

THE EFFECT OF DIFFERENTIAL TAXATION ON COMPETITION IN THE TELECOMMUNICATIONS INDUSTRY

Karie A. Barbour, Lander University, kbarbour@lander.edu

David G. Loomis, Institute for Regulatory Policy Studies, Illinois State University, dloomis@ilstu.edu

ABSTRACT

The tax differentials in the telecommunications sector have the potential to affect the playing field between different providers and may negatively impact the expansion of critical infrastructure to rural areas and consequently state economic growth. The primary objective of our paper is to examine the impacts of tax differentials on the output levels and market shares of traditional providers versus new market entrants. The results from preliminary multivariate regression models indicate that sales and property tax differentials have no statistically significant effects on competition in the telecommunication industry. However, we would like to conduct a series of robustness checks before finalizing these conclusions.

INTRODUCTION

Since the passage of the Telecommunications Act of 1996 which eliminated barriers between telephone and other forms of telecommunications, advances in technology have enabled nontraditional firms including wireless and internet telephony providers to enter the market for local telephone services, aggressively increasing competition. However, deregulation of the industry has not been accompanied by a change in the statutory definition of telecommunication services to include these new technologies, resulting in differential taxation of functionally equivalent services. Traditional telecommunication services often face fees and user chargers in addition to the full range of federal state and local taxes imposed on other businesses, while new entrants are either subject to a different set of taxes or no tax at all. Such a tax structure seemingly fails to promote the fundamental regulatory objectives of universal coverage and fair competition.

RESEARCH QUESTION

The tax differentials in the telecommunications sector have the potential to affect the playing field between different providers and may negatively impact the expansion of critical infrastructure to rural areas and consequently state economic growth. Traditional telecommunications providers face higher effective transaction, use and property tax burdens which are ultimately borne by households in the form of higher prices. The tax system increases the prices of services provided by market incumbents relative to the prices of services provided by new entrants, thus decreasing the demand for traditional services and making it more difficult for them to compete in the market. While industry leaders and policymakers have recommend that state and local taxes be simplified to ensure a level playing field and enhance economic development, little if any empirical work has been conducted to estimate the magnitudes of these effects [1].

The primary objective of our analysis is to explore whether competition in the telecommunications sector is indeed sensitive to tax differentials. Specifically, we examine the impacts of tax differentials on the output levels and market shares of traditional providers versus new market entrants. Although a complete analysis of the effects of the telecommunications and general business tax differentials on economic growth is beyond the scope of this analysis, we hope to contribute to this discussion by examining the effects of these differentials on the level of services provided in the market.

DATA

Our primary source of data will be the Federal Communications Commission which provides semiannual data on the status of local competition in the telecommunications market including the number of lines in service by traditional providers and the number mobile wireless telephone subscribers. These data indicate that the nationwide market share of traditional providers has decreased from roughly 70 percent in 1999 to 45 percent in 2004. Our objective is to examine whether the unfavorable tax treatment of traditional services has contributed to this decline.

To this local exchange market data, we will merge tax data collected by the 1999, 2000, 2001 and 2004 Committee on State Taxation Telecom Studies which document the rate and administrative burden of taxes imposed on telecommunications services, including separate tax rates imposed on traditional and wireless services. The study accounts for variation in upwards of 20 different broad types of state and local taxes and fee charges levied on telecommunications providers. While these data provide sufficient information for calculation of the necessary transaction and property tax differentials, their limited availability restricts our analysis to a rather short panel of four years. Although a longer time span would be ideal, a panel of even four years should provide efficiency gains over a simple cross-sectional study.

DESCRIPTIVE STATISTICS

The COST study shows that effective sales tax rates applied to telecommunications services far exceed the effective sales tax rates applied to general business transactions. The average total effective sales tax rate for the telecommunications industry (including federal excises taxes and fees) was 18.16 percent in 2004, compared to a total effective sales tax rate of only 6.1 percent for general business and 15.5 percent for wireless services. Figure 1 below shows a summary of the differences between telecommunication and general business sales tax rates. The average difference in tax rates between these sectors was approximately 12 percent.

On average traditional telecommunication providers have experienced a 34.5 percent decline in market share between 1999 and 2004, while the market shares of both wireless and high speed broadband providers has increased. Figure 2 shows a summary of the change in market share for individual states. While few patterns seem to emerge when comparing the data provided in the figures, the correlation between the average tax difference and percentage change in market share for incumbent local exchange carriers is -0.3274 and 0.1747 for competitive local exchange carriers, which suggests there may indeed be a discernable relationship between these variables. The positive correlation is certainly unexpected but may reflect the effects of changing telecommunication regulations across states. A multivariate regression analysis is necessary to isolate the effect of tax differentials on competition from the effects of economic, regulatory and demographic differences between states.

Figure 1: Total Sales Tax Differentials between Telecommunications and General Business in 2004

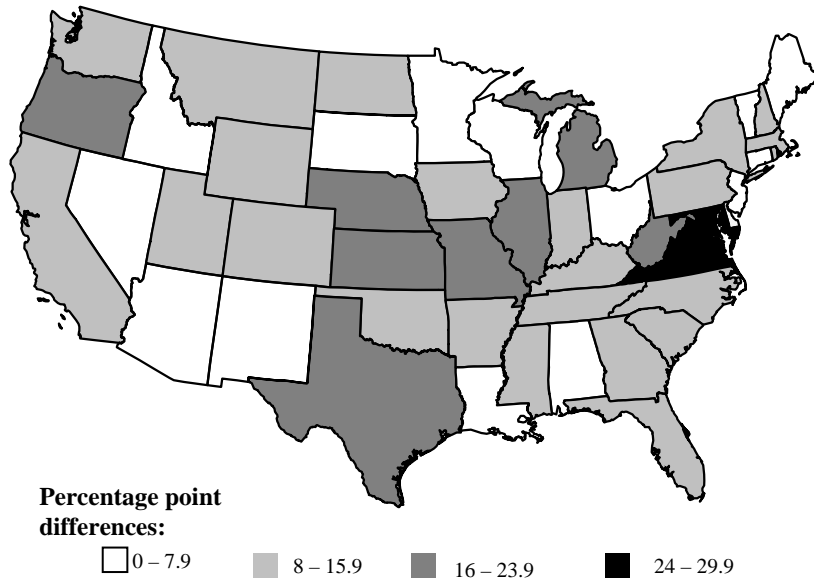
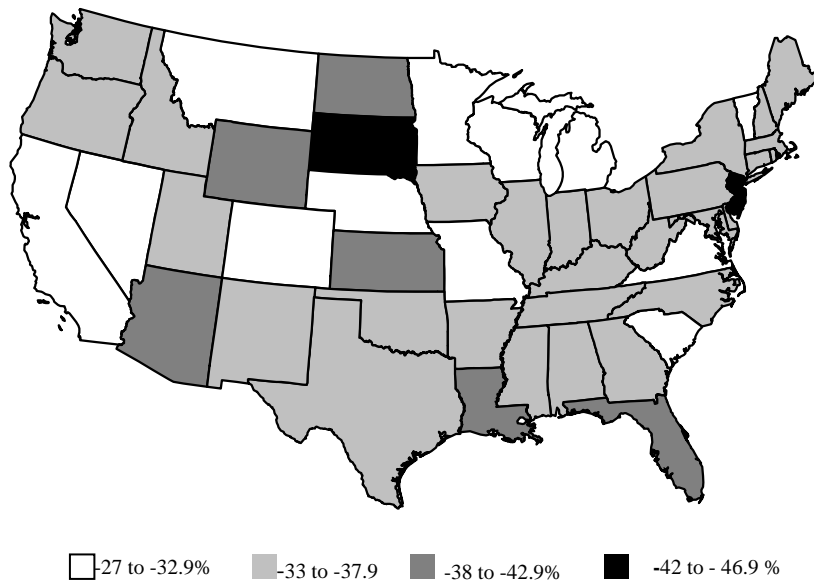


Figure 2: Percentage Change in Market Share of Traditional Communication Providers between 1999 and 2004



METHODOLOGY

Our analysis uses a modeling framework very similar to that used by Loomis and Swann (2005) to examine local competition between incumbent and competitive local exchange carriers. Loomis and Swann used a Cournot model in which two firms compete for market share through output setting decisions to derive reaction curves which were then estimated separately using OLS. We expand this framework to examine competition not only between incumbent and competitive exchange carriers but also wireless and high speed broadband providers. This modification allows us to examine how the output levels (lines in services for traditional providers and subscribers for wireless and high speed broadband providers) respond to competition from opponents as well as other factors. The primary variables of interest in the model include a measure of the tax differentials for traditional and wireless services and a measure of the property tax differentials for telecommunications and general businesses. The telecommunication variables are weighted by density (population/square mile) to allow for economics of scope and network externalities that exists in the industry. Variables that control for variation in economic conditions, regulatory environment and demographics are also included in the model.

PRELIMINARY RESULTS AND CONCLUSIONS

The results from preliminary multivariate regression models indicate that sales and property tax differentials have no statistically significant effects on competition in the telecommunication industry. However, we would like to conduct a series of robustness checks on the models before finalizing these conclusions. While our preliminary results may not present a strong case for the reduction of telecommunication taxes based on anti-competitive effects, further research should be conducted to evaluate telecommunication taxes using the criteria of efficiency, equity and simplicity. Cordes et al. (2000) provides an excellent summary of these issues and offers recommendations for future research.

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