THE DYNAMIC RELATIONSHIP BETWEEN ENTREPRENEURSHIP AND ECONOMIC GROWTH: EVIDENCE FROM U.S. MANUFACTURING INDUSTRIES (INTERACTIVE PAPER)

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INTERACTIVE PAPER

THE DYNAMIC RELATIONSHIP BETWEEN ENTREPRENEURSHIP AND ECONOMIC GROWTH: EVIDENCE FROM U.S. MANUFACTURING INDUSTRIES

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Principal Topic

We study the dynamic relationship between entrepreneurship and growth at the U.S. industry-level using Vector Autoregressions (VARs) to test Granger causality.

Method

We draw upon three datasets: the NBER-CES productivity database at the U.S. 4-digit SIC level, to obtain the growth rate of the real value of shipments per employee (GRSHIP), Domar TFP growth (GTFPD), value added weighted TFP growth (GTTPV), and industry sales weighted TFP growth (GTFPS); the Bureau of Labor Statistics (BLS), to obtain the self-employment rate across U.S. manufacturing sectors; and the Statistics of U.S. Businesses (SUSB), to obtain the new establishment entry rate (gross entry and net entry) at the U.S. 3-digit SIC level. These yield two panels: self-employment and growth spanning 73 sectors from 1983 to 1996; and industry dynamics and growth spanning 140 3-digit sectors from 1989 to 1996.

To estimate the dynamic panel models, we apply the “difference” generalized method of moments (GMM) (Holtz-Eakin et al., 1988; Arellano and Bond, 1991) and “system” GMM (Arellano and Bover, 1995; Blundell and Bond, 1998). To select the lag length, we follow the sequential test in Holtz-Eakin et al. (1988). We perform a battery of tests: panel unit roots; Hansen and Difference-in-Hansen on the validity of the instruments; and Arellano and Bond for autocorrelation. Panel unit root tests show that all entrepreneurship and growth variables are stationary, thus VAR analysis is valid. In the two panels, the lag length is identified as one year for both the entrepreneurship and growth equations.

Results and Implications

The evidence is mixed. Net and gross entry have a negative Granger causal effect on GRSHIP and a positive Granger causal effect on GTFPD, but neither GRSHIP nor GTFPD has a Granger causal effect on net or gross entry. Gross entry has a positive Granger causal effect on GTTPV and GTFPS, and GTTPV and GTFPS have a positive Granger causal effect on gross entry. Self-employment and TFP growth (GTFPD, GTTPV, and GTFPS) do not have Granger causal effects on each other. GRSHIP has a positive Granger causal effect on self-employment, but self-employment does not Granger cause GRSHIP.

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