

What effect has the 2015 power market reform had on power prices in China? Evidence from Guangdong and Zhejiang

EPRG Working Paper 2010

Cambridge Working Paper in Economics 2043

Bai-Chen Xie

Jun Xu

Michael G. Pollitt

This paper aims to investigate the impact of China's recent power market reform – following the No.9 Document of March 2015 - on electric power prices. It does this by tracking monthly power prices for 35kV+ industrial consumers in Guangdong and in Zhejiang. These are two rich provinces in China that traditionally suffer from quite high prices of electricity. They are also widely recognised as two provinces making substantial progress with power market reform.

To better evaluate the effect of the reform, this paper examines the progress with power market reform beginning in 2012 detailing the emergence of bilateral electricity trading and progress with monthly, annual and spot markets following the No.9 Document of 2015.

Electricity prices would appear to have come down substantially since 2014, when they were very much higher than in the US. However, what we highlight is the extent to which the reform has been about the introduction of competitive market prices vs reductions in regulated prices/charges. We aim to show the sources of price reductions and the impact of the reform on prices paid to generators and on the transmission and distribution charges received by the grid companies.

We find that power market reform has substantially reduced prices by December 2019. The regulated price falls by 26.6% in Guangdong and by 27.0% in Zhejiang while the market price falls even further by 30.2% in Guangdong and 30.4% in Zhejiang compared with their regulated prices in January of 2012. Accordingly, the weighted retail price for all customers

falls almost by 27.7% in both Guangdong and Zhejiang. These are all falls in the nominal price of electricity.

These price reductions are very large compared to those of US, and China has substantially reduced the gap between its industrial electricity prices and those of the US. There has also been an impressive rebalancing of electricity prices from industrial to residential consumers. For the first time in recent history the average household price in Guangdong we look at is above that for our benchmarked industrial customers since 2017.

We examine the proximate causes of these large changes in the industrial price. We find that the price falls have come from a number of different sources: falls in the prices paid to generators, reductions in grid charges and falls in government taxes and additional charges.

While this has been billed as a ‘market’ reform, we conclude that it is clearly better characterised as a ‘regulatory’ reform as the market discounts offered by generators in the power markets have only constituted a small share of the total price reductions experienced by the industrial customers we looked at.

Overall, the Chinese power market reform highlights two important lessons worth emphasising more widely. First, getting power prices down for final consumers depends significantly on controlling network charges and additional government policy costs. Second, one of the substantial benefits of markets is not that market prices are much lower than regulated prices, but that market reforms are a vehicle for improving regulation and shaking up previously poorly regulated industries.

Contact	xujun84@zufe.edu.cn
Publication	July 2020
Financial Support	EPRG; the National Natural Science foundation of China (71874121, 71603232); Major projects of the National Social Science Fund of China(17ZDA065, 18ZDA111) ; National Key R&D Programme of China (No. 2018YFC0704400).