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Network Utilities Performance and Institutional Quality: Evidence from the Italian Electricity Sector

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It is generally accepted that institutions are important for economic development. In this work, we analyse how the quality of regional institutions impacts performance of Italian electricity distribution utilities and show that utilities in regions with better government effectiveness, responsiveness towards citizens, control of corruption, and rule of law, also tend to be more cost efficient. The results suggest that national regulators should take regional institutional diversity into account in incentive regulation and efficiency benchmarking of utilities.

Due to high sunk investment costs and technical characteristics the electricity sector is considered a natural monopoly and hence, subject to economic regulation. But for the last decades, this sector has been reformed. In most countries—among them Italy—independent sector regulators were established in order to ensure fair treatment of consumers as well as to pursue efficiency improvements.

International comparison shows that the performance of utilities across different regions of a country are diverse and non-homogenous. Research proposes that this is due to technical, economic and geographical measures. But we suggest that additionally, institutional quality might influence performance of network utilities across a country. We conduct an analysis on **how regional-level economic development and the quality of local institutions impact performance of Italian electricity distribution utilities**. Italy has been one of the first countries to reform the electricity sector in the 1990s (Figure 1) and hence, is considered as having one of the most developed power systems in the world but still exhibits persistent inefficiency and service quality issues across regions.

The analysis of the cost efficiency of the electricity distribution utilities across Italy shows that the average cost efficiency is about 58% (which is lower than in studies not including institutional or economic factors). Electrical utilities in Northern and Southern Italy show a wide efficiency differential across the country. This can be linked to the fact that **regional-level macroeconomic factors and regional institutional**

quality have a significant impact on the cost efficiency. More specifically, the authors find a significant positive impact of better institutional endowments on utilities' performance scores.

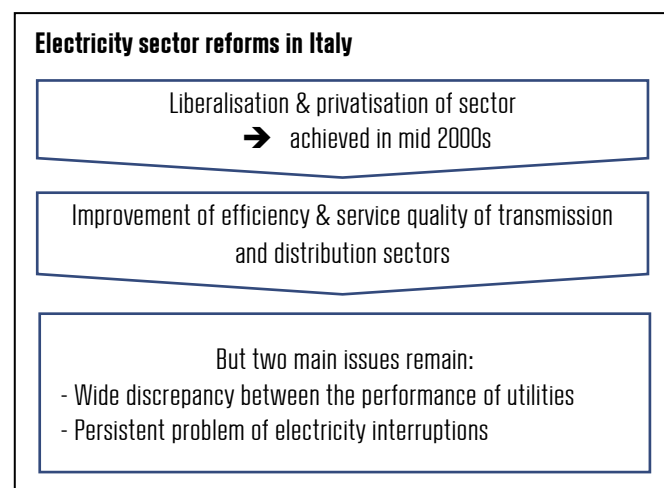


Figure 1: Electricity sector reforms in Italy

Usually, physical, organisational and environmental differences are looked upon when trying to identify regional differences that impact capital or operational expenditures of utilities. The findings show that there is empirical evidence that institutions affect the functioning of regulated network utilities. **Good quality of institutions improves cost efficiency of electricity distribution utilities. Poor quality of institutions can hinder economic and technical efficiency by utilities.**

Developed economies have a relative technical advantage, but the variations of utilities' performance within a country can be traced to regional institutional characteristics alongside the geographical and economic differences. On top, the business environment created by institutions impacts firms' operations, and a government's accountability can prevent distorted political actions as well as unfair resource allocation. These factors depend on the institution's quality and therefore,

a lower quality can negatively affect these mechanisms of resource allocation and the use of available resources.

For overcoming these issues and improving the overall efficiency of the distribution sector, we propose that regulators need to consider the diversity in regional institutional quality as well. The current established

benchmarking measures such as physical, organisational and environmental differences mainly focus on firm-level economic incentives and activities to improve the efficiency of utilities. The incorporation of the institutional domain is inevitable when assessing incentive regulation and efficiency benchmarking of network utilities.

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