

## Price and Volatility Spillovers in Australian Electricity Markets

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### Abstract:

Electricity markets are significantly more volatile than other comparable financial or commodity markets. Extreme price spikes as well as periods of substantial price volatility and their transmission between different markets pose significant risks for market participants. We investigate spillover effects in electricity spot prices and volatilities across regional markets in the Australian National Electricity Market (NEM), aiming at a better knowledge of electricity spot price dynamics in a multi-regional context. We employ the framework of Diebold and Yilmaz (2009; 2012), which is based on forecast error variance decompositions of vector autoregressive (VAR) models. Both static and dynamic spillovers, as well as aggregated spillovers and directionally decomposed spillovers between the regions are assessed. Using daily electricity spot market data from 1 January 2010 to 31 December 2015, we find stronger spillovers are observed between physically interconnected markets. South Australia (SA) transmits the most net spillovers to other regions in the NEM, while New South Wales (NSW) is the most significant net spillover receiver. Further, both price and volatility spillovers show time-varying and event-dependent patterns. Our findings provide important insights for market participants with regard to developing cross-regional risk management or hedging strategies in the Australian NEM.