The *Marshalsea* Underwater: Natural Disasters and Legal Debt Defaults*

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According to recent estimates, approximately 37% of Americans indicate an inability to cover an emergency $\$400$ expense using liquid savings (Board of Governors of the Federal Reserve System, 2023). The fraction of illiquid respondents may increase if the nominal value of negative unexpected shock is larger. One such shock is fines for traffic violations. For instance, the minimum speeding fine in Oklahoma is $\$172$. If unpaid, the original fine not only increases in nominal value but may result in suspension of driving privileges and even incarceration. Unpaid traffic fines result in instances of failure to pay (FTP) or failure to appear (FTA).

FTP or FTA instances are pervasive for lower-level cases. In New York City, for instance, 47% of defendants fail to appear for their hearings (Fishbane et al., 2020). In my context, the fraction of traffic citations that result in an FTP or FTA instance has steadily increased over the years, with a downward trend in more recent years. At the same time, the legal debt's nominal value has also followed a similar temporal pattern.

Existing work highlights the detrimental consequences of traffic fines on household finances, such as the decline in credit scores, lower borrowing limits, and increased unemployment (Mello, 2023). We, however, lack knowledge about the determinants of FTP or FTA. In this paper, I aim to fill this gap. I examine how exposures to natural disasters affect the FTP or FTA likelihood. Due to climate change, natural disasters are projected to become more frequent and intense. The existing works on the local economic impacts of natural disasters provide conflicting empirical evidence.[1] While some studies document positive impacts of natural disaster exposure both in the short- and long-run, others find negative effects over the same time

*_Marshalsea_ was a prison in London operating between 14th and 19th centuries that was notorious for housing poorest of London's debtors. The prison gained widespread popularity through the writings of Charles Dickens, whose father was incarcerated in the prison for failing to service a debt to a baker.

[1]See Tran and Wilson (2023) and the references therein. See Botzen et al. (2019) for a review of economic studies on the impact of natural disasters.

horizon. Nonetheless, Hsiang and Jina (2014) document that in the short-run, three out of four potential paths of long-run adjustment lead to negative effects on the local economy. I build on this framework and evaluate if the worsened economic prospects in the short-run also affect the ability of the affected residents to pay fines and penalties owed to the court.

I construct novel data on traffic citations by scraping the Oklahoma State Court Network (OSCN). These data provide extremely detailed information related to traffic citations, like the date of offense, the statute violated, the amount of fines owed, the location of the offense, and information on the vehicle of the defendant. From the traffic citation data, I also obtain information on the defendant's residence ZIP Code and birth date. I complement traffic citation data with data on natural disasters that I derive from the Federal Emergency Management Agency (FEMA)'s disaster declarations summaries dataset. To uncover potential heterogeneities and for mechanism analysis, I also use data from the US Census Bureau's decadal census and the five-year American Community Survey (ACS).

The main empirical strategy used to uncover the causal effect of natural disaster exposure on FTP or FTA instances on a traffic citation is regression discontinuity design (RDD). Leveraging information on the start of a natural disaster and the traffic citation's initial appearance date, I classify the defendant as exposed to natural disaster if their residence ZIP Code experiences a natural disaster before the initial appearance date on the traffic citation. Therefore, I exploit a sharp discontinuity in the natural disaster exposure emanating from the initial appearance date of each traffic citation. The initial appearance date for a traffic citation is determined based on the existing dockets caseload of the courts. Therefore, it is unlikely that the initial appearance date is subject to manipulation by the defendant. Indeed, I establish through multiple empirical checks that there is no evidence of manipulation of the initial appearance date and that the observable characteristics of the defendants are balanced across the discontinuity (Cattaneo et al., 2024).

Natural disaster exposure increases the likelihood of an FTP or FTA instance on a traffic citation by 5.6 percentage points. This effect is not only highly statistically significant but also quantitatively large. As a proportion of the pre-natural disaster mean, the increase in FTP or FTA instance likelihood is 23.76%. This conclusion is robust to a host of empirical checks suggested for the continuity based approach in an RDD framework (Cattaneo et al., 2020). RDD estimates suggest that the increased likelihood of FTP or FTA instances persists for more than 100 days following the natural disaster onset.

The increase in the likelihood of an FTP or FTA instance is more pronounced for defendants who are relatively worse off as measured through the market value of their vehicle. Furthermore, the increase in LFO default likelihood is much more pronounced for Black defendants, suggesting natural disasters worsen existing racial disparities within the criminal justice system (Agan, 2024).

With this work, I contribute to multiple strands of literature. To the literature examining the determinants of FTA or FTP instances, I contribute by highlighting the role of natural disasters as a potential driver of defaults on LFOs. The existing literature suggests roles of limited transportation options (Brough et al., 2022; Mahoney et al., 2001), cognitive overload (Chohlas-Wood et al., 2024; Emanuel and Ho, 2024; Kofman, 2019), and non-salience of court appearance date information (Fishbane et al., 2020). I also expand the existing literature on the consequences of natural disaster exposure by demonstrating that natural disasters may lead to involvement in the criminal justice system by increasing the likelihood of the defendant's FTP or FTA instance on traffic citations (Botzen et al., 2019). Finally, by showing a relatively more pronounced effect on vulnerable subpopulations exposed to natural disasters, I contribute to an extensive literature on socioeconomic disparities in the criminal justice system (Agan, 2024; Harris et al., 2010; Harris, 2016).

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