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The Effect of State Taxes on the Geographical Location of Top Earners

Evidence from Star Scientists

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In the United States, personal taxes vary enormously from state to state. These geographical differences are particularly large for high-income taxpayers. In 2010, California, Oregon, and Maine had marginal tax rates of 9.5, 10.48, and 8.5 percent, respectively; by contrast, Washington, Texas, Florida, and six other states had marginal tax rates of zero. Large differences are also observed in business taxes. Iowa, Pennsylvania, and Minnesota had corporate income tax rates of 12, 9.99, and 9.8 percent, respectively, while Washington, Nevada, and three other states had no corporate tax at all. And not only do tax rates vary substantially across states, they also vary within states over time.

If workers and firms are mobile across state borders, these large differences over time and place have the potential to affect the location of highly skilled workers and employers. The literature on taxes and the labor market has focused on how taxes affect labor supply and largely ignores how taxes might affect the location of workers and firms.

Many states compete for firms and highly skilled workers by offering low taxes; indeed, low-tax states routinely advertise their favorable tax environments. Between 2012 and 2014, Texas ran TV ads in California, Illinois, and New York urging businesses and taxpayers to relocate. Governor Rick Perry (R-TX) visited dozens of California companies to pitch Texas's low taxes, famously declaring: "Texas rewards success with no state income tax." Similarly, Kansas has paid for billboards in Midwestern states to advertise its recent tax cuts. Wisconsin Governor Scott Walker (R-WI) has called upon Illinois and Minnesota employers to "escape to Wisconsin"; Louisiana and Indiana have followed similar strategies. In the 2014 election cycle state taxes and their effect on local jobs were a prominent issue in many gubernatorial races.

But despite the attention from policymakers and voters, the effect of taxes on the location of high earners and businesses remains poorly understood because little systematic evidence is available.

Our work seeks to quantify the sensitivity of internal, high-skilled immigration to personal- and business-tax differentials across U.S. states. We focus on the location decisions of star scientists, defined as those with patent counts in the top 5 percent of the distribution. Using data on the universe of U.S. patents filed between 1976 and 2010, we identify these scientists' state of residence and compute bilateral migration flows for every pair of states for every year. We then relate bilateral out-migration to the differential between the destination and origin state

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in personal and business taxes in each year.

Star scientists are important for at least two reasons. First, star scientists earn high incomes—most of them are likely to be in the top 1 percent of the income distribution. By definition, star scientists are exceptionally talented. By studying them, we hope to shed light on the locational decisions of other well-educated, highly productive, high-income workers. Second, the presence of star scientists has potentially large consequences for local job creation. Unlike professional athletes, movie stars, and rich heirs—the focus of previous research—star scientists are typically associated with research and production facilities and, in some cases, with entire industries.

Our empirical analysis uncovers large effects of personal and corporate taxes on star scientists' migration patterns: the probability of moving from an origin state to a destination state increases when the tax rate differential between origin and destination increases. For example, our estimates imply that the effect of New York cutting its marginal tax rate on the top 1 percent of earners from 7.5 percent to 6.85 percent in 2006 was 12 fewer star scientists moving away and 12 more stars moving into New York, for a net increase of 24 stars, or a 2.1 percent increase.

We find a similar elasticity for state corporate income taxes as well as the investment tax credit (in the opposite direction), while the elasticity for the research and development (R&D) credit rate is smaller—and statistically insignificant in some specifications. In all, our estimates suggest that both the supply of, and the demand for, star scientists are highly sensitive to state taxes.

We cannot rule out that our estimates are biased by unobserved shocks to demand or supply of scientists, but the weight of the evidence lends credibility to our estimates. First, when we focus on the timing of the effects, we find that changes in mobility follow changes in taxes, rather than precede them. The effect on mobility tends to grow over time, presumably because it takes time for firms and workers to relocate.

Second, we find no evidence that changes in state taxes are correlated with changes in the fortunes of the innovation sector in the years leading up to the tax change, suggesting that states do not strategically change taxes to help local patenters at times when they are struggling (or thriving).

It is still possible that changes in economic policies other than taxes could be correlated with taxes. For example, a pro-business state legislature could both cut taxes and relax state-level regulations on labor and the environment. It is also possible that states tend to raise personal income taxes during local recessions, which also affect mobility. Our estimated elasticities, however, do not change when we control for differences in the local business cycle and differences in time-varying policies across origin or destination states.

We present a number of specification tests to further probe the validity of our estimates. First, star scientists are likely to be among the top earners in a state. Thus, if our approach is valid, we should see that star scientists' location decisions are more sensitive to changes in tax rates for high-income brackets than to changes for the median-income bracket. Consistent with our assumption, we find that star scientists migratory flows are sensitive to changes in the 99th percentile marginal tax rate but insensitive to changes in the 50th percentile marginal tax rate.

Second, corporate taxes should affect the demand for private-sector scientists but not the demand for academic or government scientists. Indeed, we find that the effect of corporate income taxes is concentrated among private-sector inventors. In addition, while individual inventors are not subject to corporate taxes, they can take advantage of R&D credits. Empirically, we find that individual inventors are not sensitive to corporate taxes but they are sensitive to R&D tax credits.

Third, corporate taxes should only matter in states where the wage bill has a non-trivial weight in the state's statutory formula for apportioning multi-state income. Empirically, corporate taxes have no effect on stars' migration in states that apportion a corporation's income based only or primarily on sales, in which case labor's location has little or no effect on the tax bill.

Overall, we conclude that state taxes have a significant effect on the location of star scientists. While many factors determine where innovative individuals and companies decide to locate, enough firms and workers are on the margin that relative taxes do matter. Local policymakers should consider this previously unrecognized cost of high taxes when deciding whom, and how much, to tax.

NOTE

This research brief is based on Enrico Moretti and Daniel Wilson, "The Effect of State Taxes on the Geographical Location of Top Earners: Evidence from Star Scientists," National Bureau of Economic Research, Working Paper no. 21120, April 2015, http://www.nber.org/papers/w21120.