

Production Networks and Misallocation*

Pravin Krishna[†]

Heiwai Tang[‡]

Johns Hopkins University and NBER

Johns Hopkins University and CESifo

July 1, 2017

(Preliminary. Comments are welcome.)

Abstract

This paper studies aggregate TFP losses due to policy-distorted (mis-)allocation of resources across heterogeneous firms in the presence of intermediate input trade. Different from the existing literature on misallocation, we pay close attention to both allocative efficiency between sectors and amplification through industry input-output (IO) linkages. We extend the model of Hsieh and Klenow (2009) to study firms' decisions to source inputs both domestically and globally from multiple industries. Solving the general equilibrium model with industry linkages reveals that an economy's aggregate TFP loss due to distortions is equal to the geometric mean of sector-level TFP losses, with weights equal to the sector's Domar weights. Using Chinese firm-level and Indian plant-level data over the period of 2000-2007, we find, however, that the estimated aggregate TFP losses due to resource misallocation with IO linkages are lower, relative to the value-added approach adopted by Hsieh and Klenow (2009). Despite the amplification of distortion costs due to input-output linkages, this surprising result is due to the fact that the estimated sectoral TFP losses are on average an order of magnitude smaller than the estimates using the value-added approach, as for both countries, the marginal revenue products of intermediate inputs are much less dispersed across firms within industries, compared to those of labor and capital. Finally, trade liberalization raises the aggregate share of imported intermediates in total intermediates for India, increasing the size of the IO multiplier and thus the macroeconomic costs of firm-level distortions.

Key Words: misallocation, input-output linkages, production networks, industrialization

JEL Classification Numbers: F14, D22, D85, L10, L14, O11, O47, O53

*We thank Hugo Hopenhayn, Chang-Tai Hsieh, Gianmarco Ottaviano, Diego Restuccia, Chad Syverson, Johannes Van Biesebroeck, Xiaodong Zhu, and participants at various seminars and conferences for comments.

[†]pravin_krishna@jhu.edu

[‡]hwtang@jhu.edu