

# Inter-Firm Network Growth over Firm Life Cycle and Its Macroeconomic Implications\*

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## Abstract

Young firms are pivotal drivers of macroeconomic dynamism and productivity growth. Yet, their integration into supply chain networks, a cornerstone of modern economies, requires a gradual accumulation of business partners after market entry. Unlike established firms, young firms typically lack pre-existing connections, making the post-entry networking process crucial to their growth. These dynamics not only shape the growth trajectory of individual firms but also have broader aggregate implications because the structure of macro-level production networks ultimately arises from the cumulative networking decisions of individual firms.

This paper is the first to shed light on the network growth patterns of young firms and their macroeconomic implications through the use of unique datasets and an innovative modeling approach. First, leveraging unique panel data on firm-to-firm trade and financial statements, we empirically show that young firms exhibit several network growth patterns, which persist despite accounting for typical age-dependent growth factors. Second, building on these findings, we construct a novel general equilibrium model that incorporates dynamic network formation decisions of heterogeneous firms while overcoming the curse of dimensionality associated with network complexity. Finally, by calibrating the model to the empirical findings, we quantitatively identify misallocation stemming from young firms' networking decisions and room for welfare improvement through policies targeted at young firms.

**Keywords:** Firm Dynamics, Production Networks, Misallocation

**JEL Classification:** D21, D24, D57, D85, E22, E23, E61

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