

Chapter 4

Prices on the Internet

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INTRODUCTION

In the pre-Internet era, consumers relied on media such as Sunday newspapers and flyers for product and price information. Such a search process is time-consuming and unlikely to be exhaustive. Existence of incomplete information has been shown to lead to price dispersion (Stigler, 1961). Recent advances in information technology have dramatically changed the manner by which consumers and businesses gather and transmit information. With a few mouse-clicks, consumers are able to compare price information from a wide range of vendors. With the advent of the Internet, especially the introduction of price comparison sites or shopbots, competition among online retailers escalates and we might expect prices to converge in the new economy. However, substantially decreased transaction cost has apparently not led to online price convergence.

An extensive literature on Internet pricing has documented persistent price dispersion in online markets. In this chapter, I review price dispersion

and related literatures, and discuss future research directions.

BACKGROUND

When e-commerce was initially introduced, retailers selling (often inexpensive) search goods emerged first. The rise of consumer confidence in e-commerce, coupled with the development of information technology, has introduced (usually expensive) experience goods to e-commerce, as indicated by the delayed entrance of luxury goods onto the online marketplace. One direct benefit of e-commerce is cost savings, but it is unclear whether any of these are passed to consumers. One strand of early studies compares prices of matched products sold in both online and brick-and-mortar stores. Most of these studies report lower online prices (see Table 1), indicating the relative efficiency of e-commerce.

Many online shoppers now enjoy enhanced search capability through “Shopbots” such as Bizrate.com. A recent comScore Media Matrix monthly

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Table 1. Empirical studies comparing online and offline sellers⁶

Article	Data Duration	Product Category	Main Findings	
			Price Level	Price Dispersion
Bailey (1998)	1996-1997	Books, CDs, software	Higher online	Higher online
Brynjolfsson and Smith (2000)	Feb 1998 - May 1999	Books, CDs	Lower online	Higher online
Garicano and Kaplan (2001)	1999 – 2000	Used-cars auctions	Higher online	Comparable
Morton et al. (2001)	Jan 1999 - Feb 2000	New cars	Lower online	Higher online
Lee and Gosain (2002)	Feb 1999 - Jan 2000	CDs	Comparable	(much) Lower online
Clay et al. (2002)	April 1999	Books	(current-hits)	Higher online
Brown and Goolsbee (2002)	1992-1997	Life insurance	Comparable	Higher online
Lee et al. (2003)	2000 (Korea)	CDs	Lower online	Lower online
Ancarani and Shankar (2004)	2002 (Italy)	Books and CDs	Lower online	Lower online
Stylianou et al. (2005)	Sept 2002 - April 2003	Over-the-counter pharmaceuticals	Lower online	Near-zero online dispersion
Zettelmeyer et al. (2006)	April - May 2002	New cars	Lower online	
Chellappa et al. (forthcoming)	3 rd quarter 2004	Airfares	Lower online	
Sengupta (2007)	2004	Airfares		
Ghose and Yao (2008)	2000	Hardware tools, office supplies, packaging materials		

analysis reports that more than 35.7 million unique users visited CNET Networks site (i.e., Shopper.com) in November 2007.¹ Search sites such as Google and Yahoo are also useful to savvy online shoppers.² One might expect these search tools to intensify online competition and eventually lead to Bertrand pricing. To date, several studies have documented persistent price dispersion in various product markets (e.g., Brynjolfsson and Smith, 2000; Clemons et al., 2002; Baye et al., 2004). A plausible explanation is that although the Internet eliminates physical barriers, other barriers that lead to incomplete information still exist.

When the “law of one price” fails to hold, price range, percent price range, coefficient of variation, price gap, and value of information are often used as measures of price dispersion. In a given product market, *price range* is defined as the difference between the highest and the lowest price, *percent price range* is the ratio of price range to the lowest price, *coefficient of variation* is the ratio of the standard deviation to the average price, *price gap* is the price difference between the

two lowest-priced firms, and *value of information* is the percentage difference between the average and lowest prices.³

PRICES ON THE INTERNET

The Internet provides an ideal environment for empirical studies of comparative prices.⁴ In this article, I review research on pricing issues concerning e-retailers and shopbots. In general, we may sort e-retailers into two categories: web-based e-retailers (Dotcoms) such as eBay and Amazon, which exclusively conduct their business on the Internet but have no brick-and-mortar presence,⁵ and multi-channel retailers (MCR), such as Best Buy’s online branch, which are extensions of their brick-and-mortar presence. Tables 1 and 2 summarize results of price and price dispersion comparisons between online and brick-and-mortar sellers, and between Dotcoms and MCRs, respectively.

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