

Chapter 5

Price Dispersion on the Internet: A Further Review and Discussion

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ABSTRACT

The emergence and explosive growth of e-commerce have ushered in a new era of retail business, which has in turned triggered an increased research interest in studying online pricing behavior. Online retailing promises the potentials of low barrier of entry, easy access of information, and low transactions costs. These features of online retailing imply that the growth of e-commerce has the potential of realizing often stated economic ideals for a truly competitive market: low search costs, fierce price reactions, low margins, and weak market power. Such benefits might provide significant welfare benefits to consumers. Early studies in the literature mainly focused on comparing price levels and price dispersion between offline and online competitors (e.g. Bailey 1998, Brynjolffson & Smith 2000). As online markets become more mature and more data on e-tailing become available, empirical studies have shifted from analyzing cross-sectional data to longitudinally investigating market dynamics in terms of price levels and price dispersions. Since customers can obtain price information in online markets easily and inexpensively, it might be expected that online price dispersion should be small. However, empirical studies have found significant price differences and persistent price dispersions in the Internet markets, for which we are going to review in the following sections.

INTRODUCTION

Pan, Ratchford and Shankar (2004) have extensively reviewed the existing literature on price dispersion research on the fast-growing Internet selling chan-

nel and also provided the profession with excellent insights on future research. However, their paper contains some critical points of misunderstanding on a field of research issues, and, even more importantly, such misunderstanding has been unfortunately widespread in the research community. Therefore, we feel a pressing urgency to clarify

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on these points and try to provide an additional review of other studies which were not included in this paper.

It is quoted in the above review paper (p.122): “Although Brynjolffson and Smith (2000) data contain both multichannel and pure Internet retailers, they did not specify test compare their relative price and dispersion levels. Tang and Xing (2001) compared the pricing behavior of these two types’ retailers in the DVD market, with a data set containing 4,896 price observations for 51 DVD titles sold at six top pure play e-tailers and four top multichannel retailers, during the period of July-August 2000 in Singapore. They found that the multichannel retailers had significantly higher price than pure play e-tailers (14% on average). Moreover, price dispersion among the pure play e-tailers was much smaller (less than half of that among multichannel retailers).” First of all, Tang and Xing (2001) data is on DVD prices in the United States, rather than in Singapore. It is a beautiful example of how Internet has exhibited its global power, since the data in Tang and Xing (2001) paper were collected then by the researchers from Singapore on the United States online DVD market, with all price quotes in US dollar. Second, it was six top pure play e-tailers versus six top multichannel retailers (rather than four). Third, but most importantly, Tang and Xing (2001) studied the price comparison issues between the pure play e-tailers versus the *online branches of multichannel retailer*, not the multichannel retailers in general. Pan et al (2004) are right about the research question of Brynjolffson and Smith (2000), which is the price comparison between the online prices versus *offline* prices of books and CDs, but critically wrong in conception about the research question by Tang and Xing (2001). Brynjolffson and Smith (2000) is a study on *inter-channel* (online versus offline) price comparison, but Tang and Xing (2001) is a study on *intra-channel* price comparison, that is, a comprehensive price comparison between two types of online sellers (the pure play e-tailers

versus the online branches of multichannel retailers, both being online operations selling DVDs on the Internet channel), in terms of absolute and relative price levels and price dispersion levels. Unfortunately, this misunderstanding to treat Tang and Xing (2001) study as a follow-up work to the research question raised by Brynjolffson and Smith (2000) has been widespread, without noting the critical differences between these two studies. The two research questions were fundamentally different. The distinct research question raised by Tang and Xing (2000) on the different pricing behavior patterns of the two different types of online sellers (both solely using the Internet channel) was historically due to the data collection problem. Based then in Singapore, they could only collect data purely on Internet, and accidentally, this exploratory attempt has yielded some surprisingly interesting results. In fact, this research methodology started from a much earlier study by Tang and Ho (2003) who collected data by three online branches of multichannel retailers (BarnesandNoble.com, Borders.com and Wordsworth.com) versus two pure play e-tailers (Amazon.com and Books.com) on 50 titles of books, from February 6 to March 6, 1999 once every two days (thus 3750 price observations). A puzzling price difference pattern similar to Tang and Xing (2001) was discovered (average price of US\$16.07 of online branches of multichannel retailers versus US\$17.22 of pure play e-tailers, or 73% versus 78% in terms of percentage prices), thus they continued to collect price data by five online branches of multichannel retailers versus five pure play e-tailers from April 29 to June 3, 2000 (once every week following the convention in Brynjolffson and Smith 2000), with a total of 2,900 price observations during this second stage (updating only the bestseller titles while keeping the random titles unchanged). The price difference patterns that were discovered in the first stage remained robust in the second stage, in fact, amplified: average price of US\$15.06 versus US\$16.98, or 66.62% versus 75.1% in terms of

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