



The effect of power distribution privatization on electricity prices in Turkey: Has liberalization served the purpose?

Hatice Karahan ^{*}, Mehmet Toptas ¹

TUBITAK, The Scientific and Technological Research Council of Turkey, Marmara Research Center, Gebze, Kocaeli, Turkey

HIGHLIGHTS

- Privatization in electricity distribution has not reduced the retail prices in transition period in Turkey.
- Changes in retail prices do not harmonize with those in wholesale prices in the electricity market.
- The cost reflectiveness of the pricing system in the market is questionable.
- The market does not seem to be ready yet for the automatic pricing mechanism.
- The increase in distribution tariffs is not compatible with the targets of the liberalization program adopted for the Turkish electricity market.

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ABSTRACT

Various electricity reforms have been adopted by a number of countries within the last 2 decades. Turkey, as one of those countries, has restructured its electricity market and intensively privatized the distribution companies. As one of the main targets of the liberalization efforts in the sector was announced to be reduced consumer prices, it is a matter of interest to look at the related developments after privatizations. Hence, this study attempts to explore the impact of power distribution privatization in Turkey on the national end-user electricity prices. Results of the analysis suggest that privatization of electricity distribution companies has not yielded the expected retail price declines within the first 4 years of the program. Whereas wholesale tariffs exhibit a reduction in the rate of 10%, retail tariffs show an increase of 5.9% within the period in question. Besides, the unstable patterns of the two tariffs imply that the market is not yet ready for the automatic pricing mechanism planned to be implemented based on a cost-reflective methodology. Therefore, results indicate that the factors behind the unsatisfactory outcomes of the program should be explored in order for the privatization efforts in the Turkish electricity distribution market to serve the purpose.

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1. Introduction

In the past 2 decades, liberalization in the electricity sector has speeded up and a number of reforms have been put in place in a number of countries throughout the world. The main motivation behind those reforms has been efficiency gains leading to cost reductions, which are assumed to benefit consumers through price

Abbreviations: EDC, Electricity Distribution Company; EPDK, Energy Market Regulatory Authority; EUAS, Electricity Generation Co.; kWh, kilowatt-hour; PMUM, Market Financial Reconciliation Center; TEAS, Turkish Electricity Generation and Transmission Co.; TEDAS, Turkish Electricity Distribution Co.; TEIAS, Turkish Electricity Transmission Co.; TEK, Turkish Electricity Authority; TETAS, Turkish Electricity Trading and Contracting Co.; TUIK, Turkish Statistical Institute

^{*} Corresponding author. Tel.: +90 262 677 2275.

E-mail addresses: hatrice.karahan@tubitak.gov.tr (H. Karahan), mehmet.toptas@tubitak.gov.tr (M. Toptas).

¹ Tel.: +90 262 677 4901.

reductions and improvements in the quality of service. On the other hand, privatization of utilities has proved to be a complex issue, often involving three separate stages, one of which is obviously a shift in ownership from the public to private hands. The second is the restructuring of the companies, while the third one is a change in the way the sector operates, usually involving an adoption of competitive procedures. Depending on the combination of these factors, liberalization tends to bring about significant changes in the way businesses are conducted (Domah and Pollitt, 2001). However, outcomes of any individual restructuring and privatization process in a given industry and in a given country have the potential to be highly variable (Pollitt, 1999). That is why each liberalization effort has to be designed and evaluated based on its own dynamics.

Outcomes of the privatization process in the sector are explored in a number of studies which analyze certain countries. Ranganathan (1993) discusses the privatization in the Indian

electricity sector and underlines the problems encountered due to unexpected consequences of privatization in application, particularly through higher prices charged by private companies compared to public power. In other words, he draws attention to the fact that the goals and outcomes of privatization may conflict. [Domah and Pollitt \(2001\)](#) assess the developments following the privatization of 12 regional electricity companies responsible for the distribution and supply of electricity in England and Wales. The social cost and benefit analysis they conduct conclude that the liberalization activities in question did yield significant net benefits for the society which were unevenly distributed across time and groups in society. In this regard, the main winner of the concerning process is found to be the government, whereas consumers turned out not to experience a significant welfare gain in terms of electricity prices.

Furthermore, [Silvestre et al. \(2010\)](#) investigate the effects of privatization of distribution companies in the Northeast of Brazil and find out that privatization well contributed to the privatized firms in financial terms but not to the quality of service provided to consumers. Therefore they conclude that some privatization experiences might possibly be ugly, where the process only benefits the investor but might harm the consumers. [Kim and Kim \(2008\)](#) explore the impact of privatization of electricity generation companies in Korea and discover that electricity prices did not fall after the reforms. Similar to the findings of [Silvestre et al. \(2010\)](#), the profitability of the privatized companies in the study are found to have been affected positively, though.

As can be seen from the cases above, within the scope of the global liberalization trend, electric power reforms have been embarked both in developed and developing countries with the purpose of transition into a competitive electricity market. It should be noted at this point that for both kinds of economies, the process of a reform program needs to consist of the following two stages: unbundling of the integrated structure of the power supply and divesting of the state's ownership at least in most of the electricity generation as well as distribution segments of the market ([Bacon and Besant-Jones, 2001](#)).

The Turkish electricity market has gone through a similar series of changes in the last 2 decades too, with a motivation of liberalization in order to attract private sector investments and maximize efficiency. In this sense, as a most recent initiative, Turkish electricity distribution network administered by Turkish Electricity Distribution Co. ([TEDAS](#)) has been divided into 21 areas to be privatized based on the Electric Power Sector Reform and Privatization Strategy Document as of March 2004. The main objective stated in the strategy document was unsurprisingly quite similar to the one targeted by the Electricity Market Law enacted in 2001: To ensure delivery of electricity to consumers in an adequate, high-quality, uninterrupted and low cost manner.

The privatization process of the power distribution companies was effectively launched in 2009 and completed in 12 regions by the beginning of 2013. As stated by the Privatization Administration of the Prime Ministry, the primary outcomes desired with the privatization in the sector can be summarized with the following properties:

- Lowering costs through effective and efficient operation of electricity distribution assets.
- Decreasing loss and theft ratios, by reducing technical losses in distribution and preventing illegal use, and hence
- Reducing consumer prices by reflecting all the gains obtained onto consumers.

Plus, it should be mentioned that within the framework of the market restructuring program, a new pricing methodology was planned to be put in effect to make the prices cost-reflective,

particularly after the transition period. In this regard, it is a matter of interest to assess how overlapping the purposes and the outcomes of the liberalization efforts in the sector have been within that period of 4 years. Hence, this paper explores the issue in terms of the eventual outcome of the program, which can be described as "consumer retail prices". For this purpose, the trends followed by the wholesale and retail prices in the specified period are demonstrated and the reflection of any change in the former on the latter is further analyzed.

In sum, the goal of this paper is twofold: Firstly, it attempts to analyze the electricity price changes following privatization in the electricity distribution sector in Turkey to determine the existence of any desired positive effects on consumer prices. Secondly, it questions the potential applicability of the cost-reflective pricing mechanism designed within the context of the process, based on the experience during the privatization period so far.

To our knowledge, no studies have yet assessed the effects or the success of the liberalization in the Turkish electricity distribution sector. Therefore, our study would be a significant contribution to the literature in the relevant field. Besides, the fact that we evaluate the existing policy and its applications with the support of a data analysis increases the reliability of the conclusions derived, which would be quite beneficial for the Turkish policy makers.

2. Background information

2.1. Electricity market restructuring in Turkey

By early 1990s, Turkish electricity market was mainly dominated by public monopolies that exhibited quite poor performance ([Ozkivrak, 2005](#)). So, based on the need to improve it and inspired from the liberalization trend adopted widely in global electricity markets, it has been extensively restructured within the last 2 decades. In this regard, the first restructuring attempt can be mentioned to have been fulfilled in 1993 by the unbundling of the sector-dominating state-owned Turkish Electricity Authority (TEK) into two entities: Turkish Electricity Generation and Transmission Co. (TEAS) and Turkish Electricity Distribution Co. (TEDAS). Based on this development, TEAS was held responsible for the generation, transmission and wholesale of electricity while TEDAS undertook the distribution activities. Further, upon the enactment of the Electricity Market Law in the year of 2001, TEAS was disunited into Electricity Generation Co. (EUAS), Turkish Electricity Trading and Contracting Co. ([TETAS](#)) and Turkish Electricity Transmission Co. (TEIAS), which have been charged by the functions of generation, wholesale and transmission, respectively. The main objective underlined by the law can be stated as "providing affordable, sustainable and quality electricity to consumers in a competitive environment".

Regarding the purpose indicated by the law, it was clear that "privatization" had to be a major pillar of the liberalization program to establish such an environment in the industry. Therefore, the next step was taken towards the privatization of the state-owned enterprises in the sector and the main target in this plan was the publicly-owned electricity distribution companies.

In 2004, as an integral element of the sectoral liberalization targets, the state-owned TEDAS was decided to be privatized, in accordance with the Privatization on High Council Decree numbered 2004/22. In this framework, the first step in the program has been the restructuring of the distribution regions throughout the country such that 20 electricity distribution companies have been specified within the 21 regions determined. ([The Privatization Administration of the Prime Ministry of Turkey, 2010](#))

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