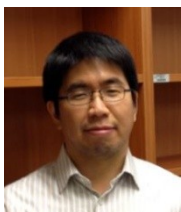



Opinions

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Total Factor Productivity and Resource Misallocation Across Producers



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Rich countries are 30 times wealthier than some poor countries. Moreover, there seems to be no sign of decline in income differences across countries. The consensus among people who study economic growth and development is that about a half of the differences results from differences in the aggregate endowment in observed resources, e.g. physical and human capital. We name the other half, which is not explained by the observed, as total factor productivity (TFP). In this sense, TFP is a residual “measure of our ignorance”. Since then, there have been various attempts to account for cross-country variation in TFP. One attempt, which recently gains popularity, is to account for the TFP variation by resource allocation across producers within a country. According to this view, labor and

capital, used for production, could not be allocated in an efficient way, especially in poor countries. Therefore even with the same resource endowment as rich countries, poor countries may suffer lower total factor productivity. Here I want to give a partial picture of what we have learned (what I know, more accurately) about this attempt.

Thanks to the recent development of firm and plant-level data across various countries, studies find what seems to help us believe that resource misallocation is actually stringent in poor countries. Among others, a celebrated work by Hsieh and Klenow (the Quarterly Journal of Economics, November 2009) introduces frictions, which generates misallocation, to a model with monopolistic competition and producers with heterogeneous productivity and decreasing return to scale production function. Their frictions are in the form of implicit taxes; some producers (possibly more productive producers) could face greater taxes, while the others (possibly less productive producers) could face greater subsidies. In the first best of their environment, resources should be allocated to producers in such a way that more productive producers utilize greater amount of resources and therefore their marginal revenue products (MRP) are equalized to the prices of each resource. By comparing the distribution of MRP from plant-level data in India, China, and the U.S. to the first best distribution and identifying the severity of such distortions, Hsieh and Klenow find that the allocation is more severely distorted in China and India than in the U.S and hypothetically reducing the frictions improves total factor productivity substantially

The substantial TFP effect of resource allocation is an important finding. Nevertheless, the analysis with implicit taxes just replaces one abstract index (TFP) with the others (joint distribution of productivity and implicit taxes). It is hard to find actual frictions corresponding to implicit taxes in reality. For example, in Hsieh and Klenow, the policy discriminating larger firms in India does not seem to distort misallocation significantly. In addition, although we are tempted to believe that implicit taxes capture net overall distortions, TFP effect of implicit taxes might differ from the overall effect of frictions in reality.

Unless we have data that completely solve the identification problem, the next step should be to develop a structure with concrete and micro-founded frictions and to discipline the structure with available data. This progress would not be just inspired by academic curiosity. Rather, our purpose of introducing micro-foundation into the model and testing it must be to help policy makers improve economic performance with appropriate policies. To figure out which frictions are needed to fix, it is necessary to understand which frictions are

quantitatively significant. To determine which policy is needed to implement relative to a certain friction, it is necessary to develop a structure that allows us to investigate how a change in policy could affect a change in variables in which we are interested.

Among others, it is intuitive that what seems to be important is the persistence of productivity shock. Imagine a certain structure such as firms facing either external borrowing constraints or adjustment costs. If the future is not very different from the current, then firms can be well prepared by either accumulating their internal capital or making the right amount of investment in advance. As the shock becomes more volatile, however, it is more likely that adjustment takes more time, MRP becomes more dispersed, and allocation is more severely distorted.

At this point, there is not a consensus about the TFP effect. This varies across regions and seemingly small details in the structure may change the result substantially. The mechanism through which frictions in reality affect TFP is not fully understood and we need more evidence to identify the TFP effect. [KIEP](#)