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Do local government fiscal spillovers exist? Evidence from counties, municipalities, and school districts ☆

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ABSTRACT

Numerous theories posit that the fiscal decisions of one jurisdiction influence the fiscal decisions of its neighbors. The main contribution of this paper is to address empirical difficulties in testing for spillovers using a regression discontinuity design on a newly collected dataset. I utilize close elections from this large dataset of local referenda in Ohio to isolate the effect of exogenous increases in taxation and spending of one jurisdiction on neighbors' fiscal decisions. For all jurisdictional types and referenda revenue sources (bonds, income, property, and sales tax), there is no evidence of spillovers, and relatively small effects can be ruled out.

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1. Introduction

A fundamental question about governments is to what extent they are influenced by one another. A large theoretical literature presumes interactions and has identified several pathways by which the fiscal decisions of one jurisdiction influence the fiscal decisions of its neighbors (such as via inter-jurisdictional tax competition, yardstick competition, conventional spillovers, or Tiebout resorting).[1] A key empirical issue in

this theoretical literature is to what degree do the fiscal decisions of one jurisdiction influence its neighbors' fiscal decisions. Are they of a large magnitude, or are they small or nonexistent? A failure to find any effect would raise questions about the importance of those theoretical channels. In this paper, I empirically explore this question of fiscal spillovers on the local level.

There are several challenges to identifying the effect of fiscal spillovers. Unobserved determinants of fiscal decisions might be correlated across neighbors, and neighbors' decisions are jointly determined in equilibrium. To provide a strong research design that addresses these challenges, I collect a new dataset. In Ohio, local governments often require the explicit approval of voters to raise taxes.[2] My dataset consists of tens of thousands of these tax referenda that are economically significant and span multiple types of government and tax instruments. The elections for tax increases lend themselves to a regression discontinuity design that exploits the underlying continuity in jurisdiction characteristics around the threshold for measure approval to produce approximate random assignment.

I examine whether jurisdictions respond to exogenous referendum passage by their neighbors. The analysis covers counties, municipalities, and school districts, and bonds, income tax, property tax, and sales tax measures. I first explore the issue graphically to

[1] With a mobile tax base, the concern to attract and retain businesses and residents can induce jurisdictions to compete among themselves over their level of taxes and benefits. This fiscal competition, depending on the model, can lead to sub-optimally low levels of public goods, so called races to the bottom, but can also lead to efficient levels of public good provision (Brennan and Buchanan, 1980; Oates and Schwab, 1988; Wilson, 1986; Zodrow and Mieszkowski, 1986). In another type of fiscal spillover, known as yardstick competition, residents use the fiscal decisions of neighboring jurisdictions as a benchmark for their own jurisdiction to correct an information asymmetry between themselves and politicians about the cost of public good provision (Besley and Case, 1995). To distinguish between good and bad elected officials, voters examine whether their tax rates are higher than in surrounding jurisdictions, which constrains the tax setting behavior of politicians who wish to be reelected. Conventional spillovers might arise where residents of one jurisdiction consume, whether in a tangible way or not, the public goods of another jurisdiction. The last source of spillovers is Tiebout resorting, where individuals move in response to a particular fiscal change to better match their public good preferences.

[2] The exact institutional details, including when tax changes must be voter approved, are discussed in Section 2.

determine whether there is evidence of any discontinuous jumps at the threshold for voter approval and then run formal econometric analyses.

Previewing the results, there is no evidence that spillovers exist for any jurisdictional type or revenue source. Plots yield no jump in the dependent variables at the threshold for voter approval. Formal analyses never find a statistically significant effect, and the estimates are reasonably precise. The main measure of neighborliness is spatial proximity (i.e. where I test for the existence of spillovers), and the results are robust to alternative ways of defining neighbors. The results are also robust to focusing only on the largest of measures as well as limiting the analysis to geographic areas where spillovers are most likely to be present. Lastly, no effect of referendum passage on mobility or sorting is found. The results therefore call into question theoretical models that presume spillovers on the local level.

The previous empirical literature on fiscal spillovers has grown in recent years. Most studies in the literature test for spillovers by instrumenting for neighbor fiscal behavior using neighbor characteristics, such as demographics, as well as neighbor lags, in taxes and spending. Papers have examined strategic fiscal behavior among countries (Devereux et al., 2008), states (Case et al., 1993; Figlio et al., 1999; Saavedra, 2000; Wheaton, 2000; Devereux et al., 2007; Chirinko and Wilson, 2008), municipalities (Brueckner and Saavedra, 2001; Buettner, 2003; Bordignon et al., 2003; Brulhart and Jametti, 2006), and school districts (Millimet and Rangaprasad, 2007; Reback, 2009). Several recent studies attempt to more directly confront the identification problem by looking for natural experiments in taxes and spending (Baicker, 2004, 2005). The empirical literature has tended to find large positive spillovers across jurisdictions, and I replicate those results with my data using neighbor characteristics as instruments. Relative to the previous studies, the main innovation in this paper is to use a regression discontinuity design that plausibly isolates exogenous variation in taxes and spending.

The remainder of the paper is organized as follows. Section 2 covers the institutional background and referendum process in Ohio. Section 3 describes the data collected for the project. Section 4 describes the research design. Section 5 investigates the validity of the research design. Section 6 presents a graphical analysis of the results. Section 7 presents the econometric results. Section 8 concludes.

2. Background

Dating back to a law passed during the Great Depression, local jurisdictions in Ohio have been restricted in their level of taxation without explicit voter approval. As a result, a significant portion of government revenue must be voter approved.[3] Ohio state law restricts the unvoted property tax to be no more than 1% of assessed taxable value (which itself is approximately 35% of market value). This constraint is binding in practically every community, and as a result, forces the local governing body to turn to the voters for tax increases.[4] This constraint became even more pronounced in 1976 when state legislators passed HB 920, which subsequently froze voter approved property tax increases to the amount collected in the first year the levies were in effect. This

meant that jurisdictions no longer received increased tax receipts from those levies when property values increased and therefore had to the resort to the ballot even more often. Similarly, Ohio law also generally requires a majority of voters to agree on bonds, income, or sales tax increases.[5] In this setting, I can apply a regression discontinuity design around the threshold for voter approval to isolate exogenous increases in taxes and spending. School districts, municipalities, and counties, which are legally separate entities, each have their own specific set of rules regarding which tax measures may be placed on the ballot.

The Ohio school system is served by a foundation system that mandates an expenditure floor but allows local districts to supplement the minimum through voter approved tax increases. School boards can place on the ballot 1) bond measures to finance school construction and 2) property tax and/or income tax increases to finance any other type of school expense.[6] Of the latter two revenue sources, property taxes are the predominant source of school funding as less than two percent of local funding comes from the income tax. Of the 612 school districts currently in the state, 517 proposed bond measures and 535 proposed property tax increases in the sample period. Conditional on proposing at least one, the average number of measures considered was 2.5 and 7.7, respectively. Table 1 shows the number of measures proposed and passed, along with the amount of revenue they are intended to generate, the percent of the budget they constitute, the mean of the vote share, years the data span, and if applicable, the number of years the levy is to stay in effect. As is apparent from the table, property tax measures are especially commonplace and the majority are to stay in effect for five years. And important to the purpose of this analysis, the amount of revenue raised by the measures is a significant portion of school district budgets.

Turning to municipalities, the major sources of local revenue are property and income taxes.[7] Because of the limited amount of revenue that can be generated from the unvoted property tax, municipalities must continually place referendums on the ballot to raise the property tax rate. Of the 2016 total municipalities, 1883 proposed a property tax increase, with an average of 8.9 measures per municipality. Income tax measures on the other hand are less frequent and are only available to incorporated municipalities, which excludes the townships that serve the municipality function for unincorporated areas. Cities are allowed to levy an unvoted one percent tax rate but must receive voter approval for any increase beyond that. While the majority of jurisdictions levying an income tax are above the one percent unvoted ceiling, many municipalities when initially deciding whether to enact an income tax of no more than 1% still put the issue up for a vote (for perhaps political reasons given the unpopularity of the income tax). The income tax applies to the wages of all individuals working within the jurisdiction as well as net profits for businesses operating within the jurisdiction. Of the 845 municipalities eligible to levy an income tax, 402 proposed an income tax measure with an average of 3.1 proposals. Table 1 contains more detailed information on these referenda. Income tax measures raise a greater amount of revenue than property tax measures, yet both are of significance to the overall fiscal situation of municipalities.

Counties also have two main sources of revenue from the local level: property and sales taxes. Given the same constraint on property tax rates, counties must also turn to elections to increase the property tax. Counties are also entitled to levy sales and use tax on top of the statewide rate. They can either do this through the normal referendum process or can enact an emergency sales tax increase after which the

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[3] While the referendum process is used more frequently in Ohio than in some other states (a notable exception is Massachusetts), at least 40 other states require localities to gain voter approval to raise taxes in certain circumstances.

[4] According to the 2008 Ohio Department of Taxation data on all property tax levies in effect, less than 0.2% of taxing districts (an area of land that uniquely shares the same county, municipality, school district, and special districts) were below the maximum rate at which new levies could be enacted without voter approval. The revenue generated from this 1% unvoted maximum tax rate is then divided among the county, municipality, and school district based on the division of the property tax that existed between 1929 and 1933.

[5] One of the main costs of putting a referendum on the ballot is the process of collecting enough signatures for the measure to qualify (at least 10% of the number of voters who voted for governor within the last gubernatorial election).

[6] School bonds are repaid by a long term property tax increase specified on the ballot.

[7] Ohio is one of the few states to have widespread local income taxation.