Application for NBER Digitization Tutorial 2018 (3 pages)

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Education

The University of Chicago, 2013 to present
Ph.D. Student in Economics
Expected Completion Date: June, 2019

B.S., Economics, Carnegie Mellon University, University Honors and Tepper School of Business Honors, 2013

B.S., Materials Science and Engineering, Carnegie Mellon University, University Honors, 2013

Teaching and Research Fields

Primary fields: Economic growth, industrial organization
Secondary fields: Firm dynamics, innovation, entrepreneurship

Statement of Research Interest

I am currently a fifth year Ph.D. student at the University of Chicago Department of Economics. My research interests primarily focus on productivity growth and firm dynamics in developing countries. Recently, I have also developed an interest in the effects of IT and related technologies on technology spillovers, endogenous growth and competition. These interests have developed through my coursework in graduate school, where my field specializations are in economic growth and industrial organization. In addition, I have taken courses on firm dynamics, numerical methods in economics and the economics of communication. I believe that attending the NBER Economics of Digitization Tutorial will help develop and refine my research ideas, allowing me to contribute to this field.

I presently have two working projects related to firm dynamics in developing countries. In the first, I study the long-run effects of energy market distortions on productivity and output growth in India. Specifically, using a dynamic structural model, I study how manufacturing plants' investments in capital as well as computing technology respond to both electricity shortages and electricity pricing distortions due to regulation. I use cross-state variation in the timing of deregulation of electricity markets as the long-run variation for identification. I then run counterfactuals to quantify the estimated gains in productivity and output growth from efficient electricity provision.

In the second (with Robert Jackman), we try to explain the lack of medium and large firms as well as the related implications for growth using a model of occupational choice and human capital acquisition. A recent literature[1] has identified two distinct types of entrepreneurs, one type that intends to grow their business and the other that uses their business for subsistence income without any desire to grow. This observation is particularly pertinent for a developing country like India, where medium and large firms account for a much smaller share of aggregate output than in developed economies. Building on this literature, we develop a model of economic growth through human capital acquisition along two dimensions, managerial and worker productivity. Agents choose to become entrepreneurs based on their comparative advantage rather than absolute advantage in human capital, leading to a highly skewed firm size distribution. We plan to study the effects of policies aimed at increasing labor productivity on aggregate growth and firm size dynamics.

Since my current work focuses on growth and firm dynamics in developing countries that are still in the process of adopting IT, I believe it will be well complemented by learning about the effects of digitization. My interest extends further too - I am especially interested in studying the effect of digitization on managerial productivity and span of control as well as the relationship between computer integrated technology adoption and market power. In addition, I have begun preliminary work on a project studying how increased information aggregation and spillovers from IT affect innovation by firms. I believe the Economics of Digitization workshop can not only help me develop my current work but also help me explore new ideas and engage productively with the experts in the field.

[1] See Schoar (2010), Hurst and Pugsley (2011) and Humphries (2017) for some examples.

References

1. Humphries, J. E. (2017). *The Causes and Consequences of Self-Employment over the Life Cycle* (Doctoral dissertation, The University of Chicago).

2. Hurst, E., & Pugsley, B. W. (2011). What Do Small Businesses Do?. *Brookings Papers on Economic Activity*, 2011(2), 73-118.

3. Schoar, A. (2010). The divide between subsistence and transformational entrepreneurship. *Innovation policy and the economy*, 10(1), 57-81.