Proposal: Entrepreneurship and State Policy

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This proposal describes work in progress on the effects of state-level policies on entrepreneurial activity. There exist large strands of literature on the economic significance of entrepreneurship, national trends in entrepreneurial activities, and correlations between various policies and entrepreneurial activities. But making progress on this issue has proven difficult due to limited data on entrepreneurial activity and a lack of credibly exogenous variation in the policies being studied. As discussed below, entrepreneurship is a driver of crucial economic outcomes, yet our understanding of how policies impact new firms and entrepreneurial job creation remains surprisingly limited.

This study overcomes the first of these hurdles by using the newly released Quarterly Workforce Indicators (QWI) firm age dataset, which provides detailed county-level information on job creation, job destruction and other key labor market variables for firms in narrowly defined age categories, including firms that are less than one year old.[2] As of 2000, the QWI covers 90 percent of U.S. employment. We overcome the second hurdle by exploiting variation in state-level corporate taxes over time across state borders. Specifically, we examine how entrepreneurial activity changed for firms located in counties that experienced a change in their state corporate tax rates relative to firms in bordering counties whose state did not change corporate tax rates. To the best of our knowledge this is the first paper to credibly identify the impact of state corporate tax rates on entrepreneurial activity. Future work will use this data and

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[2] The beta version of the QWI firm age cut was released in November 2012, with official versions being released in 2014.

identification strategy to explore the impact of other state-level policies. Early results suggest that increasing the top corporate income tax rate by 10 percentage points reduces overall gross job creation by roughly 8 percent. Job creation among firms born within the past year declines by roughly 5 percent.

A growing body of research in economics explores the importance of entrepreneurship for employment and productivity growth, and the causes and consequences of entrepreneurship are of significant interest to policymakers. New firms account for virtually all net job creation (Haltiwanger, Jarmin, and Miranda (2013)) and play a large role in business cycles (Adelino, Ma, and Robinson (2015); Pugsley and Şahin (2014)), and the employment contribution of young firms is long lasting and significant despite high failure rates (Decker et al. (2014)). Moreover, small firms engage in more "exploratory" and "radical" research and innovation than do old firms,[3] and evidence from the manufacturing sector shows that establishment entry accounts for a significant share of aggregate productivity growth (Bartelsman and Doms (2000); Foster, Haltiwanger, and Krizan (2001, 2006); Foster, Haltiwanger, and Syverson (2008)).

One reason that entrepreneurship has received significant attention in recent years is that rates of entrepreneurship in the U.S. have been declining for several decades (Decker et al. (2014)). Most entrepreneurs are "lifestyle entrepreneurs" with little growth potential (Hurst and Pugsley (2012)), and a decline in such entrepreneurs would have little consequence for labor markets or productivity growth. But a small number of entrepreneurs typically grow rapidly, ensuring that high startup failure rates are offset on net by significant growth. New evidence suggests that this type of high-growth entrepreneurship is on the decline (Decker et al. (2015)). Fully understanding the consequences of these trends requires evidence about their causes. By

[3] See Acemoglu and Cao (2015) for a review of relevant references.

providing estimates of the policy determinants of entrepreneurial activity, we will shed light on broad trends and suggest further avenues for research and policy.

While determining causal factors behind national entrepreneurship patterns is difficult, there exists considerable variation across states, and within states over time, in policies that are relevant to new business formation and growth. These include (but are not limited to) personal and corporate tax rates, bankruptcy laws, minimum wage policies, and employment protections. Garrett and Wall (2006) find a negative relationship between entrepreneurship and corporate tax rates, minimum wages, and stringency of bankruptcy laws, with no relationship with personal tax rates. Primo and Green (2011) find similar results for bankruptcy law but no relationship for taxes. Autor, Kerr, and Kugler (2007) find that wrongful discharge protections reduce entry of new establishments. Results from existing literature are mixed, and these studies do not derive causal estimates of the effects of the policies on new firm formation and growth.

We investigate the effects of various state policies on entrepreneurial activity using a border county design similar to that used by Dube, Lester, and Reich (2014) and Ljungqvist and Smolyansky (2014). First, we create a dataset consisting of all border county-pairs that cross state lines. A county may enter multiple times if it borders more than one county in a border state. We take this subsample of border counties and estimate the following econometric model:

$$y_{cpt} = \alpha + \beta_t Ctax_{ct} + \theta X_{ct} + \delta_{pt} + \gamma_c + \varepsilon_{cpt}$$

where y_{cpt} is the job creation rate in county c, border pair p, in quarter t. X_{ct} is a vector of county-year level controls that includes the county's population and the overall employment of the county. Also included in the model are δ_{pt}, a set of border pair-quarter fixed effects, and γ_c, a full set of county fixed effects. The key parameter of interest is β_t, which captures the impact of the relevant state's corporate tax rate, $Ctax_{ct}$, on the job creation rate. The county fixed effects

absorb any time-invariant differences in job creation rates, such that identification will be based off of changes to these counties' rates. The border pair fixed effects are crucial to our identification strategy as they allow us to pick up any additional change that is common to both counties in a border pair. Therefore, the identifying variation is changes that happen to corporate tax rates in one county relative to changes in the bordering county. [4]

The tax data come from *The Book of the States*,[5] the Tax Foundation,[6] and actual state tax forms when necessary. Corporate tax rates will be our first subject of study, but we are also assembling data on personal tax rates, bankruptcy law, and other policies.

Using our dataset and research design, we can answer several questions. How do changes in corporate income taxes affect entrepreneurship? Do other types of corporate taxes, such as revenue taxes, have different effects? How do things like federal deductibility, alternative minimum taxes, and corporate tax progressivity (or lack thereof) affect the tax rate/entrepreneurship relationship? State data provide ample variation for examining these questions.

Further data collection will allow us to answer additional questions. Do changes in personal income tax rates or brackets affect entrepreneurship? Do personal bankruptcy exemptions or minimum wages affect entrepreneurship? What other policies matter?

The answers to these questions will advance the literature by revealing what policies matter for entrepreneurship; the findings will also shed light on broader U.S. trends in entrepreneurial activity. While the project is in early stages, we have assembled the data necessary to begin our investigation and will be assembling more relevant data soon.

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[4] A few brief estimation notes: standard errors are clustered at the county-pair level, and observations are weighted according to the number of times they enter the data (as some counties have more than one bordering county).
[5] Council of State Governments (2000-2014)
[6] http://taxfoundation.org

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