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FROM THE PUBLISHER

With this fifth volume of the *Illinois Municipal Policy Journal*, we welcome a new partnership with the University of Illinois Springfield (UIS). The editorial team assembled by UIS has collected and reviewed an impressive combination of academic research topics, all of which will be of interest to local officials and public policy practitioners across Illinois and the nation. We appreciate the efforts that have been put forth to create this publication and we offer our gratitude for the scholars and staff at UIS who took on the task of continuing – and enhancing – an already successful project.

This volume also marks an anniversary and, as with any occasion, we should take time to recognize it. This fifth volume marks an accomplishment that goes beyond five bound copies of research papers. It also symbolizes the importance of studying municipal policy for two connected, but often divergent, purposes. The first purpose is that of policy makers and politicians who have the honor, and sometimes burden, of providing for the public health, safety and welfare of their constituents. The second purpose is that of academicians in higher education who have the honor, and sometimes burden, of training and developing those associated with the first purpose. Combined, the purposes seek the same end result: engaged individuals, strengthened communities and responsive local governments.

Some of the issues discussed in the articles contained in this volume have been on our minds for years. They will likely remain there for years to come, too. The progress made in each subsequent analysis of those issues is what makes this journal special. This journal doesn't just highlight an issue and express an opinion, it lives to build upon previous work and develops enlightened dialogue when necessary, aimed at advancing the discussion toward addressing problems and presenting possible solutions. That is certainly the case for the topic of public pension funding and the closely-tied need for substantial public pension reform in Illinois. But it is also the case for how policies impact our environment, economic development, public budgeting and so forth.

The Illinois Municipal League remains committed to publishing the *Illinois Municipal Policy Journal* and we take great pride in releasing this fifth volume. With its publication, we recognize the work of UIS staff, the authors and collaborators, our staff and so many others who helped produce the actual document for you, its readers. The traditional gift for a fifth anniversary is

wood, symbolizing the durability of a relationship. While we may forego giving ourselves a gift, the durability of our combined efforts are none-the-less worth noting and celebrating.

Thank you.

BRAD COLE
PUBLISHER

FROM THE EDITORS

Welcome to the first issue of the *Illinois Municipal Policy Journal* edited by our team at the University of Illinois Springfield. We are pleased that you are taking the time to read the research contained in this issue. We feel that it addresses some of the major issues facing the state and local governments in Illinois.

When we started the process of recruiting articles for the *Illinois Municipal Policy Journal*, we sought input from various stakeholders. We consistently heard that fiscal issues including pensions, changing demographics, new laws involving cannabis legalization and environmental issues were among the top issues facing the state. This is where we focused our efforts. The lead article in this issue concerns the fiscal effects of changing demographic patterns in Illinois. Norman Walzer and Andy Blanke from Northern Illinois University examine the “one-two punch” of declining population and increasing shares of elderly population on the fiscal situation in rural municipalities. They find that these communities will face increasing pressure on their finances and may be forced to raise property tax rates, which will likely be an unpopular decision. The next paper, by Arwi Srithongrung-Kriz of UIS, examines how communities in Florida have increased their economic outcomes through making their budgetary decisions in line with the recommendations from efficiency analyses. As Walzer and Blanke suggest in their paper, modernizing service delivery to maximize efficiency should be a focus for communities, and Srithongrung-Kriz demonstrates one pathway toward that effort. The third paper in this group examining changing fiscal patterns, also by Blanke and Walzer, analyzes changes in expenditure patterns of Illinois municipalities. They find that downstate municipalities had less growth in expenditures after the 2008-09 financial crisis and recession, and that municipalities made cuts in several discretionary spending categories. The final paper in the fiscal policy group, by Yonghong Wu of the University of Illinois Chicago (UIC), charts the impact of the federal tax change in the 2017 Tax Cuts and Jobs Act to restrict the exemption for state and local taxes paid (SALT). Wu finds that several communities, particularly in northeastern Illinois, will be disproportionately impacted.

We then move to papers that discuss important policy innovations in the state. Jared Lewis, who graduated recently from the Master of Public Policy program at the University of Chicago, discusses social equity impacts of the recently passed Cannabis Regulation and Tax Act. He finds several elements of the Act

will impact social equity throughout the state, especially those items that establish data collection and monitoring mechanisms to remedy the harms resulting from the disproportionate enforcement of cannabis-related laws and that earmark revenue from cannabis sales to address communities impacted by the war on drugs. The second paper, by Megan Styles and Junfeng Wang of UIS, discusses recent local government efforts to address plastic bags and their effects on the environment. Interviewing community leaders and officials in five communities that passed ordinances dealing with plastic bags, they find that initiatives to remediate the harm caused by plastic bags tends to be a bottom-up diffusion of policy, driven by media reports about environmental impacts. However, there was some evidence of an emerging consensus among the interviewees regarding provisions that should be included in plastic bag policies.

The final two papers deal with the ever-present threat of public pension fund problems. The first paper, by Beverly Bunch and Patricia Byrnes of UIS and Glenn Cassidy of the University at Albany, seeks to illuminate the financial situation of downstate public safety pension funds and the efforts taken by officials in communities to address challenges posed by the situation. Interviewees in communities discuss the impact of pension funding challenges on finances and operations, such as the need to create funding sources for pension contributions other than property taxes or to make cuts in other expenditures to make increasingly large contributions. The final paper, written by Amanda Kass from UIC, establishes metrics for determining the solvency of pensions. She calculates risk metrics for downstate pension plans and finds that a small number of them have significant risk of depleting their assets to the point of insolvency, with a larger number showing some risk of future funding difficulties.

We close this issue with a review of a book on municipal government written by former Chicago Mayor Rahm Emanuel. The review is written by Robert Smith of UIS. Smith points out that the book makes a strong case for local governments that are truly the laboratories of democracy, with strong policy focuses and lean, efficient management. However, he finds that the book glosses over some of the problems plaguing local government.

We hope you enjoy reading the research in this issue and that it informs your policy development.

KENNETH A. KRIZ
BEVERLY BUNCH
ARWI SRITHONGRUNG-KRIZ

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FISCAL IMPLICATIONS OF POPULATION DECLINES AND DEMOGRAPHIC CHANGES IN SMALL RURAL MUNICIPALITIES

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Demographic trends suggest continued population declines and increases in the elderly population of small rural communities during the next decade and beyond. These changes could have significant implications for communities facing a need to provide the types of services needed to not only retain current residents but also to attract others. These changes in service delivery are occurring even while property tax bases are eroding, and tax rates are increasing. This article examines the evidence suggesting demographic trends and models the determinants of effective property tax rates in smaller Illinois municipalities. Factors associated with higher effective property tax rates include the decline of the property tax base, lower reliance on intergovernmental aid and charges and fees, less retail trade area captured, more services provided, and proximity to metro areas. The analysis also includes a discussion of innovative local economic development strategies in small municipalities to combat pending population declines.

INTRODUCTION

Pending demographic trends during the next decade and beyond will have important impacts on how local governments finance the services they provide. Expected population declines along with growth in elderly populations may mean that rural counties and small communities will have to provide a different combination of services, possibly with fewer revenues. Older residents may need more health-related services or accommodations in infrastructure facilities and may want more cultural and leisure activities to continue living in these places. Some, but not all, of these services will be provided by municipalities.

On the revenue side, aging residents will likely live in smaller houses or in group quarters, some of which will be publicly subsidized. Others may qualify for Senior Citizen Homestead Exemptions that reduce the aggregate property

tax base. Residents with lower incomes may spend less, which can reduce local sales tax revenues and possibly affect current user fees.¹

In addition, older residents typically need more health and social services provided by local governments. These services will be necessary to maintain a high quality of life and make the communities attractive places to live. Given the expected growth in numbers, elderly residents could be an important target group for smaller communities to retain or attract. However, success in this strategy will mean that residents have access to health services and/or transportation facilities.

Fortunately, some of these services are provided by either other units of government, such as a county or special district, or by private agencies. Advances in telehealth and telemedicine are bringing these services to remote areas with access to high-speed Internet. Recent expansions in Internet supported by the State of Illinois will also allow residents to work remotely, which will make rural areas in Illinois more attractive for future residents. Nevertheless, necessary changes to meet the needs of elderly and other residents are unique to each community and must be seriously considered in designing a population recruitment strategy.

The combination of these factors (declining revenues and increasing service demands) will likely put pressure on local public officials in balancing budgets, in some cases requiring higher property tax rates. This article examines fiscal implications of the demographic and fiscal trends along with strategies that state and local governments might use to address these issues. The first section describes population trends overall and by age cohort in rural Illinois counties. Attention then turns to local property taxes and factors associated with effective property tax rates. Third, we briefly discuss how the 2020 COVID-19 downturn may affect small town finances. The article concludes with examples of revitalization efforts in several small communities in Illinois.

POPULATION TRENDS

Maintaining a desired level of population growth is essential for funding public services. The tax base is directly related to population. Further, several population cohorts are especially important, namely the youth, working age, and elderly populations. The ratio of these populations (sometimes called the “dependency ratio”) is strongly related to economic and fiscal health.

The data show that for Illinois, this picture is not good (Table 1) both in terms of overall population and for the important cohorts. Significant population declines are forecast for many small rural counties and, while they do not necessarily apply to all municipalities, reliable projections for all minor civil divisions are not readily available, so these projections are used as a proxy in later analyses. In 2019, projections indicated that 87 of 102 counties will lose population between 2019 and 2029 (Economic Modeling Specialists, Inc., 2019). Of the 15 counties with projected gains, all but two — Moultrie County and Effingham County — are in metropolitan areas.

TABLE 1

PROJECTED POPULATION CHANGE BY AGE GROUP, 2019-2029*

COUNTY SIZE	TOTAL POPULATION	UNDER 25	AGES 25-44	AGES 45-64	AGES 65+
Illinois	-0.8%	-4.3%	-2.7%	-9.1%	22.4%
Non metro counties by population size in 2019					
Under 10,000	-3.8%	-6.5%	-7.4%	-13.2%	15.1%
10,000 - 24,999	-3.0%	-2.9%	-6.5%	-13.0%	13.3%
25,000 - 49,999	-3.1%	-4.3%	-6.1%	-13.2%	15.2%
50,000+	-2.4%	-3.6%	-4.6%	-14.4%	18.5%
Metropolitan counties	-0.6%	-4.4%	-2.3%	-8.5%	23.6%

Source: Economic Modeling Specialists, Inc., 2019.

*Projections do not reflect the impacts of the COVID-19 pandemic.

Out-migration is driving part of these trends. According to the U.S. Census Bureau, 98 of 102 counties in Illinois lost population from net out-migration between 2010 and 2019. Only three counties had a net inflow of residents — Kendall, Monroe, and Williamson — with the inflow attributable almost entirely to in-migration.

While rural counties (those not in a metropolitan statistical area as defined by the U.S. Office of Management and Budget), on average, will decline between 2.4% to 3.8% depending on population size. Elderly population cohorts will increase 15.1% in counties smaller than 10,000 and 13.3% in those between 10,001 and 25,999. Metro counties will have the largest growth in elderly people

(23.6%), but it will be in large centers, possibly reflecting out-migration from surrounding rural areas for more suitable housing or health services.

SOURCES OF REVENUES

Population trends can have profound effects on the composition and growth of revenues for local governments. In this section, we analyze the trends in tax bases and revenue growth and the structure of revenues in small Illinois municipalities.

TRENDS

Tax bases in small municipalities decreased in the post-recession period due partly to a sluggish economy over several years (Table 2). The average equalized assessed valuation (EAV) in these municipalities was \$30,940,127 in 2009 at the lowest point of the Great Recession (National Bureau of Economic Research, 2020). Ten years later, the average was \$30,823,192 (0.4% decrease) while inflation, as measured by the Illinois Municipal Price Index (MPI) increased 25.9% (Walzer and Blanke, 2020b). Declines in the property tax base may have pressured local officials to raise tax rates if they had unused taxing capacity or possibly to draw down uncommitted financial reserves. (Sohl, Blanke, and Walzer, 2016).

A sample of 708 Illinois municipalities with populations less than 10,000 is used to explore factors affecting effective property tax rates in small municipalities. The sample includes all municipalities in this size range with audited annual financial information in the Illinois Office of the Comptroller financial databases for Fiscal Year (FY) 2009, FY 2015, and FY 2019. The Census of population estimated 1,078 municipalities with fewer than 10,000 residents in 2018, so the current sample represents 65.7% of municipalities in this size group.

A comparison of changes in effective property tax rates (property tax payments relative to house value) in sample municipalities shows that these rates increased by an average of 18 cents per \$100 of EAV between 2010 and 2018 (a change of 9.94%). Estimated total population remained stable — increasing less than 1% — but both home values and total EAV declined on a per resident basis. This stagnation of population and the property tax base occurred in a time of rising costs for public services (as indicated by changes in MPI).

TABLE 2**REVENUE AND TAX BASE TRENDS IN 1,078 MUNICIPALITIES BELOW 10,000 POPULATION**

	2009/2010	2018/2019	% CHANGE (CURRENT)	% CHANGE (CONSTANT)
Illinois Municipal Price Index (2010 = 100)	98.5	123.9	25.83%	
Average population in sample (2010-2018)	1,870	1,883	0.7%	
Total EAV (2009-2018)*	\$30,940,127	\$30,823,192	-0.4%	-16.8%
Median home value (2010-2018)	\$100,663	\$99,173	-1.5%	-17.7%
EAV per resident (2009-2018)*	\$16,546	\$16,369	-1.1%	-18.6%
Property tax per resident (2009-2019)*	\$183	\$249	36.0%	8.0%
State revenue per resident (2009-2019)*	\$133	\$145	9.0%	-13.2%
Federal revenue per resident (2009-2019)*	\$14	\$20	42.9%	10.2%
Service charges per resident (2009-2019)*	\$435	\$554	27.4%	1.2%
Charges from enterprise funds (component of service charges)*	\$390	\$510	30.8%	3.9%
Effective property tax rate (\$ per \$100 home value, 2010-2018)	\$1.81	\$1.99	\$9.94%	
Sales tax per resident (2009-2019)*	\$149	\$191	28.19%	1.5%

*For a sample of 708 municipalities with continuous Comptroller data.

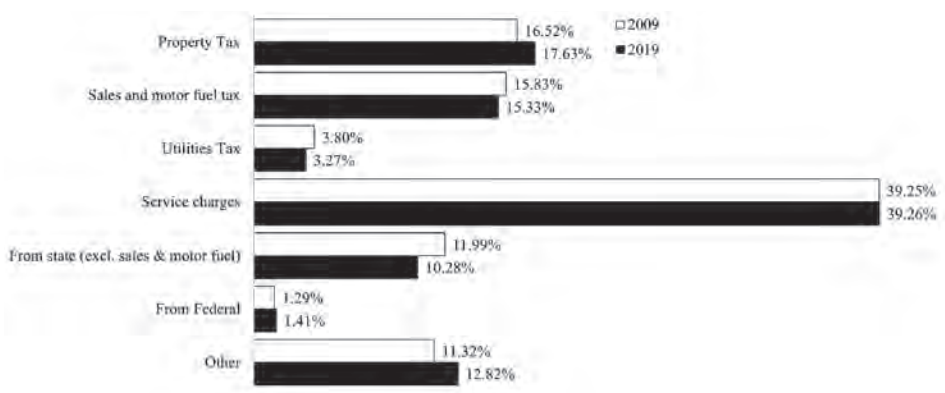
Source: Illinois Municipal League and Center for Governmental Studies at Northern Illinois University, Illinois Municipal Price Index, 2019; U.S. Census Bureau, 2006-2010 and 2014-2018 American Community Survey 5-Year Estimates; Illinois Office of the Comptroller, FY 2009 and FY 2019 financial databases.

State aid to municipalities increased from \$133 per resident to \$145 in current dollars between 2010 and 2018, but the purchasing power declined 13.2% after removing inflation effects. As state aid eroded in constant dollars, small municipalities relied more heavily on property taxes, sales taxes, and user charges, which increased on a per resident basis, even in constant dollars. Property taxes per capita increased 8% in real terms, sales taxes by 1.5%, and user charges in funds other than enterprise funds by 1.2%.

STRUCTURE

In FY 2019, the average municipality collected 39.3% of its revenue from fees and enterprise fund charges, the largest source of revenue. Nearly all these charges came from enterprise funds for services such as water supply and sanitation (92.1% of total fees and charges in FY 2019). Property taxes constituted the second greatest source of total revenue (17.6%) with sales and motor fuel taxes representing 15.3%. Amounts collected depend mainly on local sales, with an additional local tax imposed under special conditions. The revenue structure of these municipalities has changed relatively little during the past 10 years, with most revenue sources shifting by half a percentage point or less. However, municipalities became slightly less reliant on state aid and somewhat more reliant on property taxes.

FIGURE 1
SOURCES OF REVENUES FOR MUNICIPALITIES BELOW 10,000 RESIDENTS,
2009 AND 2019*



Source: Illinois Office of the Comptroller, FY 2009 and FY 2019 financial databases.
*Excludes municipalities without audited financial information in both the FY 2009 and FY 2019 editions of the comptroller database. There were 708 municipalities with data for both years.

Demographic changes can greatly affect the structure and trends noted above. Working-age populations represent major sources of revenues for local retail activities. The Baby Boom population cohort has reached retirement age and will reduce their participation in the labor market. In addition, more youth in rural areas pursuing higher education have led to a job mismatch where local

employment opportunities are not attractive enough to entice young graduates to return to their hometowns.

Employers regularly report difficulties finding employees with up-to-date skills in rural areas, and projected declines in working-age populations will aggravate this concern, possibly causing further disinvestment in these areas. These trends may make some small rural communities shift from a local employment base to a home base for commuters to regional employment centers. If so, commuters will likely spend more money in the centers where they work, further aggravating declines in sales taxes in small towns.

FACTORS DETERMINING EFFECTIVE PROPERTY TAX RATES

Setting property tax rates is one of the most important decisions that local governments make, both in political and economic senses. Illinois is widely known for having some of the highest effective property tax rates among states (Cammenga, 2020). Further increases in property taxes combined with potential declines or slower growth in house values will disadvantage smaller communities in attracting and retaining both businesses and residents. Understanding recent trends and factors associated with the property tax rate can help in understanding the need for policy adjustments.

The data for this analysis is from several publicly available sources for the period since 2015. Although longer-term trends since 2010 were described earlier to provide a broader perspective, this analysis more closely focuses on recent trends. Effective property tax rates (EPTTR) will be the dependent variable for this analysis. They are more useful in comparing local taxes than property tax levies per resident, which do not adjust for differences in home value (Cammenga, 2020). This variable was calculated from data contained in the American Community Survey published by the U.S. Census Bureau.

INDEPENDENT VARIABLES

Levels of local taxes are determined by economic conditions, demands for public services, availability of revenue sources including service charges and intergovernmental aid, and other factors (known as the causal or “independent” variables).

One of the variables of most interest is the percentage of population over age 65. This variable will give us a sense about how property tax rates must change

to provide essential public services in the face of the profound demographic change identified earlier.

EPTRs are affected immediately by changes in property tax bases, namely EAV. To maintain even constant levels of services, nominal tax rates must increase when assessed valuation decreases. Rural areas have seen relatively slow growth or sometimes declines in per capita assessed valuations (constant dollars) since the 2009 recession. In the sample municipalities with populations below 10,000, EAV per resident declined 1.1%. Likewise, the median home value for municipalities in this size range declined 1.5% between 2010 and 2019. Past studies have shown that areas with higher home values typically have lower effective tax rates (Siniavskaia, 2016).

Availability of federal and/or state aid offsets a need to raise local revenues in financing services. The high effective property tax rates in Illinois partly reflect relatively low state government support (31st from top) for public education, which places more burden on local property taxes, although not necessarily on municipalities. (U.S. Census Bureau, 2018a). That ranking has been consistent during the post-recession period. Sample municipalities (i.e., the 708 municipalities below 10,000 residents with revenue information in the Comptroller database for all years examined) obtained 10.3% of their revenues from state income tax and project funds and 1.4% from the federal government.

However, in 2011, the share of state income tax distributed to municipalities decreased from 10% to 6% with a temporary state income tax increase. In 2017, the percentage dropped to 5.45% of individual income tax collections and 6.16% of corporate income tax collections. In FY 2021, the local share of individual income taxes is 6.06% and 6.845% for corporate income tax collections. (Illinois Municipal League, 2020). In a study of fiscal responses to the Great Recession, cuts in state aid were directly linked to increases in local property taxes (Dye and Reschovsky, 2008). Thus, declines in this key funding source shifted more of the burden to local property taxes.

Service charges are also included as a control variable given their importance as a revenue source in small municipalities. According to a 2018 survey, 74.1% of municipalities increased water and sewer rates since 2015 while 37.6% raised property tax rates (Walzer and Blanke, 2018b). In some cases, increasing charges and fees may be an alternative to raising property tax rates. Even though property taxes and service charges are not directly interchangeable due to the nature of enterprise funds, increasing user fees is, nevertheless, a

prevalent strategy in local governments nearing their property tax rate limits (Zhang and Hou, 2019).

Economic conditions can also impact local tax rates. A trade-area-capture index comparing local sales to statewide sales per capita is used to adjust for differences in local economic conditions (Deller, 2019). Municipalities that retain more purchases locally can possibly rely less on property taxes. Relying more on sales tax can provide property tax relief for municipalities, although it also makes revenues more vulnerable to economic downturns (Afonso, 2013).

The institutional structure of governments plays an important role in determining service provision and tax rates. Home rule frees municipal governments from many statutory restrictions on revenue-raising powers, including those on tax rates that can be used with local funds faced by non-home rule municipalities. In times of growing fiscal pressures resulting from declines in tax bases or rising costs, local officials can raise the tax rates on each fund beyond the statutory limits, and these higher rates could translate into higher EPTRs. In recent years, some business leaders have expressed concerns about home rule municipalities raising property taxes in a state that already has high tax rates compared to other states.² However, historically, property tax rates in Illinois municipalities with home rule increased at roughly the same rate as those without home rule (Banovetz, 2002). Home rule status is included in the current analysis to study the effects of this still-contested aspect of municipal finances.

The scope of services provided by municipal governments is an important determinant of property tax collections and is measured by 2017 staffing patterns — full-time and part-time employment for 25 services reported in the U.S. Census Bureau's Annual Survey of Public Employment and Payroll. An index of services was calculated where one point per service area means at least one full-time or part-time employee. Municipalities with a broader scope of services are expected to have a higher EPTR. Past studies suggest that areas requiring more public services typically need higher property tax rates to fund those services (Siniavskaia, 2016; Emrath, 2002).

Proximity to a metro area can affect EPTR in several ways, including higher local wealth, more traffic, and higher wages for municipal employees. A state-level study found that states with more housing in urban areas had lower effective property tax rates, which was attributed to economies of scale in providing services in more densely populated areas (Gravelle, 2000). To adjust

for this effect, municipalities were assigned a value of two if located in a metro county, one if adjacent to a metro area, or zero if rural. Likewise, countywide employment was included to adjust for possible losses in manufacturing employment in the post-recession period, which could increase EPTRs. Property tax levies are often linked with local wage levels (Albouy and Hanson, 2014), but high-paying manufacturing jobs declined during the Great Recession while the need to fund municipal services remained.

RESULTS

We analyzed the data using an ordinary least squares regression analysis of the EPTR on the independent variables. The regression results (Table 3) provide several insights into factors affecting effective property tax rates in small municipalities. Significant positive relationships indicate factors associated with higher tax rates. Controlling for other variables shows a statistically significant negative relationship between the elderly population and effective property tax rates. The implications of this are not completely clear given that municipalities with large numbers of elderly residents may need more specialized services. However, these services may be provided in larger neighboring centers or by other public agencies serving the area. Also, many residents over age 65 may still be employed or be early in their retirement years — and therefore have a strong positive economic impact — and so do not yet need additional specialized services. Without controlling for other factors, municipalities with more residents over age 65 also captured more of the retail trade area (correlation coefficient of 0.074, significant at a 5% confidence interval).

The variable most strongly associated with lower 2018 EPTR is a reliance on service charges in 2015. Municipalities selling more services may have avoided property tax increases by raising user charges instead (Walzer and Blanke, 2018b). Other factors associated with lower effective tax rates include a share of revenue from state and federal sources, property tax base growth, strong sales tax base, and a more elderly population.³

In terms of institutional or structural variables, municipalities closer to metropolitan areas have higher property tax rates. They most likely need to offer a broader range of services and may pay higher wages to offset higher housing prices. Those in counties with a high concentration of manufacturing employment, a proxy measure for vulnerability to the 2009 recession, also had higher effective tax rates. Apparently, the costs for services outweigh other advantages such as additional user fees. Home rule status does not significantly

TABLE 3

RESULTS FROM ORDINARY LEAST SQUARES (OLS) REGRESSION; DEPENDENT VARIABLE IS EFFECTIVE RESIDENTIAL PROPERTY TAX RATE

VARIABLE	SOURCE	STANDARDIZED COEFFICIENT AND RELATIONSHIP TO PROPERTY TAX RATE
Proximity to metropolitan areas	U.S. Department of Agriculture, Economic Research Service, Rural Urban Continuum Codes, 2013	0.20 Significant positive (t = 5.63**)
Scope of services	U.S. Census Bureau, Annual Survey of Public Employment and Payroll, 2017	0.11 Significant positive (t = 3.41**)
Manufacturing employment	U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, 2015	0.07 Significant positive (t = 2.06*)
Home rule status	Illinois Office of the Comptroller, FY 2015 financial database	0.06 Not significant (t = 1.84)
Government structure index	Calculated from counts of local governments by type at a county level, 2017 Census of Governments	-0.06 Not significant (t = -1.77)
Change in EAV, 2009-2015	Illinois Office of the Comptroller, FY 2009 and FY 2015 financial databases	-0.10 Significant negative (t = -3.30**)
Retail trade area captured	Calculated based on sales tax revenue from Illinois Office of the Comptroller and median household income from the American Community Survey	-0.14 Significant negative (t = -4.31**)
Population over age 65	U.S. Census Bureau, American Community Survey five-year estimates, 2011-2015	-0.15 Significant negative (t = -4.54**)
Reliance on state and federal aid	Illinois Office of the Comptroller, FY 2015 financial database	-0.26 Significant negative (t = -7.10**)
Reliance on service charges	Illinois Office of the Comptroller, FY 2015 financial database	-0.34 Significant negative (t = -9.24**)

Observations: 708 Illinois municipalities. Adj. R Squared = 0.314, F = 33.369**. Durbin Watson coefficient = 1.92, within the normal range. All variables have VIFs below 1.5, indicating that collinearity is not a concern.

affect effective property tax rates, indicating that municipalities did not necessarily take advantage of fewer property tax restrictions.

The strong relationship between service charges and property tax rates is especially important because shifting to user charges could have a regressive impact on taxpayers. Past declines in EAV are associated with higher effective property tax rates. Thus, if future population declines continue and user charges become more important, the burden could fall more heavily on lower-income populations. This situation could increase in the future with growth in elderly populations.

POSSIBLE IMPACTS OF THE COVID-19 PANDEMIC

Fiscal trends may have changed since the start of 2020 due to the COVID-19 pandemic and associated mitigation measures. It is too early to tell the full impact of the pandemic on local finances. Since many residents in small towns work in surrounding larger centers, employment changes in these places will directly affect financing practices. As of this writing, several analyses of potential impacts are available regarding the early stages of the pandemic, recognizing the uncertainty caused by issues like the length and severity of the pandemic and the rate at which the economy will recover.

The Federal Reserve Bank of Chicago published the results of a survey of business conditions in April and May 2020 with responses from chamber of commerce members in the bank's seventh district (Lavelle and Walstrum, 2020). The 318 responses from Illinois (47% of those surveyed) are spread among business sectors that include entertainment, tourism and recreation, manufacturing, restaurants, real estate, and agriculture. The findings provide preliminary insights into businesses' perceptions about the potential impact of the economic downturn. For example, 53% of rural respondents (compared with 47% in metro areas) reported a large decrease in output. Likewise, 68% of rural respondents (55% in metro areas) reported large decreases in revenues, and 72% of rural respondents (56% in metro areas) reported a large decrease in profits. These preliminary numbers suggest that rural businesses may have been more adversely affected than metro businesses.

Stay-at-home orders directly affected consumer-based enterprises, including restaurants, entertainment and tourism, and retail. These business sectors are prominent in many small towns in rural areas and are important in the local economies, especially sales tax receipts. For example, in 2019,

eating and drinking places represented 16.9% of the sales taxes collected by municipalities.⁴ Likewise, gas stations represented 18.4% of municipal sales tax and motor fuel tax revenue, but travel declined significantly during the stay-at-home orders because of event cancellations and more employees working remotely. These businesses were most directly affected by furloughs or terminations in manufacturing businesses in regional centers, seriously affecting the surrounding small towns. The length of the recovery will be especially important to businesses in small municipalities.

INNOVATIVE APPROACHES

Given expected demographic shifts and possible fiscal impacts from the COVID-19 pandemic, a logical question is what small communities can do to sustain or revitalize their local economies in times of financial stress. With increases in the elderly population, more longtime business owners will retire, sometimes with difficulties finding investors to take over the business even when it is profitable. Several communities are trying new approaches.

MAINTAINING OR REBUILDING THE LOCAL ECONOMY

This will be challenging in small communities as Internet purchases with faster delivery methods continue to erode brick-and-mortar businesses. Smaller market sizes threaten the ability of current businesses to survive, let alone prosper. Attempts to encourage more local shopping will be needed.

LaSalle, Illinois (population 6,094 in 2018) is using an innovative buy-local effort with a “Locally LaSalle” citywide shopping card. The intent is that residents and participating businesses will purchase the cards to give as gifts or rewards, thereby keeping the shopping local. The cards can be purchased in any amount from various places, including from specific businesses and online. The cards have no expiration date and can be spent with any business participating in the program. The program is low-cost for participating businesses and offers yet another option for people to give a gift or reward, while supporting local retail and service activities. This program or similar efforts could be explored by other small towns for possible consideration.

In Toulon, Illinois (population 1,153 in 2020), population declines and competition from larger stores in surrounding areas led to the closure of the downtown grocery store. Operating as a Community Supported Enterprise (CSE), residents formed a limited liability corporation, pooled

their investment money, purchased the building, and — with Tax Increment Financing (TIF) monies and a commercial loan — rehabbed it. After working with several managers, a grocery store operator in the neighboring City of Wyoming managed the store until economic conditions closed both stores. The community group then converted the building to office space and rented it to local businesses (Illinois Institute for Rural Affairs, 2019).

Recognizing a continued need for a local grocery store, residents formed a second CSE and started one with a deli in 2019. Financing arrangements included selling shares at \$500, plus using funds from a TIF and a U.S. Small Business Administration subsidized loan from a local financial institution. The venture contributed to the community in several ways: it provided access to basic grocery items, plus it rehabilitated a section of the community, enhancing its viability for future development. Providing additional services are under consideration to expand the local market.

Winchester, Illinois (population 1,593 in 2010) and Mount Pulaski (population 1,481 in 2018) also faced losses of grocery stores. In both cases, working with the Illinois Cooperative Development Center managed by the Illinois Institute for Rural Affairs, they rehabbed stores that offer basic groceries plus fresh produce and other local items. These efforts involved finding niche markets like fresh produce and local meats that are not offered by chain stores. Likewise, residents played an active role in the transition process and daily operations, which strengthens the local commitment to the success of the operation. Both are successful examples of communities adjusting to expected demographic trends. They engage residents and others to invest money and time in sustainable local establishments to revitalize the community, provide social capital, and make it a more attractive place to live.

TRANSITIONING BUSINESSES TO NEW OWNERS

Finding ways to help retiring business owners sell their businesses is a growing challenge in small towns. The Redefine Your Retirement (RedTire) program at the University of Kansas successfully transitions businesses to the next generation using an electronic matchmaking system between owners interested in retiring and people who are willing to invest in a local business. Owners can provide summary information about operations and financials on a website, and interested investors apply to the program to obtain the businesses' information. Since 2012, the program has succeeded in transitioning a variety of businesses, such as meat packing, dental services, pharmacies, and publishing houses, to

new owners (University of Kansas School of Business, 2020). This type of effort retains local businesses and jobs as well as provides access to basic, necessary services.

MODERNIZING FRAMEWORKS FOR DELIVERING PUBLIC SERVICES

Continued population declines will make some communities too small to efficiently provide specific essential public services, especially those with high fixed capital costs. School districts in rural areas already have consolidated to reduce administration costs while maintaining competitive programs. Continued demographic trends will provide more pressure for local governments to collaborate in service delivery, both for higher quality of service and less reliance on property taxes.

Small rural towns have several options to maintain local services when their population is too small to provide the service locally at a reasonable cost to residents. They can collaborate with county governments (e.g., contracting with the county sheriff's office for routine patrols). This arrangement occurs in some places and perhaps can be expanded. In other cases, the county government may not be well-positioned to provide additional services, which may require creating a special district or other intergovernmental service agreements. These communities can also evaluate opportunities to coordinate with other governments through intergovernmental agreements or mergers to possibly deliver services at reduced costs (see Walzer and Blanke, 2018a).

CONCLUSIONS

Our analysis offers several insights:

- EAVs decreased slightly (0.4%) in the post-recession period compared with an estimated increase of less than 1% in population. At the same time, the MPI estimates that costs of goods and services purchased by local governments increased by 25.9%.
- Reliance on property taxes increased while reliance on sales taxes and motor fuel taxes declined slightly in relative importance.
- Average property taxes per resident increased 36% even while EAV decreased 1.5% during this period. This suggests a substantial increase in property tax bases.

- Factors associated with higher effective property tax rates included loss of EAV, less reliance on intergovernmental aid, less reliance on charges and fees, less retail area captured, more services provided, and proximity to metro areas. The percentage of elderly residents was associated with lower tax rates. Home rule authority was not significantly related to tax rates when other factors were considered.
- Addressing the effects of both the long-term demographic trends and the economic downturn will require innovative local strategies that encourage buying local and ways to transition businesses to new owners as current owners retire.

Looking forward to the next few years during the recovery, changes in these variables may affect effective tax rates in comparable ways.

Expected demographic trends have clear implications for small towns, especially in rural areas. The full impact of these trends, if they continue, is far from certain, but strategies to deal with them are currently needed. In the past, there was a definite correlation between tax rates and revenue from user charges. As pressures on property taxes continue to mount and user charges and fees increase, the burden for financing services may become more regressive unless strategies for relieving pressure on the property tax can be realized. This paper suggests several possible ways to do this.

Finally, no one yet knows the full impact of the COVID-19 pandemic. What is clear already is that there will be substantial changes in economic activity. Innovations are being initiated in telehealth, distance learning, and Internet buying. Comparable approaches may arise that will modernize the delivery of other services, as well. There has been discussion in the news media that residents in metro areas will consider relocating to more rural environments, especially as they consider retirement opportunities (Tate, 2020). It is too early to speculate about these possibilities, but they should be explored and tested further as ways for smaller municipalities to deal with long-term demographic trends.

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ENDNOTES

¹ Property is assessed every four years, so there can be a lag between changes in economic conditions and evaluation for property taxes.

² <https://www.bettergov.org/news/cash-scramble-illinois-towns-eye-home-rule/>

³ Several caveats to the analysis are needed. A Breusch-Pagan test suggests that the dataset is heteroskedastic (i.e., effective property tax rates do not vary consistently in relation to the variables examined). Also, the model does not control for spatial relationships that might occur within the data (e.g., specific parts of the state might have consistently higher or lower effective tax rates relative to the control variables).

⁴ Illinois Department of Revenue, Sales Tax Statistics, 2019.

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EFFICIENCY-BASED BUDGET (EBB) ALLOCATION: MUNICIPAL GOVERNMENTS' EXPERIENCE

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This study develops and proposes a model for budget decision-making based on program service function efficiency and suggests that such efficiency-based budgeting yields tangible benefits in terms of personal income growth. The performance-based budget concept used in this study is based on Reinventing Government principles that advocate governments finance their public service programs according to the program service demands, efficiency, and effectiveness. The study samples include 14 Florida cities' budget priorities and service performance results during the period of 2008-2016. The empirical results indicate positive impacts of a performance-based budget on local personal income growth. Implications and recommendations are discussed.

INTRODUCTION

In the wake of the 2020 pandemic, national unemployment rates have been rising (U.S. Bureau of Labor Statistics, 2020), and state and local governments are seeing revenue shortfalls (McNichol and Leachman, 2020). This has created tremendous uncertainty for the fiscal position of those governments. In such an atmosphere, long-term financial planning may not be practical given forecasting difficulties. Subnational governments are at once compelled to cut their budgets due to balanced budget requirements and political infeasibility of raising tax rates. Meanwhile, they remain responsible for delivering essential services and encouraging local economic development to expand their property tax base.

This study has two purposes. First, it develops a model for budget decision-making based on program service function efficiency. Second, it suggests that benefits of performance-based budgets can be realized through increasing economic growth, all else equal. Nearly 30 years ago, Osborne and Gaebler (1992) called for reinventing government by utilizing private-sector production concepts to make governments more results-oriented and focused on public program beneficiaries as customers. According to these concepts (Osborne and Gaebler, 1992), in order to “purchase” program services from government

agencies, central budget offices should consider which programs are needed in the following fiscal year, program sizes correspondent with public demand, and whether rightsizing or eliminating duplicative or ineffective programs is needed. Answering these questions helps the governments make the right decision in “buying” effective and efficient programs and create a competitive environment where public agencies use the most efficient production processes through technology usage and innovation in the production process.

In this paper, we introduce the concept of efficiency-based budgeting (EBB). EBB focuses on ranking spending priority by public service functions and creating program budgets responsive to public demand (i.e., effectiveness and efficiency). EBB focuses on both macro-level budgeting processes debated by key budget actors in the executive and legislative branches and micro-level budgeting decisions made by budget analysts, program officers, and legislative officials. The broad concept of EBB is that after functional budget sizes (spending ceilings) are determined at the macro level, budget analysts will further analyze program funding levels. These micro-level decisions will then be mutually determined between budget analysts and the program managers and approved by legislative officers. The ceiling set at the macro level will be an instrument for these tasks:

1. Controlling total budget size.
2. Guiding budget cutbacks at the macro-level through providing functional limits.
3. Forcing budget analysts and program managers to reduce programs' budget sizes based on program demands.

For example, if there is evidence that a service function is more efficient in aligning service demands with budget levels than those of its peers and that service function faces increasing demands in the next year, it will receive a budget increase. If inefficiency is found compared to those of the peers and if service demands are likely to fall in the next year, budgets for programs housed in that service function may be reallocated to other programs in the same service function or other service functions.

CONCEPTUAL FRAMEWORK

As implied by its name, EBB's main instruments to make informed budget

decisions are measurements of program efficiency. The performance measurement literature contains two distinctive approaches to measuring program efficiency. The first is a simple measurement of cost per service output, and the second is a statistical technique called data envelopment analysis (DEA). Cost per service output (Wang, 2006; Mikesell, 2017; Mikesell and Mullins, 2011) is calculated by dividing total budget expenditures by total population. For example, in a city's police patrol service function, total program cost (including personnel, supplies, and capital cost) is divided by population (Wang, 2006). Per capita cost for patrol service is then compared to adjacent or comparable jurisdictions to determine if the city's patrol service program is efficient.

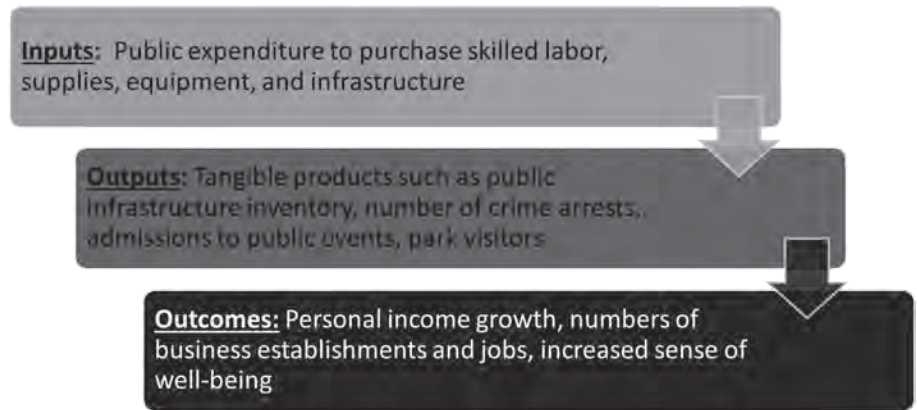
This method is simple but has several shortcomings. First, the per capita budget cost does not communicate why the city's program is inefficient. A city's per capita cost may be higher than those of other cities for several reasons, e.g., different crime rates, different input costs (including both personnel and non-personnel), different mandates, or variations in management quality. Second, the per capita program cost method does not link output with program inputs; it measures operational activity but not necessarily any output accomplishment. The per capita cost ratio cannot connect outcomes with inputs — program output does not appear in the calculation. If we seek to implement *Reinventing Government* principles, governments must demonstrate program impacts; thus, per capita cost is not useful. Finally, the per capita cost ratio method cannot measure efficiency when a public program has multiple outputs. Most programs produce several outputs. For example, schools' program outputs include not only the number of school graduates but also gains in student achievement measured by math and reading test scores.

DEA has been proposed to overcome these shortcomings. It was developed to measure public service program productivity or efficiency (Charnes *et al.*, 1994). DEA is a statistical technique that relates a government's service program inputs with its multiple outputs through assigning weights to the various inputs and outputs according to a jurisdiction's production profile (Pina *et al.*, 2019). Then it statistically derives a computed productivity value for the function being analyzed (Pina *et al.*, 2019). Finally, it identifies the best-performing jurisdictions in each function and calculates a measure of a jurisdiction's performance rate compared to the best performers, called peers (Pina *et al.*, 2019). The method can even incorporate service demand measures and “confounding” environmental variables that might impact relative efficiency

levels (Sherman and Zhu, 2013). Through incorporating input and output efficiency, consisting of multiple inputs and outputs, and through combining other information, DEA improves markedly on the simple but inherently flawed method of calculating per capita cost (Sherman and Zhu, 2013). To date, DEA has been used in over 3,000 peer-reviewed studies to evaluate relative public performance efficiency (Srithongrungs-Kriz, 2019).

Any attempt to measure or improve the efficiency of government units inevitably involves identifying the linkage among program inputs, outputs, and outcomes based on a logical model. Figure 1 presents a broad conceptual framework for the linkage among public service program inputs, outputs, and outcomes. In the language of performance budgeting, municipal service production inputs consist of government spending (operational and capital) used to purchase public official skills and expertise, equipment, land, and public infrastructure. Performance outputs can be measured as tangible products of government activities (e.g., numbers of fires extinguished and investigated, arrests, and public infrastructure inventory levels).

FIGURE 1
THE LINKAGE AMONG INPUTS, OUTPUTS, AND OUTCOMES OF PUBLIC PROGRAMS



These outputs, however, are not the outcomes of public spending. For outcomes, public productivity (outputs) must interact with external factors such as the local economic base, local economic condition, local workforce quality, and geographic location. Outcomes are intangible things like a better economy, greater security, and other things that are not directly visible. However, we can measure them indirectly with measures of economic growth or reported

measures of safety, security, well-being, and other latencies. In this paper, we demonstrate how EBB (determining budget allocations using measures of efficiency measured through data envelopment analysis) is related to socially-desirable economic outcomes.

DEA relates inputs not only to outputs but to measures of demand for public services. Measures of “cost efficiency” are produced but also measures of “scale efficiency” — whether the budget size is too large or too small or just right — compared to the level of demand for a service (on this point, see Daraio and Simar, 2007). This concept, frequently called effectiveness or responsiveness, allows managers and elected officials to see how budget allocations may be made to better provide the types of public services that citizens demand.

ANALYSIS APPROACH AND RESULTS

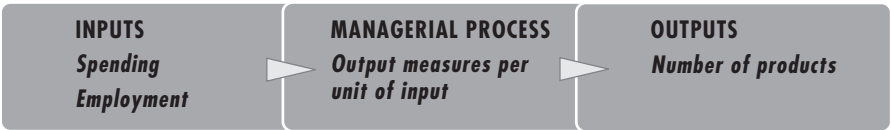
We wish to demonstrate the use of EBB and relate it to economic outcomes. Therefore, we gathered data from the Comprehensive Annual Financial Reports (CAFR) of 14 Florida cities over the period 2008-2016. The total number of observations is 126 (14 cities times nine years). These cities include Boca Raton, Daytona Beach, Deerfield Beach, Deltona, Lakeland, Miami Beach, North Miami Beach, Palm Bay, Pensacola, Plantation, Sunrise, Tamarac, Tampa, and Weston. We collected spending, employment, and output data across five functions, economic variables to measure outcomes, and other variables to “control” for moderating or amplifying influences of the local environment. Table 1 lists the variables we used in our analysis.

We performed three steps to examine the relationships between efficiency-based budget allocations and economic outcomes. First, we calculated spending efficiency values by public service function across all 14 cities over the nine-year period for which we have data. Figure 2 presents the basic idea of measuring spending efficiency through DEA.¹ Inputs in the form of labor and budgetary resources are combined using the managerial process to produce outputs. The better public managers use public budgetary resources, the greater the spending efficiency. We can measure this through looking at relative ratios of outputs per unit of input. The DEA process allows us to simultaneously look at the ratios and calculate an overall efficiency measure by function. As shown in Table 1, efficiency values were calculated for five municipal service functions, including general government, capital management, public safety, recreation, and transportation.

TABLE 1
VARIABLES USED IN THE ANALYSIS³

INPUTS: <ul style="list-style-type: none">• Full-time equivalent employment, by function• Per capita operational and capital spending, by function
OUTPUTS: <ul style="list-style-type: none">• Per capita fee and per capita permit revenue (general government function)• Per capita number of patrol units, fire stations, and miles of local roads, acres of parks (capital management function)• Per capita number of total fire and emergency calls and arrests (public safety function)• Per capita number of park admission tickets and recreation center admission tickets (recreation function)• Per capita miles of roads resurfaced, and roads maintained (transportation function)
OUTCOMES: ECONOMIC VARIABLES <ul style="list-style-type: none">• Personal income (inflation-adjusted)• Business establishments• Employment
ENVIRONMENTAL VARIABLES: <ul style="list-style-type: none">• Total population• Tax revenues (inflation-adjusted)• Intergovernmental revenues (inflation-adjusted)

FIGURE 2
LINKAGE AMONG INPUTS, OUTPUTS, AND MEASURES OF EFFICIENCY



Second, we linked the efficiency measures with the local governments' budget allocations. We did this by ranking the annual government spending efficiency scores by service function, city, and year. Then, we did the same to annual government budget spending by function, city, and year. We then performed a correlation analysis of the two measures. This tells us the extent to which cities are making budget decisions in accordance with the relative efficiency of government spending. Table 2 presents the results of this analysis. Correlation measures range from zero to one. The closer the value is to one, the stronger the relationship.

TABLE 2

RELATIONSHIP BETWEEN CITY EFFICIENCY MEASURES AND BUDGET PRIORITY RANKINGS

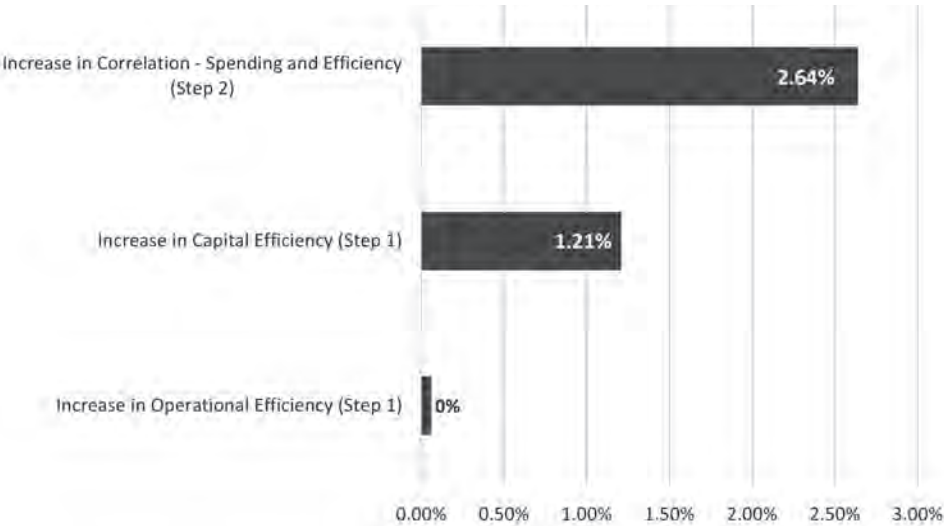
CITY	2008	2009	2010	2011	2012	2013	2014	2015	2016
Boca Raton	0.4	0.2	0.6	0.1	0.6	0.8	0.5	0.6	0.2
Daytona Beach	0.2	0.7	0.6	0.6	0.9	0.9	0.2	0.4	0.5
Deerfield Beach	0.5	0.4	0.3	0.2	0.4	0.6	0.2	0.1	0.3
Deltona	0.6	0.9	0.7	0.7	0.9	0.3	0.1	0.6	0.3
Lakeland	0.1	0.3	0.1	0.0	0.0	0.2	0.3	0.6	0.1
Miami Beach	0.4	0.1	0.6	0.3	1.0	0.1	0.7	0.5	0.1
North Miami Beach	0.7	0.9	0.1	0.1	0.5	0.3	0.2	0.6	0.9
Palm Bay	0.5	0.8	0.8	0.1	0.5	0.6	0.7	0.3	0.0
Pensacola	0.6	0.5	0.2	0.1	0.3	0.3	0.1	0.1	0.6
Plantation	0.4	0.6	0.9	0.5	0.5	0.4	0.7	0.8	0.3
Sunrise	0.1	0.1	0.1	0.3	0.2	0.4	0.0	0.4	0.5
Tamarac	0.1	0.1	0.0	0.0	0.1	0.7	0.5	0.2	0.5
Tampa	0.1	0.6	0.2	0.3	0.8	0.7	1.0	0.7	0.3
Weston	0.8	0.3	0.4	0.1	0.6	0.1	0.3	0.5	0.1

As shown in the table, budget allocation practices are varied widely, both within and across municipalities. For example, North Miami Beach had shown a very strong relationship between efficiency and budget decisions in 2008 and 2009, then the relationship weakened but became stronger again in 2015 and 2016. Overall, the cities of Boca Raton, Daytona Beach, Deltona, Palm

Bay, and Plantation make budget decisions that consistently have the strongest relationships with efficiency measures.

The third step in our analysis is to relate our efficiency measures and outcomes of greater economic growth. To do this, we used a statistical technique called panel data regression. This allows us to search for relationships between measures of efficiency calculated in the first step of our analysis, the correlations from the second step of the analysis, and economic growth, which we measure as the growth in personal income adjusted for inflation. It also allows us to control for environmental variables like increases in population that might affect the relationship.² Figure 3 shows the results for the variables of interest. Full results are presented in Appendix A.2.

FIGURE 3
EFFECT OF EFFICIENCY AND SPENDING VARIABLES ON ECONOMIC GROWTH



The results suggest that for each increase of 0.1 unit in the correlation index, a municipality will experience a 2.64% increase in personal income over a two-year period. This is a strong effect. Increases in the efficiency of capital spending themselves cause a 1.21% increase in economic growth. Increases in the efficiency of operational spending are estimated to have no significant effect on growth (meaning that we cannot infer based on the results that the relationship will hold in the larger population beyond the sample cities).

CONCLUSION AND IMPLEMENTATION

This study introduces the concept of efficiency-based budgeting (EBB), which facilitates cities making budget-allocation decisions based on the relative efficiency of public programs. In applying the EBB concept at the macro level, performance measurement results such as measurements of program efficiency can be used to set budget ceilings on service functions. Then at the micro-level, budget analysts can apply efficiency concepts to prioritize spending on certain programs. Our study suggests that this use of EBB will have tangible benefits in increasing community economic growth.

There are several practical recommendations that come from this analysis. First, during periods of budget reductions, local governments should consider using EBB to establish budget priorities and applying ceilings to public service functions. The ceilings should be determined based on performance measurement results, including efficiency measurements. This is an essential use of EBB: determining how to reallocate budgetary resources from one service function to another, especially when performance results suggest differences in relative demand for the services delivered among functions. Budget reallocations at the micro-level could be implemented like those demonstrated in this paper although data outputs the program level may be sparse.

Second, local governments should sustain and expand collection of performance data. Our study suggests a strong benefit to society when local governments make budget decisions informed by good performance information and proper evaluation techniques. It is always possible that politics could ultimately shape spending levels, but that should be contained at the marginal level while the foundation of resource allocation is determined using EBB and other “good government” concepts. Modern information technology allows for the systematic gathering, processing, and dissemination of performance information.

Last, performance measurement should be used to understand the alignment of public service demands, budgetary inputs, and service outputs rather than to punish governments as a whole. Budget cuts in a service program or function should be offset by budget increases in functions where demands are more pressing. The DEA technique used in this study can particularly yield benefits to governments in that the results are realized over time; a local government can compare its performance and assess different management styles across time to gain insights about the practices that work best in its particular context.

In this way, DEA acts as a benchmarking technique in which, when used over time, an analyst can find a “most efficient” period to act as a self-benchmark.

Although EBB can be useful for governments as discussed above, it has some challenges. First, like many other measures, efficiency scores provide only an overview of where change in the production process might occur to improve efficiency. Administrators should use them to identify potential areas of inefficiency, then meet with program managers and line staff to explore operational data, perhaps engaging consultants to help with identifying potential efficiency gains. Second, the public budgeting literature identifies a potential disconnect between the goals of public managers, citizens, and their elected representatives. For this reason, measures such as efficiency scores may become a source of negotiating power for the group that possesses them. For this reason, there should be an independent group such as internal auditors or external watchdogs that calculate and publish the results of efficiency studies. Third, EBB is a tool that can be used to help improve overall efficiency, including both effectiveness (i.e., capacity of a government to respond to public service demands) and economic efficiency. However, some bureaucrats and the public may view EBB as a tool to cut budgets or punish certain public programs. Education should incorporate EBB processes because the goal is to develop a budget process that creates the greatest overall municipal government efficiency and effectiveness.

EBB, like other budgeting approaches, also has limitations on top of those challenges. First, in a pluralistic society, EBB may not be able to be used as a sole instrument to allocate budget since a democratic society may require some programs that are not efficient and effective but are needed for some groups in the society (i.e., equity). For this reason, other criteria, such as equity and fairness, may be added into EBB.

Second, EBB is extremely useful for establishing functional spending ceilings at the macro-budgeting level; however, at the micro-level, it needs many more details in terms of costs ranging from a single input's volume and price. Also, to increase a program's efficiency, the public manager must have insights for the best use of input mix in the production process (i.e., to use relatively small number of labor and relatively large number of machines) and technical knowledge for the best way to produce public service (i.e., to use in-house service versus to contract out). The public manager's insights are, thus, the key to make EBB useful in productivity improvement at the micro-level. Unfortunately, obtaining public managers' insights to be used as information

in reinventing government production takes too much time and resources, and there may be a lack of top management support and commitment.

Finally, for this study the amount of data on outputs were somewhat limited. For a broader analysis, communities should have a good performance measurement system in place (this is something that should be done even without using EBB). This also speaks to the need to involve line managers in EBB analysis to expose data not collected in other ways.

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ENDNOTES

¹ For a more in-depth discussion of the DEA technique, see the two Srithongrung-Kriz papers (2019) listed in the References.

² Outliers were removed from the dataset using Cook's d statistics. We tested for multicollinearity among variables using a VIF test (see Ott and Longnecker, 2001, for these analyses). Heteroskedasticity and autocorrelation are frequent problems in panel data. We used the Prais-Winsten quasi-differencing method with panel corrected standard errors (PCSEs) to address these threats. Endogeneity is another concern; we addressed this problem by specifying the regression model containing lead and lagged variables. This technique is commonly used in the economic growth literature to address endogeneity. After the regression analysis, we conducted simple correlation analyses to confirm that endogeneity was controlled. For details on these techniques, see Stock and Watson (2011). All analyses are available upon request.

³ Source of data are the cities' CAFRs. Output variables are consistent across time periods and city samples. Per capita fees are an indicator of businesses' and residents' demands to perform activities within the jurisdiction, paying fees in exchange for government permission to engage in the activities in the jurisdiction. Per capita permits are a measure of the number of new resident and commercial buildings in a jurisdiction. If a local government performs well in terms of managing the entire city so that it is attractive to new residents and businesses, then these two indicators should increase. Combined, the two variables are a general indicator suggesting how attractive the government has made the city for new residents and businesses. Capital management inputs include budgets for both new projects and maintenance projects. Capital management outputs are "usable assets" that could result from new project acquisition or routine maintenance. Patrol units include all equipment, including police vehicles, that allow patrol units to function effectively.

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APPENDIX: RESULTS OF STATISTICAL MODELS**TABLE A.1**

DESCRIPTIVE STATISTICS FOR VARIABLES IN THE REGRESSION MODEL

VARIABLE	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
Total personal income (adjusted for inflation)	7,141,781	12,100,000	84,579	51,900,000
Total population	95,552	70,449	35,721	353,840
Tax revenue (adjusted for inflation)	75,400,000	75,000,000	17,000,000	285,000,000
Intergovernmental revenue (adjusted for inflation)	27,088,067	31,969,998	4,363,234	151,884,611
Total number of new business establishments	5,617	5,745	111	24,155
Efficiency index for capital spending	1.16	0.57	0.24	3.87
Efficiency index for operational spending	1.05	0.21	0.63	1.72
Correlation of budget priority ranking and efficiency ranking by service function	0.407	0.268	0.000	1.000
Employment	69,346	22,986	53,419	83,476

TABLE A.2

RESULTS OF THE REGRESSION ANALYSIS OF ECONOMIC GROWTH ON EFFICIENCY MEASURES AND BUDGET ALLOCATION CORRELATIONS (14 CITIES, 9 YEARS);
DEPENDENT VARIABLE IS LOG OF REAL PERSONAL INCOME

VARIABLE	COEFFICIENT	STANDARD ERROR (PCSE)	Z VALUE	P> Z
Constant	18.363	0.887	20.69	0.000
Log of total employment (t-1)	0.035	0.004	7.37	0.000
Log of total number of new business establishments (t-1)	0.393	0.034	11.52	0.000
Log of total population (t-1)	2.526	0.208	12.09	0.000
Log of total tax (\$ real, 2013 based year, t-1)	-2.591	0.086	-30.01	0.000
Log of total intergovernmental revenue (\$ real, 2013 based year, t-1)	0.579	0.086	6.74	0.000
Efficiency index for capital spending (t-2)	0.121	0.035	3.48	0.001
Efficiency index for operational spending (t-2)	-0.018	0.069	-0.25	0.801
Value for correlation between budget priority and efficiency ranks (Spearman's Rho, t-2)	0.264	0.072	3.66	0.000
Time fixed effect	Included through time demean method			
Entity fixed effect	Included through entity demean method			
Number of observations	119			
Panels: Correlated (unbalanced)				
Autocorrelation: panel specific AR (1)				
Sigma computed by case wise selection				
Estimated covariance	105			
Estimated autocorrelation	14			
Estimated coefficients	9			
Number of groups	14			
Wald chi2 (7)	8544.62			
Prob > chi2	0.000			

Note: Due to panel heteroskedasticity and autocorrelation, Prais-Winsten regression, correlated panels corrected standard errors (PCSEs) is used to test hypotheses. Panel autocorrelation was corrected by autocorrelation of residuals; standard error is for panel-level heteroskedastic and correlation across panels. Lag periods were chosen based on unit roots and trend results. Test results on panel heteroskedasticity and autocorrelation are available upon request.

CHANGING EXPENDITURE PATTERNS IN ILLINOIS MUNICIPALITIES

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The economic recovery in Illinois following the Great Recession was relatively sluggish. Per capita expenditures by municipalities with a population of 25,000 or larger increased by only about 1% annually between 2012 and 2019 after controlling for inflation. In some instances, these municipalities lost population or had decreases in their tax base. Some made slight shifts to capital expenditures, perhaps to adjust from cutbacks during the recession period but these changes were relatively small. This article exams expenditure trends by size of municipality and location within Illinois. Substantial differences are found between those in the Chicago area versus downstate. Downstate municipalities had the lowest percentage increase in per capita expenditures, and those with populations between 25,000 and 50,000 reported spending less. Cutbacks occurred in health, cultural, education, and sanitation expenditures. We also provide insights into potential impacts of the recent COVID-19 economic downturn on local government expenditures.

INTRODUCTION

The relatively sluggish Illinois economy in the 2008 to 2009 recession recovery added considerable stress on state and local governments in financing public services at desired levels and caused many to adjust revenues and expenditures. High unemployment and the slow economic rebound not only depressed tax bases but also created additional demands for services. Lagging state finances reduced shared revenues such as the Local Government Distributive Fund (LGDF) as the state government struggled to balance its budget.

Combined with economic issues, rising pension contributions meant that during and following the Great Recession, municipalities had to reassess spending patterns, delay infrastructure projects, including planned expansions, and, in some cases, even reduce employment. This article examines changing expenditure patterns in Illinois municipalities with a population of 25,000 or

more, excluding the City of Chicago, between 2012 and 2019 based on data published in the Illinois Office of the Comptroller Data Warehouse.¹

Compounding the economic issues, large downstate municipalities in Illinois such as Decatur (-7.1%), Rockford (-5.0%), and Moline (-4.8%) declined in population during the post-recession period. Losses of businesses and employment threatened both property tax bases and sales tax revenues. Population declines also reduce revenues from LGDF, which is the local share of state income tax, and Motor Fuel Tax.

Since not all Illinois municipalities had yet reached their pre-recession (2009) employment levels, the COVID-19 pandemic downturn will likely adversely affect them even more seriously based on early estimates (McFarland and Pagano, 2020). The current estimated potential impacts depend on fiscal year dates, and those with an April 30 year-end reported only a few months of the downturn. Likewise, revenue structure is important because property taxes have stabilizing effects. The impact of price changes in property values is typically reflected several years later in the assessment cycle, somewhat delaying the effect of tax base declines.

Subsequent analyses incorporate results from a 2018 survey of Illinois mayors regarding fiscal strategies used in responding to the Great Recession (Walzer and Blanke, 2018). Those responses showed that the 91 responding mayors had employed a variety of strategies in the post-recession period. The most prevalent was to increase water and sewer rates (74.1%) followed by delaying replacement of vehicles or equipment (68.2%) and postponing completion of capital repairs or replacements (65.9%). Less frequently reported tactics involved applying for federal or state project funds (40.0%), raising general property tax rates (37.6%), or drawing down unrestricted reserves (36.6%).

Considering the 2018 survey responses, analyses in this article pose several research questions. First, how did inflation-adjusted expenditures for common municipal services change in both level and composition during the post-recession period? Do these changes vary by economic conditions, population size and characteristics, or other factors? Can these trends shed light on the potential impacts of future recessions or economic changes such as the current COVID-19 downturn? Second, what are the effects of the cutbacks on expenditure distributions? Did municipalities divert spending from capital projects or current services to meet other obligations during the recession years and then reinvest in equipment and facilities during the recovery? These

strategies may have long-term spending impacts. Can insights gained in the past seven years help analysts and officials to understand similar changes in the future? Third, how does the structure of municipal expenditures vary by location and municipal size, and can these patterns provide insights into state policy, such as the need for assistance to help specific groups of municipalities respond to the current downturn?

To understand changes in expenditures during the recovery, subsequent analyses examine municipal expenditures in 2012 and 2019. This period was selected because the immediate effects of the Great Recession had largely passed, with municipal officials focusing more on the recovery period. The later year provides the most recent data on spending. This analysis can help show how municipalities are positioned for the economic downturn that started in April 2020.

SAMPLE CHARACTERISTICS

Of the 91 municipalities with populations of 25,000 or more in 2019, information for 43 of them was published in the Illinois Office of the Comptroller Financial Databases in Fiscal Year (FY) 2012 and FY 2019, and 42 of those had home rule authority.² Most of the municipalities had a population under 50,000. While there is some geographical clustering in northeastern Illinois (where most municipalities of this size are located), many are in the central and southern parts of the state (Figure 1). The average size of the 43 sample municipalities is similar to the average size of all 91 municipalities in the same size group (t-test).³

The sample municipalities have home rule authority unless removed by local referendum, which has happened in relatively few instances. Thus, they have more discretion to adjust expenditures and revenues during changing economic conditions. The sample differs widely in economic and employment bases, which offers insights into adjustments to the fiscal challenges. Many of these municipalities, because of their relative size, are employment centers in the region, so their fiscal responses also affected the surrounding area.

On average, populations in the sample municipalities declined 1.1% between 2012 and 2019 (Table 1). Municipalities in Cook County and downstate (i.e., outside the Chicago metro area) lost population compared with others in the Chicago metro area (collar counties), and the declines were consistent for municipalities above and below a population of 50,000.

FIGURE 1
LOCATIONS OF SAMPLE MUNICIPALITIES



TABLE 1**CHARACTERISTICS OF SAMPLE MUNICIPALITIES**

INDICATOR	SAMPLE TOTAL	BY LOCATION			BY POPULATION SIZE	
		COOK COUNTY	COLLAR COUNTIES	DOWNSSTATE	OVER 50,000	UNDER 50,000
No. of sample municipalities	43	10	18	15	9	34
Average population 2019	43,991	39,138	38,369	53,974	86,306	32,790
Pop. change 2012-2019	-1.1%	-3.1%	0.9%	-1.8%	-1.3%	-0.9%
EAV per capita FY 2019	\$28,464	\$51,165	\$29,875	\$16,286	\$22,747	\$32,447
Change in EAV/ capita FY 2012-FY 2019 (MPI adjusted)	-10.1%	0.3%	-17.3%	-11.5%	-17.9%	-5.8%
Total spending per capita FY 2019	\$1,831	\$2,201	\$1,540	\$1,899	\$2,053	\$1,676
Change in spending per capita FY 2012- FY 2019 (MPI adjusted)	9.0%	24.8%	12.6%	0.2%	5.5%	12.3%
Median household income, average of 2014-2018 period	\$70,670	\$80,154	\$83,643	\$48,780	\$61,656	\$73,056

Sources: U.S. Census Bureau, Population Estimates Program and 2014-2018 American Community Survey, Illinois Office of the Comptroller, FY 2012 and FY 2019 financial databases, Northern Illinois University Center for Governmental Studies and the Illinois Municipal League, Municipal Price Index.

However, trends in property tax assessed valuation per capita followed the opposite pattern. When adjusted for inflation, Equalized Assessed Value (EAV) per resident declined overall, but especially in larger municipalities in the collar counties, while falling slightly less elsewhere, and increasing in Cook County.

As noted previously, changes in property tax bases usually lag economic changes, so these changes may indicate potential impacts on revenues available in the next several years.

Regardless of population and tax base trends, all groups increased total spending per capita between FY 2012 and FY 2019, with the largest growth (24.8%) in municipalities located in Cook County. This is consistent with these municipalities reporting the highest increase in tax base (18.8%), and many had fewer than 50,000 residents. While the 24.8% growth in per capita spending may seem large initially, it spans seven years and averages 3.7% per year, corrected for inflation.⁴

Not surprisingly, the highest median household incomes (\$83,643) were reported by collar counties and suburban municipalities with populations smaller than 50,000 (\$73,056), although these income figures are not adjusted for spatial differences in cost of living. Anecdotally, some of the smaller, wealthier suburbs increased spending the most, supported by large increases in tax bases. Downstate municipalities, however, reported the lowest median household incomes (\$48,780), reported stable spending patterns (0.2%), and were mid-range regarding spending levels. Their tax bases are well below either those in Cook County or the collar counties.

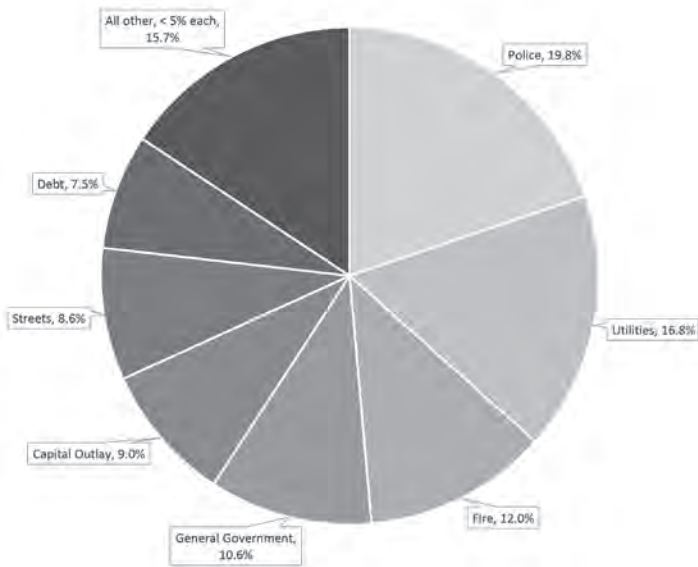
POST-RECESSION EXPENDITURE STRUCTURE AND TRENDS

Given sluggish economic growth, higher pension obligations, and shrinking LGDF revenues, the sample municipalities faced difficult expenditure choices. They had to decide whether to continue with needed capital improvements or to postpone these projects in favor of financing current services. While cutbacks in capital spending can be a temporary remedy, delayed capital spending can mean higher spending in the future.

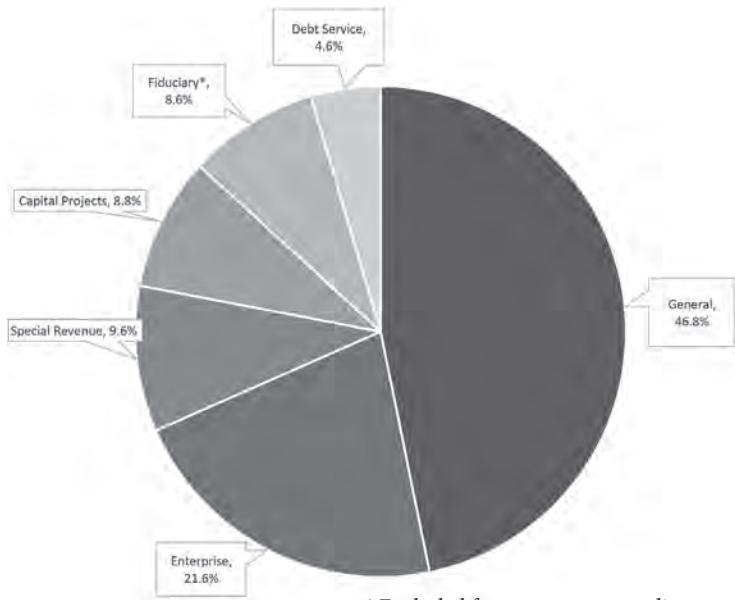
In 2019, the three largest categories for spending by Illinois municipalities were police protection, utilities such as water service, and fire protection (Figure 2). While municipal services are financed through several fund types, nearly half of the spending is from the general fund, and 21.6% of the spending is from enterprise funds. Special revenue funds and capital projects funds finance a narrow range of projects. Fiduciary fund expenditures for pension plans and other retirement benefits were not included when examining current expenditures for services but represented 8.6% of total spending across fund types.⁵

FIGURE 2
COMPOSITION OF FY 2019 EXPENDITURES BY PURPOSE AND FUND TYPE

CURRENT EXPENDITURES BY PURPOSE



TOTAL EXPENDITURES BY FUND TYPE



* Excluded from current expenditures.

TABLE 2
PER CAPITA SPENDING TRENDS

SPENDING PER CAPITA	FY 2012	FY 2019	ANNUALIZED % CHANGE (CURRENT \$)	ANNUALIZED % CHANGE (CONSTANT \$)
Total expenditures*	\$1,418	\$1,831	4.2%	1.3%
Capital outlay	\$123	\$164	4.8%	1.8%
Public safety	\$483	\$624	4.2%	1.8%
Police**	\$287	\$362	3.7%	1.4%
Fire**	\$168	\$219	4.3%	2.1%
Utilities	\$260	\$307	2.6%	-1.2%
General government	\$165	\$195	2.6%	-0.1%
Transportation and public works	\$146	\$191	4.4%	1.2%
Streets**	\$118	\$158	4.8%	1.6%
Culture and recreation	\$76	\$79	0.6%	-1.6%
Sewerage and sanitation	\$60	\$68	2.1%	-1.5%
Housing	\$16	\$20	3.4%	0.7%
Health and social services	\$19	\$20	0.3%	-1.9%
Debt service	\$110	\$138	3.7%	0.9%
All other	\$32	\$25	-3.0%	-4.8%
Fiduciary fund expenditures (not counted in total expenditures)	\$113	\$172	7.5%	4.0%

*Excludes depreciation. **Subcomponents do not sum to totals because not all items are shown.

The average sample municipality spent a total of \$1,831 per resident in FY 2019, an annualized increase of 1.3% when adjusted for the Municipal Price Index (MPI – Table 2). However, the municipalities varied widely in expenditure patterns, and population declines in some cases may create the impression of increases in per capita expenditures by reducing the denominator of the formula (population). Nevertheless, the growth in expenditures during this period was relatively small overall.

Of special interest is the ability of municipalities to support infrastructure such as streets, bridges, water/wastewater, and related services. Comparisons in

Table 2 suggest that in some cases, capital projects may have been postponed earlier or deferred to the post-recession period since spending for capital outlays increased 1.8% annually in constant dollars (higher than the 1.3% for total expenditures). The higher increase suggests that some resources were diverted to capital projects, possibly to correct for previous underspending, but the change was small, and capital outlays as a percentage of total spending went only from 8.6% to 9.0%. Also, capital outlays may include intergovernmental aid such as federal grants for infrastructure projects, but detailed information is not readily available to allow for these adjustments, and a closer examination is needed.

Streets and public works (except sewer and solid waste) also represent relatively large municipal expenditures.⁶ While the 1.6% annual increase in constant dollar expenditures for streets surpasses the 1.3% increase for total spending, street expenditures as a percentage of total spending increased only from 8.3% to 8.6%. Again, these comparisons are affected by other local factors such as use of intergovernmental aid and the fact that street projects may involve expenditures over several years, which can affect payments in any one year.

On a broader note but with similar caveats, transportation, and public works (TPW) expenditures went from an average of \$146 per capita to \$191 between 2012 and 2019. This 4.4% annual increase in current dollars represented only a 1.2% increase in constant dollars. Nevertheless, it was on par with total expenditures. Based on only these comparisons, it does not appear that municipalities made major reallocations of local funds for TPW projects. However, as noted, the local amounts may have been leveraged against federal or state funds that allow municipalities to repair and replace infrastructure facilities. Likewise, the 2018 fiscal strategies survey suggested that user fees were increased, which could also help finance these projects. More research on this issue is needed before making a definitive statement.

Expenditures for police and fire protection are typically large among those for common functions since education services in Illinois are provided by school districts, a separate unit of government. The \$483 spent per capita for public safety (police, fire, and inspections) in 2012 increased to \$624 (4.2% annually) by 2019 but was only a 1.8% growth in constant dollars. Police and fire protection departments spend high percentages on personal services as noted previously. Wage increases in the private sector affect the wages that municipalities must pay to attract quality employees. Nevertheless, spending increases for protective services exceeded overall municipal spending changes.

The rates of spending increase differ within the public safety category. Expenditures for police protection, although higher than for fire protection, increased at a substantially lower rate (1.4% versus 2.1%) in constant dollars. The higher increase is explained partly by higher initial expenditure levels in 2012, but it appears that the resources to deliver fire protection increased during the post-recession period given that spending increased substantially more than total municipal spending per capita.

Sewer treatment and other sanitation expenditures differed, but the data are less precise due to use of enterprise funds in some cases, making a more detailed examination of the data necessary before drawing inferences. The \$60 per capita spent in 2012 represented only \$68 in constant dollars, a decrease of 1.5% which conflicts with indications that water and sewer rates increased in some municipalities in the 2018 fiscal strategies survey. Also true is that some of these capital needs are not as immediately obvious as with streets and perhaps can be postponed for longer periods in favor of meeting more immediate service needs. Further, since utilities tend to be managed through funds other than a city's general fund, expenditures in this area do not directly compete with general fund services.

Also, sewerage and solid waste collection is linked with the number of residents, so stable or declining populations do not necessarily trigger expenditure increases except for emergency repairs. Streets, on the other hand, deteriorate due to weather conditions and traffic patterns, which can change with business activity and other factors. The higher visibility of streets may generate more pressure from residents for more immediate repairs or replacement.

Municipalities also engage in debt financing in providing services, especially those that will be used by future generations. The Illinois Office of the Comptroller Data Warehouse includes an expenditure item for debt but with no distinction regarding short-term versus long-term categories.⁷ Debt service payments fluctuate with both amount of debt and interest rates. As part of a national recovery strategy, the Federal Reserve has kept interest rates relatively low to stimulate investment. Thus, higher debt expenditures in the current analysis (\$110 to \$138) suggests that sample municipalities may have borrowed during the post-recession period, possibly to take advantage of low rates. Debt payments increased 0.9% in constant dollars, less than the overall increase (1.3%) in constant dollars.

The shift in spending priorities is further shown by several functions for which spending was reduced. Health and social services, for example, decreased 1.9% (constant dollars) during the post-recession period. Culture and recreation activities, such as libraries and parks, declined 1.6% post-recession. These data can be difficult to compare since park districts or library districts provide services in many municipalities. When municipalities have park or recreation departments, they typically represent relatively small components of their budgets. Thus, in cases where municipalities provide libraries, even a small dollar decline can represent a substantial percentage change.

Spending on general government activities, including central management, was stable (-0.1% in constant dollars) since these functions had to continue during this period. In some instances, technology advancements may have displaced employees and reduced expenses. Populations were relatively stagnant or declined in some municipalities, which suggests that the workload in administering services may not have increased substantially.

Rising pension costs are another important factor in understanding changes in municipal expenditures, and in the 2018 fiscal strategies survey, responding mayors reported that pensions were one of the main factors contributing to spending (Walzer and Blanke, 2018). A brief comparison of funding ratios shows that 65% of the downstate police pension funds and 58.6% of the downstate firefighter pension funds were at funding levels between 50% and 80%. Statewide mandates say that pension funds must reach 90% funding by 2040. A more detailed analysis of the pension contributions is available in Blanke and Walzer (2018). Municipal officials face higher expenditures to work down the amortization amounts and bring them in line with targeted levels. In some instances, these requirements can mean that pension contributions will compete for spending on both current services and infrastructure projects driving higher expenditures or possible reductions in staff (Schuster, 2018).

Fiduciary fund expenditures, which are counted separately from current expenditures and do not reflect the full future cost of pension liabilities, increased 4.0% annually after adjusting for inflation. Fiduciary fund expenditures include employer contributions to pension plans and costs of providing employment benefits in the current fiscal year.

TABLE 3

EXPENDITURES BY LOCATION AND SIZE, FY 2019

		BY LOCATION			BY POPULATION SIZE	
SPENDING PER CAPITA	SAMPLE TOTAL	COOK COUNTY	COLLAR COUNTIES	DOWNSSTATE	OVER 50,000	UNDER 50,000
Total expenditures*	\$1,831	\$2,201	\$1,540	\$1,899	\$2,053	\$1,676
Capital outlay	\$164	\$278	\$169	\$105	\$131	\$187
Public safety	\$624	\$745+	\$537	\$639	\$694	\$575
Police**	\$362	\$413	\$367	\$332	\$383	\$347
Fire**	\$219	\$304+	\$127--	\$257	\$292	\$168
Utilities	\$307	\$229	\$224	\$416	\$394	\$246
General government	\$195	\$296++	\$192	\$150-	\$184	\$203
Transportation and public works	\$191	\$301++	\$154	\$169	\$209	\$178
Streets**	\$158	\$207+	\$144	\$146	\$157	\$158
Culture and recreation	\$79	\$120	\$42	\$91	\$136	\$40
Sewerage and sanitation	\$68	\$27-	\$74	\$83	\$66	\$70
Housing	\$20	\$5	\$5	\$39	\$35	\$9
Health and social services	\$20	\$16	\$3	\$35	\$38	\$7
Debt service	\$138	\$179	\$117	\$137	\$154	\$127
All other	\$25	\$6	\$24	\$36	\$12	\$34
Fiduciary Fund expenditures (not counted in total)	\$172	\$241++	\$99--	\$201	\$203	\$151

*Excludes depreciation. Total slightly exceeds sum of components because judiciary and legal spending are not shown due to spending levels of less than \$1 per resident.

**Sub-components do not sum to total because not all items are shown.

+ / - Indicates significant difference at a 10% confidence interval.

+ +/ -- Indicates significant difference at a 5% confidence interval.

SPENDING BY LOCATION AND POPULATION

Examining expenditure shares by location and population size sheds light on variations among municipalities. Differences exist in expenditure patterns reflecting unique local conditions and general comparisons for several broad categories.⁸

Common expenditures, such as police and fire protection, were not expected to differ as much as some other services because they are more population-based and less influenced by economic conditions (Table 3). In 2019, expenditures for police protection ranged from \$332 per capita in downstate municipalities to an average of \$413 in Cook County municipalities. A t-test measuring the statistical significance of differences between two group averages indicates no significant variations in police expenditures per capita by county type.⁹

The wide differences in expenditures for fire protection — \$304 per capita in Cook County versus \$127 in the collar counties — may also reflect that fire protection districts in the suburbs offset expenditures otherwise made by municipalities. The districts serve multiple municipalities and allow collaboration in sharing specialized equipment or personnel, resulting in reduced expenditures. A prime example is the Tri-City Ambulance services provided jointly by Batavia, Geneva, and St. Charles along with several other fire protection districts (Walzer and Plasch, 2016). Fire protection expenditures were significantly higher in Cook County and significantly lower in the collar counties.

Expenditures on streets exhibit the smallest variations, perhaps because they are closely linked with residential and business traffic patterns. Major differences can occur when municipalities have large shopping centers or entertainment facilities that regularly draw additional traffic from outside the municipal boundaries and require more infrastructure to accommodate the traffic flows. Municipalities located in Cook County reported the highest average expenditures (\$207), but relatively small differences were reported among other size and location groupings. Overall, transportation costs were significantly higher in Cook County than in other parts of the state.

A somewhat similar situation exists with spending on sewers and sanitation. In this case, municipalities in Cook County differ by spending significantly less (\$27 per resident) than other municipalities. Once again, additional research may show these differences reflect collaborative arrangements for collection

and treatment involving other government agencies. However, relatively small differences are found among reporting municipalities when compared by size.

Fiduciary fund expenditures, which only reflect pension costs that affected FY 2019 budgets, varied significantly with higher spending in Cook County and lower spending in the collar counties.

WHAT HAVE WE LEARNED?

The analysis of spending patterns and trends for Illinois municipalities generated several findings that may help analysts and officials understand the current position of municipalities as they manage the current economic downturn. The recession came so quickly on the heels of a strong U.S. economy that it is difficult to know the full impact on municipal revenues and expenditures. Likewise, the ultimate toll will depend on the duration of the downturn, unemployment caused, and assistance from the federal government, which is under debate as of early September 2020.

However, several observations based on analyses in this article are worth noting. They are followed by a brief discussion of the *City Fiscal Positions 2020* report published by the National League of Cities.

While spending per resident increased in the post-recession period, the increase in total expenditures averaged only slightly more than 1% annually in constant dollars.

There was a slight shift in spending on capital items compared with current services during the recovery, but the inability to completely remove the effects of external funding make generalizing to future periods difficult.

Overall, wide differences in expenditure trends exist with municipalities in Cook County increasing expenditures (constant dollars) more than elsewhere. Downstate municipalities had the lowest percentage increase in per capita expenditures, and those with populations between 25,000 and 50,000 reported spending less in constant dollars.

Cutbacks occurred in health, cultural, and education costs plus sewerage and other sanitation expenditures. Presumably, these reductions freed resources to expand other services.

Spending for general administration decreased 0.1% annually in constant dollars, so the recovery brought little, if any, expansion in administration.

What, if any, light can the experiences following the Great Recession shed on the recovery from the (hopefully short-term) current economic downturn? The situations and conditions between the Great Recession and the pandemic downturn differ completely, so the relevance of past experiences is not completely clear. Inflation has been kept relatively low in recent years as an expansionary economic development practice. While interest rates are likely to continue at this level in the near term, at some point, deficit spending may stimulate inflation. Until that time, municipal costs may not be seriously affected by price increases.

The impact of the COVID-19 lockdown on businesses has already been substantial as was reported in a May 2020 survey of conditions in the Midwest by the Federal Reserve Bank of Chicago (Hauser and Walstrum, 2020). Consequently, the pandemic has substantially reduced municipal revenue expectations. Given that the fiscal impacts in this survey were only for the early months of FY 2020, they are likely to be much more serious in the next several years. This is certainly the perspective at the national level according to the 2020 National League of Cities report (McFarland and Pagano, 2020). The timing of the fiscal year is crucial in these estimates, however, because year-ends in April or May occurred shortly after the start of the COVID-19 pandemic.

However, nationwide responses from 485 cities with more than 10,000 in population indicated that nearly 90% of cities expect to be less able to deliver the same services as in FY 2020. On average, respondents reported that the revenue growth in 2020 was at or near zero. They also estimated that general fund revenues could decrease as much as 13% in 2021 and reported declines in both sales and income tax receipts (McFarland and Pagano, 2020).

The response to the National League of Cities survey in Illinois was limited (12 municipalities), which makes it difficult to apply the national findings. However, there can be no question that the impact of the recession on municipal finances will be significant over time and that additional support from the state and federal government will be important trends in finances that should be monitored closely.

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ENDNOTES

¹ The sample includes only those municipalities in Illinois with populations larger than 25,000 that reported to the Illinois Office of the Comptroller in both 2012 and 2019 so that the same municipalities are included in both years to minimize distortions.

² U.S. Census Bureau. (2019). Annual estimates of the resident population for incorporated places: April 1, 2010 to July 1, 2019. <https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-cities-and-towns.html>

³ A t-test of the mean size of the sample and all municipalities shows no statistically significant difference.

⁴ We correct for inflation using the Municipal Price Index (MPI) (Walzer and Blanke, 2020). Although inflation has not been a major issue in recent years, the index shows that during periods of relatively low inflation in the private sector, its impact on municipalities is higher because of a high concentration of expenditures for personal services. Wage increases typically outpace price increases for commodities in the private sector, and local competition for skilled workers raises wages for municipal employees, thus raising municipal costs. For instance, the cost of items purchased by municipalities in Illinois increased 23.9% between 2010 and 2019 compared with a 17.2% increase in the Consumer Price Index (CPI).

⁵ Care must be exercised when examining fiduciary fund expenditures because they reflect only employer contributions in the current fiscal year. They do not show the cost of pension liabilities, i.e., pension benefits that will be owed when current employees eventually retire. Fiduciary funds are a relatively small proportion of current spending with unfunded liabilities being a well-documented future cost.

⁶ A more complete listing of the services included in each category is provided in the Appendix.

⁷ Short-term debt only appears in the comptroller databases to the extent that it is not paid off within the year it is issued. Debt that is issued and paid off within the same year is not reported as short-term debt outstanding. And the debt service expenditure category does not distinguish service of short-term debt versus long-term debt.

⁸ Since some municipalities experienced major population changes since 2010, annual population estimates by the U.S. Census Bureau were used to calculate per capita expenditures.

⁹ A t-test of the mean size of the sample and all municipalities shows no statistically significant difference.

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APPENDIX

DEFINITIONS OF EXPENDITURE CATEGORIES

Below is a summary of items included in the expenditure categories explored in this paper. These categories are based on classifications in financial reports submitted to the Illinois Office of the Comptroller and compiled in their financial databases.

CATEGORY	DESCRIPTION	COMMENTS
Capital outlay	Code 280T in comptroller data — category cannot be dissected further	Not consistently reported across municipalities. Some streets expenditures could be considered capital projects but are reported under streets, for example. More research is needed to adjust for discrepancies in reporting.
Public safety	Code 252T — includes police, fire, and regulation/building inspections	
Utilities	Code 271T, “Public Utility Company” — includes water, electric, and public transit such as bus service	Only three sample municipalities provided electrical service in FY 2019.

CATEGORY	DESCRIPTION	COMMENTS
General government	Code 251T — includes financial administration, central staff, and general grounds/buildings costs	
Transportation and public works	Code 255T — includes streets, airports, parking meters, and parking facilities	Transportation and transit services are meant to be reported separately in the comptroller data scheme, with transportation referring to infrastructure while transit refers to services such as bus lines. More research would be needed to verify the extent to which overlaps or inconsistencies exist between these categories.
Culture and recreation	Code 257T — includes parks, libraries, and “other”	“Other” can include facilities such as museums and performing arts centers.
Sewerage and sanitation	Code 275T, “Environment” — includes sewage and solid waste management	
Housing	Code 258T — cannot be dissected further	
Health and social services	Code 256T, “Social Services” — includes welfare, health, hospital operations, cemeteries, and other human services	
Debt service	Code 259T — includes principal and interest on debt	Does not represent debt outstanding.
All other	Code 260T, “Other (Explain)”	Unpacking expenditures in this category requires reading individual financial reports for local context. The financial reports include an “explanations” section where this can be clarified, but it is not consistently filled out.

ESTIMATING THE IMPACT OF THE CAP ON SALT DEDUCTIONS: A CROSS-CITY ANALYSIS OF ILLINOIS

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The Tax Cuts and Jobs Act of 2017 limits individual deductions for certain state and local taxes (SALT) to \$10,000 per year. Using the Internal Revenue Service's 2017 Statistics of Income data, this research estimates the impact of the cap on SALT deductions across municipalities in the State of Illinois. The results indicate that municipalities with higher incomes and heavier property tax burdens will be hit harder because the magnitude of the impact rises with median household income and municipal property tax level. Municipal governments may reduce their reliance on deductible local taxes and incorporate other alternate revenue sources to mitigate the impact.

INTRODUCTION

In the U.S., the federal government provides substantial financial assistance to state and local governments through a variety of federal grant programs and deductions of SALT from federal individual income tax. The Tax Cuts and Jobs Act of 2017 (TCJA) limits the SALT deduction to \$10,000 per filer each year. The law still allows taxpayers to deduct state and local property tax, as well as income tax or general sales tax, from their federal taxable income within the limit. While this provision reduces federal tax expenditures, it adversely affects state and local finances as it substantially decreases the federal assistance that has been an important pillar of fiscal federalism in the U.S.

Given the substantial variation in the number of affected taxpayers and the amounts of SALT deductions they claim, the impact of this cap is likely to vary across states and localities. Using the Statistics of Income (SOI) data from the Internal Revenue Service (IRS), we estimate the impact of the cap on SALT deductions at the municipal level in the State of Illinois. The purpose is to identify communities most likely to be impacted based on the location of taxpayers who would be most affected by the limitation. The results indicate

that more taxpayers residing in wealthier municipalities will be negatively affected, and taxpayers will bear large negative impacts of the cap if their communities have larger median household incomes and higher levels of local property taxation.

This study improves the understanding of the TCJA's impact on municipal government finances. It is expected that the cap on SALT deductions will reduce public support for the deductible state and local taxes, and state and local governments will face pressure to lower taxes or forgo tax increases. Our findings suggest that communities with substantial affluence and heavy property tax burden will particularly face opposition to tax increases because a large number of their residents will feel relatively significant effects of the cap on deductible SALT.

RESEARCH CONTEXT

The federal government allows tax filers to deduct certain state and local taxes through the federal income tax system. Under federal tax law, tax filers may deduct state and local property taxes and general sales or income taxes from their federal taxable income. The SALT deduction decreases a taxpayer's federal taxable income and thus reduces that taxpayer's ultimate federal tax liability. For instance, if one federal income tax filer paid \$15,000 in state and local property and income taxes, and the marginal federal income tax rate is 22%, that taxpayer can reduce federal income tax liability by \$3,300. In other words, the \$3,300 state and local taxes in that particular state and locality are paid by the federal government and become a part of federal tax expenditure.

The TCJA places a \$10,000 cap on itemizers' deductions of SALT from their taxable income.¹ The law still allows filers who choose to itemize deductions to subtract SALT from their federal taxable income within the \$10,000 limit. This means that state and local taxes paid in excess of \$10,000 can no longer be deducted on a filer's federal income tax. While the provision will reduce federal tax expenditures, it will also affect some taxpayers because they will have to claim a smaller amount of taxes they pay to state and local governments. As a result, federal income tax liabilities for those who itemize their taxes and have state and local tax payments above \$10,000 would rise and their after-tax incomes would shrink, all else being equal.

The impact of the new SALT deduction cap, however, is alleviated somewhat by two other provisions in the law. First, the new law raises the standard deductions for tax filers. Under the new law, the standard deduction will be \$12,000 for single filers, \$18,000 for heads of household, and \$24,000 for married individuals filing joint returns starting in tax year 2018.² As a result of the increased standard deductions, some taxpayers will no longer itemize deductions, which will eliminate the potential negative effects those taxpayers may have incurred from the new SALT deduction cap. In addition, the law enacts a slightly lower tax rate structure. For example, the highest marginal tax rate under the new law is reduced from 39.6% to 37%. These lower rates may also reduce the potential negative effects of the SALT deduction cap, particularly for taxpayers with high incomes.

The TCJA has received a great deal of attention from scholars and practitioners regarding how it will affect taxpayers. Gordon (2018), for example, points out that the cap on SALT deduction exacerbates the penalty for workers living in high-cost, high-productivity areas. Chernick (2018) and Reschovsky (2018) expect that the new tax law will reduce support for state income and local property taxes and that state and local governments will face pressure to lower taxes or forgo tax increases, even in periods of economic recession. Reschovsky (2018) further anticipates that the tax law may induce some high-income taxpayers in higher-tax states to migrate to lower-tax states. According to a recent analysis from Pew Charitable Trusts (Oloff and Samms 2018), the impact of the cap on SALT deductions could be far-reaching because it would affect federal income tax filers in many states.

The cap will create changes in state and local tax burdens across communities and will likely lead to mobility of affluent taxpayers. Although the existing literature suggests that people do not generally migrate in response to tax changes (Day and Winer, 2006; Coomes and Hoyt, 2008), some empirical studies find that wealthy individuals are more likely to respond to tax changes than other groups (Saez, Slemrod, and Giertz, 2009). A study by Young and Varner (2011) reports little responsiveness of millionaires to a New Jersey state tax on millionaires. However, a subsequent reevaluation of Young and Warner's 2011 study identifies some issues in their modeling of migration effects (Cohen, Lai, and Steindel, 2015). After correcting those modeling issues, Cohen, Lai, and Steindel (2015) report a significant increase in the out-migration of taxpayers in the years following the tax change in the state. Young and his colleagues

(2016) later found that millionaires migrate from high-tax states to low-tax ones but only at the margins of statistical and social-economic significance.

Although the empirical evidence is not conclusive about the tax-induced migration, scholars tend to agree that affluent taxpayers are more likely to migrate to avoid a higher tax burden. This further validates state and local governments' concern with the potential negative effects of the capped SALT deduction on their tax base. The communities that are affected most will likely face a larger challenge in protecting their wealthy population and tax base.

DATA AND METHODOLOGY

Given the substantial variation in the percentage of filers who claim the SALT deduction and the size of their deductions, the impact of the new cap is likely to vary across municipalities. The SALT cap will increase federal income tax liabilities for certain tax filers because under the new law, they will not be allowed to claim a SALT deduction beyond the \$10,000 limit. More affluent and higher-tax municipalities will likely witness larger increases in federal tax liabilities. We estimate the impact of the SALT deduction cap on various communities in the State of Illinois. In particular, we examine: 1) the number of tax filers who are likely to be negatively impacted; and, 2) the magnitude of the impact on the tax liabilities and incomes of tax filers who are likely to be negatively affected by the new cap. We examine the two issues at the municipal level to understand the geographic variation in the impact of the SALT deduction cap.

We use the IRS's data of individual income tax statistics for tax year 2017.³ The data are based on administrative records of individual income tax returns (Form 1040) from the IRS Individual Master File system. Included in the data are tax returns filed during the 12-month period of calendar year 2018.⁴ The TCJA was signed into law by President Donald Trump on December 22, 2017, and took effect on January 1, 2018. The 2017 income tax statistics, therefore, provide the best possible data to examine the impact of the new cap for two reasons: First, as the immediately preceding year, 2017 is most comparable to 2018 in all relevant aspects except for the new law taking effect in 2018. Second, it is reasonable to assume that taxpayers' behavior did not change during 2017 in response to the TCJA because it became law at the very end of the year.

One major challenge to using the IRS data is that the data are not available at the municipal level. The IRS only produces the data of income tax statistics at state, congressional district, county, and ZIP code levels. Moreover, individual

public-use microdata files are only available, at a charge, for tax years 2009-2013. The only feasible option is to aggregate the ZIP code-level data to the municipal level. We use the 2010 ZIP Code Tabulation Area (ZCTA) to Place Relationship File that matches all ZIP codes to municipalities in Illinois. For instance, if one municipality contains two ZCTAs, all population of ZCTA A and 30% of the population in ZCTA B, the data of the municipality is the sum of the data of entire ZCTA A and 30% of the data of ZCTA B for each variable in the IRS's data file.

For tax year 2017, the total number of federal income tax returns from the State of Illinois was 6,060,080, and about 33% (or 1,988,200) of those returns included itemized deductions. After excluding taxpayers who would most likely take the standard deduction under the new tax law, we estimate that 1.48 million filers would continue to choose itemized deductions.⁵ In 2017, 1,932,880 filers claimed the SALT deduction, totaling \$26.3 billion.⁶ Under the new tax law, we estimate that 1.44 million filers would still itemize and claim the SALT deduction.⁷ The total SALT deductions would have been reduced to \$22.9 billion had the new, higher standard deductions been in effect in 2017.⁸

The IRS data are available for six levels of adjusted gross income (AGI) including \$1 to \$25,000, \$25,000 to \$50,000, \$50,000 to \$75,000, \$75,000 to \$100,000, \$100,000 to \$200,000, and \$200,000 or more. Because the likelihood of taxpayers' choice to itemize deductions and the amount of SALT deductions generally increase with income, the number of affected filers should rise with AGI. As shown in Table 1, larger proportions of filers at higher levels of AGI would choose itemized deductions and more likely deduct state and local taxes. We estimate that 4.3%, 10.4%, 18.3%, 21.3%, 75.9%, and 95.5% of tax filers at the six AGI levels would choose to itemize deductions, and 3.7%, 9.9%, 17.9%, 20.9%, 75.0%, and 94.3% would deduct SALT in their federal income tax returns under the new law.

We expect the amount of SALT more than the new \$10,000 cap will vary by level of AGI. We divide the total amount of SALT deduction by the number of filers who would claim that deduction to calculate the average SALT deduction per filer for each level of AGI. Table 1 shows that the average SALT deduction per filer rises with the level of AGI, and the amount of SALT deducted per filer that is in excess of the new \$10,000 SALT deduction cap also increases for filers with higher AGIs. In particular, the average SALT deduction per filer is below \$10,000 if the filer's AGI is under \$100,000. On average, tax filers with AGI at or above \$100,000 will possibly experience an increased federal tax liability due

to the new SALT deduction cap.⁹ Therefore, we estimate that the new SALT deduction cap would negatively affect approximately 16% of all 2017 Illinois federal income tax filers.

TABLE 1
DISTRIBUTION OF SALT DEDUCTIONS – STATE OF ILLINOIS

LEVEL OF AGI	FILERS	FILERS WHO WOULD ITEMIZE DEDUCTIONS	FILERS WHO WOULD DEDUCT SALT	AVERAGE SALT DEDUCTION PER FILER	AVERAGE SALT DEDUCTION PER FILER IN EXCESS OF THE CAP
\$1 – \$25,000	2,057,530	88,514	76,334	\$5,236	\$0
\$25,000 – \$50,000	1,387,340	144,302	137,839	\$5,386	\$0
\$50,000 – \$75,000	854,670	156,158	152,700	\$6,789	\$0
\$75,000 – \$100,000	568,340	121,324	118,531	\$8,660	\$0
\$100,000 – \$200,000	866,880	658,369	650,049	\$12,570	\$2,570
\$200,000 or more	325,320	310,670	306,870	\$37,620	\$27,620

ANALYSIS AND FINDINGS

We expect that more filers in some municipalities will experience a higher federal tax liability than others due to substantial variation in the geographical distribution of high-income individuals in the state as well as variation in local tax rates. We, therefore, calculate the number of filers whose federal tax liability would be increased by the SALT deduction cap for each municipality in Illinois. The data show an uneven geographic impact of the SALT deduction cap. Among the 1,164 Illinois municipalities for which we have data, the cap will affect some filers in 671 municipalities while no taxpayers in the remaining 493 municipalities will feel any financial effect.

To examine the magnitude of the impact, we follow a four-step approach to estimate the effects on the federal tax liability and income of the filers who would be affected. First, the amount of 2017 SALT deductions in excess of the new \$10,000 cap (the “excess SALT deductions”) is determined for each AGI bracket. Second, we calculate a weighted average marginal tax rate for each level of AGI by multiplying the shares of different types of filers (single, head of

household, and married filing jointly) and the corresponding marginal federal income tax rates in 2018. Third, we multiply the excess SALT deductions and the weighted average marginal tax rate. This estimate would be the increased federal income tax liability or reduced personal income if the TCJA were effective in 2017. Last, for those who would be affected by the new cap, we divide the increased federal income tax liability by their 2017 federal income taxes to calculate the percent increase in federal tax liability and the reduced personal income by their AGIs to approximate the percent reduction in personal incomes.

The estimates suggest that, on average, the SALT deduction cap will have a significant impact on a large number of taxpayers in some communities. For the 671 municipalities that will be affected, the estimated average increase of federal income tax liability would be over 8% for 234,000 affected filers in 100 municipalities. Table 2 presents the 100 municipalities, the percent of filers whose federal income tax liability would increase, and the estimated average percentage increase of federal tax liability for those who will be affected by the cap. The data show that 2,717 or nearly 66% of tax filers in Glencoe, Cook County, would have an average SALT deduction exceeding \$10,000, meaning their federal tax liability would most likely increase under the new SALT deduction cap as compared with their federal tax liability when the SALT deduction was not capped. The majority of taxpayers in 32 municipalities (about 3% of all municipalities in Illinois) would see higher federal income tax liabilities.

As for the magnitude, the 2,717 tax filers residing in Glencoe who would be affected would have to pay a total of \$55.3 million, or about \$20,400 per filer, higher federal income taxes than they paid in 2017. Such an increase in federal taxes would lead to an average of 10.6% increase of their federal income tax liabilities or 2.6% reduction of their AGIs under the SALT deduction cap as compared with tax year 2017, when the SALT deduction was not capped. About 32,000 taxpayers in 15 municipalities would see an increase of more than 10% in their federal income tax liabilities. It should be noted that the estimated increase of federal tax liability and reduction in income of the affected filers are based only on the SALT deduction cap, not the net effects of the TCJA. For example, the lower federal income tax rates may offset the negative impact of the cap. On the other hand, the increase of Illinois' income tax rate in the middle of 2017, which is only partially incorporated in the estimates, may counter the offsetting effects of the lower federal tax rates to a certain extent.

TABLE 2

ESTIMATED IMPACT OF SALT CAP, MUNICIPALITIES WITH LARGE PERCENTAGE INCREASES IN FEDERAL TAX LIABILITY

MUNICIPALITY	NUMBER OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	PERCENT OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	ESTIMATED AVERAGE INCREASE IN FEDERAL TAX LIABILITY (%)
Glencoe	2,717	65.8%	10.6%
Lake Forest	5,720	61.3%	9.4%
Kenilworth	700	60.3%	9.8%
Hinsdale	4,612	59.3%	9.2%
Lincolnshire	2,251	59.0%	9.9%
North Barrington	891	58.9%	9.4%
Northfield	1,552	58.0%	10.4%
Winnetka	3,486	58.0%	10.4%
Mettawa	155	57.6%	9.2%
Western Springs	3,674	57.1%	9.0%
Port Barrington	426	56.6%	9.4%
Barrington	2,893	56.4%	9.4%
South Barrington	1,277	56.3%	9.5%
Barrington Hills	1,173	56.1%	9.4%
Deer Park	891	56.0%	9.4%
Riverwoods	1,046	56.0%	10.4%
Tower Lakes	358	56.0%	9.5%
Deerfield	5,202	56.0%	10.4%
Bannockburn	452	55.9%	10.4%
Highland Park	8,431	55.9%	10.5%
Lake Barrington	1,374	55.6%	9.4%
Wilmette	7,397	55.6%	9.8%
River Forest	2,829	53.2%	9.9%
Campton Hills	2,743	52.8%	9.2%
Oak Brook	2,223	51.9%	8.6%
Northbrook	9,224	51.8%	8.7%
Lake Zurich	4,955	51.3%	9.5%
Libertyville	5,238	51.2%	8.9%

MUNICIPALITY	NUMBER OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	PERCENT OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	ESTIMATED AVERAGE INCREASE IN FEDERAL TAX LIABILITY (%)
Hawthorn Woods	1,925	51.1%	9.5%
Kildeer	996	51.0%	9.6%
Green Oaks	993	51.0%	8.9%
Long Grove	1,993	50.3%	9.5%
Inverness	1,858	48.7%	9.2%
Park Ridge	9,011	45.9%	9.3%
Lake Bluff	1,341	45.7%	9.4%
Geneva	4,747	42.9%	8.8%
Glenview	9,877	42.5%	8.5%
Lily Lake	188	40.8%	9.1%
Flossmoor	1,976	39.8%	8.6%
Naperville	27,507	39.6%	8.2%
Glen Ellyn	5,275	38.9%	9.3%
Clarendon Hills	1,589	37.9%	9.0%
Prairie Grove	346	37.6%	8.8%
Elmhurst	7,782	36.3%	8.3%
Palos Park	896	35.7%	8.3%
Elburn	998	35.6%	9.1%
Oak Park	9,018	35.3%	10.3%
Buffalo Grove	7,441	34.7%	9.4%
Lincolnwood	2,160	34.2%	9.2%
Vernon Hills	4,199	33.4%	8.7%
Wheaton	8,592	33.3%	9.0%
Indian Creek	76	32.8%	8.3%
Indian Head Park	632	31.9%	8.3%
Wadsworth	591	30.9%	8.2%
Old Mill Creek	27	30.3%	8.8%
Willowbrook	1,366	29.5%	8.7%
Burr Ridge	1,682	29.3%	8.6%
Hodgkins	289	29.3%	8.4%
Riverside	1,351	29.2%	8.2%

MUNICIPALITY	NUMBER OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	PERCENT OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	ESTIMATED AVERAGE INCREASE IN FEDERAL TAX LIABILITY (%)
La Grange	2,365	29.2%	8.4%
North Riverside	1,015	29.2%	8.2%
Countryside	896	29.2%	8.4%
Evanston	9,769	28.2%	8.5%
Palatine	9,441	26.8%	8.2%
Mundelein	3,876	24.5%	8.4%
Big Rock	133	24.3%	8.1%
Prospect Heights	1,631	19.8%	8.7%
Westmont	2,187	17.5%	8.1%
Greenwood	18	14.3%	8.6%
Highwood	308	12.9%	8.6%
Hudson	84	9.1%	8.1%
Geneseo	204	6.2%	8.5%
Newark	27	6.1%	8.3%
Peoria Heights	183	5.8%	8.3%
Mapleton	7	5.5%	8.4%
Oakbrook Terrace	58	5.2%	8.8%
Lexington	49	5.0%	8.1%
Villa Park	560	4.9%	9.1%
Hampton	44	4.6%	8.5%
Aviston	46	4.4%	10.4%
North Chicago	373	4.2%	8.8%
Papineau	3	3.8%	8.7%
Cordova	12	3.6%	11.3%
Sullivan	70	3.4%	8.4%
Lanark	21	2.8%	8.1%
Sun River Terrace	6	2.5%	10.1%
Grafton	7	2.4%	10.2%
Marine	11	2.3%	11.2%
St. Anne	13	2.3%	10.5%
Marshall	37	2.1%	10.3%

MUNICIPALITY	NUMBER OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	PERCENT OF FILERS WHOSE FEDERAL TAX LIABILITY WOULD INCREASE	ESTIMATED AVERAGE INCREASE IN FEDERAL TAX LIABILITY (%)
Wyoming	13	2.0%	8.2%
Carthage	19	1.6%	9.3%
Greenville	41	1.6%	9.6%
Harrisburg	56	1.5%	8.8%
Athens	15	1.5%	8.2%
Hamilton	16	1.2%	8.9%
Grandview	5	0.8%	8.8%
Chicago Ridge	32	0.5%	8.4%
Ford Heights	5	0.4%	8.3%
Dolton	1	0.0%	8.1%

Note: Municipalities are sorted by the percent of all filers whose federal tax liability would increase due to the SALT deduction cap. The estimated average percentage increase in federal tax liability is only calculated for taxpayers who would be affected by the cap on SALT deductions.

The impact of the cap is different across communities in Illinois, so it is important to explore which municipalities will be most affected. The increased federal income tax liability and reduced after-tax personal income depend on the excess of SALT deductions beyond \$10,000 and the marginal federal income tax rates. The federal income tax rate structure is progressive, meaning that taxpayers with larger AGIs face higher marginal tax rates. Therefore, we expect that wealthier communities be affected even more because they are likely to have more higher-income taxpayers facing top tax rates. We also expect that municipalities with higher levels of property tax will be more affected by the cap because tax filers in those municipalities generally have larger property tax payments included in their itemized deductions.

Based on the prior discussion, three indicators are used to measure the impact of the SALT deduction cap: the percent of filers who are negatively affected by the cap, the estimated percentage increase in federal tax liability due to the cap, and the estimated percentage reduction in income due to the cap. For the independent variables, we use a municipality's median household income and its property tax revenue per dollar of equalized assessed valuation to measure community wealth and the level of property tax, respectively. The data on

median household income are from the U.S. Census Bureau’s American Community Survey. The data on municipal property tax revenue and equalized assessed valuation are from the Illinois Office of the Comptroller.

We regress each of the three impact indicators on the two explanatory variables: median household income in logarithm form and municipal property tax revenue per dollar of equalized assessed valuation. The regression is implemented using the ordinary least squares (OLS) estimator with robust standard errors. The regression results in Table 3 suggest that the scope of the impact as measured by a municipality’s affected filers as a percentage of all filers of federal income tax returns is only affected by median household income. The estimated effect of the municipal property tax burden is not statistically significant. It makes sense that an affluent municipality has a larger proportion of taxpayers affected by the new cap because more tax filers in wealthier communities are likely to choose itemized deductions and pay relatively larger property tax bills. On the other hand, the level of municipal property tax only determines the amount of property tax a filer may pay. As one of the deductible expenses, a property tax payment alone is not sufficient for a taxpayer to choose itemized deduction. The level of municipal property tax does not matter if a tax filer chooses the standard deduction.

TABLE 3
DETERMINANTS OF SALT CAP EFFECTS

VARIABLE	FILERS NEGATIVELY AFFECTED (%)	ESTIMATED INCREASE IN FEDERAL TAX LIABILITY (%)	ESTIMATED REDUCTION IN INCOME (%)
Median household income (in logarithm)	0.249***	0.053***	0.010***
	(0.012)	(0.002)	(0.000)
Property tax revenue per dollar of equalized assessed valuation	-0.101	0.131**	0.025**
	(0.093)	(0.051)	(0.010)
Constant	-2.643***	-0.540***	-0.107***
	(0.124)	(0.019)	(0.004)
Number of observations	1,151	1,151	1,151
R-squared	0.551	0.328	0.300

*Note: Dependent variables in columns. Ordinary Least Squares (OLS) regression model. Robust standard errors in parentheses. *** denotes statistical significance level $p < 1\%$, ** for $p < 5\%$, and * for $p < 10\%$.*

Median household income and the level of municipal property tax burden affect the magnitude of the impact as measured by the cap's effects on federal income tax liability and after-tax income. The increase in federal tax liability and the reduction in after-tax personal income are larger in wealthier municipalities than other communities. More tax filers in wealthier communities are likely to pay relatively larger property tax bills. Moreover, higher-income tax filers also face higher income tax rate brackets and therefore see larger increases of their federal income tax liability and decreases in after-tax incomes. The level of property tax also matters because filers are likely to deduct more property tax if they reside in a community with higher property tax rates, others being constant.

CONCLUSION

This paper estimates the impact of a newly established cap on SALT deductions at the municipal level in order to understand the varied impact on different municipalities. This analysis suggests that more taxpayers in higher-income municipalities will feel the adverse impact of the new cap. Municipalities with higher incomes and a heavier property tax burden will be hit hard because the magnitude of the impact rises with median household income and municipal property tax rates. The estimates are static because the analysis does not consider a variety of possible behavioral changes due to this federal income tax change.

The new cap will reshape the landscape of fiscal federalism in the U.S. as the federal government shrinks its financial assistance to state and local governments through the deduction of SALT. State and local governments will see fading support of any increase in broad-based taxes. For high-tax communities that are likely facing out-migration of affluent taxpayers, one policy option is to reduce their reliance on deductible local taxes and incorporate other alternate revenue sources such as user charges and fees into municipal revenue system.

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ENDNOTES

¹ Accessed on May 25, 2019, from <https://www.congress.gov/bill/115th-congress/house-bill/1>.

² The standard deduction for tax year 2017 was \$6,350 for single filers, \$9,350 for heads of household, and \$12,700 for married individuals filing joint returns.

³ Accessed on November 22, 2019, from <https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-statistics-zip-code-data-soi>

⁴ While the bulk of tax returns filed during the 12-month period are primarily for tax year 2017, the IRS also received a limited number of returns for tax years before 2017, and these have been included in the data.

⁵ We first calculate the average itemized deduction amount per filer for each bracket of adjusted gross income (AGI). Then we exclude the filers who would switch from itemized deduction to standard deduction according to the filing status and the average itemized deduction amount. For example, married individuals filing joint returns would be excluded if the average itemized deduction is at or below \$24,000; heads of household would be excluded if the average itemized deduction is at or below \$18,000; and single filers would be excluded if the average itemized deduction is at or below \$12,000.

⁶ We focus only on the filers who itemized and claimed a SALT deduction. Filers who chose the alternative minimum tax were excluded from our estimates because they were not allowed to deduct SALT.

⁷ We assume that the number of filers who would itemize SALT is reduced in the same proportion as the number of filers who would still choose itemized deduction under the new law.

⁸ We assume that the amount of SALT deduction is reduced in the same proportion as the number of filers who would still itemize SALT under the new law.

⁹ This is based on the statewide data of the average SALT deduction. The more detailed data indicate that while the affected taxpayers are still concentrated in the income brackets at or above \$100,000, a few filers in brackets lower than \$100,000 would also be affected by the cap.

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PUBLIC ADMINISTRATION AND CANNABIS LEGALIZATION IN ILLINOIS, LEGITIMIZING SOCIAL EQUITY IN GOVERNMENT THROUGH LEGISLATIVE INTENT

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In June of 2019, the Illinois legislature passed HB 1438, the Cannabis Regulation and Tax Act (Public Act 101-0027). The law consists of a social equity program that is the most comprehensive in a state cannabis legalization bill. Cannabis legalization advocates agree that HB 1438 provides the most comprehensive social equity framework to a recreational cannabis bill created to date. In this paper, we analyze the social equity provisions in HB 1438 through the public administration framework of social equity. We find that broadly, the Act implements a new social equity approach, which we call the Illinois Doctrine. The approach institutes specific mechanisms for monitoring and measuring intentions, provides a mechanism to redress inequities in criminal justice enforcement, allows for a free market approach to cannabis provision, and provides for reparatory investments to offset the effects of the federal “war on drugs.”

INTRODUCTION

HB 1438, which became the Illinois Cannabis Regulation and Tax Act, has ignited nationwide interest in “social equity.” Social equity deals with broad concepts of fairness and justice in public policy and administration (Wooldridge and Bilharz, 2017). The Google Trends interest over time indicator, which assigns points from zero to 100 measuring interest in certain terms based on frequency of Boolean searches, reported a precipitous increase in the searched term “social equity” soon after HB 1438 passed the Illinois General Assembly. When the results are narrowed to just Illinois, the interest indicator shows the term ranked 0/100 during November 10-16, 2019. By the end of the week of December 8-14, 2019, the rating was 42/100, and by December 22-28, 2019, it was a full 100/100 (Google Trends, 2020).

HB 1438 presents the most comprehensive social equity provision in a state recreational cannabis bill to date. The Marijuana Policy Project noted that the bill's social equity provision "is the biggest step forward in social and criminal justice reform anywhere in the country, inside or outside the issue of cannabis reform" (Marijuana Policy Project, 2020). The Illinois approach centered social equity in the formation of the cannabis market (Pletz, 2019), and this approach is a fundamentally different state-sponsored process towards advancing social equity.

In the 11 states in which recreational cannabis is currently legal, sales are expected to reach \$30 billion in revenue by 2025, while the illegal market (including nonlicensed distribution and illegal distribution in states where recreational cannabis is not yet legal) will hold firm at almost \$60 billion over the same time period (Hudock, 2019). The potential for state and federal tax revenue coupled with shifting public opinion in favor of recreational cannabis (Jones, 2019) implies that the federal government will likely act to legalize recreational cannabis over the next few congressional sessions. (Congress has already demonstrated bipartisan support for H.R. 1595/S. 1200, The Secure and Fair Enforcement Banking Act of 2019, or SAFE Banking Act, which removes penalties to banks for engaging in depositor relationships with cannabis-producing companies.) Subsequently, nationwide state action and the Illinois social equity model is consequential to informing how the federal government will advance cannabis legislation.

Advocates and legislators continue to push for social equity in cannabis legislation because they view legalizing recreational cannabis without addressing the "war on drugs" as hypocritical (Quinton, 2018). Throughout the 1980s and '90s, federal and state governments disproportionately criminalized Black and Latino citizens by aggressively targeting, arresting, and prosecuting them for nonviolent cannabis-related drug offenses. From 1990-2002, cannabis-related offenses rose 82%, with 88% of arrests in 2002 for nonviolent possession of an illegal drug (King and Mauer, 2006). By 2014, one-third of Black men could be expected to be incarcerated for mostly nonviolent drug-related offenses despite the fact that White men are 45% more likely to sell illegal drugs (Rothwell, 2014). Cannabis legalization is progressing against the backdrop of thousands of people, particularly Black people, who are facing social and economic barriers that are a clear result of incarceration for offenses that are now inconsequential plus the associated social stigma and legal ramifications they bear as a result, such as losing the right to vote because of a felony conviction for something

that is no longer a felony. Cannabis social equity programs universally provide expungements for nonviolent drug-related offenses, but HB 1438 goes much further in addressing the systemic harms of the “war on drugs” with its approach to social equity.

SOCIAL EQUITY IN HB 1438

HB 1438 acknowledges the unequal treatment of Black and Latino citizens by establishing a clear and reparative intention of the social equity provision of the bill. Part (h) of Section 7-1, “Findings,” states: “In the interest of remedying the harms resulting from the disproportionate enforcement of cannabis-related laws, the General Assembly finds and declares that a social equity program should offer, among other things, financial assistance and license application benefits to individuals most directly and adversely impacted by the enforcement of cannabis-related laws who are interested in starting cannabis business establishments” (HB 1438, 2019, pp. 30).

The passage of HB 1438 piques interest for at least three reasons. First, the Illinois bill originated in the legislature, while every other state’s action to legalize recreational cannabis to date has been via ballot measures. This is particularly notable because the analysis of governance behavior relative to social equity is overwhelmingly represented by public administration studies in the form of educating future public agency managers on how to administer the law more equitably and demonstrating the need to better equip them with social equity management frameworks. When social equity is discussed through a legislative lens, analysis is usually limited to the historical context of social equity as a “third pillar” of public administration (Gooden, 2015). For example, agencies failed to execute civil rights-era policy reforms ending segregation, which partly instigated the modern social equity movement. As a piece of legislation, however, HB 1438 is distinctly different from these approaches and is more like a post-modern policy model advancing social equity.

Second, HB 1438 explicitly articulates an intention to remedy past harms from the “war on drugs” and explains specifics by including a mention of investments, small-business assistance, and other programs. A unique element of HB 1438 is the social equity provision of the bill, which the Brookings Institute lauded in calling for a Cannabis Opportunity Agenda and proposed that federal policymakers look to the design of the social equity provision in HB 1438 in determining how tax revenue and economic benefit from federally legalized

cannabis sales and consumption should target the communities most affected by the “war on drugs” (Henry-Nickie and Hudak, 2020). And the language of the law references neither race, ethnicity, gender, sexual expression, socioeconomic status, nor physical ability and instead uses geographic and experiential markers: residence in a “disproportionately affected area” or a person who was incarcerated because of the “war on drugs.” This is unlike civil rights-era policies that explicitly name race, gender, class, and other demographic markers — referred to as a “protected class” — to end discrimination. The reparatory intent in HB 1438 in naming very specific outcomes, targeting communities, and appropriating dollars suggests it is clearly a reparations bill.

And third, HB 1438 creates a new market — by legitimizing a previously illegal market — and centers that market on the equality of participation by people who have been systematically disenfranchised. This is most like the best practices identified by The National Academy of Public Administration Committee on Social Equity, which outlined four equity indicators: (1) access and distributional equity concerned with distribution of a public service; (2) quality and process equity concerned with the grade and consistency of a public service; (3) procedural fairness concerned with rights, treatment, and eligibility of groups; and, (4) outcomes concerned with resulting disparities for population groups (Hug, 2011). Outcome indicators is a leading issue in the study of social equity. Without a clear scientific method through which a causal relationship can be drawn to empirical observations (such as what exactly causes a lower life expectancy rate among Black Americans), research and recommended remedy is often rejected in favor of more research and study (Gooden, 2015).

If this new market and accompanying regulations prove successful in both remedying identified harms and generating equitable value, then it may demonstrate a model for leveraging new industries to address systemic inequality. Other industries, such as banking, health care, and housing, which have long had issues with propagating racism and discrimination, have materially affected social and life outcomes for thousands of people. When the government legitimizes new technologies and services in these industries, HB 1438 may provide a model for leveraging new markets (e.g., digital currency, virtual health care, and modular housing) to remedy the past harms of these industries. In this way, HB 1438 is experimenting with a new corporate citizenship and social responsibility model.

Academically, social equity is most frequently interpreted as a governance management best practice framework within the public administration space. However, the burgeoning cannabis industry in Illinois presents many opportunities in social equity program modeling and demonstrates the undeniable role that legislators (and therefore politics) must play in advancing actionable social equity frameworks that result in measurable change in society.

ORIGIN AND MEANING OF SOCIAL EQUITY

Modern-day social equity was born in the 1960s because of the civil rights movement and scholarship in the field of public administration recognizing that administrators were not neutral in administering the law (Gooden, 2015). This became most evident as civil rights advocates were making progress in federal-level reforms, yet state and municipal leadership were reluctant or refusing to implement mandated change. In *Brown v. Board of Education I* (1954), the U.S. Supreme Court struck down the separate but equal doctrine and ordered schools to desegregate. By the next year, however, the Court was forced to revisit the case because school districts were not progressing in achieving desegregation. In the original case, the Court vested decision-making to local school administrators, but local laws, culture, and leadership complicated the actual implementation of desegregation. In *Brown v. Board of Education II*, Chief Justice Earl Warren urged localities to act on the new principles promptly and to move toward full compliance with them “with all deliberate speed.” Federal enforcement of desegregation expanded and, in 1957, President Dwight Eisenhower deployed federal marshalls to ensure the Little Rock Nine could attend school in Arkansas without incident. In 1964, Congress continued these desegregation enforcement efforts with Title VI of the 1964 Civil Rights Act, withdrawing funds from schools and other governmental entities receiving federal funds if they discriminated (Library of Congress, 2020).

By 1968, Dwight Waldo was a leading political scientist who authored the seminal public administration text *The Administrative State*. This shifted the academic discussion about the role of the bureaucracy by contextualizing the origins of the modern bureaucracy and challenging the growing assumption that the exclusive purpose of public agency is efficient execution of the law. Increasingly, scholarship held that bureaucracy should mimic business organizations’ processes and execute policies of political leadership in the most efficient way possible. As a result, academic institutions started to

ground curriculum more in the logistics of agency management. Conversely, Waldo argued that public administrators had the duty to protect democratic principles and are, therefore, an element of the American political process (Hill, 2019). This inconvenient reality meant that students of administration needed political, policy, and an administrative education. On the backdrop of this tension, Waldo became frustrated with the discourse (or lack thereof) of civil rights in public administration. In 1968, Waldo convened the first Minnowbrook Conference, where the foundations of the modern social equity movement were formed (Woolridge and Bilharz, 2017). George Frederickson, a public administration scholar and contemporary of Waldo who is, in many ways, a co-founder of social equity, organized the conference. It was originally attended by many of Waldo's and Frederickson's contemporaries, and the conference has continued, reconvening every 10 years. By the 1990s, social equity was widely considered the "third pillar of public administration" in academia (Frederickson, 2010, pp. 52). By 2005, the National Academy of Public Administration, the congressionally chartered association focused on improving governance and advancing the field of public administration, had adopted social equity as the "fourth pillar," accompanying efficiency, economy, and effectiveness (Gooden, 2015).

The treatment and definition of social equity has continued to evolve since the foundation of the movement. This analysis will rely on the functional definition of social equity provided by Svava and Brunet in their 2005 article, *Social Equity is a Pillar of Public Administration*, "the fair, just and equitable management of all institutions serving the public directly or by contract, and the fair, just and equitable distribution of public services, and implementation of public policy, and the commitment to promote fairness, justice, and equity in the formation of public policy."

TREATMENT OF SOCIAL EQUITY IN GOVERNANCE, ACADEMIA, AND RESEARCH

Given the origins of modern social equity, it is reasonable that current academic discourse focuses on methods to expand the social equity framework and advocate for its legitimacy. Frederickson introduced the concept of "new public administration" in a series of essays reflecting on the 1968 Minnowbrook Conference. He argues that new public administration is part of the neobureaucratic model of governance in juxtaposition to the classical bureaucratic model. He notes that the classical model emphasizes "structure,

control, and the principles of administration,” while the neobureaucratic one emphasizes the “process of decision making being ... decisions are made to achieve as much of a given goal as possible” (Frederickson, 2010, pp. 32). This is the context in which research and academic literature expands on the functional understanding of social equity frameworks within governance and has been the principle influence of social equity education for the past 50 years. *Introducing Public Administration*, one of just a few foundational textbooks in public administration studies, defines Frederickson’s *New Public Administration* as “an academic advocacy movement for social equity in the performance and delivery of public services” (Shafritz and Russell, 2017, pp. 501). Subsequently, much of the contemporary discourse on social equity is driven by the need to educate and introduce social equity in the public administration profession (and to advocate for it).

The most recent Minnowbrook Conference, its 50th anniversary, took place in 2018, and leading conference scholars authored a social equity manifesto titled *Social Equity in Public Administration: A Call to Action*. The manifesto features six principles to “assist scholars and practitioners to move beyond rhetorical acknowledgement” of social equity (Blessett, *et al.*, 2019, pp. 296). The first principle is an affirmative statement that “social equity is a foundational anchor, not just a (separate) pillar, of public administration.” The remaining five principles are similarly aspirational professional standards with which the authors intend to “integrate social equity in research, teaching, and practice in public administration. [These principles] make clear that what is hanging in the balance is the identity of the field and the actual lives of those whom public administration is meant to serve” (pp. 296). Because of the origins of the scholarship, social equity research and analysis most consistently emphasizes academic advocacy of social equity within a strictly defined context of public administration.

SOCIAL EQUITY BEYOND PUBLIC ADMINISTRATION — THE ILLINOIS DOCTRINE

The uniqueness of HB 1438 has already been described, so the remainder of this paper will explore the design of HB 1438 and highlight areas of consideration for both public administration and public policy scholars.

OVERSIGHT AND ADMINISTRATION

HB 1438 is 610 pages of text and seeks to design a recreational cannabis market by setting out a highly controlled supply chain that includes substantive provisions around monitoring the total cannabis in the market and requiring dispensaries to account for all cannabis that is purchased and sold.

The law creates six different types of cannabis businesses that are permitted to touch cannabis in the regulated market through licensures: (1) a cultivation center license issued by the Illinois Department of Agriculture that permits a person to act as a cultivation center; (2) a craft grower license for a facility operated by an organization or business that is licensed to cultivate, dry, cure, and package cannabis and perform other necessary activities to make cannabis available for sale; (3) a processing organization license for a facility operated by an organization or business that is licensed by the Department of Agriculture to either extract constituent chemicals or compounds to produce cannabis concentrate or incorporate cannabis or cannabis concentrate into a product formulation to produce a cannabis product; (4) a dispensing organization license that permits a person to act as a dispensing organization under the Act and any subsequent administrative rules; (5) a transportation organization license for an organization or business that is licensed by the Department of Agriculture to transport cannabis on behalf of a cannabis business or a community college licensed under the Community College Cannabis Vocational Training Pilot Program; and, (6) an infuser organization license for facilities operated by an organization or business to directly incorporate cannabis or cannabis concentrate into a product.

In total, HB 1438 taps 15 different state departments and governmental functions and puts them in distinct oversight and administrative roles, and each falls into one of four categories: licensing, monitoring, or reporting, enforcement, or programming. (Table 1) The license types are reflective of the core function of the department that is instructed to permit the license under the law. For example, the Illinois Department of Agriculture is charged with administering adult-use cultivation center licenses for organizations interested in growing cannabis. The law monitors and reports by calling for extensive data collection requirements; 14 out of 15 entities with additional administrative responsibilities listed in HB 1438 have at least some data collection requirements. According to the legislation, the data is intended to monitor a few specific things: (1) the effect of cannabis on social and health outcomes in the state, (2) the total supply of legal cannabis available in the state as informed by both

the legitimate and illicit economy, and (3) the degree of equitable industry ownership and distribution of taxes created by the state’s legal cannabis market. The purpose of all this is to optimize the administration of the law and its social equity programs. For example, an Adult-Use Cannabis Health Advisory Committee was formed and charged with monitoring changes in drug use data and comparing it with emerging science about the health effects of cannabis use and then making formal recommendations to the Illinois Department of Human Services to better manage public health awareness campaigns.

TABLE 1
ILLINOIS STATE DEPARTMENTS AND THEIR RESPECTIVE RESPONSIBILITIES AS
ASSIGNED IN HB 1438

#	DEPARTMENT	LICENSING	MONITORING/ REPORTING	ENFORCEMENT	PROGRAMMING
1	Agriculture	X	X	X	
2	Financial and Professional Regulation	X			
3	Commerce and Economic Opportunity	X	X		
4	U.S. Census Bureau		X		
5	State Board of Education		X		
6	Employment Security		X		
7	Illinois State Police		X	X	X
8	U.S. Federal Bureau of Investigation		X		
9	Public Health		X	X	
10	Human Services		X		X
11	Illinois Community College Board		X		X
12	Secretary of State		X	X	
13	Illinois Criminal Justice Information Authority		X		
14	Legislative Audit Commission		X		
15	Revenue		X	X	

Multiple state agencies are also tasked with enforcement or programming of some provision of the law, such as administrative action or imposing fees against businesses for violations. For example, the Illinois Department of Financial and Professional Regulation may “revoke, suspend, place on probation, reprimand ... a Cannabis business establishment or Cannabis business establishment agent.” And agencies tasked with programming are responsible for providing education, support, or supplementary instruction. For example, the Illinois State Police may “include the costs for tuition at training schools [and] the salaries of trainees while in schools.”

DISCRIMINATION AND REPARATORY INVESTMENTS

The position of the Illinois Cannabis Regulation Oversight Officer was created within the Department of Financial and Professional Regulation to identify discrimination in the cannabis industry and evaluate the impact of such discrimination. The intention, according to wording in the law, is for the Officer to recommend reduction or elimination to “any identified barriers to entry in the Cannabis market.”

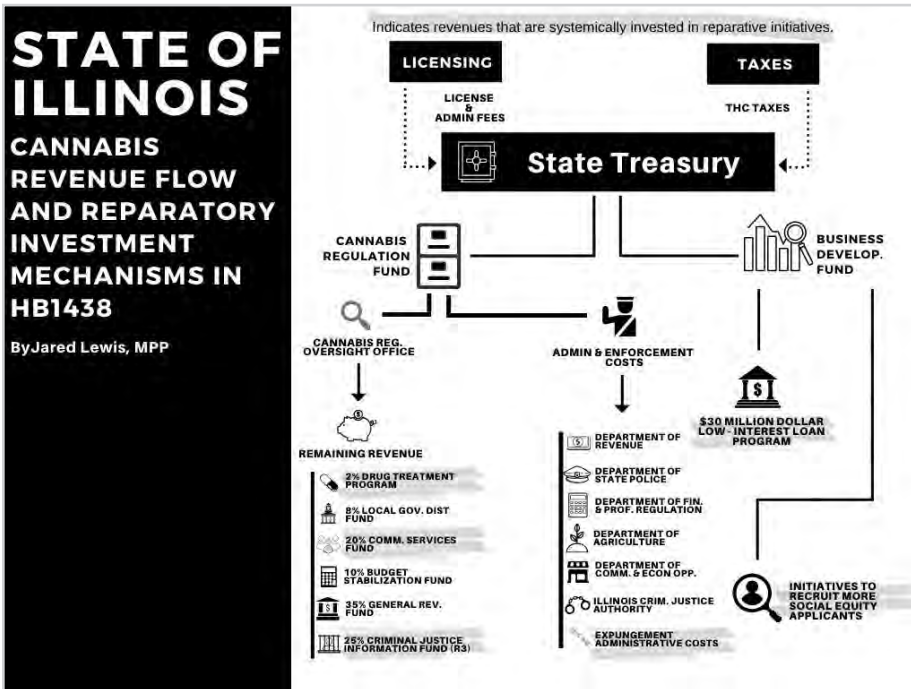
Along with this, HB 1438 institutes several newly codified roles and expands the responsibilities of state officials in the interest of reducing the effect of discrimination throughout the State of Illinois in the cannabis marketplace. At least three different types of programs are created to address such discrimination: advisory, investment, and research. The Adult-Use Cannabis Health Advisory Committee is an example of an advisory program. Composed of state officials, business owners, medical professionals, and cannabis rights advocates, it is charged with monitoring changes in drug use data and making recommendations to the Department of Human Services to better address the harms of addiction. Substantively, this committee is tasked with data-based harm reduction. Harm reduction is a vital tool in equitable public health addiction services because it “recognizes that the realities of poverty, class, racism, social isolation, past trauma, sex-based discrimination and other social inequalities affect both people’s vulnerability to and capacity for effectively dealing with drug-related harm” (National Harm Reduction Coalition, 2020).

The Restore, Reinvest and Renew (R3) Board is an investment program chaired by the Illinois Lieutenant Governor, with seats allocated to the Illinois Attorney General and other state officials. Under this program, 25% of tax revenue from cannabis will fund violence prevention, post-incarceration community reentry,

and health services throughout the State of Illinois (Figure 1). The board is responsible for designating R3 area boundaries, meaning that the Illinois Lieutenant Governor and Illinois Attorney General designate the areas of the state that will receive program funding. Geographic-based investment is a vital function in creating safer neighborhoods because studies show that violence is geographically concentrated: “Around half of all crime complaints or incidents of gun violence concentrated at about 5% of street segments or blocks in a given city” (Lurie, 2019).

FIGURE 1

FLOWCHART OF REPARATORY INVESTMENT MECHANISMS IN HB 1438



The Illinois DUI Cannabis Task Force is a research program appointed to “study the issue of driving under the influence of Cannabis.” HB 1438 grants responsibility for this program to the director of the Illinois State Police, the Illinois Secretary of State, and the president of the Illinois State’s Attorneys Association. An important feature of this task force is the open-ended nature of the question it is studying — namely, what influence does cannabis use have on

motor skills and impairment? Studies about cannabis impairment and motor skills have been inconsistent. A publication by the Centers for Disease Control and Prevention (CDC) suggests that cannabis use while driving is analogous to drinking while driving (CDC, 2017). Yet, a study by Dr. Ethan Russo, director of research at the International Cannabis and Cannabinoids Institute published that “studies have failed to demonstrate that drivers with cannabinoids in the blood are significantly more likely than drug-free drivers to be culpable in road crashes” (Russo, 2008).

Answering the question of cannabis impairment is important given the varied experiences of different demographics in traffic stops by police. The Stanford Open Policing Project investigates the disparities between Black, Latino, and White drivers when it comes to traffic stops and searches. While the study is not conclusive in determining that Black and Latino drivers are the subject of more traffic stops, it is conclusive in determining that minority drivers are searched at a higher rate after being stopped (The Stanford Open Policing Project, 2020). Finding greater clarity regarding the relationship between cannabis use and impairment (particularly while driving) could aid the state in ensuring a more consistent experience at traffic stops across all demographic groups. For example, should this research determine that cannabis intoxication and driving pose no substantive danger to society, it follows that the state would be likely to remove penalties for driving while under the influence of cannabis. This would have a direct impact on the standards by which police would have the authority to search the vehicle of someone suspected of cannabis intoxication after being stopped. Although this effect may be marginal, given the disproportional rate of drug-related searches during traffic stops experienced by minorities, this study by the Illinois DUI Cannabis Task Force may ultimately result in a reduction in the amount of minorities who enter the carceral state as a result of drug related detainment after a traffic stop.

THE CANNABIS MARKET AND LEGITIMIZATION OVERVIEW

HB 1438 legalizes possession and consumption of adult-use recreational cannabis for adults 21 years of age or older. In doing so, the law authorizes a highly regulated supply chain that permits a limited number of producers under each license type to produce or distribute cannabis and cannabis-derived products within the parameters of the law and their license. As part of the state’s multilayered monitoring and control efforts, the Department of Agriculture is tasked with providing a means through which all producers in

the supply chain are required to report the movement of cannabis. The effect of this is that at any given time, the state is able to identify the total amount of cannabis in the legitimate market, the age of cannabis in the market, and any other data analysis that speaks to the movement, sale, or resale of cannabis throughout the state. The supply chain is insulated by limiting purchasing, selling, and transportation of cannabis to interactions between licensed organizations and other licensed organizations. For example, a designated dispensing organization can purchase products from a cultivation center or another dispensing organization. However, a cultivation center is not permitted to sell to an individual buyer. The only licensed organizations that can sell to an individual buyer are dispensaries. Similarly, dispensaries cannot purchase products from any organization that is not licensed by the state. In turn, the state manages the total amount of licenses based on an assessment of demand and total supply available. In granting additional infuser licenses, the Department of Agriculture is instructed to consider (1) the percentage of cannabis sales occurring in the illegitimate market, (2) whether there is an adequate supply of cannabis for medical users, (3) where there is an adequate supply of cannabis to serve purchasers, and (4) whether there is an oversupply of cannabis.

The Department of Agriculture is also tasked with assessing the total amount of cannabis in the legitimate market for the five other license types. The state uses this data to control supply. If the state determines there to be an oversupply of cannabis, the Department of Agriculture is permitted to decrease cannabis in the cultivation stage by up to 3,000 square feet “by rule,” based on market need. HB 1438 also allows the state to penalize retailers in the unregulated market: “Any person who knowingly acts as a retailer of Cannabis in this State without first having obtained a certificate ... shall be guilty of a Class 4 felony.”

HB 1438 SOCIAL EQUITY AND CORPORATE CITIZENSHIP

The state seeks to increase the participation of minorities and disenfranchised communities in the supply chain through the social equity application process. A “social equity applicant” is defined as an applicant that (1) has resided in an area disproportionately impacted by the “war on drugs,” (2) is majority-owned by an individual who was arrested as a result of the “war on drugs,” or (3) has at least 10 full-time employees, with a majority of them either living in an area disproportionately affected by the “war on drugs” for at least five years or having been incarcerated as a result of the “war on drugs.”

The law reads such that neither race nor ethnic demographic is referenced. Instead, the law uses geographic and experiential markers, such as residence of a “disproportionately affected area” or someone who has been incarcerated as a result of the “war on drugs.” This is distinctly different than civil rights-era laws intended to prohibit discrimination, which explicitly name race, gender, class, or other demographic information referred to as a “protected class.” In HB 1438, social equity applicants, as defined by their geographic or experiential marker, receive 50 points in support of their application for a license out of a total point system that includes 250 points. All dispensary license applicants are scored based on the criteria listed in Table 2.

TABLE 2
LICENSE APPLICATION SCORING SYSTEM BY CATEGORY

APPLICATION CATEGORY	TOTAL POSSIBLE POINTS PER CATEGORY
Social Equity Applicant	50
Security/Record Keeping	65
Business Plan, Financials, Floor Plan	65
Knowledge and Experience	30
Employee Training	15
Labor and Employment	5
Environmental Plan	5
Illinois Ownership	5
Veteran Status	5
Diversity Plan	5
<i>Community Engagement Bonus Points</i>	2

An analogous criterion and scoring system that incorporates social equity status is included across all applications for license types accompanied by other social equity initiatives. In addition to social equity application scoring, the Cannabis Business Development Fund includes the creation of a \$30 million low-interest loan program to support social equity business applicants with startup costs, as well as initiatives to recruit more social equity applicants. Simultaneously, revenue from the law continues to be invested through the state’s R3 program. After covering administrative costs, 25% of the remaining revenue is invested

in communities disproportionately affected by the “war on drugs” by way of grants towards gun violence reduction programs, post-incarceration community reentry, and programs that support social determinants of health.

HB 1438 also includes innovative provisions requiring businesses operating in the cannabis market to comply with social impact initiatives. Additionally, large marketplace operators that had been permitted to operate under medical cannabis laws since 2013 must also adopt a social equity inclusion plan that permits the business to choose between one of four types of social impact programs in which to invest up to 5% of sales revenue. These programs range from industry specific training and education to small business incubation.

THE ILLINOIS DOCTRINE — OBSERVATIONS FOR PUBLIC ADMINISTRATION DISCUSSION

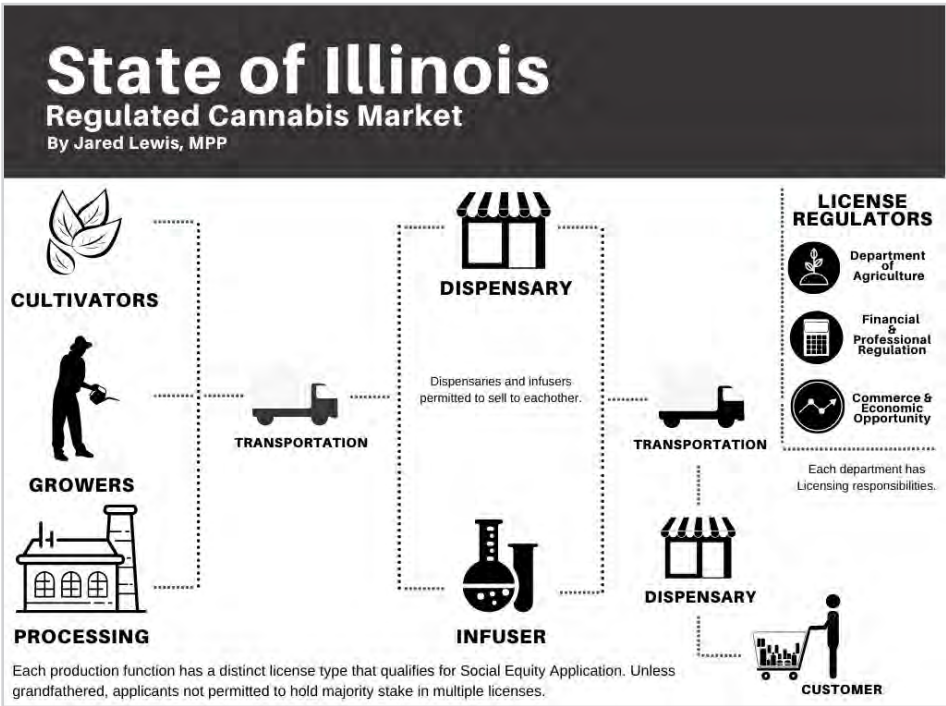
HB 1438 establishes a highly regulated cannabis market in the State of Illinois. Regulations are focused on the supply side of the market. (Figure 2) The law establishes six interdependent functions within the market supply chain from growth to consumption of cannabis products. The state limits the total number of licenses available at any one time based on regular assessment of consumer need for cannabis product (this is determined by collecting and analyzing cannabis consumption data). Similarly, the state also monitors and controls the total amount of cannabis to be produced by licensed organizations based on an assessment of data about the amount of product in the market, both regulated and unregulated. HB 1438 calls for a massive amount of data to be collected, analyzed, and incorporated into administrative decisions regulating the market. Data includes health data, criminal background data, tourism data, data on regulations in other states, and any other data “necessary for the administration of [the Bill].”

With this large scope of HB 1438, there are at least 15 policy observations that may be of interest to public administrators:

1. **It accepts the central role of politics.** HB 1438 evolved out of the “agenda-setting” process in the state legislature. Upon introduction of the bill, the legislative sponsor, Representative Jehan Gordon-Booth (D-92), explained to the Illinois House of Representatives that the discussion around legalizing recreational cannabis began two years prior and that the original intent was to address barriers to minority participation evident in other states (Fox 32 Chicago, 2019).

FIGURE 2

THE REGULATED CANNABIS MARKET IN ILLINOIS



2. **It lists intentions clearly and creates measurement mechanisms that monitor intentions.** HB 1438 provides a “preamble” to the social equity provision in the interest of “remedying the harms resulting from the disproportionate enforcement of Cannabis-related laws.” This “preamble” clearly articulates the intention of the HB 1438 social equity provision and creates data collection and monitoring protocols to achieve these intentions.
3. **It accepts the reality that resolving inequality may be a moving target.** HB 1438 establishes bureaucratic objectives that accept the “causality of empirical inequality” problem. In creating advisory, investment, and research programming, the bill recognizes a broad range of contributions that result in the larger problem of inequality. By charging the oversight officer with providing recommendations to address “any identified barriers

to entry in the Cannabis market,” the legislature empowers the role by statute to simply figure it out and tell the government what is needed to get it done.

4. **It merges classical bureaucratic and neobureaucratic principles.** Expansion of the bureaucracy includes expansion of processes within the bureaucracy. Therefore, HB 1438 is a recommitment to some classical bureaucratic principles that emphasize “structure, control, and the principles of administration” (Frederickson, 2010, pp. 32). Simultaneously, the law empowers administrators to figure things out — a reflection of neobureaucratic principles that emphasize the “process of decision making being ... decisions are made to achieve as much of a given goal as possible” (Frederickson, 2010, pp. 32).
5. **It creates interagency collaboration to address intentions.** HB 1438 relies on the expertise of multiple agency leadership, thereby mobilizing elements of many agencies to resolve the identified problems.
6. **It establishes formal opportunities for localized and citizen participation.** Most of the commissions and committees also make positions available for community activists and civic leaders who represent hyper-local issues and the communities the social equity provision seeks to serve. For example, the R3 Board must also include in its membership “one male who has previously been incarcerated and is over the age of 24 at time of appointment.”
7. **It relies on existing government data and supplements.** The bill requires data collection by almost all of the agencies mentioned in it, as well as using existing data — such as factors to determine “disproportionately impacted areas” in providing R3 capital to communities throughout the state — to make decisions going forward.
8. **It changes the charter of agencies to advance social equity.** In creating a new position and division within the Department of Commerce and Economic Opportunity, the bill effectively changes the charter of the agency. A key objective of the newly created oversight officer (colloquially, the “pot czar”) is to identify discrimination and inequality in the market and address it with administrative action or advisement to the legislature.
9. **It ties reparatory investments to the proportion of revenue by statute.** The bill sets aside 25% of revenue to go towards investment programs by

statute (Figure 1). To reduce the amount of money available for social equity programs, the legislature would have to amend the law.

- 10. It asks open-ended questions or makes a hypothesis about the cause and solution of an instance of empirical inequality.** HB 1438 creates the Illinois DUI Cannabis Task Force to obtain researched answers and report back to the legislature for things like the effects of cannabis consumption and driving and directs the Department of Human Services to monitor any changes in addiction related to cannabis. These findings will de-politicize their underlying questions (i.e., is cannabis addictive?).
- 11. It relies on free market principles and centers social equity.** At its heart, HB 1438 is a commerce and economic development bill. Its revenue, reparatory investment scheme, and enforcement and licensing is constructed around the creation of a new marketplace.
- 12. It disrupts inequality one issue at a time and attempts to resolve one issue at a time.** While issues of discrimination and empirical inequality exist throughout the state and across many industries, HB 1438 starts with the cannabis industry.
- 13. It leads with the expectation that corporations must do more.** HB 1438 implements community investment requirements for larger cannabis operators. It calls on bigger market players to help develop smaller market players and ties this support to a percentage of overall revenue of the business (up to a cap).
- 14. It uses experiential markers for social equity eligibility rather than a “protected class.”** Unlike civil rights legislation, which is arguably the most consequential social equity legislation on the federal level, HB 1438 does not create protected classes but instead leverages government fiat to acknowledge errors of the government’s past and sets out to resolve them.
- 15. It meets and expands social equity beyond public administration.** The functional definition of social equity provided by Svava and Brunet consists of three parts: (1) the “equitable management of institutions,” (2) just and equitable distribution of public services, and (3) “to promote fairness, justice, and equity in the formation of public policy” (2005). These elements are concerned with the process of governance and reflect a desire for government institutions to be fair in their approach to what they do and how they do it. HB 1438 interprets social equity as specific reparative

actions. While this may be broadly defined as a form of justice, HB 1438 uses a social equity frame that is inherent in its specifically defined reparatory action to measurably advance an equality of outcomes as opposed to just an equality of process.

CONCLUSION

The State of Illinois' implementation of HB 1438, the Cannabis Regulation and Tax Act, may prove to be one of the most consequential pieces of legislation in some time. The bill includes a social equity provision that has been lauded and which may become the baseline on which the federal government will legalize recreational cannabis. Additionally, the bill provides an opportunity for the field of public administration, and the associated academic movement, to move past a focus on legitimatization of social equity and start thinking critically about the future of the profession by supporting specific agency policies and public policy frameworks. Plus, HB 1438 leverages the creation of a new market to solve for policy failures of the past. In this sense, HB 1438 is — among other things — a post-modern social equity and reparations bill.

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ADOPTION OF PLASTIC BAG ORDINANCES IN ILLINOIS: LESSONS FOR MUNICIPALITIES CONSIDERING LEGISLATION

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Single-use plastic bags create numerous environmental and public health challenges. To date, 543 U.S. municipalities, including five in Illinois, have passed laws designed to curb their use. We analyze the plastic bag ordinances adopted in Illinois and draw on interviews with community leaders, elected officials, and municipal employees from those five communities (Chicago, Edwardsville, Evanston, Oak Park, and Woodstock) to examine factors driving the adoption of these local laws; why each municipality included specific features in their ordinances; what implementation challenges they have faced; and, their perspectives on state-level legislation. We also discuss how the proposed state bills will affect current municipal ordinances and offer recommendations for municipalities considering plastic bag legislation.

INTRODUCTION

At a global level, people are becoming more concerned about the negative effects of single-use plastics on the environment and human health (United Nations Environment Programme, 2018). Single-use plastic bags, in particular, attract criticism because they are so visible and so widely used. Plastic bags were first introduced in U.S. supermarkets in 1982 (Evans, 2019), and today, Americans use an estimated 100 billion of them per year (Wagner, 2017). In 2017, Americans recycled only 9.4% of the 4.14 million tons of plastic bags, sacks, and wraps that passed through the municipal waste stream (U.S. Environmental Protection Agency, 2019, p. 34).

Concerns about plastic bags focus on the petroleum resources needed to produce them as well as their persistence and toxicity in the environment. These bags “photodegrade” and break down into microscopic particles when exposed to sunlight; however, the tiny plastic particles never biodegrade (Lapidos, 2007). Although the potential effects of microplastics on human and environmental health are still unclear (Halden, 2010), scientists have

discovered these particles in our air, food, and drinking water (Koelmans *et al.*, 2019). Plastic bags can also clog storm drains and sewers, as well as the equipment used to sort materials at municipal recycling facilities.

In response to these concerns, many countries have adopted single-use plastic bag bans, fees, and taxes. At least 32 countries have banned plastic bags, and 18 have instituted taxes or fees to discourage the use of plastic bags, with another 17 having a partial ban or tax (ReuseThisBag.com, 2018).¹ In the United States, eight states, including California, Connecticut, Delaware, Hawaii, Maine, New York, Oregon, and Vermont, have passed laws designed to ban the use of single-use plastic bags, but another 15 states have laws that restrict municipalities from enacting such laws. In 2017, there were 271 municipalities with single-use plastic bag laws in place (Wagner, 2017), and this number has grown in the last three years. According to an online database maintained by the American Recyclable Plastic Bag Alliance, by March 2020, 543 communities in the United States had enacted single-use plastic bag laws, either in the form of a ban or tax or fee.

As of June 2020, five Illinois municipalities — Chicago, Edwardsville, Evanston, Oak Park, and Woodstock — have passed laws to curb the use of single-use plastic bags. Evanston is the only Illinois community with a definitive ban on single-use plastic bags. The other four municipalities discourage people from using them through a seven- or 10-cent per bag fee or tax. Chicago initially introduced a plastic bag ban in 2014, but it was repealed and replaced with a tax in 2016. In order to enact local plastic bag laws, Illinois municipalities must have home rule status.²

As concerns about the environmental impacts of single-use plastics spread, some communities in Illinois³ are considering adopting similar laws, and Illinois legislators have proposed several bills on plastic bags and single-use plastic cutlery, straws, and Styrofoam. Research is needed to help municipal leaders make informed decisions about how to approach plastic bag legislation in their communities. Between May and July 2020, we conducted semi-structured interviews⁴ with 16 community leaders, elected officials, and municipal employees in the five Illinois communities that have passed plastic bag legislation to understand why they took action on the plastic bag issue, how they designed their local ordinances, and what challenges they have faced during implementation. In developing our approach, we drew on previous research examining the emergence and spread of an international “anti-plastic bag shopping bag norm” (Clapp and Swanston, 2009). Our study contributes

insights into how environmental norms emerge and evolve in Illinois municipalities and how they are interpreted and actualized in local and state policies.

Due to COVID-19, plastic bag ordinances in Illinois have been temporarily suspended or postponed⁵ because Governor JB Pritzker's Executive Order 2020-32 specifies that essential stores must "discontinue use of reusable bags."⁶ However, officials expect the ordinances to be reinstated after pandemic restrictions are lifted. In the sections that follow, we examine the insights shared by our study participants. Their experiences and perspectives are useful for understanding what is driving plastic bag legislation in Illinois and strategies for designing and implementing more effective plastic bag ordinances.

FORCES DRIVING ADOPTION OF PLASTIC BAG ORDINANCES

Table 1 shows the variations in demographics and government structures in the five municipalities. Geographically, Chicago, Evanston, Oak Park, and Woodstock are clustered in northern Illinois while Edwardsville is in southern Illinois.

The process leading to the adoption of a plastic bag ordinance differed in each of these communities. However, in each, there was a shared sense that something needed to be done at a local level to act on the global problem of plastic pollution. Study participants described a similar process of becoming concerned about this issue (e.g., through articles in newspapers, magazines, and documentaries on the impacts of plastic waste), conducting research about what other communities had done to address this problem, and then working to build support for a local bag law. Many began with community outreach campaigns and calls for voluntary action. Ultimately, however, they decided a mandatory bag law was required to have a significant impact.

In each community, the two primary goals were to reduce plastic pollution and change behavior by making people aware of their reliance on plastic. Revenue generation was often discussed as a benefit of a tax or fee, but all our participants asserted this was not a primary goal. Many described plastic bags as a logical starting point for addressing plastic pollution because they are so common. In the words of one study participant, "Everyone can see themselves in this, and it puts them in the driver's seat of making this decision . . . they can see themselves as part of the solution."

TABLE 1**CHARACTERISTICS OF THE FIVE ILLINOIS MUNICIPALITIES WITH PLASTIC BAG LAWS
(AS OF JULY 2020)**

	CHICAGO	EDWARDSVILLE	EVANSTON	OAK PARK	WOODSTOCK	ILLINOIS
Estimated population in 2019	2,693,976	25,233	73,473	52,381	25,240	12,671,821
Median household income (in 2018 dollars), 2014-2018	\$55,198	\$69,213	\$77,848	\$91,945	\$60,940	\$63,575
Race/ethnicity (%) in 2019						
White	49.4	83.2	67.2	69.1	90	76.8
African American	30.1	10.8	16.6	18.3	3.7	14.6
Hispanic or Latino	29	2.5	11.8	8.8	22.9	17.5
Bachelor's degree or higher, %, 25+, 2014-2018	38.4	52.4	65.7	69.7	26.9	34.1
Form of government	Mayor-council	Mayor-council	Council-manager	Village manager-board of trustees	Council-manager	
Citizen-led environmental advisory committee or commission (yes/no)	Yes	Yes*	Yes	Yes	Yes	
City sustainability manager/officer (yes/no)	Yes	No	Yes	No	Yes	
Home rule	Yes	Yes	Yes	Yes	Yes	

**The City of Edwardsville does not have an environmental advisory committee, but it does have a Cool Cities Initiative Advisory Committee that is focused on environmental issues.*

Table sources: U.S. Census Bureau (2020); City of Chicago (2020); City of Edwardsville (2020); City of Evanston (2020); City of Woodstock (2020); Village of Oak Park (2020); Illinois Municipal League (2020); personal communication.

Building support for a bag ordinance required cooperation between active citizen groups, supportive city employees and elected officials, and local businesses that would be affected by the law. Once momentum started to build, in the words of one proponent, the “timing still had to be right.” In Illinois, several factors shaped favorable timing. Chicago first passed a ban on plastic bags in 2014, and this led to a geographic spillover effect in municipalities that bordered on Chicago. Large retailers adapted to the ban in their Chicago stores, and consumers who traveled to Chicago became accustomed to not being offered a plastic bag. People in smaller surrounding municipalities saw this as an opportunity to take similar action.

In 2015, Evanston passed a ban that was virtually identical to Chicago’s. Among the people we interviewed, there was a sense that people in Evanston are “very forward-thinking and highly educated.” Adopting the ordinance signaled a commitment to progressive environmental ideals and helped the city move toward waste reduction goals included in the city’s Climate Action and Resilience Plan. The interview participants indicated that the city’s sustainability manager, members of the city’s Environment Board (comprised of citizens nominated by the mayor and appointed by the council), and local environmental groups played key roles in building support for the ordinance.

Study participants from Oak Park, which is also immediately adjacent to Chicago, described their community as “progressive” and stressed that the village prided itself on being a leader in the environment. One participant described Oak Park’s plastic bag law, which the village council passed unanimously, as a “no brainer.” Although local organizations played a role in building support for the ordinance, at least one elected official argued that Oak Park’s initiative was “born at the board level.” Chicago’s ban got peoples’ attention, and members of the village’s Environment and Energy Commission chose to focus on the issue.

Woodstock’s plastic bag ordinance, which went into effect in January 2020, came about through the coordinated actions of a county-level environmental group and the city’s Environmental Commission. The mayor was also very supportive. Proponents initially focused on multiple cities in McHenry County. However, leaders in municipalities with shared borders were concerned consumers would shift their shopping to other communities or get confused about regulations “in place on one side of the street but not the other.” Participants explained that Woodstock was “in a nice position to be a leader in the community” because it was “more isolated” from other cities. Study participants also described Woodstock as “progressive,” especially on

environmental issues, with strong citizen-led committees. In the words of one participant, “If there are controversial issues, [other communities say] let Woodstock do it first!”

Edwardsville is the only downstate municipality to have successfully passed a plastic bag law. The ordinance was scheduled to take effect April 1, 2020, but was delayed due to COVID-19 concerns. The initiative was spearheaded by a local grassroots environmental group formed specifically to encourage people to switch to reusable bags. As in other communities, proponents started with community education but eventually identified a law as the best way to change behavior. They initially targeted the cities of Edwardsville and Glen Carbon, which are contiguous, but Glen Carbon is not a home rule municipality. Interviewees did not describe Edwardsville as progressive, but they did stress that it is a college town where green space is valued.

In each of these municipalities, passing a plastic bag law was a multiyear process. While Chicago’s 2014 ban seemed to tip more communities into action, many had previously discussed plastic bag ordinances. Table 2 summarizes the driving factors described by our study participants.

TABLE 2
DRIVING FACTORS ASSOCIATED WITH THE SUCCESSFUL ADOPTION OF PLASTIC BAG ORDINANCES IN ILLINOIS MUNICIPALITIES

Geographic proximity to another municipality with a plastic bag law
Strong citizen-led environmental advisory committee
Strong citizen-led community activism around environmental issues
Sense of civic pride and commitment to environmental leadership
Desire to do something locally to impact a global problem
Supportive city officials
Supportive (or neutral) retailers, especially “big box” stores

FEATURES OF THE ORDINANCES IN ILLINOIS

Leaders in all five communities said they researched how to craft an effective plastic bag ordinance, including examining example ordinances from other U.S. cities. Table 3 compares the key features of the ordinances that were eventually adopted. In our interviews, we asked participants why they decided to adopt these features.

BAN VERSUS FEE OR TAX

Whether to ban plastic bags or use a fee or tax to discourage their use was actively debated in each of these five municipalities. Chicago initially adopted a ban in part because city aldermen were approached about a bag law by entrepreneurs who manufactured a compostable bag that they hoped would replace the traditional thin, single-use polyethylene bags stores used. At the time, bans were a more common form of plastic bag legislation in the United States (Wagner, 2017), and there was a sense that, in the words of one participant, “if plastic bags are a problem, we should get rid of them.”

The ban in Chicago was repealed and replaced in 2016 because there was a sense that retailers were circumventing it by selling thicker plastic bags and consumers were not switching to reusable bags. Retailers also had to bear the cost of offering more costly alternative bags. According to one pre- and post-bag tax research study (Homonoff *et al.*, 2018), the Chicago bag tax is more effective than the initial ban in reducing plastic bag usage and encouraging consumers to switch to reusable bags. Research and theory in behavioral science demonstrates that people are profoundly “loss averse.” People will adjust behavior and switch to reusable bags or use fewer single-use bags in order to avoid losing even a small amount of money.

Evanston adopted a plastic bag ban similar to Chicago’s in 2015. Many of our study participants from there were proud to still have a ban in place because it felt like a more definitive form of action. However, participants who were familiar with the Chicago case study thought Evanston’s law should probably be replaced with a fee or tax. According to one interviewee, “We’ve known for two years that the ban is ineffective. Other priorities have been elevated over this, but we’re building up a case to change this.” This participant also opined that partially defining a “reusable” bag as being thicker than 2.25 mil is the “fatal flaw” of the Evanston bag ban because it could allow retailers to claim thicker plastic bags are reusable.

In the three municipalities where bag laws were adopted after 2015 — Edwardsville, Oak Park, and Woodstock — community leaders and local officials determined after research that a fee would be more effective. They looked to the data from Chicago and other places that have adopted fees and sensed that, as one interviewee put it, “people like it to be a choice, not a mandate.” Existence of an option also makes it more likely that consumers think about whether they want to pay the fee each time they’re at the store and, ideally, become more aware of their plastic use.

TABLE 3

COMPARISON OF KEY FEATURES OF PLASTIC BAG ORDINANCES ADOPTED IN FIVE ILLINOIS MUNICIPALITIES

	CHICAGO		EDWARDSVILLE
Effective date	8/1/2015 (ended 12/31/2016)	2/1/2017	4/1/2020*
Ban/tax/ fee	Ban	Tax of 7 cents/bag	Fee of 10 cents/bag
Single-use bags affected	Plastic	Plastic and paper	Plastic and paper
Tax/fee structure	N/A	2 cents to retailers, 5 cents to the city	10 cents to retailers
Revenue allocation	N/A	City's corporate fund	N/A
Retailers affected	Chain stores and franchises greater than 10,000 sq. ft. by 8/1/2015; all chain stores and franchises by 8/1/2016	All retailers	7,000 sq. ft. or greater
Reusable bag definition	Machine washable or made from a material that can be cleaned or disinfected; if made of plastic, at least 2.25 mils thick	No definition	Machine washable or made from a material that can be cleaned or disinfected; if made of plastic, at least 2.25 mils thick
Exemption for low-income customers	None	Customers with Supplemental Nutritional Assistance Program or similar government food assistance benefits	Stores may provide disposable bags free of charge to any consumer who participates in a State of Illinois food assistance program

* Edwardsville's single-use bag ordinance effective date was postponed due to COVID-19.

Table sources: City of Chicago (2014, 2016); City of Edwardsville (2019); City of Evanston (2014); Village of Oak Park (2017); City of Woodstock (2019).

EVANSTON	OAK PARK	WOODSTOCK
8/1/2015	1/1/2018	1/1/2020
Ban	Fee of 10 cents/bag	Fee of 10 cents/bag
Plastic	Plastic and paper	Plastic and paper
N/A	5 cents to retailers, 5 cents to the village	3 cents to retailers, 7 cents to the city
N/A	Village sustainability fund	City environmental management fund
Chain stores and franchises 10,000 sq. ft. or greater	5,000 sq. ft. or greater	5,000 sq. ft. or greater
Machine washable or made from a material that can be cleaned or disinfected; if made of plastic, at least 2.25 mils thick	Made of cloth, fiber, or other machine washable fabric	Made of cloth, fiber, or other machine washable fabric
None	None	None

FEE STRUCTURE AND USE

According to data from Bustos (2019), from February 2017 to March 2019, Chicago had an average monthly bag tax revenue of \$527,317. The same source also showed that from January 2018 to February 2019, Oak Park had an average monthly bag fee revenue of \$10,412.⁸ No revenue data is available for Woodstock yet. In Chicago, wholesalers collect the tax on bags they sell to retailers, remit it to the municipality, and then file tax returns. Retailers can charge consumers the fee (to offset their costs), but they don't have to pass on this cost to consumers. Bag law proponents worried that this would be confusing, but by their observation, 95% of retailers charge the fee. In Oak Park and Woodstock, retailers collect the fee and remit it to the municipality on a monthly basis.

The amount of money generated is likely sufficient to pay for costs associated with implementation and community education, but the amounts are often too small to support staff salaries or large projects in smaller municipalities. Our study participants stressed that revenue generation should not be the primary goal of passing a plastic bag law, but they also described the fee as an important bargaining chip when negotiating support from local officials.

In municipalities that opted for a bag fee or tax, there were also important decisions to make about where this money would go and how it would be used. So far, all the plastic bag ordinances in Illinois direct some or all of the revenue generated to the retailer to offset the costs of supplying alternative bags and adjusting their point-of-sale systems to collect the amount. As seen in Table 3, retailers in Edwardsville retain the entire fee, which interviewees said was a compromise to help get local stores on board with the ordinance. In Chicago, two cents go to the retailer and five to the city's general fund. According to one study participant involved in the passage of the Chicago bag tax, community members suggested the money be reinvested in environmental causes, but this was "quickly batted down."

In Woodstock and Oak Park, however, a portion of the fee collected by the city is earmarked specifically for environmental or sustainability funds. Woodstock uses some of the money to maintain a remediated Superfund site and, at the time of this research, both communities were actively discussing other uses for the funds. Proposals ranged from bike trails to additional waste management and waste reduction projects. Most study participants who supported bag taxes felt that revenue should stay local and go to relevant causes. However,

two people were concerned that if consumers think the money goes to a “good cause,” they might view it as a donation and not feel loss averse enough to use fewer plastic bags. As one interviewee explained, “We don’t want [paying the fee] to feel good.”

EXEMPTIONS AND ENFORCEMENT PENALTIES FOR RETAILERS

Another point of debate in formulating plastic bag ordinance policies focused on which retailers should be included. Each community had an interest in limiting any possible negative impacts on small businesses. Chicago’s and Evanston’s bans affected only chain stores and franchises; in other communities, a minimum square footage was used to exempt smaller retailers. In the words of one participant, “Our small businesses ... are our heart, and they are very fragile. If they feel threatened, we need to address their concerns at every chance.” During the discussion processes, officials often identified which stores would be affected at different square footage thresholds to determine what seemed “right” locally. Most study participants saw exemptions for smaller stores as a necessary “starting point” and hoped the ordinance could be expanded to all retailers after a period of adjustment. Many smaller stores exempted from the ordinance began voluntarily offering non-plastic and reusable bag options anyway, participants noted.

Each ordinance specifies small penalties for retailers who do not comply, but study participants said they generally issued only verbal warnings. Fines were rarely (if ever) collected because most retailers adjusted quickly after a reprimand or explained why the complaint was invalid. None of our participants mentioned any significant costs associated with enforcement.

EXEMPTIONS FOR CONSUMERS

Only two of the five municipalities’ ordinances include exemptions for low-income consumers. In Chicago, the tax is not charged to customers who pay using Supplemental Nutritional Assistance Program (SNAP) or similar government food assistance benefits, and in Edwardsville, retailers can choose not to collect the fee from customers using these benefit programs. Study participants in the other three Illinois municipalities said they had discussed this at length and ultimately decided that the small charge was not onerous enough to justify an exemption. Several of the people we talked with posited that low-income customers should have the opportunity to choose whether to use plastic bags. Mentioned often among interviewees was the need to

meaningfully include residents, retailers, and elected representatives from low-income neighborhoods when developing and publicizing the ordinance so that the law can be adapted to fit local needs and concerns.

EDUCATION AND PHASE-IN PERIODS

In all five communities, the city or nonprofit organizations provided free reusable bags to community members before and after bag laws were enacted. In Woodstock, the city held a logo design contest and then distributed 15,000 bags with the winning design. In Oak Park, reusable bags are permanently available at local libraries and community centers. Before the ordinances went into effect, community leaders and municipal employees prepared the communities with education campaigns. This phase-in period also gave retailers time to adapt their point-of-sale systems and store signage.

CHALLENGES WITH IMPLEMENTATION

Overall, study participants indicated experiencing fewer challenges with implementation than they expected and said it seemed most people adjusted quickly. City officials reported receiving occasional and diminishing complaints from a “vocal minority.” They attributed this to how concessions were made during the development process to accommodate concerns (especially those from small businesses) and the fact that the fees (where applicable) were not enough to matter that much financially. Although some people initially worried that consumers would shop elsewhere, there was no evidence this had happened at any significant level.

No injunctions or lawsuits have been filed in response to these plastic bag laws. One chamber of commerce representative explained that, although some businesses in her city were unhappy with the ordinance, any negative impacts would cost more to fight (legally) than they would cost to “live with.” In communities with bag fees, the portion of the fee retained by retailers also helped to offset their costs. Chicago’s initial bag ban had been opposed by the Illinois Retail Merchants Association, but its representatives worked with bag law proponents to replace the ban with a fee. Most study participants said businesses affected by these laws were supportive or neutral throughout the process, and many pointed out that major chain stores had already handled similar laws in other regions.

When we asked about challenges, study participants focused on loopholes and unintended side effects they wish they had addressed when designing their ordinances. As mentioned before, some retailers in Evanston circumvent the single-use plastic ban simply by using thicker plastic bags that meet the 2.25 mil requirement. Community leaders expressed frustration at how this undermines the goal of the ordinance.⁹ Two study participants were also concerned about the increased use of paper bags, and cited research that said paper bags are also resource intensive to produce and potentially environmentally harmful.¹⁰ To close these loopholes, participants recommended not specifying bag thickness, carefully defining what is meant by “reusable,” and charging fees for both plastic and paper bags to encourage the use of nondisposable bags that can last for hundreds of uses.

PERSPECTIVES ON STATE-LEVEL PLASTIC BAG LEGISLATION

In February 2019, Illinois state legislators introduced three bills on single-use carryout and checkout bags: SB 1240, SB 3423, and HB 3335 (Table 4). These bills proposed a tax or fee from seven to 10 cents per single-use bag (including plastic, paper, or compostable bags). As seen in Table 4, the revenue would be divided according to specified structures, and the bills set up some exemptions for municipalities, customers, and retail establishments.

All three bills would limit home rule powers. Counties and municipalities that had plastic bag tax or fee ordinances in place by certain dates (February 1, 2018, for SB 1240 and HB 3335 and May 1, 2020, for SB 3423) may continue, but they wouldn’t be allowed to make any changes unless they are consistent with the proposed state bills. Counties and municipalities may not ban carryout bags under each of the bills, which means the ordinance in Evanston would be void if any of them pass.

Additionally, this year Illinois Governor JB Pritzker proposed a five-cents-per-bag tax in his draft 2020 budget where all five cents would go to the state’s General Revenue Fund. Currently, three state bills are at various stages of action, but Governor Pritzker’s bag tax proposal was not included in the state’s fiscal year 2020 budget.

Most study participants supported state-level legislation in the form of a bag tax or fee because it would reduce plastic waste generation in Illinois by a much larger percentage than their efforts. However, most also felt strongly that any bag laws passed at the state level should not preempt home rule in

TABLE 4
MAJOR PROVISIONS OF PROPOSED STATE LEGISLATION

BILL	SB 1240
Proposed date	2/6/2019
Introduced by	Sen. Terry Link
Tax/fee	7 cents
Carryout bag definition	Plastic, paper, or compostable bag
Revenue structure	2 cents to the retailer, 2 cents to the wholesaler, 3 cents to the state Checkout Bag Tax Fund
Municipal exemption	Municipalities with a population greater than 2.5 million
Customer exemption	Recipients of SNAP benefits or a similar governmental food assistance program
Retail establishment exemption	Food banks and other food assistance programs
Impact for municipalities	Limits home rule powers. A municipality may not ban carryout bags. A municipality that charged a fee or tax on carryout bags on February 1, 2018, may continue the charge but is not allowed to change the existing ordinance unless the change is to be consistent with this bill or eliminate the tax or fee altogether.
Last action	5/31/2019, Senate, Rule 3-9(a) / re-referred to Assignments

Table sources: Illinois General Assembly (2019a, 2019b, 2020).

SB 3423	HB 3335
2/13/2019	2/15/2019
Sen. Melinda Bush	Rep. Ann M. Williams
10 cents	10 cents
Plastic, paper, or compostable bag	Plastic, paper, or compostable bag
3 cents to the retailer, 4 cents to the state Checkout Bag Tax Fund, 1 cent to the Prairie Research Institute of the University of Illinois, 1 cent to the Solid Waste Management Fund, and 1 cent to the Partners for Conservation Fund	3 cents to the retailer, 4 cents to the state Checkout Bag Tax Fund, 1 cent to the Prairie Research Institute of the University of Illinois, 1 cent to the Solid Waste Management Fund, and 1 cent to the Partners for Conservation Fund
Municipalities with a population greater than 1,000,000	Municipalities with a population greater than 1,000,000
Recipients of SNAP benefits or a similar governmental food assistance program	Recipients of SNAP benefits or a similar governmental food assistance program
Food banks and other food assistance programs, mobile food delivery, or restaurants	Food banks and other food assistance programs, mobile food delivery, or restaurants
Limits home rule powers. A municipality may not ban carryout bags. A municipality that charged a fee or tax on carryout bags on May 1, 2020, may continue the charge but is not allowed to change the existing ordinance unless the change is to be consistent with this bill.	Limits home rule powers. A municipality may not ban carryout bags. A municipality that charged a fee or tax on carryout bags on February 1, 2018, may continue the charge but is not allowed to change the existing ordinance unless the change is to be consistent with this bill.
2/14/2019, Senate, referred to Assignments	6/23/2020, House, Rule 19(b) / re-referred to Rules Committee

municipalities that have passed or will pass their own local ordinances. They acknowledged that policy conformity would help eliminate a patchwork of local laws that could be confusing for consumers and discouraging for retailers, but they also thought plastic bag laws needed to be locally adapted to avoid unintended consequences, as well as keep revenue in the community. As one interviewee explained, “Legislation at the state level makes it easier for people, but local control is also important.” The notable exception to this stance was in Edwardsville, where the ordinance already includes what one participant called a “kill switch” where the local law would be automatically revoked if a state law passes.

Many of the people we interviewed viewed their actions as part of a larger process of building the pressure necessary to encourage more communities to adopt their own ordinances or to eventually pass a state-level plastic bag law. They said they actively shared information and advice with people in other communities in the hope that more of them would ban or tax bags, leading to a larger impact on plastic pollution.

POLICY RECOMMENDATIONS

The consensus among our study participants was that, after an initial period of adjustment, these plastic bag ordinances generated very little pushback from either retailers or local citizens and posed very few challenges in terms of implementation. They suggested several strategies for designing smarter plastic bag laws in Illinois.

EDUCATION AND COMMUNITY SUPPORT ARE ESSENTIAL

Local leaders recommended including education programs, reusable bag giveaways, and a phase-in period to allow consumers to learn about why single-use bags are harmful and make educated decisions about whether to continue using them.

FEES WORK, BUT THE GOAL IS TO REDUCE PLASTIC WASTE, NOT TO GENERATE REVENUE

According to our participants, bag fees or taxes may be more effective than bag bans on multiple levels. They effectively reduce single-use plastic bag use (ScaAN 2017; Thomas *et al.*, 2019), offset costs to retailers for providing bags and updating point-of-sale systems, and seem to be more appealing to

residents. The fees can also help fund municipal activities associated with the bag law (e.g., education campaigns and bag giveaways) or other environmental initiatives. They suggested discussing and carefully specifying in the ordinance how these funds will be used and who gets to make these decisions.

However, study participants stressed that because the ultimate goal is to reduce plastic bag use as much as possible, municipalities cannot become dependent on this revenue. If charging a bag fee or tax, plan for this funding source to shrink over time as people adjust to using fewer bags. The leaders we talked with recommended staying focused by setting goals and benchmarks for waste reduction and tracking progress with a plastic bag law as one component of a larger strategy.

BEWARE OF LOOPHOLES AND UNINTENDED CONSEQUENCES

Study participants suggested communities contemplating plastic bag rules should impose a fee on all single-use bags, not just plastic, and carefully define what is considered a “reusable” bag. They discouraged specifying bag thickness in the ordinance since this could lead retailers to switching to thicker bags, which use more plastic.

BUILD IN MECHANISMS TO ASSESS IMPACT AND EFFECTIVENESS

Although hundreds of communities in the United States have adopted plastic bag laws, very few have designed processes to systematically assess whether these laws are effective at reducing plastic bag use and whether they have unintended consequences (i.e., negative effects for retailers). Before enacting a law, plan to collect baseline data on plastic bag usage. After the law is enacted, continue to collect data at regular intervals to determine whether plastic bag use is declining, whether sales have been impacted, and other issues of concern to local community members. Consider partnering with a local university or hiring external consultants to do this research (possibly using the revenue generated by a fee). Nearly all the people we interviewed intended to do a better job of this in the future and wished they had discussed this more at the start. Good data on the effectiveness of these local policies will also be useful for thinking about how to improve plastic bag legislation state- and nationwide.

CONCLUSION

Illinois municipalities are already leading in implementing smart policies

designed to reduce plastic waste generation, and they will continue to do so. The experiences and perspectives of community leaders, municipal managers, and elected officials in these five Illinois communities help us better understand the role that plastic bag ordinances can play in waste reduction initiatives and how to make these laws more effective.

Their perspectives also help us understand what is driving the development of an “anti-plastics norm” in some Illinois communities. In their analysis of the global development of this new environmental norm, Clapp and Swanston (2009) described the global diffusion of an anti-plastics norm “as an ad hoc series of bottom-up events occurring simultaneously at different jurisdictional levels around the world” (p. 316). Our research suggests that in Illinois communities, the decision to focus on plastic bags as a point of entry for addressing larger concerns about plastics originated with active community members and city leaders inspired by widely circulating magazine articles, news reports, and documentaries about the harm caused by plastics, as well as other communities that have already passed plastic bag laws. Although diffusion is still “bottom-up,” it is clear that Illinois community members are beginning to draw on anti-plastics discourses that reflect a more uniform message on the problem with — and potential solutions for curbing our dependence on — single-use plastics.

In the United States, the “anti-plastics norm” has merged with the idea that behavioral economics can be used to design more effective solutions for curbing plastic use. It is essential that municipalities in Illinois and elsewhere collect better data on the results of these policies to determine how much plastic waste is being reduced and to lay the groundwork for more comprehensive initiatives. Ultimately, many of our study participants argued that an anti-plastics agenda was not enough to address their broader concerns about waste generation and management. They viewed plastic bag policies as a small first step in changing behaviors and mindsets surrounding waste.

The fact that plastic bag laws have only been passed in five municipalities (and not yet at the state level) suggests that there may still be resistance or indifference to this idea in many Illinois communities. Our study helps us understand how and why these laws were enacted in these five communities, but more research is needed to understand why plastic bag initiatives (and the development and diffusion of a broader anti-plastics norm) might have stalled or failed elsewhere. Experiences with the COVID-19 pandemic may also significantly alter public attitudes toward reusable versus disposable items, including single-use plastic bags. Despite these limitations, this research makes it clear that plastic bag laws

can be effective at reducing plastic bag usage and triggering behavioral change in a relatively short amount of time with few implementation challenges.

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ENDNOTES

¹ ReuseThisBag.com is a company that supplies wholesale reusable and recycled promotional bags. The American Recyclable Plastic Bag Alliance is a plastics-industry-funded lobby group that tracks plastic bag legislation in the United States. We cite these sources because their records on international, state, and municipal bag laws are more up-to-date than available scholarly sources, but neither of these websites is a neutral source of information.

² According to Article VII of the Illinois Constitution, units of local government with a population in excess of 25,000 have home rule status unless a referendum has been passed to remove home rule status. Other municipalities can elect to become home rule through a referendum. According to the Illinois Municipal League (2020), there are currently 217 home rule communities in Illinois.

³ For example, local plastic bag legislation has been discussed in Champaign-Urbana (Wade, 2012), Springfield (personal observation), Belleville (Metro East Earth Coalition, 2019), and according to our study participants, Algonquin and Glen Carbon.

⁴ We conducted these interviews using Zoom video conferencing software to allow for safe social distancing. We received approval for this research from the University of Illinois Springfield Institutional Review Board.

⁵ In Edwardsville, city officials postponed the start date for its ordinance. City officials in the other four Illinois municipalities have suspended enforcement of their plastic bag policies.

⁶ Research on health concerns associated with reusable bags is still in development, and this is an area of active public debate. In one peer-reviewed study (Williams *et al.*, 2011), researchers examined reusable shopping bags collected from a random sample of shoppers in San Francisco, Los Angeles, and Tucson for traces of common bacterial pathogens. They concluded that reusable bags could play a role in food cross-contamination and recommended that consumers wash or disinfect them regularly. In another study (Sinclair *et al.*, 2018), researchers sprayed reusable bags with a nonharmful virus and then examined how much viral material was transferred to store surfaces and the hands of shoppers and store clerks. They concluded that viral transfer

from reusable bags is a potential risk, and as a result, they recommended encouraging people to regularly wash and disinfect these bags. Sinclair, lead author on the 2018 study, has recommended (Potts, 2020) that reusable bags not be used during the coronavirus pandemic. However, in a statement released in June 2020, 125 health experts from around the world argued that reusable items (including bags) can be used safely during the pandemic if basic hygiene is employed because “available evidence indicates that the virus spreads primarily from inhaling aerosolized droplets, rather than through contact with surfaces” (Greenpeace International, 2020). Only one of our participants mentioned the research on reusable bags and health issues; she was very concerned that the plastics industry would exploit the pandemic to undermine progress made toward reducing the global use of disposable products. Advocates for reduced plastic waste nationally have expressed similar concerns (e.g., Sampson, 2020).

⁷ See Heshmat, 2018, for a very accessible introduction to the concept of loss aversion.

⁸ For Chicago, the revenue reported includes only the money remitted back to the city (five out of seven cents per bag) and not the amount retained by wholesalers. For Oak Park, the revenue reported includes only the money remitted back to the village (five out of 10 cents per bag) and not the amount retained by retailers.

⁹ This has also happened in stores in California, where a statewide ban went into effect in 2016 (Gardiner 2019).

¹⁰ To date, studies comparing the environmental impact of single-use paper versus plastic bags have varied widely in their methodology and conclusions (summarized in Singh & Cooper, 2017). Researchers use life-cycle analysis to determine how many resources are needed to produce the bag and measure environmental impacts that may result from a bag’s use and circulation before its disposal. Evidence suggests that paper bags are costlier to produce (in terms of inputs such as water and land space); however, plastic bags are more toxic and circulate in the environment as nonbiodegradable waste. Sturdy, nondisposable, reusable bags are preferable to either single-use plastic or paper bags.

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PUBLIC SAFETY PENSION FUNDING CHALLENGES IN ILLINOIS

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This article discusses police and firefighter pension funding challenges in Illinois and how municipalities have responded to those challenges. The authors present findings from interviews that were conducted in 2019 with officials from 36 Illinois municipalities. Local officials note the large increases in state-mandated pension contributions, the crowding out of other types of expenditures, and the need for additional revenues. Although there is no panacea for pension funding, this article provides some suggested approaches or strategies that local officials may want to consider as they address pension funding challenges.

INTRODUCTION

The funding of police and firefighter pension plans is a major challenge for many Illinois municipalities. Drawing from interviews with local officials in Illinois municipalities, this article describes those challenges, discusses how local governments have responded to the challenges, and identifies strategies or approaches municipalities may want to consider as they look to the future. The interviews were conducted prior to COVID-19 and therefore do not reflect the increased fiscal challenges associated with pension funding because of the pandemic and related economic impacts.

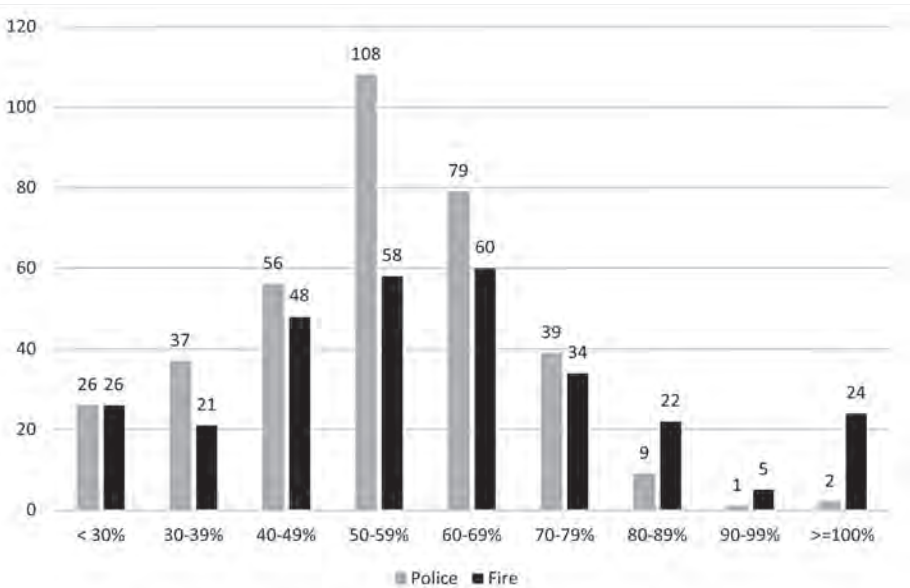
BACKGROUND

Illinois has more than 650 local police and firefighter pension plans. Local pension boards administer the plans, but the state government plays a significant role. State legislation sets the pension and disability eligibility criteria and benefits, mandates which municipalities must maintain a pension plan, and specifies the member composition, training requirements, and authority of the local pension boards. The state sets limits on investment choices depending on the amount of assets in the pension plans. In 2019, the Illinois General Assembly passed legislation that will transition pension plan investments into

two statewide consolidated investment funds, one for police pension funds and one for firefighter pension funds.

The median funded ratio (pension fund assets divided by accrued pension liabilities) in 2018 was 55% for police pension funds and 59% for firefighter pension funds (author calculations based on data from the Illinois Department of Insurance, 2019). About 33% of the plans had a funded ratio less than 50%, and 90% had a funded ratio below 80% (Figure 1).

FIGURE 1
DISTRIBUTION OF FUNDED LEVELS BY PENSION FUND TYPE - 2018

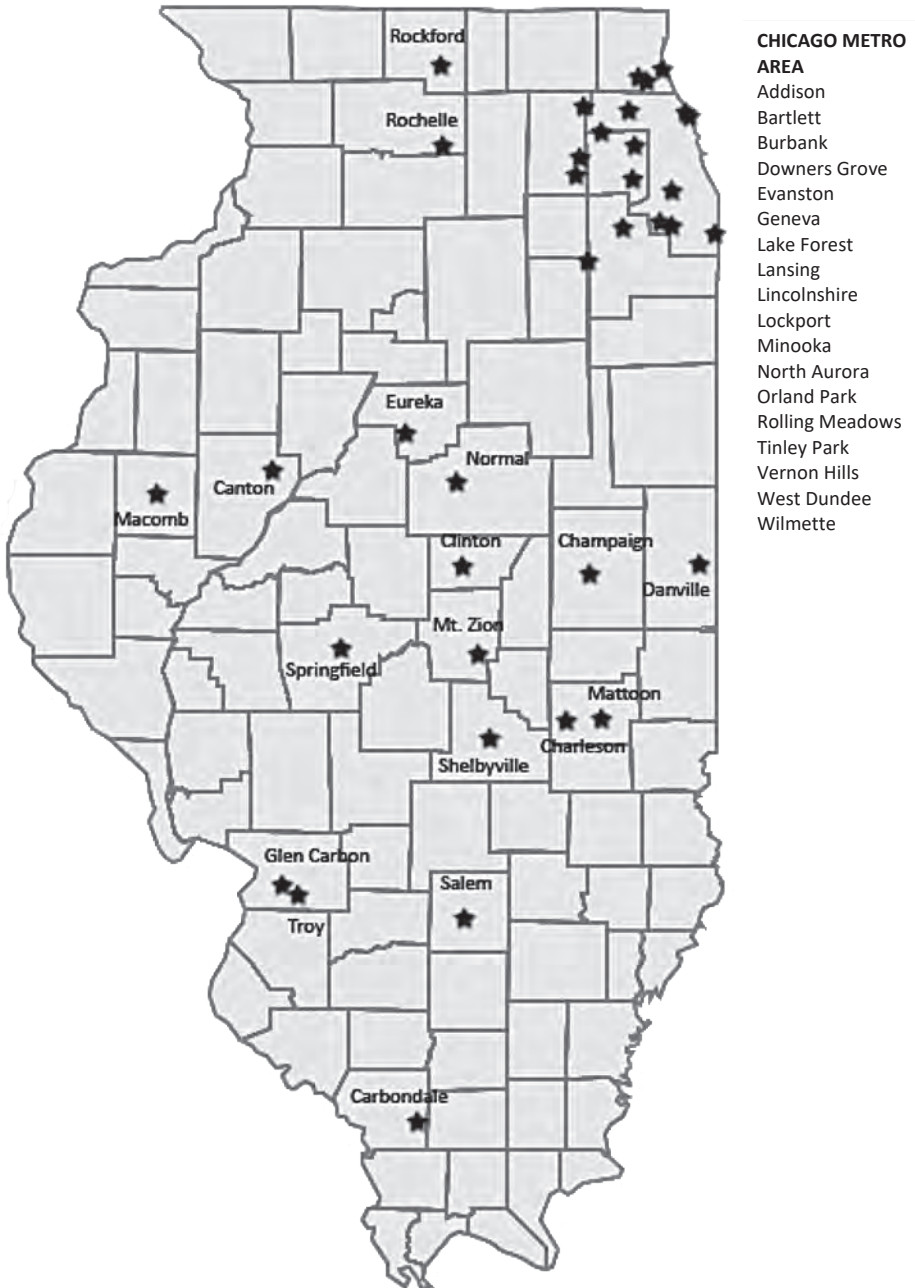


Note: This graph shows data for 357 Illinois police pension funds and 298 Illinois firefighter pension funds. Source: Illinois Department of Insurance Public Pension Division, 2019.

In a previous study, Blanke and Walzer (2018) analyzed factors that may have influenced changes in the Illinois police and firefighter pension funded ratios for individual plans between 2012 and 2016. They found that the unemployment rate and assumed interest rate were negatively correlated with changes and that municipal contributions per participant, the percent of assets invested in equities, and the ratio of participants to pensioners were positively associated with changes. The authors report that the size of the municipality had only a marginal impact on the changes in funded ratios.

FIGURE 2

MUNICIPALITIES REPRESENTED IN THE INTERVIEWS



RESEARCH APPROACH

The research team conducted interviews with local government officials from 36 municipalities in Illinois (Figure 2). The research team selected a sample to include municipalities from each of the quartiles for population and for pension funded ratios as well as municipalities from Cook County, the collar counties, and downstate. It also included some local governments whose pension funded ratios had increased or decreased by the greatest amounts over the past 10 years. Some of the municipalities in the sample did not respond to the research team's request for an interview, including several with the lowest funded levels, and additional municipalities were added to the original sample based on recommendations from interviewees.

Figure 3 shows the population and funded ratio for the police pension fund for each of the municipalities where a local official participated in this study. Most of the interviewees (86%) were from municipalities with police pension funded levels between 40% and 80%. About 44% of the municipalities had a population of less than 20,000, and the police pension funded levels for those smaller municipalities ranged from a low of 42% to a high of 120%. (The high funded level was for a relatively new pension fund with small pension liabilities.) All municipalities included in the interviews had a police pension fund, but eight did not administer a firefighter pension fund. In those municipalities, fire services are being provided by a fire protection district.

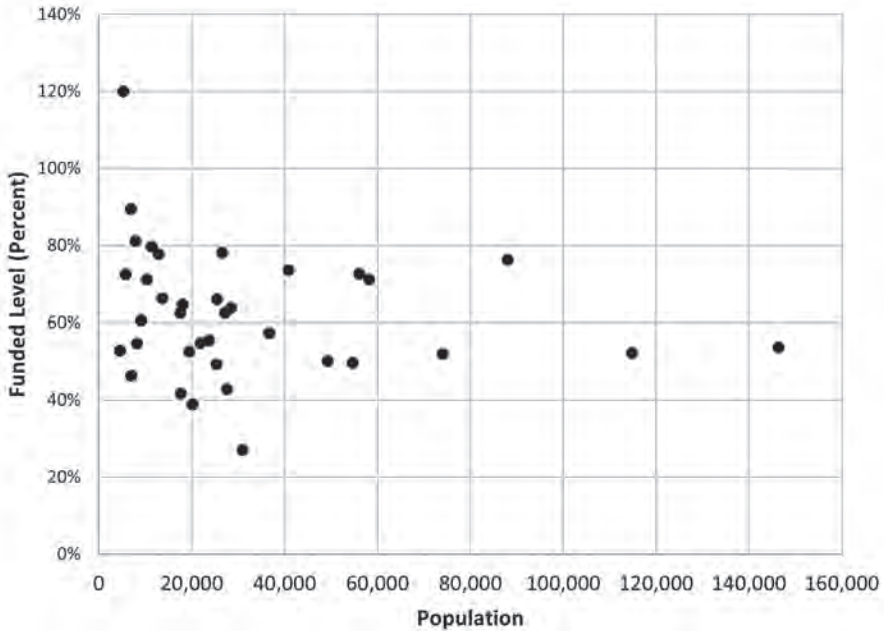
The interviews took place from January through June 2019. Most of the interviewees were the local treasurer or finance/budget director for the municipality. About 39% of the interviewees served as a voting member on a police or firefighter pension board, and an additional 47% were the treasurer for a pension board. The research team conducted most of the interviews by phone, but a few occurred in person. The average phone interview lasted about 25-30 minutes, and the in-person interviews lasted about an hour.

In formulating the interview questions, researchers drew on concepts from a theoretical framework called fiscal federalism. This framework focuses on the relationships between state and local governments and addresses factors such as local needs and preferences, resource constraints, economies of scale, and the consideration of costs and benefits of decisions. The research team also reviewed existing and proposed state legislation, pension reports, and news stories and talked with officials from professional associations, including the Illinois Government Finance Officers Association and the Illinois Municipal

League. In addition, the research team conducted a couple of pilot interviews to test and refine the questions.

FIGURE 3

POLICE PENSION FUNDED LEVELS BY POPULATION



LOCAL GOVERNMENT PENSION FUNDING CHALLENGES

One of the major pension funding challenges identified by the interviewees was the large growth in the required annual pension contributions. One official said, “The increase in pension expense has been pretty incredible; we now pay two times more than we did 10 years ago.” Another official said that “sustainability is an issue,” noting that the police and firefighter contributions for her municipality had increased from \$1 million to \$7 million over the past 10-12 years.

Interviewees identified several factors that have contributed to the growth in required pension contributions. Some officials referred to issues related to investments, including low market returns, state restrictions on the type of investments, and actual investment performance being less than the assumed rate of return. Changes in actuarial assumptions and mortality tables were

also noted. Other factors interviewees identified were changes in the number of active and nonactive members, higher salaries, increased benefits, higher disability liabilities, past underfunding, the state mandate to reach 90% funded by 2040, and the use of the projected unit credit funding method by some pension plans.

Pension funding is especially challenging for communities that are experiencing economic decline. One official commented, “We have a struggling economy — more taxes won’t help.” That community has decreased the number of government positions through layoffs and attrition and has closed a fire station. Another official said, “We’re doing what we can; we have a declining assessed value and have had a bond rating decrease two times in the past three years, mainly due to pensions.”

Some small non-home rule communities are also facing major challenges. To implement a non-home rule sales tax requires a successful voter referendum, and the local rate is limited to 1%. If the municipality is in a county that is subject to the property tax extension limitation law (PTELL), the growth in the municipality’s property tax extension is restricted to the lesser of 5% or the rate of inflation. “Eventually,” one interviewee from a non-home rule community noted, “all of our property tax and a good share of sales tax revenue is going to wind up going only for pensions.” Another official said her non-home rule community did not fund at the actuarially recommended level during the Great Recession but instead “funded what we could afford.”

Several interviewees commented on the benefits of being a home rule community. One official from a community where a home rule referendum was passed by the voters said, “Home rule really has helped us address pension challenges.” Another official said that with home rule, the municipality can raise different types of revenues, including a home rule sales tax, a food and beverage tax, and an amusement tax.

However, as pointed out by some officials, home rule communities still must cope with economic and political constraints. “We’re home rule, but we have practical limits,” one official said and explained that the municipality has held the general property tax levy constant for about eight years, which has limited the amount of property tax revenues that are available for other purposes. Another official said, “Pension funding is a huge issue; we are home rule and can levy what is necessary legally, but realistically, we don’t want to increase property taxes.”

An additional area of concern expressed by several interviewees was disability payments. One official from a small jurisdiction said, “A disability is a pretty big hardship for our municipality when it happens.” Another explained that duty disabilities can have a major impact: “Theoretically, this could involve someone in their 20s who would get benefits for life.” Other interviewees raised issues such as whether it is appropriate for the local pension board to make disability decisions and why the state requires a municipality to provide free health insurance for life to a disabled member who gets another job.

LOCAL GOVERNMENT RESPONSES TO FUNDING CHALLENGES

POLICE AND FIREFIGHTER PENSION FUNDING LEVELS

Almost all interviewees indicated their municipality is funding the pension funds in accordance with actuarial requirements. Under state law, if a municipality does not contribute the actuarially required amount, then the pension board can request that the State Comptroller redirect a portion of the municipality’s state aid to the pension fund to make up for the shortfall. (See Kass and Crosby, 2019, for a discussion about the initial implementation of this provision.)

Some interviewees said their municipalities contribute more than the actuarially required amount when they can afford to do so. One official said, “During the past five years, we have put extra money into the pension funds; if there is excess money available toward the end of the fiscal year, we will do a budget adjustment to move funds to the pension fund.” Another official also said they contributed “a little more” because “older officers had left and were replaced with new officers at lower salaries, thus freeing up some funds.” And a third interviewee noted, “If there are any funds left in the police department’s budget at year-end, the excess is transferred to the pension fund; this helps avoid year-end spending.”

However, other officials said they do not contribute more than the actuarially required amount due to other needs. For example, several interviewees mentioned the competition for funding between pensions and infrastructure with one official commenting that “choosing to fund pensions is difficult for village trustees when they are swerving around potholes.”

Most of the interviewees (83%) said their municipality hires a local actuary. Under state law, a municipality can use the actuarial figures provided by the

state actuary or can contract with an actuary and use those figures instead. State law stipulates that all actuarial figures should be based on achieving at least a 90% funded level by 2040. Among the municipalities that entered into a contract with a local actuary, most of the interviewees said the local actuarial contribution amounts were higher than the state figures. One interviewer noted the local actuarial amount was 75% more than the state recommended level.

Some municipalities base their contribution amounts on the local actuary's figures, but some municipalities present both the state and local actuary figures to their city council or village board. Several interviewees said that the council or board decides which figures to use based on how tight the budget is for that year. For example, one official said, "This year, we avoided layoffs by using the state amount, which was about \$700,000 lower than the local actuarial amount."

In certain municipalities, interviewees indicated they've established a more aggressive pension funding approach than what the state requires, setting a target rate greater than 90% funded by 2040. For example, Lockport has a target of 100% funded by 2033, and Minooka, Downers Grove, and Normal have a target of 100% by 2040. Some municipalities are using the entry age normal funding method instead of the projected unit credit (PUC) method used by the state. One official explained that the PUC method decreases the current funding requirements by imposing higher costs in the future. Another interviewee noted that "PUC is like a hockey stick — low contributions at first and then large increases."

Some interviewees said that their municipality had revised the actuarial assumptions to align more closely with experience. For example, the Town of Normal decreased its assumed rate of return from 7.5% to 7.0% and then later to 6.75%. A few officials said their municipality discussed this issue but decided not to revise the assumed rate of return because it would have resulted in a higher pension contribution requirement.

FUNDING SOURCES FOR POLICE AND FIREFIGHTER PENSION CONTRIBUTIONS

The major revenue source for funding Illinois local police and firefighter pension funds is the property tax. However, some of the interviewees said their municipality tries to limit the growth in the overall property tax levy. An official from a home rule municipality explained that their municipality does not increase the levy by more than 5% annually and tries to keep the increase in line with the increase in the consumer price index. An official from

a non-home rule community said, “Last year, we shifted \$100,000 from our self-funded insurance plan’s re-insurance tax levy to the firefighter pension plan tax levy — we’ll continue to do this.”

Other interviewees said their municipality tries to keep the total property tax levy stable. As required pension fund contributions increase, this decreases the amount of property tax revenue available to fund other purposes. Plus, the levy may not be sufficient to meet the pension contribution requirement. One official said, “Last year was the first time the levy was not sufficient to pay for pension disbursements; we drew down on the pension fund.”

Increasing the sales tax rate is another tactic municipalities have tried to help finance pension costs, some interviewees said. One official explained that property tax revenues pay for about one-third of the pension funding and that the remainder is funded with sales tax revenues. Although sales tax revenues can serve as a supplemental source for funding pensions, sales tax revenues were more volatile than property tax revenues during the Great Recession (Mikesell, 2018).

A local official from Canton, a non-home rule community, said voters in her community approved a half-cent sales tax referendum. “Pension funding was the driving factor for the tax,” she said. “Our mayor did a good job of promoting the referendum by explaining that the sales tax is a fairer way to pay for the pension obligation since nonresidents using our services also help pay the tax.”

Interviewees identified various other revenue sources that their municipalities use to help finance pension contributions or to address fiscal challenges associated with pension funding, including sources such as food and beverage taxes, electricity and natural gas utility taxes, video gaming tax revenues, and cannabis taxes. One official said his municipality uses property tax revenues to fund the actuarial amount and uses video gaming tax revenues to fund beyond that amount. Another official said that half of the dollars generated from the municipal tax on recreational cannabis sales are intended for police and firefighter pension contributions above the actuarially required contribution.

Several officials from well-funded pension plans mentioned the significance of interest earnings. In those municipalities, interest earnings accounted for 65% to 70% or more of total pension revenues.

A couple of interviewees said their municipalities implemented a pension fee in 2017:

- Danville uses a public safety pension fee based on square footage for residential and business properties that is added to the sewer bills. The official explained, “We use the property tax to pay the actuarial amount and then try to kick more into unfunded liabilities using the public safety pension fee revenues.”
- Lake Forest has a public safety pension fee, which is a quarterly fee per account that is included on the water and sewer utility bill. When the fee was established in 2017, it was set at \$10 per quarter for single accounts and \$35 per quarter for other accounts; it was increased to \$20 and \$70, respectively, in 2018. The fee was intended to increase public awareness regarding pensions, and the city decreased the tax levy by the estimated amount of revenue from the fee.

OTHER RESPONSES TO FUNDING CHALLENGES

Some of the interviewees discussed other approaches their municipalities have used to fund pension contributions. A couple of officials said their municipality has used reserves or the fund balance in the general fund to help pay pension costs.

Interviewees also identified approaches that municipalities use to increase the amount of general fund revenues that are available to be used to fund pension contributions. This included shifting the applicable Illinois Municipal Retirement Fund (IMRF) costs to the enterprise funds (e.g., water and sewer), moving motor fuel tax revenue to the general fund to help pay for street expenditures, and cutting back on public works services, such as picking up large household items.

The funding of pension plans also constrains funding for other purposes. For example, one interviewee said there are less funds available for parks and recreation and streets. Another commented, “Buildings don’t get upgraded; vehicles don’t get replaced.”

One interviewee discussed the use of pension obligation bonds in a community where he previously worked. He said the Village of Rantoul had faced police pension contributions that had tripled over 20 years, and so the city issued pension obligation bonds and transferred the bond proceeds into the pension fund. The official said the interest rate on the bonds was “well below 3.25% compared to a return of 5% to 6% on the pension assets” and that the bonds

will result in an estimated savings of \$2.3 million over time. He also said Rantoul has a utility tax on gas, electric and water utility bills that is a set dollar amount per household, with a higher rate for commercial and industrial sites. The revenue from these taxes is dedicated to abating property taxes imposed to satisfy police pension fund obligations.

The Government Finance Officers Association recommends that governments not issue pension obligation bonds. One of the reasons stated is that the interest rate on the invested bond proceeds over the term of the bonds might be less than the interest rate owed on the bonds (GFOA, n.d.). One interviewee said that his municipality considered the issuance of pension obligation bonds but decided it was “too big of a gamble.”

When asked about ways to control pension costs, interviewees noted that their options are limited because the state legislature establishes pension and disability benefit levels. However, some interviewees discussed approaches their municipality has used or considered, including these:

- Considering pension costs when deciding whether to add new positions.
- Holding firm on longevity during contract negotiations because those benefits would be pensionable.
- Using part-time instead of full-time police officers, partially based on pension considerations.
- Converting from sworn positions to civilian non-sworn positions when feasible (e.g., training positions).
- Taking action to prevent salary spikes in the final year prior to retirement.

Some interviewees described efforts to decrease disability claims. One official discussed her village’s work to ease or prevent injuries by having a risk manager and risk management safety committee that seek to “keep the whole place safe.” For example, the village emphasizes doing warm-ups and stretching and has purchased new technology to help lift cots into the ambulance. Several interviewees identified other approaches used regarding disabilities, such as having workers’ compensation benefits in place so employees can return to work when they are better instead of applying for disability benefits, hiring

contract attorneys who specialize in disability cases, and appealing disability cases.

Some interviewees identified practices their municipalities use to decrease the costs associated with pension fund administration. One official said his mayor appoints the same two people to serve on both the firefighter and police pension boards, which saves training costs. Some municipalities perform pension administrative duties in-house. One interviewee explained, “We talked about outsourcing but decided it’s cheaper to do in-house; plus, we have in-house knowledge.” However, another official said that “contracting is more efficient since the firm does that all of the time; it results in more information provided on a monthly basis.” Another said, “Contracting is one of the best things we ever did — there is so much to know to do it right; the laws are constantly changing.”

LOOKING TO THE FUTURE

An analysis of the results of the interviews undertaken for this study suggests some guidance that may be useful for municipal officials to consider as they look to the future.

TAKE A MULTIYEAR PERSPECTIVE

Given the magnitude and growth in pension payments, local government officials may find it helpful to take a multiyear perspective to pension funding. This could entail setting pension plan funding goals and developing strategies to meet those goals.

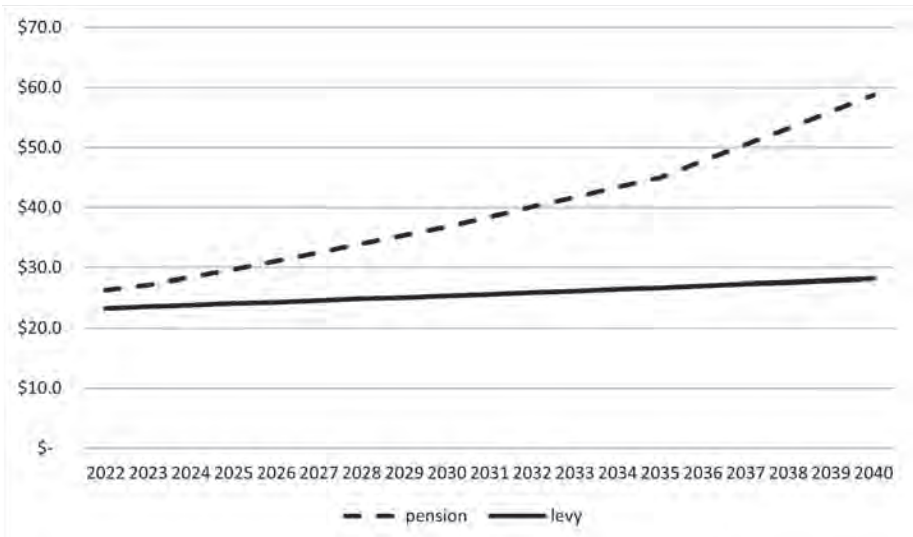
For most of the municipalities in this study, a main goal is to ensure they have sufficient revenues to meet the state-mandated actuarially determined contribution amounts. It can be helpful to look at the estimated funding requirements in future years relative to the estimated amount of revenues that will be generated by existing funding sources, especially because pension contributions may increase significantly in the future.

For example, the budget director for the City of Springfield prepared a chart that shows the estimated revenues from the property tax levy to the estimated pension obligations through 2040 (Figure 4). The figures assume that all actuarial assumptions are met and that contributions proceed unabated. This analysis shows a significant and increasing gap that the city will need to address

through tax increases, additional revenue sources, or other means. This long-term perspective helps set the stage for discussions about how to manage the estimated funding gap and may influence plans for other projects that require significant tax revenues.

FIGURE 4

ESTIMATED PENSION CONTRIBUTIONS VS. PROPERTY TAX LEVY (IN MILLIONS),
THE CITY OF SPRINGFIELD, IL



Source: City of Springfield, Illinois. Office of Budget and Management (2019).

Some of the officials interviewed for this study indicated that their municipalities want to avoid large increases in pension contributions in the future. Aaron and Blake of Moody's Investors Service (2020) stated, "Illinois cities tend to backload pension costs if they follow the state's minimum contribution requirement to attain a 90% reported funded ratio by 2040" (pp. 2). As previously discussed, efforts to offset large increases in the future can include using the entry age normal approach rather than the projected unit costs method used by the state, as well as updating mortality tables and other actuarial assumptions. One interviewee described this as "coming to reality."

A multiyear perspective also can help local officials examine the tradeoffs between higher costs now and lower costs in the future. For example, Wilmette

decided to switch to an open 15-year rolling amortization schedule for its police and firefighter pension funds. The government will have to make higher contributions from 2020 through 2023 but anticipates saving about \$38 million in pension contributions by 2040. The municipality is financing the higher contributions through reserves and a “modest” property tax increase. Other communities may not have sufficient capacity to do this, but it still can be worthwhile to examine the short-term and long-term trade-offs when making pension funding decisions.

When municipalities experience fiscal stress, local officials may consider decreasing the pension contribution. Aaron and Blake (2020) state that a decrease in pension contributions by Illinois local governments with severely underfunded pension plans can constrain asset accumulation and, in the worst cases, lead to insolvency. Therefore, local officials should consult with an actuary regarding the impacts of a decreased pension contribution in both the short-term and long-term.

LEARN FROM THE PAST AND FROM PEERS

One way to make better decisions for the future is to learn from the past. For example, if a plan is underfunded, what factors have contributed to the underfunding? How much is attributable to state changes in benefit levels, past municipal underfunding, lower than estimated investment earnings, or changes in actuarial assumptions? If a municipality is not satisfied with a past action or outcome, what action, if any, can be taken to bring about improvements in the future?

Municipal officials also may learn from discussions with officials from other municipalities regarding pension- and disability-related issues. This could include the approaches that other municipalities are using to mitigate pension and disability costs, the advantages and disadvantages of relying on particular types of revenue sources to finance pension costs, how some non-home rule communities have educated the public about a sales tax referendum, and how and why a municipality has revised the actuarial funding methods or assumptions.

Municipalities that are nearing the 5,000 population threshold that triggers the establishment of a police or firefighter pension fund may find it helpful to talk to officials in other communities that have recently started a pension fund. An official from one municipality noted that his government had started setting aside funds for the pension plan eight years before its creation.

EDUCATE STATE AND LOCAL DECISION MAKERS AND THE PUBLIC

The results of the interviews for this study suggest variation across municipalities in the level of understanding of pension plan funding by local elected officials. Most discussions about pension funds appear to occur in conjunction with the budget process and the setting of the property tax levy. This makes sense, but that also is a time when elected officials have many issues to address, including constituent demands. Therefore, it may be helpful to establish additional times during the year to engage with city council or village board members on pension matters. This could include presentations or discussions at city council or village board meetings, appointment of a committee of the legislative body to examine pension issues and make recommendations, or increased communication between the pension board members and elected officials. Some municipalities have someone who informally serves as a “champion” of pension issues. In some municipalities, that has been the mayor, city manager, finance director, or a city council member. Some interviewees commented on the role that the actuary or the pension board has played in communicating concerns and recommending action.

Several interviewees said that the public primarily cares about the big picture, focusing on services and taxes. These interviewees said, with a few exceptions (e.g., those who complain that they personally do not have a pension plan), residents are not interested in the intricacies of pension plan funding. As one interviewee stated, “People just want things to work.” Another said, “Citizens care about having police officers and firefighters on the streets.” Yet, the residents and local businesses bear most of the fiscal burden of funding police and firefighter pension plans. Therefore, local officials need to make decisions about what type and amount of information the public needs and how best to convey that information. Several interviewees indicated their mayor includes a discussion of pensions in the annual state of the city speech. Local finance or budget directors also may include pensions in the annual budget presentation. Some municipalities include information about the pension funds on the municipal web page, and some have a separate property tax rate for pensions. Several of the officials from municipalities located in Cook County noted that their municipality’s pension liabilities and funded ratio are listed on the county tax bill.

The other group that needs to be informed about local pension plan funding challenges is state legislators and their staffs. When the researchers asked interviewees to identify major factors that have contributed to local police

and firefighter pension plan funding challenges, the most frequent answer was that state government establishes pension and disability benefits but that local governments must fund those benefits. Therefore, it is important for local officials to help state legislators understand pension funding challenges at the local level. In the interviews, the local officials identified several suggestions for state officials to consider:

- Allow non-home rule municipalities to implement a local sales tax without a voter referendum if the revenues will be used for pensions.
- Provide an exemption from PTELL for non-home rule municipalities that need to increase property taxes to fund pension plans.
- Give more guidance to municipalities that have to establish a pension plan because they have reached the 5,000 population threshold (a “starter packet” would be helpful).
- Extend the 2040 deadline for pension plans to be 90% funded.
- Clarify what is considered a “catastrophic injury” for disability pension benefit eligibility.

Several interviewees also suggested that the state give local pension boards more flexibility regarding investments and decrease the number of hours of required training. These items are both addressed in the 2019 state legislation that consolidates the investment function for Illinois police and firefighter pension funds.

CONCLUSION

The funding of local police and firefighter pension plans in Illinois is a major challenge for many municipalities. The COVID-19 pandemic, combined with expected future increases in pension contribution requirements, has exacerbated the challenges. This article has discussed how some municipalities in Illinois have responded to the funding challenges as well as concerns expressed by local finance officials. Additional research and discussion are needed to hear from officials in communities that are struggling the most and who may have been less likely to consent to an interview for this research study. It also will be important to hear the perspectives of others, including police officers and firefighters, union or association representatives, other pension board members, and state and local elected officials.

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HOW MANY ILLINOIS PUBLIC SAFETY PENSION FUNDS RISK RUNNING OUT OF ASSETS?

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This article focuses on the finances of Illinois' police and firefighter pension funds. While most pension funds are underfunded, the aim was to better differentiate the funds and identify ones in the best and worst fiscal shape prior to the COVID-19 related economic downturn. Data from several sources was used to examine trends in pension funds' funding levels and to examine liquidity risk. Findings indicate that prior to COVID-19, a small number of public safety pension funds were in danger of running out of assets. While the risk of asset depletion is not widespread, this is nonetheless an important policy issue as a pension fund running out of assets risks benefit payments being halted.

INTRODUCTION

The COVID-19 pandemic and related economic downturn are having important consequences for state and local governments throughout the United States. Pension funds' funding levels are likely to be negatively impacted as they rely heavily on investment returns as a source of funding. Decreased pension funding levels can exacerbate existing fiscal challenges for state and local governments, but another important issue is the liquidity of the pension funds. Most public pension funds are designed to be pre-funded, meaning that a sufficient pool of money is generated — from a combination of investment returns and employee and employer contributions during the course of an individual's employment — to pay for their benefits once they retire. Pre-funding contrasts with pay-as-you-go (PAYGO), in which benefits are simply paid as they come due. A pension system facing a liquidity crisis is a worst-case scenario in which, due to the depletion of assets, benefit payments may be halted and/or governments may have to pay benefits as they come due.

This brief focuses on the financial condition of Illinois' police and firefighter pension funds (referred to as “public safety pension funds”)¹ with special attention paid to their liquidity risk. Data from the Illinois Commission on Government Forecasting and Accountability (COGFA) and the Illinois

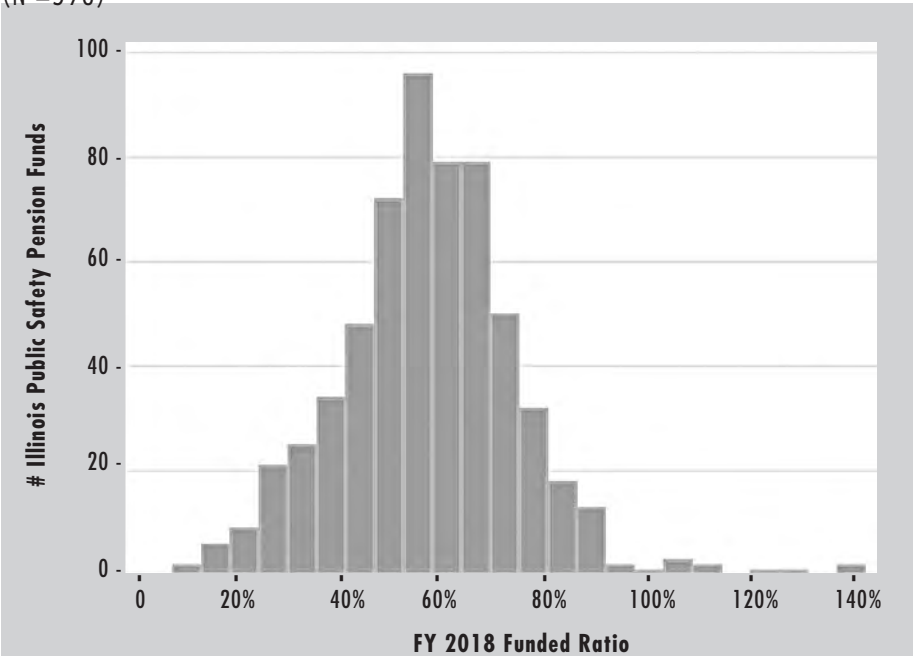
Department of Insurance (IDOI)² were used to look at the public safety pension funds’ funding levels over time and to calculate liquidity measures. Analysis reveals that funding and liquidity levels vary widely and that a small number of funds are at risk of depleting their assets.

PENSION SIZE AND FUNDING LEVELS

Illinois’ public safety pension funds vary in size and funding levels. This analysis focuses on the public safety pension funds that had at least one active member who paid employee contributions and at least one beneficiary (retiree). From a pool of 654 downstate public safety pension funds, there were 596 that met these criteria as of Fiscal Year (FY) 2018.³ Nearly 60% of the funds are for police officers while the remainder are for firefighters. Most (87%) are connected to a municipal government while 13% are tied to a fire protection district. As of FY 2018, seven public safety pension funds had only one active member while the largest fund (the Rockford Police Pension Fund) had nearly 300 active members. Including all members (active employees, retirees, and

FIGURE 1

ILLINOIS’ PUBLIC SAFETY PENSION FUNDS FUNDING LEVELS AS OF FY 2018
(N =596)



beneficiaries), the average public safety fund had 72 members. Most of the funds are underfunded, and only nine funds were fully funded as of FY 2018. The average funded ratio (the ratio of assets to liabilities) in FY 2018 was 56%; the lowest was 7%, and the highest was 141%. Figure 1 shows the distribution of the public safety pension funds' FY 2018 funded ratios. Importantly, most public safety pension funds are less funded today than they were prior to the last major economic downturn (the 2007-2009 Great Recession), and in FY 2007, the average funded ratio was 67%.

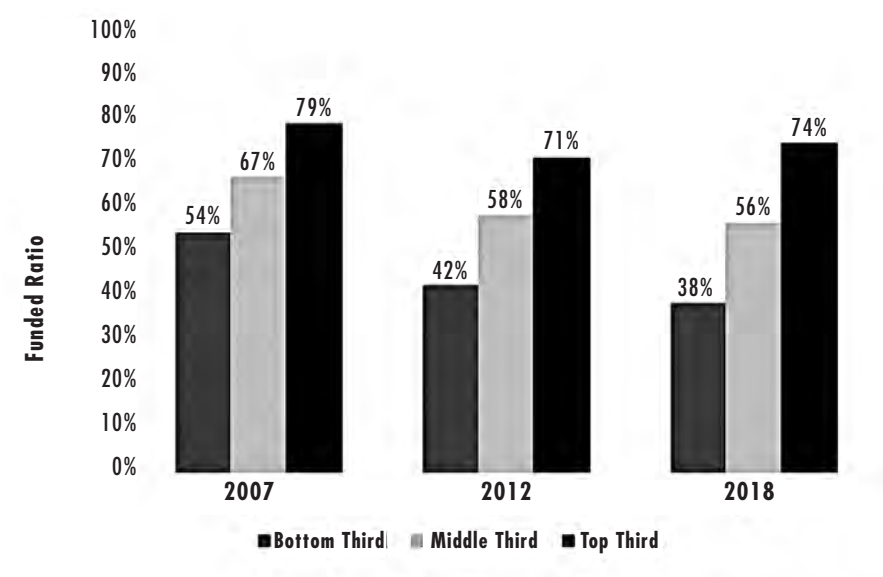
While the average public safety pension fund was 56% funded as of FY 2018, as Figure 1 shows, there is a large range in funding levels. Some funds are fully funded while others are less than 10% funded. While anything less than 100% means a pension system is underfunded, Standard and Poor's considers funds that are less than 80% to be of concern, with those that are less than 40% funded deemed severely underfunded (Kanaster *et al.*, 2019; Tauzer *et al.*, 2017). Of the 596 public safety pension funds examined, only 37 were at least 80% funded as of FY 2018, and 95 had funded ratios below 40%.

To understand trends in funding levels over time and between well-funded and underfunded funds, the public safety pension funds were divided into three groups based on their FY 2018 funding levels. The groups are as follows: the bottom third have a funded ratio less than 50%; the middle third have funded ratios between 50% and less than 63%; and the top third have funded ratios that are at least 63%. Figure 2 shows the average funded ratio for each group before and after the Great Recession (specifically, years 2007, 2012, and 2018). In response to the Great Recession and with the aim of improving the pension funds' finances, state lawmakers in Illinois passed several major pieces of pension legislation in 2010, and Public Act 96-1495 specifically affected the public safety pension funds. Important changes from that legislation included reducing benefits for new hires and changing the funding target from 100% by 2033 to 90% by 2040.

Looking at the average funded ratio for each group over time shows that there is a growing divergence between public safety pension funds in terms of funding levels. While the average funded ratio declined for all three groups in the wake of the Great Recession (between 2007 and 2012), the average funded ratio for the bottom third group has continued to deteriorate over time. Funding levels for the other groups have stabilized or slightly improved. In sum, the worst-funded public safety pension funds are continuing to see an erosion in their funding levels, and there is a growing gap between the groups.

FIGURE 2

AVERAGE FUNDED RATIOS FOR SELECTED YEARS BY GROUP



This is consistent with studies from the Center for Retirement Research at Boston College and Pew Charitable Trusts that have looked nationally at pension funding levels and found similar trends (Aubry *et al.*, 2018; Pew, 2019). Under Illinois law, a local government’s annual pension payment must be sufficient so that its public safety pension funds are each 90% funded by the end of FY 2040. The erosion in funding levels tied to the economic downturn will drive up required contributions. For many funds, required contributions will also increase over time because state law requires that the project unit credit (PUC) method be used for calculating liabilities and determining municipalities’ required contributions, and under this method, costs increase over time as current employees’ benefits accrue. Prior to COVID-19, many municipalities were struggling to make their annual pension payments and had looked for alternative revenue sources (Bunch *et al.*, 2019; Jones and Rutecki, 2019). Increases in required pension payments will further strain municipalities’ finances.

WHAT IS THE RISK OF RUNNING OUT OF MONEY?

Another concern is the risk of pension funds themselves running out of money and being unable to payout benefits. Pension funds’ total assets are likely to

be negatively impacted by poor investment returns and/or losses tied to the COVID-19-related economic downturn. Other factors, like governments not making required contributions and/or decreased employee contributions due to layoffs, will compound deterioration in funding levels tied to poor investment performance. Given the severity of the economic downturn and many funds' low funding levels, there is a risk that some pension funds may run out of assets. To get a sense of each funds' liquidity risk, an operating cash ratio and liquidity-to-assets ratio were calculated for each fund. Operating cash flow indicates how reliant a pension system is on investment returns while the liquidity-to-assets ratio provides insight into the pension system's ability to pay for its obligations (like benefit payments) in the short term. These are the equations for the ratios:

- Operating Cash Flow = (Income from Members + Income from Municipality – Total Expenses) / Net Present Assets Market Value
- Liquidity-to-Assets Ratio = (Cash and Cash Equivalents + Income from Members + Income from Municipality + Other Income – Total Expenses) / Net Present Assets Market Value

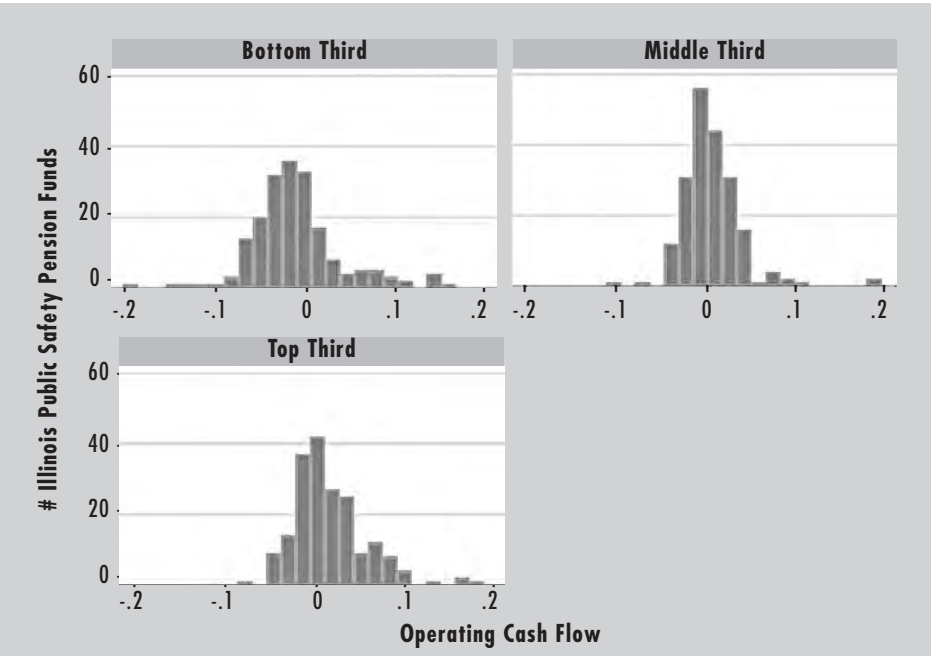
These measures were chosen because credit rating agencies and researchers at Pew have used them to examine pension fund insolvency risk (Kanaster, 2019; Mennis *et al.*, 2018). Ratios below zero indicate weak liquidity, and the further below zero a ratio is, the greater the liquidity risk. In looking at liquidity risk among eight severely underfunded pension funds, S&P found that liquidity-to-assets ratios ranged widely from a high of 0.06 for Pittsburgh to a low of -0.07 for the New Jersey teachers' pension fund (Kanaster, 2019). Moody's Investors Service examined the operating cash flow of Illinois' state pension funds and the City of Chicago's pension funds and found that all were negative, with Chicago's pension funds for police officers and municipal employees having the lowest at -0.1 each (Aaron and Blake, 2020).

Among the 596 public safety pension funds, the operating cash flow values ranged from -0.26 to 0.67, with an average of 0.01. The liquidity-to-assets values ranged from -0.17 to 1.21, with an average of 0.06. The distributions of the ratios are skewed, and except for the liquidity-to-assets value for the top third group, the averages are higher than the median values, as shown in Table 1.

TABLE 1
AVERAGE LIQUIDITY RISK VALUES, BY GROUP

GROUP (BASED ON FY 2018 FUNDED RATIO)	# PENSION FUNDS	OPERATING CASH FLOW (MEAN)	OPERATING CASH FLOW (MEDIAN)	LIQUIDITY- TO-ASSETS RATIO (MEAN)	LIQUIDITY- TO-ASSETS RATIO (MEDIAN)
Bottom Third	197	0.001	-0.010	0.071	0.039
Middle Third	202	0.001	-0.003	0.043	0.032
Top Third	197	0.026	0.010	0.041	0.061
Total	596	0.009	0.000	0.058	0.036

FIGURE 3
OPERATING CASH FLOW RATIOS BY GROUP⁴



The distribution of the ratios are somewhat similar across the three funding level groups (defined above) but are more positively skewed for the funds in the top third group (those that were at least 63% funded in FY 2018), as shown in Figures 3 and 4.

FIGURE 4
LIQUIDITY-TO-ASSETS RATIOS BY GROUP⁵

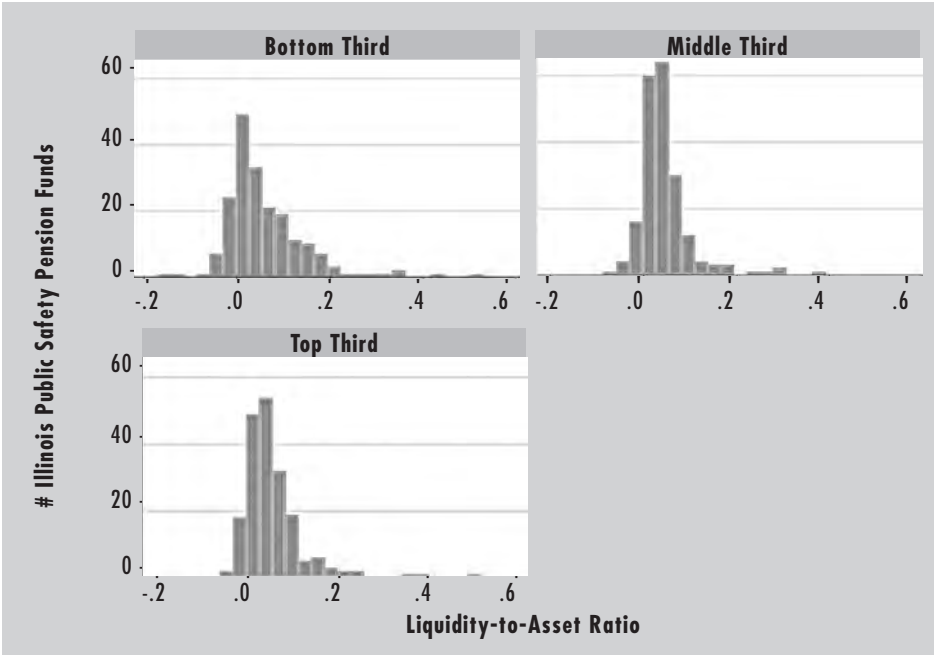


TABLE 2
NUMBER OF PUBLIC SAFETY PENSION FUNDS WITH NEGATIVE LIQUIDITY RATIOS,
BY GROUP

GROUP (BASED ON FY 2018 FUNDED RATIO)	# PENSION FUNDS	FUNDS WITH AT LEAST ONE NEGATIVE LIQUIDITY RATIO	
		#	%
Bottom Third	197	118	60%
Middle Third	202	109	54%
Top Third	197	71	36%
Total	596	298	50%

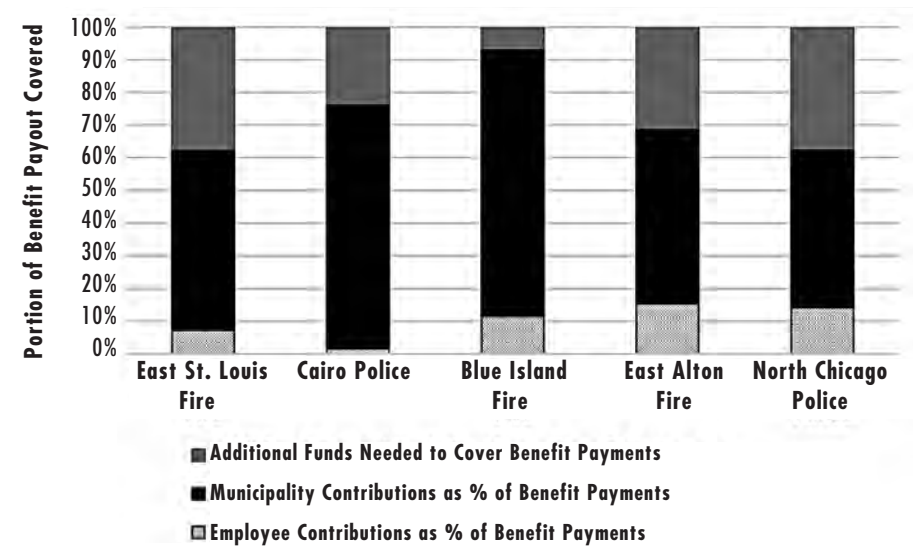
With both ratios, negative numbers indicate that annual expenses exceed income and/or available cash. While there is not a strict threshold for identifying when there is a serious issue, the further below zero, the greater the liquidity risk. A pension fund’s total assets include more than just annual income and available cash, and other assets (like long-term investments) can be converted

to cash if necessary. As Table 2 highlights, most public safety pension funds that are funded at 50% or less have at least one negative liquidity ratio whereas only 36% of the top funded funds do.

Consistently having to liquidate investments to pay expenses (like pension benefit payments), however, negatively impacts a pension fund’s finances because it means that total assets are decreasing over time. Depending on market conditions and the investment type, funds could end up having to liquidate investments at a loss.

Negative liquidity measures and a low funded ratio is a worrisome combination that indicates that a pension fund may be at risk for depleting its assets, which could ultimately threaten benefit payments. Of the 596 public safety pension funds examined, 37 (or 6%) had a negative operating cash flow ratio, negative liquidity-to-assets ratio, and FY 2018 funded ratio below 50%. All but one of those funds were less funded in FY 2018 than they were in FY 2007, with funded ratios decreasing by an average of 22 percentage points in that time period. If these pension funds run out of assets, significant amounts of additional money would be needed to cover benefits. Figure 5 focuses on the five public safety pension funds with the lowest FY 2018 funded ratios and provides insight into how much municipalities’ contributions would need to increase if the system ran out of assets.

FIGURE 5
CASH FLOW GAP BETWEEN CONTRIBUTIONS AND BENEFIT PAYOUTS (FY 2018)



For the Blue Island Firefighters' pension fund, for example, pension and benefit expenses totaled \$1.35 million in 2018, and contributions from employees and the city were \$1.26 million that year. That means that contributions covered 94% of the payout (as shown in Figure 5), and the remaining 6% came from existing assets. If the pension fund ran out of assets, the City of Blue Island would have needed to pay approximately \$87,000 more than it did in 2018 to prevent benefits from suddenly being halted.

CONCLUSION

The COVID-19 recession is likely to have significant consequences for state and local governments and their public pension funds. Many public pension funds' funding levels did not rebound after the Great Recession, and the present economic downturn will further deteriorate funding levels. Decreases in pension fund funding levels will drive up local governments' required contributions, exacerbating deficits that those governments are already likely to face. The compounding circumstances could lead to a public safety pension fund completely running out of money. If a pension system depletes its assets, it is questionable whether the municipality or fire protection district would be able to make up the shortfall given that many were already struggling to make their annually required pension contributions prior to COVID-19. This could lead to a worst-case scenario of benefit payments being halted, and while rare, this has happened in the past (Cooper and Williams Walsh, 2010). Analysis of Illinois' public safety pension funds indicates that while most are underfunded, a smaller fraction risk depleting their assets.

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ENDNOTES

¹ The public safety pension funds are the pension funds governed by Articles 3 and 4 of the Illinois Pension Code. The City of Chicago's police and fire pension funds are excluded from this group because they are governed by different articles of the Pension Code.

² Specifically, the pension funds' funded ratios for years 2007, 2012, and 2016 were obtained from the Commission on Government Forecasting and Accountability's 2017 report on the public safety pension funds (Lazzara, 2017). Data for fiscal year 2018 were obtained from the Illinois Department of Insurance's Pension Data Portal.

³ These criteria were used because a pension system that has no active members may be operating as a PAYGO system in which benefits are paid as they come due, and one with no beneficiaries is not paying out benefits.

⁴ In Figure 3, the range was limited between -0.2 and 0.2 to better display the distribution of values. Of the 596 public safety pension funds, 98% had an operating cash flow value within the -0.2 to 0.2 range.

⁵ In Figure 4, the range was limited between -0.2 and 0.6 to better display the distribution of values. Of the 596 public safety pension funds, 99% had liquidity-to-assets ratios within the -0.2 to 0.6 range.

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BOOK REVIEW:

***THE NATION CITY: WHY MAYORS ARE NOW RUNNING THE WORLD,* BY RAHM EMANUEL (KNOFF, 2020)**

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Whatever else you may think, Rahm Emanuel is the consummate modern-day politician, elected official, and accomplished big-city mayor. His experience and vantage point from serving as Mayor of the City of Chicago is important, and he shares those views and experiences in this book. His city-leading terms have been characterized as uneven or mixed, but his vantage point from these years cannot be discounted. In fact, when viewed through a lens of “big-city” mayor, this book is a must-read for former, current, or aspiring leaders in municipalities of all sizes.

Make no mistake about it: Emanuel is right that our cities, large and small, are the centers of our universe and central to our democracy. Any insights, strategies, observations, or experiences in running these jurisdictions is therefore valuable and instructive to leadership throughout places in Illinois and beyond. And while politics are always a context, the management and administration of the myriad social problems facing society are on local leadership’s front steps and at the heart and soul of our cities. Navigating those issues, problems, and realities is not easy, and passing on lessons about them is essential in guiding municipal leaders forward in the balance of the 21st century.

In this context, Emanuel’s book is not the first treatment of firsthand experiences as Mayor of Chicago (see *My Chicago* by Jane Byrne, Northwestern University Press, 2000), but those personalized, descriptive, and aspirational accounts provide an important backdrop for understanding the role. Emanuel both recounts his successes and reveals his shortcomings, and along the way, he concludes that mayors today are more important than presidents or prime ministers. In essence, he outlines how cities are at the front lines of big-

picture issues and backyard problems like health crises (witness COVID-19), education challenges, rising crime and criminal justice reform, climate change, immigration challenges, deteriorating infrastructure, disparities in wealth, and, of course, the threat of terrorism. Cities are in the thick of things and are therefore often much better positioned to address and respond to these challenges than the federal government.

The book appropriately reflects on defining moments in Emanuel's life and the importance of his immigrant family roots. He also dives into the basis for his views on the importance of education and what drove his education reform efforts that varied from political battles over pre-kindergarten programs to union conflicts over the length of the school day and year to neighborhood opposition about closing schools. Whether seen as wins or losses, these events reveal the focus of Emanuel's priorities and his approach to successful leadership.

One clear thread and significant theme in Emanuel's book is found in his highlighting the dysfunction of the federal government (hard not to dismiss), the influence of special interests, overt politicization, and the seeming inability to deliver programs directly to citizens who need the help. Notwithstanding his articulation of a "progressive agenda" that he espouses, Emanuel correctly emphasizes that cities are "the only governments left in the world that are immediate, intimate, and impactful." He makes a strong case for local governance in an age of dysfunction, strongly suggesting that streamlined and efficient city governments are a practical necessity rather than a political one. It is precisely in this context that mayors matter — and they matter a lot.

Although *The Nation City* cannot be considered a policy primer, it nonetheless opens a lens for viewing cities (and mayors) in a policy context, and Emanuel offers a case-study-type approach of various cities that have successfully tackled issues ranging from building infrastructure, refinancing pension funds, downtown revitalizations, education reforms, energy-efficiency measures, shifting to a tech-oriented economy, and more. As such, this is an instructive read for current and future mayors and all city officials.

However, there are some harsh realities that seem to be glossed over in the book — significant challenges that everyday cities face. They do not have fiscal tools like the federal government, borrowing limits are real and restrictive, underfunded pensions are a huge problem, and raising revenues is a significant hurdle. And many mayors have limited statutory power. While Chicago is a

strong-mayor format, many other forms of government limit the power of their chief executives, such as council-manager systems. Also, as creatures of state government, local authorities can be preempted with state legislation.

At the same time, it should be acknowledged that Chicago's problems have existed through years of mismanagement and political gamesmanship that no two-term mayor could expect to totally address. Indeed, problems of crime, police oversight, budget shortfalls, decreasing population, traffic congestion, education disparities, and more persist — and they are not just confined to Chicago but are ongoing for cities large and small. Although there is no one fix or cure, sometimes looking back offers a lens to look forward, and that is where this book matters.

There are certainly other more exhaustive and critical biographies and treatments of big-city mayors (see *Building the City Spectacle: Mayor Richard M. Daley and the Remaking of Chicago*, Cornell University Press, 2016) and important assessments of city leadership across the globe (see *Leading Cities: A Global Review of City Leadership*, UCL Press, 2019). However, it has always been a popular adage that the best way to lead a city is to take cues from previous leaders. There will be good lessons and bad lessons. It may point to things that worked or did not work and offer strategies or directions for the future. Emanuel's book clearly plays that role. As such, it is worth adding to your library of important reads that can inform the future of municipal governance.

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