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An Analysis of the Effect of State Aid Transfers on Local Government Expenditures

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Executive Summary

This paper seeks to determine the effects of state budget changes on local government expenditures; particularly, how changes in state funding provided to local governments affects local government expenditures. The hypothesis tested is that state funding is a significant factor on local government expenditure. To evaluate this, two levels of analysis were conducted. The first was a paneled fixed effects regression analysis of data for all fifty states from the years 2000 to 2013, in which changes to local expenditure were measured by the effects of multiple fiscal and socioeconomic variables. The second level of analysis evaluated the same effects during the same time period using the same method, but for county level expenditures for the state of New York.

The results from the analysis showed that, at both the national level for all states and the New York state level for all counties, state aid or transfers to local governments was a statistically significant factor on local expenditures. The data for all fifty states showed that for every $100 increase in per capita state intergovernmental revenue, per capita local expenditures increased by $116, or that a 6.8% change in state IG revenue results in a 2.3% change in local expenditure. For the county level data for New York, the analysis showed that for every $100 increase in per capita state aid, per capita local expenditures increased by approximately $45, or that a 40% change in state aid results in a 2.5% change in local expenditures.

These results would support our hypothesis that state funding, either through direct aid or other intergovernmental revenue transfer mechanisms, is a significant factor on local government spending on projects and services; as such, it can be assumed that when state governments reduce their budgets, local governments see their ability to fund projects and services reduced without resorting to another funding mechanism.

Problem Statement

  In the United States, 49 out of 50 states have some form of a balanced budget

requirement as reported by the National Conference of State Legislatures. The rules behind these

requirements vary from state to state, but the intention is the same – by being required to keep

balanced budgets, states are theoretically able to ensure that government operations are occurring

efficiently and affordably. However, an issue that is frequently discussed is the effect that the

outcomes of balanced budgeting has on local governments – often, states balance their budgets

by cutting spending to various programs, which in turn causes local governments who were no

longer getting funding from the states to adapt. Sometimes, this comes in the form of litigation or

legislative action, such as in Ohio, where a governor's veto of $80 million to education spending

was later reversed. More often, however, local governments are forced to make funding

adjustments to react to the shortfall from state cuts.

  What I would like to determine is the net effect of balanced budget requirements on local

governments and citizens. Specifically, I would like to know if cutting spending to create a

balanced state budget requires local governments to make potentially negative changes to

account for the reduction in state spending.

  The way that I will conduct this research this is to measure the effect of changes to state

budgeting on local governments. When states reduce expenditures, particularly in terms of

transfers to local governments, how does it impact changes in local government? Does it affect

local government expenditure, which could in turn affect the amount of services provided to

citizens? I will be using fiscal and socioeconomic data from all states for several years to try to

measure these effects.

  There is a significant policy issue at stake. If cutting spending at the state level to balance

the budget is having an overall negative effect within the state enacting the budget cuts, perhaps

a different method of balancing budgets (or even budgeting overall) should be considered to make sure that the state budget is being created and maintained in a way that benefits citizens rather than harms them. While it may be politically expedient to be able to say "we balanced the budget," from a practical standpoint it should be examined to make sure that these types of requirements are having the positive effects that we would hope to achieve through the budgeting process.

Literature Review

Many of the research articles on this topic were written from the early to mid-1960s; more recent articles addressing this issue do not examine the same topic researched here. With that in mind, this review includes directly relevant articles (journal articles and otherwise).

Charles Tiebout's 1956 article "A Pure Theory of Local Expenditures" examined the model of public goods and how citizens voice their preferences for public goods. Unlike previous research, which had assumed that the federal government primarily handled public goods spending, Tiebout made the case that local expenditures on public goods were more important for measuring people's preferences, because citizens are more likely and able to choose communities whose public goods provision better reflect their preferences. (Tiebout, 1956). This article establishes the importance of goods and services provided by local government; when noting the effect of state government fiscal changes on local governments, acknowledging that importance of local government expenditure is necessary.

Seymour Sacks and Robert Harris (1964) looked to build on research by Fisher (1957), in which Fisher found that because the variation of state and local expenditures explained by population, urbanization, and income had been reduced since 1942, there must be some unexplained variation. The authors attempted to account for that "unexplained variation" by measuring federal aid to state governments and state aid to local governments using data from

1960, finding that "state aid often reduces pressures on local governments to hold their expenditures down" (Sacks and Harris 1964).

In the same issue of the *National Tax Journal* as the Sacks and Harris article, Glenn Fisher wrote an updated version of his research, which expanded on his initial research also using data from 1960 to try to explain more of the variance by expanding the number of variables - this article was also intended as a rebuttal to the Sacks and Harris article, arguing that "the statistical procedures used overstate the importance of federal aid as a cause of variation in expenditure" (Fisher 1964). Fisher found a high negative correlation between levels of expenditure and percent of low income families in the state, putting forth the hypothesis that low-income families are more politically resistant to higher expenditure if that expenditure results in higher taxes. He also concluded that the use of federal aid as an independent variable is likely invalid, but that state aid to local government "should be included in future studies of this type" (Fisher 1964).

Moving ahead to 1988, John Wallis and Wallace Oates (1988) chapter, "Decentralization in the Public Sector: An Empirical Study of State and Local Government," from an out of print book called *Fiscal Federalism: Quantitative Studies*, used a collection of Census data to model the trend of fiscal responsibility moving from local governments to the states at the first half of the 20th century. This data was used to measure the halt of that trend and predicting the potential of fiscal decentralization away from the states at the end of the 20th century (Wallis and Oates 1988). This research on the fluctuation in the relationship between state and local government expenditures could be useful in noting recent trends in state and local spending and how local governments react to fiscal changes in different economic and political climates.

Poterba's (1994) article, "State Responses to Fiscal Crises," examined how state fiscal decisions are affected by fiscal rules and political factors. However, Poterba didn't look at the relationship between state and local governments when fiscal changes occur. The primary finding of this paper was that state fiscal rules such as balanced budget amendments and spending limits have significant effects on the ability of states to respond unexpected fiscal shocks. It also noted the importance of political factors, such as party control of the state house and the governorship and whether it is a gubernatorial election year when the shock occurs (Poterba 1994). Although the article does not specifically apply to the relationship between state and local governments, it did generate some good ideas for which explanatory variables might be considered.

In 1995, Poterba followed up his 1994 article with "Balanced Budget Rules and Fiscal Policy: Evidence from the States" in the *National Tax Journal*. In response to the discussion of a federal balanced budget amendment, Poterba looked at the effects of balanced budget rules at the state level to determine their effects on fiscal policy to determine whether there are any implications that should be noted when considering a federal balanced budget rule. An important distinction that he notes in this article is that when states report that they faced prospective deficits, much of the action that they take to close these potential deficits occurs through spending cuts, followed (in a distant second) by revenue increases, and finally by "other actions" such as changes in the accounting process (Poterba 1995).

Reschovsy (2003) attempted to measure the impact of state government budget shortfalls on local governments. By analyzing previous behavior of state governments in response to budget crises, Reschovsky concludes that "in many states, aid to local governments and school districts will be reduced by a greater percentage amount than reductions in overall state

spending" and that "it is likely that many of these cuts in state aid will translate into reductions in public services." (Reschovsky 2003).

Greer and Denison (2016) provide the most recent research on this topic. They examine the distribution of debt between state and local governments, and measure the factors that affect how states and localities determine who will take on the most debt concentration. (Greer and Denison 2016). Their research adds a further layer of consideration on the relationship between state and local fiscal determinations, as well as provided further potential explanatory variables to measure in my own research with the inclusion of the concentration of debt at both the state and local level.

<u>Research Design</u>

My research attempts to measure the balance of fiscal responsibility and program funding implementation between state and local governments. The goal is to see if, when states cut spending to balance their budgets, local governments must react in such a way that the positive effects of a balanced state budget are offset. This was examined to an extent by Poterba (1995), who found that when states are faced with potential deficits, most of the action taken to offset this deficit occurs through spending cuts. Additionally, Rechovsky (2003) concluded that states faced with budget crises reduced aid to local governments and school districts by a greater amount than reductions in overall state spending.

I further examine this issue by looking at how local governments respond to changes in state level spending. This is done with two levels of data. First, I perform a fixed effects panel regression analysis of all fifty states from the years 2000 to 2013 using a combination of fiscal data from the Urban Institute's Tax Policy Center (Urban Institute 2015) and socioeconomic and political data from the University of Kentucky Poverty Research Center (UK Center for Poverty Research 2016). This data is aggregated total local expenditure, total local revenue, local

property tax, local outstanding debt and the change in local debt during a given year; I will also include data for total state revenue, total state expenditure, gross state product, unemployment rate, state outstanding debt, the change in state debt during a given year and total state intergovernmental revenue; and political data such as whether the Governor is a Democrat and whether Democrats have greater than fifty percent control over the state House and Senate. All of my included fiscal data is per capita. My hypothesis is that state aid significantly affects the amount of local expenditures in a given year, and that this will be reflected both in national data and at the county level.

Once I have outcomes for the state level data, I repeat the regression analysis for a single state at the county level to determine if similar results occur. For this, I will evaluate the state of New York; I chose New York because of their extensive reporting on county fiscal information for multiple years, as reported by the Office of the Comptroller (New York OSC, 2017). I chose county level government data because there is uniformity in the structure of county governments compared to city governments, which can have different structures even within a single state. Measuring state level data will allow me to establish patterns that might support my hypothesis, and county level data measurements will be used to verify whether those patterns and the hypothesis hold.

State Level Analysis

The first level of analysis conducted was a fixed effects panel regression on data for all fifty states from 2000 to 2013 (because there was missing data for some variables for the years 2001 and 2003, those years were omitted from my state level analysis). For lag purposes, I also collected data for 1999, but did not include 1999 in the regression year. For the regression, my dependent variable is the total aggregate amount of local expenditures per capita in real dollars

(for the remainder of my analysis, all fiscal variables are per capita in real dollars). My independent variables are state population, state unemployment rate, total state expenditure, total local revenue, percent change state debt, percent change local debt, total state intergovernmental revenue (in this dataset, "total state intergovernmental revenue" is the name given to the revenue that local governments get from the states), whether the governor is a Democrat (a binary variable which is 1 if the governor is a Democrat), and whether the Democrats hold the majority in the state Senate and state House (each is a binary variable created using data regarding the percentage of Democrats in each chamber, where the variable is equal to 1 if the percentage is greater than fifty percent).

Before conducting my regression analysis, I first did a summary analysis of my data in order to get a better overall view of the information I gathered. The summary analysis returned the results seen in Table 1.

Table 1. State Level Summary Statistics (Fiscal Variables in Per Capita Dollars)

Variable	Mean	Standard Deviation	Min	Max
Total Local Expenditure	5089.52	2612.98	1992	24163
Total State Expenditure	6346.95	1872.05	3805	19293
Total Local Revenue	4696.75	1195.50	1817	9751
Total State IG Revenue	1464.07	480.45	161	3497
Local Property Tax	1242.19	532.98	244	3001
Total State Revenue	6598.64	2359.75	1632	25678
State Population	5981439	6585855	494300	38414128
State Unemployment Rate	.0592	.0209	.023	.137
Governor is a Democrat (1 if yes)	.4643	.4991	0	1
Democrats Control House (1 if yes)	.5356	.4991	0	1
Democrats Control Senate (1 if yes)	.4929	.5003	0	1
Percent Change Local Debt	.0158	.0623	-.2507	.2642
Percent Change State Debt	.0889	.5545	.-8517	5.343

Assuming that local expenditures will change as a reaction to the previous year's fiscal variables, I lagged all the fiscal independent variables by one year; in addition, I lagged the

political variables by one year since budgets are previously made for the next fiscal year in the

current fiscal year. This resulted in every variable except for population and unemployment rate

being lagged, and the regression equation is as follows:

$$\text{TotalLocalExpenditure}_{i,t} = \alpha_i + \beta_1 \text{TotalLocalRevenue}_{i,t-1} + \beta_2 \text{TotalStateRevenue}_{i,t-1} +$$
$$\beta_3 \text{TotalStateExpenditure}_{i,t-1} + \beta_4 \text{LocalPropertyTax}_{i,t-1} + \beta_5 \text{GovernorisaDemocrat}_{i,t-1} +$$
$$\beta_6 \text{UnemploymentRate}_{i,t} + \beta_7 \text{Population}_{i,t} + \beta_8 \text{DemocratControlHouse}_{i,t-1} +$$
$$\beta_9 \text{DemocratControlSenate}_{i,t-1} + \beta_{10} \text{ChangeLocalDebt}_{i,t-1} +$$
$$\beta_{11} \text{ChangeStateDebtOutstanding}_{i,t-1} + \beta_{12} \text{TotalStateIGRevenue}_{i,t-1} + \varepsilon_{i,t}$$

My expectation was that the variables for state expenditure, local revenue, state

intergovernmental revenue, and local property tax will be significant, as well as the variable for a

Democratic Governor and Democratic control of the House; the first four variables I expected

significance from due to either the direct effect on local funds available for expenditure or the

effect on the amount of state funds available to potentially use to increase transfers to local

governments, while the two political variables reflect the fact that the House is primarily the

budget making body in a state and the Governor sets the economic policy agenda, and in both

instances Democrats are more likely to approve greater state level spending overall which could

possibly include transfers to local governments. These expectations were somewhat accurate, as

reflected in the analysis in Table 2.

Prior to running my regression, I ran a variance inflation factor command to catch any

potential multicollinearity issues. The VIF returned nothing of significant magnitude. With this

being the case, I proceeded with my fixed effects regression, which produced the results seen in

Table 2.

Table 2. State Level Regression Analysis (Fiscal Variables in Per Capita Dollars)

R-sq: Within   = 0.4153   Number of obs   = 400
       Between   = 0.0278   Number of Groups   = 50
       Overall   = 0.0307

Total Local Expenditures	Coef.	Robust Std.Err.	T	p>|t|	95% confidence interval
Total State Expenditure (lag)	-.1053	.0493	-2.14	0.038	-.2044 -- -.0062
Total Local Revenue (lag)	.1105	.0945	1.17	0.024	-.0794 -- .3004
Total State IG Revenue (lag)	1.159	.1598	7.26	0	.8386 -- 1.481
Local Property Tax(lag)	.4862	.1996	2.44	0.019	.0851 -- .8872
Total State Revenue (lag)	.0012	.0197	0.06	0.950	-.0384 -- .0408
State Population	-.0002	.0001	-3.19	0.002	-.0003 -- -.0001
State Unemployment Rate	5965.42	1906.69	3.13	0.003	2133.77 -- 9797.07
Governor is a Democrat (1 if yes, lag)	-6.935	26.255	-0.26	0.793	-59.696 -- 45.826
Democrats Control House (1 if yes, lag)	141.77	72.1994	1.96	0.055	-3.319 -- 286.861
Democrats Control Senate (1 if yes, lag)	-84.966	62.992	-1.35	0.184	-211.554 -- 41.622
Local debt change (lag)	436.569	192.3958	2.27	0.028	49.935 -- 823.203
State debt change (lag)	427.586	298.3009	1.43	0.158	-171.872 -- 1027.044

The statistically significant explanatory variables for aggregate total local expenditure are total state expenditure, total state IG revenue, aggregated local property tax, state population, state unemployment rate, Democratic control of the House, and aggregated local debt change.

Total state expenditure and total local expenditures are negatively correlated. This could be because as states increase their total expenditures, local governments do not need to spend as much on provision of services or capital projects that the state would pick up, therefore total local expenditure decreases.

Total state IG revenue is positively correlated. This is the outcome my hypothesis predicted – as states increase the amount of revenue they provide to local governments, the amount of funding that local governments have to spend is increased, which leads to an increase in local expenditures.

Aggregated local property tax is positively correlated. Property taxes are a significant revenue function for local governments; it is reasonable to expect that increasing local property tax increases the amount of local funds to spend, and similarly raises local expenditures.

State population and local expenditures are negatively correlated; as the state population goes up, the amount of revenue collected by the state overall may increase, which in turn would allow states to increase expenditures – as noted, state expenditure and local expenditure are also negatively correlated.

In discussing the state unemployment rate, it is important to note the variables in the dataset are presented as percentages, so a 5% unemployment rate is reflected in the data as 0.05 rather than 5; to analyze the size of the coefficient on the dependent variable, the decimal of the coefficient must be shifted to the left two digits, meaning that a 1% increase in the unemployment rate increases local expenditure by approximately $60 rather than $6,000. It can be assumed that, as the unemployment rate in a state goes up, more people are seeking services both at the state and local level, and therefore local expenditures would increase as a result.

Democratic control of the House is positively correlated. The state House is typically the primary body responsible for crafting the state budget (and Democrats are more likely generally to approve spending increases, including increases to local government funding), as such, it is reasonable to expect that Democratic control of the state House would increase local funds provided by the state, thereby increasing local expenditures as a result.

Aggregated local debt change, like unemployment rate, is a percentage, so local expenditure would increase by approximately four dollars for every percent increase in local debt – presumably because local debt can be accrued to have funds to spend on capital projects or expansion of services.

Since the variable of interest in the hypothesis was total state intergovernmental revenue, the coefficient for Total State IG Revenue is the effect we would like to measure. The analysis shows that for every dollar increase in per capita state intergovernmental revenue, per capita local expenditure goes up by approximately $1.16. Another way to view this relationship is to measure the percent change of state intergovernmental revenue relative to local expenditure. To do this, we will first consider the means of our statistics from our summary analysis. The average amount of per capita total local expenditure is approximately $5,090; the average amount of per capita state intergovernmental revenue is approximately $1,464. We will simplify our percentage change equation by multiplying the coefficient amount by $100, so for every $100 increase in per capita state intergovernmental revenue, per capita local expenditure goes up by $116. This would mean that if average state intergovernmental revenue increases from $1,464 to $1,564 (a 6.8% change), average local expenditure would increase from $5,090 to $5,206 (a 2.3% change). Therefore, a 6.8% change in state intergovernmental revenue would result in a 2.3% change in local expenditures.

County Level Analysis

For my second level of analysis, I wanted to test my findings for the state level data on county level data from a single state, which would allow me to capture the variance between local governments within a state. The database used for this analysis was compiled of yearly reports from the New York Office of the Comptroller, with state level variables merged into the table from my initial dataset. Like my first dataset, my analysis will be for the years 2000 through 2013 (again, data was collected for the year 1999 for lag purposes but not included in the analysis).

The variables I initially included for this analysis are local total expenditures, total state expenditures, local revenue, state revenue, total state aid, county population, state population, amount of local property tax collected, gross state product, state unemployment rate, local unemployment rate, state debt change percentage, local debt change percentage, and whether or not the Governor is a Democrat in a given year. Running summary statistics for this dataset produced the results in Table 3.

Table 3. County Level Summary Statistics (Fiscal Variables in Per Capita Dollars)

Variable	Mean	Standard Deviation	Min	Max
Local Total Expenditures	1783.89	494.83	722.05	4731.52
Total State Expenditure	8540.96	860.46	6901	9762
Local Revenue	1238.76	412.72	581.40	3927.55
Total State Revenue	8652.07	1511.88	5181	10904
Total State Aid	247.95	60.36	101.49	683.63
County Population	193601.1	298831	4836	1493350
State Population	19263081.21	204505.3	19001780	19691032
Local Property Tax	346.27	144.63	111.21	1321.87
Gross State Product	53853.37	7371.48	42994.87	65320.46
State Unemployment Rate	.0632	.0517	.045	.086
Local Unemployment Rate	.0629	.0196	.024	.128
Percent State Debt Change	.0154	.0273	-.0337	.0721
Percent Local Debt Change	.7480	11.27	-1	285.21
Governor is a Democrat	.5	.5003	0	1

Similarly to the first model, I conducted a VIF test to check for multicollinearity prior to conducting my regression. Running the VIF found that Gross State Product was causing multicollinearity issues; removing the variable eliminated the issue, so it is omitted from the regression analysis. This leaves the final regression equation as follows:

$$\text{LocalTotalExpenditure}_{i,t} = \alpha_i + \beta_1 \text{LocalRevenue}_{i,t-1} + \beta_2 \text{TotalStateAid}_{i,t-1} + \beta_3 \text{CountyPopulation}_{i,t} + \beta_4 \text{StatePopulation}_{i,t} + \beta_5 \text{GovernorisaDemocrat}_{i,t-1} + \beta_6 \text{PercentLocalDebtChange}_{i,t-1} + \beta_7 \text{PercentStateDebtChange}_{i,t-1} + \beta_8 \text{StateUnemploymentRate}_{i,t} + \beta_9 \text{LocalUnemploymentRate}_{i,t} + \beta_{10} \text{TotalStateRevenue}_{i,t-1} + \beta_{11} \text{TotalStateExpenditure}_{i,t-1} + \beta_{12} \text{LocalRealPropertyTax}_{i,t-1} + \varepsilon_{i,t}$$

In this model, I expected to see significance in the local revenue variable, the total state aid variable, the variable for total state expenditure, and the variable for local property tax – this is due to the fact that these are the variables that I would expect to directly affect the amount of funds that local governments have available for expenditure. One difference of note about this regression is that I have omitted the variables for Democratic control of the House and the Senate that were included in the regression for all states; this is because there was no variation in House or Senate control for New York in the given time period so the variable would be unchanging, and therefore does not need to be included in the analysis. With the necessary variables included, my regression produced the results in Table 4.

Table 4: County Level Regression Analysis (Fiscal Variables in Per Capita Dollars)

R-sq: Within	= 0.8306				Number of obs	= 728
Between	= 0.3142				Number of Groups	= 57
Overall	= 0.4476					

Local Total Expenditures	**Coef.**	**Robust Std.Err.**	**T**	**p>|t|**	**95% confidence interval**
Local Revenue (lag)	.7811	.1364	5.73	0	.5078 -- 1.0544
Total State Aid (lag)	.4530	.1926	2.35	0.022	.0673 -- .8388
County Population	-.0010	.0007	-1.36	0.018	-.0025 -- .0005
State Population	-.0001	.0001	-0.80	0.425	-.0002 -- .0001
Governor is a Democrat (1 if yes, lag)	127.30	29.298	4.35	0	68.609 -- 185.991
Percent Local Debt Change (lag)	.9126	.2502	3.65	0.001	.4113 -- 1.414
Percent State Debt Change (lag)	341.93	479.30	0.71	0.479	-618.233 -- 1302.112
State Unemployment Rate	481.033	1243.752	0.39	0.7	-2010.502 -- 2972.568
Local Unemployment Rate	-1980.903	1033.681	-1.92	0.06	-4051.616 -- 89.809
Total State Revenue (lag)	.0013	.0053	0.24	0.812	-.0094 -- .0119
Total State Expenditure (lag)	.0623	.0309	2.01	0.049	.0002 -- .1243
Local Real Property Tax (lag)	-.1004	.2137	-0.47	0.64	-.5285 -- .3277

The statistically significant variables that the model produced are local revenue, total state aid, Governor is a Democrat, percent of local debt change, and total state expenditure.

Local Revenue is positively correlated. As local governments earn more revenue, they have more funds to spend; therefore, local expenditures might increase as a result.

Total state aid is also positively correlated. This is the result my hypothesis predicted – as states provide more aid to local governments, they can increase their spending.

Initially, I thought the positive correlation of the Governor being a Democrat was a political impact; Democratic governors are typically more likely to approve budgets that would include more state level spending, including spending in aid to local governments. While this may be true, what might be captured in this analysis is time related. Prior to 2006, New York had a Republican governor; after 2006, New York had a Democratic Governor. This variable might be noticing the fluctuations in expenditures prior to 2006 (after 9/11 but before the recession) and after 2006 (the recession and its aftermath).

Percent of local debt change is positively correlated. If a local government takes on more debt, they are possibly doing so to spend on projects or services.

Unlike in the state level model, total state expenditure here is positively correlated. Since total state expenditures include state aid to local governments, it could be possible that as state expenditure increases, state aid to local governments might be a part of that increase, and as such the amount of funds that local governments have available to spend would also increase. The difference in the direction of the correlation here could be a reflection that more states overall see a negative correlation between these two variables, but that New York is one of the states in the minority in this aspect; it could also be that county level governments are more likely to have a positive correlation between these variables than other levels of local government.

To account for the effects of state aid on local government expenditures, we would consider the coefficient of the variable Total State Aid on local expenditure, which is 0.453. This shows

that, per capita, for every dollar increase in total state aid to local governments, local government expenditure increases by approximately forty-five cents.

Like the first analysis, I will measure the percent change of total state aid relative to the percent change to local expenditure. From our summary statistics, the average per capita local total expenditure amount is approximately $1,784. The average per capita amount of state aid is approximately $248. Because every dollar of state aid increases local expenditure by forty-five cents, we will assume for every $100 increase in state aid, local expenditure increases by $45. Next, we will measure the percentage change. Using average state aid, a $100 increase will raise average state aid from $248 to $348. Therefore, the percentage change from the original amount to the amount with $100 in aid is approximately 40%. Next, we will assume that the $100 increase in state aid created a $45 increase in local total expenditure; this takes the average local total expenditure from $1,784 to $1,829, a percentage change of approximately 2.5%. Therefore, we can assume that, when the state adjusts aid to local governments by 40 percent, the average change to local government expenditure is 2.5 percent.

State/County Comparison

The patterns of the effects established in the analysis can also be found in the analysis at the county level. Many of the same variables that are significant in the initial analysis are significant in the second analysis; importantly, the variables of interest in both analyses – state intergovernmental revenues and state aid to county governments – are statistically significant.

The primary difference to note between these two analysis models is the magnitude of the effect of a change in aid to local governments. There are several reasons why this might be occurring. It could be based in the data used in the models; where the state level model aggregates all levels of local spending, it could be capturing levels of local government where

the effect of changes in state aid is more amplified. It could also be structural; county governments may generally be able to adapt to changes in state aid and transfers, and could be able to substitute lost funding from that aid from other sources. Additionally, it could be that there is some unaccounted for unique characteristic to New York that is not present overall nationally which is amplified by performing analysis specifically on that state. There are two potential options to determine if one of these reasons is reflected in the research. Future research could either conduct the county level analysis for a broader number of states, or determine the effects on specific levels of government by splitting the aggregate local spending data into county, city, municipality, special district, and other levels and running the analysis individually.

Limitations and Future Research Recommendations

There are some limitations that should be accounted for. Although I do think that I had an adequate amount of data to conduct the evaluation, having the missing data for 2001 and 2003 to include in the regressions would make the analysis more complete. It might also be worth consideration to analyze a longer period of time to capture any variations that might have occur due to long term political factors. There may also be additional variables that affect state aid and transfers to local governments beyond what I have included, such as whether a given year in each state is an election year. Likewise, collecting data on local political factors might provide an additional level of analysis, as variables for local political data could affect local expenditure decisions.

When considering future research on this topic, expanding the list of variables and the time period of data collection might be considered in order to further develop the model. Additionally, reframing the model around more specific dependent variables where available

could narrow the focus in a way that determines the effects of state aid and transfers on specific types of spending, such as education, public health, public safety, or administrative expenditures.

<u>Conclusion</u>

After conducting an analysis for two datasets – one that measures effects on local expenditures for all fifty states with aggregate local data, and one that measures effects on local expenditure for New York's county level data to capture local variation, my hypothesis that state mechanisms to provide funding to local governments is a statistically significant factor on local government expenditures on services and other projects was supported. This is reflected both in the aggregate local data for all fifty states where a 6.8% change in state IG revenue results in a 2.3% change in local expenditure, and also for the county government level for the state of New York, where a 40% change in state aid results in a 2.5% change in local expenditures. While these percentages might seem relatively small, a 2.5% reduction in expenditures could have a significant impact when those expenditures go to public services, such as education or public health or safety. When the option for local governments is to either reduce the provision of those services or to find other funding mechanisms such as increasing local taxes, it may be worth consideration to those responsible for state budgeting to consider the effects of state level funding cuts, particularly if those cuts include funding for local governments.

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