AN ANALYSIS ON THE IMPACT OF ECONOMIC DOWNTURN ON MUNICIPAL FINES AND FORFEITURES REVENUE

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ABSTRACT

Unlike the federal and state governments, municipal governments have limited revenue generating authority. Typically, municipalities generate revenue in five ways: sales tax, income tax, property tax, charges and miscellaneous fees, and state and federal funding. Municipal budgets were devastated as tax revenue declined during and following the 2008 recession, leaving cash-strapped municipalities with large budget deficits. Evidence suggests that in times of economic hardship certain municipalities have increased their fines and forfeitures collection, which turns what is supposed to be a mechanism to protect public health and safety into a regressive revenue collection scheme. This study, which aims to discover if this phenomenon happens on a mass scale, uses the U.S. Census Bureau's Annual Survey of State and Local Government Finances to examine the relationship between economic conditions and municipal governments' collection of fines and forfeitures. This paper hypothesizes that as economic conditions worsen, fines and forfeits revenue collection will increase as governments attempt to make up funding from the decrease in expected intergovernmental transfers and tax revenue. The results of this paper do not find a meaningful relationship between economic conditions on the collection of fines and forfeitures, but further research is warranted due to the limitations of this study. Given that over-reliance on fines and forfeitures has the potential to adversely impact municipalities' most vulnerable residents, researchers and policy makers should continue to address this important public policy issue.

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I. INTRODUCTION

For over two years, people, government, and businesses alike have fought to stop the spread of COVID-19. Despite these efforts, the pandemic continues to plague our population and wreak havoc on our economy. The year 2020 saw small businesses closing at alarming rates, high unemployment, and many people and businesses unable to pay their expenses, leading to upheaval in every sector of the economy. In the wake of such upheaval, municipal governments lost much needed revenue. As municipal governments have few options for raising revenue, they may turn to generating income through increasing fines and forfeitures collection, a regressive funding scheme that is predatory in nature.

II. BACKGROUND

Municipal Revenue Generation

Municipal governments are very limited in how they are able to generate revenue. While municipal financing is difficult to talk about broadly because of the varying authorities granted by each state constitution, local governments typically acquire revenue through sales tax, income tax, property tax, charges and miscellaneous fees, and state and federal funding (Urban-Brookings Tax Policy Center). Of these revenue sources, the largest source of revenue for municipal governments is intergovernmental transfers. Unfortunately, the recession that followed the 2008 market crash resulted in permanent funding reductions from state governments to local governments (Gordon, 2012), leaving municipal governments more reliant on other sources of revenue.

Additionally, during the recession, local governments' struggles were compounded from a loss of revenue due to decreased tax revenues – property values dropped, leading to less

property tax income, unemployment skyrocketed leading to less income tax, and people cut back spending leading to less sales tax revenue. Because municipalities have only a handful of ways to generate revenue, municipalities may end up turning to a funding method that has the most flexibility to make up the shortfalls: charges and miscellaneous fees. Charges and miscellaneous fees include line items such as water, sewerage, parking meter fees, etc. (Urban-Brookings Tax Policy Center). Notably, the charges and miscellaneous fees category also includes fines and forfeitures revenue.

Municipal governments are hamstrung in the ways in which they can raise revenue because of limits on taxing authority granted by each state constitution. As mentioned previously, it is difficult to discuss municipal taxing authority broadly, as it differs for each state, but typically states limit the taxing authority given to municipalities. This limitation is in large part to avoid vertical tax competition, where municipal governments and state governments levy a tax on an overlapping tax base, affecting the revenue both levels of government can generate. Therefore, states have a direct fiscal incentive to limit how municipalities can levy taxes to maximize their own ability to generate revenue (Scharff, 2016).

States further limit the ability for municipalities to generate revenue through tax and expenditure limits (TELs), by restricting how and by how much municipal governments can raise revenue. Nearly every state preempts municipal governments from adjusting their tax revenue generation through TELs, which grew in popularity in the 1970s as states imposed these restrictions as a tool to limit inflation (McFarland and Wagner, 2020). One TEL which hampers municipalities' ability to respond to fiscal needs in a timely manner is full disclosure tax requirements, otherwise known as "truth-in-taxation" requirements. While intended to protect the taxpayer from government overreach, this TEL requires governments to hold public hearings on

all tax changes, curtailing the ability for local leaders to promptly address fiscal needs in times of crisis (McFarland and Wagner, 2020). Therefore, municipal policymakers may rely on other methods to raise revenue that do not require a public forum.

Lastly, even when municipalities can raise tax revenue, there are political implications for municipal governments to be reluctant to raise taxes. First, as raising taxes is universally unpopular, and assuming that local elected policymakers are rational actors, they will not vote to increase taxes if it will harm their chances of reelection. In addition to raising taxes being politically unpopular, policy makers must be careful about the adverse effects of raising taxes during a recession, given that it is important for citizens to spend their disposable income to stimulate the economy. Expansionary fiscal policy – where the government reduces taxes to encourage spending and stimulate the economy – is a tool that policy makers can employ to help combat a recession (Congressional Research Service, 2021). Consequently, municipal politicians may look to other ways to generate revenue apart from raising taxes.

Fines, Fees, and Forfeitures Revenue

Due to the limits on taxing authority and the reduction of state intergovernmental transfers, municipalities have turned to other sources to augment their budgets. One method through which municipal governments circumvented state authorized taxing authority is through the advent of the "user fee." Since the 1980s, municipal governments have moved away from levying taxes for general public services to the user fee model, where residents pay for services provided. This allows municipal governments more flexibility and authority to impose charges without explicit permission from the state (Scharff, 2016).

In addition to the "user fee" model, municipal governments can turn to fines and fees revenue to augment their budget. Typically, state and local legislative bodies set court fines and fees, and local legislative bodies have the authority to set additional fines and fees for "low-level, quasi-criminal ordinance violations, misdemeanors, or civil infractions" (U.S. Commission on Civil Rights, 2017, p. 7). Of course, revenue from fines and fees is a legitimate source of municipal income. However, fines and fees as a source of revenue becomes dangerous when these fines and fees are collected with the intention of simply raising revenue rather than protecting public health and safety.

In early 2020, scholar Bernadette Atuahene coined the term "predatory cities" to describe municipalities that resort to raising revenue through means such as excessive fines and fees. Atuahene defines a "predatory city" as "urban areas where public officials systematically take property from residents and transfer it to public coffers, intentionally or unintentionally violating domestic laws or basic human rights" (Atuahene, 2020). In her work, she analyzes how four predatory policies that cities may use to generate revenue: inflating property values to increase property tax revenue, excessive fines and fees, civil asset forfeiture, and exploitive court fines and fees. This paper focuses on three of these policies: excessive fines and fees, civil asset forfeiture, and exploitive court fines and fees, which this paper will refer to collectively as fines and forfeitures revenue. Table 1 defines each of these policies.

Table 1. Predatory Policy Definitions

Predatory Policy	Definition
Excessive fines and fees	Systematically writing fines or fees for innocuous infractions that do not threaten the public health or safety, like having mismatching curtains or walking on the left side of a crosswalk (Wilson, 2015), or fining in a way that is grossly out of proportion with the infraction.
Exploitive court fines	A court must consider the individual's ability to pay a fine before jailing a defendant for failure to pay and therefore incurring more debt; however, many courts flagrantly ignore this and create a system in which people are fined for not being able to pay court fines, keeping them in a cycle of debt and accruing interest, which in turn generates revenue.
Civil asset forfeiture	Asset forfeiture is when the government seizes property – typically homes, cars, and cash – and transfers it for its own use or to sell. Federal, state, and local governments have the authority to use asset forfeiture. By taking the property that has been used to commit a crime or could be valuable to a criminal organization, forfeiture is supposed to disrupt criminal activity. According to the U.S. Marshals Service, their asset forfeiture program is designed to: "use asset forfeiture as a tool to deter, disrupt and dismantle criminal enterprises by depriving criminals of the instruments of illicit activity" (U.S. Department of Justice, 2021). However, in practice, police departments – federal, state, and local – across the country use asset forfeiture to fund themselves and reap the financial benefits. It is important to note there are two types of asset forfeiture: civil and criminal. The difference is whether the owner of the property has been charged with a crime or not. Unlike when charging people, the police do not need to charge you with a crime to keep your property. When discussing asset forfeiture, this paper is referring to civil asset forfeiture, or simply, civil forfeiture.

There is evidence that suggests that many municipalities turned to fines and forfeitures to generate revenue after the financial crisis of 2008, and likely have not turned away from using these policies since. Atuahene suggests that "heightened vulnerability" causes municipalities to turn to these policies. This paper aims to analyze if economic downturn, as a "heightened vulnerability," has led to municipalities adopting predatory policies – such as turning to increasing fines and forfeitures revenue – on a widespread scale across the country.

III. LITERATURE REVIEW

The use of fines and forfeitures as a municipal revenue generating tool is a relatively new area of study among public policy scholars. While the study of the perverse incentive for police officers to abuse civil asset forfeiture to fund their own department has been accruing since the 1990s (Boudreaux and Pritchard, 1996), scholars have only just begun to examine how municipalities can manipulate excessive fines and fees and exploitative court fines to generate revenue.

Fines and Fees

Policymakers began to seriously examine how cities can use fines and fees to generate revenue after the tragic killing of Michael Brown. The following investigation by the US Department of Justice Civil Rights Division (DOJ) found that the Ferguson Police Department was consistently violating the First, Fourth, and Fourteenth Amendments through its predatory policies that were meant to raise revenue rather than protect the health and safety of its citizens. Furthermore, that those violations were systematically targeted at the Black population (U.S. Department of Justice, 2015).

Ferguson is not alone. Since the DOJ published its report, government bodies and public policy scholars alike have turned their attention to understanding how municipalities may use fines and forfeitures revenue to pad their budgets. As budgets become tighter, governments use revenue from fines and fees to offset the increasing costs of operation (Dindial and Fortier, 2021). A report published by the U.S. Commission on Civil Rights (2017, p. 7) found that since 2010, forty-seven states have increased their fines and fees payments, for both civil and criminal offenses.

In many cases, these new fees and increased surcharges were implemented to address 2010 budget shortfalls (Martin, Smith, and Still, 2017, p. 6). One study reviewed data from North Carolina counties, finding that significantly more traffic tickets were issued in the year following a decline in revenue. Specifically, the authors found that a 10 percent decrease in revenue growth resulted in a 6.4 percent increase in the issuance of traffic tickets (Garrett and Wagner, 2009).

A Governing Report found that fines and forfeitures revenue is a critical source of funding for many municipalities, especially small municipalities. In fact, some municipalities rely almost entirely on fines and forfeitures revenue to fund their budgets, sometimes accounting for more than half of a municipality's budget (Maciag, 2019). In one particularly egregious example, between 2018 and 2020, the town of Brookside, Alabama's revenue from fines and forfeitures rose by a staggering 640 percent. Over the course of these years, the total budget of Brookside doubled, with fines and forfeits now making up half of the town's budget (Archibald, 2022).

The Governing report analyzed 840 cities, towns, and counties reporting fines and forfeitures revenue of at least $100,00 and found that municipalities that have sustained decades

of economic decline tend to rely on fines and fees to fund their budget (Maciag, 2019). However, this report relies on data trends rather than regression analysis.

Another report published in 2019, the Price of Taxation by Citation, studied how municipal code enforcement can be abused to raise revenue. The authors evaluated three Georgia cities that have historically relied on fines and fees revenue as a large portion of their revenue, finding that the cities' fines and fees revenue peaked in 2012, then began to decline as the city started to generate more general tax revenue. As the study reports:

> These trends generally correspond to the recession of the late 2000s and early 2010s and the subsequent recovery. This suggests the cities—which are poorer than average, face uncertain economic futures and have few means of generating substantial revenues—may have seen fines and fees as a way out of a budget crunch (Carpenter, Sweetland and McDonald, 2019, p. 4).

Furthermore, as mentioned previously, municipal policymakers have political incentives to avoid raising tax rates. Lacking independent courts or robust legal protections creates a structural incentive for policymakers to turn to fines and fees to generate revenue, rather than increase tax rates (Carpenter, et. al., 2019, p 5).

Unfortunately, relying on fines and forfeits as a revenue scheme not only distorts the structural incentives of municipal policymakers but also creates a system that preys on the most vulnerable communities: communities of color and low-income communities. As the Department of Justice's investigation of the Ferguson Police Department uncovered, not only was the city abusing its municipal code enforcement to generate revenue, but these efforts were also targeted at the Black community. Once again, Ferguson is not alone: municipal governments are more likely to use excessive code enforcement to generate revenue in cities with larger black populations (Sances and You, 2017). It is well documented that the Black community is disproportionately overpoliced; for example, black drivers are approximately 20 percent more

likely than white drivers to be pulled over for traffic violations (Pierson, et. al, 2020). Therefore, when policymakers rely on fines and forfeits to generate income, they are doing so on the backs of already vulnerable communities.

This disparity has important implications for municipal revenue generation. In some cities, fines and fees revenue make up more than half of a municipal budget revenue (Maciag, 2019). If most of these fines and fees are generated from vulnerable communities – and there is evidence that they are – it suggests that the municipal revenue generation is inequitable. In addition to the injustice, this outcome suggests that the state law regarding municipal financing may be in need of reform, from how municipalities are allowed to raise taxes to the incentives of those generating revenue.

While court fines and civil asset forfeiture revenue do not make up a large portion of fines and forfeitures revenue, because the majority comes from municipal code enforcement fines (Maciag, 2019), it is important to note that there is evidence that these tools are used to pad municipal budgets as well.

Civil Asset Forfeiture

Asset forfeiture is the process of the government seizing property to purportedly dismantle criminal enterprises. However, there is evidence to suggest that forfeiture does not, in fact, fight crime (Kelly, 2021). A study examined the rate of crime in New Mexico following legislative reform that limits its civil asset forfeiture program in 2015, finding that, compared to Colorado and Texas, crime rates in New Mexico did not rise nor did arrest rates fall, calling into question the claim that asset forfeiture programs fight crime (Knepper, McDonald, Sanchex and Smith Pohl, 2020, p. 32).

Despite the lack of evidence to suggest that forfeiture fights crime, the federal, state, and local governments still use asset forfeiture under the guise of fighting crime. In reality, it is more likely that government uses asset forfeiture as a revenue generation tool, suggesting governments are more interested in profit than crime-fighting (Knepper et. al., 2020). Evidence suggests this to be true: a study finds that economic conditions have a strong and statistically significant impact on forfeiture activity, using data from five states. The author finds that: "When local budgets are squeezed, police respond by increasing their reliance on forfeiture. A one percentage point increase in unemployment—a common measure of economic health—was associated with an 11 to 12 percent increase in forfeiture activity" (Kelly, 2021, p. 7). While this study was focused on the state level, we can expect trends to be the same at all levels of government, as seizing and forfeiting people's property – whether they are ever convicted of a crime or not – is a profitable venture, as most people do not have the means to contest a forfeiture (Knepper, et. al., 2020). These results suggest that the financial incentive of poor economic conditions can impact the use of forfeitures as a revenue generating tool.

Exploitative Court Fines

A third revenue generation tool that cities may use to fund themselves on the backs of those who can least afford it is through exploitative court fines. The law protects Americans from debtors' prisons, as the concept was both declared unconstitutional and banned by Congress long ago (Atuahene, 2020). Consequently, courts must determine a defendant's ability to pay before jailing a defendant for failure of payment. Despite this, courts continue to jail defendants for their inability to pay, leading to a revenue generating scheme as late fees and additional court fines add up (Bannon, Nagrecha and Diller, 2010).

In the past few decades, the use of the court fees and fines system has grown rapidly: between 1991 and 2004, the number of people who received court-ordered fines increased from 25 percent to 66 percent (Dindial and Fortier, 2021). In 2019, it was reported that 6 percent of adults in the United States had unpaid court or legal debt (Board of Governors of the Federal Reserve System, 2020). This increase in court fines and fees has devastating impacts on those who are stuck in the criminal justice system. An investigation by NPR found that, in some cases, the fines and fees were so high that people were jailed for failure to pay court fines and the late fees tacked on due to missed payments, rather than the underlying offense (Shapiro, 2014). This situation creates a cycle where people are unable to pay their way out of the criminal justice system due to ever-compounding court fines. In fact, one study found that an increase in fines and fees schedules is associated with an increased likelihood of re-offense within two years (Giles, 2021).

Once again, the increased reliance on court fees is due to a perverse institutional incentive to raise revenue rather than raise taxes. For example, legislators in Oklahoma have become reluctant to raise taxes over the last few decades, so they have turned to increasing fines and fees in order to fund the court system (Carlton Greer, 2015). One study examined the mechanism by which municipal courts can supply cash-strapped municipalities with much needed revenues. This study examined nationwide municipal revenue data and found that small cities and cities with low property tax collection – cities with lower tax revenue – were more likely to use municipal courts to fund the government operations (Mughan, 2021).

Judges have the choice whether to impose a fine in over 30 million low-level cases each year, signifying that municipalities have discretion over how much they collect in court fines and

fees. Exploitative court fines – imposing harsh court fines and fees and jailing those who cannot pay – results in recidivism, hurting rather than promoting public health and safety.

Moreover, a reliance on court revenue to fund government operations is both inefficient and costly. Court fines rarely, if ever, bring in the amount of revenue forecasted, as many people are unable to pay their fines (Mughan, 2021). Additionally, it is more costly to collect court fines and fees. One study found that, on average, jurisdictions spent $0.41 for every $1 collected from court fines and fees, versus $0.34 for every $100 collected via the IRS (Menendez, 2019, p. 9).

Fines, Fees, and Forfeitures

The literature suggests that municipal governments use the collection of fines and fees, court fines, and civil asset forfeiture as means to generate revenue, and are more likely to do so in times of economic distress.

Contribution to Public Policy

At the municipality agency level, there are structural incentives for judges, police officers, or property tax assessors – those generating the revenue – to fund their own agency, and therefore themselves, through writing tickets, confiscating property, etc. This structure creates a perverse incentive for those who are supposed to be upholding public health and safety to use predatory fines and forfeitures to generate revenue. This incentive structure is a policy area ripe for reform.

The literature has presented a clear picture: structural incentives and "heightened vulnerability" (Atuahene, 2020) create a situation where municipalities that are susceptible to engaging in the practice of using excessive fines and forfeits to generate revenue rather than

protect public health and safety. The question remains: what tips municipalities over the edge? With the literature stated above, and considering that nearly every state and locality increased their fines and fees rates following the recession (Maciag, 2019), there is reason to believe that the 2008 recession tipped many municipalities over the edge. Therefore, using Census data on municipal fines and forfeitures, this paper uses regression analysis to determine whether municipalities rely on increased fines and forfeitures after the 2008 recession.

IV. CONCEPTUAL MODEL

As the literature shows, municipalities have only a handful of ways to generate revenue so in times of economic decline. Therefore, municipalities – especially those that are already struggling – may turn to relying on fines and forfeitures to make up the income, resulting in revenue generation that is predatory in nature. There have been many documented instances of municipalities that turn to fines and forfeitures to generate revenue, however, much of the literature does not rely on statistical analysis but instead relies on qualitative analysis and data trends. To understand if this phenomenon is broadly occurring en masse, this paper tests the following: As economic decline causes a reduction in revenue, local governments increase their fines and forfeitures revenue.

To test this hypothesis, this paper uses data collected via the Census Annual Survey of State and Local Government Finances, which shows an aggregate amount of the total that all local governments of a state generated from "fines and forfeits" each year.

To assess economic health, this paper uses the change in revenue from the state to local governments over time via intergovernmental transfer, which decreased during the recession (Gordon, 2012), leaving municipalities needing to produce revenue from new sources.

Additionally, I include the total tax revenue collected by municipal governments in each state, as the 2008 recession also devastated municipal budgets due to a decrease in tax revenue, for the reasons outlined in the background section. As employment is a general indicator of economic health, I have included the annual unemployment rate, along with the average weekly earnings of private employees and the total number of private employees as additional independent variables.

Population has been included as a control variable, to control for tax revenues increasing over time because of an increase in the tax base, rather than an increase due to economic growth. Additionally, I have included all reported crime instances as a control for fines and forfeitures, to ensure the revenue from fines and forfeits is not increasing simply due to an increase in crime.

V. DATA DESCRIPTION

Variable Definitions

Using panel data from 2005-2015 to understand if fines and forfeits increase due to the economic hardship of the Great Recession, the dependent variable will be fines and forfeits, the key independent variables will be intergovernmental revenue from the state, total local tax revenue, annual unemployment, average weekly earnings in the private sector, and total number of people employed in the private sector, and the control variables will include, all crime offenses, and population.

Table 2. List of Variables with Definitions

Variable	*Definition*	*Collected from*
Fines and forfeits	Includes the following revenue categories: "Receipts from penalties imposed for violations of law; civil penalties (e.g., for violating court orders); court fees if levied upon conviction of a crime or violation; court-ordered restitutions to crime victims where government actually collects the monies; and forfeits of deposits held for performance guarantees or against loss or damage (such as forfeited bail and collateral)" (U.S. Census Bureau, 2006).	Census Annual Survey of State and Local Government Finances, 2005-2015.
Intergovernmental revenue from the state	The total amount of money distributed by the state government to all the local municipalities.	Census Annual Survey of State and Local Government Finances, 2005-2015 .
Local general revenue from taxes	The total amount of tax revenue collected by all of the municipalities of each state.	Census Annual Survey of State and Local Government Finances, 2005-2015.
Total local revenue	The total revenue of all of the municipalities of each state.	Census Annual Survey of State and Local Government Finances, 2005-2015.
Unemployment rate	The annual unemployment rate per state.	US Bureau of Labor Statistics, 2005-2015.
Average weekly earnings	The average weekly earnings of all private employees per state in dollars.	Current Employment Statistics Survey, 2007-2015. Note: 2007 was the earliest available data year.
Total employees, in thousands	The total amount of all private employees per state.	Current Employment Statistics Survey, 2005-2015.

Crime	Includes all known crime offenses by state by year. This variable will be used as a control variable for "fines and forfeits" to ensure that fines and forfeits are not increasing simply because crime is increasing.	FBI Uniform Crime Reporting Program Data: Offenses Known and Clearances by Arrest, 2005-2015.
Population	Census data of the population of each state by year.	U.S. Census Bureau, Population Division: Annual Estimates of the Resident Population for the United States, Regions, States, and Puerto Rico, 2005-2015.

Additionally, using the variables listed in Table 2, I created an additional variable: fines and forfeits as a percentage of total budget. Presenting the fines and forfeits variable as a percentage instead of a raw number may help improve the model as a review of the literature has indicated the revenue figures as a percentage of the total budget may capture a better picture of the relationship between economic health and fines and forfeits collection than the raw revenue amount.

Descriptive Statistics

As Table 3 shows, there are 561 observations for each variable – 11 years of data for 50 states and D.C. – except for the variable average weekly earnings. Average weekly earnings has just 459 observations from 2007 to 2015, whereas all others have data from 2005 to 2015. The amounts of fines and forfeits collected ranges widely, from a minimum of $0 to a maximum of nearly 1.4 million dollars, with a mean of $163,657 collected. The minimum of $0 – identified in the data set as North Carolina in 2006 – is likely due to incomplete data collection, as in some cases the central collections for the state and local finance survey is incomplete (U.S. Census Bureau, 2019). As fines and forfeits is a legitimate revenue source when it is not being abused, it

is unlikely that not a single municipality in North Carolina collected fines and forfeitures revenue in 2006. Additionally, the intergovernmental transfer revenue from the state variable has a minimum of 0 as D.C. does not receive state intergovernmental revenue transfers.

Table 3. Descriptive Statistics of Variables

Variable	*Observations*	*Mean*	*Std. Dev.*	*Minimum*	*Maximum*
Fines and forfeits	561	163657.6	273238.06	0	1386421
Intergovernmental transfers from state	561	9042308.6	13780733	0	95222923
Local revenue from taxes	561	11066266	15410056	331859	94183032
Total local revenue	561	30974561	44172268	2032373	2.900e+08
Unemployment rate (%)	561	6.309	2.181	2.5	13.8
Average weekly earnings	459	772.495	115.637	543.51	1409.99
Total employees, in thousands	561	2223.943	2389.342	198.8	13589.2
Crime	561	255820.51	295917.62	12321	1650951
Population	561	6049015.9	6775321.8	514157	38918045
Fines and Forfeits as a percentage of total local revenue (%)	561	.438	.284	0	1.472

Key Variable Relationships

As shown in Table 4, a pairwise correlation between the variables in my data set, there is a positive and strong relationship between the following variable combinations: fine and forfeits and intergovernmental revenue from the state, fines and forfeits and tax revenue, and fines and forfeits and all crime offenses. There are positive but weak correlations between fines and forfeits and annual unemployment and fines and forfeits and average weekly earnings.

Additionally, there are strong, positive associations between intergovernmental revenue from the state and tax revenue and between intergovernmental revenue from the state and all crime offenses. There are positive, but weak, associations between intergovernmental revenue from the state and the unemployment and weekly earnings variables.

Lastly, there is a strong, positive association between tax revenue collected and all crime offenses.

Table 4. Correlation Coefficients between Variables

Data Correlation Values	*Fines and Forfeits Amount*	*Intergovernmental Revenue from State*	*Tax Revenue*	*Annual Unemployment*	*Average Weekly Earnings*	*All Crime Offenses*
Fines and Forfeits Amount	1					
Intergovernmental Revenue from State	0.8913	1				
Tax Revenue	0.9381	0.9046	1			
Annual Unemployment	0.2237	0.2236	0.1899	1		
Average Weekly Earnings	0.2695	0.2359	0.3256	0.0978	1	
All Crime Offenses	0.856	0.8252	0.8044	0.2387	0.1388	1

VI. REGRESSION RESULTS

This section presents the results for three sets of regression analyses to estimate the relationship between the local collection of fines and forfeits and economic health. In all sets of regressions, this study uses the total number of crimes reported in each state by year, the total population of each state by year, and the combined total budgets of all local municipalities in each state by year as control variables.

The results in Table 5 measure the relationship between fines and forfeits collected as a percentage of combined total budgets of all local municipalities of each state and weekly employment statistics as an economic indicator. Control variables include the weekly earnings of all private employees as an additional economic indicator, crime, and population. Model 1 shows a significant relationship between weekly earnings and the percentage of fines and forfeits collected as part of the total budget, but with a null effect, assuming all else is held constant.

Model 2 includes an additional variable: the unemployment rate. Model 2 shows a significant relationship at the 10% level between weekly earnings and fines and forfeits collected as a percentage of the total revenue, assuming all else is held constant, with a null effect. At the 5% level, Model 2 suggests that, all else held constant, there is a relationship between the number of people employed and fines and forfeits as a percentage of total revenue, again with a null effect. However, the unemployment rate has a statistically significant relationship with fines and forfeits at the 1% level that supports the hypothesis presented in this paper. All else held constant, a one percentage point increase in the unemployment rate results in a 0.033 percentage point increase in the amount of fines and forfeits collected.

Model 3 includes fixed effects to help explain any variation over time or across states. The relationship between fines and forfeits as a percentage of total revenue no longer has a statistically significant relationship with weekly earnings or the number of employees. However, the unemployment indicator remains significant at the 1% level, suggesting a strong significant relationship that a one percentage point increase in the unemployment rate is associated with a 0.01 percentage point increase in the amount of fines and forfeits collected, all else held constant.

Table 5. OLS Regression Results: Fines and Forfeits as a Percent of Total Governmental Budget

Dependent Variable:	**Models**		
Fine and Forfeits Revenue Percent	**(1)**	**(2)**	**(3)**
Weekly Earnings of Employees	0*** (.009)	0* (.081)	0 (.896)
Employees in Thousands	0 (.851)	0** (.029)	0 (.149)
Annual Unemployment Rate		0.033*** (0)	0.01 *** (0)
All Crime	0*** (.002)	0*** (0)	0 (.765)
Total Local Revenue	0* (.403)	0 (.986)	0*** (.001)
Population	0 (.663)	0** (.017)	0 (.148)
Constant	0.129*** (.164)	0 (.998)	0.587 *** (0)
R-squared	0.118	0.169	0.096

*Note: p-values in parenthesis; * refers to p < 0.05, ** refers to p < 0.01, *** refers to p < 0.001*
Model 3 is an OLS regression with fixed effects.

Table 6 shows the relationship between the amount of fines and forfeits collected in dollars, with two key economic indicator variables: intergovernmental transfers from the state and general tax revenue. Model 4 shows there is a statistically significant, positive – albeit small – relationship between tax revenue collected and fines and forfeits collected, disagreeing with the hypothesis. Notably, however, in this regression model there is a statistically significant relationship at the 5% level between the unemployment rate and fines and forfeits collected,

suggesting that a one percentage point increase in the unemployment rate is associated with a $3493 increase in fines and forfeits collected annually.

Model 5 is the same regression analysis as Model 4, but includes fixed effects, to accommodate variance over states and time. While the intergovernmental transfer and general tax revenue relationships are significant and positive, which undermines the hypothesis of this paper, the unemployment rate is significant at the 1% level, all else held constant. This regression suggests that, all else held constant, a one percentage point increase in the unemployment rate is associated with a $2,160 increase in the amount of fines and forfeits collected annually. This analysis also finds a small, negative relationship between total local revenue and fines and forfeits collection at the 1% significance level, supporting the hypothesis presented in this paper.

Model 6 adds additional economic indicator variables to Model 4, to increase the robustness of the regression. Model 6 finds small, significant, positive relationships between fines and forfeits collected and the economic indicator variables intergovernmental transfers from the state and local tax revenue generation, which undermines the hypothesis presented in this paper. However, Model 6 also finds that, all else held constant, an increase of 1000 employees in the private sector is associated with a $82.39 decrease in the amount of fines and fees collected. As increases in employment numbers are indicators of a thriving economy, a decrease in the amount of fines and forfeits collected supports the hypothesis presented in this paper. Model 7 attempts to aid our understanding of Model 6 by adding fixed effects across states and time. The added effects negate the significant relationship between fines and forfeits collected and intergovernmental transfers from the state. Further undermining the hypothesis presented in this paper, there is a significant positive relationship between weekly earnings and fines and forfeits

collected. Model 7 suggests that, all else held constant, a one dollar increase in weekly earnings of employees is associated with a $52.67 increase in fines and forfeits collected annually. However, the added effects do not remove the significant, negative relationship with fines and forfeits collected and employment in the private sector. Model 7 suggests that keeping all else constant, an increase of 1,000 employees in the private sector is associated with a $39.20 decrease in the amount of fines and fees collected annually, which supports the hypothesis presented in this paper. Lastly, Model 7 shows a negative, significant relationship between fines and forfeits collected and total local revenue. The model suggests that a one unit increase in the total local revenue is associated with a $0.001 decrease in fines and forfeits collected, all else held constant. Despite having a small effect, this supports the hypothesis presented by this paper as it suggests that municipalities will rely more heavily on fines and fees when total revenue decreases.

Table 6. OLS Regression on Fines and Forfeits Amount

Dependent Variable:	Models			
Fine and Forfeits Amount	**(4)**	**(5)**	**(6)**	**(7)**
Intergovernmental Transfers from State	0.002 (.247)	0.005*** (0)	0.003* (.089)	0.002 (.237)
Local General Revenue from Taxes	0.012*** (0)	0.008*** (0)	0.014*** (0)	0.009*** (0)
Annual Unemployment Rate	3493.014** (.034)	2160.231*** (0)	-79.233 (.968)	91.856 (.899)
Weekly Earnings of Employees			26.125 (.491)	52.677** (.027)
Employees in Thousands			-82.394*** (0)	-39.203*** (0)
All Crime	0.319*** (0)	0.062** (.039)	0.343*** (0)	-.035 (.491)
Total Local Revenue	0.001 (.253)	-0.001** (.025)	0 (.634)	-0.001** (.016)
Population	-0.009** (.016)	0.014*** (0)	0.02** (0.044)	-0.009 (.117)
Constant	-54648.812*** (0)	-57992.426*** 0)	-47420.203 (0.113)	198445.59*** (0)
R-squared	0.909	0.897	0.915	0.326

*Note: p-values in parenthesis; * refers to p < 0.05, ** refers to p < 0.01, *** refers to p < 0.001*
Models 5 and 7 are OLS regressions with fixed effects.

The dependent variable (fines and forfeits amount) and the key independent variables (local tax revenue and intergovernmental revenue from the state) all have skewness measures close to 3 (2.86, 3.29, 4.05 respectively), this suggests that a logarithmic model may be more appropriate than a linear regression. Model 8 in Table 7 shows there are significant relationships between all of the variables, however all effects are null except for the log of tax revenue. This analysis suggests that, all else held constant, a one percent increase in total tax revenue is associated with a 0.03 percent decrease in fines and forfeits collected, suggesting that municipalities rely more heavily on fines and forfeit collection when tax revenue decreases.

Table 7. A Logarithmic Regression Analysis: Log of Fines and Forfeits

Dependent Variable:	Logarithmic Model
Log Fine and Forfeits Amount	**(8)**
Log Intergovernmental Transfers from State	0*** (.0)
Log Local General Revenue from Taxes	-0.03*** (.002)
All Crime	0*** (.003)
Total Local Revenue	0*** (.001)
Population	0*** (0)
Constant	12.003*** (0)
R-squared	0.379

*Note: p-values in parenthesis; * refers to p < 0.05, ** refers to p < 0.01, *** refers to p < 0.001*

VII. DISCUSSION

This paper aimed to address whether municipalities rely more heavily on fines and fees collection during times of economic downturn. While the literature shows evidence that certain municipalities across the country use fines and forfeitures to pad their budgets in times of economic crisis, there has not been a national study to show if this is happening en masse. Rather, the literature focuses on specific instances of fines and forfeitures collects abuse in specific municipalities. The lack of a robust national study is surprising given the attention that generating revenue via fines and forfeitures collection is regressive in nature. Because people of low-income are more likely to be the targets of fines and forfeits collection, this revenue generation scheme places the tax collection burden on low-income earners.

This paper presents mixed results. In this paper, I hypothesized that municipalities are more likely to generate fines and forfeits revenue in times of economic crisis, due to a decrease in tax revenue and state intergovernmental transfers. The results, however, did not strongly support this hypothesis. The findings suggest there a small to null effect of economic downturn on a rise in fines and fees collection. As described in the results section, the relationship between fines and forfeits collection and the key independent variables of local tax revenue and intergovernmental revenue from the state did not support the hypothesis presented in this paper. However, the results suggest that, overall, there is a relationship between the employment statistic variables (unemployment rate and persons employed) and fines and forfeits revenue collection that imply as employment increases, fines and forfeits collection decreases. As employment is an indicator of a healthy economy, these results support the hypothesis presented in this paper that economic distress results in an increase in fines and forfeits collection. As employment statistics are

complicated, more research is necessary to understand the underlying mechanism that is causing the relationship between employment and fines and forfeitures collection.

Overall, the lack of substantial statistically significant results is due to the limitations of the available data. The preliminary shortcoming of this paper is that the Census Data used to measure the fines and forfeits collected is only available as an aggregated number for each state. While local budget data is available through each municipality, there is no database of all local municipal budgets by budget line to identify the collection of fines and forfeits. The data for each state is not separated by each municipality, therefore the regression analyses of this paper assume that all municipalities are equal, when in practice they are not. Each municipality has its own idiosyncrasies that cannot be captured at the state aggregate level. For example, as much of the previous literature shows, this phenomenon of municipalities is happening in small municipalities, but perhaps not in large cities.

As mentioned previously, while the regression analyses presented in this paper either suggest there is a very small positive relationship or no significant relationship between economic downturn and fines and forfeits collection, it may be possible that this phenomenon is tied to the population size of a municipality. Major cities, like New York City, Los Angeles or Houston that have robust tax bases may not need to turn to fines and forfeitures collection to pad their budgets. Therefore, these large municipalities may be outliers of this phenomenon that skew the results. Unfortunately, there is no way to extrapolate the high tax collecting municipalities from this data and therefore the analysis cannot show if this phenomenon is occurring in certain municipalities versus others. Further research should explore this issue through the lens of municipal population size, but currently municipal level data is not widely available. Further research must be

completed in order to determine if smaller municipalities are succumbing to this revenue generation scheme.

The mixed findings of the regression analyses may not support the hypothesis presented by this paper, but the literature suggests that this phenomenon is occurring, even if it is isolated to certain communities. Even in the case that this phenomenon is not a prolific problem, as this paper suggests, it still is a problem that plagues communities and must be addressed. While municipal policy makers are certainly limited in their options for revenue generation reform, as they are severely bound by their state's constitution, it is essential that municipalities closely examine how their revenue is being generated.

There are steps that states can take to protect citizens from the burden of fines and forfeitures collection as a revenue generation tool. One legislative solution that states legislatures have begun to adopt is to cap the amount of money that a municipality can collect in fines and forfeitures. For example, following the Department of Justice report that found the Ferguson police department was violating the United States Constitution by targeting the Black community with excessive fines and forfeitures, the Missouri Legislature passed a bill that codified that a municipality cannot generate more than 20 percent of their budget through fines, fees, and forfeits (SB 5, 2015).

However, this solution is not a silver bullet, as the original problem that municipalities do not have flexibility to raise revenue persists. One potential solution to this problem is the concept of Presumptive Taxing Authority (Scharff, 2016). As it currently stands, typically, a municipality must ask for permission from the state to levy a new tax, and it is in the state's financial interest to decline this request to keep the tax base open to their own use. Presumptive taxing authority flips the rule on its head; instead of municipalities asking permission, it would allow

municipalities to levy additional taxes if the state does not prohibit expressly prohibit the taxing authority. However, this would need to be passed by the state legislature, who would be giving up an authority making it a politically unfeasible solution. Regardless, it is a reform worth considering, as it would allow for municipalities to legally levy new taxes rather than relying on harmful and regressive solutions, like increasing fines and fees collection.

VIII. CONCLUSION

Unlike the federal and state governments, municipal governments have very limited revenue generating authority. While municipal financing is difficult to talk about broadly due to the varying authorities granted by the states, local governments typically acquire revenue through sales tax, income tax, property tax, fines, fees, and forfeitures, and state and federal funding. Unfortunately, the recession that followed the 2008 market devastated local budgets. Because municipalities have only a handful of ways to generate revenue, in times of economic hardship some municipal governments turned to fines and forfeitures revenue to balance their budgets. Unfortunately, this action results in a regressive revenue generation scheme, where municipalities are being funded by the people who can least afford it. Policymakers must understand that while turning to fines and forfeits may help generate funds in the short run, it has destructive impacts on vulnerable communities and erodes the public trust of the government (Carpenter, et. al., 2019, p. 5). Municipal policymakers must work to reform the incentive structures that allow and promote the collection of excessive fines and forfeits to fill government coffers.

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