

Short-term electricity price forecasting with a composite fundamental-econometric hybrid methodology

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Abstract-

Various power exchanges are nowadays being affected by a plethora of factors that, as a whole, cause considerable instabilities in the system. As a result, traders and practitioners must constantly adapt their strategies and look for support for their decision-making when operating in the market. In many cases, this calls for suitable electricity price forecasting models that can account for relevant aspects for electricity price forecasting. Consequently, fundamental-econometric hybrid approaches have been developed by many authors in the literature, although these have rarely been applied in short-term contexts, where other considerations and issues must be addressed. Therefore, this work aims to develop a robust hybrid methodology that is capable of making the most of the advantages fundamental and the hybrid model in a synergistic manner, while also providing insight as to how well these models perform across the year. Several methods have been utilised in this work in order to modify the hybridisation approach and the input datasets for enhanced predictive accuracy. The performance of this proposal has been analysed in the real case study of the Iberian power exchange and has outperformed other well-recognised and traditional methods.

Index Terms- forecast combination; fundamental-econometric models; hybrid models; power exchanges; short-term electricity price forecasting

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