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State Taxation and the Reallocation of Business Activity

Evidence from Establishment-Level Data

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The impact of state business taxation on employment and capital has been heavily debated in both academic and policy circles on both theoretical and empirical grounds. State-level business taxation could depress business activity through several channels. Businesses that might otherwise have hired or invested might simply not do so because of the difference between pre-tax and after-tax profits, or, alternatively, businesses might move their activities to another U.S. state. On the other hand, increased business taxation might not have a negative effect on business activity if businesses can change their activities to use more tax-favored production strategies or organizational forms, or if tax revenues are spent on public goods that improve the state's business climate. As U.S. states face increasing fiscal pressures, the debate over the effects of state tax policy on state-level business activity is likely to intensify.

A long empirical literature has studied the geographic location decisions of new firms or establishments as a function of state tax and other characteristics. These studies have used aggregated panel data at the state, county, or industry level to examine the effect of state and local taxes on economic growth, employment, or capital formation. This line of work has faced two main challenges. First, tax policy is not exogenously determined, so that ascribing a causal interpretation to correlations between state tax changes and counts of businesses or employees has been problematic. The primary concern is that state governments might change tax policy in anticipation of changing economic conditions. Some work addresses this question by using county-level data to study how state taxation or business climates affect business activity in border counties between states that change policy and those that do not. The second challenge is that the studies have lacked comprehensive micro-data at the establishment level, so that the decisions of individual businesses cannot be tracked over time, leaving uncertainty as to whether firms are relocating their businesses to other regions or reducing the scale of their operations.

Our research uses comprehensive and fully disaggregated establishment-level data from the U.S. Census Bureau to examine the impact of state business taxation on employment and capital. We focus on firms with establishments in multiple states. To measure an effect of state tax policy on establishment counts, employment, and capital, we begin by exploiting the fact that the corporate tax code only has a direct effect on firms organized as subchapter C corporations, whereas firms organized

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as S corporations, partnerships, or sole proprietorships (so-called pass-through entities) are only directly affected by the individual tax code and other business taxes.

This setting allows for separate identification of the effects of the corporate tax code on the activities of C corporations and of the effects of the personal tax code on the activities of pass-through entities. Furthermore, the establishment-level micro data allow us to disentangle reallocation versus pure economic disincentives of taxation. Specifically, we examine whether firms increase their activities in a given state when taxes increase in the other states in which they are active.

We consider the complete sample of all U.S. establishments from 1977–2011 belonging to firms with at least 100 employees and having operations in at least two states. We find that a one percentage point increase (decrease) in the state corporate tax rate leads to the closing (opening) of 0.03 establishments belonging to firms organized as C corporations in the state. This corresponds to an average change in the number of establishments per C corporation of 0.4 percent. A similar analysis shows that a one percentage point change in the state personal tax rate affects the number of establishments in the state per pass-through entity by 0.2–0.3 percent. On the intensive margin, we find similar results. The elasticity of C corporation employment for a given establishment is 0.4 with respect to the state corporate income tax rate, and the elasticity of pass-through business employment is 0.2 with respect to the personal income tax rate. These effects are robust to controls for local economic conditions and heterogeneous time trends.

Opposite effects of around half of these magnitudes are observed in response to tax changes in the other states in which firms operate, so that around half of the baseline effect is offset by reallocation of activity across states. This lends strong support to the view that tax competition across states is economically relevant and is consistent with earlier findings that emphasize the importance in the labor market of shifts in the distribution of employment opportunities across work sites.

We find no empirical correlation in the data between changes in employment at an establishment belonging to a C corporation and the personal tax rate. Similarly we find no empirical correlation between changes in employment at an establishment belonging to a pass-through entity and the corporate tax rate. The lack of cross-correlation is consistent with the identifying assumption in these regressions that there are not state-level trends in general business activity that follow changes in tax policy for reasons unrelated to the tax reforms. This finding also suggests that movement of activity between the corporate and noncorporate sector, while clearly important on the national level over the past several decades, plays a somewhat limited role in shaping the overall economic response to state-level tax changes.

Further analysis captures complexities, heterogeneity, and changes in state tax codes regarding apportionment of income in multi-state firms. If a company has physical presence in more than one state, the company has to apportion its profits according to each state's apportionment factor weights for property, payroll, and sales. Furthermore, so-called throwback or throw-out rules at the state level require companies to apportion profits arising from sales into states where they have no physical presence back to states where they do.

We show that the response of moving establishments and employees is greatest when those factors have greater apportionment weights. Even if the sales apportionment factor is large, we also find strong effects when throwback or throw-out rules are in effect, as these rules mitigate the tax attractiveness of firm moves to high sales-apportionment states.

We further examine whether there is evidence of confounding differential trends in C corporations versus pass-through entities in the years leading up to tax changes in a subsample of firms affected by states that changed at least one of their tax rates by at least 100 basis points. These large tax changes occurred 161 times during the sample period. Here we find similar directional results of somewhat smaller magnitude. Around half of the effects are felt in the tax year in which the tax rate changed, with the full force being felt in the following year.

Analysis on the subset of the Census data on manufacturing firms allows us to consider the impact of state taxation on capital formation and location. We find that capital shows similar directional patterns to labor in its response to taxation, but that the elasticities are 36 percent smaller. Furthermore, the detailed data on the location of manufacturing firm property allow us to consider the impact of a state policy that raises the actual tax claim on a dollar of total corporate profit by one percentage point, as opposed to increases in the statutory rate by one percentage point. Under this definition, which captures cross-sectional firm heterogeneity in the extent to which statutory changes affect the tax burden, we find somewhat larger elasticities of around 0.4 percent for labor and 0.3 percent for capital.

One concern about the analysis might be that the results could be affected by firms that change their organizational form in response to changes in the tax code. Earlier work finds that the share of economic activity by firms in corporate form does in fact respond to the relative taxation of personal to corporate state income. However, our sample in this paper consists only of firms with activity in more than one state, and firms must choose one organizational form that will be applicable to all entities. For these firms, federal tax policy should be far more important for the organizational form decision than the mix of state tax policies they face, a hypothesis we confirm in the data. Limiting the sample to the 92 percent of observations belonging to firms that do not change their organizational form within 5 years of tax changes leaves the results unaffected.

Overall, our findings on the effects of corporate taxation are larger than those found in work that has examined the impact of tax policy at the national level. Some of this difference may be attributable to differences in the measurement of corporate tax rates (average versus marginal), the level of analysis (state versus federal), the identification strategy and the distinction between GDP per capita and the variables we consider. That said, in our analysis, tax competition across states roughly doubles the baseline effects that would be found in the absence of firms' ability to move across states, and for that reason we would extrapolate that the impact of state policy on state business activity should be about double the impact of federal business taxation on federal business activity.

NOTE

This research brief is based on Xavier Giroud and Joshua Rauh, "State Taxation and the Reallocation of Business Activity: Evidence from Establishment-Level Data," National Bureau of Economic Research Working Paper no. 21534, September 2015.