Financial Repercussions of SNAP Work Requirements

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Abstract

This paper considers the credit response of individuals after the implementation of new work requirements for Supplemental Nutrition Assistance (SNAP) benefits using a large nationally representative sample of credit records. It does so by exploiting county-level variation in the implementation of work requirements after the Great Recession in a difference-in-differences design. We find that the implementation of new SNAP work requirements leads more people to seek out new credit and leads to an increase in credit account openings. New work requirements also result in an increase in total outstanding balances on bank and retail card accounts and increase the number of borrowers that are past due on these accounts. These findings suggest that some individuals are turning to credit and debt products to cover expenses after losing eligibility for SNAP benefits.

1. Introduction

Since the welfare reforms enacted in the mid-1990s, the U.S. social safety net system has focused on promoting self-sufficiency in an approach that is often called "welfare to work." Frequently, this involves limiting or forbidding program benefits among those who are not working. For example, the Supplemental Nutrition Assistance Program (SNAP), the Temporary Assistance for Needy Families (TANF) program, and Medicaid program all include work requirements for some participants. Recent policy proposals have also expanded and strengthened these work requirements by reducing existing exemptions (United States Department of Agriculture 2019). While research has long recognized that these work requirements reduce SNAP caseloads (Ziliak, Gundersen, and Figlio 2003), the effects of these requirements on financial outcomes are still under debate.

This paper uses variation in work requirements for SNAP benefits to consider a new dimension of consumer responses by determining how individuals adjust their credit decisions and use of credit in response to newly imposed work requirements. It does so by using geographic variation in work requirements through a USDA waiver program that has been in place since the Great Recession. In general, "able-bodied adults without dependents" (ABAWDs) are subject to additional work requirements that limit them to three total months of benefits per three-year period if they are not working. The waiver program allowed states to remove these additional work requirements for ABAWDs in specific counties. Variation in the timing and locations of waivers affects who is subject to work requirements each quarter and provides a natural experiment to explore the effects of these requirements.

Using this variation in work requirements from the waiver program in a difference-in-differences framework, we consider three primary consumer responses to SNAP work requirements: (1) the rate at which consumers seek and obtain additional credit, (2) total outstanding balances on credit and retail card accounts, and (3) the prevalence of past-due card debt. Recognizing that SNAP benefits represent a

substantial share of consumption resources for some recipients, individuals who lose access to benefits

without a similarly-sized increase in earnings may turn to credit to offset the repercussions of lost

benefits.[1] The comparison or control group in our empirical models is the set of individuals in counties

within the same commuting zone (CZ) that do not have a work requirement in place. This approach

restricts the control group to those counties that are most likely to share fundamental economic and

policy attributes as well as common trends with the treatment group. Thus, this control group is most

likely to satisfy the assumptions necessary for unbiased estimates in a difference-in-differences

framework. We validate this approach with an event study model that traces out dynamic responses to

the work requirements and allows us to detect differential trends for those living in treatment and

control areas prior to the imposition of work requirements.

Our results suggest that SNAP work requirements significantly increase the likelihood that

consumers apply for and use additional credit. Credit applications, total accounts, total credit limits, and

outstanding balances all increase significantly after the enactment of new work requirements, indicating

that individuals subject to these requirements are seeking out and utilizing additional credit in response

to the loss of benefits. Sullivan (2008) previously observed that low-asset households increased

borrowing in response to lost employment earnings, and our results indicate that similar borrowing

occurs in response to lost public benefits as well. Additionally, we find evidence that consumers are

slightly more likely to be past due on their card payments in response to the work requirements,

indicating elevated levels of financial distress. Because we are unable to directly observe SNAP

recipiency in the credit data, we focus our analysis on individuals who persistently do not have a

mortgage (and therefore are likely to be renters) who have had a credit score under 700 in the past

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[1] For context on the scale of benefits, when recipiency peaked in 2013, 23 million households, containing 47 million people, received an average of $274 worth of monthly benefits (United States Department of Agriculture 2020). Hastings and Shapiro (2018) demonstrate a high marginal propensity to consume food out of SNAP benefits, and these benefits have also previously been found to reduce food insecurity (Schmidt, Shore-Sheppard, and Watson 2016) and material hardship (Shaefer and Gutierrez 2013; McKernan, Ratcliffe, and Iceland 2018).

decade, as these individuals are disproportionately likely to be SNAP recipients. Based on our difference-in-differences estimates for this group, in the 1-6 years following the imposition of work requirements, credit inquiries in the past six months increased by 0.17 inquiries (17 percent), total credit accounts increased by 0.29 accounts (18 percent), total combined credit limits increased by approximately $1,500 (36 percent), and total card balances increased by approximately $500 (29 percent). The prevalence of past due balances also increased by 1.3 percentage points (5 percent).

We also observe important temporal patterns in credit behaviors, particularly for outcomes related to the "flow" of credit such as new inquiries and new account openings. Based on our dynamic estimates, in the first quarter after the imposition of new work requirements, there is an approximately 12 percentage point (29 percent) increase in the likelihood of applying for new credit among our sample population before returning to pre-treatment levels. The likelihood of opening a new account similarly increases by 5-7 percentage points (18-20 percent) in the first two quarters after the work requirement takes effect. Thus, there is a short-lived shock in these flow variables. The average credit balance among this group increases by approximately $130 in the first quarter after work requirements are imposed, but these balances grow at a steady rate over time indicating that consumers begin to carry larger balances the longer work requirements are in place. These relatively large increases in credit-seeking behavior and carrying credit balances suggest that the SNAP-eligible ABAWD population experienced significant frictions in adjusting to new work requirements, particularly in the first quarters after the requirement is in force, with implications for medium- and long-term financial health.

To examine mechanisms of these effects, we then estimate our models in states that did not have asset limits for SNAP eligibility versus those that did. We find that the effects are significantly stronger in states that had asset limits. Hence, it appears that the work-requirements impose additional financial pressure in the short run for those who lack meaningful financial assets to withstand the shock.

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The approach within this paper builds on previous research that has used geographic variation in work requirements from the USDA waiver program to explore the effects of SNAP work requirements on employment. The findings of this previous research on employment are mixed. Gray et al. (2020) rule out large employment gains from the imposition of SNAP work requirements, as does Han (2022). In contrast, Harris (2021) finds meaningful positive effects on employment, but notes that the declines in program participation exceed the number of people who found employment after work requirements went into effect.[2]

In contrast to the mixed results on employment, the recent literature consistently documents a drop in SNAP participation as work requirements are (re)introduced (Gray et al. 2020; Harris 2021; Ku, Brantley, and Pillai 2019; Stacy, Scherpf, and Jo 2018). Gray et al. (2020) find that work requirements for ABAWDs reduced SNAP participation among the affected population by as much as 52 percent, with the lowest-income and homeless population being most affected. In their models, the authors rule out employment increases of more than two percentage points in response to the work requirement. Ku, Brantley, and Pillai (2019) find reductions among the target population of over one third of ABAWDs, leading to overall declines in SNAP participation of 3-4.5 percentage points. Brantley, Pillai, and Ku (2020) show that declines are greatest among demographic groups with higher rates of food insecurity. Harris (2021) finds a slightly smaller overall reduction in SNAP participation of 1.7 percentage points but finds an increase in employment of 1.3 percentage points. Stacy, Scherpf, and Jo (2018) find a reduction in SNAP participation of 3 percentage points among ABAWDs under 250 percent of the Federal Poverty Line, with a precisely-estimated zero effect on employment. Finally, Han (2022) finds that suspending work requirements led to employment declines no larger than 1.4 percentage points among the potentially affected population. Importantly, the author attributes this small effect to the fact that new

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[2] As earlier evidence of how SNAP benefits without work requirements can affect work decisions, Hoynes and Schanzenbach (2012) observed that there were employment declines when the food stamp program began prior to the introduction of work requirements.

enrollment during exemption periods was concentrated among the lowest-income SNAP population where there is a very low benefit reduction rate due to significant itemized deductions in the program. In each of the studies above, none find increases in employment that are consistently larger than disenrollment from SNAP, which raises the question of whether or not lower-income ABAWDS may adjust to work requirements in ways that make their financial prospects worse through debt-financed consumption and therefore preclude them from a path to future financial independence. We address this question in our study.

Our findings have important implications for considering the effects of work requirements connected to public assistance programs more broadly. Numerous studies have documented the positive effects of TANF work requirements on employment (Blank 2002 and Ziliak 2016 review these findings) as well as the employment gains from increasing the returns to work through programs such as the EITC (Dahl, DeLeire, and Schwabish 2009; Eissa and Liebman 1996; Meyer and Rosenbaum 2001). However, Sommers et al. (2020) found that work requirements for Medicaid did not increase employment and Falk (2018) observes that while welfare-to-work programs resulted in employment gains, the incomplete employment response and low earnings in these positions meant that average incomes did not increase once factoring in lost benefits. Although our focus is on SNAP benefits, the results also provide guidance on how families may respond to the loss of benefits from other types of programs as well.

SNAP is an important source of consumption funding for many low-income Americans. As recipients lose access to benefits and are not offsetting lost benefits with increases in employment earnings, they use credit to make up the difference that could hamper potential asset and wealth accumulation. If the population affected by the work requirements falls behind on their payments with larger debt amounts, they may be subject to additional financial hardships and material deprivation in the future.

2. Institutional Details on SNAP and Work Requirements

Originally termed "Food Stamps," the Supplemental Nutrition Assistance Program has been one

of the primary methods of support for low-income families for decades**.** Since 1990, at least 6 percent of

the US population has received SNAP each year, rising to approximately 15 percent of the population in

the years following the Great Recession (Ganong and Liebman 2018). The eligibility rules for SNAP

require that a household's income must either be below 130 percent of the Federal Poverty Line (FPL) or

else have a post-deduction income below the FPL. There is also an asset limit of $2,250. However, the

majority of states, through the use of "broad-based categorical eligibility," have raised or eliminated

their asset limits altogether.[3] The benefits are calculated by first taking the maximum benefit ($194 for a

single-person household in 2019 prior to increases in benefits after the onset of COVID-19) and reducing

the size of the benefit by 30 percent for each dollar of net (post-deduction) earned income each month.

Numerous deductions, however, can be taken to reduce the income counted for reducing benefits.

These include an income deduction of 20 percent for earned income, a standard deduction that depends

on household size, and deductions for childcare, child support payments, medical expenses, and shelter

costs.[4]

Following the passage of the Farm Bill of 1996, the SNAP program has required that "Able-

Bodied Adults without Dependents," or ABAWDs, work for 80 or more hours per month or participate in

a workforce program in order to receive benefits. The United States Department of Agriculture (USDA)

defines ABAWDs as adults age 18–49 who do not have children under the age of 18 living in their home,

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[3] Following default federal guidelines, some states have vehicle asset limits as well, meaning that some portion of the value of a vehicle owned by the household is counted toward the value of their assets when evaluating against the state's overall asset limit.
[4] Han (2022) shows that average benefits generally do not decline for households with a gross monthly incomes below $600, indicating that most recipients with incomes this low can deduct almost all of their income from the eligibility calculations.

are not pregnant, are not considered disabled, and are not receiving unemployment benefits.[5] This work

requirement applies to ABAWDs who apply for benefits for more than three months in a three-year

period, and work status is certified each individual month in which they collect benefits.[6] The USDA,

which oversees the SNAP program, grants waivers allowing states to drop the work requirement in

certain areas—normally counties—experiencing high unemployment or that are otherwise experiencing

significant hardship in labor markets. Specifically, states can exempt ABAWDs from the work

requirement if the local labor market had an average unemployment rate of 10 percent or higher during

the prior three months or a historical seasonal unemployment rate over 10 percent. Waivers also may

apply when the unemployment rate is 20 percent above the national average in the prior two years.

There are also regulations that allowed states to apply for waivers under other conditions such as being

in a US Department of Labor "Labor Surplus Area," being described in an academic study as an area with

a lack of jobs, having a low and falling employment-to-population ratio, qualifying for extended

unemployment benefits, or experiencing declines in particular occupations or industries. Despite being

eligible to drop the work requirement in many of their local labor markets, a number of states did not

implement a waiver even though they were eligible to apply for one.

In the wake of the Great Recession, Congress passed two pieces of legislation that substantially

impacted waiver status across states: the temporary Emergency Unemployment Compensation (EUC)

program in 2008 and subsequent extensions, and the American Recovery and Reinvestment Act (ARRA)

in 2009.

The ARRA effectively created a temporary elimination of work requirements nationwide in 2010

by suspending the time limits for waivers in all states. These waivers accounted for approximately 10

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[5] Definitions of disability for the SNAP program include those that receive income from disability insurance, those with a statement from a medical profession that they cannot work due to a physical or mental concern, and those deemed unable to work by a state agency.
[6] For additional details on the characteristics of people likely affected by work requirements for SNAP and other programs, see Council of Economic Advisers (2018) and Bauer, Schanzenbach, and Shambaugh (2018).

percent of the substantial growth in SNAP enrollment after the Great Recession (Ganong and Liebman 2018). Additionally, because an area is eligible for a waiver from work requirements if it qualifies for extended unemployment benefits, the nationwide extended unemployment benefits created under the EUC program allowed states to request a waiver from work requirements until these benefits ended in December 2013. States were then eligible for a 12-month waiver extension that began 12 months after the end of EUC, meaning that states could extend waiver eligibility through the end of 2015 if they chose to do so. The majority of waivers before 2016 were justified based on these EUC regulations. As a result of these provisions, all states had effective waivers in place in 2010, and work requirements were reimposed by states over the subsequent years. Nevertheless, several counties never reimposed work requirements prior to 2017 due to low local employment rates, statewide waivers, or by qualifying under the other special conditions mentioned earlier. Our analysis leverages variation in when work requirements returned across states and counties during this period to identify the effects of the work requirements on individual financial and credit outcomes.

3. Data

To estimate the effects of SNAP work requirements on credit outcomes, we rely primarily on data from the FRBNY/Equifax Consumer Credit Panel (CCP) from 2010 to 2017. This is a large administrative panel dataset of credit records and contains consumer-level information on credit applications and credit usage for an anonymized random sample of all individuals with a social security number and a credit report in the U.S. From these data, we drew a random sample that contains 0.5 percent of individuals in the United States with a credit report. The quarterly reporting structure in the CCP allows us to examine effects of the work requirements as they are implemented each year and to trace out any dynamic effects over quarters. This is particularly useful in light of the three-month benefit time limit for ABAWDs that are not working.

In the CCP, we focus on measures of credit-seeking behavior and debt on credit and retail cards. These are the number of credit inquiries on an individual's credit report in the past six months, the likelihood of an inquiry in the past year, the likelihood of opening a new account in the past year, the total number of these accounts on the consumer's credit report, and total credit limit and balances on these accounts.[7] We pay particular attention to these outcomes because credit and retail cards are the most commonly used types of credit for day-to-day purchases and consumption (Green and Stavins 2018).[8]

To track waivers from SNAP work requirements, we use county-level waiver data from Harris (2021), which are constructed based on official approval letters from the USDA in response to state waiver applications. Waivers typically take effect at quarterly breaks, so we consider a county to be "treated" if a work requirement waiver was not in place at the beginning of each quarter in the sample.[9] Because waiver receipt is predicated upon a state's political leaders applying for the waivers, following Harris (2021) we include as controls in our analysis measures of party control of each state's governor's office and state legislature. County waivers critically depend on the recent labor market conditions in the county, so we also include in our sample annual measures of lagged (1 year) county-level unemployment and labor force participation from the Local Area Unemployment Statistics (LAUS) from the Bureau of Labor Statistics.

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[7] The CCP data represent a key source of information on credit outcomes. However, they are limited in that they do not contain any information that does not appear on credit records and we do not merge individual-level credit records with SNAP recipiency data or datasets. As a result, we are unable to account directly in the data for gender, race/ethnicity, education, household structure, or other demographic characteristics besides age.

[8] The CCP contains credit data for those with a credit score or thin credit file but does not capture those without a credit score or the use of informal borrowing. Because the SNAP eligible ABAWD population may have particularly low incomes, they may turn to other forms of credit not specified on a credit report such as informal borrowing channels. To the extent that affected individuals are also accelerating credit seeking in these other sectors this may mean that our results understate the increasing of credit usage, particularly if the intensity of credit-seeking behavior is negatively correlated with income and a presence in the formal credit market. However, to the extent that individuals who find employment after the work requirements shift from informal borrowing to formal borrowing, it would mean that our results overstate the increase in borrowing.

[9] See, for example, https://www.fns.usda.gov/snap/ABAWD/waivers, which structures waiver permissions each quarter (Accessed October 12, 2021).

The CCP does not contain information on individual demographic characteristics, but we do include a set of controls of local neighborhood characteristics for each individual in the panel that may be correlated with individual characteristics. These variables come from 5-year estimates from the American Community Survey for each person's census tract, and we apply these estimates to middle year; for example, the 2011-2015 estimates are applied to the year 2013. These measures include population and population density, race/ethnicity shares, the share of adults with a bachelor's degree, the share of households with children under age 18, and the share of the population under age 18. We also include the lagged (1 year) local poverty rate.

Sample Restrictions

Ideally, we would examine changes in financial outcomes among just the SNAP-eligible or near-eligible ABAWD population in response to SNAP work requirements. The CCP does not contain individual information on income, receipt of public assistance, dependents, disability, or other determinants of SNAP eligibility. We therefore are left to approximate this population in the CCP based on factors that are in the data such as age, credit score, and mortgage status.

We begin by limiting our sample to those ages 18–49 to match the ABAWD age definitions for SNAP. In order to approximate the income level of those in or near SNAP eligibility, we also limit our main estimation sample to those whose lowest Equifax Risk Score was below 700 at any point during the sample period. We impose this restriction based on the correlation between income, Equifax Risk Score, and SNAP recipiency documented in other work. For example, in the Federal Reserve Board's 2019 Survey of Household Economics and Decisionmaking, the 22 percent of adults who reported that their credit was "fair" or "poor" represented 65 percent of SNAP recipients (Federal Reserve Board 2020). It is also well documented that income and credit score are highly correlated (see, for example, Beer, Ionescu, and Li 2018). As the median Equifax Risk Scores for those classified as "Low Income, "Moderate Income," and "Middle Income" are 658, 692, and 735, respectively (Kramer-Mills, Landau, and Scally

2020), our choice of 700 as a sample cutoff allows us to better focus on low- or moderate-income consumers.

We further limit our sample to those who never had a mortgage in the CCP during our sample period. According to Kramer-Mills, Landau, and Scally (2020), less than 20 percent of low- and moderate-income adults have a mortgage. Based on ACS data from IPUMS (Ruggles et al. 2021), we observe that among those ABAWDs who received SNAP at least once in the prior year, 71 percent were renters or owned their home free and clear (no mortgage). Taken together, our restrictions result in a sample that contains 45 percent of the age 18–49 population with a credit score.[10]

Finally, since our comparison groups are based on Commuting Zones, we limit the estimation sample to those residing in any area designated in a Commuting Zone based on year 2000 definitions and limit to those with complete area controls. In our various robustness tests, we relax this restriction to commuting zones and find similar results.

While our sample restrictions attempt to represent the population that is likely to be affected by changes to the SNAP program, because we cannot narrowly identify the SNAP eligible population, our estimates should be interpreted as broad "intent-to-treat" effects of SNAP work requirements. After our various restrictions, our final estimation sample covers 3,108 counties in 707 Commuting Zones with a total of approximately 8.67 million observations.

Descriptive Statistics

Table 1 presents summary statistics for our estimation sample. The average consumer in the data is 33 years old with an average of approximately one credit inquiry in the past six months.

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[10] In the 2010-2017 CPS, 54 percent of renters ages 18 to 49 were able-bodied adults without dependents and between 5 and 6 percent were ABAWDs who received SNAP (the CPS does not have credit data to include that restriction). Because we restrict by credit score and to those who never have a mortgage between 2010 and 2017, our sample will be lower income than this group in the CPS, but even with the sample restrictions, a large share of our sample will be unaffected by the work requirements and the estimates would likely be larger were we able to isolate ABAWD SNAP recipients.

Approximately 41 percent of consumers in the sample had a new inquiry on their credit report, and 28

percent opened a new account in the past 12 months. The average total card balance was

approximately $1,700 and the average credit limit was approximately $4,000. About 26 percent of

consumers in the sample had past due debts on a credit or retail card listed on their credit report. The

average local unemployment rate experienced by consumers in the sample was 6.5 percent, which

tracks the 6.8 percent national average calculated by the Bureau of Labor Statistics over this period, and

their states of residence had expanded Medicaid for approximately 36 percent of the observations, the

earliest of which began in 2014.

Table 1. Summary Statistics of Estimation Sample

	Mean	SD
Age	32.59	8.56
Inquiries in Past 6 Months	0.97	2.30
Pr(Any New Inquiries)	0.4137	0.4925
Pr(Any New Account)	0.2753	0.4467
Total Card Accounts	1.55	2.39
Any Card Total Balance	1,696.34	4,616.75
Total Card Credit Limit	4,043.51	10,858.33
Pr(Any Card Past Due)	0.2555	0.4361
Census Tract Characteristics		
Total Census Tract Population	5,273.25	2,728.17
% Under Age 18	23.24	6.46
% Non-Hispanic White	56.18	30.61
% Non-Hispanic Black	15.39	22.52
% in Poverty	16.81	11.98
% Bachelors+	28.03	18.09
% HH with Children Under 18	33.44	11.33
Population Density	6,641	14,588
County Labor Market Characteristics		
Total County Labor Force	636,593	1,037,553
Unemployment Rate	6.48	2.44
State Expanded Medicaid	0.3599	0.4800
N	8,665,475	

Source: Authors' calculations using FRBNY Consumer Credit
Panel/Equifax Data, the American Community Survey, and BLS Local
Area Unemployment Statistics.

Figures 1 and 2 provide the first indication that individuals affected by new work requirements are seeking out additional credit. In these figures, those who already had a work requirement that did not change status (i.e. "already treated") are included in the "no new work requirement" group, making these raw comparisons conservative estimates. While these figures are unconditional on other characteristics other than restricting the sample to renters, it is apparent in Figure 1 that lower-credit borrowers – and especially those with credit scores between 550 and 620 – are seeking out additional credit on the intensive margin in the year that new work requirements go into effect. In the raw data without controls, borrowers with credit scores in this range had approximately 5 percent more credit applications if living in an area with new SNAP work requirements than are those in areas where the work requirement rules did not change. For borrowers with either higher or lower credit scores, the gap in credit applications is smaller – and it disappears entirely among borrowers with a credit score over 680, who are less likely to be receiving or be eligible to receive SNAP benefits and thus be affected by the work requirements. As seen in Figure 2, which looks at new account openings, those living in areas with newly imposed work requirements also are more likely (12 percent) to have actually opened an account – especially if their credit score is in the 550 to 620 range. These figures provide further justification for our sample restriction to those with a minimum credit score under 700. Between these two figures, it is clear that those with higher credit scores, while seeking credit at roughly the same probability as their lower-score counterparts, are far more successful in actually obtaining new credit. However, the gap between areas with new work requirements and those without new work requirements follows a similar pattern when considering both outcomes. This suggests that the gap is driven not by unobserved differences in the ability to get credit after applying conditional on credit score, but by differences in credit seeking.

Figure 1. Inquiries in the past six months by credit score and presence of new work requirements
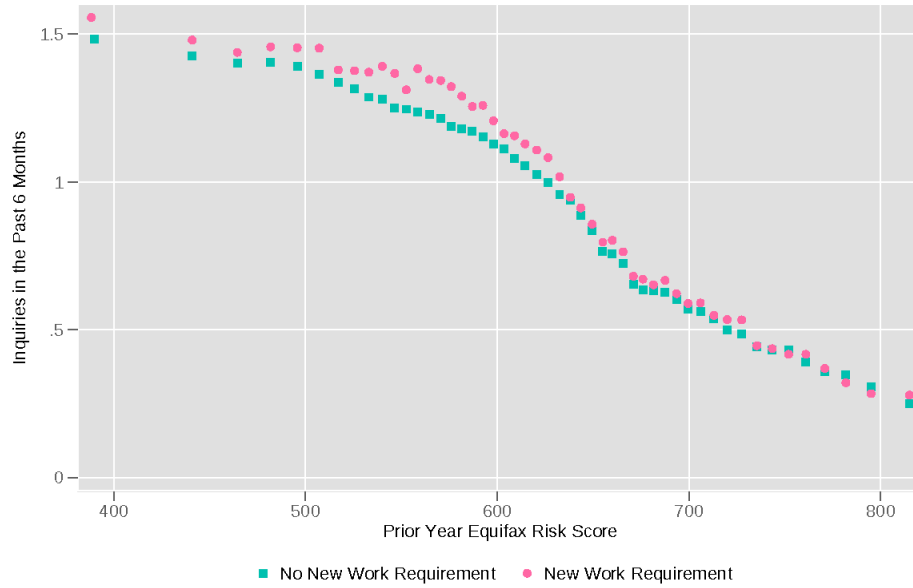
Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data
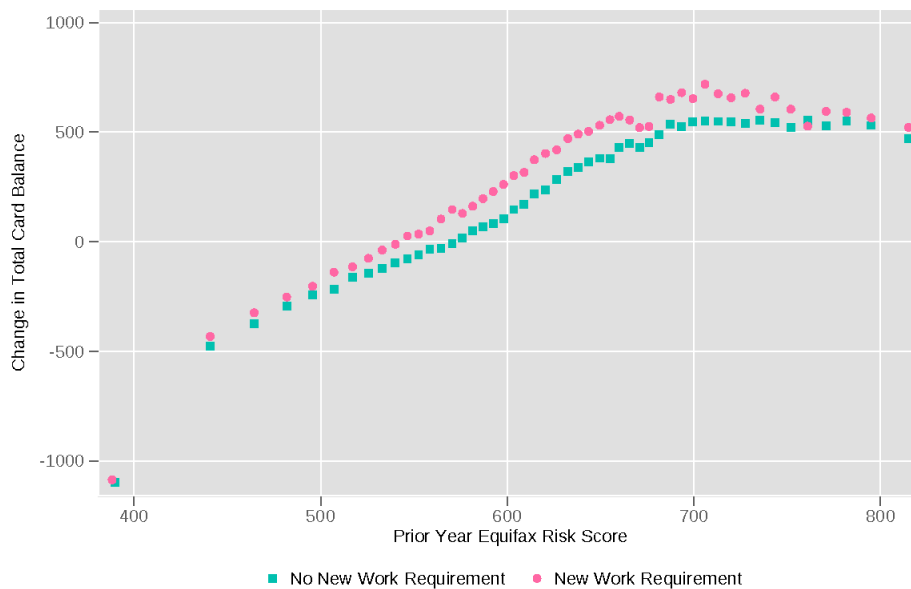Note: Among individuals without a mortgage from 2010 through 2017

Figure 2. Probability of opening a new credit account by credit score and presence of new work requirements
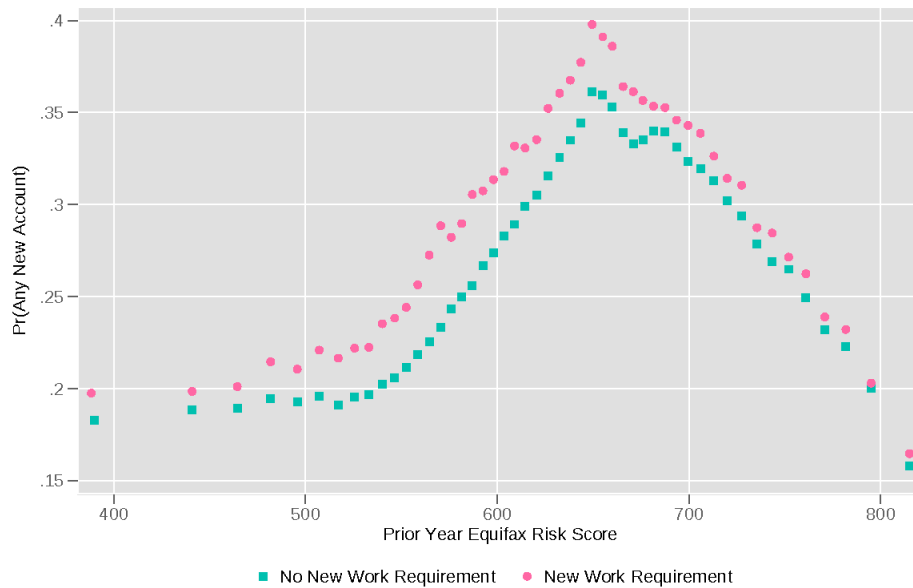
Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data
Note: Among individuals without a mortgage from 2010 through 2017

Figure 3 presents the same credit score distributions but shows the change in total debt balance on all card accounts. This shows the realized change in balances, reflecting actual credit usage. Across the credit score distribution, changes in total balances across card accounts are notably higher in areas that implemented a new work requirement as a condition of SNAP recipiency for ABAWDs. Changes to reduce card balances were noticeably smaller (i.e. less negative) in these areas, while increases in balances were larger. Like the figures for credit-seeking behavior, these changes in balances are most pronounced for those with credit scores between 500 and 660, indicating that the balances are occurring subsequent to the opening of new credit lines for those most likely to be low-income earners.

Figure 3. Change in total card balance by credit score and presence of new work requirements

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data
Note: Among individuals without a mortgage from 2010 through 2017

While suggestive of how individuals may be seeking and relying on additional credit, Figures 1-3 do not control for other differences between areas that have newly imposed work requirements and those that do not. To incorporate these differences, we formally estimate the causal effects of the work requirements in a difference-in-differences framework, which we describe below.

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4. Empirical Strategy

Our strategy to measure the causal effects of SNAP work requirements for the SNAP-eligible ABAWD population is a difference-in-differences design. A core challenge in this design is the selection of an adequate control group whose experiences with financial and labor market conditions are likely to satisfy the parallel trends assumption and where the potential outcomes for the untreated group are likely to closely match the actual treatment group before the policy change. With a staggered policy roll-out, the standard difference-in-differences model implicitly compares treated units to all untreated units as well as units that are not yet treated among the entire sample (Goodman-Bacon 2021). Given the uneven spatial distribution of the negative effects of the Great Recession and the uneven recovery after it, the entire sample of untreated counties may not closely match the experiences of the treated counties prior to the imposition of the work requirements in trends or in levels. This is particularly true if there are heterogeneous effects over time.

We use definitions of Commuting Zones from the USDA Economic Research Service in the year 2000 to construct our control groups to ensure that we are comparing individuals with experiences in the labor market and financial markets that are likely to be similar before and after the policy change. The 709 Commuting Zone (CZ) designations in the US are intended to capture common labor market experiences and commuting patterns for those living in different counties. Recent research has frequently used Commuting Zones to capture place-based differences in economic outcomes (Chetty et al. 2014, Yagen 2019). Most Commuting Zones are centered around major metropolitan areas, but many extend into nonmetropolitan areas that are highly integrated economically with metro counties or other nonmetro counties. Commuting zones can therefore justifiably be interpreted as a "local labor market." Commuting Zone designations can cross state boundaries, increasing the variation in waiver status and the possible determinants of waiver status within a single CZ. Importantly, SNAP work requirement waivers at the county level are based upon the residence of the prospective recipient. Two individuals in

the same local labor market may experience difference SNAP work requirements depending on which county they live in. This commonality means that unobserved differences in levels and trends in financial and labor market outcomes are unlikely to confound our results. The potential outcomes for those in treated counties before treatment are much more likely to match the potential outcomes of those in untreated counties.

With this framework in mind, we estimate the following difference-in-differences equation:

(1) $Y_{icgt} = \beta_0 + \beta_1 WorkReq_{ct} + \beta_2 EverWorkReq_i + X_{it}\beta_3 + Z_{ct}\beta_4 + \mu_c + \gamma_{gt} + \varepsilon_{icgt}$,

where *WorkReq* equals one beginning in the quarter-year *t* in which individual *i* encountered a work requirement while living in county *c (*in Commuting Zone *g).* The variable *EverWorkReq* indicates if an individual was ever in a county with a work requirement over our sample period (including in later years). This removes any time-invariant mean differences between treated versus never-treated individuals. The *X* vector contains individual-level controls from the CCP, which, in this case, is limited to age and age squared. The *Z* vector captures county-level controls that may influence financial outcomes, SNAP eligibility, and selection into work requirement status in the county, namely, the county unemployment and labor force participation rates. We select lagged labor market measures because contemporaneous measures like unemployment and labor force participation may be intermediate inputs to financial outcomes in the same period, and thus may be colliders if included in the regression. The vector also includes local neighborhood values of poverty rates in year *t-1,* total population and population density, the share of the population under age 18, the share of the county's households with children at home, the share of the adult population with a bachelor's degree or more, and population shares that are non-Hispanic white, non-Hispanic black, and Hispanic. *Z* also includes state-level policy and political variables, namely indicators for if the state expanded Medicaid by January of the year including quarter *t*, indicators for the party controlling the state legislature, and indicators for the party affiliation of the governor.

We include fixed effects for each county (μ_c) and Commuting-Zone-by-quarter-year interacted fixed effects (γ_{gt}). These fixed effects control for time-varying trends and shocks across commuting zones as well as time invariant differences in county characteristics. Conditional on these fixed effects, the coefficient of interest, β_1, measures the average effect of SNAP work requirements on each outcome for individuals in counties that had a work requirement in relation to others in the same CZ that did not have a work requirement in the same quarter. We cluster our standard errors by counties because treatment varies at this level.

To examine dynamic effects of the work requirements, we estimate an event study model:

(2) $Y_{icgt} = \beta_0 + \sum_{e=-24; \, e \neq -1}^{24} \alpha_e I_e + \beta_2 EverWorkReq_i \, X_{it} \beta_3 + Z_{ct} \beta_4 + \mu_c + \gamma_{gt} + \varepsilon_{icgt}$,

where each indicator *I* represents *e* time (in quarters) relative to when person *i* experienced the imposition of SNAP work requirements. The magnitudes of the *I* coefficients trace out pre-treatment trends in the treatment group as well as dynamic treatment effects in the treated counties in the same CZ relative to the untreated counties across quarters. This exercise can reveal if there are different trends across these groups that may violate the parallel trends assumption. The coefficients can also reveal if there is an anticipatory or time-varying response to the reimposition of work requirements. These dynamic effects are particularly important if work requirements generate an immediate financial shock that consumers must accommodate over time. These dynamic effects also provide information on how consumers affected by work requirements absorb short-term increases in out-of-pocket costs for food.

There are several ways that individuals may adjust their credit behaviors in response to the loss of SNAP benefits after the imposition of work requirements if they are facing economic hardships. First, some individuals who have limited credit available may seek out additional credit that they can use to cover regular expenses. Second, individuals may utilize either their existing credit or this new credit by increasing their outstanding balances. An increase in balances is an indication that the individuals are

taking on new debt, as would occur if their monthly income (including SNAP benefits and other support programs) is insufficient to cover their monthly expenses. Although many who incur additional debt can remain current on these bills, some may fall behind on the additional debt payments.[11] Hence, as a sign of substantial distress we also consider past due accounts.

5. Results

A. Difference in Differences Estimates

We first present the results of our difference-in-differences estimates in Table 2. Once controlling for the other local characteristics, our sample population of probable renters with low or moderate credit scores in counties with work requirements had 0.170 additional inquiries on their credit account in the past 6 months (Panel A) than individuals in the same commuting zone without a work requirement. The mean number of inquiries in our sample is just under one, so the additional 0.170 inquires reflects a 17.4 percent increase at the sample mean. We also consider two other outcomes related to the "flow" of credit: the probability of having any inquiry in the past year, and the probability of opening a new account. We find significant effects on inquiries, but we do not find a statistically significant increase in the probability of opening a new account as a result of the work requirements. However, new inquiries and accounts are "sticky" in the sense that opening a new account today may reduce one's need to open a new account tomorrow because the individual still has access to the additional credit generated today. For these flow variables, it is particularly important to consider dynamic effects.

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[11] Credit card accounts typically have a required minimum payment equal to the greater of a percent of the outstanding balance (such as 2 or 3 percent) or a dollar amount (such as $40). Hence, a borrower could be current on their outstanding credit card debt as long as they are able to pay at least the minimum amount due each month.

Table 2. Difference-in-Differences Coefficients

	Panel A			
	(1)	(2)	(3)	(4)
	Inquiries in Past			Total Card
VARIABLES	6 Months	Pr(Any Inquiries)	Pr(New Account)	Accounts
Coefficient	0.170***	0.0332***	0.00982	0.293***
	(0.0186)	(0.00847)	(0.00722)	(0.0275)
Dep. Var. Treated Mean	0.9783	0.4164	0.2818	1.59
Pct Effect at Treated Mean	17.38%	7.97%	3.48%	18.42%
Observations	8,531,288	8,665,475	8,665,475	8,665,475
R-squared	0.031	0.031	0.028	0.073

	Panel B		
	(1)	(2)	(3)
	Total Card Credit	Any Card Total	Pr(Any Card Past
VARIABLES	Limit	Balance	Due)
Coefficient	1,512***	511.7***	0.0134***
	(170.6)	(49.47)	(0.00280)
Dep. Var. Treated Mean	4,192.92	1,735.13	0.2534
Pct Effect at Treated Mean	36.06%	29.49%	5.29%
Observations	8,665,475	8,665,475	8,665,475
R-squared	0.075	0.057	0.044

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data
Notes: Estimates correspond to Equation 1. Standard errors clustered at the county level.

Consistent with the increase in inquiries we find in areas with work requirements, we also see

an increase in the average number of total card accounts, which represents one aspect of the "stock" of

available credit. Individuals in areas with work requirements have 0.293 more open accounts on

average. At the sample mean, this reflects a 18.4 percent increase in total card accounts. This level

change in the stock of accounts is less likely to exhibit the same behavior as the flow variables because

the stock of credit increases with new accounts while reductions in the stock of accounts require closing accounts.

As consumers increase the number of accounts to which they have access, they also may seek additional credit at the intensive margin, meaning higher credit limits on existing accounts. We therefore consider the total credit limit on all card accounts because this reflects the combination of extensive and intensive margin adjustments. In Panel B, our results show that SNAP work requirements increased the upper credit limit of consumers by approximately $1,512 (36 percent).

We also find that consumers are using this additional credit by increasing the balances they carry on their accounts. Our results suggest consumers increase their total balance by over $500 (29.5 percent), indicating that these borrowers are carrying larger debt burdens as a result of the work requirements. As an indication that some people who are increasing their borrowing experience financial distress, we also observe an increase in the share of borrowers who are past due after the imposition of work requirements. Column 3 of Panel B suggests that consumers were 1.34 percentage points more likely to be past due on their card payments as a result of the work requirements, an increase of approximately 5.3 percent.

Taken together, the results of our difference-in-differences estimates strongly point to consumers seeking out and using new credit in order to make up for lost SNAP benefits. There is also a nontrivial share of consumers that fall behind on their payments, reflecting the financial vulnerability of their position.

B. Event Studies

Using an event studies framework, we can observe the dynamic treatment effects around the imposition of work requirements, doing so in Figures 4 and 5. These figures confirm the results of the difference-in-differences estimates and add additional context.

Figure 4. Event Study Results for Credit Inquiries, New Accounts, and Total Accounts
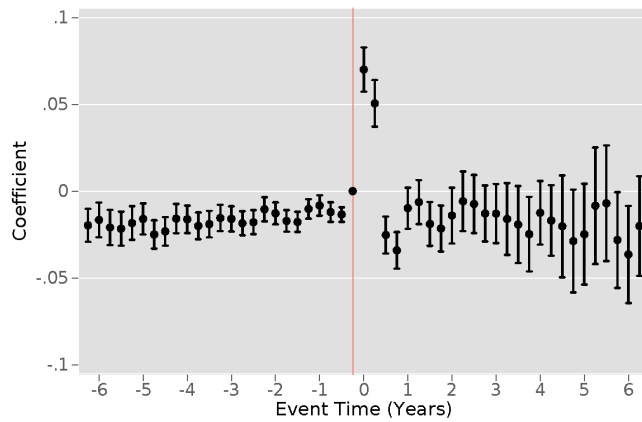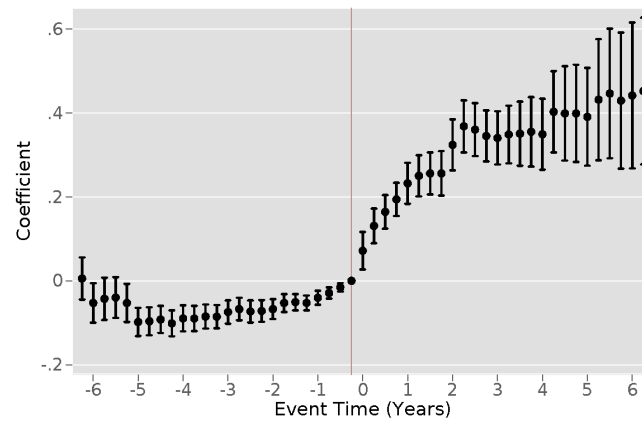
Panel A. Inquiries in the Last Six Months
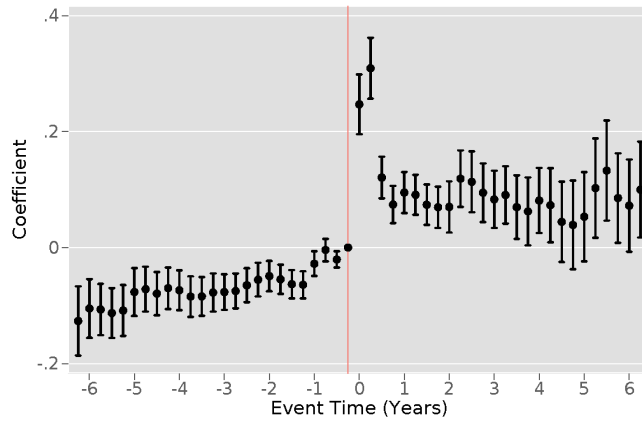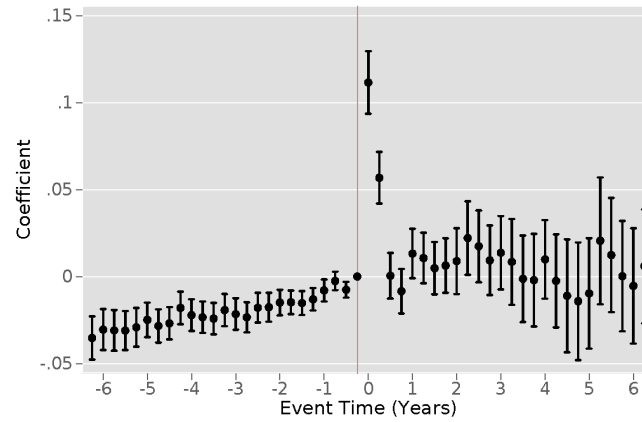
Panel B. Pr(Any Inquiry in Last Year)

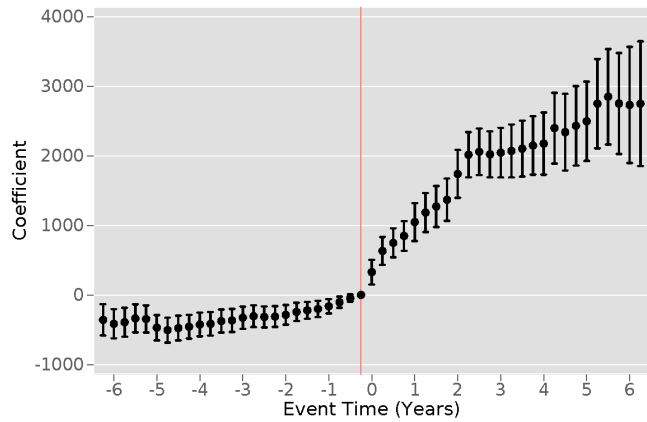Panel C. Pr(Any New Account in the Last Year)
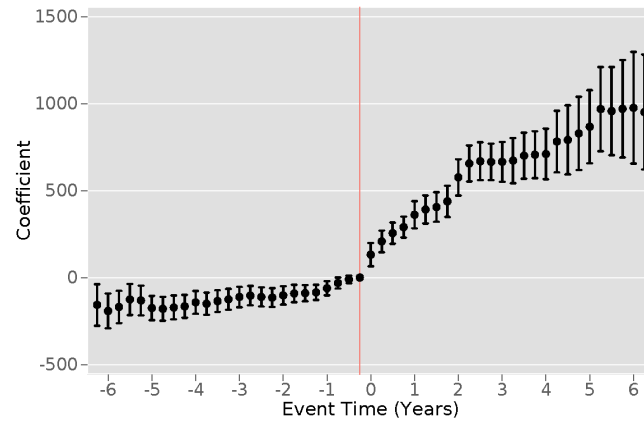

Panel D. Total Number of Card Accounts

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data
Notes: Estimates correspond to Equation 2. Standard errors clustered at the county level.

Figure 5. Event Study Results for Total Credit Limit, Total Card Balance, and Pr(Past Due)
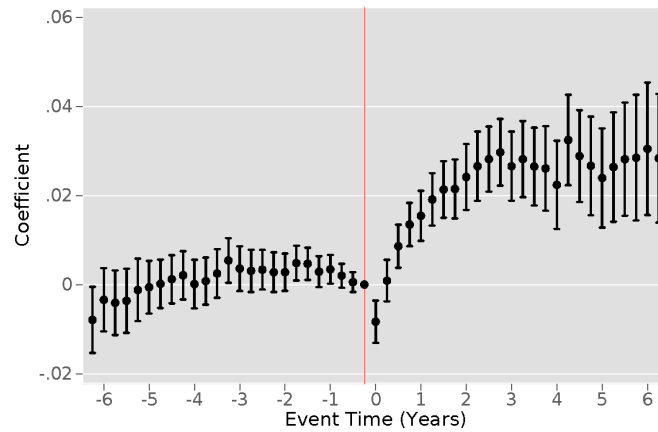
Panel A. Total Credit Limit on All Cards   Panel B. Total Card Balance

Panel C. Pr(Past Due)

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data
Notes: Estimates correspond to Equation 2. Standard errors clustered at the county level.

Panels A and B of Figure 4 show that there is a substantial increase in both the number of inquiries that a consumer has on their credit report (Panel A) and the likelihood of having any inquiries (Panel B). The change in Panel B shows that the likelihood of new inquiries is short lived: the extensive margin shifts upward only for the first quarter after the work requirements are put in place by approximately 12 percentage points (29 percent). However, the number of new inquiries, while significantly higher in the first two quarters (0.3 or nearly 30 percent), remains higher than the control group for several years. Similar to Panel B, Panel C shows that the pattern at the extensive margin of new account openings is short lived as well, rising 5-7 percentage points (18-20 percent) in the first two quarters before returning to the prior trend. SNAP work requirements result in a short-term spike in new credit seeking behaviors in the "flow" of credit and generate higher numbers of inquiries for at least 18 months after the work requirements begin. Panel D shows the lasting increase in the "stock" of accounts after new SNAP work requirements. There is a one-time level shift in the first quarter after the work requirements are imposed, followed by a gradual increase relative to the control counties.

Overall, Figure 4 provides strong evidence that the treatment effects of the work requirements appear almost immediately. This shows that the spike in credit inquiries is larger than it appears from the difference-in-differences estimates, which aggregate the entire "post" period, since the effect is relatively short lived. It is also clear that within commuting zones, the control counties appear to satisfy the parallel trends assumption, and any common shocks to the commuting zone would be controlled for with our quarter-year by commuting zone fixed effects.

Figure 5 shows the results relating to the total amount of credit available to consumers as well as key findings about the dynamics of card debt and past due balances. Panel A of Figure 5 shows that total credit limits on all credit and retail cards jump in the first quarter after the work requirements are in place, followed by a steep incline as new accounts are opened and credit limits on existing accounts rise. This is instructive because this measure incorporates information on *all* margins of credit: the

existence of accounts and the credit available on those existing accounts. Panel B for total card balances follows a similar pattern. Total balances exhibit an immediate level shift after the work requirements, and total balances grow over time.[12]

These growing balances may be an indication of individuals' budgets becoming strained after losing SNAP eligibility without an increase in labor earnings. If the person experiences a financial shock under these conditions, this leaves them with less room to absorb the shock with their existing assets or credit. Because a borrower can remain current by making a minimum payment, the risk of past due debt may not necessarily track balances over time. Panel C shows that the risk of having past due payments peaks after the first three years and remains elevated for at least six years. At the same time that consumers are applying for new credit at high rates in the first quarter after the work requirements begin, the likelihood of past due balances temporarily falls slightly (likely reflecting consumers prioritizing card payments prior to seeking new accounts, as well as the fact that the new accounts must be open for a minimum of about two months prior to becoming past due).[13] However, the risk of being past due quickly increases over the subsequent two years, reaching levels as high as 3 percentage points higher (12 percent) by the end of the third year. That the past due effects are smaller than the effects on balances indicates that the increase in past due risk is concentrated among a smaller subset of lower-income adults.

C. Mechanisms

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[12] In some cases, the initial increase in credit seeking behavior and credit usage could reflect precautionary behaviors if uncertain about future resources. This would be consistent with precautionary borrowing behaviors observed previously by Telyukova (2013); Gorbachev and Luengo-Prado (2019); Druedahl and Jørgensen (2018). Since credit bureau data does not include any transaction-level information, we cannot speak to the type of spending and consumption that consumers are seeking credit for or using their credit on when increasing balances.
[13] Supporting the view that this temporary decline relates to consumer behavior around opening new accounts, when restricting the sample to individuals who did not open a new account, no decline is observed. In addition to this explanation, many of the work requirements in the data begin during the first quarter of the year when tax refunds are issued for most low-income people. These refunds may also help explain part of the first-quarter drop in past due balances coincident to applying for new credit.

We argue that this rise in credit-seeking behaviors and card balances is likely the result of financial need on the part of prospective SNAP-eligible consumers. However, an alternate explanation is that there is an increase in credit supply associated with work requirements and more people working. If this were the case, then one might expect that those with more monetary assets prior to SNAP work requirements being imposed should exhibit similar (or even larger/faster) changes in balances to those with fewer available assets. Similarly, there should be similar experiences with past due debt. This is not the case.

To test this, we compare our estimated effects in states that had asset limits in place for SNAP recipients to estimates in states without asset limits. Larger relative changes in credit-seeking behavior and card balances in states with asset limits strengthens the case that these consumers are encountering new financial constraints that they cannot pay down with existing assets. Figure 6 presents our results for total balances and the probability of past due accounts when we separately estimate these effects in asset limit states versus states without asset limits.

Panels A and B show that there is a larger immediate increase in card balances in states with asset limits, and these balances increase for approximately two years after the work requirements. Those in states without asset limits for SNAP participation experience a smaller immediate shock to total card balances, and these balances remain stable for approximately two years before exhibiting a larger increase in later years. This is consistent with those with more available assets spending down a portion of their assets instead of taking on costly card debts soon after work requirements are imposed. This is not consistent with a straightforward expansion in credit supply.

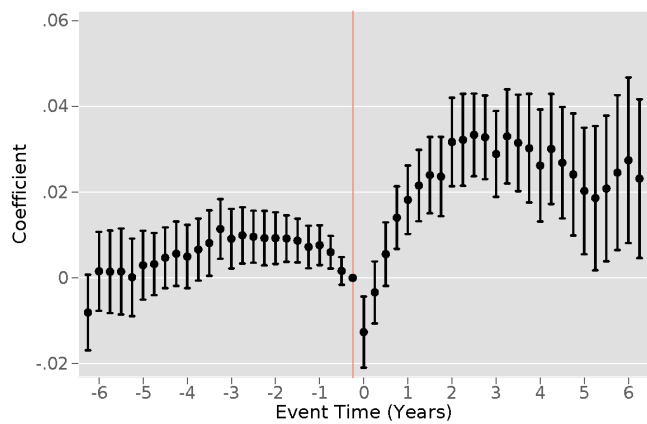Figure 6. Comparison of Effects in States with and without Asset Limits
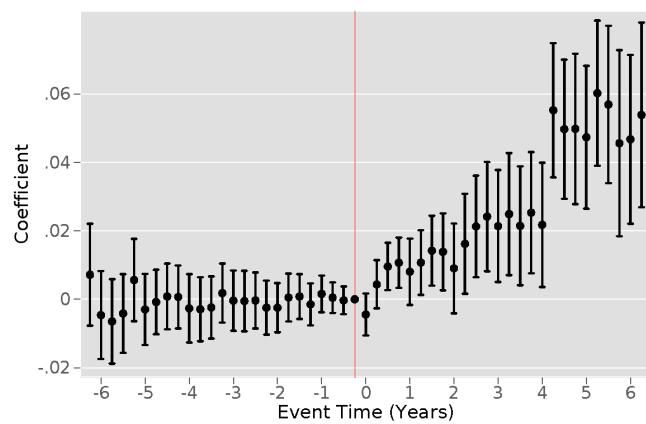
Panel A. With Asset Limits: Total Balance
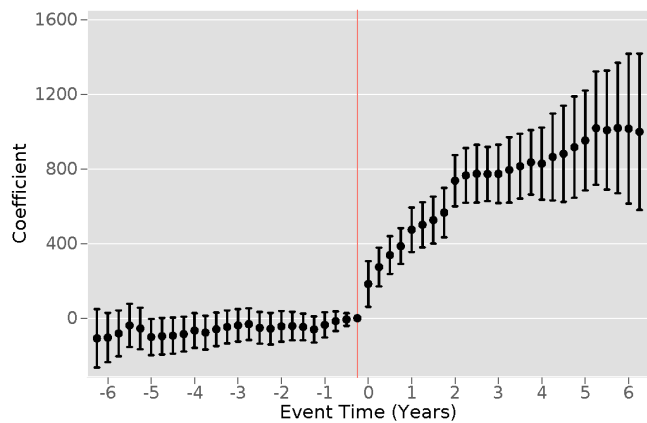
Panel B. Without Asset Limits: Total Balance
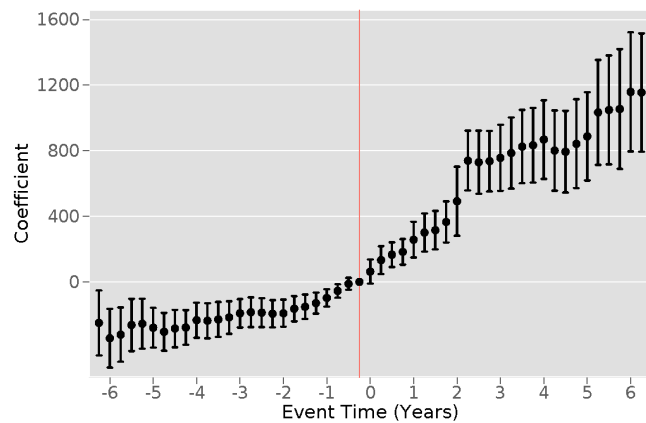
Panel C. With Asset Limits: Pr(Past Due)

Panel D. Without Asset Limits: Pr(Past Due)

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data
Notes: Estimates correspond to Equation 2. Standard errors clustered at the county level.

In Panels C and D, our results suggest the risk having past-due debt falls in the first quarter after the work requirements are in place in areas with asset limit rules, consistent with the need to prioritize card payments to secure additional credit in the absence of available liquid assets. But the risk of past due debt subsequently increases sharply during the following two years in states with asset limits. However, in states without asset limits, these risks grow more slowly. By the end of the first year after the work requirement, the change in risk of past due debt in states with asset limits was approximately twice the change in risk in states without asset limits. It is not until the fifth year after the work requirements that states without asset limits reach the same level as states with asset limits, though the wide error bars limit the statistical significance of these comparisons in years 3-4. Taken together, these results suggest that the new debts taken on by those near SNAP eligibility are reflecting the need for new credit to finance consumption. Those that are disallowed from having more liquid assets for SNAP eligibility seek more credit, which is likely due to those with more available assets being able to partially finance their consumption out of existing assets rather than debt. These results also underscore the fact that asset limits for SNAP eligibility may increase pressure to take on credit card debts due to a lack of substantial savings.

D. Intent-to-Treat Effects and Non-ABAWDs

Our sample from the CCP cannot narrowly select the SNAP-eligible ABAWD population due to a lack of demographic information on dependents, family status, income, or disability. We therefore interpret our estimates as an intent-to-treat effect. Importantly, the effects of ABAWD work requirements for SNAP may not be isolated to only ABAWDs themselves. There are multiple reasons for this. ABAWDs may share a household and financial responsibilities with other ABAWDs, which is the case for cohabitating or married couples without dependents, or with non-ABAWDs, which is the case for multi-generational homes. Incomes among ABAWDs eligible for SNAP during time limit exemption periods are particularly low as documented in Han (2022), so if this low-income status is correlated with

a propensity to have others in the home that share financial responsibilities, there may be spillovers within households. In addition, lost SNAP benefits among very low-income ABAWDs may necessitate financial help from others outside the household. Both mechanisms may drive an increase in credit-seeking and debt levels among lower-income adults that are not ABAWDs but are nonetheless affected by the work requirements indirectly. Furthermore, increases in administrative burdens from the work requirements may reduce take-up rates of benefits even among those who are otherwise eligible.[14] Unfortunately, however, with the available data, it is not feasible to test the extent to which results reflect the effects for the population directly affected versus those who may be indirectly affected in these ways. We therefore cannot rule out spillovers effects.

ABAWDs likely represent at most 7-10 percent of our total CCP sample. The implied treatment-on-the-treated effects on total balances suggest that one year after the work requirements, there is an implied total increase in credit card balances of approximately $2,500-$3,000. Notably, this is similar to or slightly larger than the total annual value of lost SNAP benefits. Several mechanisms may explain this large effect. First, not all balances on a credit card revolve, but a share of borrowers may use their credit cards for normal purchases and pay off most or all of the balances in full each month. Yet, the credit balance for these "transactors" who pay off their balance each month will still appear in the data with their outstanding credit balance based on the day that the credit data is pulled.[15] According to the Federal Reserve's Survey of Household Economics and Decisionmaking, in recent years about half of people with a credit card do not have a balance in any given month (Federal Reserve Board, 2020). Using

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[14] Researchers have long documented the large share of apparently eligible individuals who do not take up public benefits (Currie 2006). Homonoff and Somerville (2021) illustrate SNAP disenrollment effects from the administrative burdens of the SNAP recertification process. Finkelstein and Notowidigdo (2019) use a novel experiment to document both the information costs and transaction costs associated with SNAP enrollment. Bhargava and Manoli (2015) and Daigneault and Mace (2020) similarly observe that administrative burdens reduce take up rates of tax credits and public benefit programs.

[15] Typically, the statement closing balance reported to the credit bureaus each billing cycle reflects a month of spending (per credit card). Individuals who own more than one credit card can have different reporting dates throughout the month for each tradeline.

credit bureau data, Fulford and Schuh (2020) further suggest that revolver status is relatively persistent

over time for many consumers. For these individuals, if their spending shifted from SNAP benefits to a

credit card, their reported credit card balance will increase even if they pay it off each month. Second, to

the extent that the work requirements increase employment, for those who find employment there may

be a credit supply response in addition to the increase in credit demand.[16] Third, recent research

suggests that when individuals seek and obtain additional credit, they incur higher debt balances as a

behavioral response to the credit itself (Fulford and Schuh, 2017). This implies that as the work

requirements induced the need for more credit, the additional credit itself may have partially induced

higher balances. Fourth, revolving balances and fees for missed payments can add a substantial amount

to credit card balances, so the rise we find in past due risk may contribute to a rise in balances beyond

the cash value of lost SNAP benefits.

E. Robustness to alternate specification

In an alternative approach to our commuting zone design, we use people in counties that share

the same state-state border dyad as controls in a separate specification. This approach does not rely on

commuting zone or other definitions of local labor markets, but implicitly assumes that counties on a

common state border share similarities in financial and labor market levels and trends. In addition, the

identifying variation using these controls is more likely to reflect state-level policy choices surrounding

work requirements. Several states had uniform waiver policies that affected all or nearly all of their

counties at once, while some states declined to extend waivers at all. The validity of the assumption of a

similar economic experiences is less clear in this case because state borders extend along larger

geographic scales and also because the integration of economies across state lines is not as clear as in

the case of commuting zones. Nevertheless, this approach produces similar results to our commuting

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[16] Reflecting these differences in credit supply, in 2010, 45 percent of all unemployed households had unsecured
revolving credit, compared to 65 percent of all households (Herkenhoff 2019).

zone approach, which increases confidence in our commuting zone estimates. We present the difference-in-differences estimates in Appendix Table B1 and the event study figures in Figures B1 and B2.

Another alternative specification is to estimate our models without any interacted fixed effects to compare all untreated counties (and not yet treated counties) to all treated counties. This exercise results in significant point estimates, albeit somewhat smaller than our main estimates (see Appendix Table B2). However, there are notably diverging pre-trends for several outcomes. We argue this makes the simple design with fixed effects for county and year ("two-way fixed effects") inappropriate for this setting because the control group is not adequately capturing the set of potential outcomes for the treatment group. Nevertheless, for transparency, we present our event studies in Appendix Figures B3 and B4. One clear pattern in our estimates is that as the control group is defined with more restrictions to make the treatment and control groups more similar in terms of possible unobserved factors, the measured treatment effects are larger.

There is an emerging econometric literature extoling the careful use of the difference-in-differences design when considering staggered treatments (Callaway and Sant'Anna, 2021; Goodman-Bacon, 2021; Sun and Abraham, 2021). One key insight from these recent papers is the importance of distinguishing between control units that are never treated versus not yet treated. In order to investigate this aspect of our design, we arrange our data by treatment cohort panels in a "stacked" regression (Cengiz et al. 2019). In this setup, each never-treated unit is assigned a placebo treatment cohort, and we include cohort-by-CZ-by-year, and cohort-by-county fixed effects so that we are comparing treated counties to never treated counties within the CZ in the same panel. This implicitly removes any identifying variation that leverages the earlier-to-later treatment comparison and focuses

solely on treated units in comparison to never treated units in the same local labor market.[17] Appendix

Table B3 shows similar estimates to our main approach. Appendix Figures B5 and B6 show that our

results are very similar under this approach as they are in our preferred specification. The one difference

is the size of the effect in the first few quarters, which are smaller in the stacked regression approach.

This difference indicates that the earlier-treated to later-treated comparison groups contain information

related to the timing of the effects. Importantly, the overall picture is very similar, with the upward

trends in quarters 5-8 after treatment showing an even steeper profile than in our main models. The

estimated effects on past due debts are larger than our baseline model.

     To investigate our results further, as a placebo test, we estimate our main difference-in-

differences model on a subsample of our target population over age 50 that are not directly subject to

work requirements due to their age (although we acknowledge that some may alter their credit

behavior if sharing resources with affected individuals). We present those results in Appendix Table B4.

Each of the coefficients are small and not statistically significant with the exception of the inquiry

outcomes. This strengthens our interpretation that the effects we see over time are attributable to the

work requirements and not to other contemporaneous shocks or trends.

     As a final robustness test, we use the age 50 cutoff for the definition of ABAWDs in a regression

discontinuity framework and compare the discontinuities at this age before and after the imposition of

work requirements within treated counties. These "differences in discontinuities" are RD analogs of the

difference-in-differences model, but with localized controls at a single age margin. We estimate first-

order polynomial splines on age for each outcome on either side of the age 50 cutoff for those within a

ten-year age band around the cutoff (age 39-49 and 50-60). In this specification, we eliminate those age

49-50 to avoid measurement error because we cannot narrowly measure exactly when each person

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[17] Because the number of interacted fixed effects is so large and results in infeasible computational requirements, we take a smaller random subsample of our main sample for these models. We lose some precision in these estimates, but the main result is the same.

turned 50 in the sample and therefore could be subject to the work requirements. This is similar to a

"donut" RD. The results of this exercise are in Appendix Table B5.[18] The resulting estimates similarly

show an increase in total credit and balances as seen in our preferred estimates, though smaller in

magnitude. These estimates confirm the causal interpretation of our results and provide some context

for the size of the effects on those subject to the work requirement in comparison to possible spillovers

to those that are not. Taken together, across multiple specifications and identification strategies, our

results point to the same conclusion: work requirements for SNAP increase credit-seeking in credit and

retail cards, debt on these cards, and the incidence of past due debts among lower-income renters.

6. Conclusion

This paper advances our understanding of the financial repercussions of work requirements by

measuring the causal effects of the SNAP work requirements on credit outcomes in high-quality

administrative data. Using a difference-in-differences design in which we compare people within the

same Commuting Zone that are differentially affected by work requirements, we find evidence that

SNAP work requirements increased credit-seeking behavior among lower-income renters. We find that

borrowers in counties with work requirements applied for more new accounts, sought increases in

credit limits, increased their total debt amounts on retail and credit cards, and experienced an elevated

risk of having past due card debts. The effects are particularly pronounced in states that have asset

limits attached to SNAP eligibility, pointing to a lack of liquid assets and the need to seek additional

credit to fund consumption as the primary mechanism for the effects we find.

These results provide evidence about a new dimension of the financial repercussions of work

requirements beyond the employment effects commonly studied. They suggest that work requirements

result in an increase in credit seeking behavior and outstanding debt as individuals lose access to public

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[18] Graphs of these discontinuities are available from the authors upon request. The discontinuities may understate the effect if those subject to the work requirements age into the control group (over age 50) after the work requirement begins, changing both the discontinuity and estimated slope parameters on both sides of the cutoff.

benefits. Our findings suggest that these individual-level harms for those who fail to quickly transition to employment or are hampered by new administrative burdens should be weighed against the benefits of encouraging work when considering the tradeoffs of future work requirements for public benefits programs.

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Appendix

A. Select features of the U.S. renter population ages 25 to 49

Table 1.

		Adults, 18 - 49, renters	Adults, age 18-49 without kids, renters
Gender			
	Male	47.9%	55.3%
	Female	52.1%	44.7%
Age			
	18-24	24.6%	34.3%
	25-29	21.8%	24.2%
	30-34	17.1%	14.4%
	35-39	13.6%	9.2%
	40-44	12.0%	8.5%
	45-49	11.0%	9.4%
Race/Ethnicity			
	White, non-Hispanic	55.8%	58.9%
	Black, non-Hispanic	19.9%	18.1%
	Hispanic	17.0%	15.3%
	Asian, non-Hispanic	3.7%	4.1%
	Other race, non-Hispanic	3.6%	3.3%
Parental Status			
	Has at least one child age <18	39.7%	--
Education			
	Less than high school graduate	10.7%	8.9%
	High school graduate	27.9%	25.6%
	Some college/technical or associates degree	37.7%	37.1%
	Bachelor's degree	17.3%	21.1%
	Graduate or professional degree	6.4%	7.3%
Employment and earnings			
	Employed	72.6%	73.5%
	Employed for more than 20 hrs/week	69.1%	69.6%
	Hours worked	31.0	31.2
	Annual wage	$30,142	$30,172

Notes: Among renters. Dollar values are inflation adjusted to 2021 values.

Source: Authors' calculations using 2010-2017 1-year PUMS samples from IPUMS USA.

Appendix

B. State Border Design, Two-Way Fixed Effects, "Stacked" Regression, and Difference in Discontinuities

Table B1. Difference-in-Differences Coefficients in State Border Design

	Panel A			
	(1)	(2)	(3)	(4)
VARIABLES	Inquiries in Past 6 Months	Pr(Any Inquiries)	Pr(New Account)	Total Card Accounts
Coefficient	0.0802***	0.00700	-0.00463	0.208***
	(0.0177)	(0.00953)	(0.00840)	(0.0327)
Dep. Variable Sample Mean	0.9225	0.4192	0.2695	1.59
Pct Effect at Sample Mean	8.69%	1.67%	-1.72%	13.11%
Observations	4,085,929	4,151,660	4,151,660	4,151,660
R-squared	0.032	0.029	0.028	0.084

	Panel B		
	(1)	(2)	(3)
VARIABLES	Total Card Credit Limit	Any Card Total Balance	Pr(Any Card Past Due)
Coefficient	1,038***	340.8***	0.0132***
	(187.1)	(53.26)	(0.00303)
Dep. Variable Sample Mean	4,157.68	1,758.44	0.2537
Pct Effect at Sample Mean	24.97%	19.38%	5.20%
Observations	4,151,660	4,151,660	4,151,660
R-squared	0.093	0.063	0.045

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
Notes: Estimates correspond to Equation 1 but with state border pairs instead of CZ interacted fixed effects. Standard errors clustered at the county level.

Table B2. Difference-in-Differences Coefficients in Two-Way Fixed Effects Design

Panel A

VARIABLES	(1) Inquiries in Past 6 Months	(2) Pr(Any Inquiries)	(3) Pr(New Account)	(4) Total Card Accounts
Coefficient	0.0526***	0.0101***	0.00519**	0.0882***
	(0.00768)	(0.00274)	(0.00263)	(0.0102)
Dep. Variable Sample Mean	0.968	0.429	0.267	1.519
Pct Effect at Sample Mean	5.43%	2.35%	1.94%	5.81%
Observations	8,532,902	8,667,098	8,667,098	8,667,098
R-squared	0.028	0.028	0.026	0.072

Panel B

VARIABLES	(1) Total Card Credit Limit	(2) Any Card Total Balance	(3) Pr(Any Card Past Due)
Coefficient	406.9***	148.3***	0.00466***
	(67.78)	(17.56)	(0.00153)
Dep. Variable Sample Mean	3,938	1,700	0.260
Pct Effect at Sample Mean	10.33%	8.72%	1.79%
Observations	8,667,098	8,667,098	8,667,098
R-squared	0.073	0.056	0.042

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
Notes: Estimates correspond to Equation 1 but replacing commuting zone by year fixed effects with year fixed effects and expanding the sample to all US counties. Standard errors clustered at the county level.

Table B3. Difference-in-Differences Coefficients in Commuting Zone "Stacked" Regression

Panel A

VARIABLES	(1) Inquiries in Past 6 Months	(2) Pr(Any Inquiries)	(3) Pr(New Account)	(4) Total Card Accounts
Coefficient	0.105**	0.0185	0.00608	0.257***
	(0.0415)	(0.0123)	(0.0113)	(0.0451)
Dep. Variable Sample Mean	0.959	0.417	0.240	1.365
Pct Effect at Sample Mean	10.95%	4.44%	2.53%	18.83%
Observations	9,374,912	9,513,351	9,513,351	9,513,351
R-squared	0.156	0.079	0.079	0.126

Panel B

VARIABLES	(1) Total Card Credit Limit	(2) Any Card Total Balance	(3) Pr(Any Card Past Due)
Coefficient	1,713***	503.8***	0.0217***
	(263.0)	(94.12)	(0.00710)
Dep. Variable Sample Mean	3411	1568	0.271
Pct Effect at Sample Mean	50.22%	32.13%	8.01%
Observations	9,513,351	9,513,351	9,513,351
R-squared	0.126	0.112	0.090

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
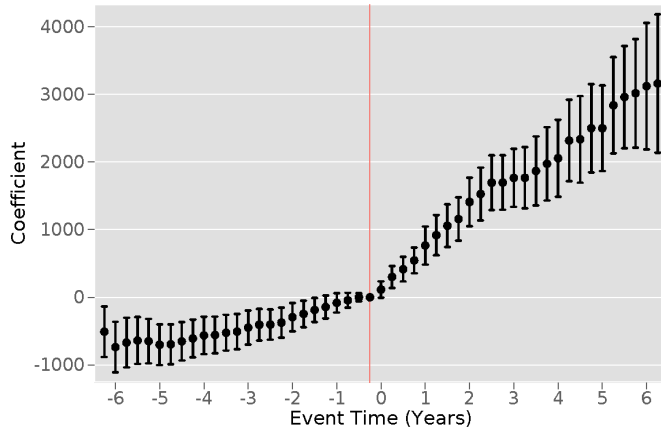Notes: Estimates correspond to Equation 1 with additional interactions for treatment panels as described in the text. Standard errors clustered at the county level.

Table B4. Difference-in-Differences Coefficients with Sample Over Age 50

Panel A

VARIABLES	(1) Inquiries in Past 6 Months	(2) Pr(Any Inquiries)	(3) Pr(New Account)	(4) Total Card Accounts
Coefficient	0.0586***	0.0166**	0.00125	-0.0181
	(0.0165)	(0.00678)	(0.00587)	(0.0323)
Dep. Variable Sample Mean	0.6301	0.3027	0.1991	2.04
Pct Effect at Sample Mean	9.30%	5.48%	0.63%	-0.89%
Observations	4,316,321	4,328,298	4,328,298	4,328,298
R-squared	0.024	0.057	0.034	0.052

Panel B

| VARIABLES	(1) Total Card Credit Limit	(2) Any Card Total Balance	(3) Pr(Any Card Past Due)
Coefficient	-120.7	-61.86	0.00374
	(156.3)	(63.76)	(0.00388)
Dep. Variable Sample Mean	7,852.78	2,837.32	0.2111
Pct Effect at Sample Mean	-1.54%	-2.18%	1.77%
Observations	4,328,298	4,328,298	4,328,298
R-squared	0.052	0.038	0.029

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.

Notes: Estimates correspond to Equation 1. Standard errors clustered at the county level.

Table B5. Changes in Discontinuities at Age 50 Cutoff

Panel A

VARIABLES	(1) Inquiries in Past 6 Months	(2) Pr(Any Inquiries)	(3) Pr(New Account)	(4) Total Card Accounts
Coefficient - Pre	0.0154	0.0025	0.0021	0.0253
95% CI	[-0.0002, 0.0310]	[-0.0001, 0.0051]	[-0.0004, 0.0043]	[0.0097, 0.0410]
Coefficient - Post	0.0075	0.0047	-0.0024	0.0746
95% CI	[-0.0078, 0.0227]	[0.0010, 0.0083]	[-0.0056, 0.0009]	[0.0505, 0.0987]
Change in discontinuity	-0.0079	0.0022	-0.0045	0.0492

Panel B

VARIABLES	(1) Total Card Credit Limit	(2) Any Card Total Balance	(3) Pr(Any Card Past Due)
Coefficient - Pre	-31	40	0.0058
95% CI	[-116, 53]	[4, 76]	[0.0035, 0.0812]
Coefficient - Post	411	253	0.0070
95% CI	[299, 523]	[200, 305]	[0.0037, 0.010]
Change in discontinuity	442	213	0.0012

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.

Notes: Standard errors based on heteroskedasticity–robust nearest neighbor variance.

Figure B1. Event Study Results for Credit Inquiries, New Accounts, and Total Accounts in State Border Design

Panel A. Inquiries in the Last Six Months
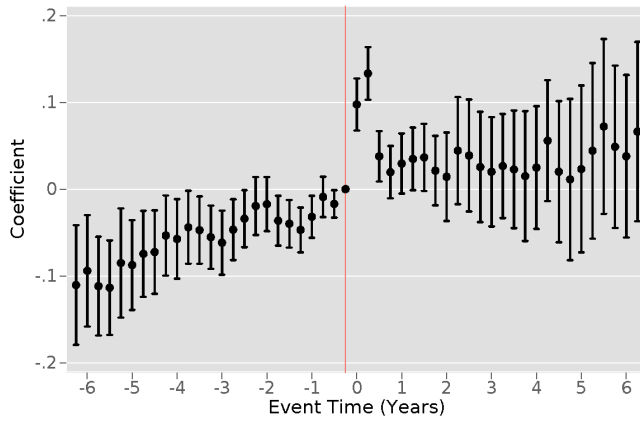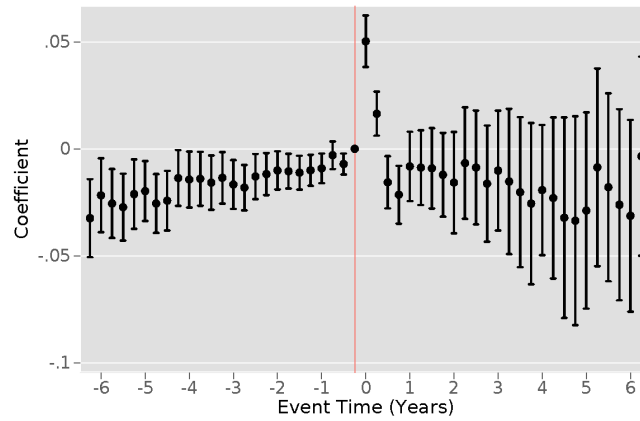
Panel B. Pr(Any Inquiry in Last Year)

Panel C. Pr(Any New Account in the Last Year)
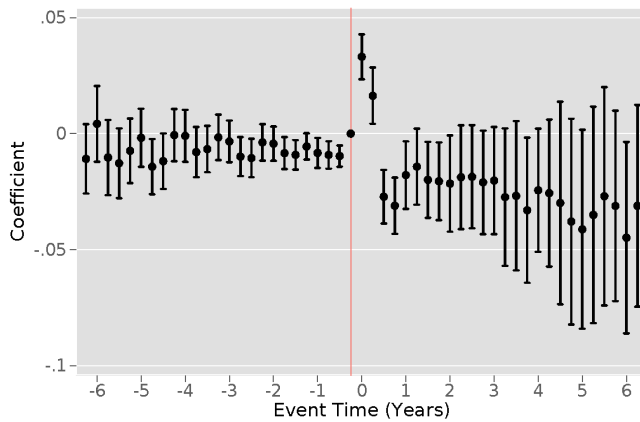
Panel D. Total Number of Card Accounts
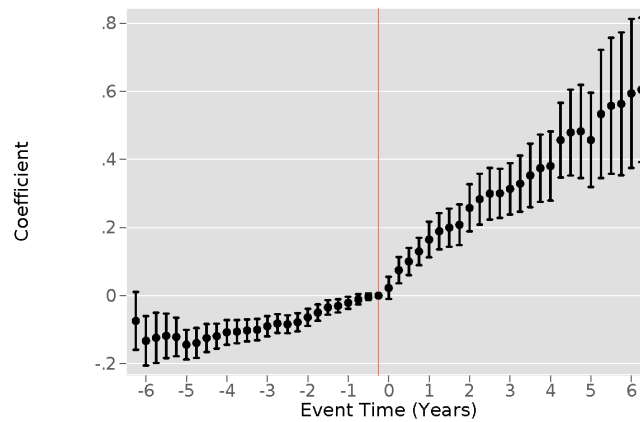
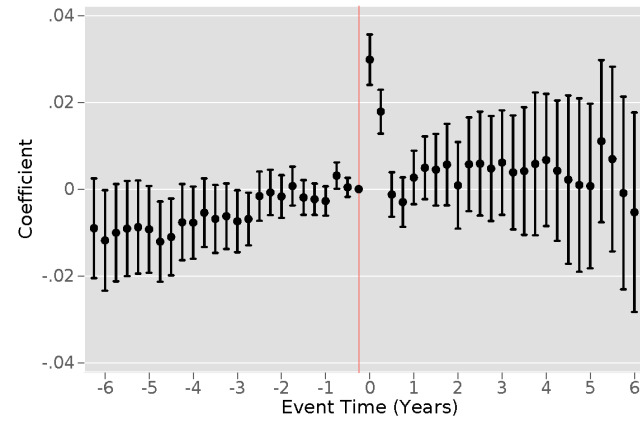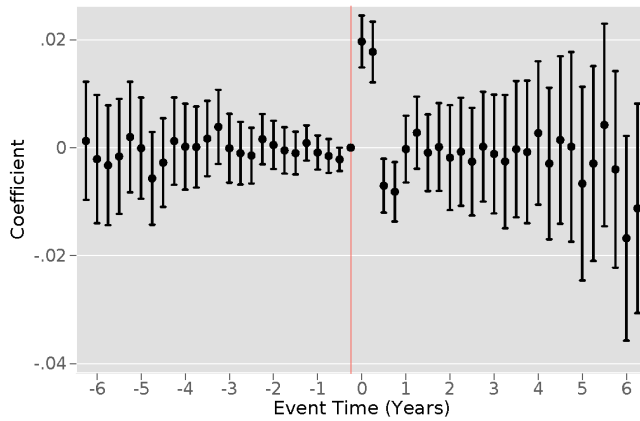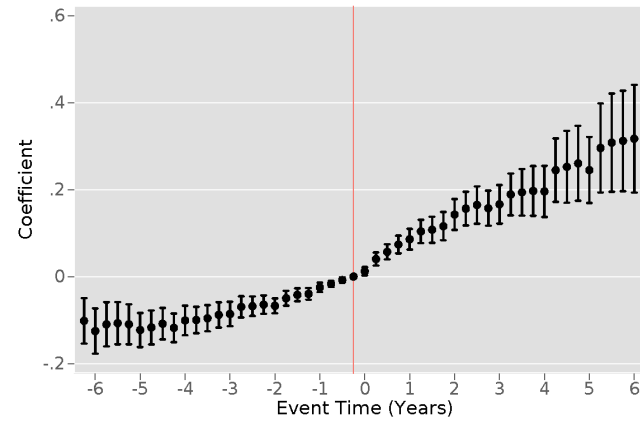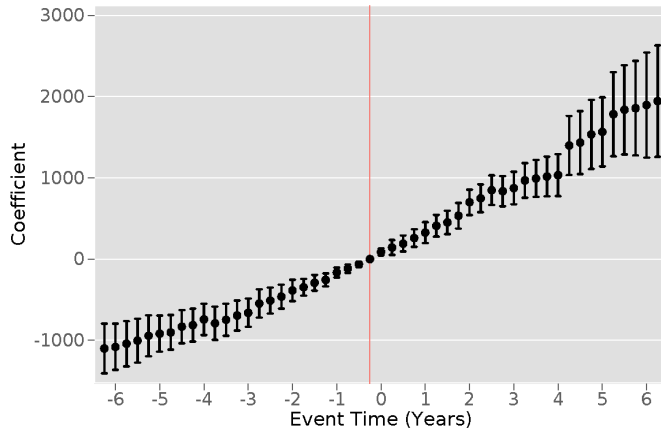

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
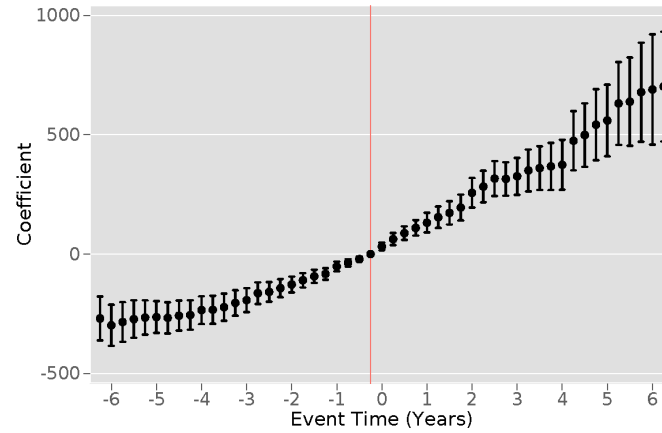
Notes: Estimates correspond to Equation 2 except with state border by year fixed effects instead of commuting zone by year fixed effects. Standard errors clustered at the county level.

Figure B2. Event Study Results for Total Credit Limit, Total Card Balance, and Pr(Past Due) in State Border Design
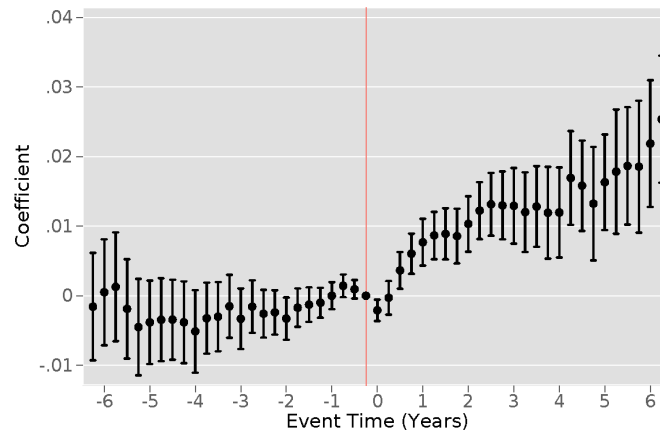
Panel A. Total Credit Limit on All Cards
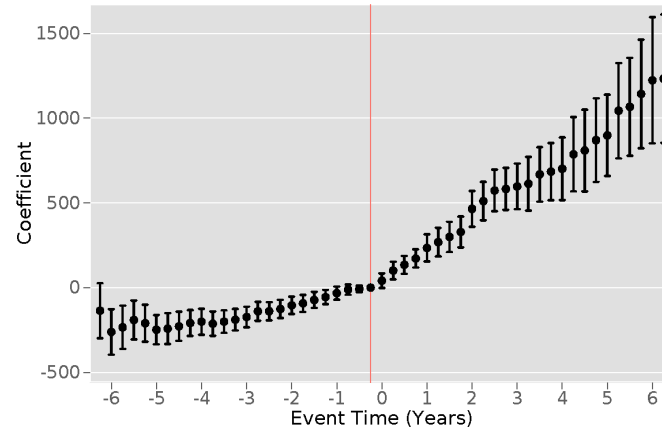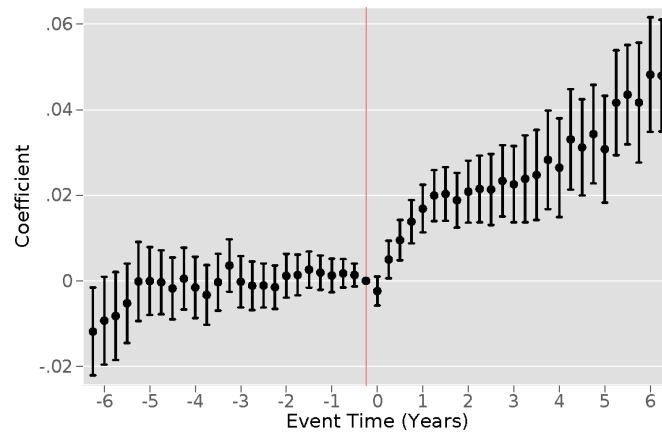
Panel B. Total Card Balance

Panel C. Pr(Past Due)

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
Notes: Estimates correspond to Equation 2 except with state border by year fixed effects instead of commuting zone by year fixed effects. Standard errors clustered at the county level.

Figure B3. Event Study Results for Credit Inquiries, New Accounts, and Total Accounts in Two-Way Fixed Effects Design

Panel A. Inquiries in the Last Six Months
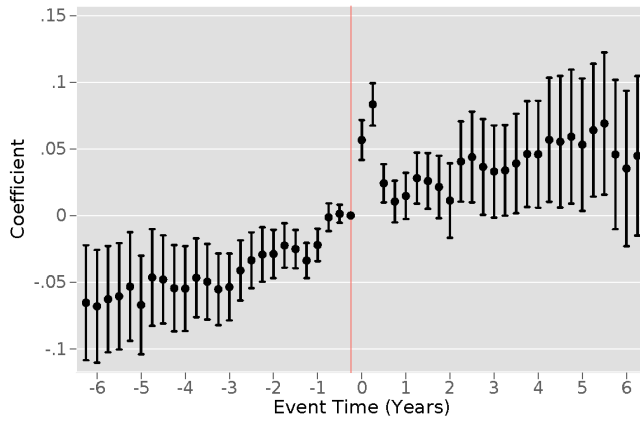
Panel B. Pr(Any Inquiry in Last Year)

Panel C. Pr(Any New Account in the Last Year)
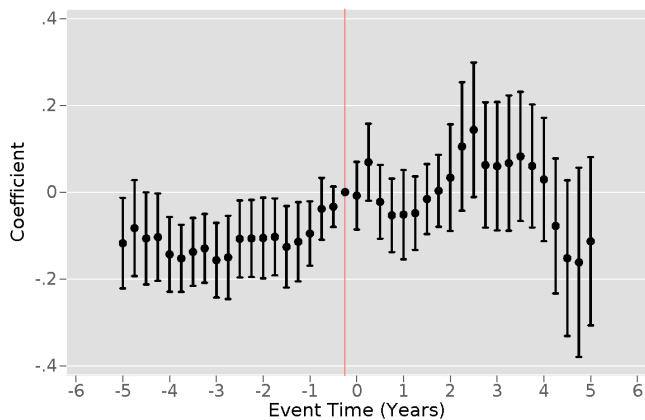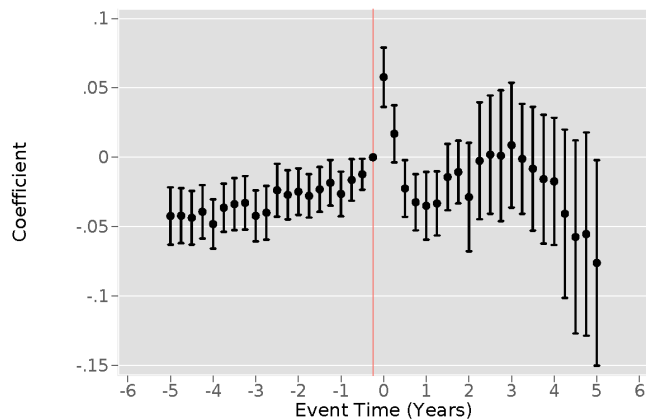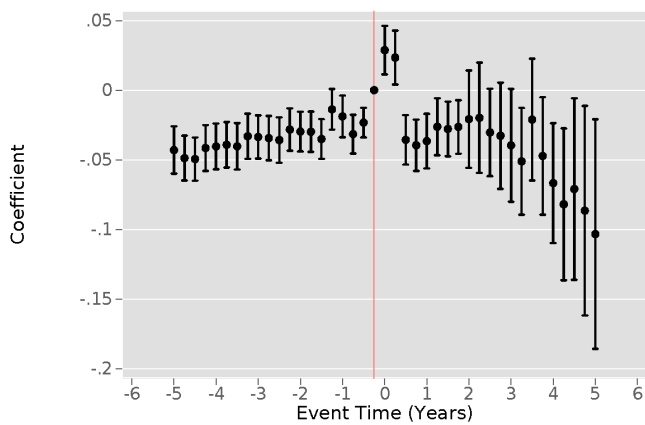
Panel D. Total Number of Card Accounts

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.

Notes: Estimates correspond to Equation 2 but replacing commuting zone by year fixed effects with year fixed effects and expanding the sample to all US counties. Standard errors clustered at the county level.

Figure B4. Event Study Results for Total Credit Limit, Total Card Balance, and Pr(Past Due) in Two-Way Fixed Effects Design

Panel A. Total Credit Limit on All Cards

Panel B. Total Card Balance

Panel C. Pr(Past Due)

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
Notes: Estimates correspond to Equation 2 but replacing commuting zone by year fixed effects with year fixed effects and expanding the sample to all US counties. Standard errors clustered at the county level.

Figure B5. Event Study Results for Credit Inquiries, New Accounts, and Total Accounts in Commuting Zone "Stacked" Regression

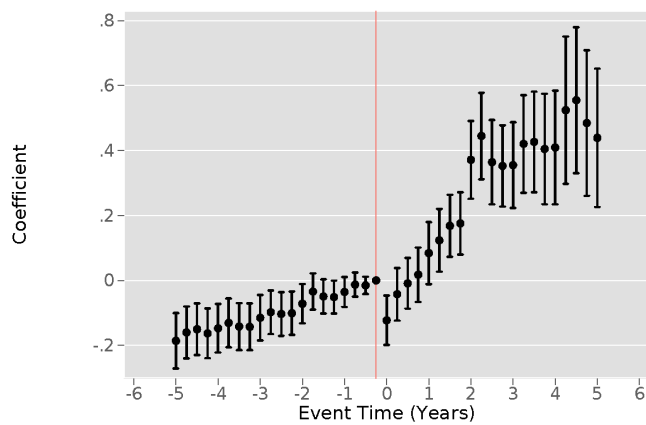Panel A. Inquiries in the Last Six Months

Panel B. Pr(Any Inquiry in Last Year)

Panel C. Pr(Any New Account in the Last Year)
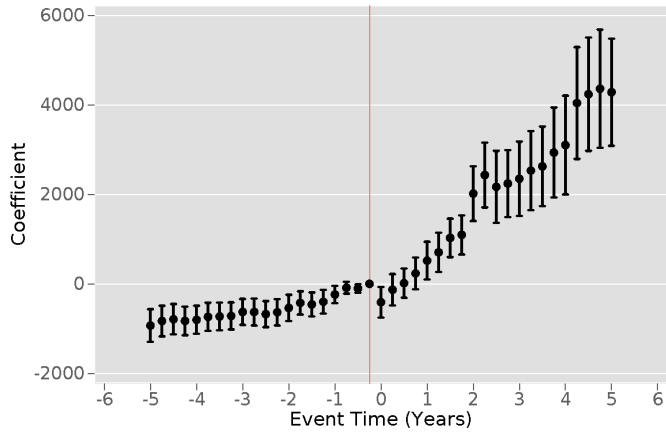

Panel D. Total Number of Card Accounts

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
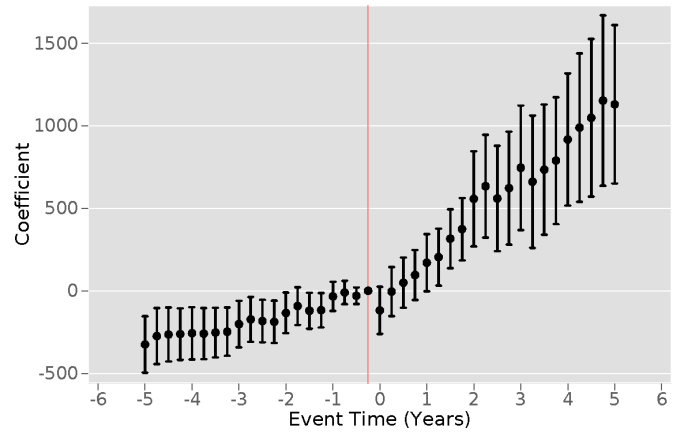
Notes: Estimates correspond to Equation 2 with additional interactions for treatment panels as described in the text. Standard errors clustered at the county level.

Figure B6. Event Study Results for Total Credit Limit, Total Card Balance, and Pr(Past Due) in Commuting Zone "Stacked" Regression
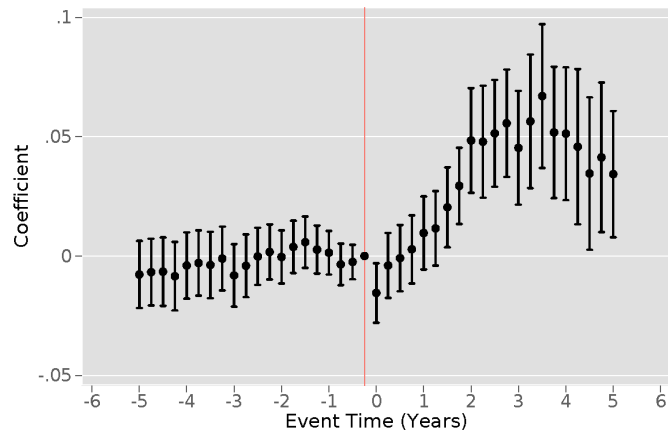
Panel A. Total Credit Limit on All Cards

Panel B. Total Card Balance

Panel C. Pr(Past Due)

Source: Authors' calculations using FRBNY Consumer Credit Panel/Equifax Data.
Notes: Estimates correspond to Equation 2 with additional interactions for treatment panels as described in the text. Standard errors clustered at the county level.