

Ownership, location and prices in chinese electronic commerce markets

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Abstract

This study examines the pricing behavior of online retailers (e-tailers) in Chinese e-commerce markets. Descriptive statistics indicate that prices have not converged in China's e-commerce markets and that there is relatively more price variation in markets for cosmetics, compact discs, gifts and books. Fixed effects model estimates show that e-tailer's characteristics are significant determinants of prices. These findings are consistent with studies of "Western markets" that show e-tailer product offerings through the Internet may not be the same, even when their underlying attributes are. We also find ownership structure and "location" to be an important source of price differences between e-tailers.

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1. Introduction

How does the widespread availability of information on the Internet affect retail prices in electronic commerce (e-commerce) markets? With reduced search costs and better informed consumers, standard economic theory predicts that prices by online retailers (e-tailers) would converge to the same low level for goods with the same product attributes. Moreover, because of the easiness of finding different sellers online, one may think that the "location" of a seller would no longer matter in the online market.

Initial empirical evidence has not found strong support for these predictions.¹ Bailey (1998) and Clay et al. (2002) find that prices in United States (US) e-commerce markets are at least as high as those in physical markets, while Brynjolfsson and Smith (2000), Clemons et al. (2002) and Pan et al. (2002a, 2004) find greater price

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¹ See Pan et al. (2004) for a comprehensive review of this literature.

dispersion. Greenwald and Kephart (1999) and Brynjolfsson and Smith provide evidence that is consistent with e-tailers with strong customer awareness setting higher prices than lesser known e-tailers. These findings are typically explained by market immaturity and disequilibrium during the initial diffusion of e-commerce, and heterogeneity in the trust consumers have for e-tailers. However, Baye et al. (2004) find little evidence to support the disequilibrium explanation and instead find persistent price dispersion that depends on market structure measured by the number of listed firms.

Other studies on price levels and elasticities suggest that some e-commerce markets are becoming more efficient (Ellison and Ellison, 2001; Brown and Goolsbee, 2002; Pan et al., 2002b). However, Pan et al. (2003) continue to show the effects of reliability in fulfillment, trust and consumer awareness on the price level are ambiguous. Because most of this evidence is from Europe and the US, it is not clear how these results generalize to less-developed markets. This study makes two contributions to the existing literature. First, we expand the empirical analysis of e-commerce markets to a transition economy by examining the pricing behavior of Chinese e-tailers. Second, we examine whether prices at government, and foreign, owned e-tailers are different to prices at other e-tailers.

To examine e-tailer behavior, we gathered price data for 535 product items from 93 e-tailer web sites during July, 2004. The dataset consists of 6316 observations for nine product categories: books; compact discs; laptop computers; gifts; cosmetics; digital video cameras; digital cameras; MP3 music players; and cellular telephones. We follow the general approach of Brynjolfsson and Smith (2000), Clay et al. (2002) and Pan et al. (2002a,b) by using these data to investigate: (i) whether the widespread availability of information has resulted in e-tailer price convergence; and (ii) in the event of no convergence, the extent to which price variation can be explained by product differentiation. However, in contrast to these studies, we investigate these questions for several product categories in a transition economy, and collect data directly from e-tailer's web sites and by telephone survey.

Results from descriptive statistics indicate that prices have not converged in China's e-commerce markets and that there is relatively more price variation in markets for cosmetics, compact discs, gifts and books. Fixed effects model estimates show that e-tailer's characteristics are significant determinants of prices. These findings are consistent with previous studies of "Western markets" that show e-tailer product offerings through the Internet may not be the same, even when their underlying attributes are. This suggests that while it is easier to obtain *price* information online, e-commerce may also exacerbate information asymmetry about *product quality*, since the buyer cannot physically inspect the product before purchase. We also find ownership structure and "location" to be an important source of price differences between e-tailers. On average, government-owned e-tailers charge about an 11% price premium in e-commerce markets, while e-tailers with foreign affiliations or *without* a physical store (i.e., pure-play e-tailers) must discount prices.

The paper is organized as follows. Section 2 provides background on the Internet and e-commerce in China. Section 3 outlines the empirical model and hypotheses about online pricing behavior, and describes the data used to test our hypotheses. Estimation results are discussed in Section 4, and Section 5 concludes.

2. The Internet and e-commerce in China

e-Commerce requires computers with access to the Internet (i.e., Internet hosts) and Internet users. Given its large size and rapidly developing economy, China has experienced exponential growth in Internet hosts and users. Fig. 1 shows the number of hosts increased from about one million (or, 0.07% of the population) in 1997 to 111 million (or, 8.5% of the population) in 2005.² Growth in the number of Internet hosts has coincided with the rapid development of e-commerce markets. The value of e-commerce transactions increased 66% per annum from 77.2 billion Yuan in 2000 to 355.6 billion Yuan in 2003. Most of these transactions are between businesses. Business-to-business e-commerce accounted for 97% of transactions in 2003 and business-to-consumer accounted for the remainder (China E-Commerce Yearbook Editorial Commission, 2002, 2003; China Internet Network Information Center (CNNIC), 2006).

² China's per capita hosts are relatively low. At 2004, the number of Internet hosts, expressed as a percentage of the population, was 8.1% for Asia, 30.9% for the Americas, 31.1% for Europe and 47.9% for Oceania (International Telecommunication Union, 2006).

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