Market Makers and Liquidity Premium in Electricity Futures Markets

Juan Ignacio Peña[a] *and Rosa Rodríguez*[b]

Electricity futures trading offers benefits to electricity producers and consumers, such as price discovery, a hedge against spot price market risk, and market power mitigation. But these benefits come at a cost when the futures price diverges significantly from expected spot prices, giving rise to a forward premium, defined as the difference between futures prices and expected spot prices. If the futures price is higher (lower) than expected spot prices during the delivery period, this cost is borne by consumers (producers). The forward premium has been studied by comparing futures prices against expected spot prices. If we use realized (ex-post) spot prices, futures prices contain forecast errors that may induce bias in the estimated forward premium. If we use the estimated (model-based, ex-ante) spot prices, the forward premium becomes dependent on the spot price model used. There are many models of the spot price, and none enjoys general acceptance. This paper studies the forward premium as a liquidity premium in electricity futures markets as determined by producers and retailers' demand for immediacy. Demand for immediacy by a buyer (seller) means the willingness to buy (sell) at the current market price rather than wait until a better price appears. An imbalance between the supply and demand of futures contracts creates a need for immediacy. Market makers satisfy this demand by offsetting the imbalance at the current market price and require a liquidity premium until the imbalance disappears. The liquidity premium is negative (positive) when market makers sell (buy) futures contracts. The empirical application to the French, German, Spanish, and Nordic futures electricity markets in 2008-2017, finds several periods with a negative liquidity premium in the first three markets, suggesting that retailers wanted to offload a higher amount of price risk than the producers. The premium decreases when market competition, as measured by the number of market makers, increases.

a Corresponding author. Universidad Carlos III de Madrid, Department of Business Administration, c/ Madrid 126, 28903 Getafe (Madrid, Spain). E-mail: ypenya@eco.uc3m.es.

b Universidad Carlos III de Madrid, Department of Business Administration, c/ Madrid 126, 28903 Getafe (Madrid, Spain). E-mail: rosa.rodriguez@uc3m.es.

The Energy Journal, Vol. 43, No. 2