Affordable Care Act Medicaid Expansions and Self-Reported Financial Health

Vivekananda Das[1]

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Abstract: This study investigates the association between 2014 Medicaid expansions under the 2010 Patient Protection and Affordable Care Act and self-reported indicators of financial health for low-income childless non-elderly adults without disabilities – the primary beneficiaries of these expansions. I use data from the National Financial Capability Study 2009-2021 and estimate models using difference-in-differences and event study approaches exploiting the temporal and spatial heterogeneity in state-level Medicaid expansions. Similar to existing literature, findings suggest that the 2014 Medicaid expansions were associated with a substantial increase in health insurance coverage and a decrease in unpaid medical bills past due date among the newly eligible in the post-2014 years. Additionally, findings indicate that these expansions were linked to higher financial satisfaction in 2015 and a lower perceived indebtedness and difficulty paying for usual household expenses in 2021, the second year of the COVID-19 pandemic. Overall, these results suggest that although gaining health insurance coverage does not impact the beneficiaries' perceived financial satisfaction over an extended period, it works as a buffer against the stress induced by indebtedness and struggle with usual household expenses during an economic downturn.

Keywords: Medicaid Expansion; Health Insurance; Financial Health; Financial Satisfaction; National Financial Capability Study

[1] Ph.D. candidate in Human Ecology (Specialization: Consumer Behavior and Family Economics) at the University of Wisconsin-Madison. Email: vdas3@wisc.edu.

Introduction

Lack of health insurance coverage for millions is a major social issue in the United States. In 2010, about 48 million non-elderly Americans were uninsured (Finegold et al., 2014). The absence of health insurance can have devastating consequences for the financial health of those who suffer from a severe illness or get seriously injured in an accident. Some financial challenges faced by the uninsured in case of a mishap include delinquency on medical and non-medical bills, reduced access to credit, and increased chances of filing for bankruptcy (Dobkin et al., 2018; Hu et al., 2018).

The 2010 Patient Protection and Affordable Care Act (ACA) expanded the eligibility to enroll in Medicaid – one of the two major public health insurance programs in the country – to low-income childless non-elderly adults without disabilities. This expansion played a crucial role in bringing down the number of uninsured Americans to about 28 million in 2015 (Finegold et al., 2014). As Medicaid expansions specifically targeted low-income individuals, for whom illness imposes a significant financial burden, one justification of ACA was to increase the financial protection of the insured (Hu et al., 2018).

A growing body of literature finds a positive impact of Medicaid expansions on multiple indicators of financial health (Allen et al., 2017; Batty et al., 2022; Brevoort et al., 2017; Callison & Walker, 2021; Caswell & Waidmann, 2019; Hu et al., 2018). These indicators include credit score, debt sent to third-party collection agencies, and bankruptcy. Although existing studies contribute to our understanding of the role health insurance coverage plays in enhancing *indirectly* measured financial health, it is unclear how the newly insured *directly* assess their finances.

To elaborate, individuals may have different perceptions of their finances even though they are in objectively identical situations. For example, Keese, 2012 finds that subjective debt burden depends on many non-financial factors. Self-reported indicators of financial health matter because the literature suggests that these measures are more robust and significant predictors of mental health than objective indicators (Asebedo & Wilmarth, 2017). Furthermore, the literature suggests these indicators are linked to many outcomes with implications for societal wellbeing, such as health risk behaviors (Sampson et al., 2021), self-harm behaviors (Barnes et al., 2016), and marital instability (Gudmunson et al., 2007). Therefore, investigating the impact of Medicaid expansions on self-reported indicators of financial health can be helpful in terms of developing a deeper understanding of how public health insurance expansion affects individual and household wellbeing.

This paper uses data from the National Financial Capability Study (NFCS) 2009, 2012, 2015, 2018, and 2021 to investigate the association between 2014 Medicaid expansions and self-reported indicators of financial health. For a more comprehensive exploration, I use two types of indicators available in the NFCS:

descriptive and evaluative. The descriptive indicators show whether the respondent had health insurance coverage, unpaid medical bills past due date, spending above income, large drop in income, and emergency funds. The evaluative indicators show how respondents *assessed* their indebtedness, difficulty paying for usual household expenses, and financial satisfaction. I estimate models using difference-in-differences (DD) and event study approaches, which exploit temporal and spatial heterogeneity in Medicaid expansions.

Regarding the impact on descriptive indicators, similar to existing literature, the results of this study show that the 2014 Medicaid expansions were, on average, associated with a substantial increase in health insurance coverage and a decrease in unpaid medical bills among the newly eligible in the post-2014 years. Regarding the impact on evaluative indicators, findings reveal that these expansions were linked to higher financial satisfaction in 2015, the year immediately after the expansions, but not in the later years. Also, estimates suggest lower perceived indebtedness and difficulty in paying for usual household expenses in 2021, the second year of the COVID-19 pandemic. Everything considered, the findings of this study suggest that gaining health insurance coverage works as a buffer against the stress induced by indebtedness and struggle with usual household expenses during an economic downturn, although it may have little impact on the beneficiaries' perceived financial satisfaction over an extended period.

This study makes two contributions to the literature on the impact of public health insurance expansion on the financial health of economically disadvantaged households in the United States. First, it attempts to shed light on the perspectives of the newly eligible by incorporating three outcome variables that directly capture their evaluations of financial health. Second, it explores the yearly variations in the association, which help elucidate the relationship between public health insurance expansion and people's self-reported financial health in relatively more (i.e., 2015 and 2018) and less (i.e., 2021) stable economic environments.

Background

Overview of ACA Medicaid Expansions

Medicaid, a means-tested public health insurance program jointly funded by the federal and state governments and administered by the latter, covers Americans in different stages of life, including low-income children and parents, people with disabilities, pregnant people, and older adults (AHIP, 2019). Before 2014, in general, non-elderly childless adults without disabilities were not eligible for Medicaid (Lee & Porell, 2020). The 2010 ACA expanded Medicaid eligibility to all adults with income up to 138% of the federal poverty line (FPL). States could expand their Medicaid programs starting in 2010, and 10

states and the District of Columbia (DC) partially or fully expanded before the nationwide expansion on January 1, 2014 (Caswell & Waidmann, 2019; Lee & Porell, 2020; Schmidt et al., 2020). However, the June 2012 Supreme Court ruling in the *National Federation of Independent Business v. Sebelius* case made state-level Medicaid expansions optional (Medicaid and CHIP Payment and Access Commission, 2022). By 2021, 39 states and DC had expanded Medicaid (Kaiser Family Foundation, 2022; Schmidt et al., 2020).

Based on the state-level Medicaid expansion decisions by 2021, states can be broadly divided into four groups: 1) Early expanders, 2) 2014 expanders, 3) Post-2014 expanders, and 4) Non-expanders. Below, I mention the names of the states in each category.

Early expanders (10 states and DC): Arizona (2010), California (2012), Connecticut (2010), Delaware (2010), DC (2010), Hawaii (2010), Massachusetts (2010), Minnesota (2011), New Jersey (2012), New York (2010), and Vermont (2010).

2014 expanders (15 states): Arkansas, Colorado, Illinois, Iowa, Kentucky, Maryland, Michigan, Nevada, New Mexico, North Dakota, Ohio, Oregon, Rhode Island, Washington, and West Virginia.

Post-2014 expanders (13 states): Alaska (2015), Idaho (2020), Indiana (2015), Louisiana (2016), Maine (2019), Missouri (2021), Montana (2016), Nebraska (2020), New Hampshire (2015), Oklahoma (2021), Pennsylvania (2015), Utah (2020), and Virginia (2021).

Non-expanders (12 states): Alabama, Florida, Georgia, Kansas, Mississippi, North Carolina, South Carolina, South Dakota, Tennessee, Texas, Wisconsin[2], and Wyoming.

The temporal and spatial heterogeneity in state-level Medicaid expansions created a quasi-experimental context, which can be utilized to study the impact of Medicaid expansions on financial health of the newly eligible.

Financial Health

According to Weida et al., 2020, financial health is "understood as one's ability to manage expenses, prepare for and recover from financial shocks, have minimal debt, and ability to build wealth." Financial health can be explored using indirect and direct indicators[3]. Indirect indicators are available in the credit bureau and administrative records. For example, credit bureau data provide information on people's credit score, bankruptcy, current balance, payment history, etc., and administrative records provide information on

[2] Wisconsin, although a non-expansion state, expanded Medicaid coverage to adults without dependent children up to 100% of the FPL (Gates & Rudowitz, 2014).

[3] By indirect indicators, I refer to outcomes that are operationalized based on a source other than the respondents themselves. And, by direct indicators, I refer to outcomes that are operationalized based on survey responses.

income, tax records, employment history, etc. Although these indirect indicators provide a detailed description of people's finances, they do not capture how people *evaluate* their finances. On the contrary, direct/self-reported indicators can be operationalized based on people's responses to survey questions about their finances. These questions can be both descriptive and evaluative. For example, in the NFCS, one question asks: "Do you currently have any unpaid bills from a health care or medical service provider (e.g., a hospital, a doctor's office, or a testing lab) that are past due?" The response to this question (Yes/No) describes one aspect of a respondent's financial health. Another question in the NFCS asks: "Overall, thinking of your assets, debts and savings, how satisfied are you with your current personal financial condition?" The response to this question (on a scale ranging from 1 to 10, with a higher score indicating higher satisfaction) shows how the respondent made an overall evaluation of their finances.

How Do Medicaid Expansions Affect the Financial Health of the Newly Insured?

Medicaid expansions can affect the financial health of the newly insured primarily through two channels. First, these expansions provide health insurance coverage, which helps alleviate the financial burden of out-of-pocket medical expenditures. As medical expenses can be catastrophic in many cases (e.g., fatal accidents), the expanded coverage potentially protects some people from medical debt, delinquency, and bankruptcy. Second, the health insurance provided through Medicaid tends to be more generous because, in most cases, beneficiaries pay no premiums and no copayments or coinsurance (Caswell & Waidmann, 2019). Therefore, Medicaid expansions reduce the probability of any out-of-pocket expenditure and can lead to some savings for those who would have opted for less generous health insurance coverage in the absence of these expansions.

Conceptually, it seems reasonable to hypothesize that Medicaid expansions would improve aspects of financial health directly related to medical expenses (e.g., reduced unpaid medical bills past due date); however, it is difficult to predict the effect of the expansions on other aspects of financial health. Hu et al., 2018 argue that Medicaid expansions, by providing health insurance coverage, can decrease borrowing related to health care costs; however, the newly insured may reduce their savings for precautionary reasons and increase their consumption and non-medical debt. Consequently, the net effect of these expansions on total debt and other aspects of financial health is conceptually ambiguous due to these opposing possibilities.

Empirical Evidence on the Impact of Medicaid Expansions on Financial Health

In the extant literature, several studies used credit bureau data to investigate the impact of Medicaid expansions on multiple indirect indicators of financial health. Brevoort et al., 2017 used a nationally representative panel of 5 million credit records and found that ACA Medicaid expansions reduced unpaid

medical bills sent to collection, prevented the incidence of new delinquencies, and positively affected credit scores. Similar findings are reported by Caswell & Waidmann, 2019 who used a novel dataset from a major credit bureau. Hu et al., 2018 used the Federal Reserve Bank of New York Consumer Credit Panel/Equifax (CCP) dataset and found that Medicaid expansions reduced medical debt and the amount of debt sent to third-party collection agencies; however, they found little effect on credit score and no effect on bankruptcy. The efficacy of Medicaid expansions in terms of reducing medical debt is also reported by Callison & Walker, 2021 and Batty et al., 2022. In another study, Allen et al., 2017 found that early Medicaid expansion in California was associated with a reduction in payday borrowing.

Overall, existing literature strongly suggests that Medicaid expansions reduce medical debt. In addition, there appears to be some evidence regarding the impact of the intervention on other aspects of personal finance (e.g., credit score, bankruptcy, lien, and delinquency) beyond a reduction in medical debt.

Importantly, previous studies did not investigate how the newly eligible evaluated different aspects of their finances – such as level of indebtedness and difficulty paying for usual household expenses – or their overall financial satisfaction. This study attempts to address the gap and contribute to the literature in two ways. First, for a comprehensive evaluation, it uses both descriptive and evaluative indicators of financial health. Second, it explores how the association between Medicaid expansions and these indicators varied in the post-2014 years. The exploration of the yearly heterogeneity in the association contributes to our understanding of how public health insurance expansion provides financial relief to resource-constrained individuals under different economic environments.

Data

National Financial Capability Study

This study uses data from the National Financial Capability Study (NFCS) 2009, 2012, 2015, 2018, and 2021. The Financial Industry Regulatory Authority (FINRA) Investor Education Foundation conducts this tri-annual survey to monitor and better understand the financial capability in the United States (FINRA Investor Education Foundation, 2022). The combined dataset is repeated-cross-sectional because the NFCS surveys different people in different years.

The NFCS provides data on multiple self-reported indicators – both descriptive and evaluative – of financial health. Additionally, the survey includes socioeconomic variables, such as the age group of the respondent, state of residence, number of financially dependent children, marital status, disability status, and annual household income category. The availability of these variables in the NFCS, unlike in the credit bureau

data, helps identify the respondents most likely to be the beneficiaries of the ACA Medicaid expansions. Table A1 in Appendix describes the operationalization of the eight self-reported indicators of financial health used as outcome variables in this study.

Analytical Sample

In order to construct an analytical sample most likely to be affected by the Medicaid expansions, first, I select NFCS respondents with five key characteristics: 1) lived in a household with less than $15,000 annual income[4], 2) did not have any financially dependent children, 3) aged between 18 and 64, 4) did not report any disabilities, and 5) responded to the eight questions on financial health. Next, I select respondents from two types of states: states which expanded Medicaid in 2014 (heretofore 2014-expansion states) and states which did not expand Medicaid by 2021[5] (heretofore non-expansion states). I select respondents from these two groups because of two reasons. First, this approach avoids the issue of differential treatment timing, which can bias the results of two-way fixed effects models estimated using linear regression (Goodman-Bacon, 2021). Second, it creates a two-group, two period context, which facilitates the invocation of simpler counterfactual assumptions.

Table A2 in Appendix presents the summary statistics of the main analytical sample. Looking at the table, it appears that the average respondents from the 2014-expansion and non-expansion states are somewhat different. For example, in the pre-2014 years, the percentage of respondents who identified as Non-Hispanic White was 59% and 72% from the non-expansion and 2014-expansion states, respectively. Additionally, the average respondents within each group in the pre- and post-2014 periods appear to have somewhat different characteristics as well. For example, the 18-25 age group represents 45% and 39% of all respondents from the non-expansion states in pre-and post-2014 periods, respectively. For the non-expansion states, the same group represents 43% and 38% of all respondents in pre-and post-2014 years, respectively. I attempt to account for these differences in respondent characteristics by adding socioeconomic control variables to the estimated empirical models.

Descriptive Findings

[4] In 2009, for a one person household living in 48 contiguous states or DC, the poverty level was $10,830, and 138% of this value equals to approximately $14,945. As the poverty levels were higher for larger households and in the subsequent years, I assume that respondents living in households with annual income below $15,000 were under 138% of the FPL. However, this income group does not capture everyone under 138% of the FPL.

[5] I exclude respondents from Wisconsin as the state expanded Medicaid coverage to adults without dependent children up to 100% of the FPL (Gates & Rudowitz, 2014).

Table 1 presents the descriptive findings for the eight outcomes. It provides both the first differences (Δ1 and Δ2) and canonical difference-in-differences (DD=Δ2 – Δ1) estimates for each outcome. Findings suggest that in the post-2014 years, on average, the percentage of respondents with health insurance coverage increased to a greater extent (22 percentage points) in the 2014-expansion states relative to non-expansion states. Similarly, results suggest that in the post-2014 years, on average, the percentage of respondents reporting unpaid medical bills past due date and difficulty covering expenses decreased to a greater extent (13 and 6 percentage points, respectively) in the 2014-expansion states. For the other five outcomes, statistically insignificant DD estimates suggest similar post-and pre-2014 changes for the respondents from the two groups. One limitation of these descriptive findings is that the methodology applied to obtain them did not account for socioeconomic and state-level temporal factors. The next section explains the empirical strategy used in this paper to address these concerns.

Empirical Strategy

Difference-in-Differences Approach

I estimate the following model to investigate the effect of 2014 Medicaid expansions on self-reported indicators of financial health for the main analytical sample (i.e., childless non-elderly adults without disabilities living in households with income below $15,000):

$$Y_{ist} = \gamma_s + \gamma_t + \beta\, MC14_s * Post_t + X_i + \sigma_{st} + \epsilon_{ist} \quad (1)$$

where, Y_{ist} is the value of the outcome for respondent i from state s in year t. γ_s refers to a vector of state fixed effects which account for all the time-invariant state-level factors that identically affected the outcomes for the respondents living in state s. γ_t refers to a vector of year fixed effects which account for all the temporal events that identically affected the outcomes for all the respondents in year t. $MC14_s$ is a dummy variable, which takes a value of 1 for the 2014-expansion states and 0 for the non-expansion states. $Post_t$ is a dummy which takes a value of 1 for those who responded in 2015, 2018, and 2021 and 0 for those who responded in 2009 and 2012. X_i refers to a vector of these socioeconomic factors: gender, age group, ethnicity, education, and marital status. σ_{st} refers to a vector of these state-level year-specific factors[6]: whether the governor was a democrat, fraction of state house that was democrat, fraction of state

[6] In the context of this study, one important question is: What are the factors that make some states more likely to expand Medicaid? Rocco et al., 2020 discuss the role of four factors on the state-level expansions: 1) competitiveness of elections, 2) availability of ballot initiatives, 3) interest group coalitions, and 4) entrepreneurial administrators. These factors are unobserved in the context of this study given the unavailability of relevant data in the NFCS. I use data from publicly available National Welfare Data (NWD) provided by the University of Kentucky Center for Poverty Research, 2021. This dataset includes several variables capturing

senate that was democrat, unemployment rate, minimum wage, poverty rate, and state-level Earned Income Tax Credit rate as a percentage of Federal Earned Income Tax Credit rate. Lastly, ϵ_{ist} is the error term. The coefficient of interest in equation (1) is β, which, conditional on the covariates, is an estimator of the following:

$$\beta = (\overline{Y}_{\text{2014−expansion states, post−2014}} - \overline{Y}_{\text{2014−expansion states, pre−2014}}) - (\overline{Y}_{\text{non−expansion states, post−2014}} - \overline{Y}_{\text{non−expansion states, pre−2014}})$$

Event Study Approach

One limitation of the difference-in-differences specification in equation (1) is that it cannot detect variation in the associations between Medicaid expansions and self-reported indicators of financial health in the post-2014 years. The yearly heterogeneity in the associations is possible due to two reasons. First, descriptive statistics shown in Appendix Table A3 suggests that the proportion of respondents with health insurance coverage varied in the post-2014 years both in 2014-expansion and non-expansion states, which could have contributed to differential financial challenges over the years for both groups. Second, given that the COVID-19 pandemic may have created unique financial challenges for the uninsured, it is possible that the effect of Medicaid eligibility was different in 2021 than the previous years. As an attempt to explore the yearly heterogeneity in the association, I use an event study specification and estimate the following model:

$$Y_{ist} = \gamma_s + \beta_1 Y_{2009} + \beta_2 Y_{2015} + \beta_3 Y_{2018} + \beta_4 Y_{2021} + \beta_5 Y_{2009} * MC14 + \beta_6 Y_{2015} * MC14 + \beta_7 Y_{2018} * MC14 + \beta_8 Y_{2021} * MC14 + X_i + \sigma_{st} + \epsilon_{ist} \quad (2)$$

where, Y_{2009}, Y_{2015}, Y_{2018}, and Y_{2021} refer to dummy variables which take a value of 1 for the respondents in 2009, 2015, 2018, and 2021 NFCS, respectively and 0 otherwise. Here, respondents in the 2012 NFCS form the reference category. The coefficient of interest in equation (2) are β_5, β_6, β_7, and β_8, which, conditional on the covariates, are estimators of the following:

$$\beta_5 = (\overline{Y}_{\text{2014−expansion states, 2009}} - \overline{Y}_{\text{2014−expansion states, 2012}}) - (\overline{Y}_{\text{non−expansion states, 2009}} - \overline{Y}_{\text{non−expansion states, 2012}})$$

$$\beta_6 = (\overline{Y}_{\text{2014−expansion states, 2015}} - \overline{Y}_{\text{2014−expansion states, 2012}}) - (\overline{Y}_{\text{non−expansion states, 2015}} - \overline{Y}_{\text{non−expansion states, 2012}})$$

aspects of yearly state-level political and economic conditions. I merge the NWD dataset with the combined NFCS dataset using a common year variable.

$$\beta_7 = (\overline{Y}_{2014-\text{expansion states, } 2018} - \overline{Y}_{2014-\text{expansion states, } 2012}) - (\overline{Y}_{\text{non-expansion states, } 2018} - \overline{Y}_{\text{non-expansion states, } 2012})$$

$$\beta_8 = (\overline{Y}_{2014-\text{expansion states, } 2021} - \overline{Y}_{2014-\text{expansion states, } 2012}) - (\overline{Y}_{\text{non-expansion states, } 2021} - \overline{Y}_{\text{non-expansion states, } 2012})$$

Parallel Trends Assumption

The critical identifying assumption for both equations (1) and (2) is that "conditional on the covariates, in the absence of 2014 Medicaid expansions, the trends in the average outcomes for the 2014-expansion and non-expansion groups would have evolved in parallel between 2015 and 2021." Although the parallel trends assumption is *fundamentally untestable*, researchers often consider parallel *pre-treatment trends* as evidence supporting it. Ideally, the availability of outcome variable data over an extended period in the pre-treatment years is desirable for investigating parallel pre-treatment trends. In that respect, one limitation of the NFCS data is that there are only two pre-treatment years (i.e., 2009 and 2012) in which the survey was conducted. Also, the 2009 NFCS did not include two outcome variables (unpaid medical bills past due date and debt perception). Nevertheless, zero values of β_5 in equation (2) can be interpreted as a suggestive evidence of parallel pre-trends for the six outcome variables available in all the NFCS waves.

Additional Analyses

Because people living in households with incomes below 138% of the FPL were eligible for expanded Medicaid coverage, there should be no effect of these expansions on the financial health of the respondents living in households with incomes above 138% of FPL. Note that the NFCS provides the income variable in categories, which makes the exact income of the respondents' households unknown. Therefore, one key limitation of this study is that it cannot accurately identify all the respondents living in households with income below 138% of the FPL. It seems reasonable to assume that NFCS respondents living in households with income below $15,000 were below the FPL, and those living in households with income above $50,000 were above the FPL. However, it is difficult to determine what proportion of the NFCS respondents living in households with income between $15,000 and $50,000 were below the FPL. Nevertheless, to explore the heterogeneity across income groups, I estimate equations (1) and (2) for childless non-elderly adults without disabilities living in households with annual income between $15,000 and $25,000, between $25,000 and $50,000, and $50,000 and above.

Additionally, the ACA requires that plans and issuers offer dependent child coverage until a child reaches the age of 26 (Centers for Medicare & Medicaid Services, 2023). Consequently, it is possible that some people in the main analytical sample – which consists of NFCS respondents aged between 18 and 64 –

gained health insurance coverage through the aforementioned provision of ACA and not through the Medicaid expansions. Therefore, as a robustness check, I estimate equations (1) and (2) by narrowing the main analytical sample to respondents aged between 25 and 64[7].

I estimate all the models in R using the fixest package (Berge, 2018). For estimation, I use the weighted least squares (WLS) procedure using the weights provided in the NFCS and cluster the standard errors at the state level.

Results

Difference-in-Differences Findings

Table 2 presents the estimated values of the coefficient of interest (β) in the DD specification shown in equation (1). The table's columns 1-8 refer to the eight outcomes, and the rows 1-5 refer to the five analytical samples. For the main analytical sample, estimates suggest that 2014 Medicaid expansions were, on average, associated with 21 percentage points (95% CI [15, 27], $p<0.05$) increase in health insurance coverage and 10 percentage points (95% CI [-19, -2], $p<0.05$) decrease in unpaid medical bills past due date in the post-2014 years. However, there appears to be no association between Medicaid expansions and other self-reported indicators of financial health.

At the subgroup level, Medicaid expansions were significantly linked to increased health insurance coverage in all cases except for the respondents living in households with annual incomes above $50,000 (column 1). The null association for the higher-income sample is not surprising because Medicaid expansions were primarily directed at childless non-elderly adults without disabilities living in households with income below 138% of the FPL. Another point to note is that the magnitude of the association appears to get smaller for higher-income groups. This is possibly due to the fact that those who were living in households with income below 138% of the FPL (and hence, newly eligible for Medicaid) were more likely to be in the lower-income subgroups.

Surprisingly, the estimated association suggests no significant link between Medicaid expansions and unpaid medical bills for those who lived in households with annual incomes between $15,000 and $25,000 (row 2, column 2). Also, we observe a negative link between Medicaid expansions and financial satisfaction for the annual income above $50,000 subgroup (row 4, column 3). Lastly, we find some evidence that Medicaid expansions were linked to a decrease in perceived difficulty with expenses for the annual income

[7] The NFCS provides the age variable in these categories: 18-24, 25-34, 35-44, 45-54, 55-64, and 65+.

$25,000-$50,000 subgroup (row 3, column 5). Both associations were significant at the 10% significance level.

In general, the results of the DD analyses suggest that Medicaid expansions were significantly linked to increased health insurance coverage and decreased unpaid medical bills for those who were most likely to be the beneficiaries of these expansions. However, based on these DD estimates, there appears to be little evidence to suggest that these expansions were linked to other aspects (either descriptive or evaluative) of financial health. Lastly, the DD findings show larger point estimates (between Medicaid expansions and the two aforementioned outcomes) if we restrict the sample to those aged between 25 and 64 (row 5).

Event Study Findings

Table 3 presents the coefficients of interest from the event study specification shown in equation (2) estimated for the main analytical sample. In the table, columns 1-8 refer to the eight outcomes, and rows 1-4 refer to the coefficients of the interaction terms. Estimated coefficients of $Y_{2009}\, X\, MC14$, as shown in columns (1) and (3)-(7), are statistically insignificant at the 5% significance level. These estimates suggest that the trends in the six outcomes (health insurance, financial satisfaction, spending more than income, difficulty covering expenses, emergency funds, and unexpected income drop) for the 2014-expansion and non-expansion groups moved in parallel between 2009 and 2012, a period before the 2014-Medicaid expansions. These findings provide some suggestive evidence that the trends in the outcomes for the two groups were moving in parallel before Medicaid expansions.

For the post-2014 years, estimates shown in column (1) suggest that Medicaid expansions were, on average, linked to an increase in the percentage insured by 10 (95% CI [3, 17], p-value<0.05), 26 (95% CI [12, 39], p-value<0.05), and 19 (95% CI [8, 31], p-value<0.05) percentage points in 2015, 2018, and 2021, respectively. Estimates presented in column (2) suggest that Medicaid expansions were associated with a reduction in unpaid medical bills past due date by 7 (95% CI [-17, 2], p-value=0.13), 16 (95% CI [-25, -6], p-value<0.05) and 12 (95% CI [-24, 0], p-value=0.05) percentage points in 2015, 2018, 2021, respectively. However, the estimates for 2015 and 2021 are statistically insignificant at the 5 significance level.

Additionally, these expansions were linked to a 0.48 unit increase (95% CI [0.01, 0.94], p-value<0.05) in financial satisfaction (on a scale ranging from 1 to 10 with a higher score indicating more satisfaction) in 2015 but not in 2018 and 2021. For the other outcomes, we do not observe any significant association in 2015 and 2018. Interestingly, estimates shown in column (5) and column (8) suggest that, in 2021, there was a statistically significant link between Medicaid expansions and a reduction in difficulty covering

expenses and perceived indebtedness (at the 10% significance level) in 2021, the second year of the COVID-19 pandemic. These estimates provide some suggestive evidence that the Medicaid expansions were linked to an improvement in how the typical respondent from the newly eligible group (i.e., low-income childless non-elderly adults without disabilities living in the 2014 expansion states) perceived some aspects of their finances during the challenging times of the pandemic.

Summary and Discussion

This paper used data from the National Financial Capability Study (NFCS) 2009-2021 and a difference-in-differences approach to investigate the association between 2014 Medicaid expansions and financial health indicators reported directly by those who became newly eligible for Medicaid coverage. Overall, results demonstrate that these expansions were linked to an improvement in multiple aspects of the financial health of the newly eligible. For example, estimates suggest that Medicaid expansions were, on average, associated with a 21 percentage point increase in health insurance coverage and a 10 percentage point decrease in unpaid medical bills past due date in the post-2014 years. These two findings are broadly consistent with the findings of previous studies (Brevoort et al., 2017; Caswell & Waidmann, 2019; Hu et al., 2018).

Additionally, this paper estimated models using an event study approach to explore whether the associations between 2014 Medicaid expansions and financial health indicators varied over the years. Estimates suggest a positive link between Medicaid expansions and the financial satisfaction reported by the newly eligible in 2015; however, the association was not visible in the later years (i.e., in 2018 and 2021). Also, estimates indicate that these expansions were linked to a decrease in perceived indebtedness and difficulty paying for usual household expenses in 2021, the second year of the COVID-19 pandemic.

From a policy perspective, the findings of this study indicate that public health insurance expansion, beyond increasing health insurance coverage and reducing medical debt, can increase the financial satisfaction of households; however, the impact on financial satisfaction may be short-lived. Additionally, this study finds evidence suggesting that public health insurance expansion can reduce the stress induced by difficulty paying for usual household expenses and indebtedness during an economic downturn. Considering everything, these findings indicate that although health insurance expansion may not improve people's satisfaction with their finances over an extended period, it works as a buffer against some sources of financial stress during financially challenging times.

From a theoretical perspective, one important question is: Why did the association between 2014 Medicaid expansions and the financial satisfaction of the newly eligible *not* last over the years? One possibility is that

satisfaction assessment depends on how individuals construct counterfactuals (Heintzelman et al., 2013). For example, while answering a question on financial satisfaction a year after gaining health insurance coverage, the typical respondent from the newly eligible group may consider the counterfactual world in which they were not insured. However, a few years later, while answering the same question, they may consider another counterfactual world in which they aspire to be in a more comfortable financial situation (and not the one in which they were uninsured). Future studies should investigate the role of counterfactual constructions in how people assess their financial satisfaction and wellbeing.

The results of this study should be interpreted in light of its critical limitations. First, causal interpretations of the associations reported in this study are contingent on the validity of a parallel trends assumption, which is fundamentally untestable. To increase the credibility of the estimates, I included several state-specific-yearly factors in the empirical models. However, as Medicaid expansions were non-random events, it is possible that the estimated models could not account for all the unobserved time-varying confounding factors. Second, the respondents forming the two comparison groups in this study appear to be somewhat different both between the two groups in a particular year and within each group across years. I attempted to address this issue by incorporating several observable socioeconomic variables in the empirical models. Nevertheless, given the unbalanced repeated cross-sectional data used in this study, we cannot rule out the possibility that the findings are driven by individual-level differences rather than as a result of 2014 Medicaid expansions. Third, there may have been some misclassification of respondents' Medicaid eligibility. This is primarily because the NFCS provides the income variable in categories, which makes it difficult to identify respondents with income below 138% of the FPL. Fourth, this study considered only those who responded to the outcome variables of interest. If the respondents to these questions were fundamentally different from the non-respondents, the estimates are biased.

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Author Contribution The author confirms sole responsibility for the following: study conception and design, data analysis, interpretation of results, and manuscript preparation.

Data Availability This paper uses data from the National Financial Capability Study (NFCS), which is publicly available here: https://finrafoundation.org/knowledge-we-gain-share/nfcs/data-and-downloads

Declarations

Conflict of interest The author declares that he has no conflict of interest.

Tables

Table 1: Descriptive findings

	Non-expander			2014-Expander			
	Pre-2014 (N=728)	Post-2014 (N=868)	Δ1	Pre-2014 (N=975)	Post-2014 (N=1256)	Δ2	DD= Δ2 - Δ1
Health insurance	0.46	0.52	0.06*	0.53	0.81	0.28***	0.22***
Unpaid medical bills	0.32	0.32	0	0.32	0.19	-0.13	-0.13**
Financial satisfaction	3.50	4.19	0.69***	3.43	4.06	0.63***	-0.06
Spending above income	0.25	0.26	0.01	0.26	0.28	0.02	0.01
Difficulty with expenses	0.77	0.74	-0.03	0.81	0.72	-0.09***	-0.06.
Emergency funds	0.20	0.25	0.05*	0.19	0.27	0.08***	0.03
Large drop in income	0.50	0.39	-0.11***	0.46	0.36	-0.10***	0.01
Debt perception	5.57	5.67	0.10	5.01	5.02	0.01	-0.09

Notes: Author's calculations based on data from the National Financial Capability Study (NFCS) 2009, 2012, 2015, 2018, and 2021 conducted by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation. Sample (N=3827) consists of respondents who had these characteristics: 1) aged between 18-64, 2) did not have any disabilities, 3) lived in households with annual income below $15,000, 4) lived in a state which either expanded Medicaid in 2014 or did not expand by 2021, 5) either had no children or no financially dependent children, and 6) answered questions related to the eight outcome variables. Survey weights are used in the analyses. Note that the sample size (N=2788) for analyzing the "Unpaid medical bills" and "Debt perception" outcomes is smaller than the main analytical sample (N=3827) because NFCS 2009 does not contain these variables.

Table 2: Effect of 2014 Medicaid expansion on self-reported indicators of financial health

	(1) Health insurance	(2) Unpaid medical bills	(3) Financial satisfaction	(4) Spending above income	(5) Difficulty with expenses	(6) Emergency funds	(7) Large drop in income	(8) Debt perception
(1) Main analytical sample	0.21***	-0.10*	0.03	-0.01	-0.03	0.02	0.03	-0.78
	(0.03)	(0.04)	(0.20)	(0.02)	(0.03)	(0.02)	(0.02)	(1.0)
(2) Income group $15,000-$25,000	0.18***	-0.02	0.06	-0.03	-0.01	-0.005	0.01	-0.57
	(0.04)	(0.05)	(0.21)	(0.04)	(0.03)	(0.04)	(0.04)	(0.62)
(3) Income group $25,000-$50,000	0.09***	-0.06*	0.06	-0.02	-0.05.	-0.003	-0.002	-0.27
	(0.01)	(0.02)	(0.15)	(0.02)	(0.02)	(0.02)	(0.02)	(0.70)
(4) Income group >= $50,000	0.004	0.002	-0.17.	0.01	0.009	-0.006	0.02	0.06
	(0.01)	(0.02)	(0.09)	(0.009)	(0.02)	(0.02)	(0.02)	(0.32)
(5) Age group (25-64)	0.27***	-0.13*	-0.11	0.01	-0.03	0.03	0.05	-0.03
	(0.03)	(0.06)	(0.25)	(0.04)	(0.03)	(0.02)	(0.04)	(1.3)

Notes: Author's calculations based on data from the National Financial Capability Study (NFCS) 2009, 2012, 2015, 2018, and 2021 conducted by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation. The main analytical sample consists of respondents who had these characteristics: 1) aged between 18-64, 2) did not have any disabilities, 3) lived in households with annual income below $15,000, 4) lived in a state which either expanded Medicaid in 2014 or did not expand by 2021, 5) either had no children or no financially dependent children, and 6) answered questions related to the eight outcome variables. Survey weights are used in the analyses and standard errors are clustered at the state level. Appendix Table A4 shows the sample sizes of different analytical samples used in these analyses.

Table 3: Effect of 2014 Medicaid expansions on self-reported indicators of financial health (main analytical sample)

Dependent Variable	(1) Health insurance	(2) Unpaid medical bills	(3) Financial satisfaction	(4) Spending above income	(5) Difficulty with expenses	(6) Emergency funds	(7) Large drop in income	(8) Debt perception
(1) $Y_{2009}\ X\ MC14$	-0.07	---	0.34	0.06	-0.05	-0.007	0.04	---
	(0.05)		(0.25)	(0.04)	(0.03)	(0.04)	(0.04)	
(2) $Y_{2015}\ X\ MC14$	0.10**	-0.07	0.48*	0.02	-0.03	-0.008	0.04	-0.24
	(0.03)	(0.05)	(0.23)	(0.03)	(0.04)	(0.04)	(0.03)	(1.14)
(3) $Y_{2018}\ X\ MC14$	0.26***	-0.16**	0.08	0.02	-0.07	0.04	0.08	-1.03
	(0.06)	(0.05)	(0.28)	(0.04)	(0.04)	(0.04)	(0.06)	(1.28)
(4) $Y_{2021}\ X\ MC14$	0.19**	-0.12.	-0.17	0.02	-0.1*	0.05	0.07	-2.61.
	(0.06)	(0.06)	(0.31)	(0.04)	(0.04)	(0.05)	(0.05)	(1.49)
Observations	3,827	2,788	3,827	3,827	3,827	3,827	3,827	2,788

Notes: Author's calculations based on data from the National Financial Capability Study (NFCS) 2009, 2012, 2015, 2018, and 2021 conducted by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation. Sample consists of respondents who had these characteristics: 1) aged between 18-64, 2) did not have any disabilities, 3) lived in households with annual income below $15,000, 4) lived in a state which either expanded Medicaid in 2014 or did not expand by 2021, 5) either had no children or no financially dependent children, and 6) answered questions related to the eight outcome variables. Survey weights are used in the analyses and standard errors are clustered at the state level.

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Appendix

Table A1: Operationalization of outcome variables based on questions from the National Financial Capability Study (NFCS)

Outcome Variable	NFCS Question	Response options	Coding
Health insurance	Are you covered by health insurance?	Yes No	1 if Yes, 0 if No
Unpaid medical bills	Do you currently have any unpaid bills from a health care or medical service provider (e.g., a hospital, a doctor's office, or a testing lab) that are past due?	Yes No	1 if Yes, 0 if No
Financial satisfaction	Overall, thinking of your assets, debts and savings, how satisfied are you with your current personal financial condition?	1-10, where 1 means "Not At All Satisfied" and 10 means "Extremely Satisfied.	1-10
Spending above income	Over the, would you say your spending was less than, more than, or about equal to your income? Please do not include the purchase of a new house or car, or other big investments you may have made.	Spending less than income Spending about equal to income Spending more than income	1 if Spending more than income, 0 otherwise
Difficulty with expenses	In a typical month, how difficult is it for you to cover your expenses and pay all your bills?	Very difficult Somewhat difficult Not at all difficult	1 if Very difficult or Somewhat difficult, 0 otherwise
Emergency funds	Have you set aside emergency or rainy day funds that would cover your expenses for months, in case of sickness, job loss, economic downturn, or other emergencies?	Yes No	1 if Yes, 0 if No
Large drop in income	In the past 12 months, have you [has your household] experienced a large drop in income which you did not expect?	Yes No	1 if Yes, 0 if No
Debt perception	How strongly do you agree or disagree with the following statement: I have too much debt right now?	1-7, where 1 = "Strongly Disagree," 7 = "Strongly Agree," and 4 = "Neither Agree Nor Disagree"	1-7

Table A2: Summary statistics of the main analytical sample

	Non-expander		2014-Expander	
	Pre-2014 (N=728)	Post-2014 (N=868)	Pre-2014 (N=975)	Post-2014 (N=1256)
Female	0.46	0.47	0.44	0.49
Age 18-25	0.45	0.39	0.43	0.38
Age 25-34	0.15	0.17	0.16	0.19
Age 35-44	0.10	0.11	0.07	0.10
Age 45-54	0.16	0.14	0.20	0.16
Age 55-64	0.14	0.18	0.14	0.17
White non-Hispanic	0.59	0.54	0.72	0.64
Married	0.12	0.10	0.10	0.08
College degree or above	0.10	0.07	0.10	0.12

Notes: Author's calculations based on data from the National Financial Capability Study (NFCS) 2009, 2012, 2015, 2018, and 2021 conducted by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation. Sample consists of respondents who had these characteristics: 1) aged between 18-64, 2) did not have any disabilities, 3) lived in households with annual income below $15,000, 4) lived in a state which either expanded Medicaid in 2014 or did not expand it by 2021, 5) either had no children or no financially dependent children, and 6) answered questions related to the eight outcome variables. Survey weights are used in the analysis.

Table A3: Descriptive findings (by year)

	Non-expander					2014-Expander				
	2009 (N= 387)	2012 (N= 341)	2015 (N= 335)	2018 (N= 249)	2021 (N= 284)	2009 (N= 529)	2012 (N= 446)	2015 (N= 426)	2018 (N= 393)	2021 (N= 437)
Health insurance	0.50	0.41	0.59	0.47	0.47	0.55	0.51	0.81	0.86	0.78
Unpaid medical bills	---	0.32	0.26	0.34	0.36	---	0.32	0.18	0.17	0.22
Financial satisfaction	3.16	3.89	3.94	4.18	4.52	3.29	3.61	4.26	4.00	3.92
Spending above income	0.26	0.23	0.26	0.26	0.27	0.30	0.20	0.27	0.28	0.30
Difficulty with expenses	0.81	0.72	0.75	0.71	0.76	0.82	0.79	0.77	0.70	0.70
Emergency funds	0.20	0.21	0.26	0.23	0.26	0.18	0.19	0.24	0.27	0.31
Large drop in income	0.54	0.45	0.35	0.35	0.46	0.5	0.41	0.32	0.35	0.41
Debt perception	---	5.57	4.97	5.53	6.69	---	5.01	4.41	5.28	5.36

Notes: Author's calculations based on data from the National Financial Capability Study (NFCS) 2009, 2012, 2015, 2018, and 2021 conducted by the Financial Industry Regulatory Authority (FINRA) Investor Education Foundation. Sample (N=3827) consists of respondents who had these characteristics: 1) aged between 18-64, 2) did not have any disabilities, 3) lived in households with annual income below $15,000, 4) lived in a state which either expanded Medicaid in 2014 or did not expand by 2021, 5) either had no children or no financially dependent children, and 6) answered questions related to the eight outcome variables. Survey weights are used in the analyses. Note that the sample size (N=2788) for analyzing the "Unpaid medical bills" and "Debt perception" outcomes is smaller than the main analytical sample (N=3827) because NFCS 2009 does not contain these variables.

Table A4: Sample sizes of analytical samples shown in Table 2

	Health insurance	Unpaid medical bills	Financial satisfaction	Spending above income	Difficulty with expenses	Emergency funds	Large drop in income	Debt perception
Main analytical sample	3,827	2,911	3,827	3,827	3,827	3,827	3,827	2,911
Income group $15,000-$25,000	3,048	2,353	3,048	3,048	3,048	3,048	3,048	2,353
Income group $25,000-$50,000	7,216	5,591	7,216	7,216	7,216	7,216	7,216	5,591
Income group >= $50,000	11,967	9,532	11,967	11,967	11,967	11,967	11,967	9,532
Age group (25-64)	2,317	1,845	2,317	2,317	2,317	2,317	2,317	1,845