Financing Constraints, Firm Dynamics and Innovation

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Abstract

A large body of literature on firm dynamics has emphasized that firms and plants are created small, and tend to grow over time. The process of entry, growth and exit is largely driven by technological progress. New entrants adopt technologies at the frontier and are more productive than existing units. Moreover firms and plants that successfully innovate grow, while unsuccessful ones shrink and disappear. This paper studies the effect of financing frictions and bankruptcy risk on the entry and the innovation decisions of firms, and derives quantitative implications for aggregate productivity growth. It is motivated by a recent paper by Hsieh and Klenow (2012), which illustrates the importance of plant productivity growth by comparing plant data from US, Mexico and India. Hsieh and Klenow (2012) show that the average size of surviving plants increases with plant age in the US, while it does not increase in Mexico and India. Importantly, they show that such difference is largely driven by differences in total factor productivity growth, which is much higher in the US plants than in the Mexico and India Plants. This paper proposes an industry model with imperfect competition where financing frictions and bankruptcy risk affect entry and innovation decisions. By affecting the entry of new firms with the latest vintage of technology, financial factors distort competitive forces in the industry and indirectly affect the innovation decision of incumbent firms, thus reducing aggregate industry growth. Besides showing that the model provides an explanation of the stylized facts illustrated by Hsieh and Klenow (2012), we directly test its prediction on a sample of Italian manufacturing firms with firm level data on innovation decisions and financing frictions.

References