Impact of Energy Market Distortions on the Productivity of Energy Enterprises in China

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China aims to enhance the total factor productivity (TFP) to achieve sustainable development. However, the looming energy market reform, and its accompanying major energy distortions prevent the realization of this ambitious goal. Naturally, we have questions: what kinds of distortions do China's energy market face? How these distortions restrain the TFP improvement of energy enterprises in China? Investigating these issues deepens the reform of China's energy market by correcting the distortions, improving the input–output efficiency of energy factors, and further promoting the sustainable development of China's economy.

Theoretical analysis reveals that energy market distortion significantly inhibits the promotion of enterprises' TFP, and this impact has been diminishing. Furthermore, according to the data of China's energy enterprises and energy factor market (EFM) characteristics, We measures the EFM distortion and TFP to weigh the degree of distortion of the energy market and efficiency of energy enterprises. Finally, on the basis of the intensive margin of TFP change and the extensive margin of energy enterprise entry and exit, we empirically investigates the impact of EFM distortions on enterprise TFP and further verifies and extends the conclusions of the theoretical model.

The main conclusions are as follows. (1) Misallocation among China's energy enterprises and overall distortions of the EFMs in different regions have negative effects on energy enterprises' TFP. The greatest inhibitory effect is observed in state-owned enterprises. (2) The results of the panel smoothing transformation model show that the "bonus" for productivity gains can gradually increase with the continuous correction of market distortions. (3) The distortion of the energy market can inhibit enterprise entry and accelerate enterprise exit from the energy market. These results are robust for different model specifications and instrumental variable estimations. Considering the similarities in the energy market structures and the widespread distortion of energy markets in developing countries, the method and conclusions of the present study explain the ways to promote energy market reform.

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