Proposal for research grant in the area of Entrepreneurship
The Regulation of Entry of Startups and the Decline in Business Creation: Evidence from a State-Industry Dataset of Entry Regulations

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1 Project

Entrepreneurship is an essential part of the process of creative destruction that imprints dynamism in an economy. The U.S. economy has been among the most entrepreneurial in the world but recent evidence shows some alarming trends: job and worker reallocation and the entry rate of businesses have been steadily declining over time. Academics and policymakers have suggested a litany of explanations for this decline such as slower population growth (Hathaway and Litan, 2014), changes in business models (Foster, Haltiwanger, and Krizan, 2006), and a greater resilience of incumbent firms to idiosyncratic shocks in the economy (Decker, Haltiwanger, Jarmin and Miranda, 2016). One of the most intriguing hypothesis is, however, that the increasing number of regulations and related compliance costs are discouraging potential entrepreneurs from starting new businesses. In spite of the importance of understanding the decline of business creation, there is no empirical evidence quantifying the role of entry regulation on the decline of entrepreneurial activity in the U.S.

In this project, I propose to construct a new comprehensive dataset of indicators of entry regulation over the last three decades at the state-industry level. The U.S. states have markedly different entry regulations on an industry-by-industry and occupation basis. Moreover, the U.S. experienced substantial heterogeneity in the severity of the decline in business dynamism across industries and states. I take advantage of the significant variation in the regulatory burden to start a business across states and sectors to quantify the effect of additional entry regulations on business creation while accounting for sector-specific trends and location-specific trends that may confound the measurement of the relation between entry and entry regulation.

While regulation has been suggested as an important force behind the decline in the entry rates, there is no empirical evidence linking the decline in business creation and the evolution of entry regulation in the U.S. because of the lack of systematic data.[1] Some studies examine the impact of entry regulations across countries. Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2002) measure the intensity of entry regulations for 85 countries and find evidence that entry regulation is associated

[1] See for instance: `http://www.nytimes.com/2015/04/01/opinion/thomas-edsall-has-american-business-lost-its-mojo.html?_r=0`. A related issue regards occupational regulations. Kleiner and Krueger (2013) document that the fraction of workers required to hold a government-issued license to do their jobs rose from less than 5 percent in the 1950s to 29 percent in 2008.

with negative outcomes. Since then, the World Bank has compiled this information for 189 economies.[2] The data cover the number of procedures, official time, and official cost that a start-up must incur before it can legally operated a "standardized firm" in the largest city of the country in a particular point on time. Empirical researchers (e.g. Klapper, Laeven and Rajan, 2006) exploit this data to show that greater entry regulation negatively affects the creation of new firms. Other researchers exploit the staggered implementation of large shifts in entry regulation within a country to measure the effects of entry regulation on the creation of businesses (e.g. Bruhn 2008 for Mexico, and Monteiro and Assuncao 2006 for Brazil). These studies find that simplified entry regulations foster the creation of new businesses. This project contributes to this literature by creating an ambitious new dataset with data on the regulation of entry of start-up firms in different states disaggregated by industry over time. Such dataset would allow me to not only measure the average effect of the continuous accumulation of entry regulations in the U.S., but also explain what factors amplify or mitigate the effects of entry regulations on business creation.

I propose two methodologies to measure entry regulation. First, I will use the text of the state's legal codes/laws containing state regulations. To measure regulatory stringency, I will apply an algorithm that counts the number of restrictive terms within a block of sentences that mention procedures of business creation, such as permits, licenses and zoning rules. To identify the industry, I will use an algorithm of industry classification using machine learning techniques. Al-Ubaydli and McLaughlin (2015) have used these innovative techniques to obtain an index of regulatory stringency of federal regulations at the industry level. They used the Code of Federal Regulations which contains all federal regulations in effect in a given year. I will use similar techniques to compute a regulatory stringency index at an industry-by-state level. Naturally, the substantial diversity in the structure of the state codes, will complicate comparisons of the index across states. Nevertheless, the evolution of the index within a state over time will likely be comparable and an indication of the relative evolution of entry regulation.

The second set of indicators of entry regulation are even more ambitions. They will be calculated using detailed information at the industry and state on the number of procedures, time, and cost that a start-up must bear before it can legally operate. The advantage of these indicators is that their levels will be comparable across states and/or industries. Their main drawback is that this can only be made for the most recent years. This information is available from the websites of each U.S. State and will be collected and standardized. The format is similar to Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2002).

2 Grant

The creation of the dataset described above will involve a substantial investment in resources. The index of regulatory stringency will involve consulting services from lawyers and technical services from machine learning experts. The detailed indexes on the number of procedures, time and cost will require hiring services from research assistants to go over each states' website to collect the information.

[2] `http://www.doingbusiness.org/rankings`.

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ACADEMIC POSITIONS

Kellogg School of Management, Northwestern University — 2016–
Assistant Professor of Management and Strategy

EDUCATION

The University of Chicago of Chicago — 2010–2016
Ph.D. in Economics

ISEG Lisbon School of Management - Lisbon, Portugal — 2008–2009
M.Sc. in Applied Econometrics and Forecasting

Universidade do Porto, FEP - Porto, Portugal — 2000–2005
B.Sc. in Economics (5 years degree)

PUBLICATIONS

"Double Coverage and Health Care Utilisation: Evidence from Quantile Regression" (with Pedro Barros)
Health Economics, 19, 2010, pp. 1075-1092

WORKING PAPERS AND WORK IN PROGRESS

"Firm Dynamics, Persistent Effects of Entry Conditions, and Business Cycles"
"Self-Employment and the Business-Cycle"
"The Role of Sectoral Composition in the Evolution of Skill Wage Premium"
"A New State-Industry Dataset of Labor Shares" with Loukas Karabarbounis and Brent Neiman
"Re-employment Opportunities and Job Finding" with Steven Davis and Ippei Shibata

PRESENTATIONS

Kellogg, Brown, UIUC, MIT, LSE–Economics, LSE–Strategy, Boston University	2016
University of Notre Dame, University of Connecticut, Fed St. Louis, UCSD, SED (scheduled)	
Entrepreneurship Mentoring Workshop	2015
CES Census Research Conference	2014
NBER Entrepreneurship Summer Bootcamp	2013

AWARDS AND HONORS

Ewing Marion Kauffman Foundation, Kauffman Dissertation Fellowship	2014–2016
University of Chicago, The Margaret G. Reid Memorial Fellowship	2015–2016
University of Chicago, The Theodore W. and Esther Schultz Econ. Fellowship	2014–2015
University of Chicago, Tuition Fellowship	2010–2014
Portuguese Government, PhD Scholarship	2010–2004

OTHER EXPERIENCE

Research Economist, Economic Research Department, *Banco de Portugal* — 2005–2010