

Regressive revenue sourcing by local governments

Thai V Le 

University of Southern California, USA

Matthew M Young 

Leiden University, Netherlands

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Abstract

Emerging work in fiscal sociology examines the intersection of race/ethnicity, inequality and taxation, and suggests that localities are increasingly turning to nontax alternatives such as fines, fees and forfeitures to fill revenue gaps and service demands. These revenue sources are regressive and discriminatory as they disproportionately affect low-income racially/ethnically minoritised groups. We assess the extent to which local municipalities in California are more dependent on regressive nontax revenue sources, and if increases are correlated with a city's racial/ethnic composition. We use fixed-effects estimators on panel fiscal data from the California State Controller Office's Cities Annual Reports between 2002 and 2016 for our analysis. We further exploit our time period to determine how fiscal crises like the Great Recession compound race/ethnicity-driven finance disparities. Our results suggest the proportion of Latinx/Hispanic in a city's population is positively and statistically associated with an increase in a city's reliance on fines, fees and forfeitures. These results suggest concerns of discriminatory and regressive revenue sourcing by local governments that further perpetuate racial inequality and poverty. In aggregate, relative to other years in our analysis, the growth rate of fines, fees and forfeitures as a portion of total own-source revenue saw higher increases during the Great Recession, a time of heightened financial insecurity among low-income, Latinx/Hispanic and Black households.

Keywords

Fines, fees and forfeitures, fiscal crises, fiscal sociology, local government, public finance, race/ethnicity

Corresponding author:

Thai V Le, Equity Research Institute, University of Southern California, 1149 South Hill Street, Suite H340, Los Angeles, CA 90015, USA.

Email: thaivle@usc.edu

摘要

本财政社会学新著审视种族/民族、不平等和税收的交互联系，并表明地方当局正越来越多地采用非税替代品，如罚款、收费和没收物，以弥补财政收入缺口、满足服务需求。这些收入来源具有倒退性和歧视性，因为它们过度影响到低收入种族/民族少数群体。我们评估了加利福尼亚州地方市政当局对倒退性的非税收入来源的依赖程度，以及增长是否与城市的种族/民族构成相关。我们的分析针对2002年至2016年加利福尼亚州州长办公室发布的《城市年度报告》中的面板财政数据，使用了固定效应估计函数。然后进一步利用我们的时段来确定像大萧条这样的财政危机是如何加剧种族/民族驱动的财政悬殊的。研究结果表明，拉丁裔/西班牙裔在城市人口中所占比例与城市对罚款、收费和没收物的依赖程度的增加在统计上呈正相关。这些结果表明，人们担心地方政府的歧视性和倒退性收入来源会进一步加剧种族不平等和贫困。总的来说，与我们分析的其他年份相比，在大萧条期间，作为总自有收入一部分的罚款、收费和没收物的增长率更高，这一时期低收入、拉美/西班牙裔和黑人家庭的财务不安全加剧。

关键词

罚款、收费和没收物， 财政危机， 财政社会学， 地方政府， 公共财政， 种族/民族

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Introduction

During fiscal crises and economic hardships, municipalities face increased demands for public services while revenues decrease. This tension requires government entities to reduce services and/or increase revenue – the latter often through nontax alternatives including fines, fees and forfeitures (FFF). Considering the difficulties of raising taxes, these nontax revenue sources are becoming more common at the local level as a means to fill gaps in local revenue without direct public voting (Henricks and Seamster, 2017; Park, 2017). Concerningly, however, there has been evidence of discriminatory enforcement of FFF disproportionately impacting the poor and racially minoritised (Graham and Makowsky, 2021; Harris, 2016; US Department of Justice, 2015).

In this article, we draw from fiscal sociology to analyse the racialised and distributive implications of local government financing via regressive nontax alternatives, specifically FFF, and contribute to the ongoing conversations on public finance and racism (Gale, 2021). Colgan (2017) and O'Brien (2017) argue regressive nontax alternatives – like regressive taxes – disproportionately impact low-income minority communities and

contribute to systemic barriers that unjustly disadvantage their social and economic mobility. We take an empirical approach in determining whether local financing strategies in California are associated with a locality's changing racial/ethnic makeup. We also examine the effect of the Great Recession to estimate whether fiscal crises moderate reliance on nontax alternatives.

Tax structures (e.g. property-tax-based financing of education) and preferential tax treatments (e.g. joint filing and family transfers) have historically privileged white households and disadvantaged communities of colour, (Brown, 2021; Walsh, 2018). Regressive taxes, in particular, continue to disproportionately impact low-income communities of colour with research, for example, finding larger Black and Latinx/Hispanic populations associated with states' increased reliance on regressive taxes, such as sales taxes (Jacobs and Waldman, 1983; O'Brien, 2017). This focus on taxes, however, overlooks a significant piece of public finance: regressive nontax alternatives enforced at the local level in the forms of FFF. Although FFF represent a small percentage of total revenue compared to taxes, their use is becoming more common in response to economic shocks and they have

disproportionate consequences on poor households and communities of colour who are unable to afford these financial penalties that are discriminately enforced (Harris, 2016; Park, 2017). Local officials have been found to disproportionately patrol, ticket, and fine in neighbourhoods with higher shares of low-income and minoritised groups (Brazil, 2018; Sances and You, 2017).

Prior research by Jung and Bae (2011) and Park (2017) used longitudinal approaches to estimate localities' shifting reliance on FFF but did not explicitly consider racial/ethnic and equity implications. Singla et al. (2020) analysed the relationship between race/ethnicity and reliance on fines and forfeitures, finding that cities with higher proportions of Black and/or Asian residents have higher shares of their revenue from fines and forfeitures than cities that are more white. Less empirical evidence has been found on how the Latinx/Hispanic population have been impacted by the enforcement of FFF, though prior work has shown unequal treatment at an individual level (Harris et al., 2011; Menjivar et al., 2018).

Our research adds to the fiscal sociology literature and the conversation on public finance and racism by analysing demographic factors associated with shifting reliance on regressive nontax revenue sources and the potential impact of fiscal crises on such strategies. We use fixed-effects models controlling for financial, social and political factors for 452 California municipalities from 2002 to 2016. This approach yields more reliable and precise estimates on the association between racial/ethnic composition and local California municipalities' dependence on FFF. Our models account for time-invariant unobserved heterogeneity and incorporate information from cities of all sizes, both in highly urbanised metropolises and in rural communities across the state, allowing us to capture the quickly changing demographics within and across localities.

We also consider whether the Great Recession had a compounding effect on municipalities' reliance on regressive taxes and nontax alternatives. The effects of racial/ethnic composition on a city's reliance on regressive revenue sources are hypothesised to increase during fiscal crises because of the expected decline in revenue sources and the increase in public services (Kato, 2003; Kim and Warner, 2018).

This research contributes to the debate on whether the enforcement and regulations of FFF by municipal governments have perpetuated racial/ethnic disparities in California during fiscal crises, exacerbating income inequality and other unjust consequences of the racial tax state (Brown, 2021; Walsh, 2018). We find cities in California that experienced a growth in their Latinx/Hispanic population over the 2002–2016 period also became, on average, more reliant on regressive FFF. Shifts in revenue sourcing associated with the changing Latinx/Hispanic population underscore concerns of how enforcement and regulation of such revenue sources are racialised in a state where Latinx/Hispanic people are a significant and growing share of the population. We find cities' reliance on FFF increased during the Great Recession, a time when low-income and racially minoritised households were in especially precarious circumstances and impacted by even the slightest financial costs. Our findings suggest local funding structures need to be re-examined and restructured to promote equity. By understanding how racial/ethnic disparities are created by local agencies, local policymakers and advocates can push for more equitable and just approaches to fiscal resiliency.

Fiscal sociology and the racial tax state

Fiscal sociology challenges the traditional economics approach to public finance,

arguing economic factors alone are not sufficient in explaining the drivers and social consequences of tax structures and revenue systems (O'Brien, 2017; Schumpeter, 1918). Rather, complex social, political and institutional relationships influence how policy-makers, the public and government agencies formulate and implement different fiscal policies (Campbell, 1993). Fiscal sociologists find tax structures and fiscal policies are not immune to deep-rooted racism and classism that have divided communities over generations, including tax breaks for the wealthy, broken windows policing, stop and-frisk programmes and discriminatory court fees. Henricks and Seamster (2017) argue state-sponsored fiscal mechanisms have exacerbated the marginalisation of racial/ethnic minorities who are disproportionately burdened by revenue-building tools, such as regressive taxes and monetary penalties that take up a disproportionate share of low-income households' financial resources.

Regressive revenue sources

Revenue sources are regressive when they require lower-income groups to pay higher proportions of their income than their higher-income counterparts. Our analysis focuses on FFF as nontax alternatives that are increasingly employed by local governments seeking politically feasible alternatives to taxes in addressing fiscal gaps, particularly when property taxes and intergovernmental transfers are limited (Colgan, 2017; Henricks and Harvey, 2017; Mughan, 2021; Park, 2017). These include traffic tickets, warrants, court fees and fines and library charges. Such finance sources are often regressive as they disproportionately target communities that are low-income and less able to pay, which may lead to further monetary sanctions (Colgan, 2017). These financial consequences due to one's inability to pay, also known as 'poverty penalties', disproportionately affect

low-income communities of colour and perpetuate a cycle of poverty among already marginalised communities who are forced to decide between paying these fines and fees or basic needs like housing and food (Colgan, 2017; Henricks and Seamster, 2017).

Regressive penalties have also been found to be racially enforced across multiple municipalities. In Ferguson, Missouri, for example, it was found that a surge in FFF and changes in discriminatory policing tactics were driven by the intent to generate revenue rather than public safety and crime deterrence (Derickson, 2016; Jones, 2018; US Department of Justice, 2015).

Uneven recessionary pressures on public finance

The Great Recession sharply reduced income and consumption levels, development and infrastructure growth, and public revenue (Adkisson and Mohammed, 2014). Public finance across states and localities experienced different trends in growth and decline following the Great Recession (Bargain et al., 2017; Chernick et al., 2014). In the 2008–2009 fiscal year, the US collected \$87 billion (11%) less revenue than the previous fiscal year as a result of reduced wages, lost jobs, and decreased economic activity and consumption. This decline in tax revenue – coupled with increased reliance on public and welfare services – contributed to significant recessionary pressures on state and local budgets (Johnson et al., 2010). With the shortage in expected revenue and anticipated spending on public services, states encountered a \$300 billion gap total for the 2009–2010 fiscal year, leading to sharp declines in state and local employment, public wages, and fiscal aid and transfers to local municipalities (Johnson et al., 2010).

Johnson et al. (2010) and Chernick et al. (2014) find government responses during crises include cuts to spending and services,

increased taxes, and growing reliance on intergovernmental transfers and federal assistance. However, intergovernmental revenue is not always guaranteed; even though intergovernmental transfers increased sharply during the Great Recession – relative to the years prior – Ross et al. (2015) find cities received a lower than expected amount from intergovernmental transfers during the Great Recession, which led to consequential budget deficits. Significantly reduced aid from the federal government and states to cities shifted expenditure responsibilities and increased fiscal pressures on local government during and after the Great Recession, with the lowest levels in 2011 when funds from the federal stimulus (The American Recovery and Reinvestment Act of 2009) to mitigate the economic consequences of the Great Recession were depleted (McFarland and Pagano, 2015). Localities and cities with more diverse revenue sources (e.g. property tax) were more resilient and better equipped to mitigate recessionary pressures and fiscal crises (Hendrick, 2006; Kim and Warner, 2018). Overall, intergovernmental transfers to cities shrunk as economies recovered from the Great Recession, including increased revenue from sales tax (Tax Policy Center, 2018). Institutional attempts to mitigate budget deficits consequently varied across states and local governments, with less resilient municipalities relying on intergovernmental transfers and regressive taxes and nontax alternatives to recoup revenue losses (Cynamon and Fazzari, 2016).

Urban fiscal crises disproportionately hurt low-income communities of colour, especially in localities with high public debt, high demand for public services and poor public infrastructure (Pulido, 2016). While more fiscally-resilient localities can use financialisation strategies, such as restructuring bond and equity returns or refinancing infrastructure debt (Pryke and Allen, 2019), localities with higher concentrations

of poverty and debt resort to less sustainable and often riskier options, including borrowing from private lenders then defaulting (Pulido, 2016) and the over-enforcement of regressive revenue sources (i.e. “policing-for-profit”) (Mughan, 2021). Given the racial tax state and the existing structures that allow racialised minorities and poor communities to be discriminately targeted and disproportionately fined, fiscal crises have inequitable consequences that only further perpetuate existing inequality.

Data and methods

We estimate the determinants of a city’s reliance on FFF by utilising fixed-effect models on city-level panel data. This dataset covers 452 California cities with observations from 2002 to 2016. The fixed-effect specification is used to account for time-invariant unobserved heterogeneity within cities and metropolitan regions.

Data

Fiscal data, including revenue sources and expenditures, are drawn from the California State Controller Office’s Cities Annual Reports. Revenue sources are categorised by different types of taxes and nontax alternatives, such as fines. Expenditure amounts are categorised by use, including public safety and transportation. Demographic and socio-economic data, including poverty rate, unemployment rate and racial/ethnic composition, are from the American Community Survey (ACS) administered by the US Census Bureau. All socio-economic and demographic data from the ACS have been linearly interpolated from the 2000 and 2010 decennial census and the 2012–2016 five-year ACS estimate (values centred on 2014). Voter registration data was compiled from public documents available on the Secretary of State Office’s website.¹ The total number

of observations in this data after excluding cities with significant missing data is 6584, representing 452 different California cities over multiple years during our study period (i.e., separate observations for the same city but at various years). A robustness check including interpolated data for these cities is discussed further in the results section.

Our outcome variable measures the reliance on FFF-based nontax revenue sources as a percentage of all own-source revenue. These sources, along with their average share of the total across all city-year observations, include functional and general revenue vehicle code fines ($m = 48\%$), functional and general revenue forfeiture penalties ($m = 17\%$), library fines and fees ($m = 3\%$), transit revenue ($m = 11\%$) and 'other fines' ($m = 21\%$). Total own-source revenue includes all general and functional revenue and excludes intergovernmental transfers. We assume contemporaneous changes since FFF are one of the only revenue streams that local government can adjust in the moment – unlike taxes. In addition, because local government's reliance on revenue from FFF can be retroactive in addressing revenue gaps or can change in anticipation of future expenses, we believe assuming contemporaneous changes is a logical middle ground.

Explanatory and control variables can be categorised as either social, fiscal, economic or political. Social variables include demographic information about racial/ethnic composition and the proportion of residents who are foreign-born. The model disaggregates racial/ethnic minority groups instead of a total number representing all racial minorities to account for possible variances across racial/ethnic groups and racial/ethnic prejudices. In California, intergroup relations have moved beyond a white-Black dichotomy where discrimination and relationships among racial/ethnic minority groups have intensified (Dovidio et al.,

2010). Proportion of foreign-born is included though this effect may be absorbed by the proportion of Latinx/Hispanic because of California's large and concentrated immigrant Latinx/Hispanic population that is disproportionately policed and fined compared to other immigrant groups (Harris et al., 2011; Vaquera et al., 2014). Additional social variables include an index of city-level racial and ethnic diversity; a quadratic specification of total population to account for non-linear effects by city size, population density, the proportion of residents aged 65 or older, the proportion of residents who are homeowners, and total crime per capita.

Fiscal variables are included to measure the solvency of a municipality in times of economic hardship and fiscal crises. Municipalities avoid bankruptcy by cutting services and or shifting to additional or alternative taxes and nontax revenue sources (Chernick et al., 2014; Colgan, 2017; Kim, 2018; O'Brien, 2017). We include log measures of municipal revenue sources from intergovernmental transfers, property taxes and sales taxes to account for revenue diversification and shifts between revenue sources. We include policing expenditures, debt servicing of general government and public safety services, and total per-capita expenditures, all log-normalised, to control for changes in expenditures that may lead municipalities to use regressive nontax financing (Goldstein et al., 2018; Su, 2020).

We include the percent of a city's population living below the poverty line, unemployment rate, median household income and median household value to gauge the overall health of the local economy. Political climate also plays a role in determining fiscal policies (Berch, 1995; Jacobs and Waldman, 1983; O'Brien, 2017). Because California law prohibits party affiliation for local government elections, we use the percent of conservative voters in a municipality to measure support of conservative policies.

Finally, we also include fiscal year fixed effects as an indicator for whether the observation occurred during the Great Recession (fiscal years 2009–2012; complete calendar years 2009–2012). We estimate the model without lagging these covariates, as evidence suggests localities employ nontax revenue alternatives as an expedient means of addressing unexpected financial gaps in the current fiscal year (Colgan, 2017; Henricks and Harvey, 2017).

Methods

We use fixed-effects models to isolate the relationship between a city's racial/ethnic composition and its reliance on regressive nontax revenue sources. Given confounding factors that shape both a city's reliance on FFF and its racial/ethnic composition, this multivariate statistical approach allows us to control for these effects and for time-invariant and city-specific unobserved characteristics. Our primary model estimates the impact of racial/ethnic composition on the reliance of regressive nontax revenue where δ is the effect of racial/ethnic composition (R) on the proportion of regressive FFF of total own-source revenue (Y). Other variables in the models include the city fixed effects (γ_c), the year fixed effects (λ_t) and the vector of individual control variables (X_{ct}):

$$Y_{ct} = \alpha + \delta R_{ct} + \gamma_c + \lambda_t + \beta X_{ct} + \varepsilon_{ct}$$

To account for heteroskedasticity and serial correlation, we use cluster-robust standard errors by Census-designated Core-Based Statistical Areas (CBSAs). As an additional robustness check and to address concerns of how vehicle code fees (e.g. speeding tickets and parking fees) may impact non-residents in the city (i.e. drivers passing through neighbouring cities), we estimate an alternative model where our outcome variable excludes vehicle code fines. Unlike other forms of

regressive collections, including library fines and forfeiture penalties, vehicle code fines are enforced by law enforcement agencies. Given functional and general revenue, vehicle code fines make up the largest average share ($m = 48\%$) of the total FFF across all city-year observations and the increased propensity of racially minoritised residents being stopped and ticketed while driving (Harris et al., 2011); excluding vehicle code fines from our measure may impact results.

Results

Across localities in California from 2002 to 2016, the average share of the population that is Black is 3.68%, smaller than the average share that is Asian Pacific Islander (10.32%) and Latinx/Hispanic (33.99%) (Table 1). The Black population has the lowest variation between ($SD = 5.2$) and within ($SD = 0.82$) localities, whereas our measure of the Latinx/Hispanic population has the highest between ($SD = 25.11$) and within ($SD = 2.8$) variation. The average share of own-source revenue that comes from FFF is 1.57%. This varies substantially with a range from 0 to 27%. On average, revenue from property tax (14.82%) and sales tax (14.72%) see similar relative change. Revenue from intergovernmental transfers (15.08%), on average, experience slightly higher growth.

Figure 1 illustrates how the average California city's reliance on FFF experienced a general decline prior to the beginning of the Great Recession but saw a relatively sharp increase from 2008 to 2010. This trend began to decrease again after 2010. Similarly, as shown in Figure 2, the proportion of revenue from intergovernmental transfers and sales taxes generally declined prior to the recession while revenue from property taxes increased slightly. During the recession, reliance on intergovernmental transfers increased as reliance on

Table 1. Descriptive statistics for all variables.

	Mean	Median	Std. Dev.	Min	Max	N
Share of own-source revenue: fines, fees, forfeitures	1.57	1	1.85	0	27	6999
Revenue from property tax (logged)	14.82	14.95	1.67	-9.21	21.20	6999
Revenue from sales tax (logged)	14.72	14.97	2.08	-9.21	19.90	6999
Revenue from intergovernmental transfers (logged)	15.08	15.05	1.33	10.13	20.64	6999
Total expenditures (per capita, logged)	4.84	4.82	0.80	-5.05	8.40	7054
Total expenditures: debt servicing (logged)	4.52	11.2	10.97	-9.21	19.99	7054
Total expenditures: policing (logged)	15.59	15.69	1.72	-9.21	21.70	6999
Population (thousands)	62.78	28.91	198.01	0.13	3,982	7064
Population density (thousands per sq. mile)	4.24	3.42	3.32	0.05	23.76	7064
Proportion of population Black Non-Hispanic	3.68	2	5.26	0	46	7064
Proportion of population Asian Pacific Islander	10.32	6	12.45	0	70	7064
Proportion of population Latinx or Hispanic	33.99	27	25.24	0	99	7064
Proportion of population foreign born	22.83	21	12.21	0	57	7064
Population diversity index	0.49	0.52	0.16	0.01	0.78	7064
Proportion of population age 65 +	13.38	12	7.02	0	85	7064
Proportion of population homeowners	59.26	59	13.76	13	98	7064
Median house value (logged)	12.81	12.79	0.67	10.73	14.77	7064
Median household income (logged)	11.13	11.08	0.44	10.07	12.60	7064
Unemployment rate	9.45	9	4.42	0	31	7064
Proportion living below poverty line	14.37	13	8.67	1	54	7064
Proportion conservative voters	36.15	36.55	12.67	5	73.72	7064
Total crime per capita (tens of thousands)	323.14	290.87	170.36	0.12	1956.52	6692

Note: All dollar amounts reported in 2017 values. Debt servicing values for general government and public safety expenses.

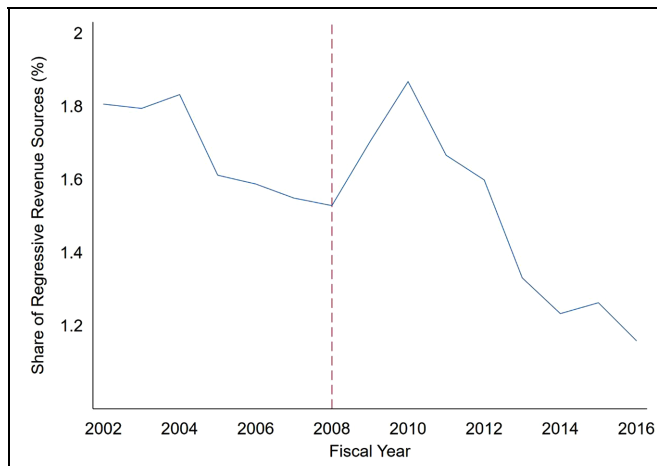


Figure 1. The average California city's proportion of fines, fees and forfeitures to the city's total own-source revenue by fiscal year, 2002–2016.

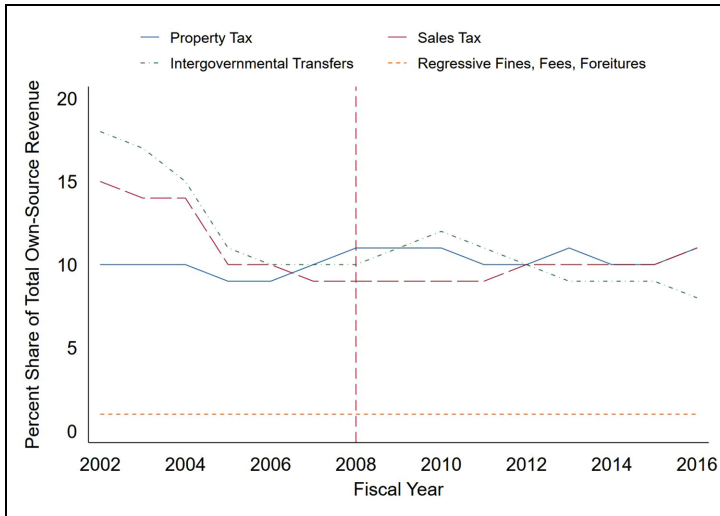


Figure 2. The average California city's percent share of own-source revenue by source, 2002–2016.

property tax and sales tax were near stagnant. After the recession, the share of total own-source revenue from intergovernmental transfers and property tax declined while reliance on sales tax increased.

A handful of cities consistently have high dependence on revenue from FFF. Table A1 in the Online Appendix shows the cities with dependence on FFF at least two standard deviations ($SD = 1.85$) above the mean ($m = 1.57$), with a dependence ratio of 5% or more. There are noticeable peaks in the mean dependency ratio in 2003 and 2010. We suspect these spikes may be a product of decreasing revenue from intergovernmental transfers at the end of the 2001 and 2008 recession periods. There are three cities (Montebello, San Gabriel and Santa Monica) in which all years in the study period have a relatively high dependence ratio. We find significant heterogeneity among cities with relatively high dependency on FFF. For example, across the study period, Montebello on average has a predominantly Latinx/Hispanic population (77.01%), whereas San Gabriel has a

predominantly Asian Pacific Islander population (57.90%) and Santa Monica has a predominantly white population (68.86%).

In examining the upper quartile of cities across the study period with the largest representation of each racial/ethnic group, we find 90 cities with a population at least 71% white, 115 cities with a population at least 4% Black, 101 cities with a population at least 13% Asian Pacific Islander and 94 cities with a population at least 74% Latinx/Hispanic. Figure 3 shows the average percent of total own-source revenue from FFF over time for localities with the highest quartiles of each racial/ethnic group. Similar trends occur across groups: declining reliance on revenue from FFF prior to the Great Recession, increasing reliance during the Great Recession and a downward trend after 2010. However, cities with a relatively higher concentration of Black, Asian Pacific Islander and/or Latinx/Hispanic residents consistently saw higher reliance on revenue from FFF than cities with white populations in the top quartile. These trends may suggest that cities with relatively higher

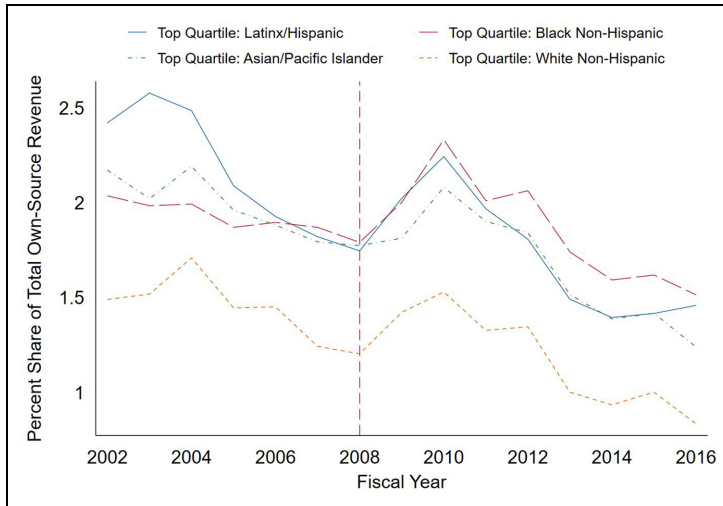


Figure 3. Percent share of total own-source revenue for California cities with highest quartiles of racial/ethnic group populations, 2002–2016.

representation of racially/ethnically minoritised groups are relying more on revenue from fines, fees and forfeitures than cities with higher representation of white residents. However, other time-varying factors may also shape a locality's shifting reliance on fines, fees and forfeitures (e.g. crime rate, policing expenditure and shifting demographics), thus we turn to our fixed-effects models.

The results from our fixed-effect models (see Table 2) show that, on average, controlling for other city characteristics, a growing population of Latinx/Hispanic residents over time is statistically and positively associated with a city's reliance on revenue from FFF. Looking at model 1, a percentage point increase in the share of Latinx/Hispanic is associated with a 0.032 percentage point increase on a city's proportion of revenue from FFF as a share of the city's total own-source revenue, all else equal. When excluding vehicle code fines, a percentage point increase in the share of Latinx/Hispanic is associated with a 0.026 percentage point increase on the city's proportion of revenue

from other FFF, all else equal. The proportion of the Black population is negative but not statistically significant. Like O'Brien's (2017) research on regressive state-level taxes, the results' lack of statistical significance is likely due to the small within and between variation compared to the Latinx/Hispanic population, which had larger within and between variation. This aligns with other research on monetary sanctions that finds no direct Black effect due to the Black population's relatively small and stable size (Harris et al., 2011). Similarly, the proportion of the Asian Pacific Islander population is positive but not statistically significant, also exhibiting relatively small within (SD = 1.67) and between (SD = 12.34) variation.

Though not statistically significant in model 1, the share of foreign-born residents in a city is statistically and positively associated with a city's reliance on FFF when excluding vehicle code fees: a one percentage point increase in the immigrant population is associated with a 0.034 percentage point increase on the city's proportion of revenue

Table 2. Estimated effects of covariates on California cities' proportion of (1) all fines, fees and forfeitures and (2) fines, fees and forfeitures excluding vehicle code fines, to total own-source revenue.

	1: All sources		2: No vehicle code fees	
	Coefficient	SE	Coefficient	SE
Property tax revenue (logged)	-0.096	0.056	-0.067	0.047
Sales tax revenue (logged)	0.024*	0.012	0.026*	0.011
Intergovernmental transfers (logged)	0.045	0.037	0.037	0.031
Policing expenditures (logged)	0.105***	0.015	0.000	0.014
Debt expenditures (logged)	0.006	0.003	0.003	0.003
Total expenditures (per capita, logged)	-0.091	0.051	-0.114**	0.045
Population	0.014*	0.006	0.013*	0.006
Population (squared)	0.000	0.000	0.000	0.000
Population density	0.000	0.000	0.000	0.000
Proportion Black Non-Hispanic	-0.013	0.023	-0.026	0.023
Proportion Asian Pacific Islander	0.015	0.019	0.006	0.015
Proportion Latinx or Hispanic	0.032**	0.011	0.026**	0.009
Population diversity index	0.934	0.988	1.618*	0.739
Proportion foreign born	0.033	0.022	0.034*	0.017
Proportion age 65 +	0.018	0.020	0.024	0.015
Proportion homeowners	0.001	0.015	0.006	0.011
Median house value (logged)	-0.137	0.292	0.050	0.235
Median household income (logged)	0.364	0.815	-0.599	0.729
Unemployment rate	0.028	0.043	0.019	0.037
Proportion in poverty	-0.001	0.011	-0.012	0.010
Proportion conservative voters (%)	0.001	0.019	0.005	0.020
Total crime per capita (thousands)	0.000	0.000	0.000	0.000
During Great Recession (2010–2012)	0.607*	0.262	0.225	0.220
Fiscal Year (base = 2009)				
2002	0.976***	0.213	0.535**	0.210
2003	0.933***	0.204	0.509**	0.195
2004	0.951***	0.190	0.477**	0.192
2005	0.694***	0.202	0.368*	0.186
2006	0.636***	0.199	0.322	0.190
2007	0.532*	0.220	0.213	0.209
2008	0.459*	0.226	0.187	0.201
2009 (referent)	—	—	—	—
2010	0.118	0.073	0.086	0.056
2011	-0.089	0.054	0.005	0.043
2012	-0.147*	0.068	-0.042	0.066
2013	0.179	0.145	0.064	0.129
2014	0.062	0.118	0.026	0.102
2015	0.102	0.085	0.013	0.079
Constant	-4.941	8.456	4.740	7.630
Fixed Effects	Yes		Yes	
Observations	6586		6586	
Cities	452		452	

Robust standard errors (SE) clustered on Core-Based Statistical Area (CBSA). Italics indicate standard errors that do not have significant p-values.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

from other FFF as a share of the city's total own-source revenue. This effect could potentially be driven by other fines and fees that immigrants, regardless of race/ethnicity, face disproportionately, including how limited English proficiency and unfamiliarity with the local governance system may create more difficult circumstances in paying fines and fees, which could then lead to additional monetary sanctions and late penalties (Brazil, 2018).

The size of local sales taxes is statistically and positively associated with a city's reliance on regressive FFF. This positive correlation suggests Californian cities, on average, rely on both regressive taxes and regressive nontax alternatives. Model 1 results show a statistically significant and positive relationship between the share of policing expenditure to total expenditures and a city's reliance on regressive nontax revenue sources. A percentage point increase in the share of policing expenditure to total expenditures is associated with a 0.105 percentage point increase on a city's reliance on FFF. This could be interpreted in two ways: either cities are using revenue from FFF to meet policing expenditures or cities are increasing policing expenditures to address the increased demand in enforcing FFF (Goldstein et al., 2018; Shoub et al., 2021). Controlling for crime rates, the absence of a statistically significant finding in model 2, where vehicle code fines are excluded, further substantiates the relationship between police expenditures and vehicle code fines.

As expected, we also find that cities during the Great Recession saw on average a 0.607 percentage point increase in their proportion of revenue from FFF to total own-source revenue. This is a relatively modest change when expressed in percentages but could mean large sums of revenue for cities with especially large budgets and expenditures. This effect, however, becomes insignificant when vehicle code fees are removed

from FFF. Similar to findings from previous research (e.g. Su, 2020), this suggests that cities in California likely resorted to increasing enforcement of vehicle code fees and traffic fines during fiscal crises when revenue loss was significant.

As a robustness check to address concerns for endogeneity between a city's reliance on revenue from FFF and other financial measures, we run our models with lagged financial independent variables in line with previous work on local financing (e.g. Shoub et al., 2021; Singla et al., 2020). Of interest, our results yield similar and statistically significant Latinx/Hispanic effects: a percentage point increase in the share of Latinx/Hispanic is associated with a 0.038 percentage point increase on a city's proportion of revenue from FFF as a share of the city's total own-source revenue, all else equal; when excluding vehicle code fines, a percentage point increase in the share of Latinx/Hispanic is associated with a 0.028 percentage point increase on the city's proportion of revenue from other FFF, all else equal. See Table A2 in the Supplemental Appendix for results.

Discussion

The increase in the Latinx/Hispanic population over time is statistically and positively associated with a city's increased reliance on FFF, suggesting concerns of racialised disparities in the enforcement and consequences of regressive nontax alternatives. Although these nontax revenue sources typically constitute a small percentage of a city's overall revenue source, they may have concentrated and negative consequences for racially/ethnically minoritised groups. We argue that a city's relative reliance on FFF as a function of how many minority residents it has is antithetical to the norms of ethical democratic governance. What makes our findings substantively meaningful is that they suggest

that regressive fiscal strategies are more likely to disproportionately affect Latinx/Hispanic residents in California, a significant and growing population in the state.

Localities with baseline low levels of Latinx/Hispanic residents disproportionately increased their reliance on FFF as a function of sharp demographic change compared to cities with already large Latinx/Hispanic populations. This increased reliance on FFF could be part of a coping response to the decline in intergovernmental transfers that accompanied the Great Recession (Su, 2020). However, these results also suggest potential racialisation of policing and enforcement in localities that have a large and growing Latinx/Hispanic population where prejudicial treatment is shaped by anti-Latinx/Hispanic sentiment and 'group threat' stemming from recent sharp growths in the Latinx/Hispanic population (Hall and Krysan, 2017; Harris et al., 2011; Pickett, 2016). California has seen increasing immigrant enforcement during our period of analysis as localities entered the 287(g) programme², which subsequently led to an over policing of Latinx/Hispanic communities despite immigration status (Parrado, 2012; Vidales et al., 2009). This increased enforcement exposed Latinx/Hispanic communities to more instances of being cited and fined, often with costlier monetary penalties and fines than those of other races/ethnicities accused of the same offence (Harris et al., 2011).

Low-income racial/ethnic minorities face greater challenges and consequences than their wealthier, often white, counterparts when faced with FFF. If we assume that the burden of FFF is shared evenly across residents in a city, a higher per-capita reliance on this revenue source disproportionately and regressively impacts low-income residents who are less likely able to afford the cost compared to their wealthier counterparts. Like the regressive nature of sales taxes, FFF take a disproportionately larger

share from those with more limited resources. For example, \$35 – the base fine for speeding between 1 and 15 miles per hour above the speed limit in California – amounts to be a larger portion of income for poorer residents. What is even more concerning, as mentioned previously, is that these burdens are often not shared evenly as enforcement of these FFF are often discriminatory in nature, including the disproportionate increase in stops and ticketing of minority drivers (Epp et al., 2014; Harris et al., 2011).

Racially/ethnically minoritised groups have suffered from discriminatory policies and enforcement that further perpetuate a cycle of poverty. FFF can cause further harm when those who are cited are unable to pay and are consequently punished with additional late fines and fees that make paying off the debt even more challenging (Jones, 2018). In some cases, delinquencies can also lead to (re)incarceration which is of concern as this is further evidence of how poverty for people of colour is unfairly penalised (Rose, 2021). With the discriminate nature of how FFF are enforced, localities are further widening racial/ethnic and class divides. This can have lasting intergenerational implications as racial/ethnic minorities' opportunities linked to financial and community well-being continue to shrink, including housing options, job prospects and educational attainment for their children (Harris, 2016).

Our results show no definitive answer on how localities with higher growth in racial/ethnic minority groups are further reliant on FFF during fiscal crises compared to localities that did not experience any growth. This may suggest that cities across California, on average and all else equal, are resorting to some increased degree of reliance on FFF to fill revenue gaps during these fiscal crises, including increasing traffic citations (Su, 2020) and monetary sanctions

on the city's already existing Black and Latinx/Hispanic residents (Harris et al., 2011; Martin et al., 2018). Regardless, during fiscal crises, low-income communities of colour are more likely to be in financially insecure circumstances (Bitler et al., 2017; Hoynes et al., 2012), thus, making them more vulnerable to worse social outcomes, debt, additional fines and other penalties (e.g. jail time and licence suspension) because of their inability to pay FFFs.

Endogeneity is a concern when considering the relationship between neighbourhood choice and external factors like public goods, taxes and local expenditures (Lee, 2021; Tiebout, 1956). Though residential sorting based on these external factors and others (e.g. housing value, racial/ethnic makeup, crime rate) may lead to mass exodus of the population to different localities (e.g. white flight) – consequently impacting the local tax base and the makeup of future residents – we suspect this effect to occur more frequently within cities than across cities. Especially for low-income and racially/ethnically minoritised residents, residential mobility is more difficult due to limited resources and discrimination (Lee, 2021). As such, leaving localities solely due to lack of municipal services may be less likely for residents with limited mobility due to other factors like employment and housing affordability.

Our dataset does not fully capture the complexity of social and institutional factors that may be sources of inequality and lead to disparate enforcement of FFF. For example, it cannot account for qualitative changes in service provisions over time. It is also important to consider how income inequalities may relate to revenue strategies. A complete Gini coefficient dataset over time or an alternative measure to income inequality may provide more robust and precise results in analysing the impact of income inequality on a city's reliance on FFF to meet revenue demands.

This research would benefit from additional attention to civic and political inequality, including patterns of representation in the police department, governing bodies (e.g. city councils), and public agencies. These patterns of social representation may have substantive influence on how public revenue is generated and collected. Singla et al. (2020) find this to be the case where Black communities with an overrepresentation of white law enforcement officers were more reliant on fines. Similarly, in Ferguson, Missouri, despite making up two-thirds of the population, 'Black residents comprised 85% of all traffic stops, 90% of all citations, and 93% of all arrests between 2012 and 2014' (Henricks and Seamster, 2017: 175). The six-person city council had one Black member during this time to represent the Black-majority city. Brazil's (2018) research on parking tickets in Los Angeles, where Latinx/Hispanic make up the majority, finds that racial/ethnic representation on the city council only has an impact for predominantly Latinx/Hispanic neighbourhoods. Future research that takes into account the demographics of representation and their influence on revenue decisions would help clarify whether representations that are more reflective of the population could lead to more equitable fiscal policies (Sharp, 2014).

Despite these limitations, this research contributes to the fiscal sociology and public finance literature and addresses unobserved heterogeneity issues prior research on regressive revenue sources face. With an extensive panel dataset on cities' expenditures and revenue sources, this work takes a comprehensive approach in examining the role of race/ethnicity through fixed-effects models accounting for time-invariant characteristics within and across cities in California. By isolating the impact of racial/ethnic composition on California cities' reliance on FFF, this research provides further evidence on how existing funding structures are not

devoid of complex social, political and institutional mechanisms that have disadvantaged racially/ethnically minoritised communities.

Conclusion

In his 2020 National Tax Association Presidential Address, William Gale writes that ‘studying race will make the discipline of public finance more salient for key issues in society and the economy’ (Gale, 2021: 955). As his discussion centres on tax policies, the conversation on public finance and racism can be advanced with more meaningful work examining and addressing the racist nature of nontax public revenue sources, such as fines, fees and forfeitures (FFF). Though a relatively smaller share of a city’s total own revenue compared to taxes, FFF are important mechanisms to understand for a multitude of reasons, including (1) their use by local agencies to subsidise revenue losses especially during times of fiscal crises, (2) their disproportionate and regressive effects on low-income and racially/ethnically minoritised communities and (3) their consequential effect on exacerbating existing racial/ethnic and class disparities. Our fixed effects models show that cities in California are more likely to rely on FFF – despite their regressive nature – when their share of Latinx/Hispanic population grows. These findings signal potential concerns of racialised and discriminatory enforcement of FFF.

Increased reliance on local governments to fund their own-source revenue during times of crises is more prevalent now as tax policies and tools become more decentralised under struggling federal fiscal systems (Gamkhar and Pickerill, 2012; Kim, 2018; Park, 2017). With limits on revenue sources, such as property taxes and intergovernmental transfers, localities are resorting to other means to build their revenue, including

regressive FFF (Kato, 2003; Kim and Warner, 2018; Mughan, 2021). Not only are FFF regressive, they are not sustainable nor do they address the core issues in public financing. To reduce local municipalities reliance on discriminatory enforcements of FFF to subsidise losses from fiscal crises or funding gaps, more needs to be done to ensure localities’ fiscal resiliency and solvency through the accumulation of net assets that help to mitigate deficit spending.

Whether it is with more progressive distributions of intergovernmental transfers or incentivising cities to diversify their revenue sources, this research provides evidence for local funding to be re-examined and restructured to address equity concerns. Particularly for low-income and marginalised communities, FFF can be detrimental as it discriminately perpetuates poverty and debt traps, which ultimately impact individual and community well-being.

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ORCID iDs

Thai V Le  <https://orcid.org/0000-0001-8627-6603>

Matthew M Young  <https://orcid.org/0000-0002-9262-2346>

Supplemental material

Supplemental material for this article is available online.

Notes

1. <https://www.sos.ca.gov/elections/voter-registration/voter-registration-statistics>
2. Localities that participate in the 287(g) programme, part of the US Immigration and Nationality Act (INA), agree to formally cooperate with federal agencies—namely, the US Department of Homeland Security—by requiring local law enforcement to act on behalf of federal immigration agents and under the supervision of Immigration and Customs Enforcement (ICE). Such acts can include asking individuals' immigration status, detaining and transferring noncitizens into ICE custody, and beginning removal proceedings.

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