Impacts of Taxes on Firm Entry Rates Along State Borders

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Research on the determinants of firm entry has currently focused on the role that complementary agglomeration economies plays in differing firm start up rates across geographic locations. Recent examples include high tech firm start up rates around star scientists examined by Zucker and Darby (2014) and local population density studied by Brulhart et al (2012). These studies show that local agglomeration economies are a recurring driver of new firm entry, and by proxy, new entrepreneurial activity. However, many of these papers exclude traditional barriers to entry, particularly proper identification of tax policy effects on firm entry rates. This identification has been historically difficult due to the lack of variation in tax and regulatory policies, anticipated changes, or endogenous responses to local macroeconomic conditions.

Our paper fills this gap by using a regression discontinuity technique. We take the difference in firm start up rates between counties on either side of a state border for all 48 continental US states. This process removes location specific determinants of firm entry and endogenous responses to macroeconomic shocks in our policy variables. As we get asymptotically close to the policy divide around a state border, the difference in tax rates becomes strictly exogenous for new entrepreneurs, removing many of the problems that made previous estimation difficult. Similar techniques and estimators have been used by Holmes (1998), Dube et al (2010), and Rohlin (2011) to study the impacts right to work status and minimum wages on employment and firm dynamics. Our extension allows similar identification at the cost of estimating dynamic impacts of such changes.

We use data on firm births from the US Census Bureau to look at the impact of seven top marginal tax rates, including property, sales, income, corporate, capital gains, workers compensation, and unemployment insurance tax rates. We further include log expenditures per capita on highways, education, and welfare as an additional determinant of the sorting behavior of entrepreneurs into preferred neighborhoods as shown in McKinnish (2007). Our data observes matched 1202 counties across 107 state-pair borders over 11 years. We then estimate a model that takes the difference in log firm start ups and independent variables between randomly assigned subject and neighbor counties.

Our estimates show that property, sales, and income taxes have a negative and statistically significant impact on firm start up rates. These estimates indicate that a 1% increase in the relative income and sales tax differentials decreases relative firm start up rates by 0.1%, while a 1\% increase in the relative property tax differential decreases firm start up rates by 0.3%. These findings appear consistent with the fact that the majority of firms that enter in a given year are small firms with a short expected lifespan.

We include a plethora of sensitivity tests. We first increase the distance between counties on either side of the border, where our policy effects becomes indistinguishable from zero as is predicted by our methodology. We next add state pair fixed effects, which appear to destroy most of our results, but also drastically reduces our degrees of freedom. We next run cross section estimates for each year in our sample, as well as estimate our model on NAICS industry sub-codes to see if our estimates change on different samples of firm characteristics. In both cases we find that our original model's estimates remain stable both across time periods and differing industries.

A final output of the paper is an index of where the tax differentials are the largest, and an estimate of the aggregate effect of taxes on deterring firm entry. This is calculated by multiplying my estimated coefficients by the existing marginal taxes in those counties. This allows readers to better visualize the aggregate impact of taxes on firm entry, as well as what borders currently have the largest amount of firm start up differential imposed by their regulatory choices. We find that despite the low fit of our models, most of the states with the largest difference in firm start up rates feature a preferential weighted tax differential. In conclusion, by using regression discontinuity techniques along state borders we are able to estimate the impacts of top marginal tax rates on firm entry rates, and find that sales and income taxes impact firm entry rates, results that are consistent with the characteristics of new firm entrants.

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