Large Real Exchange Rate Movements, Firm Dynamics and Productivity Growth

Abstract

This paper theoretically and empirically explores how severe exchange rate shocks affect a firm's production scale and turnover decisions and how these decisions contribute to industry-level productivity growth. My theoretical model modifies Krugman's (1979) model by adding exchange rates to the monopolistic competition and increasing returns to scale framework. I use this model to explain how a firm responds to exchange rate shocks yielding two empirically testable predictions. First, real exchange rate appreciation reduces the number of domestic varieties, i.e. a net exit of domestic firms. Second, appreciation reduces a firm's exports but boosts its domestic sales. As a result, the relative magnitude of these two offsetting forces determines how appreciation affects the incumbent firm's total sales and labor productivity. Taiwanese firm-level data are used to conduct these tests. The empirical results show that real exchange rate appreciation increases both a firm's probability of exit and the production scale of each surviving firm. Moreover, these two outcomes contribute substantially to industry-level productivity growth. Specifically, productivity growth can be generated by rising production scale, which enables a firm to better utilize economies of scale, and by the replacement of less productive firms with more productive entrants (better known as firm evolution). From the decomposition of total factor productivity growth, this paper provides strong evidence that both the scale expansion by continuing firms and firm evolution play significant roles in the industrial productivity growth of Taiwanese manufacturing sector.

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