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INTEGRATED NORDIC WHOLESALE ELECTRICITY MARKET: DOES IT LEAD TO EQUAL RETAIL ELECTRICITY PRICES TO HOUSEHOLDS ACROSS THE NORDIC COUNTRIES?

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Overview

Retail electricity suppliers in the Nordic countries (Denmark, Finland, Norway and Sweden) have in general access to the integrated Nordic wholesale electricity market in which the power exchange Nord Pool plays an important role. While there is a Nordic wholesale market, the small business and household retail markets are still national. The electricity supply industry in the Nordic countries has a different historical background and they deregulated their electricity markets at different points in time. Different approaches to regulation, market structure, corporate strategy, and other factors (such as the magnitude of electricity consumption) may have contributed further to different retail price movements across the four national markets¹, despite wholesale price movements to a large extent are identical in all the markets. Important dimensions of these differences are supply prices, margins, customer mobility and contract variety and choices. In fact, the four Nordic countries and their household retail electricity prices leave us with data for a real and large-scale policy and regulation experiment.

The aim of this paper is to study the behavior of household retail electricity prices in the Nordic countries since 1993 i.e. a period of more and less equal length before and after the liberalization of this market. It is part of a joint Nordic research project the aim of which is to identify and explain the nature and reasons for the differences observed in the residential markets and the consequences for market efficiency². We investigate by statistical methods to what extent the wholesale market price signals have been passed through to Nordic household consumers.

The analysis is extended by using Denmark as a benchmark for 2005-2006. In this country the local retail companies have a "last resort supply obligation" for consumers that have not been active finding another supplier. Since January 2005 prices in these contracts are regulated as Nord Pool's average forward price for the following quarter plus a mark-up for each supplier, which is also constructed from market data. Almost all residential consumers in Denmark have such contract that bypasses retail market competition.

¹ This is briefly discussed in: Ole Jess Olsen, Tor Arnt Johnsen and Philip Lewis: A Mixed Nordic Experience: Implementing Competitive Retail Electricity Markets for Household Customers, *The Electricity Journal* (19) 2006, p. 37-44.

² *RETAIL – the residential Nordic Electricity Markets – How do they work and why?* Project no.: 173109 financed by the Research Council of Norway.

Methods

- We investigate by statistical methods the comparative price development from 1993 to 2006. To what extent have the wholesale market price signals been passed through to Nordic household consumers in the four countries?
- The approved Danish prices are used as a benchmark for a statistical comparison of retail prices and margins for inactive (default retail electricity contract, not switching supplier) respectively active (other contracts, switching supplier) residential customers in 2005-2006 in the three other Nordic countries.

Results

We find that:

- Household expenditure for electricity has developed differently across the four countries.
- Norway has had the most volatile retail electricity prices.
- Finland and Denmark have had the most stable household electricity prices.
- The benchmark analysis of prices and margins in 2005-2006 has not been finished yet.

Conclusions

Among our conclusions:

- The default retail electricity contract after liberalization is an important policy choice.
- The average household electricity consumption determines the savings potential by switching electricity supplier, and thus retail competition should be expected to be strongest in Norway and Sweden.