgage hardship. The magnitude of these differences expands if we condition the analysis on those who experienced a medical shock, with the prevalence of that hardship

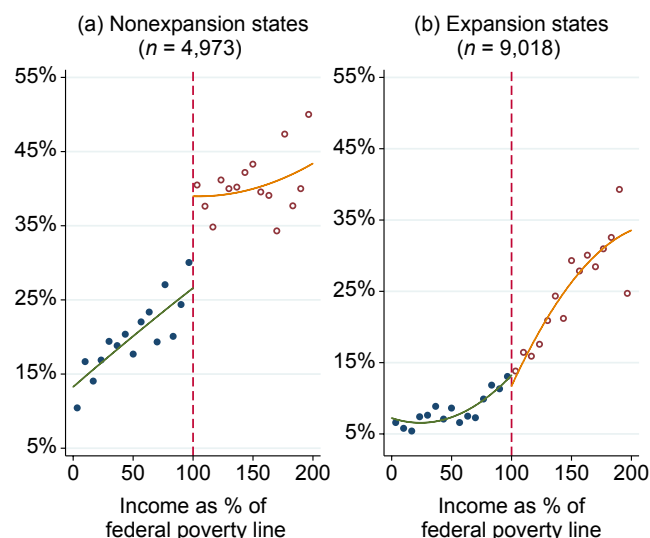
rising 10 percentage points for insured respondents and 14 percentage points for uninsured ones.²⁸ These simple statistics are purely suggestive, however, and are not intended to document the causal impact of health insurance on financial well-being.

If we instead compare otherwise similar households that differ only in their eligibility for subsidized Marketplace insurance, we can get closer to a causal interpretation. As part of our quasi-experimental design, we exploit the fact that some states did not expand Medicaid. Because of the coverage gap in these states and the threshold for accessing Marketplace subsidies, insurance is dramatically more affordable for households with income above 100% of the FPL. We therefore expect that the likelihood of enrolling in coverage is higher among households with income above that threshold than among households with incomes that are lower but too high for Medicaid eligibility. Hence, the subsidy threshold offers a source of variation in insurance coverage that is not correlated with individual's unobservable characteristics or current financial conditions.

Figure 4 summarizes coverage trends in 2015 and 2016 for tax filers who have incomes in the range of 0% to 200% of the FPL. Of these filers, 4,973 of live in states that did not expand Medicaid and 9,018 live in states that expanded Medicaid.²⁹ Dots represent the mean of the y-axis variable within small bins (ranges) of income (the x-axis variable). Figure 4 plots the average share of respondents reporting private insurance coverage within each bin of income.

Figure 4 shows that, consistent with our expectations, sample participants living just above the poverty line in states that did not expand Medicaid are about 10

Figure 4. The start of subsidies generates a jump in Marketplace coverage in nonexpansion states. Share of respondents with private insurance coverage. Sample not weighted. Sample includes 2015 and 2016 respondents with incomes between 0 and 200% of the federal poverty line (FPL). Sample excludes respondents with access to alternative forms of insurance such as through an employer. Dots represent the averages for the observations within each of 15 bins of income on each side of the subsidy threshold (100% FPL).



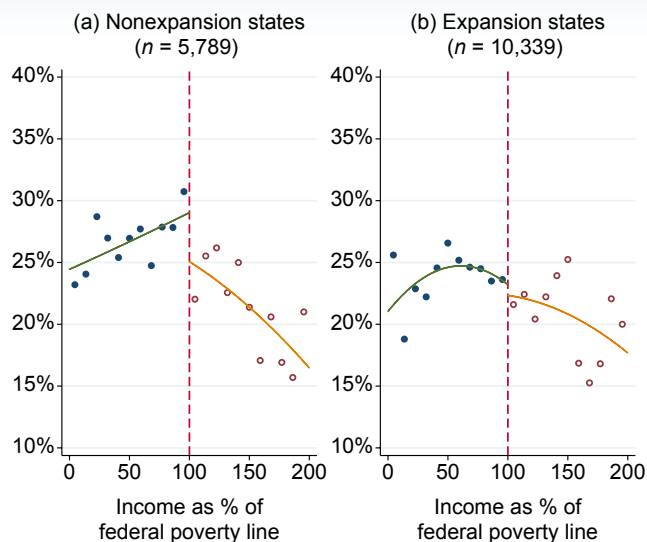


Figure 5. A jump in Marketplace coverage is linked to a decline in rent/mortgage hardship. Share of respondents reporting delinquent housing payments. Sample not weighted ($n = 16,128$). Sample includes 2015 and 2016 respondents with incomes between 0 and 200% of the federal poverty line (FPL). Sample excludes respondents with access to alternative forms of insurance, such as through an employer. Dots represent the averages for the observations within each of 11 bins of income on each side of the subsidy threshold (100% of the FPL).

percentage points more likely to obtain private insurance than are sample participants living just below the poverty line. Furthermore, the same demarcation in the prevalence of private insurance coverage is not observed among respondents residing in states that expanded Medicaid to adults earning up to 138% of the FPL.³⁰ In other words, Marketplace coverage is discontinuous in nonexpansion states among households with income around 100% of the FPL, the threshold at which federal subsidies come into play.

If health insurance coverage affects financial outcomes, discontinuity in coverage should translate into a discontinuity in the prevalence of rent/mortgage hardship at the subsidy threshold. As shown in Figure 5(a), the share of participants who fell behind on mortgage or rent payments declines by about 4 percentage points at the subsidy threshold.³¹ This decline equates to a 15% reduction relative to the average prevalence of delinquent housing payments to the left of the threshold (27%).

If, as we suspect, the mechanism driving reduced rent/mortgage hardship is reduced illiquidity caused by medical bills, then *medical bill illiquidity* should also be discontinuous. We measure medical bill illiquidity as the ratio of a household's medical spending to its liquid assets.³² Figure 6(a) illustrates medical bill illiquidity among a subsample conditioned on reported experience of a recent medical shock (i.e., a shock occurring within the previous 6 months). We observe a decline of approximately 20% at the threshold in the logged value of this ratio. These observations are consistent with what we would expect to find if insurance reduced the degree of financial strain generated by large, unexpected medical expenditures.

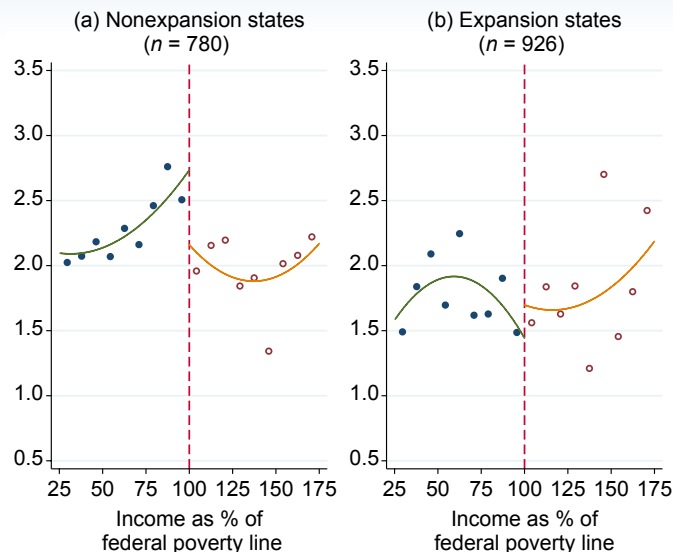


Figure 6. Illiquidity due to medical bills declines at the threshold for Marketplace subsidies. Mean of (logged) medical spending over liquid assets following a medical shock. Sample not weighted. Sample includes 2015 and 2016 respondents who have incomes between 25% and 175% of the federal poverty line (FPL) and who report experiencing a recent unexpected medical expense. Sample excludes respondents with access to alternative forms of insurance, such as through an employer. Dots represent the averages for the observations within each of nine bins of income on each side of the subsidy threshold (100% of the FPL).

An easy falsification test is to run these same analyses on participants living in states that expanded Medicaid (i.e., where there is no discontinuity in insurance coverage at 100% of the FPL). As Figures 5(b) and 6(b) document, expansion states show none of the same discontinuities in financial distress evident in nonexpansion states. These findings support the theory that the jump in insurance access at the poverty line in nonexpansion states is driving improvements in the ability of affected households to make home payments.

Discussion

While a number of studies have documented the importance of Medicaid coverage in reducing financial strain among low income households,³³ we believe that this is the first study to causally link household financial conditions and the Marketplaces established under the ACA.

Results based on the administrative tax data and survey responses from a large sample of LMI households during 2015 and 2016 indicate that the rate of delinquency on rent or mortgage payments is about 15% lower among near-poverty-line households that qualify for Marketplace subsidies than among those that do not qualify. A delinquent housing payment is a good signal of a household facing an extreme liquidity problem—the kind of problem that health insurance coverage is most likely to measurably affect in the short term.

The expansion of health insurance access has a number of direct benefits for LMI populations, which are often less healthy than the general population, less likely to

receive treatment, and more exposed to environmental and social conditions that can negatively affect their overall well-being.³⁴ This research demonstrates, however, that the benefits of health insurance extend beyond the direct benefits to physical health, manifesting in financial well-being as well. The chief outcome explored in this study—the prevalence of delinquent housing payments—is of particular concern to LMI populations. Housing instability is a common experience among LMI households.³⁵ Moreover, housing instability carries a number of risks beyond loss of shelter. It has been linked to negative mental-health outcomes and poorer early childhood developmental outcomes.³⁶

This brief presents new evidence that, within just 3 years, expanded health insurance access for LMI populations through the ACA Marketplaces likely reduced rent/mortgage hardship, thereby, potentially lessening the prevalence of housing instability and the associated downstream outcomes documented by prior researchers. It follows that future work should explore the influence of health insurance coverage on downstream and longer term indicators of financial well-being. For example, it would be interesting to know whether improved, preventive health-care access leads to higher labor output and to college attendance of dependent children.³⁷

This brief has demonstrated the financial benefits of insurance, but insufficient take-up of existing low-cost health-insurance options is now as much of a challenge as is lack of access. Indeed, 60% of uninsured LMI households in our survey qualified for low cost insurance, either through Medicaid or through subsidized Marketplace insurance, in the state where these residents lived in 2016. Future research should also explore the reasons eligible individuals do not to acquire health insurance through Medicaid or the subsidized Marketplace.

Acknowledgments

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The Refund to Savings Initiative would not exist without the commitment of Intuit and its Tax and Financial Center, including the dedication of our collaborators, David Williams, Melissa Netram, Joe Lillie, Krista Holub, and many others on the Intuit team who have worked diligently in planning and implementing the experiment. Lastly, we thank the thousands of taxpayers who consented to participate in the research surveys and shared their personal financial information.

Disclaimer

Statistical compilations disclosed in this document relate directly to the bona fide research of and public policy discussions concerning savings behavior as it relates to tax compliance. Intuit Inc. shared administrative data from the TurboTax Freedom Edition product with the researchers in accordance with Title 26 U.S. Code §7216, through the sharing of anonymous, aggregated data from no fewer than 10 people,

in the form of high level statistical compilations, and individual-level data only with the prior explicit consent of TurboTax Freedom Edition customers. Compilations follow Intuit's policies and internal procedures to help ensure the privacy and confidentiality of customer tax data.

End Notes

1. Mazumder and Miller (2016).
2. Fitzgerald, Bias, and Gurley-Calvez (2015); Hu, Kaestner, Mazumder, Miller, and Wong (2016); Lee (2016).
3. Results presented in this brief summarize findings from a forthcoming working paper by Gallagher, Gopalan, and Grinstein-Weiss. Email emily.gallagher@wustl.edu to request a copy.
4. Patient Protection and Affordable Care Act of 2010, Pub. L. No. 111-148, 124 Stat. 119 (2012). On Medicaid expansion, see Sec. 2001 at 124 Stat. 271-279. On subsidies for insurance, see Secs. 1401-1402 at 124 Stat. 213-224.
5. Garfield and Damico (2016). In 2016, 100% of the FPL was \$11,880 for an individual and \$24,300 for a family of four; 400% of the FPL was \$47,520 for an individual and \$97,200 for a family of four (Annual Update of the HHS Poverty Guidelines, 2016).
6. HealthCare.gov (n.d.).
7. Kaiser Family Foundation (n.d.).
8. For example, these subsidies raise the actuarial value (the portion of health care expenses covered by the plan) of a silver plan from 70% to 94% for participants earning between 100% and 150% of the FPL. The actuarial value of the same plan falls slightly to 87% for participants earning between 150% and 200% of the FPL (DeLeire, Chappel, Finegold, & Gee, 2016).
9. Kaiser Family Foundation (n.d.).
10. For example, if a family of four making \$20,000 per year (82% of the FPL) and living in a nonexpansion state chooses to insure the two children through either the Children's Health Insurance Program or Medicaid and to insure the two adults (both 30 years old) through a silver plan purchased on the Marketplace, that family could expect to pay the following for the silver plan: premiums of \$531 per month (\$6,371 per year, or 31.86% of the family's annual income) and 30% of the cost of the adults' medical services, up to an out-of-pocket limit of \$13,700 (Kaiser Family Foundation, n.d.).
11. Garfield, Damico, Cox, Claxton, and Levitt (2016).
12. The Refund to Savings Initiative assesses the outcomes of behavioral economics techniques aimed at encouraging LMI tax filers to save all or a part of their expected federal tax refunds. This brief uses the same data set to study a different set of research questions.
13. Intuit offers the TurboTax Freedom Edition software as part of the Internal Revenue Service's Free File program. For more on the Free File program, see: <https://www.irs.gov/uac/about-the-free-file-program>.
14. We assess financial outcomes in the final part of this brief. We do this using a research design that requires us to restrict the sample to participants who have incomes between 0% and 200% of the FPL and who live in the 18 states that have not expanded Medicaid to adults earning over 100% of the FPL. In the pooled 2015-2016 data set, 4,973 participants meet these criteria. We exclude 2014 data from this part of the analysis because the Marketplaces had just opened at the time of tax filing in 2014 and we would not expect the Marketplaces to affect financial outcomes so immediately.

15. Our weighting procedure involves estimating sampling probabilities with a logistic regression on American Community Survey data appended onto our sample data. Weights are the inverse of the estimated probability of being sampled. Before calculating the weights, we restrict the American Community Survey data set to participants aged 19 to 64 with annual incomes below \$35,000, our population of interest. Sampling probabilities are based on the same demographic characteristics (census division, education, gender, race, and age) used by the FINRA (Financial Industry Regulatory Authority) Investor Education Foundation's National Financial Capability Study. For more on the Financial Capability Study, see <http://www.usfinancialcapability.org>.
16. Participants often round their responses to continuous variables. They may also misremember or type the wrong value. For this reason, we remove aberrant values (e.g., \$1 billion) and log all continuous variables.
17. For ease of exposition in this brief, a positive response to this question is taken to indicate a "delinquent" housing payment and an expression of "rent/mortgage hardship."
18. Tables 2 and 3 do not employ sampling weights. Weights are used in Table 1 and Figure 2 in order to make our sample demographically representative of the national LMI adult population. In contrast, Tables 2 and 3 are intended to explore only a subset of our sample: those respondents who are uninsured and live in states with particular program eligibility thresholds.
19. We recognize that affordability is subjective and not all LMI households would consider subsidized premiums, even those as low as \$20 per month, to be affordable. Nonetheless, in some cases, subsidized Marketplace insurance costs less than insurance available for purchase through an employer, and take-up rates for employer insurance are high: around 73% for households with incomes below 250% of the FPL (Blavin, Shartzter, Long, & Holahan, 2015).
20. Our estimate of the share of uninsured LMI adults who are eligible for assistance appears to be similar to estimates produced by the Kaiser Family Foundation once those estimates are adjusted to match our sample criteria (see Garfield et al., 2016).
21. Several surveys conducted by the Kaiser Family Foundation support this hypothesis (see, e.g., Garfield et al., 2016).
22. Finkelstein et al. (2012).
23. Gross and Notowidigdo (2011); Hu et al. (2016).
24. Barcellos and Jacobson (2015).
25. Gross and Notowidigdo (2011); Mazumder and Miller (2016).
26. We find that 57% of sample participants who live in nonexpansion states and have incomes under 100% of the FPL report being recently delinquent on regular bills. By comparison, 27% report being recently delinquent on housing payments.
27. Gross, Notowidigdo, and Wang (2014); Jagtiani and Li (2014).
28. Regardless of an individual's insurance status, a major health shock, such as a hospitalization, may cause missed work hours and, therefore, reduced income, which, in turn, may result in rent/mortgage hardship. However, the finding that the incidence of rent/mortgage hardship is greater for the uninsured following a medical shock suggests that the underlying mechanism is not income loss alone; expenditures associated with the medical shock may also play a role.
29. We restrict this analysis to include only those participants without coverage through an employer, school, or family member since people with access to these alternative forms of insurance are unlikely to seek (or qualify for) subsidized Marketplace insurance.
30. It is interesting to note that incidence of private insurance coverage (Figure 4) is not closer to zero even among households with incomes that are below subsidy eligibility (less than 100% of the FPL in nonexpansion states) or that overlap with Medicaid eligibility (less than 138% of the FPL in expansion states). There are several possible explanations. First, there could be a degree of misreporting (see the Sample section of this brief). Second, people who are under the age of 30 and cannot afford private insurance are permitted to purchase low-cost "catastrophic" plans (not sold through the Marketplace) without paying a penalty under the ACA mandate. Third, some participants may fall into a loophole permitting people who have projected incomes above 100% of the FPL to qualify for Marketplace premium and cost-sharing subsidies, which don't need to be refunded if actual incomes later fall below the poverty line. Fourth, some enrollees may be in quasi-retirement, having incomes below 100% of the FPL but the necessary resources to purchase Marketplace insurance. Finally, these participants might be recently unemployed and covered through COBRA (the common term for postemployment coverage provisions in the Consolidated Omnibus Budget Reconciliation Act of 1985).
31. In their forthcoming working paper, Gallagher et al. (in press) use a fuzzy regression discontinuity approach implemented through a bivariate probit model and find that a 10 percentage point increase in the probability of private insurance coverage reduces the probability of rent/mortgage hardship by about 5 percentage points after controlling for demographic factors.
32. Medical spending includes all nonreimbursed premiums and out-of-pocket costs. Liquid assets include bank account balances, cash, money market assets, and prepaid card balances.
33. See, e.g., Finkelstein et al. (2012); Gross and Notowidigdo (2011); Hu et al. (2016).
34. Morello-Frosch, Zuk, Jerrett, Shamasunder, and Kyle (2011); Woolf et al. (2015).
35. Curtis, Corman, Noonan, and Reichman (2014); Kushel, Gupta, Gee, and Haas (2006); Phinney, Danziger, Pollack, and Seefeldt (2007).
36. Suglia, Duarte, and Sandel (2011); Ziolo-Guest and McKenna (2014).
37. Although prior research has found significant downstream effects on children from children's health insurance coverage (Cohodes, Grossman, Kleiner, and Lovenheim, 2016; Brown, Kowalski, and Lurie, 2015), research is less clear on how coverage of adults affects the long-term financial outcomes of adults and their children.

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