The Big Economic Consequences of Small Financial Shocks: Evidence from Minor Car Crashes

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Abstract

Unexpected expenses are common and can have significant economic consequences, particularly for individuals with limited financial buffers. This paper examines the long-term effects of modest financial shocks stemming from minor car crashes. Leveraging a unique dataset combining car crash reports with Census and tax records, we estimate the causal impacts of these shocks on employment, earnings, and related indicators of economic and social well-being. We find that such shocks lead to persistent declines in employment and earnings, particularly among financially vulnerable populations. These effects are substantially mitigated during periods of higher liquidity and among individuals with access to greater social supports.

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1 Introduction

Unexpected expenses are a routine aspect of financial life, affecting a majority of households each year.[1] Among the most prevalent unexpected expenses, car repairs account for a substantial share, affecting 30% of households. Medical costs and home maintenance issues follow closely, impacting roughly a quarter of households (Pew 2015).

Despite the frequency of these financial disruptions, many individuals are ill-prepared to manage these expenses using liquid assets. For example, roughly 60% of Americans report not having the financial resources to cover an unexpected $1,000 expense out of savings.[2] This lack of liquidity is particularly dramatic for low-income households.

These alarming statistics have spurred extensive discourse in both media and policy circles regarding the strategies individuals employ to cope with such financial shocks. For instance, numerous articles and policy briefs highlight the vulnerability of households to these seemingly minor yet potentially destabilizing financial events, suggesting the need for robust financial literacy and emergency savings programs (Hasler et al. 2018).

Traditional economic models often view these expenses as minor inconveniences that can be smoothed away by borrowing from future consumption. However, qualitative research and emerging perspectives suggest that small financial shocks can precipitate a cascade of adverse outcomes, leading to cycles of financial instability.[3] These effects may result from difficulty accessing credit or negative impacts on mental health and decision-making due to stress and anxiety associated with financial instability. This perspective suggests that even modest unexpected expenses can have profound and enduring impacts, particularly for those with limited financial buffers.

Despite growing attention to financial instability, little empirical research quantifies the long-term impact of small, unexpected expenses. In this paper, we add to the limited evidence on the persistent impact of small financial shocks by investigating how one of the most common unexpected expenses, car repairs, affects labor market and related measures of well-being. Additionally, we provide new evidence on the role of financial and social supports in mitigating these effects, shedding light on the mechanisms that help individuals navigate

[1] Indeed, some estimates indicate that approximately 60% of households experience at least one unplanned expense within a given year (Pew 2015).

[2] The 60% statistic comes from Bankrate Emergency Savings Surveys. Roughly 41% would not be able to cover a $400 emergency expense with savings or a credit card paid off at the end of the month (author's calculations using Survey of Household Economics and Decisionmaking (SHED)).

[3] For example, an unexpected home repair might lead to an ability to pay rent, which could affect credit access and/or lead to eviction.

financial instability.

Leveraging a novel panel of linked data that combines detailed car crash information with commingled Census and tax data, we estimate the effects of small financial shocks on a range of outcomes including employment, earnings, income, family structure, criminal justice involvement, receipt of government support, and residential mobility. Our analysis focuses on incidents involving damage to unoccupied parked cars, allowing us to isolate the unexpected financial expense from any physical or mental health effects of involvement in a crash.

We posit that the timing of these incidents is unlikely to be correlated with changes in individuals' economic outcomes, thus allowing us to isolate the causal impact of these financial shocks. Our findings reveal significant effects of such incidents, reducing the likelihood of employment by approximately 1 percentage point and decreasing average annual earnings by approximately $700 (close to 2 percent). These effects persist and grow over time (to roughly 3 percent), underscoring the long-term ramifications of small unexpected expenses.

The estimated effects are consistent with a causal effect of the crash. We see no evidence of differential pre-trends in outcomes. Additionally, for crashes occurring at the end of the year, there are no anticipatory effects observed within that year, reinforcing the argument that the financial shock itself drives the observed outcomes. Furthermore, when examining incidents with minimal vehicle damage, which likely did not incur significant unexpected expenses, we find no significant effects. Conversely, crashes with greater levels of damage (and uninsured expenses) correspond to progressively larger negative impacts on employment and earnings, further substantiating the causal relationship between the extent of the financial shock and the size of its effects.

These effects are large given the magnitude of the shock. At the individual level, the negative effect of a single unexpected expense on earnings is roughly equivalent to reducing an individual's educational attainment by a third of a year. At the aggregate level, a back of the envelope calculation suggests that unexpected expenses lead to an estimated $170 billion in lost earnings *each year*, comparable to the impact of the 2001 recession.

Further analysis indicates that the effects are more pronounced among individuals with lower baseline financial security, such as those with lower incomes and savings, and among Black individuals compared to White individuals. This heterogeneity aligns with previous qualitative and theoretical work suggesting that access to liquidity and social supports play critical roles in mitigating the effects of financial shocks.

Using nationally representative data from the Consumer Expenditure Survey (CEX), we

estimate that a minor crash yields roughly $800 in out-of-pocket repair costs, roughly three weeks of wages for a full-time worker receiving the minimum wage. There is little indication that minor crashes significantly alter access to transportation. Instead, our findings point to the liquidity shock itself as the central mechanism, particularly among low-income households: minor crashes precede non-trivial reductions ($100–$200) in spending and increases in unpaid debt, but only among those with limited means.

We use additional data on family structure, criminal justice involvement, residential mobility, and unemployment insurance (UI) receipt to further investigate the mechanisms driving the longer-term effects. Our findings suggest several potential channels: increased financial and psychological stress (evidenced by higher rates of criminal justice involvement), greater difficulty securing or maintaining employment (as reflected in increased UI receipt), and heightened housing instability (as indicated by increased residential mobility). These challenges appear to compound over time, with the most pronounced negative impacts observed among individuals at the lower end of the earnings distribution and among those with fewer financial resources.

Consistent with the proposed role of liquidity in buffering against financial shocks, we find that the negative impacts are exacerbated during periods when families are more likely to be financially constrained and that government supports can partially ameliorate these effects. Specifically, individuals whose vehicles are involved in a car crash appear unaffected by the negative shock if it occurs soon after the likely timing of tax refund receipt, a period of high liquidity.

While survey evidence indicates that many individuals rely on support from family and friends to weather unexpected expenses, we provide some of the first evidence to show that this support likely insulates individuals from the negative impacts of shocks. Specifically, we show that individuals who grew up in families and neighborhoods with higher resource levels are less affected by unexpected expenses. We further decompose this impact gradient to show that the relationship between family background and the impact of shocks persists even after controlling for the effect of one's own income.

This paper contributes to the literature by providing robust evidence of the significant and lasting impact of small unexpected expenses, highlighting the importance of financial preparedness and social supports and the potential for programs to support vulnerable populations in managing financial shocks.

2 Data

To estimate the causal impact of minor car crashes on economic and social outcomes, we leverage a rich panel of administrative data. We link comprehensive crash records from the state of Florida to Internal Revenue Service (IRS) and U.S. Census data, enabling precise tracking of employment, earnings, and household income trajectories before and after these shocks. The combination of detailed crash reports, administrative tax records, and Census data provides a uniquely comprehensive dataset for studying how unexpected financial disruptions affect labor market attachment, mobility, and financial well-being. Additionally, we link individuals to their parents and siblings, allowing us to examine how social support networks buffer against negative economic shocks. To complement our administrative data, we also utilize the Consumer Expenditure Survey (CEX) to produce nationally representative estimates of financial and expenditure responses to unexpected expenses.

2.1 Car Crash Data

Our empirical strategy leverages variation in the timing of minor car crashes as a source of exogenous variation in unexpected expenses. We obtain this information from administrative police reports covering the universe of auto crashes known to law enforcement in Florida from 2006 to 2018, provided by the Florida Department of Transportation. The crash data contain a wealth of information about each incident, including the time, location, and characteristics (e.g. violation codes, contributing circumstances, and the extent of damage and injuries). We use this information to determine the presence and timing of the minor crashes that enable our empirical approach. The data also contain additional information regarding the individuals and vehicles involved in each incident. Notably, this includes identifying information, specifically name, date of birth, and address, that we use to link the crash data to other data sources. Other details, such as vehicle make, model and year, and driver demographics, suspected drug or alcohol use, and insurance coverage, are used in supplemental analyses.

2.2 Census and Administrative Data

We link the crash data to Census and tax records through the U.S. Census Bureau's Person Identification Validation System (PVS) as described in Wagner and Layne (2014). Over 90% of individuals in the crash data were assigned a Protected Identification Key (PIK), which enable linkages to other datasets housed at Census. Linkage rates were high

across demographic groups, implying that the linked sample is generally representative of those involved in crashes.

Among the U.S. Census Bureau data that we link to using the PIKs are data from the 2000 and 2010 U.S Censuses.[4] We use these data to identify Florida residents in 2010 for our primary analysis sample and in 2000 for our social supports analysis sample. We also use these data to obtain demographic and family structure information.

The primary tax data we use consist of W-2 earnings records from 2004 to 2019 and IRS 1040 tax filings spanning 1984, 1989, 1994-1995, and 1998-2019. W-2 records capture individual earnings while 1040 filings provide data on adjusted gross income (AGI), marital status, dependents, and geographic location. We also make use of IRS 1099 data to look at additional outcomes. We use receipt of an SSA-1099 as a proxy for disability receipt, receipt of a 1099-G as a proxy for Unemployment Insurance receipt, and receipt of a 1099-INT as a proxy for receipt of interest income.[5]

We also take advantage of other administrative data housed at the U.S. Census to investigate effects on additional outcomes. We use the Criminal Justice Administrative Records System (CJARS) to observe criminal charges and convictions and Housing and Urban Development (HUD) data to observe housing voucher use.

2.3 Outcome Measures

Our primary outcomes are annual measures of employment, earnings, and household income. Employment is defined as having total annual W-2 earnings exceeding $5,000 in a year. Earnings is defined as the total annual W-2 earnings, winsorized and including zero values for non-earners. Household income is defined as Adjusted Gross Income (AGI) from IRS Form 1040 filings, winsorized and including zero values for non-filers, and is measured at the level of the filing unit. All dollar values are inflated to 2019 dollars. Other outcomes include indicators for any conviction (CJARS), any incarceration (CJARS), married on December 31 (Form 1040s), residential move from last year (Form 1040s), residential move since 2010 (Form 1040s and 2010 Census), any receipt of Social Security Disability Insurance (1099), and any unemployment insurance receipt (1099). In combination, these outcomes allow for a comprehensive analysis of the long-term effects of unexpected financial

[4]Following U.S. Census Bureau guidance, we do not link the two censuses together, but use these for different analyses.

[5]Form 1099-G is primarily filed by states for individuals receiving unemployment insurance payments or income tax refunds. Because Florida does not have an income tax, we assume that 1099-G forms are only issued for recipients of unemployment insurance.

shocks on various dimensions of economic and social well-being as well as an exploration of the channels through which these effects are operating.

2.4 Primary Samples

Given changes in the formatting of police reports after 2010, our primary analytical sample is restricted to the owners of cars involved in a crash between 2011 and 2018. Much of our analysis focuses on the owners of empty parked cars involved in a crash. We identify parked cars using a movement code contained on police reports that indicates that the vehicle was parked at the time of the incident. We further restrict this sample to prime-aged (25-54) Florida residents in 2010.

Table 1 provides summary statistics for the roughly 126,000 individuals in our primary sample. The average age is roughly equivalent to the median of prime-aged individuals, implying that the age of individuals is relatively uncorrelated with the likelihood that their parked car is hit. Sample individuals are somewhat more likely to be male, consistent with the higher rates of car ownership among males.[6] Sample individuals are also somewhat more likely to be black than a representative sample of prime-age individuals in Florida. This may be a result of average differences in the parking environment faced by black individuals in Florida (e.g. denser neighborhoods with more street parking) or average differences in parking behaviors.[7]

Average outcomes for the primary sample suggest that those with parked cars that are hit are somewhat negatively selected relative to the general population. For example, the average earnings (income) of Floridians of prime age is $41,043 ($92,328), versus $38,130 ($62,560) among those in the sample.

2.4.1 Social Support Samples

In addition to measuring the effect of small financial shocks on economic and social outcomes, we also examine how family background affects an individual's resilience to these sorts of shocks. To create the sample needed for this analysis we link individuals to attributes of their childhood home via tax data linkages. Specifically, we link individuals contained in our primary analytic samples (i.e., age 25-54 in 2010 and owning a car involved in a crash

[6]This may also be driven, in part, by males being more likely to be listed as the owner in the case of joint ownership.

[7]Ongoing analyses explore the locations of crashes and the extent to which certain groups are more affected.

between 2011 and 2018) to any 1040 on which they appear as a dependent. Given the available data (dependent information is only available on IRS 1040s beginning in 1994), this results in a sample of individuals who are between 25 and 33 in 2010 (and between 33 and 41 by the end of the window of observation). We also follow any individuals who are observed on the same 1040 tax form as the individuals in our primary analytic sample, allowing us to track the earnings and income of parents and siblings across time.

2.5 Consumer Expenditure Survey

In addition to our primary analysis samples using linked Florida crash data, Census, and administrative tax and program data, we use data from the public use Consumer Expenditure Survey (CEX) to better understand the effects of vehicle crashes on household finances and consumption patterns. The CEX is a nationally representative survey sponsored by the Bureau of Labor Statistics (BLS) that collects detailed information on household income, expenditures, and financial assets multiple times from the same household in a given year. The survey provides comprehensive data on spending patterns across various categories. We use it to investigate the effect of a minor crash on out-of-pocket vehicle repair costs as well as responses related to transportation and non-transportation spending.

We construct an initial sample that includes households with a prime-age (25-54) household head in the 2010-2019 surveys. This yields 399,683 observations of 49,490 households. With this sample, we define a "minor" car crash as occurring in a month where a household has a vehicle expense that is coded as "bodywork and paint" and no expenses for medical services. This definition is somewhat broader than the unoccupied parked car definition used in the primary sample. To mirror our primary analysis, we restrict our sample to only the 2.3% of households that have a minor crash during the time they are observed in the data (up to 12 months). This yields a CEX analysis sample of 11,135 observations of 1,119 households. Figure **??** shows the summary statistics for this sample.

3 Empirical Approach

To estimate the causal impact of minor car crashes on individual and family outcomes, we employ a Difference-in-Differences framework combined with local projections. This methodological approach enables the estimation of dynamic treatment effects over time while accommodating staggered treatment timing and heterogeneous effects. The identification strategy leverages the exogeneity of the timing of car crashes involving parked cars. Since

these events occur independently of the economic trajectories of affected individuals, they provide a natural experiment to isolate the impact of unexpected financial shocks.

The validity of this approach relies on the assumption that, absent the crash, individuals whose parked cars were hit would have followed similar outcome trajectories as those whose parked cars were not hit. This assumption is tested by examining pre-treatment trends in outcomes, which consistently show no significant differences between treatment and control groups before the crash event.

3.1 Model Specification

We estimate the dynamic effects of these financial shocks using the following specification:

$$Y_{i,t+h} - Y_{i,t-1} = \tau^h \Delta D_{it} + \delta_t^h + \epsilon_{it}^h, \tag{1}$$

where $Y_{i,t+h}$ represents the outcome of interest for individual i at time $t+h$, and ΔD_{it} is a binary indicator denoting treatment, i.e., whether the individual's parked car was hit at time t. The coefficient τ^h measures the treatment effect h periods after the crash. Time fixed effects, δ_t^h, are included to account for temporal shocks that may affect all individuals, and standard errors are clustered at the individual level to correct for repeated observations over time.

The analysis is restricted to treated individuals ($\Delta D_{it} = 1$) and clean controls, defined as individuals with no crash events during the estimation window ($\Delta D_{i,t+j} = 0$ for $j = -J, ..., h$). This restriction ensures that the comparison group remains unaffected by potential contamination, thereby strengthening the validity of the estimated effects.

The local projections DiD (LP-DiD) approach is straightforward, transparent and flexible in its handling of treated and control units, and fast and easy to compute. Intuitively, local projections estimates conditional means of a future outcome given today's available information. It has been shown to perform well in a variety of settings and is equivalent to the stacked difference-in-differences approach under common assumptions, while simpler and faster to compute (Dube et al. 2024). In contexts in which there are concerns about selection into treatment (based on pre-treatment outcome dynamics or fixed characteristics), the LP-DiD approach has potential advantages over other approaches as it allows for pre-treatment characteristics to influence subsequent outcomes. Given the computational and robustness advantages, we employ the the LP-DiD method as our preferred approach. We also confirm empirically that our key results are robust to alternative estimation strategies,

including stacked difference-in-difference estimators and the methods of Sun and Abraham (2020) and Callaway and Sant'Anna (2021).

4 Results

We begin by examining the effects of minor car crashes on key labor market outcomes. Figure 1 shows that employment declines by approximately one percentage point a year after the event and roughly two percentage points five years following the event, a reduction of nearly 3 percent relative to the baseline employment rate of 71 percent (Table 1). Figure 2 presents the corresponding effect on annual earnings, which decline by approximately $1,000, or about 2.6 percent of the pre-crash mean of $38,130. A similar pattern emerges for AGI in Figure 3, indicating that the financial consequences of the shock extend beyond wages alone.

4.1 Identification Checks and Robustness

A necessary condition for a causal interpretation of these estimates is that the treated and control groups exhibit parallel pre-trends in the absence of treatment. Visual inspection of pre-event estimates confirms that there are no meaningful differences in trends in employment, earnings, or AGI prior to the crash, reinforcing the validity of the difference-in-differences design. Statistically, we cannot reject that the pre-treatment estimated effects are equal to zero. The estimated effects thus reflect the consequences of a crash rather than pre-existing trends or selection into treatment.

To assess the robustness of these estimates, we demonstrate the robustness of the estimates to the inclusion of demographic controls for age, sex, and race/ethnicity. Figures A1, A2, and A3 demonstrate that the estimated effects remain virtually unchanged when these covariates are included, suggesting that differences in observable characteristics between treated and control individuals do not drive the findings. To further ensure that compositional differences across treatment cohorts do not affect the results, we estimate effects separately for distinct demographic subgroups and reweight the subgroup-specific effects to match the baseline distribution of groups. The reweighted estimates remain consistent with the primary findings, further reinforcing the robustness of the results.

A potential threat to identification is that some unobserved factor may simultaneously affect both the likelihood of a crash and subsequent labor market outcomes. One possibility is that improved labor market prospects lead individuals to purchase cars, increasing their exposure to crashes. Alternatively, job loss or financial hardship may cause individuals to

park in locations where their vehicle is more likely to be hit. If such factors were driving both crash risk and employment outcomes, one would expect the treatment effects to be visible immediately after the crash event. To evaluate this possibility, we exploit the timing of crashes by restricting the sample to individuals whose parked cars were hit in the fourth quarter of a given year. Since the financial consequences of these crashes should not manifest until the following year, the absence of an immediate effect would be inconsistent with a confounding factor driving both crash incidence and earnings declines. Figures A4, A5, and A6 show that employment and earnings are unaffected at event time zero for crashes occurring in Q4, with the estimated effects emerging only in later periods. This pattern suggests that the financial shock itself, rather than a third factor, is responsible for the observed earnings declines.

Further supporting a causal interpretation, we examine whether the effects are larger for crashes that resulted in greater vehicle damage. More severe crashes likely entail higher repair costs and thus impose a larger financial burden. Consistent with this intuition, the estimated effects on employment and earnings increase in magnitude as the extent of vehicle damage rises, reinforcing the conclusion that the economic consequences of the crash stem from the associated financial costs rather than other unobserved factors.

4.2 Heterogeneous Effects and Distributional Consequences

A priori, there are reasons to expect that these effects might differ based on demographic characteristics that correlate with the presence of financial or social supports that might insulate individuals against the effects of financial shocks. In practice, we observe relatively modest evidence of heterogeneity by age, sex, or race (Figures 4 and 5). We observe some indication that the earnings of younger individuals may be less affected than those of older individuals. This result is consistent with a role for parental support in mitigating the effects of shocks, but it may also just reflect the noisy nature of earnings measures for younger individuals. Consistent with prior theoretical and empirical work on liquidity constraints, there is some evidence that employment and earnings losses are larger for Black individuals, a pattern consistent with racial disparities in access to credit and financial buffers. Given lower average employment and earnings among Black individuals, the implied percentage differences are even larger. But these differences are not statistically significant.

Consistent with the role of liquidity constraints, individuals with lower baseline earnings suffer more pronounced labor market disruptions, suggesting that the inability to smooth consumption exacerbates the long-term consequences of even modest financial shocks. These

findings align with previous research indicating that credit constraints and limited social insurance coverage amplify the persistence of earnings losses following negative economic events.

4.3 Magnitude of Effects

To contextualize the magnitude of these effects, we compare them to the estimated impacts of other financial shocks in the literature. Because there are few shocks of similar magnitude that have been studied, many of our points of comparison are somewhat larger shocks. Displacement due to mass layoffs reduces employment by 25 to 30 percentage points after five years (Davis and von Wachter, 2011), while unexpected hospitalizations lead to an 11 percentage point decline in employment and an $11,000 reduction in earnings after three years (Dobkin et al., 2018). These effects are much larger than the estimated effect of a minor crash, but so is the magnitude of the shock.[8] More modest financial shocks also generate persistent labor market effects: eviction lowers employment by 1.8 percentage points and quarterly earnings by $600 two years after the event (Collinson et al., 2024).[9] These impacts are similar in levels to our estimated impacts, but the percentage effects are much larger as the sample of individuals facing eviction is quite negatively selected.

Compared to these shocks, the 2 percent decline in employment and 3 percent decline in earnings following a minor car crash is smaller in magnitude but remains economically meaningful. At the individual level, the negative effect of a single unexpected expense on earnings (3 percent) is roughly equivalent to reducing an individual's educational attainment by a third of a year. At the aggregate level, a back of the envelope estimate of lost earnings associated with shocks experienced by all prime-age workers is around $170 billion, roughly equivalent to the impact of the 2001 recession.[10] The results underscore that even modest financial disruptions can have meaningful economic consequences.

[8]For example, the estimated average out of pocket medical expenses alone are over $3,000 in the context of insured hospital visits (Dobkin et al. 2018). This ignores the separate effect of a negative health shock.

[9]Mello (2024) estimates the impact of an even more modest shock (average of $200) generated by traffic fines. While he does not have individual earnings or employment data, he is able to use payroll data from a large firm to triangulate annual earnings impacts. Under different assumptions, he estimates that the fines reduce annual earnings by between $XXX and $XXX.

[10]We generate this back-of-the-envelope estimate by multiplying the effect of an individual shock on earnings by the probability of experiencing an unexpected expense each year (0.6) by the number of individuals between ages 25 and 54. (According to the 2015 Pew Report "Survey of American Family Finances" roughly 60% of individuals experience a meaningful unexpected expense in the last 12 months. This estimate is conservative as the expenses associated with a minor car crash are less than those associated with other unexpected expenses and many individuals experience more than one unexpected expense each year.

Taken together, these findings provide compelling evidence that modest unexpected expenses—such as those induced by minor car crashes—generate significant and lasting reductions in employment and earnings. The persistence of these effects and their concentration among lower-income and credit-constrained individuals highlight the importance of financial preparedness in mitigating the consequences of small but unexpected expenses. These results align with a growing literature on financial fragility, which highlights how liquidity constraints amplify the persistence of economic shocks. The finding that even a modest unexpected expense generates significant long-term earnings losses underscores the precarious nature of low-income employment.

5 Mechanisms

The previous section documents the negative impact of minor car crashes on employment and earnings. In this section, we explore the nature of treatment and the mechanisms through which treatment effects likely operate. The treatment consists of both the direct financial costs associated with car repairs and the *potential* loss of access to reliable transportation. We begin by discussing the likely role of those channels given the regulations present in Florida, the insurance held by owners, and the extent of damage to the involved vehicle or vehicles. We then provide empirical evidence as to the extent of the effects on expected expenses and transportation access as well as the role that liquidity may play in mediating the effects of these initial impacts on downstream outcomes. We then examine the channels through which these factors may translate into adverse labor market outcomes, including increased stress, difficulty searching for or maintaining employment, constrained credit access, and housing instability. These effects may interact, reinforcing one another in ways that exacerbate the long-term consequences of financial instability, particularly for lower-income individuals.

5.1 Understanding the Treatment: Financial Shock and Transportation Loss

The extent to which a car crash generates unexpected expenses or loss of transportation depends on whether the car owner is insured and the nature of the crash. Table A1 summarizes Florida's insurance requirements and the insurance characteristics of drivers. As is true in most states, Florida requires both property damage liability (PDL) and personal injury protection (PIP) insurance. The PDL insurance of the vehicle owner covers damage

to others' vehicles when the driver of a vehicle is at fault. PIP insurance covers injuries to anyone in a vehicle, regardless of fault. Most states require both types of insurance, but the minimum requirements in Florida ($10,000 for each type of insurance) are among the lowest in the country. Despite the low minimum requirements, Florida drivers face some of the most expensive rates in the country ($1,605 per year on average for minimum coverage).

Likely contributing to these high rates, Florida has among the country's highest share of uninsured drivers (26.7% in 2015). These statistics highlight that a significant share of drivers lack adequate coverage for vehicle damage, leaving many crash victims exposed to large out-of-pocket expenses. Lower-income households are particularly vulnerable, as they are more likely to have only the state-minimum required coverage and to opt for higher deductibles in order to reduce premiums.

The effects of a crash depend on the involved parties' insurance status and the circumstances of the crash. For simplicity, we will focus on empty parked cars involved in a crash and think about how the effects vary across three scenarios: (1) a hit and run, (2) the at-fault driver is uninsured, and (3) the at-fault driver has minimum required insurance.

In the hit and run scenario, the victim (owner of the parked car) bears the full cost of repairs unless they have collision coverage in addition to the minimum required coverage, in which case they pay their deductible. A $500 deductible is typical, but $1,000 is also common.

The second scenario, when the at-fault party is uninsured, is similar to the hit and run. The victim is responsible for repair costs unless they have collision coverage. A key distinction with the first scenario, however, is that the owner of the parked car can sue the at-fault party to recover expenses.

In the third scenario, the owner of the parked car is in theory reimbursed up to the $10,000 in damages through the at-fault party's insurer. In practice, there is often negotiation between parties and insurers as fault and responsibility for coverage is determined. This process may take some time.[11] Individuals with collision coverage may file a claim with their own insurer, paying the deductible up front while their insurer seeks reimbursement.

It is likely then that all three scenarios involve some amount of immediate unexpected expense, with larger expenses associated with hit and runs, likely somewhat smaller expenses

[11]While we have been unable to find data that quantify the distribution of the time from crash to claim resolution, this process can take from weeks to months for straightforward crashes involving property damage and several years for crashes involving personal injury. While insurers in Florida are required to complete any investigations within 30 days of a claim, this can take longer in the case of uncooperative parties (Florida Statute 627.70131).

associated with cars hit by uninsured drivers, and the smallest expenses associated with cars hit by insured drivers. In addition to immediate expenses, premiums for insured drivers likely rise over the subsequent year regardless of their level of fault in the incident.

What about changing access to transportation? This depends on the extent of damage to the car and the insurance available to the owner and at-fault party. Minimum policies do not provide coverage for a loaner vehicle for owners. In some cases, the at-fault party's insurance will pay for a loaner car as part of the property damage liability. Again though, this is subject to negotiation and may take some time.

5.1.1 Empirical Estimates of Effects on Expenses and Transportation Access

The financial burden of a minor car crash varies depending on the extent of the damage, the victim's insurance coverage, and the at-fault driver's insurance status. Using data from the Consumer Expenditure Survey (CEX), we estimate the average out-of-pocket cost of a minor crash, including repair expenses net of insurance reimbursements, to be around $800 (Figure 6). This is a little less than a week of earnings for a full-time worker with median wages, or around three weeks of earnings for a full-time minimum wage worker.

We can also use the CEX to explores how the crash may influence transportation access, non-transportation related expenditures, and total expenditures (Figure 7). There is little evidence that the average crash influences access to transportation. We observe no evidence of a reduction in spending on gas. There is weakly suggestive evidence of a modest increase in substitute transportation spending, which may reflect a small percentage of individuals relying on rental cars while their cars are fixed. It is possible that some individuals lose access to their primary vehicle, but this doesn't seem to inhibit their access to transportation more generally. While we cannot directly observe transportation access in our primary sample, these patterns suggest that access to transportation is unlikely to explain the enduring effects on employment and earnings.

Rather, it seems likely that the unexpected expenses themselves have direct or indirect effects on individuals, particularly for those who face liquidity constraints. Consistent with this, we see suggestive evidence that minor crashes precede non-trivial drops in total spending and non-transportation spending, but only among low-income individuals ($370 and $130, respectively) .

5.2 Exploring the Channels of Impact

To understand how these financial disruptions translate into labor market effects, we examine potential mediating factors, including stress, health, job search frictions, credit constraints, and housing instability.

First, we examine whether stress-related factors contribute to the observed earnings declines. While we do not detect an increase in the probability of divorce (Figure 9), we find a moderate increase in criminal justice involvement (Figure 10). The left panel of Figure 10 shows a small increase in criminal convictions, while the right panel shows a limited effect on incarceration rates. These findings suggest that while financial strain may induce some stress-related behaviors, its impact on serious criminal activity appears to be modest.

Second, we explore whether physical health effects contribute to labor market disruptions. The crash itself is unlikely to cause negative health effects given that the vehicles were empty when hit. To explore longer-run effects on health, we turn to data on disability benefit receipt contained on tax forms. We find no significant increase in disability insurance receipt, suggesting that the observed employment declines are not primarily driven by physical incapacitation following a crash. Of course, disability insurance receipt is a coarse measure of significant impairment, so there may still be effects on health that are not captured in the data.

Third, we explore the role of the negative shock on job search frictions. We find evidence that job search frictions play a role in employment declines. Figure 11 shows that unemployment insurance (UI) receipt rises modestly following a crash, suggesting job displacement or prolonged job search. However, this increase is not as large as might be expected if job loss were the primary channel. Much of the earnings decline is driven by individuals who were not employed at baseline (Figure 12), indicating that much of the impact may operate through reductions in job-finding ability rather than job loss. Consistent with the CEX findings, the effect on job-finding does not appear to be driven primarily by loss of transportation access; individuals whose vehicles sustained no disabling damage still experience negative labor market effects. Job searching entails monetary costs, and in the presence of imperfect insurance and credit markets, liquidity constraints may hinder unemployed individuals from actively seeking employment. These financial barriers are likely to be particularly burdensome for low-asset individuals, who have limited means to smooth consumption while navigating periods of unemployment.

Fourth, we examine the role of financial strain on bill payment and eviction risk. As shown previously, low-income individuals appear to reduce spending on non-transportation related

items when faced with an unexpected expense. Consistent with this, we also see evidence that minor car crashes lead to subsequent reductions in liquid savings and increases in credit card debt and the likelihood of late charges.

In Figure 13, we explore whether this financial strain may influence one's ability to pay other important bills, such as rent. Figure 13 shows that affected individuals are more likely to move in any given year (left panel), suggesting increased housing instability. However, they are also less likely to move over longer time horizons (right panel). One explanation for this pattern is that financial constraints may force individuals to remain in suboptimal housing situations while simultaneously increasing short-term housing volatility.[12]

An open question is whether individuals are doing worse in an absolute sense or whether the negative impacts of financial shocks are just limiting growth. The event study figures show immediate and deepening negative impacts on individuals. One thing that is obscured by the event studies though, is that while individuals are doing worse than they otherwise would, average earnings are still growing over time for most groups. It is unclear then to what extent the average impacts are driven by absolutely worse outcomes for a smaller subset of individuals versus reduced earnings growth for a larger group.

In Figure 14, we explore the impact on earnings at different points of the distribution. The figure illustrates that the earnings effects are largest at the lower end of the earnings distribution, suggesting that some share of individuals are likely harmed in an absolute sense. Figure 15 highlights that those with fewer financial resources experience disproportionately negative effects. These findings indicate that the negative effects of minor financial shocks are somewhat concentrated among economically vulnerable individuals.

Overall, these findings suggest that the negative labor market effects of minor car crashes operate through multiple, interrelated channels. While we find limited evidence that stress-induced behaviors or changes in physical health play a major role, financial strain appears to be a primary driver. Increased job search frictions, limited liquidity, and heightened housing instability all contribute to persistent employment and earnings losses, particularly among individuals with fewer financial resources. The concentration of effects among economically vulnerable individuals underscores the challenges of financial fragility, highlighting the potential for even modest unexpected expenses to create lasting economic disruptions.

[12]Another potential explanation is that younger individuals are more likely to return to the home that they lived in with their parents. We are currently exploring this explanation empirically.

6 The Role of Financial and Social Supports

The previous section indicates that modest unexpected expenses can have long-lasting negative impacts on individual well-being, particularly among those who lack the resources to buffer against them. In this section, we examine the extent to which financial and social supports mitigate these negative effects. As a proxy for financial support, we analyze how liquidity from tax refund receipt influences the consequences of unexpected expenses. As a proxy for social support, we explore the role of childhood background and proximity to potential family assistance in shaping individuals' ability to absorb financial shocks.

6.1 The Role of Liquidity

A key motivation for this study is that a large fraction of individuals lack the savings necessary to cover modest unexpected expenses, with this inability to pay being more pronounced among lower-income individuals. In the previous section, we used the Consumer Expenditure Survey (CEX) to show that lower-income individuals experience a decline in non-transportation expenditures following a crash, whereas higher-income individuals do not. Additionally, we found that individuals with fewer financial resources suffer more pronounced negative effects from unexpected expenses across multiple outcomes. Both findings suggest that liquidity constraints play an important role in mediating the consequences of financial shocks.

To further investigate this role, we exploit the plausibly exogenous variation in individual liquidity based on the timing of crashes relative to the expected receipt of tax refunds. The underlying idea is that low-income individuals whose cars are hit near the time of tax refund receipt are more likely to have cash on hand to cover unexpected expenses. Figure A7 provides evidence in support of this claim, using data from JPMorgan Chase on account balances. We observe a substantial increase in cash on hand at the end of months in which individuals are likely to receive tax refunds.

We use this variation to estimate how the impacts of unexpected expenses depend on household liquidity. In Figure 16, we show that the negative impacts of minor car crashes largely disappear when they occur during periods of greater liquidity. By contrast, when we perform the same analysis for higher-income households, we find no evidence that tax refund timing influences the effects of financial shocks. This result suggests that short-term liquidity constraints are an important driver of the negative effects among lower-income households, while higher-income individuals appear to have sufficient savings or access to credit to buffer

against similar shocks.

In ongoing work, we seek to provide additional evidence supporting this conclusion by leveraging variation in liquidity from the 2009 stimulus payments, which provided a one-time exogenous increase in disposable income to lower-income households. Preliminary analysis suggests that this additional liquidity similarly reduced the negative effects of unexpected expenses, reinforcing the importance of financial constraints in shaping responses to financial shocks.

6.2 Family and Social Supports

Beyond personal savings and financial assistance from government transfers, many individuals rely on support from family and friends to weather unexpected financial shocks. For example, among individuals who experienced financial hardship in the past year, 27 percent received financial assistance from family or friends (SHED 2014).

The ability of family and social networks to provide financial assistance may be influenced by one's childhood environment and social background. Chetty et al. (2022) highlight the importance of early-life exposure to economic resources in shaping financial outcomes later in life. Geographic variation in where individuals grew up may influence the availability of financial resources, access to well-off family and friends, and broader contextual factors that affect financial stability.

To explore this idea further, we link individuals to attributes of their childhood home via tax data linkages. We use these data to assess how variation in access to well-off family and friends may mitigate the negative impacts of financial shocks. Specifically, we examine heterogeneity in impacts based on the average levels of education, income, and poverty in individuals' childhood neighborhoods as well as their own families' income levels during childhood.

Figure XXX suggests that greater social supports can buffer against the negative effects of financial shocks.[13] Individuals who grew up in better-off neighborhoods are significantly less affected by unexpected financial shocks. This is not merely a result of the higher earnings or incomes accruing to individuals from better backgrounds. Even among individuals with the same current levels of individual resources (i.e., income and savings), those from better-off neighborhoods are less affected. This is the first evidence of which we are aware that one's family background provides a protective effect against negative shocks.These results

[13]Detailed results not yet fully disclosed.

suggest that access to financial and social networks plays a critical role in shaping economic resilience.

In ongoing work, we further use the data to disentangle the role of one's family background on insulating against shocks via increases in one's own income versus other factors.

7 Discussion and Conclusion

The findings in this paper demonstrate that even modest financial shocks, such as the expenses incurred from minor car crashes, can have significant and lasting economic consequences. Employment and earnings decline in the years following a crash, particularly for individuals with limited financial buffers. These effects persist over time, suggesting that small financial disruptions can lead to long-term economic instability.

While stress-induced behaviors and physical health declines appear to play a minimal role, financial strain emerges as the primary mechanism driving employment and earnings losses. Evidence suggests that increased job search frictions, liquidity constraints, and housing instability collectively contribute to these negative outcomes, reinforcing economic hardship over time.

These results contribute to the broader literature on liquidity constraints, income volatility, and financial resilience. Prior work has documented how job displacement, eviction, and unexpected medical bills can have persistent effects on economic well-being, but these shocks are large in magnitude. The findings here are consistent with theories of liquidity constraints and financial fragility, which suggest that individuals without sufficient savings struggle to smooth consumption and maintain economic stability in response to shocks.

The results highlight the critical role of financial supports in mitigating the long-term consequences of financial shocks. Liquidity constraints appear to play an especially important role, as the negative effects of minor car crashes largely disappear when households have greater financial resources available (e.g., during the window after tax refunds are provided).

These findings highlight a potential role for programs that enhance financial resilience. Expanding access to financial safety nets could substantially reduce the economic harm caused by unexpected expenses, particularly for lower-income individuals. Targeted emergency assistance programs, such as one-time cash grants or hardship relief funds, could prevent small financial shocks from triggering long-term employment declines.

In the absence of individual liquidity or access to financial safety nets, family and social networks provide an additional layer of support. We show that individuals who grew up

in better-off neighborhoods are significantly less affected by financial shocks, even if they themselves have low incomes as young adults. Similarly, younger individuals, who are more likely to rely on financial assistance from family or friends, appear to be less vulnerable to the consequences of these shocks.

Outside of formal safety net programs, our results thus suggest a benefit for approaches that enhance social supports by strengthening individuals' access to informal financial assistance from family, friends, and community networks. Programs that facilitate stronger social connections—such as community-based financial assistance initiatives, mentorship programs, or programs that incentivize multi-generational housing—could help mitigate the economic consequences of unexpected financial shocks.

While the analysis provides strong evidence that minor financial shocks have lasting labor market effects (and that financial or social supports can mitigate those effects), the study is not without limitations. Although the study design isolates exogenous variation in financial shocks, the findings rely on data from a specific environment, where labor market conditions and access to safety net programs may differ from other settings. Further research could examine whether similar patterns hold in different institutional contexts. The study also cannot fully disentangle all potential mechanisms driving the observed effects. While the evidence suggests that liquidity constraints play a key role, job search frictions, stress, and other behavioral factors may also contribute. Additional research could explore the relative importance of these mechanisms in shaping economic responses to financial shocks. Finally, this paper primarily examines short- to medium-term effects, and further work is needed to understand whether affected individuals recover financially over time or if small disruptions lead to permanent reductions in employment and earnings.

These findings open several avenues for future research. An important direction is to examine how financial innovations, such as early wage access programs or employer-provided hardship loans, help workers manage unexpected expenses. Research on whether financial assistance programs could be better timed to provide liquidity precisely when individuals need it most would provide valuable insights. Smoothing the timing of tax refunds, for example, by distributing portions throughout the year, could reduce financial instability and prevent shocks from disrupting employment. Further work could also explore heterogeneity in financial shock responses across demographic groups. While this paper highlights differences by income, race, and family structure, additional research could examine geographic disparities in financial vulnerability, particularly given differences in access to credit, insurance, and social networks. The findings here suggest that financial shocks may interact

with other sources of economic disadvantage, reinforcing downward mobility for some individuals while others recover quickly. Future research could explore how multiple financial shocks compound over time, leading to persistent earnings reductions or increased economic precarity.

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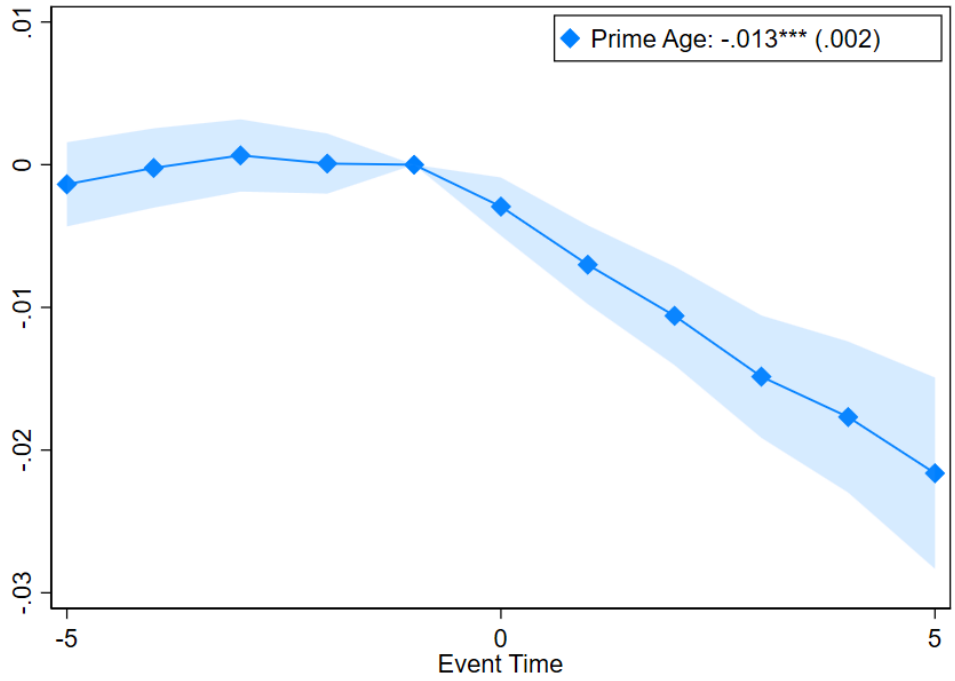
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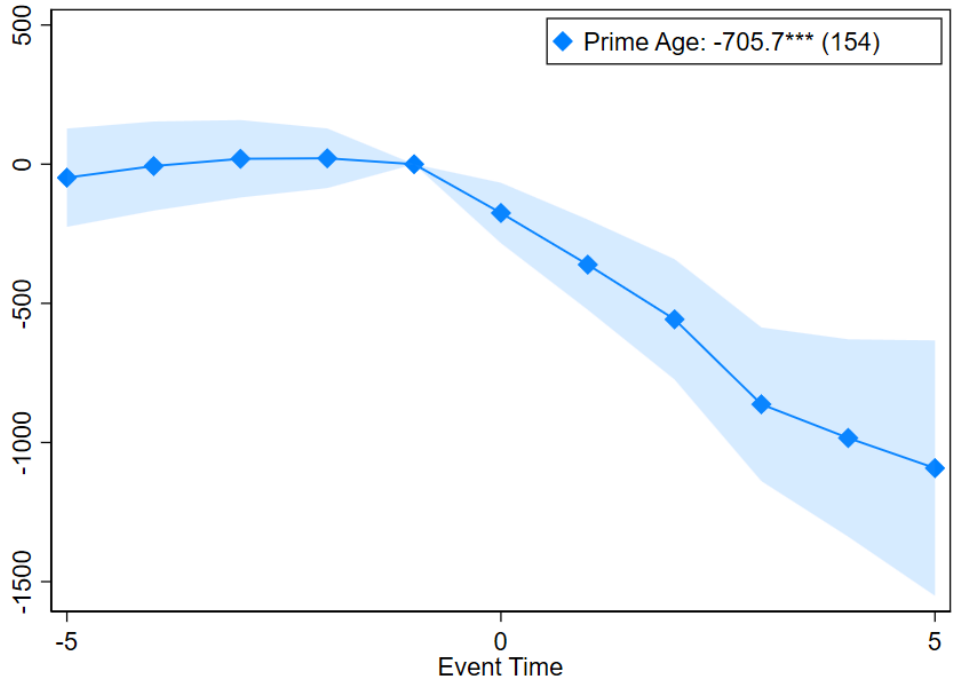
Figures and Tables

Figure 1: Impact of Car Crashes on Employment



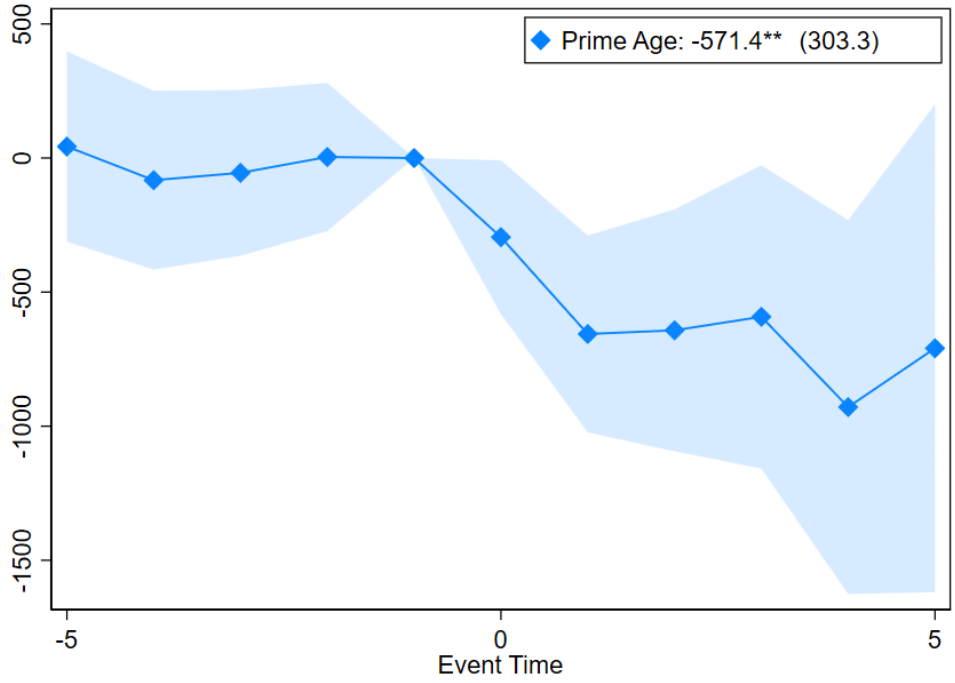
Note: This figure presents the estimated effect of minor car crashes on employment, defined as having W-2 earnings of more than $5,000 in a given year. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Employment outcomes are derived from IRS W-2 tax records spanning 2004-2019. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 2: Impact of Car Crashes on Earnings



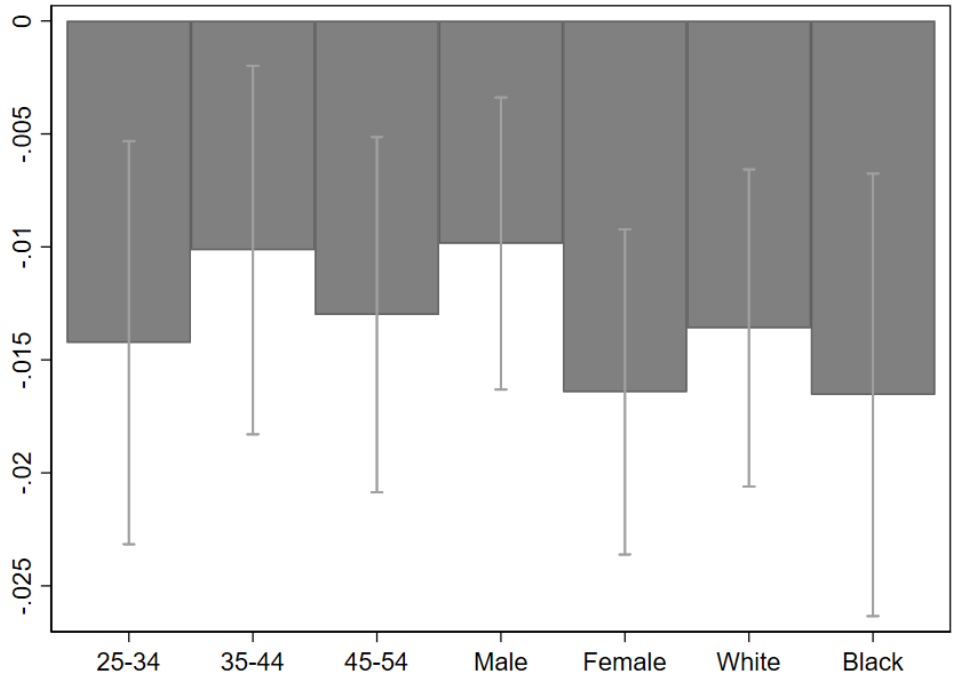
Note: This figure presents the estimated effect of minor car crashes on annual earnings, defined as total earnings in W-2 records for a given year, winsorized at the 1st and 99th percentiles. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Earnings measures are derived from IRS W-2 tax records spanning 2004-2019. Individuals without W-2 records are counted as having zero earnings in that year. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 3: Impact of Car Crashes on Adjusted Gross Income



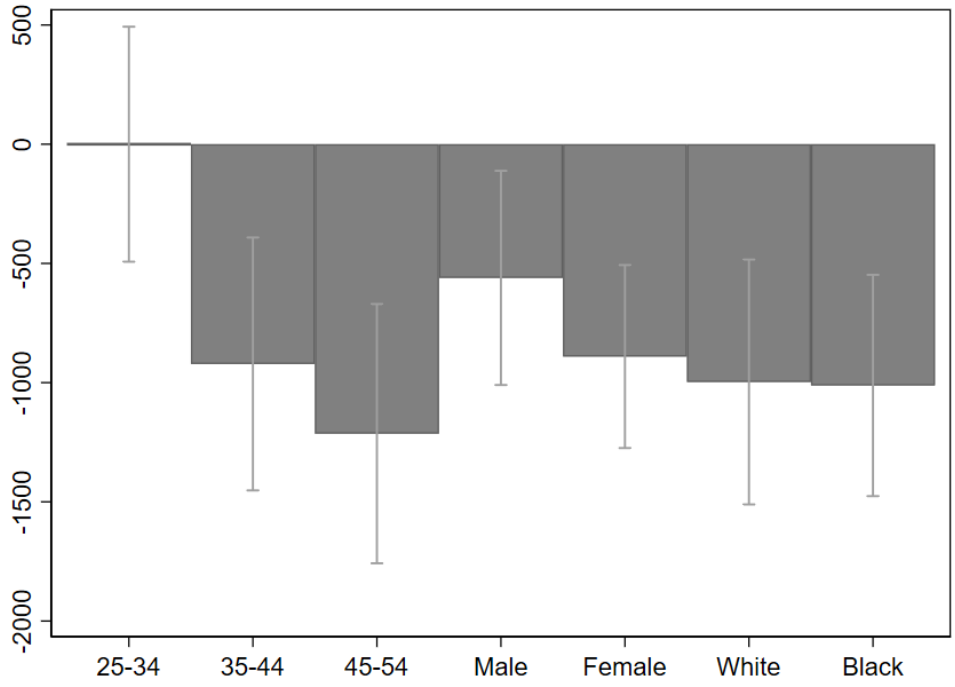
Note: This figure presents the estimated effect of minor car crashes on adjusted gross income (AGI), winsorized at the 1st and 99th percentiles. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Data are obtained from IRS 1040 tax filings spanning 2004-2019. Non-filers are counted as having zero earnings in that year. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 4: Heterogeneity in Employment Impact by Demographics



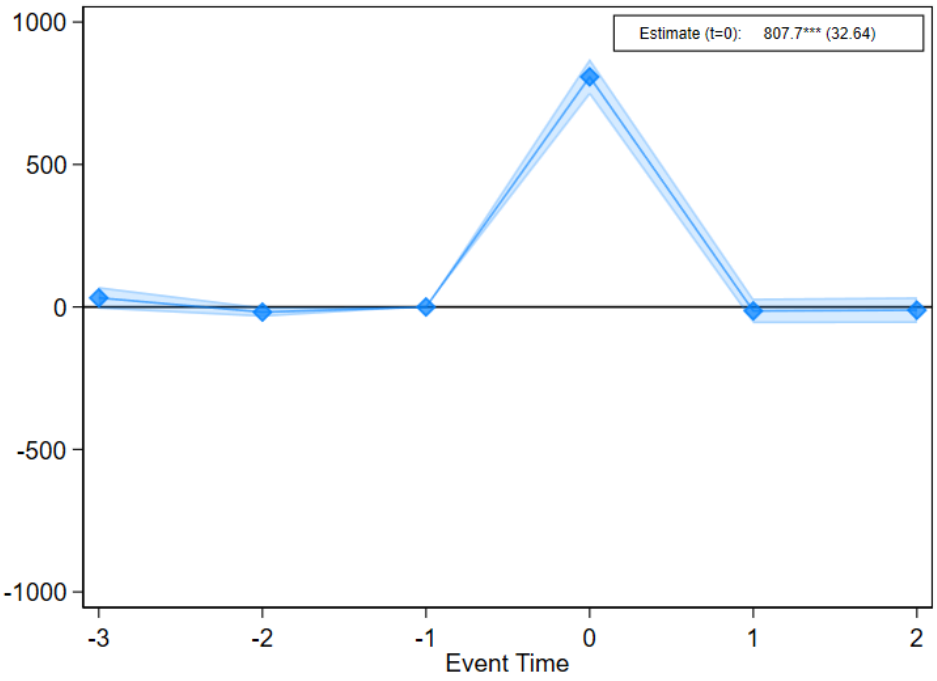
Note: This figure presents the estimated effect of minor car crashes on employment, defined as having W-2 earnings of more than $5,000 in a given year. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Employment outcomes are derived from IRS W-2 tax records spanning 2004-2019. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text.

Figure 5: Heterogeneity in Earnings Impact by Demographics



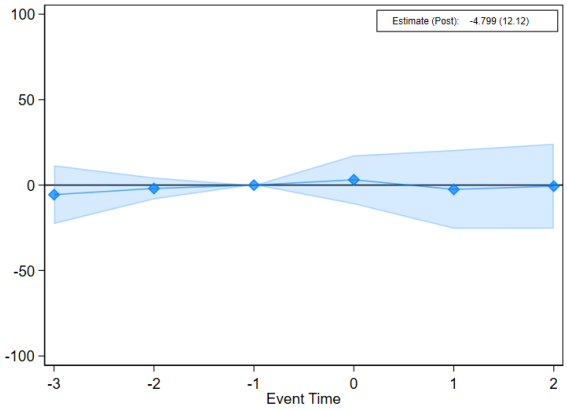
Note: This figure presents the estimated effect of minor car crashes on annual earnings, defined as total earnings in W-2 records for a given year, winsorized at the 1st and 99th percentiles. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Earnings measures are derived from IRS W-2 tax records spanning 2004-2019. Individuals without W-2 records are counted as having zero earnings in that year. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 6: First Stage (CEX): Vehicle Repair Expenses

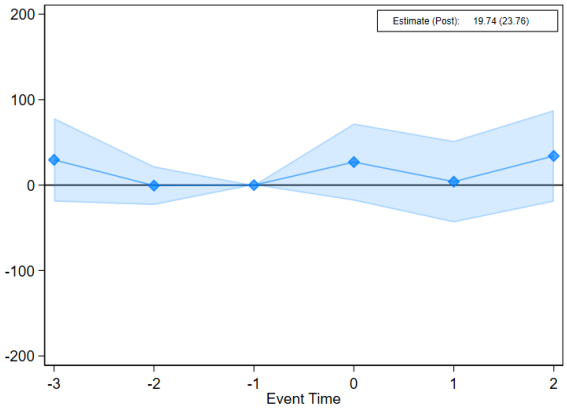


Note: This figure presents the estimated increase in vehicle repair expenses following a minor car crash. The dependent variable is total "amount paid for vehicle service and parts less reimbursements". A "minor" car crash is defined as occurring in a month where a household has a vehicle expense that is coded as "bodywork and paint" and no expenses for medical services. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Data come from the Consumer Expenditure Survey (CEX), 2010-2019. Sample consists of households with a head aged 25-54 who are observed for at least 9 months.

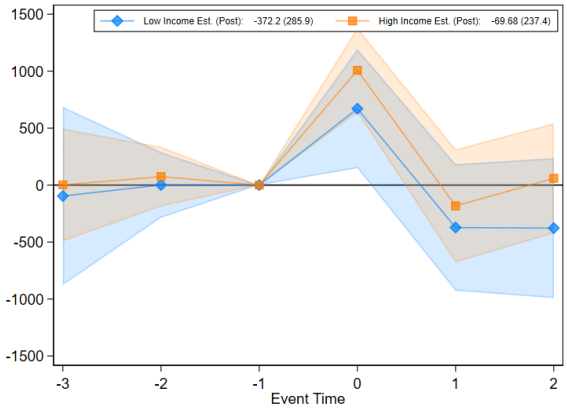
Figure 7: Spending Patterns Around Minor Crashes



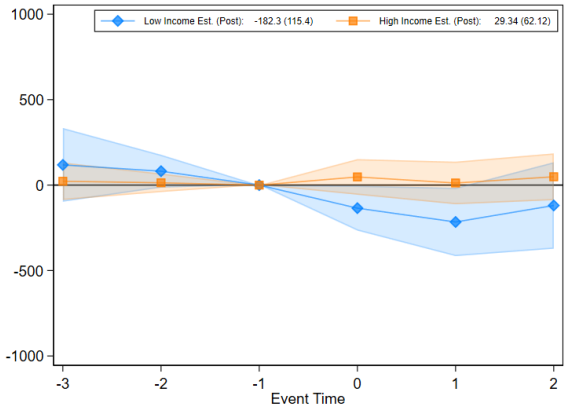
(a) Spending on Gas



(b) Substitute Transportation Spending



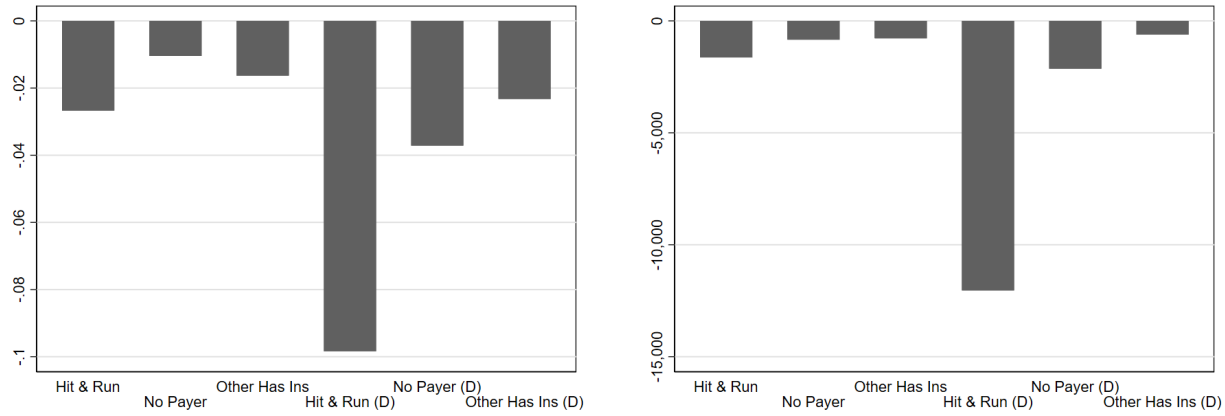
(c) Total Spending by Income Level



(d) Housing Spending by Income Level

Note: This figure presents the estimated changes in the level of expenditure in various categories following a minor car crash. The first panel examines total spending on gasoline, the second panel captures spending on vehicle rentals, leases, and public transportation. The third panel shows total expenditures and the fourth panel shows housing expenditures separately for low-income and high-income individuals. A "minor" car crash is defined as occurring in a month where a household has a vehicle expense that is coded as "bodywork and paint" and no expenses for medical services. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Data come from the Consumer Expenditure Survey (CEX), 2010-2019. Sample consists of households with a head aged 25-54 who are observed for at least 9 months.

Figure 8: Effects by Insurance and Whether Car Disabled (D)

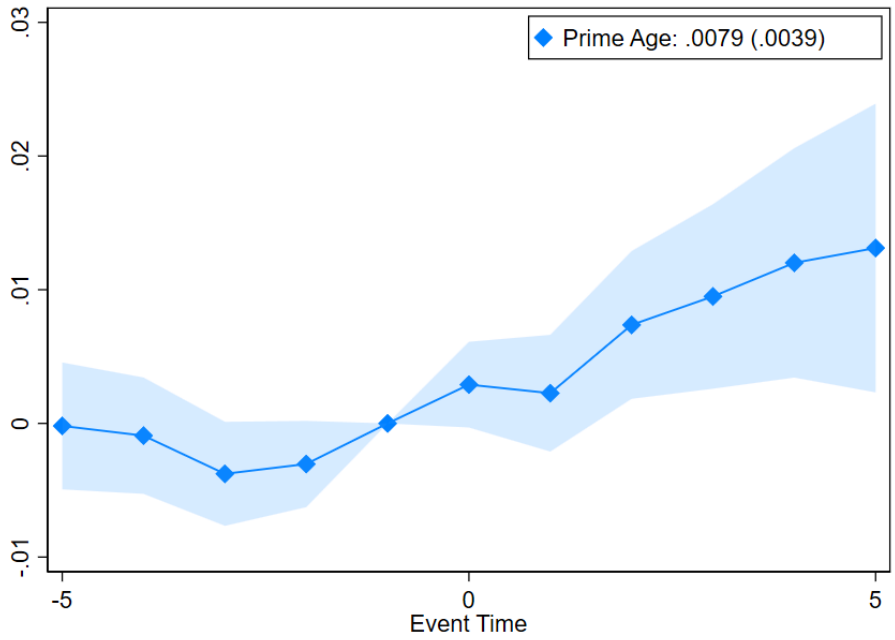


(a) Employment Effects

(b) Wage Effects

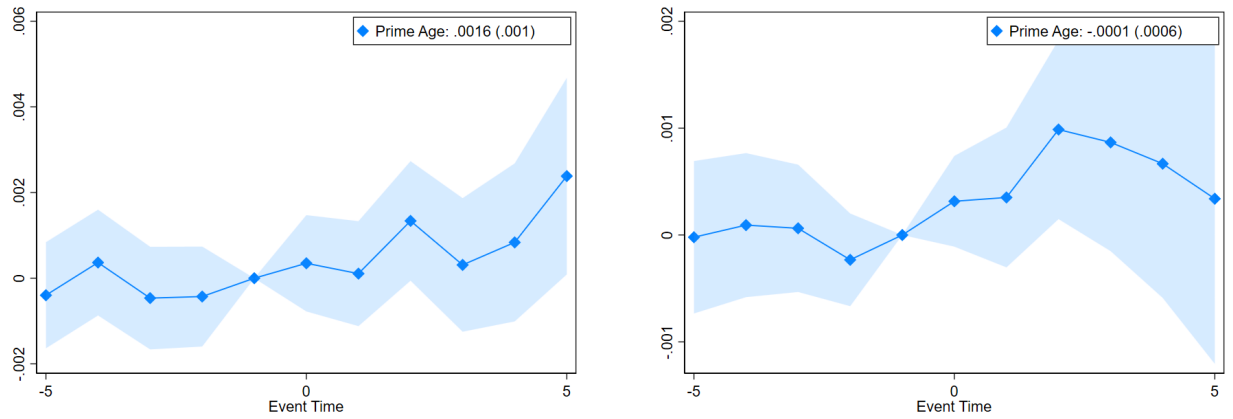
Note: Confidence intervals are relatively wide (not many events).

Figure 9: Impact of Minor Car Crashes on Marital Status



Note: This figure presents the estimated effect of minor car crashes on the probability of being married. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Marital status is inferred from IRS 1040 filings spanning 2004-2019. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 10: Impact of Minor Car Crashes on Criminal Justice Outcomes

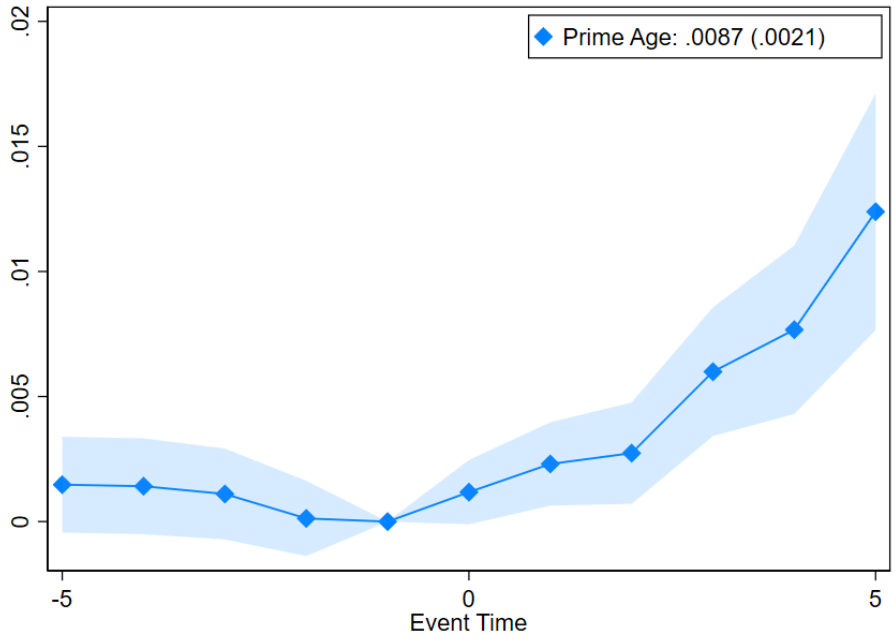


(a) Any Conviction

(b) Incarceration

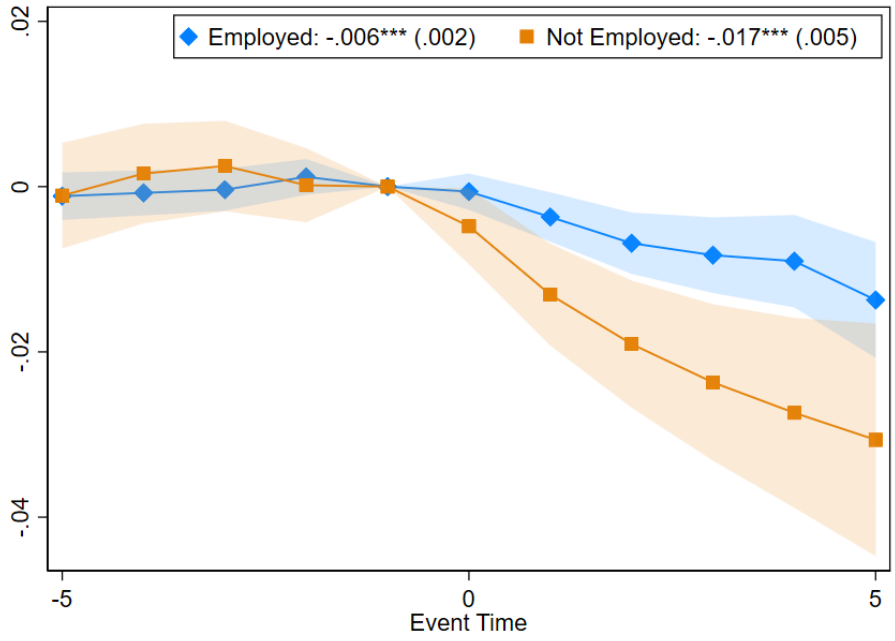
Note: This figure presents the estimated effect of minor car crashes on criminal justice outcomes. The left panel shows the impact on the likelihood of a criminal conviction, while the right panel shows the impact on the likelihood of incarceration. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Criminal justice measures are taken from CJARS. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 11: Impact of Minor Car Crashes on Unemployment Insurance Receipt



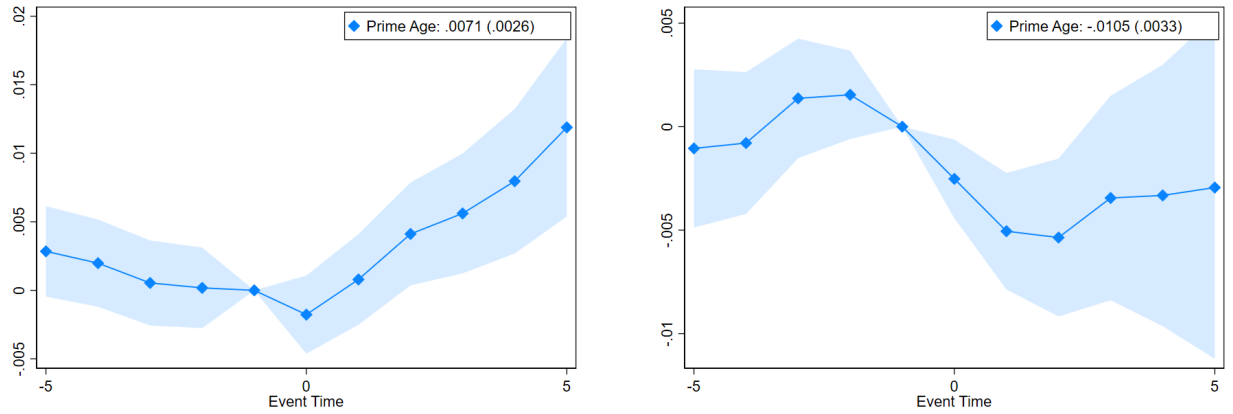
Note: This figure presents the estimated effect of minor car crashes on Unemployment Insurance (UI) receipt. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Unemployment Insurance receipt (UI) is inferred from IRS 1099-G filings from states. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 12: Heterogeneous Effects of Minor Car Crashes on Employment by Baseline Employment Status



Note: This figure presents the estimated effect of minor car crashes on the probability of being employed by baseline employment status. Baseline employment status is "employed" if individuals are employed in 2009 and 2010. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Employment outcomes are derived from IRS W-2 tax records spanning 2004-2019. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 13: Impact of Minor Car Crashes on Residential Mobility

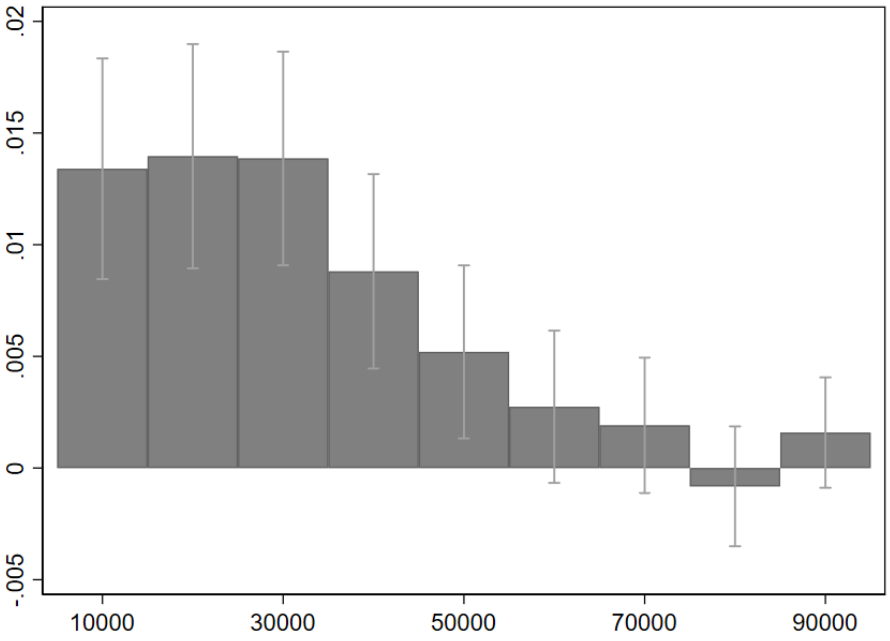


(a) Annual Residential Mobility

(b) Moving from Baseline Residence (2010)

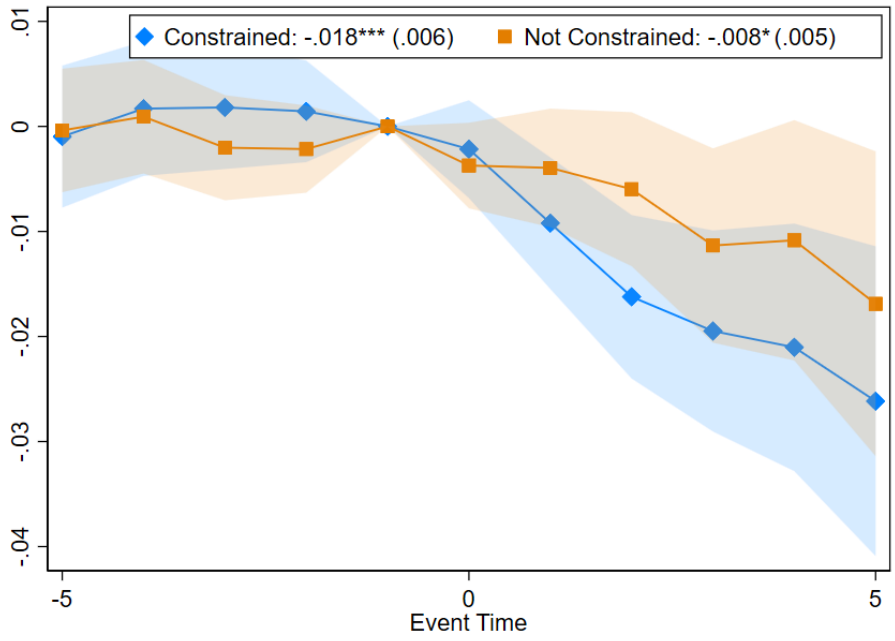
Note: This figure presents the estimated effects of minor car crashes on residential mobility. The left panel examines the probability of moving within a given year, using location identifiers (MAFIDs) from tax filing addresses to determine whether an individual changed residence between year $t-1$ and t. The right panel evaluates whether individuals moved away from their baseline residence, defined in 2010, with location changes tracked through MAFIDs of tax filing addresses. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 14: Impact of Minor Car Crashes on Probability of Earning Below Threshold



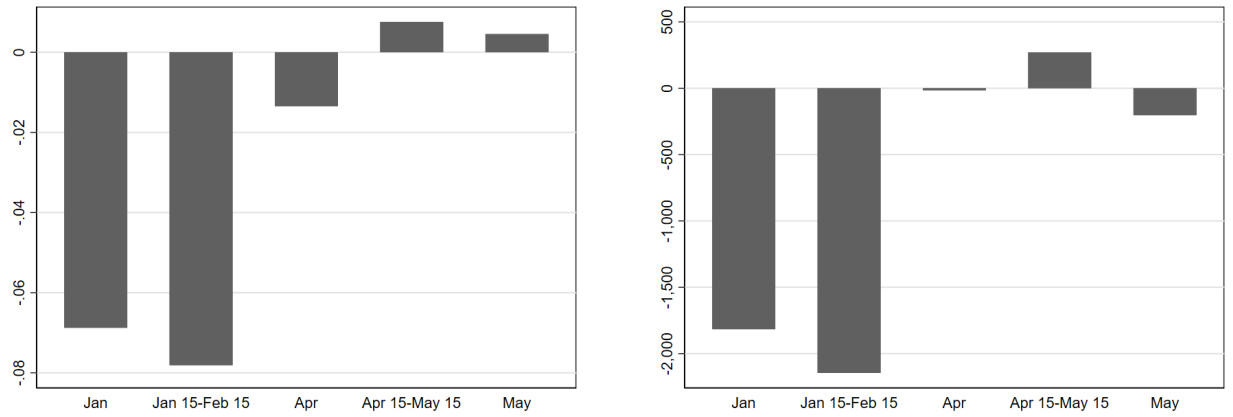
Note: This figure presents the estimated effects of minor car crashes on the probability of earning below a specified earnings threshold, where earnings is the total reported in W-2 records for a given year. Each estimate is obtained from a separate implementation of the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 15: Heterogeneity in Employment Effects by Financial Constraints



Note: This figure shows how the employment effects of minor car crashes vary by financial constraints. "Constrained" individuals are defined as those with incomes below 100% of the federal poverty line (FPL) and no reported interest income in 2010, while "Not Constrained" individuals have incomes above 400% of the FPL. Employment is defined as earning more than $5,000 in W-2 wages in a given year. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Employment outcomes are derived from IRS W-2 tax records spanning 2004-2019. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Figure 16: Impact of Minor Car Crashes by Expected Cash on Hand



(a) Employment

(b) Earnings

Note: This figure presents estimated effects of minor car crashes on employment (left panel) and earnings (right panel) by expected liquidity of low-income individuals. Expected liquidity is low in the first two columns (which precede the likely timing of tax refund receipt) and higher in the last three columns (which follow the likely timing of tax refund receipt). Employment is defined as earning more than $5,000 (according to W-2 records) in a given year. Estimates are obtained from the linear projections difference-in-differences model with controls for age, sex, and race as described in the text. Employment outcomes are derived from IRS W-2 tax records spanning 2004-2019. Sample consists of individuals age 25-54 and residing in Florida in 2010 that owned a car that was hit while parked and unoccupied between 2011 and 2018. See the notes to Table 1 for additional details.

Table 1: Summary Statistics

Variable	**Mean**
Outcomes	
Employed	0.71
Earnings ($)	38,130
Adjusted Gross Income (AGI) ($)	62,560
Any Conviction	0.011
Moved in the Last Year	0.12
Baseline Characteristics	
Black	0.24
White	0.44
Female	0.45
Male	0.55
Age (years)	39.17
Observations	126,000

Note: This table presents summary statistics for the primary sample of individuals whose empty parked cars were hit in a minor crash between 2011 and 2018. Employment is defined as having total annual W-2 earnings exceeding $5,000. Earnings and AGI are measured in 2019 dollars and obtained from IRS W-2 and IRS 1040 tax records. Conviction status is derived from the Criminal Justice Administrative Records System (CJARS). Mobility is determined using tax filing address changes from IRS 1040 records. Demographic characteristics are obtained from Census data.

Appendix Figures and Tables

Figure A1: Robustness of Employment Impact to Controls

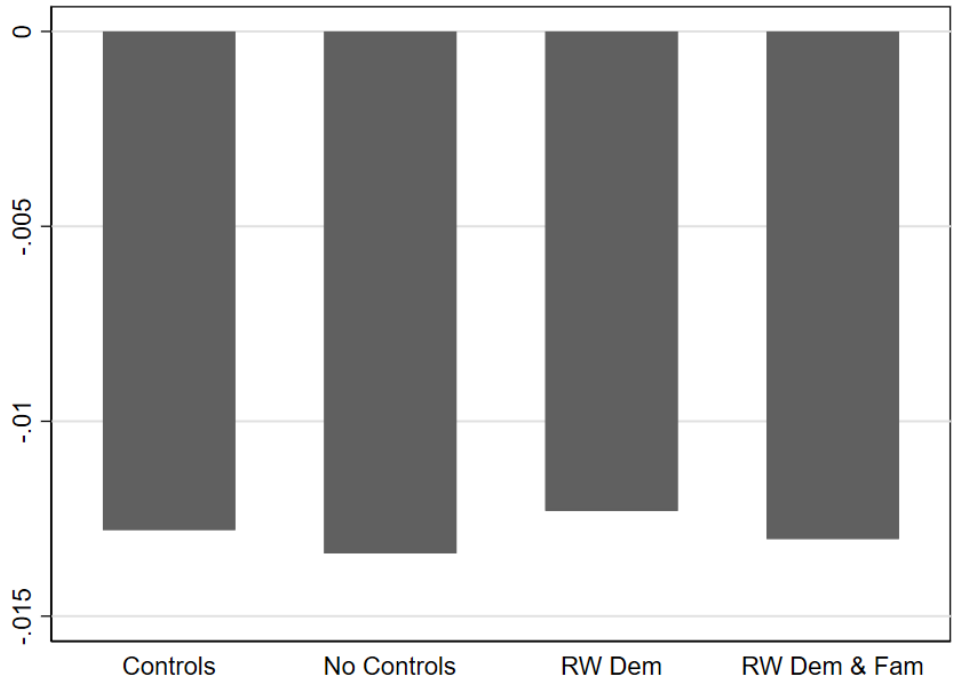


Figure A2: Robustness of Earnings Impact to Controls

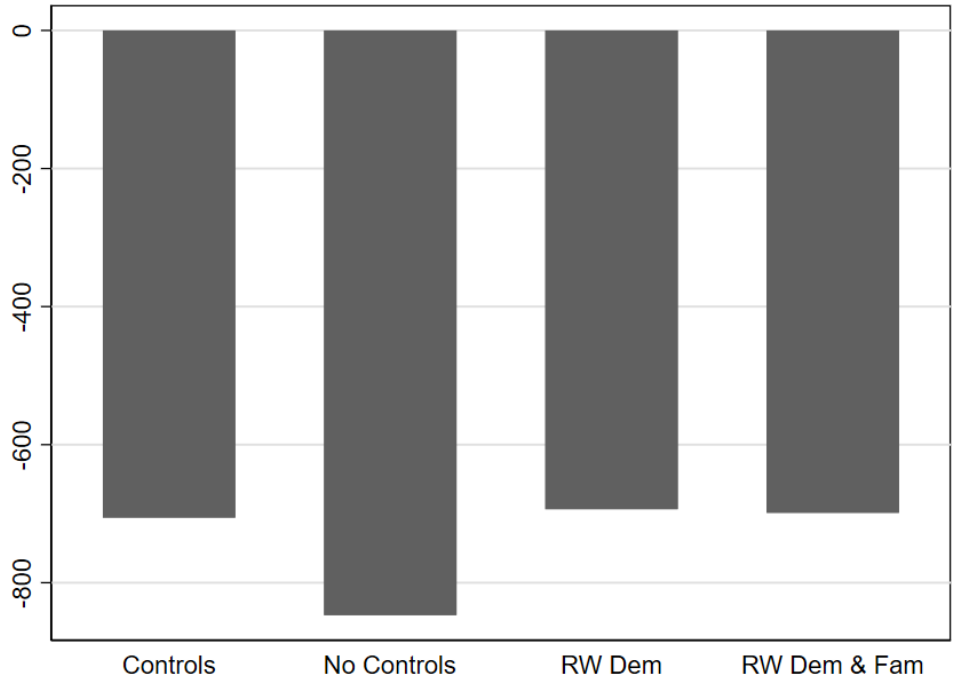


Figure A3: Robustness of AGI Impact to Controls

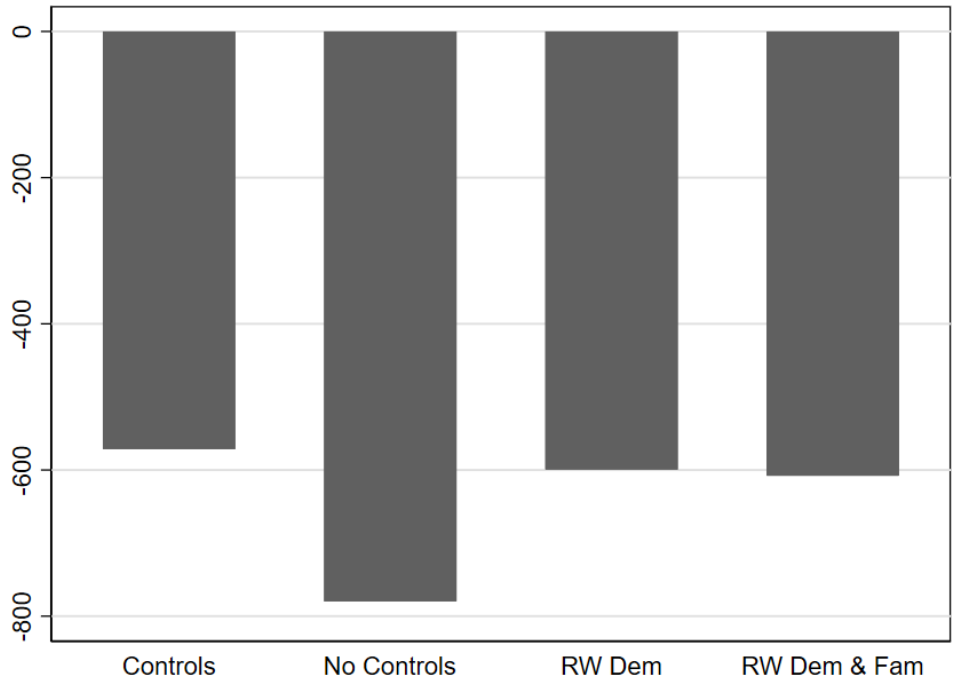


Figure A4: Employment Effects by Quarter of Event

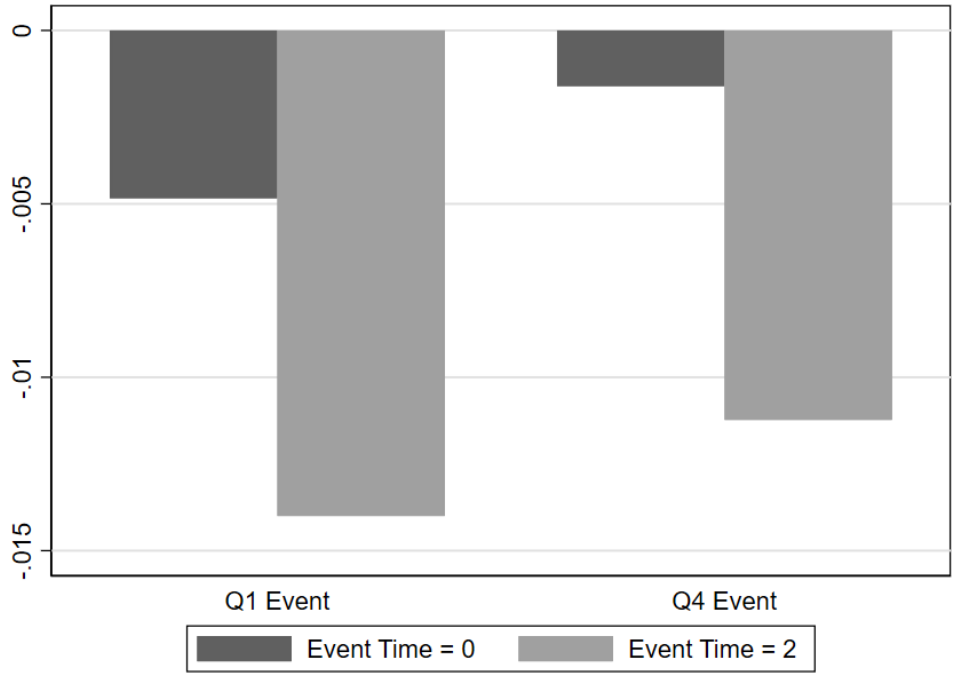


Figure A5: Earnings Effects by Quarter of Event

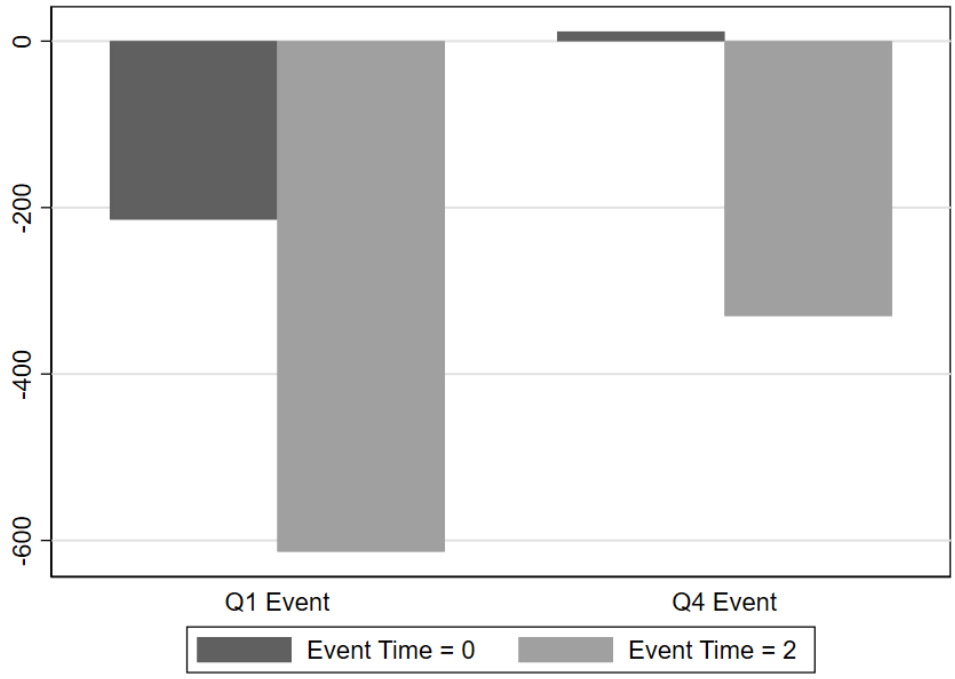


Figure A6: AGI Effects by Quarter of Event

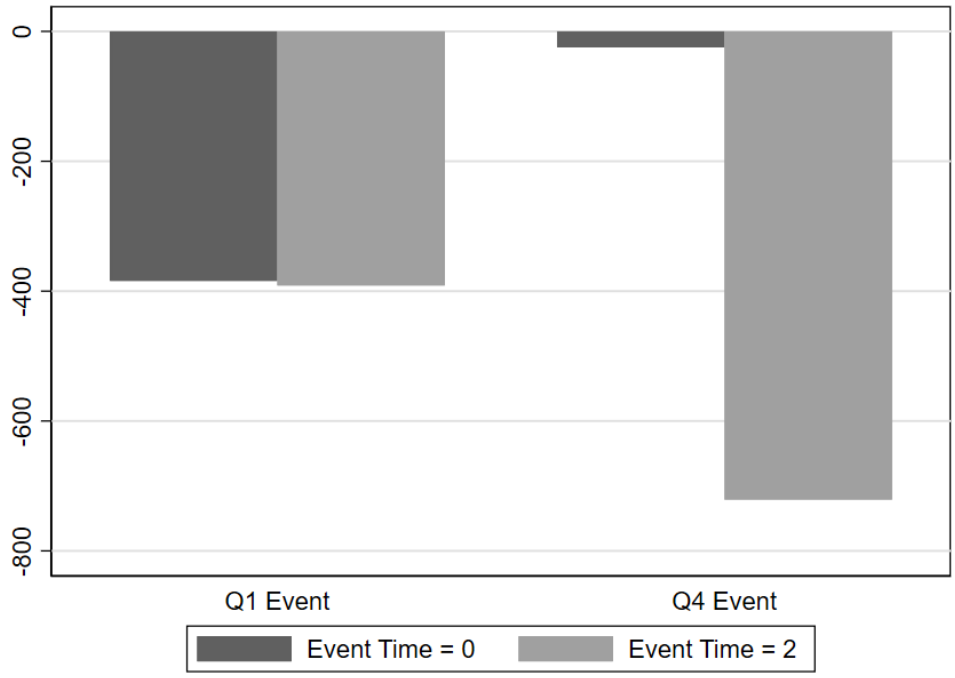
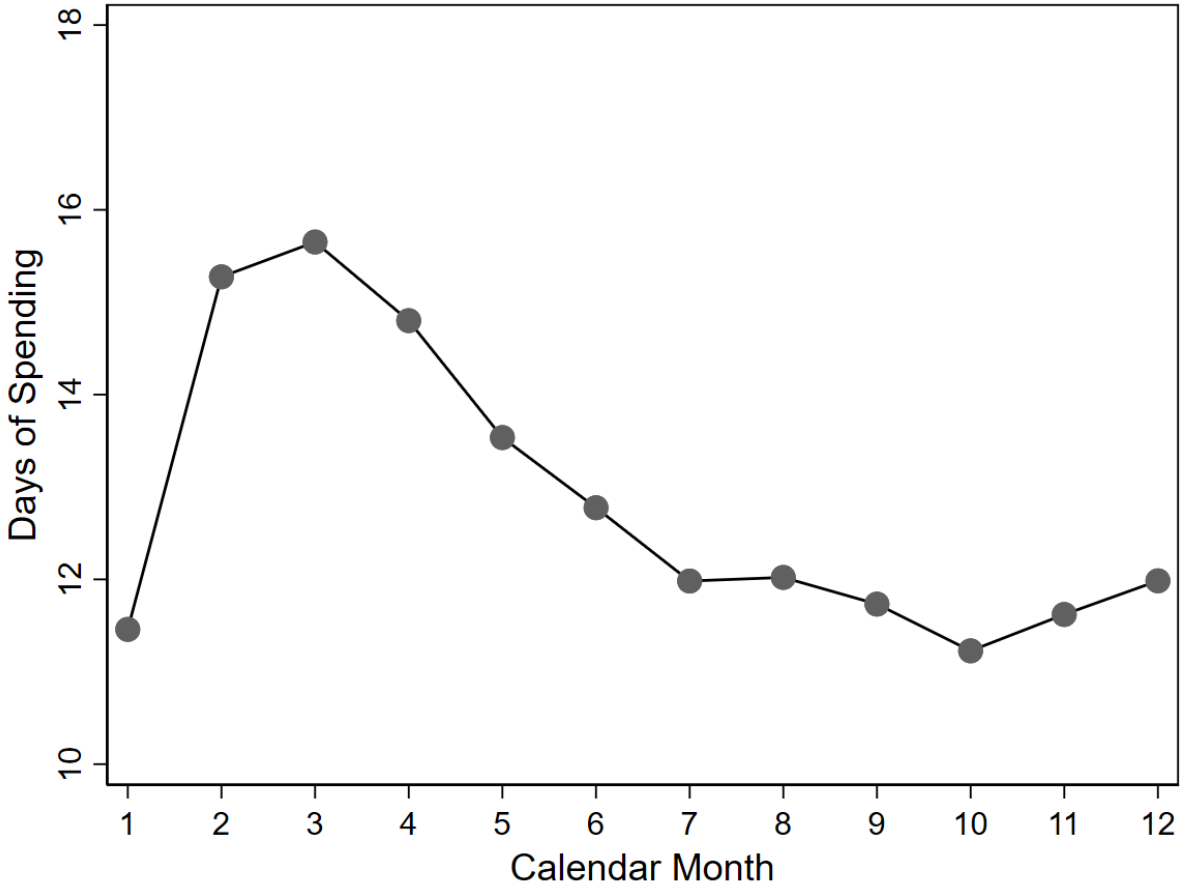


Figure A7: Cash on Hand Among Low-Income Individuals



Note: Figure illustrates the average cash on hand in terms of days of spending by calendar month. Data extracted from **XXX** using **XXX**. (Source: JPMorgan Chase Institute.)

Table A1: Auto Insurance Structure in Florida

Requirement	**Details**
Minimum Coverage	$10,000 Personal Injury Protection (PIP)
	$10,000 Property Damage Liability (PDL)
Collision Coverage	Optional, covers damage to policyholder's vehicle
Average Premium for Minimum Coverage	$1,605 per year (MarketWatch, 2023)
Florida's Ranking (Cost-to-Income)	2nd most expensive state (IRC, 2018)
Uninsured Drivers	26.7% (highest in U.S., IRC 2015)
Policies Without Collision Coverage	20% (FLOIR data)
Deductible Choices	$500 typical, but $1,000 is common

Note: This table summarizes auto insurance requirements and coverage levels in Florida.