

Service Solvency and Quality of Life After Municipal Bankruptcy*

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Abstract

Despite playing a critical role in the delivery of public goods to residents, American local governments face many resource constraints, including hard budget constraints, state restrictions on revenue generation, and declining economic bases. One of the outcomes of these situations can be a perpetual cycle of fiscal stress, with potentially harmful effects on residents via impaired delivery of public goods. This research examines an understudied and often maligned intervention – Chapter 9 of the federal bankruptcy code, or municipal bankruptcy – and its effect on local government service delivery. After employing propensity score matching to generate a set of control governments that are fiscally similar prior to intervention, we assess the effects of filing for Chapter 9 on the delivery of public goods. We find that bankrupt governments make deeper cuts to expenditures across a variety of service areas relative to the counterfactual. We also show that these cuts are concentrated in the area of public safety or policing but that these cuts come with an apparent improvement to service quality via increases to crime clearance rates and no negative effects on crime rates. This suggests that Chapter 9 may provide local governments the space to reorganize their fiscal profiles in ways that are politically-untenable during normal times but potentially yield improved public goods at a lower cost for residents.

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1 Introduction

In the American system of federalism, local governments play a critical role in the financing and delivery of public goods. Whether it is education, public safety via policing and fire protection, or via the delivery of myriad other services, local governments do quite a bit. Local governments deliver these services despite being subject to hard budget constraints resulting from federally-imposed restrictions on printing money, state-imposed restrictions on generating revenue and issuing debt, and, in some cases, eroding economic bases. The combination of these factors can create deep and perpetual cycles of fiscal stress for some local governments, with potentially harmful effects on residents via impaired provision of public goods. In such cases, local governments themselves have few choices, and externally-driven attempts to remediate these cycles via interventions like state-imposed managers can have limited or even harmful effects (Nickels, Clark and Wood 2020). In this article, we examine a different response to extreme fiscal stress – the decision to file for municipal bankruptcy via Chapter 9 of the federal bankruptcy code – and how it affects the provision of public goods by local governments.

As a policy response to fiscal stress, municipal bankruptcy is often discussed in pejorative terms or framed as a last resort (Jump 1996). There may be good reasons for this, as some evidence demonstrates that bankruptcy can cause a negative fiscal externality via the municipal bond market (Yang 2019). However, municipal bankruptcy also represents a process by which local governments can effectively ease their budget constraints by discharging debt or renegotiating employee contracts. Recent work suggests that the process may actually improve the financial standing of local governments that choose to file for bankruptcy (Abott and Singla N.d.). What this body of evidence does not speak to, however, is what intervention via Chapter 9 means for the provision of public services.

In one respect, the effect of municipal bankruptcy on service delivery may seem straightforward: municipal bankruptcy is a legal process and it cannot improve the underlying so-

cioeconomic conditions that typically contribute to extreme fiscal distress. In fact, there are pathways by which bankruptcy could harm residents. A government could use the leverage generated by Chapter 9 to make deep cuts to public expenditures in the name of balancing a budget, for instance. Combined with curtailed access to credit markets that may prevent infrastructure and other capital spending, Chapter 9 may imply a grim future for local governments and their residents. Alternatively, a government could attempt to use the Chapter 9 process to steer decline toward a better outcome. This would mean using the space provided by the court to reorganize a government's fiscal profile to be sustainable while still meeting resident needs through an adequate provision of public services.

Case studies and press accounts of service delivery in cities that recently filed for Chapter 9 – like Detroit, Michigan and Jefferson County, Alabama – tend to highlight austerity responses and the pursuant negative effects on service delivery and resident welfare (Kirshner 2020). In 2012, The New York Times ran a story titled, “In Alabama, a County That Fell Off the Financial Cliff” (Walsh 2012). The article describes how Jefferson County lost its ability to provide basic services for its 650,000 residents after filing for Chapter 9 bankruptcy. The lede reads

One county jail here is so crowded that some inmates sleep on the floor, while the other county jail, a few miles down the road, sits empty. There is no money for the second one anymore. The county roads here need paving, and the tax collector needs help. There is no money for them, either.... There is no money for holiday D.U.I. checkpoints, litter patrols or overtime pay at the courthouse. None for crews to pull weeds or pick up road kill.... Jefferson County has even canceled municipal elections scheduled for this August. It seems that there's no money for voting booths, either.

The message of this and similar stories or anecdotes is clear: governments that file for bankruptcy are in bad shape and that does not bode well for their ability to deliver services to residents (Kirshner 2020).

The major limitation of such stories is that they do not consider what would have happened in the absence of intervention via Chapter 9. Consider that in 2016, the City of East Cleveland ran out of money for working snow plows in December (Raymond 2016). To contextualize this, the Cleveland area averages 68 inches of snowfall per year (Johnston 2019). In Springfield, Ohio, firefighters began repairing their own fire engines because there was not enough funding to support a repair contract (Maciag and Wogan 2017). And in 2010, budgetary pressures caused the City of Colorado Springs to sell police helicopters on the internet, replace trash bins in parks with signs asking residents not to litter, and deactivate a third of its streetlights (Booth 2010). These anecdotes suggest that disruptions to the delivery of public goods are not unique to bankrupt local governments. It is thus entirely plausible that the counterfactual to bankruptcy is something like East Cleveland or Colorado Springs.

In this research, we empirically investigate the effects of a Chapter 9 intervention on the delivery of public goods by local governments. To conduct this evaluation, we leverage the spat of municipal bankruptcies during and after The Great Recession. Based on six municipalities that successfully petitioned the courts for protection under Chapter 9 of the federal bankruptcy code, we construct a set of financially-similar municipalities via propensity score matching. Then, using a staggered difference-in-differences and event study design, we explore whether filing for bankruptcy meaningfully altered service provision as measured by a range of different indicators. We find limited evidence that governments going through the bankruptcy process make substantial budgetary cuts or increase revenue-generating activities. In addition, we show that bankruptcy may even improve service delivery outcomes even in the presence of budgetary cuts. These findings should provide financial managers and elected officials alike with some guidance about Chapter 9's viability as a strategy to manage decline in subnational governments.

2 The Provision of Public Goods and Local Responses to Fiscal Stress

There are myriad factors that affect the provision of public goods by local governments. Among public choice scholars, the dominant explanation is that residents vote with their feet to induce competition among local governments. As a result, local governments respond to resident preferences with a variety of taxation and service bundles (Tiebout 1956). More recent work has demonstrated a variety of other factors that affect the provision, including the number of local governments delivering services within a region (Jessica Guy Grossman, Pierskalla and Boswell Dean 2017), election cycles (Pierskalla and Sacks 2018; Ting, Hirano and Snyder Jr 2018), and the diversity of the community (Rugh and Trounstein 2011). Another critical factor in local public goods provision is the effect of resource constraints, or fiscal stress.

Fiscal stress plays a significant role in the behavior of American local governments because they face hard budget constraints. Whether due to state law, local charter, expectations, or credit markets, local governments generally cannot operate at a deficit with the expectation that those deficits will be supported by another level of government (Kornai 1986; Rodden 2012). As a result, when faced with declines in revenue, there are few options: cut expenditures, raise revenues, or rely on reserves. Further complicating the matter are tax and expenditure limitations that prevent new revenue generation along with the credit consequences of depleting reserves. The most common response among local governments to fiscal stress is to cut expenditures, often termed cutback management (Levine 1978).

Cutbacks can take many forms, including more human-resources-oriented actions like furloughs, layoffs, or changes in leadership, to larger-scale responses including deferred maintenance on capital assets, and more general forms of service reduction. The effects of these responses on the amount and quality of public goods provision is difficult to assess (Pandey 2010). Nevertheless, scholars have attempted to evaluate the efficacy of these different re-

sponses in a variety of areas, including when, what, and for how long governments reduce expenditures in response to decline (Raudla, Savi and Randma-Liiv 2015). Others have examined the effects of limits to resources on the behavior of public managers (Singla, Stritch and Feeney 2018; Berry 1994). And though this literature is vast, there remains no consensus on which strategies to manage decline are more appropriate or in what contexts certain responses may make sense (Bozeman 2010). If there is a common thread among the strategic responses to decline among local governments, it is that they represent an attempt by the government to make proactive choices in order to manage decline toward a better outcome.

More recent work in this area has argued that managing toward a better outcome is different than cutback management. Instead, it suggests that local governments facing fiscal stress can balance community needs against resource constraints (Warner, Aldag and Kim 2020). This means resisting cutbacks and instead focusing on a search for additional revenue streams to mitigate shortfalls as well as attempts to innovate in order to maintain service quality (Kim and Warner 2016). Termed pragmatic municipalism, this line of thought suggests that public managers are stewards of the public trust and will therefore act to maintain or improve the quality of resident lives within the constraints of the social, demographic, legal, and economic landscape. There is considerable evidence to support this view of public manager responses to fiscal stress (Warner, Aldag and Kim 2020), though few studies apply the theory specifically to municipal bankruptcy.

An alternative response to fiscal stress in local governments is austerity. If both cutback management and practical municipalism attempt to manage decline toward a better outcome, austerity is an intentional attempt to hollow out government (Peck 2012). And though austerity may follow some of the same principles of cutback management insofar as both focus on reducing the size and scope of government, austerity tends to emphasize cuts to socially-oriented services (Davidson 2019). It is important to note that the theory of austerity is not normative. Rather, it is presented as, “a coalition of business and financial interests, local government, and state and national government actors who use austerity measures –

often bypassing democratic processes – to decrease the level of public services and public employment” (Kim and Warner 2016, p. 791). Most scholars discussing the theory note, either explicitly or implicitly, that residents are likely to suffer if it is implemented.

3 The Possible Effects of Chapter 9 Bankruptcy on the Provision of Public Goods

As a policy response to fiscal stress, Chapter 9 of the federal bankruptcy code has not received considerable scholarly attention. One potential explanation for this is that, historically, the number of general purpose local governments filing for Chapter 9 protection is fairly small. However, in the past decade there has been an uptick in the number of filings, with 7 in the years following The Great Recession and evidence that others are considering filing in the wake of the COVID-19 crisis. This makes understanding the intervention’s effects on local governments and their residents extremely important.

In order to use Chapter 9 of the federal bankruptcy code to remediate its liabilities, a local government must meet four criteria: it must 1) have specific state authorization to file for bankruptcy; 2) be insolvent; 3) be willing to file a plan of adjustment defining how it will make changes to its obligations; and 4) have made a good faith attempt to negotiate with its creditors and failed (Spiotto 2012). Historically, the first two criteria are the most significant obstacles to clear. State authorization is variable. 27 states authorize local governments under at least some contexts, 21 have no explicit policy, and 2 explicitly prohibit the process. Insolvency is similarly complicated. The statutes define the construct financially, meaning a government needs to be unable to meet its obligations currently or in the immediate future (11 U.S.C. § 101(32)(C)). However, recent court decisions have extended the definition beyond financial considerations to include a significant reduction or inability provide core services to residents (Abott and Singla N.d.; Gillette 2020). The upshot of these requirements is that while not all local governments are eligible to file, many

are, especially if they can demonstrate financial insolvency or the inability to deliver public goods to residents.

Once a government has successfully petitioned the court for bankruptcy protection, the result is effectively a loosening of the government's budget constraint. This happens in a few different ways. First, the government stops payments to creditors while it negotiates a settlement that allows the government to continue operations for the foreseeable future, thereby providing direct and immediate relief. Second, the government begins work on a Plan of Adjustment that details the changes a government will make to its operations and to its obligations in order to continue functioning and return to solvency. The plan can include cut expenditures, raised revenues, renegotiated public sector union contracts, altered pension liabilities, and reduced principal or interest owed on long-term debt. Critically, no specific actions can be imposed on the local government by the federal court due to the 10th Amendment and creditors have only a small role in its crafting (Moringiello 2014; Chung 2015). Thus, the Plan of Adjustment allows a local government to reshape its fiscal profile.

There are several important avenues by which a government can undertake this reshaping. First, the bankruptcy process generates a tremendous amount of leverage for local governments that can make previously intractable issues more manageable. This is because creditors have no legal role in the construction of the Plan of Adjustment, and the court's only role is to assess whether the plan is feasible (i.e., will the municipality be able to meet its obligations if the plan is enacted) and whether the plan passes the best interests test (i.e., are the creditors better off than they would be in the absence of bankruptcy). In the latter case, the court's assumption is that the alternative to bankruptcy is the repudiation of the debt, meaning the court assesses whether the plan is making a reasonable attempt to pay (Moringiello 2015). Critically, if the court determines these criteria are met, creditors can be forced to accept the municipality's plan via a process called cramdown (Chung 2015). As a result, local governments gain leverage to renegotiate a broad range of obligations.

One way a government might use this leverage is to make deep cuts to its service delivery.

The ability to reject or renegotiate existing contracts¹ extends to issues like outstanding leases and collective bargaining agreements. This can allow a local government that desires to reduce expenditures in large service areas like policing or fire protection that are typically governed by CBAs and politically-powerful unions. And given that wages represent more than 40 percent of local government expenditures (McNichol 2012), such options allow local governments to make radical changes to service delivery.

Second, Chapter 9 can allow local governments to resist budget cuts by reducing expenditures on or extending the maturities of debt or other long-term liabilities. This effectively softens a local government's budget constraint by freeing up funds that were otherwise allocated, thereby reducing the need for cuts. Third, Chapter 9 may indirectly alter the political landscape by signaling to voters and elected officials that changes are needed. In the aftermath of Vallejo, California's bankruptcy, for instance, a group of newly-elected city councilors pushed for new processes like participatory budgeting that would more directly link community input to service delivery (Davidson 2019).

Ultimately, it remains unclear how local governments use the freedom and leverage afforded them by the Chapter 9 process. Do governments use the Chapter 9 process to implement cutback management practices? Do they behave more like stewards of the public trust and attempt to maintain service delivery? Do they use the ability to reject existing contracts to implement austerity and hollow out government? And, critically, how do these choices affect residents? Our research aims to provide answers to these questions.

4 Data and Methods

There are two major challenges associated with studying the effects of Chapter 9 bankruptcy: the limited number of cases of general purpose governments that file for bankruptcy in any given period, and the difficulty associated with identifying an appropriate comparison group

¹Though breaching a contract entitles the counterparty to fees, such obligation is effectively treated as an unsecured liability in the court process (Jones Day 2010)

for those cases. Our empirical strategy attempts to mitigate both of these concerns.

We begin by determining the cases of Chapter 9 that are appropriate for study. The challenge is to identify cases that we can study sufficiently in both the pre- and post-intervention phases. This points us to the 11 cases filed sometime within the past 10 years (Chapman, Lu and Timmerhoff 2020), a period for which we can realistically gather data pre- and post-bankruptcy. Unfortunately, all 11 of these cases are not viable for inclusion in our study: three of the most recent cases are too recent to allow for a meaningful post-intervention evaluation, and another two were dismissed because federal courts determined the filing governments were ineligible. The remaining governments serve as our 'treated' sample: Jefferson County, Alabama (2010); Central Falls, Rhode Island (2010); Mammoth Lakes, California (2011); San Bernardino, California (2011); Stockton, California (2011); and Detroit, Michigan (2012).

One advantage of examining this grouping is that it captures the spate of municipal bankruptcies that filed in response to the economic crisis of 2007 - 2009. It also has some important practical advantages: 1) expenditure and other financial data are more readily comparable across governments because the accounting standards by which the data are generated are more consistent, and 2) the datasets of financial and socioeconomic we use to construct a counterfactual for bankruptcy match this period.

4.1 Generating a Counterfactual for Bankruptcy

The second and most substantial challenge associated with evaluating the effects of Chapter 9 bankruptcy is determining an appropriate comparison group. Because the event is rare and not plausibly exogenous, it is inadvisable to compare governments receiving the intervention to the average non-bankrupt government. To address this issue, we construct a weighted dataset of governments that appear similar to bankrupt governments using propensity score matching. We conduct k-nearest neighbor matching without replacement on the covariates most closely correlated with the decision to file for bankruptcy, measured in the final year

prior to treatment, using the MatchIt package in R (Ho, Imai, King and Stuart 2011).

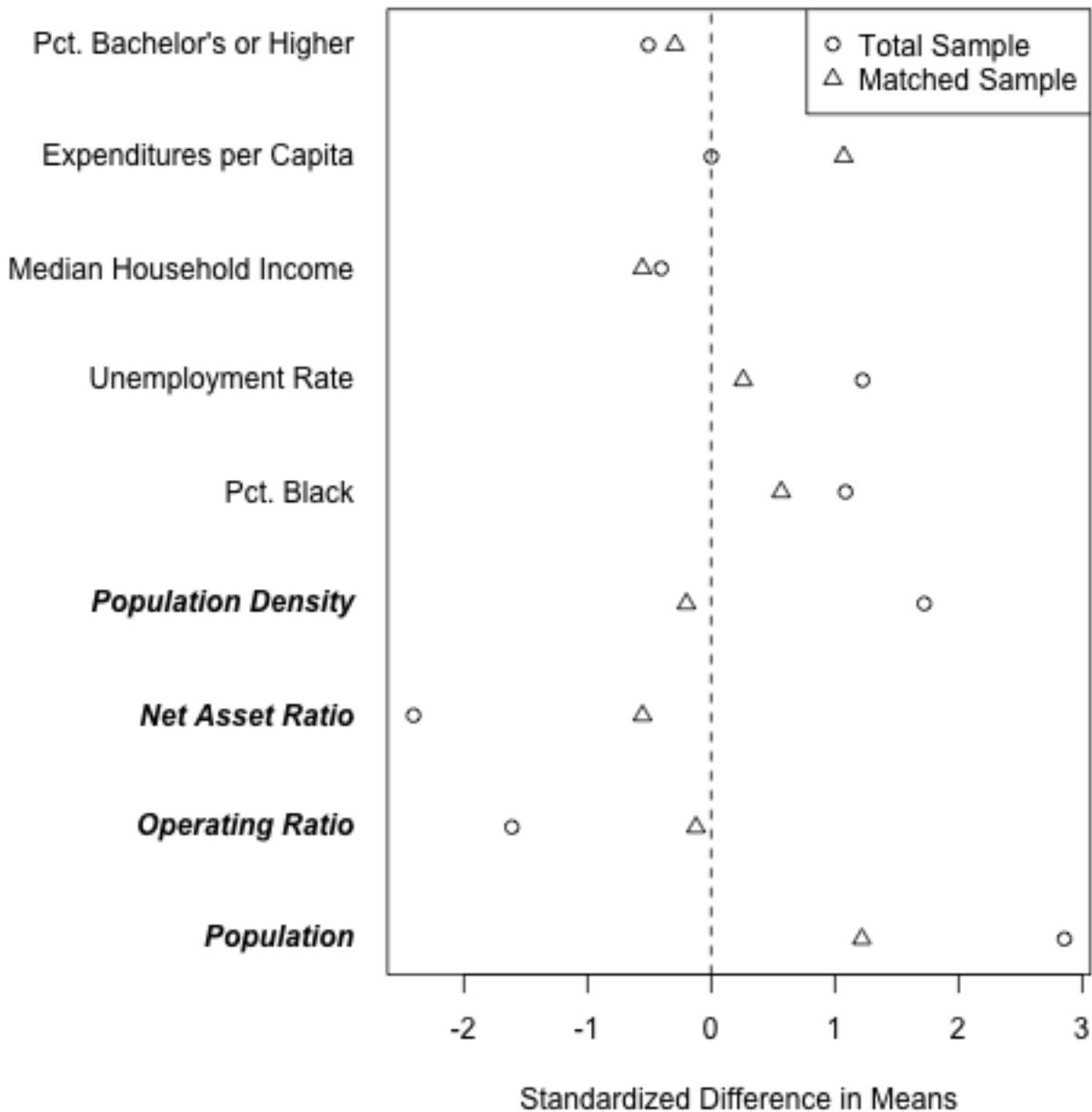
To determine which covariates to match on, we first look to theory about prediction of fiscal stress and bankruptcy. Unfortunately, modeling and predicting fiscal stress or declines in government financial health is challenging due to the limited number of cases of default or bankruptcy (Gordon and Center 2018). However, there is evidence that financial health indicators drawn from audited financial statements can be used to predict some of the behaviors associated with fiscal stress (Gorina, Maher and Joffe 2018; Stone, Singla, Comeaux and Kirschner 2015). Moreover, scholars tend to agree that underlying demographic and socioeconomic characteristics of a government are the ultimate and critical drivers of financial health (Jacob and Hendrick 2012). Thus, we construct a dataset of financial, socioeconomic, and demographic variables for about 8,000 municipalities.² The data for these variables comes from three sources: the American Community Survey’s 5-year estimates,³ the United States Common Sense’s GovRank project, and the Census of Governments for 2007. Table 1 describes these variables and their associated datasets in more detail.

To winnow down the list of covariates appropriate for matching, we run a logistic regression to determine which covariates were associated with petitioning for bankruptcy protection. We find that two financial health variables – the net asset ratio and the operating ratio – and two demographic variables – population and population density of the locality – were statistically related to the decision to file for bankruptcy. The results of this regression are presented in the Appendix in Table A.1. Table A.1 also contains variables that were not significantly associated with filing for bankruptcy: the local unemployment rate, the

²Though there are 39,000 local governments in the United States, panel data coming from audited financial statements is available for only roughly 8,000 governments. Because this data is necessary for our matching strategy, our sample is therefore limited. We should note that the GovRank dataset of audited financial statement data is at least an order of magnitude larger than any other panel dataset of municipal financial data. In addition, we believe the data captures approximately 90 percent of governments with more than 1,000 people and likely represents close to the population of governments that produce audited financial statements (for more detail see Kaldani, Carter, Kaye-Zwiebel, Aroskar, Ang, Ravi and Liu (2016)).

³Because the ACS’ five-year estimates do not exist prior to 2009 and we need a balanced panel to execute the matching strategy, the data for 2008 are slightly different. For the demographic data, we calculate the annualized growth rate between 2000 (via the decennial census) and 2009 and use it to project 2008’s values. For 2008 unemployment, we use the Bureau of Labor Statistics data at the county level.

Figure 1: Balance Improvements



percent of the population that is black, expenditures per capita, median household income, the percent of the population with a bachelor's degree or higher, and various categories of social spending.

After filtering our data to municipalities with less than 1 million residents,⁴ we selected k

⁴We made the decision to limit our analysis to cities and counties with populations under 1 million as we believe that there are structural differences in the bankruptcy process and large externalities associated

= 5 matches using cross-validation. Our matching strategy yields a significant improvement in balance on both our matched variables and our unmatched variables, including fiscal, financial, economic, and demographic characteristics. Figure 1 shows the matching balance.

with fiscal distress of municipalities of this size.

Table 1: Matching and Control Variables

Variable	Description	Data Source
Operating Ratio	Calculated as Total Revenues / Total Expenditures	United States Common Sense
Net Asset Ratio	Calculated as Unrestricted Net Assets / Total Assets	United States Common Sense
Population Density	Population per square mile	ACS 5-year Estimates
Pct. Black	Percentage of the population that is black	ACS 5-year Estimates
Pct. Other Races	Percentage of the population that is neither black nor white	ACS 5-year Estimates
Population	Total population	ACS 5-year Estimates
Median Household Income	The median income at the household level	ACS 5-year Estimates
Pct. 65 Or Older	Percentage of the population 65 years old or older	ACS 5-year Estimates
Pct. 18 Or Under	Percentage of the population 18 year old or younger	ACS 5-year Estimates
Pct. w/ Bach. Or Higher	Percentage of the population that has obtained a Bachelor's degree	ACS 5-year Estimates
Unemployment Rate	Percentage of local population that is unemployed	ACS 5-year Estimates

4.2 Outcome Measures: Expenditures and Revenues

One of the most substantial challenges of empirical work on American local governments is the dearth of existing large N, time-series datasets that describe the provision of public goods. As a result, most scholars gravitate toward the Census of Governments because it provides revenue and expenditure data for the population of local governments. However, this dataset has serious limitations: it only provides data every 5 years, the underlying accounting basis of the information is not considered, and the information does not include important detail on government balance sheets (Ross, Yan and Johnson 2015). These limitations can be overcome as local governments routinely produce better, more nuanced data in their audited financial statements. But these documents are not gathered centrally and constructing datasets from them is extremely labor intensive.

A major advantage of our matching strategy is that we can feasibly gather higher-quality data from audited financial statements for the treated and counterfactual governments in our study. To do this, we gathered each government's annual audited financial statement, or Comprehensive Annual Financial Report (CAFR) for the years 2007 to 2017. Then, we extracted information on spending and revenues from the Statement of Revenue, Expenditures, and Changes in Fund Balances for all Governmental Funds. On the expenditure side, we extracted total spending as well as spending on police, fire, parks and recreation, libraries, and capital outlay. On the revenue side, we extracted total revenue as well as information on property tax revenue, sales tax revenue, income tax revenue, user charge revenue, and revenue from fines and forfeitures. The resulting dataset contains sufficient pre- and post-intervention data for a meaningful evaluation of how Chapter 9 altered the provision of public goods by local governments.

Table 2: Matches

Bankrupt Municipality	Within-State Matches
Central Falls, RI	Cranston, RI East Providence, RI Pawtucket, RI Providence, RI Warwick, RI
Detroit, MI	Flushing, MI Harper Woods, MI Highland Park, MI Melvindale, MI Pontiac, MI
Jefferson County, AL	Calhoun County, AL Houston County, AL Madison County, AL Mobile County, AL Montgomery County, AL
Mammoth Lakes, CA	Bell, CA Duarte, CA Placentia, CA Seaside, CA South El Monte, CA
San Bernardino, CA	Bakersfield, CA Baldwin Park, CA Long Beach, CA Pico Rivera, CA Pomona, CA
Stockton, CA	El Monte, CA Norwalk, CA Sacramento, CA San Fernando, CA Santa Ana, CA

4.3 Outcome Measures: Operationalizing Service Solvency & Government Performance

Though examining expenditures in different areas and the mechanisms of revenue generation gives us insight into how Chapter 9 bankruptcy affects the provision of public goods by local governments, it does not directly tell us about how residents experience this service delivery. Revenues and expenditures are inputs into a system responsible for producing the public goods that residents actually experience and value: functioning roads and bridges, clean parks, safe neighborhoods, easy access to water, and adequate disposable income – just to name a few. Further, the relationship between those inputs and outcomes is not necessarily positive or linear. More financial resources do not necessarily mean better outcomes, and not all changes in resource allocation should be expected to affect outcomes in the same way (Singla, Stritch and Feeney 2018). The ability of a government to provide these outcomes to residents at a reasonable level is known in financial management as service solvency.

Measuring or assessing the service solvency of a government, however, is particularly challenging. Previous literature (Wang and Liou 2009) has conceptualized service solvency using financial ratios like total taxes per capita, total revenue per capita, and total expenses per capita. The relationship between these metrics and service delivery or resident quality of life is unclear. It is possible that more revenue per capita could mean higher quality service delivery. But it is also likely that more revenue represents a political preference expressed as taxation-service bundles (Stone et al. 2015; Tiebout 1956). This issue unfortunately makes broad financial ratios ill-suited for assessing the quality of service delivery.

How, then, should we assess service solvency? Broadly speaking, this is simply another way of asking how to assess the performance of government. And while there is a large and diverse body of literature on performance measurement in government, perhaps the single most important take away is that no single performance measure can capture all of the things residents care about (Behn 2003). Standardized metrics for evaluation require agreement

about policy objectives and a clear understanding of the causal linkages in the program structure. And because different programs have different functions, evaluating an entire general purpose government may be impossible. Nevertheless, performance measurement can still be a valuable exercise when its limits are understood (Moynihan and Pandey 2010).

Unfortunately, there is no simple solution to this issue. The challenges of evaluating government performance are also enhanced in the local government context where the dearth of data limits the choice of metric. Many sources at the local level are not annual, are concentrated at the county-level (e.g. Bureau of Labor Statistics data), or are only available for a particular set of governments (e.g. a random sample, only governments with populations over 100,000, a specific state or region). Given these limitations, we focus our examination of service solvency on one core area: policing. Policing and public safety are core to local government service provision and represent sizable portions of most local government budgets. In addition, the Federal Bureau of Investigations' Uniform Crime Reporting Program provides standardized, annual data on law enforcement outputs and outcomes.

In addition to playing an outsized role in local government service provision, policing and crime have been raised in numerous Chapter 9 cases as evidence of service insolvency (Gillette 2020). In Stockton, for instance, the court wrote

Service delivery insolvency focuses on the municipality's ability to pay for all the costs of providing services at the level and quality that are required for the health, safety, and welfare of the community. The evidence demonstrates that the police department has been decimated. The crime rate has soared. Homicides are at record levels. The City has among the ten highest rates in the nation of aggravated assaults with a firearm. Police often respond only to crimes-in-progress. (In Re City of Stockton 2013)

To assess the performance of policing in local governments, we focus on two metrics: crime rates and crime clearance rates. In each instance, we look at the aggregated measure as well as the measures broken into violent and property crime. Critically, crime rates represent an

outcome variable whereas crime clearance rates represent an output variable. Outcomes are perhaps more important to residents, but are frequently affected by numerous forces beyond any single actor's control. Crime rates are no different in this regard, with evidence that they can be affected by policing (MacDonald 2002; Zhao, Scheider and Thurman 2002) but also broad economic forces like unemployment (Raphael and Winter-Ebmer 2001). Outputs, on the other hand, are directly affected by the program in question but may be less directly related to the things residents care about. Crime clearance rates show the proportion of crimes cleared by arrest and have been used in several recent studies on the effectiveness of law enforcement (Park 2019; Goldstein, Sances and You 2020).

5 Empirical Framework

5.1 Empirical Model

In order to determine the causal impact of successfully filing for Chapter 9 bankruptcy, we estimate a staggered differences-in-differences (DD) model using our matched datasets. The staggered DD model, or DD model with variations in policy adoption timing, is slightly different from the canonical DD model where timing of the treatment does not vary (Stevenson and Wolfers 2007; Goodman-Bacon 2018). The variation in the years that municipalities filed for bankruptcy allows us to use a more generalized framework where we analyze changes in output and outcome variables before and after the year of filing (or in the case of control observations, before and after the year of acute fiscal distress), rather than before and after a fixed point in time. The model takes the form of equation (1):

$$Y_{m,t} = \beta BankruptcyFiling_{m,t} + \omega PostDistress_{m,t} + \kappa \mathbf{X}_{m,t} + \alpha_m + \tau_y + \epsilon_{m,t} \quad (1)$$

The model relates output or outcome Y in municipality m at time t directly to the act of successfully filing for federal bankruptcy protection. In equation (1), $Y_{m,t}$ is a measure

of public goods provision. $BankruptcyFiling_{m,t}$ is an indicator of whether a municipality was in bankruptcy protection at time t and years thereafter (i.e., at least one calendar year after the municipality files), and $PostDistress_{m,t}$ indicates whether the observation in period t occurs after the municipality has experienced its acute fiscal event. For treated observations, $BankruptcyFiling$ and $PostDistress$ will only ever take on the same value $(0, 0)$ or $(1, 1)$ in a given period t for a given municipality m . For control observations, in which $BankruptcyFiling$ is always 0, $PostDistress$ takes on 0 or 1 depending upon whether we are observing the time period before or after the fiscal stress that qualified the observation to be similar enough to the treated observations to be included in our analysis. The model also includes a vector of controls \mathbf{X} that includes logged population, population density, percent of the population over the age of 65, percent of the population under the age of 18, percent of the population that is black, percent of the population that has a bachelor's degree or above, the local unemployment rate, and median household income. Finally, the model includes municipal and year fixed effects, α_m and τ_y , respectively, and an error term, $\epsilon_{m,t}$. Standard errors are heteroskedasticity-robust and clustered by municipality.

Our parameter of interest in equation (1) is β , which estimates the average effect of filing for bankruptcy on our various measures of local government public goods provision. This estimate averages the effect across all time periods post-filing, including the time periods in which the municipality is still in bankruptcy protection. Because it is possible that the true costs and benefits to filing may not accrue to the municipality until after exiting bankruptcy protection, this specification may bias our estimate towards zero. Nevertheless, we find limited evidence that bankruptcy negatively affects service provision and some evidence that it improves service solvency. We alter the definition of what constitutes the period of treatment in the Appendix and find that our results are qualitatively unchanged.

While the classic formulation of the staggered DD model above captures the average effect of treatment on our financial indicators over all of the years of post-treatment data we observe, an event-study analysis allows us to trace the effects over time as well as probe the

appropriateness of the parallel trends assumption which is a requirement for being able to interpret the DD estimate causally. In equation (2) we split our treatment into a set of lead and lag variables such that ρ_k estimates the effect of bankruptcy protection $k \in (1, 7^+)$ years after filing while δ_j estimates the difference in pre-treatment trends in the $j \in (-4^-, -2)$ years prior to filing (we leave the year prior to filing as our reference group). The ϕ parameter estimates the difference between those municipalities that filed for protection and those that did not in the year of filing. The reference period in our research design is the year before filing for bankruptcy protection. Our endpoints (4 years prior to filing and 7 years after filing) are binned as the vast majority of our observed data falls within this range.

$$Y_{m,t} = \sum_{-4^-}^{-2} \delta_k BankruptcyFiling_{m,t}^k + \phi BankruptcyFiling_{m,t}^0 + \sum_1^{7^+} \rho_k BankruptcyFiling_{m,t}^k + \kappa \mathbf{X}_{m,t} + \omega_t + \alpha_m + \tau_y + \epsilon_{m,t} \quad (2)$$

6 Results

6.1 Assessing Public Goods Provision via Revenues Expenditures

We begin by reporting the results for the classic DD specification from equation (1) in Tables A.5 and 4. At first glance, the results appear to support the general conclusion that municipal bankruptcy shrinks the size of the public sector on several dimensions relative to the counterfactual.

To reach this conclusion, we consider the beta coefficient and p-value for each estimation. In total, we estimate 16 models for our set of matches. Among spending outcomes, we see beta coefficients that are statistically different than zero (i.e., statistically significant) in four of the eight models: general fund expenses per capita, total expenses per capita, public safety expenses per capita, and libraries expenses per capita. All of the coefficients on our parameter of interest are negative (with the exception of public works spending), suggesting

Table 3: Average Effect of Filing for Bankruptcy on Spending, per capita

<i>Outcome Variable</i>	
General Fund Expenses	-77.06*** (28.84)
Total Expenses	-512.88** (257.07)
Public Safety	-97.91*** (35.71)
Parks & Rec	-84.91 (73.61)
Public Works	16.92 (22.90)
Sanitation	-26.32 (38.30)
Libraries	-6.45*** (1.68)
Capital Outlay	-34.28 (41.36)
Year Fixed Effects	Yes
Municipal Fixed Effects	Yes
Clustered & Robust Std. Errors	Yes
Controls	Yes

Note: *p<0.1; **p<0.05; ***p<0.01

Table 4: Average Effect of Filing for Bankruptcy on Revenue, per capita

<i>Outcome Variable</i>	
General Fund Revenue	-76.53 (66.82)
Total Revenue	-4.26 (142.53)
Total Taxes	26.10 (128.69)
Income Tax	-22.37 (14.77)
Property Tax	-32.20 (45.90)
Sales Tax	-11.27 (15.47)
User Charges	0.93 (4.43)
Forfeitures	-1.47 (4.84)
Year Fixed Effects	Yes
Municipal Fixed Effects	Yes
Clustered & Robust Std. Errors	Yes
Controls	Yes

Note: *p<0.1; **p<0.05; ***p<0.01

that the municipal public sector shrinks along virtually all service dimensions after entering bankruptcy protection.

For both general fund and total expenditures, coefficient estimates are negative and substantively large. Governments that filed for bankruptcy saw average decreases in their general fund spending of 77 dollars per capita; with average populations in the filing localities of 330,000, this would amount in a net decrease of over \$25M per year relative to non-filing governments. Similarly, filing governments could expect an average decrease in total expenditures of \$513 per capita for a total decrease of \$169M per year. This implies that as much as a quarter of a filing government's annual budget could shrink upon entering bankruptcy protection, relative to those similar governments that chose not to file.

Public safety spending and libraries spending also shrinks upon filing for bankruptcy, and this decrease is statistically significant when comparing bankrupt municipalities to other governments within the state. Decreases in libraries spending is unsurprising in that libraries spending seems, intuitively, to be viewed as the least urgent of the categorical spending, and the most likely to be viewed as a luxury. However, the decline in public safety spending – a category of government expense that is more or less deemed universally essential – is more puzzling.

6.2 Public Goods Provision: Policing Service Solvency

To further investigate the effects of the significant decline in public safety spending, we reestimate our main DD specification on measures of service solvency associated with policing and public safety: crime rates and crime clearance rates. Tables 5 and 6 depicts what happens to the crime rate and crime clearance rate in bankrupt versus non-bankrupt municipalities after experiencing an acute fiscal event. We further break down these outputs and outcomes into violent crimes and crime rates and property crimes and crime rates, largely following Goldstein, Sances and You (2020).

As is probably unsurprising, our data do not detect any statistically significant effect

Table 5: Number of Crimes Reported, per 1,000 Residents

	<i>All</i>	<i>Violent</i>	<i>Property</i>
Post-treatment period	-0.41 (1.89)	0.24 (0.69)	-0.54 (1.35)
Post-treatment * bankruptcy	-9.15 (6.01)	-2.78 (2.69)	-6.73* (3.92)
Log population	-83.37 (78.81)	-41.76 (28.04)	-30.01 (38.01)
65 and older (%)	-61.69 (148.81)	-26.29 (58.42)	-35.47 (95.16)
18 and younger (%)	-26.53 (95.06)	17.47 (46.04)	-50.87 (51.57)
Black (%)	-109.41 (116.72)	-61.35 (50.33)	-48.21 (69.24)
Bachelor's or greater (%)	15.54 (131.18)	-5.18 (58.76)	11.99 (83.22)
Unemployment (%)	176.29 (110.61)	64.62 (47.52)	111.45* (66.31)
Median HH income (\$10,000)	0.40 (6.75)	1.10 (3.02)	0.75 (4.03)
Public safety spending per capita, lagged (\$1,000)	-20.59 (23.30)	-8.95 (9.48)	-10.85 (14.20)
Year Fixed Effects	Yes	Yes	Yes
Municipal Fixed Effects	Yes	Yes	Yes
Clustered & Robust Std. Errors	Yes	Yes	Yes
N	251	251	251
Adjusted <i>R</i> ²	0.975	0.965	0.976

Note: *p<0.1; **p<0.05; ***p<0.01

Table 6: Crime Clearance Rate

	<i>All</i>	<i>Violent</i>	<i>Property</i>
Post-treatment period	-0.02 (0.02)	-0.04 (0.03)	-0.02 (0.02)
Post-treatment * bankruptcy	0.08** (0.03)	0.12** (0.06)	0.04 (0.02)
Log population	0.15 (0.23)	0.40 (0.33)	0.02 (0.15)
65 and older (%)	1.16 (1.04)	1.82 (2.32)	0.48 (0.70)
18 and younger (%)	1.89*** (0.68)	2.50** (1.12)	1.29** (0.54)
Black (%)	0.00 (0.58)	-0.04 (0.67)	-0.25 (0.43)
Bachelor's or greater (%)	2.31* (1.33)	2.94* (1.53)	1.60 (1.05)
Unemployment (%)	-0.34 (0.62)	-0.01 (0.83)	-0.06 (0.48)
Median HH income (\$10,000)	0.09* (0.05)	0.12 (0.09)	0.05* (0.03)
Crime per capita, lagged	1.44 (1.18)	1.66 (1.66)	0.65 (0.74)
Public safety spending per capita, lagged (\$1,000)	0.06 (0.09)	-0.01 (0.14)	0.05 (0.06)
Year Fixed Effects	Yes	Yes	Yes
Municipal Fixed Effects	Yes	Yes	Yes
Clustered & Robust Std. Errors	Yes	Yes	Yes
N	222	223	223
Adjusted <i>R</i> ²	0.953	0.965	0.935

Note: *p<0.1; **p<0.05; ***p<0.01

on per capita crime rates. While the point estimates of the coefficients on bankruptcy are negative for all three categories of crime rates, as depicted in Table 5, the estimates do not achieve statistical significance at conventional thresholds ($p = 0.13$ for all crimes, $p = 0.30$ for violent crimes, and $p = 0.13$ for property crimes). Increasing our sample size by removing the lagged value of public safety leaves our results unchanged. None of our other control variables achieve statistical significance, either, leaving us in the company of the many other social scientists across space and time who have struggled to explain changes in crime rates (Roeder, Eisen, Bowling, Stiglitz and Chettiar 2015; Greenberg 2014; Barker 2010; Ford 2016). It should be noted, however, that there is a marked secular decline in crime rates for both control and treated municipalities. This decline is evident in Figure 3 below. The year fixed effects completely dominate the other regression coefficients across all three of our crime categories; every year of our data relative to 2008 sees a large and statistically significant decrease in crime rates. Removing the year fixed effects (not reported) makes any interpretation of the remaining coefficients suspect, and does not result in any individual variable becoming significant. This suggests that, as scholars before have found, the largest and perhaps only predictor of crime rates is time.

Table 5 shows us that while we could not detect any effect of bankruptcy on crimes committed, we are able to detect quite a strong effect on the ability of the local police force to make arrests in response to those crimes – particularly violent crimes. Bankruptcy increases the rate at which all crimes are resolved by 8 percentage points and violent crimes by 12 percentage points (about a third of the crimes in our sample are classified as violent crimes). These increases in clearance rates that the municipalities experience upon filing for bankruptcy protection are notable; both the 8 percentage point increase in the total crime clearance rate and the 12 percentage point increase in the violent crime clearance rate is about two-thirds of a standard deviation of the sample's crime clearance rates (which, is 13% and 20%, respectively). The increase in the overall crime clearance rate represents a 32% increase over the average rate in non-bankrupt observations while the increase in the

violent crime clearance rate represents a 26% increase.

6.3 Parallel Trends Assumption and Event Study

For a DD design to be valid, the trends in the outcome variables for the treated and untreated groups should be similar. To check this parallel trends assumption, we first plot the trends in all of our outcome variables split by group in Figure 2 and Figure 3. In the figures, the data are centered around the year of filing for those municipalities that petitioned for bankruptcy while the data for comparison localities are centered around the year that fiscal indicators were most similar to those of their matched treated observations in the year prior to filing.

Visual inspection of the figures reveals that the trends across is mostly similar, though this alone cannot rule out the potential that differences in pretrends are affecting the main DD results. To investigate this further, we use an event study design that modifies the main DD models by adding period-specific dummies. If the dummies for the pretreatment period not statistically significant, we can have confidence that pretrends are not driving the main DD results.

Table 7 reports the results of our event study and the appropriateness of the parallel trends assumption. As Table 7 and Table 8 show, the differences in the outcomes for our municipalities are not statistically different from zero for nearly all of the years prior to filing for nearly all of our outcomes, and this is especially true for the years that are nearest to the filing period. This suggests that our matching algorithm has done a good job of finding municipalities that are very similar to each other prior to and leading up to bankruptcy, *especially since we were unable to match directly on spending variables*, and that the assumptions necessary to causally interpret our DD estimates are satisfied.⁵

⁵We also conduct a falsification test to further test the parallel trends assumption. The results further validate the assumption. We present the full results in the Appendix.

Figure 2: Trends in Expenditures

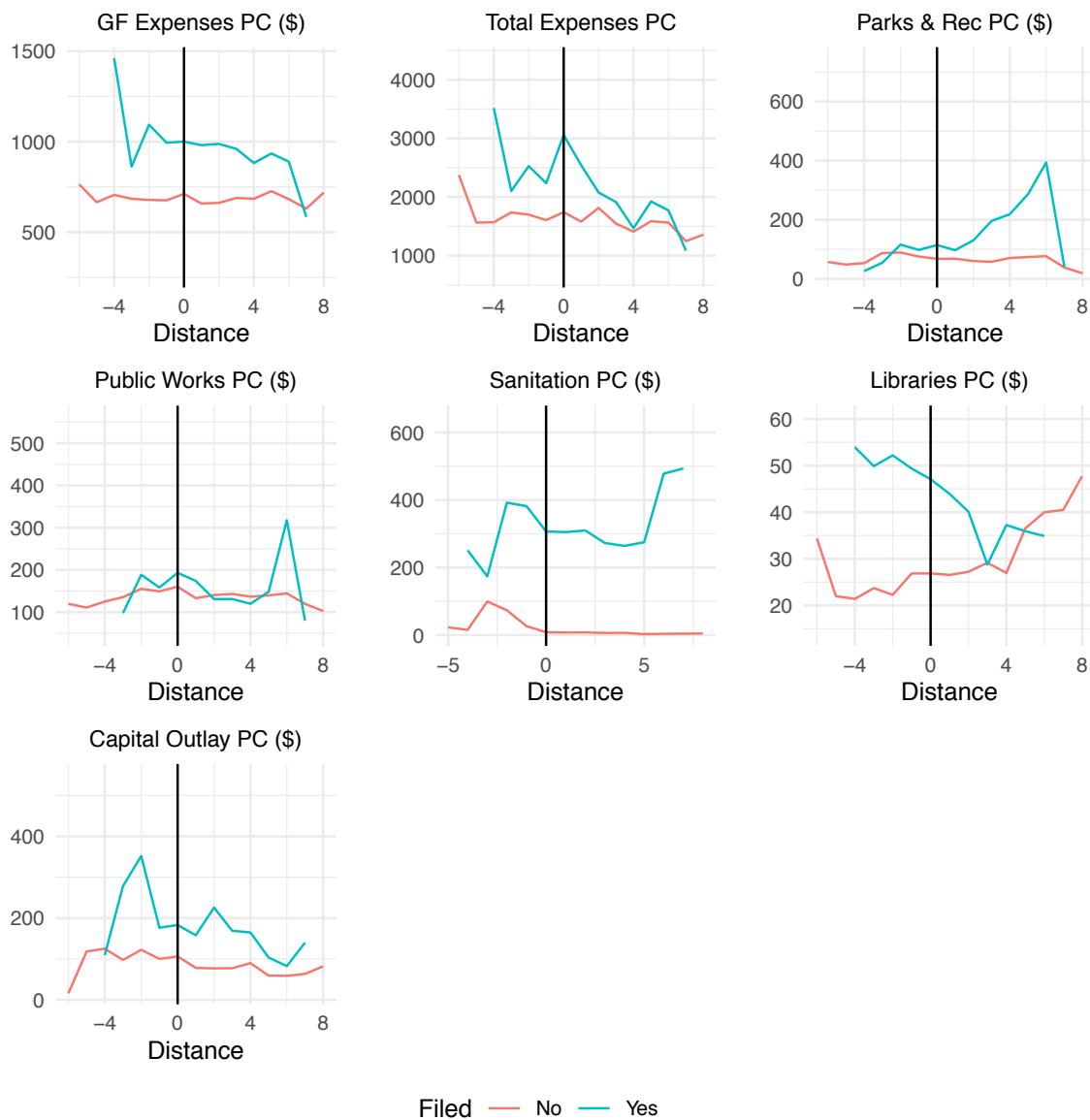


Figure 3: Trends in Crime Data

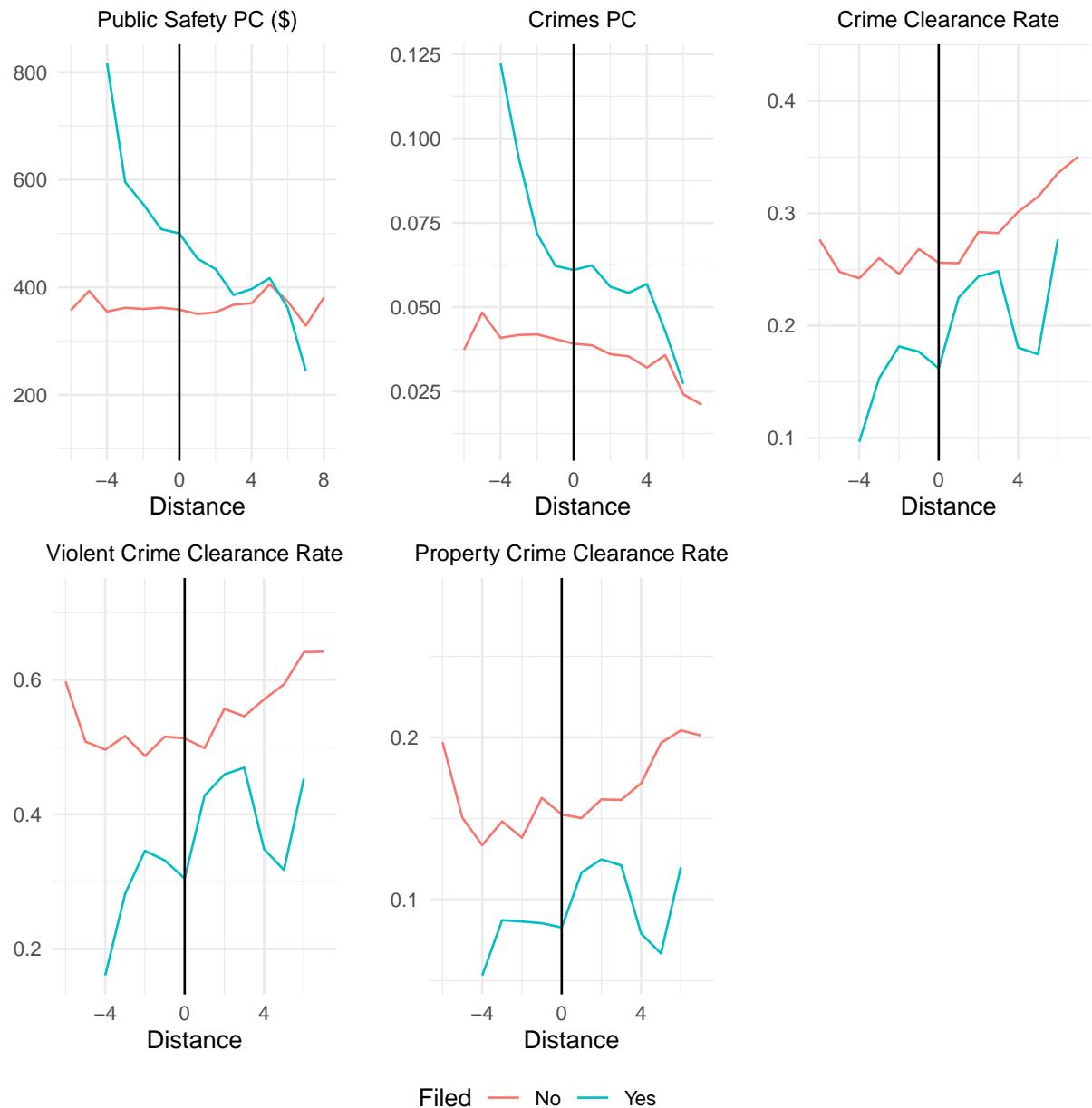


Table 7: Effect of Filing for Bankruptcy on per Capita Spending

	<i>Dependent variable:</i>						
	GF Expenses	Total Expenses	Parks & Rec	Public Works	Libraries	Capital Outlay	Sanitation
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
-4+ years	174.368*** (53.278)	432.511 (274.576)	13.822 (32.398)		-0.031 (6.902)	35.656 (69.381)	195.624 (167.797)
-3 years	26.233 (55.618)	145.531 (272.394)	35.326 (42.312)	39.382 (31.918)	13.852*** (2.397)	150.603* (86.207)	-159.836 (280.080)
-2 years	72.289 (44.629)	160.835 (136.550)	-7.455 (14.410)	10.197 (21.239)	-0.842 (1.782)	114.948 (103.335)	59.054 (58.525)
Filing year	-15.527 (44.490)	628.990 (839.514)	3.757 (12.926)	12.216 (33.428)	0.614 (1.203)	12.982 (42.711)	-37.466 (59.430)
+1 year	5.709 (109.039)	508.355 (529.084)	-4.576 (14.571)	28.383 (30.496)	-3.015 (2.982)	14.572 (36.416)	-78.732* (42.088)
+2 years	27.067 (75.369)	-279.151 (342.762)	23.502 (21.500)	-17.795 (32.934)	-6.235 (4.039)	87.310 (70.797)	-105.403 (64.773)
+3 years	-118.686** (48.263)	-520.489** (220.863)	124.425 (102.407)	-13.424 (27.829)	-6.736** (2.638)	29.980 (64.261)	-134.037* (69.035)
+4 years	-68.176 (49.722)	-1,233.639* (693.797)	51.354 (61.266)	53.244 (47.742)	-10.100** (3.809)	10.653 (55.303)	-132.728 (97.668)
+5 years	-85.485 (54.391)	80.729 (249.089)	196.634 (173.290)	-40.682 (62.308)	-12.445*** (3.777)	-105.720** (47.587)	-136.380 (120.946)
+6 years	-81.280 (50.448)	-411.188* (239.861)	256.283 (224.477)	164.892 (148.082)	-6.592 (4.350)	2.219 (75.493)	-126.266 (101.752)
+7+ years	-116.665* (64.751)	-594.666* (339.408)	88.961 (75.183)	48.628 (45.269)		155.849 (101.978)	-70.329 (125.855)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Muni FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CR SEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	321	323	260	308	59	270	67
R ²	0.993	0.946	0.894	0.923	1.000	0.863	0.989

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 8: Effect of Filing for Bankruptcy on Crime Data

	<i>Dependent variable:</i>				
	Public Safety PC	Crimes per 1000	CCR, All	CCR, Violent	CCR, Property
	(1)	(2)	(3)	(4)	(5)
-4+ years	35.801 (61.150)				
-3 years	-0.517 (84.387)	17.513 (21.699)	-0.113 (0.113)	-0.225 (0.139)	-0.056 (0.075)
-2 years	29.484 (48.689)	7.557 (6.218)	0.056** (0.026)	0.087 (0.062)	0.040** (0.017)
Filing year	-10.068 (19.056)	-4.044 (3.292)	0.018 (0.034)	-0.005 (0.054)	0.010 (0.021)
+1 years	-52.634 (67.662)	-6.420* (3.614)	0.099** (0.044)	0.149** (0.066)	0.057* (0.034)
+2 years	-68.267 (65.246)	-11.274** (4.979)	0.083* (0.046)	0.106 (0.073)	0.045 (0.031)
+3 years	-115.179** (57.599)	-7.824 (5.974)	0.110** (0.051)	0.148* (0.088)	0.052* (0.031)
+4 years	-104.419 (84.286)	-10.644 (9.411)	0.035 (0.057)	0.038 (0.091)	0.010 (0.034)
+5 years	-132.080** (54.898)	-15.688 (9.500)	0.003 (0.064)	-0.036 (0.096)	-0.030 (0.046)
+6 years	-115.713* (61.549)	-12.047* (6.873)	0.061 (0.076)	-0.020 (0.110)	0.032 (0.046)
+7+ years	-97.980* (53.599)				
Year FE	Yes	Yes	Yes	Yes	Yes
Muni FE	Yes	Yes	Yes	Yes	Yes
CR SEs	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes
Observations	322	251	223	223	223
R ²	0.992	0.982	0.968	0.977	0.955

Note:

*p<0.1; **p<0.05; ***p<0.01

In addition to probing the parallel trends assumption, the event study also allow us to trace the effects of the decision to file for bankruptcy across time. When interpreted this way, the results generally confirm the findings from the DD estimates: local governments that filed for bankruptcy shrunk across a number of measures and across time, especially across libraries spending, sanitation, and aggregate measures of spending. The event study reveals dynamics that the difference-in-difference design is unable to show, however. Specifically, the contractions in spending and in revenue are not concentrated at a single point in time post-filing. Instead, the contractionary effects are persistent throughout the entire post-treatment period, even up until the last year in which we observe data.

For public safety and policing, both in terms of expenditures and service solvency, the event study also comports with the main DD results. Table 8 depicts the precipitous decline in per capita public safety spending (column 1). There were large, statistically significant contractions in public safety spending for every year more than 2 years out from filing, including more than 7 years from the date of filing. There were also statistically significant declines in crime rates relative to the control municipalities for a handful of years in the post-filing period (one year, two years, and six years post-filing). The coefficients on the other years are all negative but do not achieve statistical significance. Changes in crime clearance rates, across all categories, are largely positive during the post-filing period, especially in the first three years after filing. This suggests that there are meaningful positive gains in government performance associated with filing for bankruptcy protection when experiencing acute fiscal distress, even if the financial inputs to those outputs and outcomes decline.

7 Discussion

As a consequence of the American system of federalism, where local governments face a myriad of constraints but have important service delivery responsibilities, local government responses to fiscal stress are an evergreen issue. Even in times of strong economic growth

nationally, a handful of the nearly 40,000 general purpose local governments will be faced with resource constraints that may impair their ability to serve residents. This paper has examined an understudied and often dismissed intervention for local governments – Chapter 9 bankruptcy – and how the process might affect residents. Unlike most top-down approaches from state governments, Chapter 9 bankruptcy allows for local governments to retain control of their finances and determine, for themselves, which fiscal strategies to pursue against the backdrop of a newly loosened budget constraint. If local governments use the space afforded by bankruptcy to pursue austerity, it raises important equity concerns for the efficacy of the policy. But if local governments use the process to strategically manage the situation toward a better outcome, it may be the case that Chapter 9 is a powerful tool to manage decline and fiscal stress in local governments.

Our results paint a portrait of Chapter 9 that is more complicated than terms like austerity, cutback management, or pragmatic municipalism might imply. On the one hand, we find evidence that bankruptcy is associated with expenditure cuts, both to core services and to services more oriented toward social objectives. In addition, we see no evidence that governments going through bankruptcy attempt to raise additional revenues or diversify their revenue streams via additional user charges. On the other hand, we see evidence of improved service solvency in the area of policing via a reduction in crime rates and an improvement in crime clearance rates. And, though there are cuts to social programs, the steepest ones come from policing. The overall effect of municipal bankruptcy on residents is thus unclear; there is some evidence that bankruptcy reduces inputs to service delivery, but that those cuts do not necessarily impair outcomes for residents.

The starker contrast between these findings comes in the area of policing, where we find statistically significant and negative effects of filing for bankruptcy on funding but statistically significant and positive effects of filing for bankruptcy on service quality via improved crime clearance rates. It is important to emphasize that these effects are relative to other fiscally-stressed municipalities, so we can attribute them to the Chapter 9 filing itself rather

than just fiscal stress. What, then, explains these findings? One potential explanation is that the expenditure cuts are to police salaries and pension and retirement benefits, which could potentially reduce expenditures but not necessarily affect service quality. This explanation would highlight bankruptcy's ability to loosen local budget constraints by allowing changes to otherwise intractible situations.

Another, not mutually-exclusive explanation is that the bankruptcy altered the political calculus around reducing public safety expenditures. Traditionally, public safety employees are represented by powerful unions and elected officials are loathe to make cuts. But bankruptcy – either directly via the bankruptcy-induced threat of cramdown, or indirectly by increasing the salience of the issue – may alter the situation and allow governments to pursue previously infeasible options. More generally, a large body of literature suggests that fiscal stress can increase innovation or the consideration of new ideas (Warner, Aldag and Kim 2020; Singla, Stritch and Feeney 2018). Anecdotal evidence in the bankrupt cities aligns with this explanation as well. In Stockton, for instance, there has been an effort at more community-oriented policing since the bankruptcy (Friedrich 2019). And in Detroit, the city's ability to retain police officers was impaired prior to Chapter 9 (Dickson 2020); given the costs associated with high turnover, it could be possible to improve outcomes and reduce expenditures simultaneously.

What does all of this mean for the efficacy Chapter 9 bankruptcy as a response to fiscal stress? Combining our findings with other work can help. Our work suggests that Chapter 9 bankruptcy has a limited and mixed effect on the delivery of public goods to residents. When combined with work demonstrating that Chapter 9 can improve the finances of local governments (Abott and Singla N.d.), however, the balance shifts toward a positive assessment of Chapter 9 as a response to extreme fiscal stress. It is, of course, critical for governments to not file for bankruptcy capriciously or to do so as a first response to stress. But, for some governments struggling with decisions about making draconian cuts or Chapter 9, it may be the case that Chapter 9 is a viable option.

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Appendix

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A Additional Tables and Figures

Table A.1: Logistic Regression on Filing for Bankruptcy

	Dependent Variable: <i>Bankruptcy Filing</i>
Net Asset Ratio	-4.046** (1.832)
Pop. Density (1000 people/sq mile)	0.244* (0.144)
Unemployment Rate	0.312 (0.321)
% Population Black	-0.02 (0.038)
Operating Ratio	-6.994* (4.045)
Population (000s)	0.009*** (0.003)
Expenditures per Capita (000s)	-0.44 (0.357)
Median Household Income (000s)	-0.24 (0.066)
% w/ Bachelors or Higher	-0.169 (0.200)
Wages per Capita	-3.59 (2.995)
Fire Services Exp. per Capita	9.474 (7.025)
Police Services Exp. per Capita	0.599 (6.213)
Parks and Rec. Exp. per Capita	-8.389 (10.620)
Constant	-0.643 (5.138)
Observations	11,211
Akaike Inf. Criteria	66.276

Note: Treated observations exit the sample in the year of bankruptcy filing *p<0.1; **p<0.05; ***p<0.01

Table A.2: Staggered DD with Treatment Date $t = -3$

<i>Outcome Variable</i>	
General Fund Expenses	-82.21*** (29.35)
Total Expenses	-250.84 (183.12)
Public Safety	-40.11 (39.10)
Parks & Rec	15.23 (22.59)
Public Works	-27.19 (22.21)
Sanitation	-123.75** (56.45)
Libraries	-15.06*** (2.31)
Capital Outlay	-109.02 (99.45)
Total Crime Clearance Rate	0.15 (0.10)
Violent Crime Clearance Rate	0.01 (0.08)
Property Crime Clearance Rate	-0.02 (0.02)
Year Fixed Effects	Yes
Municipal Fixed Effects	Yes
Clustered & Robust Std. Errors	Yes
Controls	Yes

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table A.3: Robustness Test for the Effect of Filing for Bankruptcy
with Treatment Date $t = +1$

<i>Outcome Variable</i>	
General Fund Expenses	-83.16*** (28.26)
Total Expenses	-728.53*** (261.16)
Public Safety	-85.89*** (29.03)
Parks & Rec	124.19 (103.68)
Public Works	14.00 (18.82)
Sanitation	-4.78 (49.15)
Libraries	-6.07*** (0.98)
Capital Outlay	-19.38 (41.35)
Total Crime Clearance Rate	0.03 (0.02)
Violent Crime Clearance Rate	0.03 (0.04)
Property Crime Clearance Rate	0.01 (0.02)
Year Fixed Effects	Yes
Municipal Fixed Effects	Yes
Clustered & Robust Std. Errors	Yes
Controls	Yes

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Table A.4: Robustness Test for the Effect of Filing for Bankruptcy,
Excludes Mammoth Lakes and Matches

<i>Outcome Variable</i>	
General Fund Expenses	-89.81*** (29.46)
Total Expenses	-190.42 (228.79)
Public Safety	-84.62** (37.55)
Parks & Rec	2.64 (7.17)
Public Works	8.32 (20.16)
Sanitation	-26.32 (38.30)
Libraries	-6.45*** (1.68)
Capital Outlay	-52.63 (42.66)
Total Crime Clearance Rate	0.05 (0.03)
Violent Crime Clearance Rate	0.08 (0.05)
Property Crime Clearance Rate	0.02 (0.02)
Year Fixed Effects	Yes
Municipal Fixed Effects	Yes
Clustered & Robust Std. Errors	Yes
Controls	Yes

Note: *p<0.1; **p<0.05; ***p<0.01

Table A.5: Robustness Test for the Effect of Filing for Bankruptcy,
Excludes Detroit and Matches

<i>Outcome Variable</i>	
General Fund Expenses	-81.06*** (23.76)
Total Expenses	-496.43 (323.84)
Public Safety	-75.92*** (24.08)
Parks & Rec	122.07 (101.07)
Public Works	12.68 (28.86)
Sanitation	-71.40 (48.67)
Libraries	-7.04*** (1.34)
Capital Outlay	-50.34 (44.15)
Total Crime Clearance Rate	0.09** (0.04)
Violent Crime Clearance Rate	0.14* (0.07)
Property Crime Clearance Rate	0.04 (0.03)
Year Fixed Effects	Yes
Municipal Fixed Effects	Yes
Clustered & Robust Std. Errors	Yes
Controls	Yes

Note: *p<0.1; **p<0.05; ***p<0.01