

Chapter 60

The Role of B2B E-Commerce in Market Share: Evidence from Spanish Manufacturing Firms

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ABSTRACT

This chapter explores the impact of the Internet and Business to Business (B2B) e-commerce on Spanish manufacturing firms' market share while most studies focus on innovation and productivity. Using standard panel estimations, the authors find that firms with their own Web domain and that also carry out B2B e-commerce increase their market share, though this effect is not homogeneous among industries. B2B e-purchases have a more significant (and positive effect) on firms' market share than B2B e-sales have. Unlike other studies, the authors also use a panel threshold regression specification that shows that e-commerce affects market share in a non-linear manner depending on firm's characteristics. Larger firms and firms with higher share of skilled workers are better at increasing their market shares through Internet-based commerce strategies than other firms.

INTRODUCTION

Market share, an important indicator of firms' performance, has traditionally been explained by a variety of factors, such as price, advertising, and product characteristics. The use of electronic channels for selling products and purchasing inputs (e-commerce) has the potential to optimize production and logistics

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processes, since it facilitates more flexible production, just-in-time inventory management, integration of sales with production planning and a reduction of the costs of coordinating with suppliers (Polder et al. 2009; Martin & Nguyen-Thi, 2010). As a consequence, one would expect this potential reduction in costs and increase in efficiency to have a positive impact on firms' competitiveness and their capacity to retain and increase market share over time.

Since the beginning of the 2000s there has been a general interest in the literature in assessing the effects of the adoption and use of Information and Communication Technology (ICT) and its applications such as e-commerce, on costs, firm performance, innovation and productivity. Although results from these studies do not reach a unified conclusion on the benefits derived from using such technologies, it seems that at least one consensus emerges: ICT and its use for procurement and sales (e-commerce) has a positive effect on firms' productivity (Rincon, Robinson, & Vecchi, 2005; Bertschek & Fryges, 2002; Falk, 2005 and Leeuwen & Farooqui, 2008). E-commerce also seems to matter for process and product innovation (Leeuwen & Farooqui, 2008; Martin & Nguyen-Thi, 2010), which suggests that using electronic channels for selling or buying products also promotes innovation in the way products are made (Polder et al. 2009).

Research on the link between e-commerce's use and firms' performance is far less conclusive. Using data from four technology-intensive industries, Wu et al. (2003) find that some aspects of e-business have a positive effect on performance outcomes, but this is not the case with the activities related to e-commerce. On the other hand, both Clayton et al. (2004) and Quirós Romero & Rodríguez Rodríguez (2010) find, for UK and Spanish manufacturing firms respectively, that e-procurement has a positive effect on firms' efficiency but that e-sales do not. A more recent study by Sila & Dobni (2012) finds that the level of B2B e-commerce integration has a strong positive relationship with overall firm performance as well as the individual components of firm performance, including business process, operational and financial performance.

Nonetheless, very few studies have directly explored an important indicator of firms' performance, that is their capacity to maintain and gain market share and how these dynamics can be in part explained by their ICT use and, in particular, electronic commerce¹. One of the few studies we are aware of is a study for Canada by Baldwin & Sabourin (2001) who find that plants that were using communications technologies increased their relative productivity the most, and those that gained in relative productivity also obtained market share gains. However, most of the studies that consider e-commerce variables focus on the effect of business to consumers (B2C), that is retailer e-sales on market structure (Min & Wolfenbarger, 2005; Goldmanis et al., 2009), and not on B2B e-commerce as we do.

Our study contributes to the existing literature by exploring the impact of Internet and B2B e-commerce on Spanish manufacturing firms' market share over the period 2000-2006. We also control for other important variables such as advertising and R&D expenditure. Our results suggest that firms with their own Web domain that also carry out B2B e-commerce increased their market share between 2000 and 2006.

We additionally explore how firm characteristics, such as size or workforce composition, can mediate in the effect of Internet and e-commerce use on market share. We do this by using a panel threshold regression method (Hansen, 1999) that captures possible asymmetric effects of e-commerce on market share depending on firms' size. Moreover, our methodology is able to show the possible mechanisms underlying this non-linearity by controlling the efficiency effect that a more qualified workforce could have when online commerce is used as a business strategy to increase market share. We find evidence of an increasing relationship between e-commerce and market share depending on firm size, and depending on the ratio of workers without secondary studies, the ratio of non-production workers, and the techni-

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