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## Tax Advantages and Imperfect Competition in Auctions for Municipal Bonds.

State and local governments finance multi-year expenditures by issuing municipal bonds. To reduce the borrowing costs of state and local governments, municipal bond income is excluded from federal and, in most cases, state taxation. This tax advantage creates a tax expenditure for the federal and state governments, which is forecast to cost the federal government alone more than $500 billion over the coming decade. It has been rising over time, and is mainly enjoyed by top-income individuals. Not surprisingly, the tax advantage of municipal bonds has been the subject of a controversial policy debate.

This paper contributes to this debate by showing that the interaction between tax advantages and the structure of municipal bond issuance market, plays a crucial role in determining the effect of tax advantages on borrowing rates and the efficiency of this subsidy. Specifically, the authors analyze a novel dataset on over 14,000 new issuances of municipal bonds sold at auction between 2008 and 2015. The authors exploit within-state changes in taxes over time to show that tax advantages have large effects on the borrowing costs of state and local governments. They then develop an empirical auction model that clarifies the economic mechanisms in this market. Finally, they use the estimated model to evaluate recent proposals by the Obama and Trump administrations, as well as parts of the Tax Cuts and Jobs Act of 2017 (TCJA17) that affect the tax advantages of municipal bonds. By highlighting the interactions between taxes and imperfect competition, their results suggest a fundamental reassessment of the mechanism through which tax subsidies reduce borrowing costs, and provide new evidence suggesting that tax subsidies may be more efficient at subsidizing local borrowing costs than previously thought.

The rest of the paper is organized as follows. The authors describe the institutional context and their data in Section 2. Section 3 describes reduced-form relationships between tax advantages, borrowing costs, and imperfect competition in auctions for municipal bonds. In Section 4, the authors develop an auction model for municipal debt with tax advantages. Section 5 describes the estimation procedure and results of this model, and Section 6 explores the mechanisms through which taxes influence municipal borrowing costs. The authors simulate the effects of policy counterfactuals in Section 7. Section 8 concludes.

Read the full paper here.

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