

Efficiency and Environmental Factors in the US Electricity Transmission Industry

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Abstract : The electricity industry in most developed countries has been restructured over recent decades with the aim of improving both service quality and firms' performance. Regulated segments (e.g. transmission) still provide the infrastructure for the competitive segments and represent a notable amount of the total price paid by final customers. However there is a lack of empirical studies that analyze firms' performance in the electricity transmission sector. We conduct an empirical analysis of the US electricity transmission companies for the period 2001-2009. We use stochastic frontier models that allow us to identify determinants of firms' inefficiency and to control for weather conditions, potentially one of the most decisive uncontrollable factors in electricity transportation. Our results suggest that there is room for improvement in the performance of the US electricity transmission system. Regulators should also take into account that more adverse conditions generate higher levels of inefficiency and that achieving long-term efficiency improvements tends to deteriorate firms' short-term relative performance.

Keywords : electricity transmission, heteroscedastic stochastic cost frontiers, inefficiency determinants

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