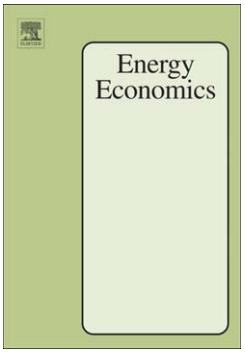

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Toby Daglish, Gabriel Fiuza de Bragança

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Investing in vertical integration: electricity retail market participation

Toby Daglish[1] and Gabriel Fiuza de Bragança[2]

Abstract

Electricity industries are frequently characterised by a high degree of vertical integration. We explore the option for a generator to enlarge its participation in the retail market, and show that the firm will choose to delay if market demand is too high or low. In the former case, high wholesale prices may make fixed price retail customers unattractive, while in the latter, too little revenue is earned to justify the option's expense. Increased volatility can, under some circumstances, lower the value of the option, contrary to conventional real options theory. Firms expand their retail positions more aggressively in concentrated markets, vertically integrated markets, and markets where financial hedging is prevalent.

Keywords: Electricity; Real Options; Vertical Integration; Investments; Market Structure; Market Power.

1. Introduction

Electricity markets often present market power issues, along with intricate market structure. In addition, electricity market participants frequently participate in both generation and retail markets simultaneously, which is referred to in the economics literature as vertical integration. Electricity firms who are both retailers and generators are termed "gentailers".[3]

This paper develops a structural model of a decentralized electricity market and shows that market structure can affect gentailer decisions about when

[1]Victoria University of Wellington. E-mail: toby.daglish@vuw.ac.nz.

[2]Instituto de Pesquisa Econômica Aplicada. E-mail: gabriel.fiuza@ipea.gov.br.

[3]The term *gentailer* is in wide circulation in New Zealand and Australia, used to describe vertically integrated electricity retailers/generators. The first academic reference we can find to its use is Meade (2005).