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Dissertation Abstract

Essays on the Theory and Empirical Evidence Regarding Spatial Tax Competition

The existing literature on tax competition has focused on the role of state size, public good preferences, and state characteristics as determinants of tax rates. The theoretical and empirical evidence in this dissertation suggest that in addition to these factors, state borders and the spatial composition of jurisdictions within a state are important determinants of tax rates and fiscal externalities within a federation.

1 The Tax Gradient: Do Local Sales Taxes Reduce Tax Differentials at State Borders? (JMP)

Geographic borders create a discontinuous tax treatment of retail sales and encourage cross-border shopping by residents of high-tax states. But do municipalities' local option taxes smooth these discontinuities? In a model where towns within a federation maximize revenue and compete in a Nash game, equilibrium local tax rates decrease from the nearest high-tax border and increase from the nearest low-tax border. Using driving distance from the state border and data on all local sales tax rates in the United States for 2010, I empirically test whether tax rates follow the pattern predicted by this theoretical model. Local tax rates on the low-tax side of the border are significantly higher than on the high-tax side of the border, reducing the differential in state tax rates at the border by more than half. Consistent with the model's prediction, a 100 mile increase in distance from the nearest high-tax border lowers local tax rates by 15% of the average local rate. Local taxes fall most rapidly closest to the border and when the differential in state tax rates is largest.

2 Games Within Borders: Are Geographically Differentiated Taxes Optimal?

The discontinuous tax treatment of sales at borders creates incentives for individuals to cross-border shop. This paper addresses whether it is optimal from a state perspective to levy

geographically differentiated commodity taxes or preferential tax rates near borders. I show in a model where states in a federation maximize social welfare, a state's optimal commodity tax system is geographically differentiated. The optimal pattern of geographic differentiation critically depends on fundamental parameters as well as whether a state has a preference for high or low tax rates. Under the assumption that utility is linear in consumption, a state with a preference for high taxes will find it optimal to set a lower tax rate in the state's border region relative to the periphery region. If the elasticity of cross-border shopping is greater than unity in absolute value, a state with a preference for low taxes will set lower tax rates in the state's border region relative to the periphery region. The model's results generalize to international borders, so long as the border is open.

3 Inter-federation Competition: Sales Tax Externalities with Multiple Federations

Existing models of tax competition focus on intra-federation competition. This paper analyzes how introducing inter-federation competition affects the strategic nature of tax competition. In the context of a Nash equilibrium, the paper shows that lower levels of government will respond differently to higher levels of government depending on the local government's position within the federation – specifically whether the locality is internal or peripheral relative to the federation's borders. Inter-federation competition will also introduce "diagonal externalities," which are fiscal externalities between neighboring jurisdictions, but that occur between different levels of government. A diagonal externality will have similar effects as a horizontal externality. The paper uses two unique data sets, a cross-section of all local tax rates in the United States and spatial proximity data, to test how local governments react to horizontal, vertical, and diagonal competitors. The empirical specifications allow for vertical and horizontal externalities to have interaction effects and allow for strategic reactions that vary based on proximity to neighboring federations. If interaction effects and distance based effects are omitted from the estimating equation, the vertical strategic reaction will be approximately 30% too large in absolute value. After including these terms, a one percentage point increase in the county tax rate implies that municipal tax rates in that county are approximately 0.60 percentage points lower. Taxes in neighboring jurisdictions have a large and positive effect.