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INTEGRATED VERSUS NON-INTEGRATED ELECTRICITY MARKETS: A STRATEGIC APPROACH

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At the end of the 1980s a process of liberalization started in the European electricity markets. With this process, the aim of the European Union (EU) was to set up an internal European electricity market through transmission expansion in order to create integrated markets with homogenous rules. The main advantages of larger markets are an increase in security of supply, a reduction in reserves and an increase in efficiency due to a higher level of competition, among others. Our paper builds on this idea by analyzing short run decisions of generation given the size of the interconnection and the number of incumbents. We consider the strategic behavior of generators that sell in two markets (countries) and analyze the effect of the interconnections on energy prices and welfare. In this context, two feasible modes of operation are the integrated electricity markets and the connected electricity markets. We begin with a discussion on monopolistic markets because it is a benchmark that allow us to analyze the effects of increasing competition and investments in transmission. We show how strategic interaction plays a significant role in the presence of congestion and in the optimal choice of the market organization: simple interconnection or integration. There exist short-run equilibrium results such that market integration harms the larger and more efficient countries as compared to simple interconnection. We show how indeed this is the current situation in many countries where the transmission capacity is low as compared to total consumption. Thus, in the long-run either transmission capacity should grow at a faster rate otherwise larger more efficient countries would not find profitable to integrate with smaller more inefficient countries.