THE EFFECTS OF STATE AID ON ILLINOIS MUNICIPALITIES' BUDGETS

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This study examines the effects of state aid on 691 Illinois municipalities' budgets from 2010 to 2019. Existing literature shows that local governments use state aid to relieve the local tax burden, increase spending, and build budget reserves. We postulate that the effects may be different across municipalities based on their fiscal profiles, budget structures, and local economic conditions. This study, thus, departs from previous literature in that it examines the effects of state aid on a municipality's budget in four Illinois municipal groups. Cluster analysis was conducted to segregate municipalities based on their fiscal and economic profiles. Empirical results suggest that the effect of state aid is most pronounced in strong-economic-base municipalities. Municipalities appear to prioritize state aid in budget reserves for their state aid usage, especially in small towns with fiscal distress. Implications are provided in the last section.

INTRODUCTION

The COVID-19 pandemic pushed world economies, including those of the United States, toward recession in 2020 (Jones et al., 2021). During the initial pandemic period from February 2020 to April 2020, Illinois' unemployment rate rose to 17.2%, compared to the 3.4% pre-pandemic rate measured in February 2020 (Illinois Governor's Office of Management and Budget, 2020). Illinois was estimated to have lost more than $800 million in general fund revenue compared with pre-pandemic trends (Kriz, 2021).

On average, state governments share about 48% of their revenue with local governments through restricted and unrestricted grants (i.e., special-purpose grants and lump-sum or general aid, respectively) (National Conference of State Legislatures, 2015). Data from the National Association of State Budget Officers (NASBO) (2020) indicates that nine states prepared to cut aid to local governments in fiscal years 2020 and 2021 to balance their budgets. More states may unintentionally reduce their aid, especially states that give general aid. General aid is tied directly to a state's capacity to collect sales and income taxes. Although Illinois is not among the nine states in the NASBO survey that said they plan to cut aid to local governments, the likelihood that Illinois

municipalities will see reduced state aid is relatively high. The State of Illinois primarily shares its revenue with local governments through earmarked income and sale taxes. According to Kass et al. (2020), in 2019, the State of Illinois shared 6.06% of personal income tax revenue, 6.85% of corporate tax revenue, and 37% of sales tax revenue with its local governments. In 2018, except for the City of Chicago, state aid constituted a third of Illinois municipalities' budgets on average (Institute for Illinois Fiscal Sustainability at the Civic Federation, 2021).

We address an important question given the fiscal situation confronting Illinois local governments: How do Illinois municipalities respond to changes in state aid? Knowing this will help us understand Illinois municipalities' behaviors in balancing their budgets in the face of potential declines in state aid. To answer this question, we examined responses to changes in state aid by Illinois municipalities from 2010 to 2019 and how four different groups of cities, developed in a 2020 study by the Institute for Illinois Public Finance (Srithongrung-Kriz, 2020), reacted to changes in state aid during this period.

We found that state aid influences municipal spending in cities with strong economic bases and property tax growth. In cities where property tax revenue is declining, state aid is used to substitute lost property tax revenues. And when cities have fiscal distress or rely on state aid for more on than half of their budgets, state aid does not have a significant effect in increasing government spending. In short, Illinois municipalities appear to prioritize budget reserves for their state aid usage.

BACKGROUND

Intergovernmental aid is an essential fiscal instrument in a federal system because it allows governments at lower levels to produce more public goods and services. In the U.S., intergovernmental grants include categorical, block, general revenue sharing, and state aid, to name just a few. The relationship between state and local governments is similar to that of federal and state governments in a fiscal sense. State governments share their revenue to lower levels of government such as counties, municipalities, townships, and school districts (Faith, 1979). Historically, in 1950 through 1975, state aid to local governments contributed 25%-30% of local government revenue (Faith, 1979). In 2015, this figure stood at 29.2% (National Conference of State Legislatures, 2015).

State aid sent to local governments is divided into two forms: grants for specific projects or purposes (categorical grants) and grants for general purposes (or lump-sum grants) (Kass et al., 2020). In theory, the former stimulates the production of the good or service being subsidized more than the latter because categorical grants lower the relative cost of producing that good or service (Steinemann et al., 2005). Lump-sum grants only increase a local government's income, allowing it to spend on a wide variety of goods and services (Steinemann et al., 2005). Another theoretical finding in academic literature suggests a "flypaper" effect, where lump-sum grants increase spending by more than an equivalent increase in personal income in a community (Hines & Thaler, 1995). This theory suggests that communities spend more on public goods when incentivized by grants than if their income increased through other means, such as economic growth. Therefore, lump-sum grants are not an efficient way to achieve policy goals like reducing property tax burdens.

LITERATURE REVIEW

The existing municipal finance literature examining local government responses to changes in state aid has found three broad strategies: replace revenue, increase spending, or accumulate emergency funds, including unrestricted fund balances in various governmental funds (Faith, 1979). Nguyen-Hoang and Hou (2014) found that municipal governments in Massachusetts use state aid to increase spending and fund balances. Bartle (1996) found that when New York cut state aid, cities increased their property taxes, cut spending, and drew down their fund balance, depending on the cities' fiscal profiles. These studies suggest that municipalities respond to changes in state aid differently depending on their budget structure and tax base growth.

In terms of the effect of state aid on fund balances, Hendrick (2006) found an inverse relationship between a municipality's reliance on intergovernmental revenue and unrestricted fund balance. She argues that this is because cities with more intergovernmental revenue see less risk in facing revenue shortfalls. Although this finding does not directly confirm the impact of state aid on a local government fund balance, it signifies that municipalities do use state aid (or intergovernmental revenue) to relieve the need to build their savings. More recently, Arapis and Reitano (2016) found that from 2005 to 2012, Florida municipalities reduced unrestricted fund balances when they saw increases in intergovernmental revenue, confirming Hendrick's findings. However, Kriz (2002) points out that this depends critically on the stability of the

grants being received. His simulations for Minnesota municipalities show a direct relationship between intergovernmental revenue and the need for fund balances. But his result was driven by high volatility in intergovernmental revenue for the years in his analysis.

Related literature deals with the combination of price and income effects of grants. As stated in the last section, theory suggests that categorical grants generate changes in the relative price of public goods. In contrast, lump-sum grants generate only changes in a municipality's total income. However, studies have consistently found that both types of state aid cause income effects while only categorical grants induce price effects (Hines & Thaler, 1995; Nguyen-Hoang & Hou, 2014). As for the flypaper effect, many studies find a significant impact of lump-sum grants on spending above that expected by changes in income (Weicher, 1972; Bowman, 1974; Nguyen-Hoang & Hou, 2014). However, others find more negligible effects (Inman, 2008) or that state aid is used to relieve property tax burdens (Sobel & Crowley, 2014; Deller & Maher, 2005).

METHODOLOGY AND DATA

The primary purpose of this study is to explore a municipality's response to total state aid (both specific and unrestricted purpose grants) based on its unique fiscal and socioeconomic characteristics. To achieve this, we replicated Nguyen-Hoang and Hou's testing model, adjusting for data availability and local context. We used it to estimate the effects of state aid on a city's total revenue, expenditure, and unrestricted fund balance. This results in a series of three equations that are estimated.

In our empirical tests, a municipal government's total revenue, including tax and nontax revenue, in all governmental funds is represented by $lnrev_{i,t}$ (the subscripts reference municipality "i" in year "t"). We exclude state intergovernmental revenue as that is another variable in the model. Our treatment of this variable is slightly different from Nguyen-Hoang and Hou's in that they used only property tax revenue to measure the effect of state aid on revenue. The typical Illinois local government has more diversified revenue sources compared to Massachusetts. Illinois governments may have many more options to do tax and nontax reduction, such as user fees and charges, which Bartle (1996) found in New York cities.

TABLE 1

VARIABLES IN ECONOMETRIC MODELS

VARIABLE ROLE	VARIABLE
Dependent Variable in Equation 1	Log of a municipal government's total revenue, including tax and nontax revenue, in all governmental funds ($lnrev_{i.t}$)
Dependent Variable in Equation 2	Log of a municipal government's total expenditure (both operational and capital) from all governmental funds ($lnrexp_{i.t}$)
Dependent Variable in Equation 3	Log of a municipal government's total unrestricted fund balance in all governmental funds ($lnfb_{i.t}$)
Independent Variable 1	One-year lagged log of total state aid (or intergovernmental revenue) received by a municipality from the State of Illinois ($lnsaid_{i.t-1}$)
Independent Variable 2	One-year lagged log of the median household income in a municipality ($lninc_{i.t-1}$)
Independent Variable 3	One-year lagged log of a municipality's total population ($lnpop_{i.t-1}$)
Independent Variable 4	One-year lagged property tax burden in a municipality (total property tax revenue/equalized assessed value in the community ($taxprice_{i.t-1}$)
Independent Variable 5	One-year lagged percent of the Caucasian population in a municipality ($race_{i.t-1}$)
Independent Variable 6	One-year lagged unemployment rate in the county where a city is located ($unemp_{i.t-1}$)
Municipality's Fixed Effects	Unmeasurable factors that are different across cities but do not change over time, e.g., home-rule status or council-manager form of government (M_t)
Year's Fixed Effect	Control conditions that are the same in all municipalities during a given year, such as national economic conditions (T)
Random Errors	Randomly distributed errors that cannot be captured by variables in the models ($u_{i.t}$)

A municipal government's total expenditure (both operational and capital) from all governmental funds is represented by $lnexp_{i.t}$. Once again, this variable is slightly different from the original Nguyen-Hoang and Hou model, where

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only operational expenditures in the general revenue fund were included. If the flypaper effect occurs, it should be manifested through all types of expenditure, including capital and operational spending, and in all governmental funds as found by Hines and Thaler (1995). Our measure of total expenditures excludes total state aid.

A municipal government's total unrestricted fund balance in all governmental funds is represented by $lnfb_{i,t}$. Like revenue and expenditure, this variable is slightly different from the original model, where only balances in the general revenue fund were measured. Instead, we incorporated fund balances from all governmental funds since we only had data on total state aid and not lump-sum versus categorical aids. So, the aid may flow to many different funds (e.g., special revenue funds).

For the independent variables, our variable of interest was total state aid (or intergovernmental revenue) received by a municipality from the State of Illinois and is represented by $lnsaid_{i,t-1}$. As discussed earlier, this includes both lump-sum earmarked and categorical aid. We control many variables that might otherwise affect spending, revenue, and fund balance as used in previous studies. The median household income in a municipality is represented by $lninc_{i,t-1}$. The city's total population is represented by $lnpop_{i,t-1}$. A municipality's property tax burden is represented by $taxprice_{i,t-1}$, calculated by dividing total property tax revenue by property tax base (equalized assessed value (EAV) in the community). Racial composition, which we measure by the percent of the Caucasian population in a municipality ($race_{i,t-1}$), is often used in studies to control preferences for public goods spending, and we also included this variable. The unemployment rate is represented by $unemp_{i,t-1}$. This measures unemployment rate in the county where a city is located and is used to control local economic conditions. A municipality fixed effect (M_t) captures unmeasurable heterogeneity across cities that does not change over time, such as home rule status or council-manager form of government. Finally, a time-fixed effect (T) controls conditions that are the same in all municipalities during a given year, such as national economic conditions. MacDonald (2008), attempting to find the factors affecting local government spending and budgeting, found that once fixed effects are controlled, there is no significant relationship between political factors (including city council size and partisan ideology) and local government spending and budgeting. In all three estimating models, all variables except for tax price, race, and unemployment are in

logarithmic form to allow for nonlinear effects of the independent variables on dependent variables.

Finally, we note that in all equations, the independent variables, such as population and unemployment, are lagged (measured one year in the past) to control the simultaneous nature of dependent variables (spending, expenditure, and fund balance) and independent variables. Technically, the independent variables occur a year before the dependent variables in all equations. This treatment rules out the possibility that changes in our dependent variables influence the changes of the independent variables, isolating the effect of changes in the independent variables on the dependent variables. We also

TABLE 2

FACTORS AND VARIABLES USED IN CLUSTER ANALYSIS

FACTOR	VARIABLE
Community Needs and Resources	2018 Population, 2018 Equalized Assessed Valuation (EAV - $), Population Changes During 2010-2018 (%), EAV Change During 2010-2018 (%)
Public Service Size and Growth	2018 Per Capita Total Revenue ($), 2018 Per Capita Total Expenditure ($), 2010 -2018 Per Capita Total Revenue Change (%), 2010-2018 Per Capita Total Expenditure Change (%)
Revenue Structure and Trend	2018 Property Tax Reliance (%), 2018 State Sales Tax Reliance (%), 2018 State Aid Reliance (%), 2010-2018 Property Tax Change (%), 2010-2018 State Sales Tax Change (%), 2010-2018 State Aid Change (%)
Own-Source Revenue Capacity	2018 Property Tax Rate (mill, cent per $1,000 EAV), 2018 Per Capita State Sales Tax Revenue ($), 2010-2018 Property Tax Rate Change (%), 2010-2018 Per Capita State Sales Tax Change (%)
Fiscal Condition	2018 Operational Balance (%), 2018 Fund Balance (%), 2010-2018 Operational Balance Change (%), 2010-2018 Fund Balance Change (%)
Budget Flexibility and Liability	2018 Debt Capacity (per $1,000 EAV), 2010-2018 Debt Capacity Change (%), 2018 Pension Liability (per $1,000 EAV)

Note: All financial data is in adjusted for inflation. Source: Illinois Comptroller's Office Local Government Financial Database.
Source: Srithongrung-Kriz, 2020

control for a statistical problem called serial correlation, which frequently happens in data observed over time by adding variables that capture long-term trends into the models. Further, we use difference value for all variables in the model to estimate marginal effects of independent variables on the dependent variables.

The unit of analysis in this study is the municipality. We obtained data on the finances of 687 Illinois municipalities from 2010 to 2019. Local government financial data are calculated from the Illinois State Comptroller's Office Local Government Financial Databases (2021).

Other studies have included variables capturing the financial characteristics of municipalities as explanatory variables in a model. We took a different approach and relied on prior research that identified six clusters of communities in the state that share specific financial characteristics (Srithongrung-Kriz, 2020). That study used 29 fiscal and economic variables — including community needs and resources, public service size and growth, revenue structure and trend, own-source revenue capacity, fiscal condition, and budget flexibility and liabilities — to identify six distinct types of communities (see Table 2).[1]

Table 3 summarizes the clusters identified by that study, some typical characteristics of the cities in the cluster, and some representative communities. To give a sense of the relative size of each cluster, note that Group 1 (Chicago) contains 22% of total state population. Group 2 (Bedford Park and McCook) contains 0.01% of state population while Groups 3, 4, 5, and 6 contain 21%, 9%, 2%, and 2% of state population, respectively. Due to data availability, we included only 687 municipalities out of the total 1,296 cities, villages, and towns in Illinois.

Our model estimates the effects of state aid on the three dependent variables in each cluster aside from Groups 1 and 2, resulting in 12 sets of results. We did not include Group 1 or Group 2 cities in our analysis because those groups are unique compared with the rest of the sample. Also, since there is only one city in Group 1 and two in Group 2, changes are not likely to be detectable.

EMPIRICAL RESULTS AND DISCUSSION

We conducted our analysis separately on Groups 3-6. Full statistical results are reported in the appendix in Tables A2-A4. Our statistical models have support for validity given the summary statistics. Also, our methods of correcting for

TABLE 3

CITY CLUSTERS USED IN THE ANALYSIS

GROUP	SHORT NAME	IDENTIFYING CHARACTERISTICS	EXAMPLE CITIES
1	Chicago	Extremely Large Population	Chicago
2	Industrial Towns	Small Population, High Industrial Concentration, Little or No Tax Base	Bedford Park, McCook
3	High Sales Tax Reliance Cities	Declining Property Tax Base, Strong Sales Tax Base and Growth	Chatham, Champaign, Macomb, Quincy
4	Strong Economic Base Cities	Relatively Large Population, Strong Property and Sales Tax Base Growth	Aurora, Chicago Heights, Evanston, Rock Island, Springfield
5	Small Towns in Fiscal Distress	Small and Declining Population, Declining Property Tax Base, Growing Deficits	Arlington, Calhoun, Macon, Mason City
6	Small Towns Experiencing Stagnation	Small but Stable Population, Stagnant Property and Sales Tax Base, High Reliance on State Aid	Brookport, Green Valley, Junction City, Rochester

Source: Srithongrung-Kriz, 2020

serial correlation, long-term trends, and time/year fixed effects are supported by statistical tests. For the revenue model, median household income is statistically significant in all groups. Tax price significantly increases total revenue in Groups 5 and 6 but not in Groups 3 and 4.

REVENUE EFFECTS

Regarding our variable of interest, state aid significantly increases total revenue in all groups, except for Group 5 (see Figure 1). In the Strong Economic Base Group (Group 4), the effect of state aid on municipal revenue is almost unity (i.e., a $1 increase in state aid resulted in a 90-cent increase in total revenue). In the High Sales Tax Reliance (Group 3) and Small Towns with Stagnant Tax Base (Group 6) cities, the positive effects of state aid are significant but negligible at about 13 cents and 3 cents, respectively. These results suggest that we can expect to see substantial income effects when aid is sent to cities where the property

tax base is growing compared to those with stagnant or declining property tax bases. Interestingly, in Group 5, although state aid is not statistically significant, the sign of the coefficient is negative (see Table A2). This coefficient suggests that municipalities in Group 5 may use state aid to relieve local tax and nontax burdens. This effect is not present in the other groups.

FIGURE 1
### THE EFFECT OF AN EXTRA $1 IN STATE AID ON TOTAL REVENUE
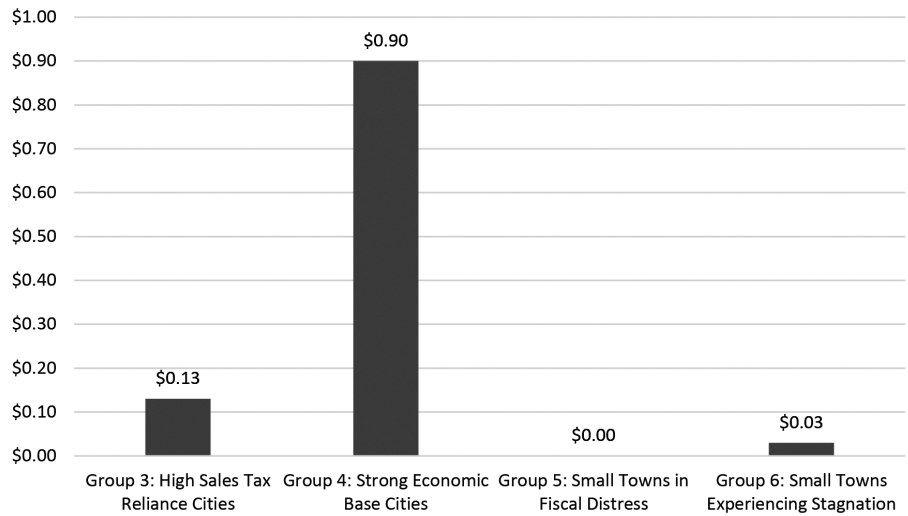
EXPENDITURE EFFECTS

For the expenditure model, median household income is statistically significant in all municipal groups. State aid significantly increases total expenditure in all groups, except for Group 5 (see Figure 2). The pattern of results is similar to the revenue results. State aid increases expenditure in all groups except for Group 5. The effect on expenditures is once again greater than unity for Group 4. In Groups 3 and 6, the direct relationship between state aid and expenditures is statistically significant but negligible at about 15 cents and 4 cents, respectively. The pattern of results suggests that we can expect to see substantial income and price effects when state aid is sent to municipalities where the property tax base is growing compared to those that have a stagnant or declining property tax base.

FIGURE 2

THE EFFECT OF AN EXTRA $1 IN STATE AID ON TOTAL EXPENDITURES
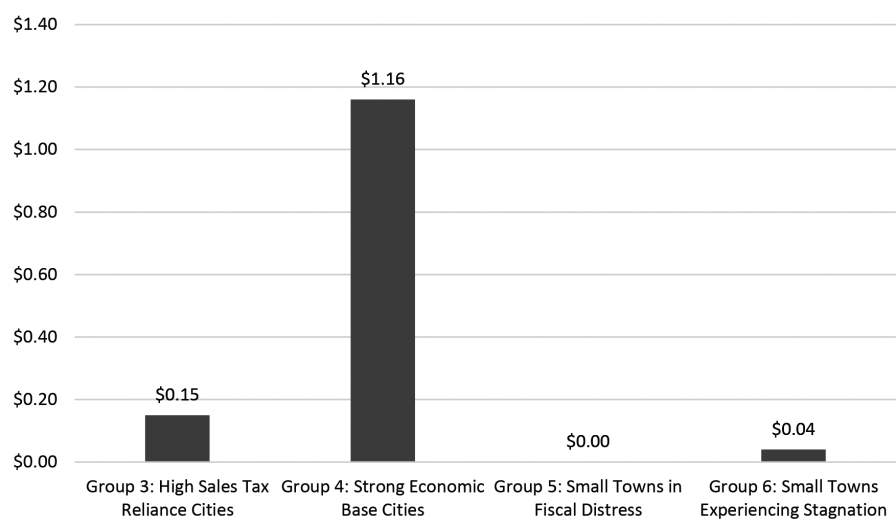
The results from the revenue and expenditure models thus far suggest that state aid plays a significant role in increasing public goods and service provision in the majority of Illinois municipalities, except for those in smaller cities experiencing fiscal stress.

In Group 3 (High Sales Tax Reliance), the effects of state aid on both revenue and expenditure are not relatively large. The communities in this group may use state aid to replace property tax revenue since the municipalities in this group see the fastest growth rate of state sale tax revenues while facing stagnant property tax bases at the same time. This effect, called fiscal replacement, was identified by Deller and Maher (2006).

State aid has no statistically-significant effect on government spending and revenue in Group 5. This lack of influence reveals that when a municipality faces population and economic decline and severe decreases in fund balance, state aid does not have enough power to spur spending. The earlier study identifying the clusters suggests the primary budget strategy for municipalities in this group is to keep spending low to accumulate fund balance. Therefore, the primary role of state aid for these municipalities may well be to increase the fund balance.

In Group 6, the role of state aid on municipal spending and taxing is negligible. As seen in Figure 1, a $1 increase in state aid increases municipal spending by only 4 cents. Like those municipalities in Group 5, the primary budget strategy in this group is to grow some savings through fund balance by keeping expenditure growth reasonable. Thus, it is conceivable that state aid does not produce significant effects.

FUND BALANCE EFFECTS

The effect of state aid on fund balance is statistically significant and economically more substantial compared to the revenue and expenditure models. Illinois municipalities seemingly use state aid to enhance their budget cushions, although the usage rate varies among different municipal groups. Figure 3 presents the effects of state aid on unrestricted fund balance in all governmental funds.

FIGURE 3
THE EFFECT OF AN EXTRA $1 IN STATE AID ON FUND BALANCES
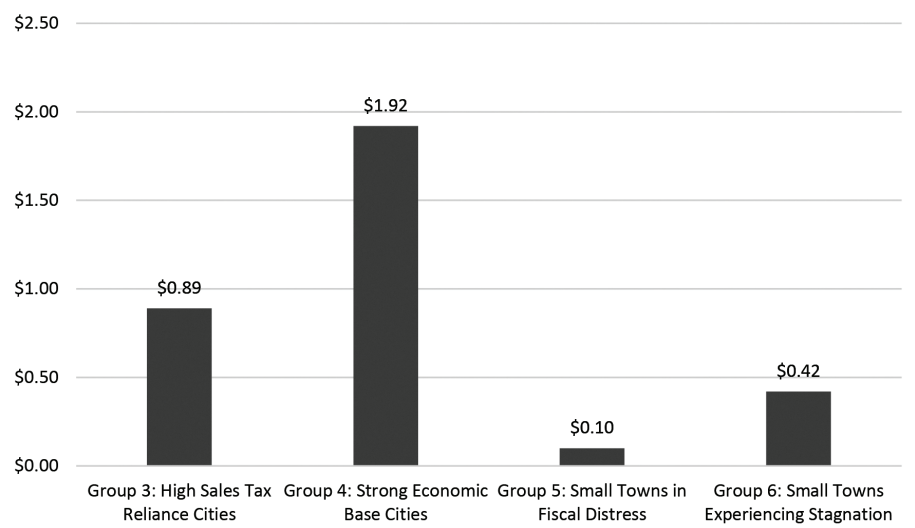
State aid increases fund balance in all municipal groups. The effect of state aid on a municipality's unrestricted fund balance approaches 2:1 in Group 4. In Groups 3, 5, and 6, the positive effects of state aid are significant and large relative to the effects found in the revenue and expenditure models. The results

for Group 5 suggest that when a city is facing fiscal distress, every marginal dollar received is used toward reducing fiscal uncertainty through growing fund balances. State aid acts as a tool of fiscal survival for these communities.

From the cluster analysis that generated the groups (Srithongrung-Kriz, 2020), Group 4 had the lowest unrestricted fund balance and was the only group with a negative operational fund balance (operating revenues minus operational expenditures). The high coefficient of state aid on fund balances suggests that this group might be trying to replenish their fund balances using state aid during the period of analysis.

CONCLUSIONS

Combining results from the analyses, we can make six general observations:

- State aid can stimulate spending on local public goods and services, especially in municipalities where the economic base is strong and the property tax base is growing.

- Municipalities may use state aid to replace property tax revenue, as we can see the significant but relatively small effect of it on municipal spending in Group 3.

- State aid does not significantly impact spending when municipalities are struggling with local economic declines, facing diminishing fund balances, or have a heavy reliance on the aid.

- When reliance on state aid is more than half of a municipality's budget, state aid does not have an income or price effect since the aid is used to replace their own-source revenue. This result confirms those by Faith (1979).

- We do not find evidence of the flypaper effect in any group. The effect of median household income on municipal spending is larger than state aid on municipal spending in all groups.

- Illinois municipalities appear to prioritize budget reserves for their state aid usage. We find significant and positive effects of state aid on fund balances in all groups, including Group 5, where we do not see any significant effect of state aid on revenue and expenditure. This suggests that state aid is used to increase fund balances in all groups analyzed.

> There are different magnitudes in the effect size. The effect is higher in municipalities with more uncertainty in their budget reserves. This finding is consistent with Kriz (2002), who found that communities facing greater uncertainty required more budget reserves.

Two implications emerge from the results of this study. First, economic and budget uncertainty and revenue capacity are vital in determining whether a municipality will respond to state aid as intended to support government production of public goods. The more municipalities face economic and budget uncertainty, as in Groups 5 and 6, it is unlikely that state aid will influence municipal spending. To alleviate this issue, the State of Illinois should consider fiscal tools in addition to state aid to help those municipalities improve their local economies to enhance fiscal sustainability. Examples of these tools include local government capital investment pools, where a small city can use pooled money to build and renovate its civic infrastructure, and other economic development strategies to attract new business owners and residents.

Second, it is likely that Illinois municipalities use state aid to create a cushion for revenue shortfalls, especially for those municipalities facing declining fund balances, such as Group 4. This result is likely a significant reason we do not see evidence of the flypaper effect in Illinois. Thus, the State of Illinois may play a role in establishing some fiscal certainty for its municipalities by providing increased access to emergency loans (with zero- or relatively low-interest rates) available to municipalities. Emergency loans or state loans should have clear criteria in defining municipal fiscal crisis and eligibility to borrow from the state government. So far, 14 states (excluding Illinois) provide loans to their local governments (Pew Charitable Trusts, 2013). Once a municipality feels like it has a safety net, then it may be able to use state aid in the way it was intended: to increase local production of public goods and services. Since the tools recommended above are not included in empirical analyses, the state should examine the effectiveness of those practices prior to employing them.

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ENDNOTES

[1] All financial data are adjusted for inflation. Source: Illinois Comptroller's Office Local Government Financial Database.

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APPENDIX

TABLE A1

SUMMARY STATISTICS

VARIABLE	MEAN	STANDARD DEVIATION	MIN	MAX
Group 3				
Median Household Income	59,723	13,904	31,900	105,586
Total Population	10,979	12,727	450	88,029
Total Revenue from All Governmental Funds Excluding Total State Aid	14,400,000	23,200,000	780,000	221,000,000
Total Expenditure from All Governmental Funds Excluding Total State Aid	13,900,000	22,500,000	800,000	221,000,000
Total Unrestricted Fund Balance from All Governmental Funds	41,000,000	58,000,000	39,521	421,000,000
Tax Price (Total Property Tax/EAV)	0	1	0	40
Total State Aid (Specific and Lump-sum)	5,077,471	6,410,662	224,665	52,200,000
Percent of Caucasian Population	78.8	16.1	43.3	98.6
Unemployment Rate	6.9	2.3	2.4	14.1
Group 4				
Median Household Income	62,884	11,970	36,093	96,354
Total Population	17,535	20,577	146	155,960
Total Revenue from All Governmental Funds Excluding Total State Aid	36,200,000	66,700,000	1,010,654	514,000,000
Total Expenditure from All Governmental Funds Excluding Total State Aid	35,600,000	65,700,000	640,157	572,000,000

VARIABLE	MEAN	STANDARD DEVIATION	MIN	MAX
Total Unrestricted Fund Balance from All Governmental Funds	74,200,000	121,000,000	(92,400,000)	955,000,000
Tax Price (Total Property Tax/EAV)	0.08	1.12	0.00	29.32
Total State Aid (Specific and Lump-sum)	6,580,064	8,972,466	100,375	55,400,000
Percent of Caucasian Population	60.58	18.34	43.31	97.73
Unemployment Rate	7.09	2.42	2.90	13.90
Group 5				
Median Household Income	50,131	8,623	28,499	105,586
Total Population	978	1,035	63	17,000
Total Revenue from All Governmental Funds Excluding Total State Aid	487,820	1,262,872	185,000	5,974,055
Total Expenditure from All Governmental Funds Excluding Total State Aid	456,370	1,243,614	185,000	5,741,557
Total Unrestricted Fund Balance from All Governmental Funds	2,000,828	1,690,066	(1,821,582)	12,700,000
Tax Price (Total Property Tax/EAV)	0.013	0.010	0.001	0.206
Total State Aid (Specific and Lump-sum)	453,415	1,005,066	14,624	18,600,000
Percent of Caucasian Population	90.37	8.06	61.35	98.63
Unemployment Rate	7.05	2.21	2.50	13.40
Group 6				
Median Household Income	52,318	10,331	31,742	96,354
Total Population	1,447	2,481	58	22,875
Total Revenue from All Governmental Funds Excluding Total State Aid	1,285,181	3,875,821	544,204	31,300,000

VARIABLE	MEAN	STANDARD DEVIATION	MIN	MAX
Total Expenditure from All Governmental Funds Excluding Total State Aid	1,241,786	3,805,217	541,221	31,500,000
Total Unrestricted Fund Balance from All Governmental Funds	4,155,471	10,800,000	(3,743,416)	109,000,000
Tax Price (Total Property Tax/EAV)	0.015	0.018	0.00012	0.152
Total State Aid (Specific and Lump-sum)	552,146	1,358,101	8,876	13,300,000
Percent of Caucasian Population	86.1	10.5	43.3	98.5
Unemployment Rate	7.0	2.2	2.5	14.1

Note: All financial data are adjusted for inflation.

TABLE A2

REGRESSION RESULTS FOR DEPENDENT VARIABLE TOTAL REVENUES (LOGARITHMIC)

INDEPENDENT VARIABLE	GROUP 3	GROUP 4	GROUP 5	GROUP 6
lninci,t-1	0.246***	0.574***	0.267***	0.400***
	(0.018)	(0.105)	(0.043)	(0.065)
lnpopi,t-1	-0.529***	0.039	-0.002	-0.004
	(0.01)	(0.026)	(0.009)	(0.020)
taxpricei,t-1	-0.000	-0.003	6.460***	3.80***
	(0.001)	(0.002)	(0.196)	(0.263)
lnsaidi,t-1	0.045***	0.163***	-0.006	0.015***
	(0.003)	(0.016)	(0.003)	(0.005)
racei,t-1	-0.019***	0.054	0.000	0.004
	(0.005)	(0.043)	(0.000)	(0.014)
unempi,t-1	-0.002	-0.028**	0.003	-0.003
	(0.002)	(0.013)	(0.004)	(0.006)
Municipality Fixed Effect	Included	Included	Included	Included
Time Fixed Effect	Included	Included	Included	Included
Long-Term Trend Correction	Yes	Yes	Yes	Yes
Autocorrelation Correction	0.972***	0.574***	0.983***	0.986***
	(0.003)	(0.022)	(0.003)	(0.005)
Total Municipalities	234	69	245	139
Total Observations	1808	546	1646	988
F-Statistic	569.46***	23.00***	729.98***	511.6***
Adjusted R2	0.987	0.78	0.991	0.987

*Note: * - p < 0.05, ** - p < 0.01, *** - p < 0.001*

TABLE A3

REGRESSION RESULTS FOR DEPENDENT VARIABLE TOTAL EXPENDITURES (LOGARITHMIC)

INDEPENDENT VARIABLE	GROUP 3	GROUP 4	GROUP 5	GROUP 6
lninci,t-1	0.284***	0.532***	0.241***	0.385***
	(0.021)	(0.124)	(0.038)	(0.066)
lnpopi,t-1	-0.060***	-0.043	0.006	-0.009
	(0.012)	(0.030)	(0.007)	(0.020)
taxpricei,t-1	-0.001	-0.006**	5.335***	3.883***
	(0.000)	(0.003)	(0.166)	(0.242)
lnsaidi,t-1	0.054***	0.215***	-0.004	0.020***
	(0.004)	(0.019)	(0.003)	(0.006)
racei,t-1	-0.027***	0.037	0.002	0.006
	(0.005)	(0.050)	(0.007)	(0.014)
unempi,t-1	-0.003	-0.016	0.000	-0.006
	(0.002)	(0.014)	(0.003)	(0.006)
Municipality Fixed Effect	Included	Included	Included	Included
Time Fixed Effect	Included	Included	Included	Included
Long-term Trend Correction	Yes	Yes	Yes	Yes
Autocorrelation Correction	0.976***	0.732***	0.979***	0.978***
	(0.003)	(0.019)	(0.003)	(0.006)
Total Municipalities	234	69	245	139
Total Observations	1806	546	1626	967
F-Statistic	570.54***	35.60***	751.80***	462.11***
Adjusted R2	0.988	0.848	0.992	0.986

Note: * - $p < 0.05$, ** - $p < 0.01$, *** - $p < 0.001$

TABLE A4

REGRESSION RESULTS FOR DEPENDENT VARIABLE FUND BALANCES (LOGARITHMIC)

INDEPENDENT VARIABLE	GROUP 3	GROUP 4	GROUP 5	GROUP 6
lninci,t-1	0.095**	0.188	0.0167***	0.121**
	(0.035)	(0.122)	(0.029)	(0.042)
lnpopi,t-1	-0.025	-0.009	-0.002	-0.022
	(0.020)	(0.030)	(0.005)	(0.011)
taxpricei,t-1	-0.000	-0.003	4.006***	-0.182
	(0.001)	(0.002)	(0.145)	(0.166)
lnsaidi,t-1	0.110***	0.170***	0.023***	0.056***
	(0.006)	(0.020)	(0.001)	(0.003)
racei,t-1	-0.015	0.074	0.007	0.010
	(0.009)	(0.049)	(0.005)	(0.008)
unempi,t-1	0.002	-0.005	0.006	-0.000
	(0.004)	(0.014)	(0.003)	(0.004)
Municipality Fixed Effect	Included	Included	Included	Included
Time Fixed Effect	Included	Included	Included	Included
Long-Term Trend Correction	Yes	Yes	Yes	Yes
Autocorrelation Correction	0.863***	0.541***	0.094***	0.912***
	(0.008)	(0.024)	(0.006)	(0.009)
Total Municipalities	234	69	245	139
Total Observations	1854	531	1912	1091
F-Statistic	59.81***	16.36***	113.19***	113.16***
Adjusted R2	0.888	0.716	0.938	0.941

Note: * - $p < 0.05$, ** - $p < 0.01$, *** - $p < 0.001$