Review of Marketing Science

Volume 2 2004 *Article* 6

Buyer Shopping Costs and Retail Pricing: An Indirect Empirical Test

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Abstract

Suppose that consumers incur fixed shopping costs and choose stores according to advertised discounts. Then, the extent to which a store will discount advertised items should increase with the profit from other regularly-priced items. Bookstores customarily advertise discounts on bestsellers. Among conventional bookstores, we found that the bestseller discount systematically increased with the store area, selection of titles, and presence of other product categories. One standard deviation increase in store area was associated with a 3.7 (± 1.8) higher bestseller percentage discount. Among online stores, we found that the bestseller discount systematically increased with the selection of titles and number of product categories. One standard deviation increase in selection was associated with a 9.5 (± 2.2) higher bestseller percentage discount. These results indirectly confirm that booksellers discount bestsellers to attract consumers, and that consumers bear significant fixed shopping costs.

KEYWORDS: shopping costs, pricing, advertising

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1. Introduction

When and how retailers should price in relation to consumer shopping costs has been the subject of considerable theoretical research. Considerations that have been identified include the distinction between "shopping goods" and "impulse goods" (Hess and Gerstner 1987), price advertising as a commitment to attract buyers (Lal and Matutes 1994), differences in buyer loyalties (Simester 1997), the role of *unadvertised* discounts (Rao and Syam 2001), and differences in the buyers' intended basket of purchases (DeGraba 2003). All of these strategies depend on consumers incurring fixed shopping costs.

However, owing to the lack of cost information, there has been relatively little empirical research into retail pricing in the presence of consumer shopping costs (Chevalier et al. 2003). The key finding to date is that fixed shopping costs lead consumers to concentrate their shopping activities and hence invest more in price search when demand is high. Consequently, demand is more elastic and retail prices are lower at times of peak demand, and, overall, the result is counter-cyclical pricing (Warner and Barsky 1995; Chevalier et al. 2003).[1]

Absent cost information, we adopt an indirect approach. We focus on the cross-sectional pattern of prices: What is the relation between the sale of unadvertised items and pricing of advertised items at any particular time? In this paper, we simplify and extend the model of Lal and Matutes (1994) to consider the sale of multiple unadvertised items. Specifically, we consider a setting of monopolistic competition where each consumer incurs a fixed shopping cost. We then model and then test the relation between the selection and availability of *unadvertised* items and the pricing of *advertised* items.

Suppose that consumers choose stores according to advertised discounts. Owing to the fixed shopping cost, the consumer would buy other,

[1] However, from weekly price promotions at two supermarkets, Walters and McKenzie (1988) concluded that advertised items did not affect store profit and had little impact on store traffic.

unadvertised items at the same store, even though they are not discounted, rather than shop elsewhere. From the retailer's viewpoint, the return from discounting advertised items is the profit from unadvertised items. In turn, the profit from unadvertised items depends on the selection and availability of such items, which we call "store scope". Accordingly, the extent of advertised discounts should increase with store scope.

We tested this hypothesis in the contexts of both conventional and online bookstores. Bookstores customarily advertise discounts on bestsellers. For conventional stores, we measured store scope by the area of the store, selection of titles, and presence of other product categories such as music and videos. With all three measures, we found strong support for the hypothesis that the extent of discounts on advertised prices increased with store scope.

For online stores, we measured store scope by the selection of titles and number of other product categories. We found strong support for the hypothesis with store scope measured by selection of titles and marginal support with scope measured by the number of other product categories.

We conclude that the empirical evidence from book retailing supports the hypothesis that booksellers discount bestsellers to attract customers. Since this policy only makes sense in the presence of substantial fixed shopping costs, the evidence indirectly confirms that such fixed shopping costs are significant among consumers who buy books.

2. Model

Consider a retailer selling one advertised item and a selection s of other, unadvertised items under conditions of monopolistic competition. All consumers are identical and have demand for at most one unit *each* of the $[1+s]$ items. For simplicity, each consumer's reservation value for every one of the items is v. Each consumer incurs a cost $t \in [0, t']$ to visit the retailer,

where the cost t is uniformly distributed. Each consumer has the same reservation utility, u.

The sequence of decisions is that the retailer first chooses the selection s to offer, then, given s, sets prices. Following Hess and Gerstner (1988) and Lal and Matutes (1994), we suppose that the retailer sets price $p < v$ for the advertised item and prices the other s unadvertised items at the consumer's reservation value v. Let $Q(p)$ represent the number of consumers at price p. Further, let the retailer incur a fixed cost F of retailing and a constant marginal cost c for all items.

Given the retailer's strategy, a consumer's utility is

$$[v - p] + [v - v]s - t = [v - p] - t. \quad (1)$$

The marginal consumer is that whose utility just equals the reservation utility,

$$[v - p] - t = u. \quad (2)$$

Since consumers are uniformly distributed on $[0, t']$, the demand arises from those consumers with travel costs less than or equal to that of the marginal consumer, hence,

$$Q(p) = \frac{t}{t'} = \frac{v - p - u}{t'}. \quad (3)$$

At the pricing stage, the retailer's profit is

$$\Pi = [p + vs]\ Q(p) - [1 + s]\ cQ(p) - F. \quad (4)$$

Substituting from (3) in (4), the retailer's profit becomes

$$\Pi = [p + vs - c - cs]\ \frac{v - p - u}{t'} - F. \quad (5)$$

Differentiating with respect to p, the first-order condition is

$$[p + vs - c - cs]\left[\frac{-1}{t'}\right] + \frac{v - p - u}{t'} = 0, \quad (6)$$

or

$$p = \frac{1}{2}[v + c - [v - c]s - u], \quad (7)$$

which characterizes the price, $p(s)$.

Condition (7) is the textbook profit-maximization condition under conditions of monopolist competition with the adjustment

$$-[v-c]s \qquad (8)$$

for the impact of the advertised item on the profit from selling the other items. If s is higher, this adjustment factor will be more negative, and hence, by (7), the profit-maximizing price p will be *lower*. Describing s as the "store scope", we have our central theoretical proposition – that the price of the advertised item decreases with store scope.

Although we do not explicitly model the effect of retailer competition, we can address this indirectly. Competition in retailing would raise the consumer's reservation utility, u, and hence, by (7), lead the retailer to reduce price.

Note that the advertised and unadvertised items are not inherently complements in the consumers' preferences. The *apparent* complementarity in the consumer demand for the advertised and unadvertised items arises from the fixed shopping cost, t (Lal and Matutes 1994; Rao and Syam 2001). Once a consumer has incurred the shopping cost to visit a particular store, she would rather purchase other items from the same store than incur the cost again to visit another store.[2]

3. Hypotheses and Data

We tested our theoretical propositions in the context of book retailing. Our model was based on the premise that pricing is a short-run decision, while store scope is a longer-term issue, and hence the retailer sets prices taking store scope as given. In the book industry, it does apparently take substantially longer to adjust store scope than prices: "The Company is

[2] The fixed shopping cost reinforces any inherent complementarity that may exist among the products in the store (Chib et al. 2002).

continuing to execute a strategy to maximize returns from its B. Dalton stores in response to declining sales attributable primarily to superstore competition. Part of the Company's strategy has been to close underperforming stores as leases come up for renewal" (Barnes & Noble, Inc., *Annual Report 2002*, page 12).

Books differ from many other consumer products in that they are marked with a list price at the point of manufacture. Bookstores set prices not in absolute dollar terms, but rather in terms of discounts from list price. In common with other retailers, bookstores engage in a variety of pricing strategies, including loyalty programs, coupons, and clearance sales.

Bookstores stand out from other retailers in one respect. They systematically charge lower prices for their most popular items. Specifically, bookstores offer larger discounts on current bestsellers than titles not on the bestseller list. For instance, Barnes & Noble sets a 30% discount on all hardcover and paperback titles on its bestseller list, 20% discount on selected featured titles, and no discount on most other titles (Barnes & Noble Inc., *Annual Report 2002*, page 8).

On first impression, it seems odd for a bookstore to offer larger discounts for bestsellers than other titles. Since bestsellers are in the hottest demand, bookstores should be able to extract relatively higher margins. In conventional microeconomic models of both perfect competition and monopoly, when demand is higher, the price will be higher.[3] One possible rationalization is that bookstores use bestsellers to draw customers. Steve Riggio, then Vice Chairman of Barnes & Noble.com, once remarked: "best sellers, which make up only 3% of sales, have long been treated as loss leaders".[4] [5]

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[3] The practice of discounting bestsellers also contradicts the general retail policy of managing uncertain demand by setting a high initial price and marking down if demand turns out to be low (Lazear 1986; Pashigian and Bowen 1991; and Png 1991).

[4] "Web Booksellers Give Potter Fans Rush Delivery", *Wall Street Journal*, June 22, 2000.

[5] In the DVD market, retailers systematically discount bestsellers more heavily than other titles (Tang and Xing 2000, Table 4-2).

We engaged surveyors to report the pricing of eight titles and store attributes at bookstores in four areas – around two East and West Coast university campuses – during the week of August 3, 2003. We asked each surveyor to survey any ten bookstores in their area. After eliminating duplicate outlets of chain stores, we had 22 unique stores.

The eight titles consisted of four bestsellers and four non-bestsellers. The four bestsellers comprised the top two titles in the Sunday, August 3, 2003 *New York Times* hardcover fiction and paperback fiction bestseller lists. To represent titles that were not bestsellers, the other four titles consisted of the top two titles in the same headings one year earlier (the week of August 4, 2002), excluding those titles that were among the August 3, 2003 bestsellers.

The surveyor recorded the discount from the publisher's recommended list price. In the case of a conventional bookstore, the extent to which a customer attracted by an advertised item might buy other unadvertised items depends on the store scope – the availability and selection of the other items. Hence, appropriate measures of store scope would be store area and selection of titles, and also the presence of other product categories. The surveyors recorded, for each store, the estimated store area (Area), the number of titles in stock (Selection), and the presence of other product categories (Other_Cat).

Table 1 reports descriptive statistics of the sample. The discount rates ranged from 0% to 42% with a mean of 9.4% (±13.4%).[6] The average store area was 8,577 square feet (±12,330 square feet) and the average selection of titles was 114,023 (±181,770).[7] The surveyors also recorded whether the store

[6] Numbers in parentheses are the respective standard deviations.

[7] For the chain stores – Barnes & Noble, B. Dalton (which belongs to Barnes & Noble, Inc.), Borders, and Waldenbooks (which belongs to Borders, Inc.), we used the average of the discounts observed by our surveyors over the outlets of the chain surveyed, and the chain-wide average store area and title stock, as reported in the respective 2002 corporate annual reports.

had a visible competitor (Competitor), and whether the store was located in a shopping mall (Mall). Mall stores benefit from the presence of anchor stores and may price differently from stand-alone stores that must draw their own traffic (Pashigian and Gould 1998).

During the same week of August 3, 2003, we visited 11 online bookstores to record the pricing of the same eight titles, and various retailer attributes. These stores were identified from Clay et al.'s (2001) list of "wide selection" online booksellers and after eliminating stores that had ceased operations. In the case of an online bookstore, store scope could be measured by the selection of titles and the number of other product categories, such as music and videos.

Absent direct information on the online stores' selection of titles, we built an index using the following procedure. First, we constructed a random sample of book titles by randomly generating 10 digit numbers in ISBN (International Standard Book Number) format, and then discarding those were not listed by bookfind-online.com as representing an actual title. We repeated the procedure until we had accumulated 1000 titles. Next, for each online store, we checked the availability of these titles to derive its selection of titles (Selection_Total), as measured as out of 1000. We also constructed a narrower index of titles available for delivery within five working days (Selection_Onhand).

Table 2 reports descriptive statistics of the sample. The average discount rate among the online stores was 17.6% (±15.1%), which was higher than that among the conventional stores. On the broader measure, Selection_Total, the average selection of titles was 322.7 (±264.4), while on the narrower measure, Selection_Onhand, the average selection was 208.6 (±224.0).[8] We also recorded whether the online store was related to a

[8] Data on page views from Trafficranking.com provided independent validation of our selection measures: the correlation between Selection_Total and page views per visit was 0.739, while the correlation between Selection_Onhand and page views per visit was 0.940.

conventional store, as previous research into the retail pricing of DVDs showed that online affiliates of conventional stores price higher than pure online stores (Tang and Xing 2001).

Accordingly, we operationalized our key theoretical proposition as follows.

Hypothesis 1. Among conventional stores, the discount on bestsellers is increasing in

(i) the area of the store,
(ii) the selection of titles, and
(iii) the presence of other product categories.

Hypothesis 2. Among online stores, the discount on bestsellers is increasing in

(i) the selection of titles, and
(ii) the number of product categories.

4. Empirical Results

We tested the hypotheses using least-squares regression with White's (1980) adjustment of standard errors and covariance for heteroskedasticity. In all regressions, the dependent variable was the discount from the list price and the explanatory variables included indicators for hardcover titles (Hardcover) and bestsellers (Bestseller) to reflect industry pricing practices. Generally, the pricing of hardcover titles differs from paperbacks, and bestsellers are subject to discount.

For conventional stores, besides the variable to operationalize the empirical test, we also included the store area (Area) and presence of other product categories (Other_Cat) as explanatory variables to capture economies of scale and scope respectively.

Table 3 reports the results. Referring to column (a), the coefficient of Hardcover was positive and significant. The coefficient of store area was negative and significant, which is not consistent with economies of scale. The coefficient of the presence of other product categories was positive and significant, which is consistent with economies of scope.

Regarding Hypothesis 1, the coefficient of the compound variable, Bestseller*Area, was positive and significant. Consistent with Hypothesis 1(i) that the discount on bestsellers increases with store scope, *larger* stores systematically offered *bigger* discounts on bestsellers. Specifically, a store that was larger by one standard deviation offered a 3.7 (±1.8) higher bestseller percentage discount. This seems very reasonable relative to the mean 9.4% (±13.4) percentage discount in our sample.

An alternative measure of store scope is the selection of titles (Selection). However, we were able to collect data on selection for relatively few stores.[9] Table 3, column (b), reports the regression with store scope measured by the selection of titles. The results were quite similar to those with store scope measured by store area. While the coefficient of Selection itself was negative but not significant, the coefficient of the compound variable, Bestseller*Selection, was positive and significant, which was consistent with Hypothesis 1(ii). A store with a one standard deviation larger selection offered a 18.3 (±9.7) higher bestseller percentage discount.

Yet another measure of store scope is whether the store also retailed other product categories. Table 3, column (c), reports the regression with store scope measured by the presence of other product categories. The results were quite similar to those with store scope measured by store area. While the coefficient of Other_Cat itself was positive but not significant, the coefficient

[9] The selection of titles increases with store area. In a regression of the logarithm of title selection on the logarithm of store area, the coefficient of the logarithm of store area was 0.5039 (correlation coefficient 0.695), which suggests that the title selection increased *less than proportionately* with store area. These results suggest that stores use larger area to increase both the array of titles and the quantity of each title.

of the compound variable, Bestseller*Other_Cat, was positive and significant, which was consistent with Hypothesis 1(iii). A store that carried other categories offered a 10.3 (±3.4) higher bestseller percentage discount.

There are several other possible reasons why bookstores discount bestsellers but not other titles, the most obvious of which is competitive factors. Table 3, column (d), reports a regression with additional variables to gauge the impact of store-level competition and complementarity on pricing in general and bestseller discounts. The coefficient of Competitor was positive (8.67) and significant. However, the coefficient of Bestseller*Competitor was negative (-1.04) and not significant. This implies that, in the presence of nearby competition, bookstores offer larger discounts on *all* titles, and not just on bestsellers. The coefficients of Mall and Bestseller*Mall were both insignificant, which suggests that the pricing policies of bookstores located in malls are no different from free-standing stores.

We also tested the impact of store-level competition in another way. It is reasonable to believe that stores in university campuses or airports have some degree of market power. We marked all such stores with the indicator variable, "Monopoly". Table 3, column (e), reports the results. The coefficient of Monopoly was negative (-4.28) but not significant. The coefficient of Bestseller*Monopoly was positive (6.80) and marginally significant. The evidence suggests that bookstores with monopoly power offer *larger* bestseller discounts than other stores. We infer that competitive factors are not a significant explanation of why bookstores discount bestsellers.

The other possible explanations of why retailers discount bestsellers but not other titles relate to cost differences.

- Wholesale cost differences. However, differences in wholesale costs between bestsellers and other titles can account for only a part of the difference in retail discounts between bestsellers and other titles (Clay et al.

2001, Table I).[10] Further, wholesale cost differences would not explain why the depth of the bestseller discount increased with the store area, selection of titles, or presence of other categories.

- Volume discounts. Larger bookstores benefit relatively more from volume discounts. To the extent that the sales volume of bestsellers is correlated with store area, then the discount on bestsellers should increase with store area and selection. However, if bookstores with larger area benefited from volume discounts, these should be reflected in the pricing of *all* titles, not just bestsellers. In our regression, the coefficient of store area was negative. Further, volume discounts would not explain why the depth of the bestseller discount increased with the selection of titles or presence of other categories. Moreover, this explanation is not consistent with the pricing strategies of the Barnes & Noble and Borders groups. The cost of books should be the same for all stores in a group. However, within each group, the large-format stores (Barnes & Noble and Borders) offered deeper and wider bestseller discounts than their smaller-format affiliates (B. Dalton and Waldenbooks respectively).
- Overhead costs. Yet another cost-related explanation relates to overhead costs. Suppose that larger stores incur disproportionately higher overhead costs. Then, in equilibrium, they will set lower discounts overall, but, suppose that, for competitive or other reasons, must match the competition on bestsellers. Indeed, as Table 3 column (a) reports, the coefficient of Area was negative and significant, suggesting that larger stores set lower discounts overall. This result, however, was not robust to alternative specifications of store scope. As reported in Table 3 columns (b) and (c), when store scope was measured by selection of titles or presence of other product categories, the coefficient of Area was not significant.

[10] This was further substantiated by an industry source. Publishers and wholesalers set prices to retailers in terms of a discount from the recommended price. The difference in wholesale discount between bestsellers and other titles ranges from 15-30%. By contrast, in our sample, the difference in retail discount between bestsellers and other titles was, on average, 8.9%.

We also investigated whether pricing differed systematically *within* the bestseller list. "Topseller" identifies the top title in the respective bestseller list – paper or hardcover fiction. As reported in Table 3, column (f), the coefficient of the additional variable, Topseller*Area, was not significant. However, the addition of this variable caused the variable, Bestseller*Area, to become insignificant. This suggests that there is no systematic difference in pricing between the top two titles on the bestseller list.

Finally, we tested Hypothesis 2 for online stores. As reported in Table 4, the results were similar to those for conventional stores. Column (a) reports the regression with the store scope measured by the selection of titles. The coefficient of Hardcover was positive and significant, showing that online booksellers followed industry practice of discounting hard cover titles. The coefficient of Selection_Total was negative and significant, which suggested that larger stores exercised some degree of market power. The coefficient of Categories was positive and significant, suggesting that the presence of significant scope economies.

The coefficient of the compound variable, Bestseller*Selection_Total was positive and significant. Consistent with Hypothesis 2(i) that the extent of advertised item pricing increases with the store scope, stores with a *broader* selection of titles systematically offered *bigger* discounts on bestsellers. A store with one standard deviation larger total selection offered a 9.7 (±2.2) higher bestseller percentage discount.[11]

Table 4, column (b) reports the regression with store scope measured by the selection of titles deliverable within five days. The results were very close to those with store scope measured by the total selection of titles. In particular, the coefficient of the compound variable, Bestseller*Selection_Onhand was positive and significant, which was

[11] There were only 87 observations, as one online bookstore did not carry one of the titles.

consistent with Hypothesis 2(i). A store with one standard deviation larger selection on hand offered a 6.5 (±2.1) higher bestseller percentage discount.

Using data from Trafficranking.com, we found a high degree of correlation between page views per visit and our selection measures: the correlation with Selection_Total was 0.739, while that with Selection_Onhand was 0.940. The number of pages a customer views during each visit directly measures browsing and the extent to which they might buy regular-priced items.

Table 4, column (c) reports the regression with store scope measured by the number of product categories (Categories). The results were similar to those with store scope measured by the selection of titles. The coefficient of the compound variable, Bestseller*Categories was positive and significant, which was consistent with Hypothesis 2(ii). A store with one standard deviation more product categories offered a 3.9 (±2.2) higher bestseller percentage discount.

Table 4, column (d) reports the regression with an indicator variable, Conventional_Affiliates. The coefficient was negative, suggesting that online affiliates of conventional stores did indeed offer lower discounts than pure online stores, which is consistent with the previous research into DVD retailing (Tang and Xing 2001). However, the coefficient was quite small (-0.2162) and not significant. Two possible explanations are that the pricing strategies of conventional stores' online affiliates and pure online stores have converged since the dot.com boom, and that the pricing of books differs from that of DVDs.

6. Concluding Remarks

The empirical evidence from conventional and online book retailing supports our principal hypothesis – that booksellers discount bestsellers to attract

customers. Since this policy only makes sense in the presence of substantial fixed shopping costs, the evidence indirectly confirms that such fixed shopping costs are significant, at least among buyers of books.

Our analysis was based on a simplified version of the Lal and Matutes (1994) model. In that model, the competing retailers advertise and discount the same item, while *not* advertising and *not* discounting another item. A trend in conventional book retailing has been for retailers to switch from discounting a common bestseller list (the *New York Times*) to their individual bestseller lists. Also, we have observed that at least one chain store – Borders – discounts both its chain-wide bestseller list as well as a store-level "manager's list". Rao and Syam (2001) analyze when competing retailers would discount both advertised and unadvertised items. Future empirical work should investigate the role of unadvertised discounts in the presence of consumer shopping costs.

Besides store-level attributes, the effectiveness of discounting advertised items to draw customers also depends on level of the consumer shopping costs. If a consumer could easily switch from one store to another, then she could buy a cheap bestseller at one and then travel elsewhere to buy other items. In that case, she would not be locked in to the store offering the advertised item. An intriguing direction for future work is to compare the extent to which advertised items are discounted in online and conventional channels. If buyer switching costs are lower in online channels, then the discounts on advertised items should also be relatively lower. The challenge would be to construct a measure of store scope that can be applied to both channels.

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Table 1: Conventional Bookstores

Variable	Unit	Min	Mean	Max	Std deviation
Discount*	Percent	0	9.40	42.00	13.40
Hardcover	Indicator	0	0.5	1	0.50
Bestseller	Indicator	0	0.5	1	0.50
Area#	'000 sq. feet	0.30	8.58	45	12.33
Selection#	'000	10.00	114.02	700.00	181.77
Mall	Indicator	0	0.19	1	0.39
Competitor	Indicator	0	0.11	1	0.31
Other_Cat	Indicator	0	0.59	1	0.49
Monopoly	Indicator	0	0.27	1	0.45
Topseller	Indicator	0	0.25	1	0.43

* For the chain stores – Barnes & Noble, B. Dalton (which belongs to Barnes & Noble, Inc.), Borders, and Waldenbooks (which belongs to Borders, Inc.), the discounts were the average of the discounts observed by our surveyors over the outlets of the chain surveyed.

For the chain stores, we used the chain-wide average store area and title selection, as reported in the respective 2002 corporate annual reports. For other stores, the store area and title selection were as reported by our surveyors.

Table 2: Online Bookstores

Variable	Unit	Min	Mean	Max	Std deviation
Discount	Percent	0	17.60	46.00	15.13
Hardcover	Indicator	0	0.5	1	0.5
Bestseller	Indicator	0	0.5	1	0.5
Selection_Total	Of 1000	65	322.7	846	264.4
Selection_Onhand	Of 1000	30	208.6	688	224.0
Categories		1	6.36	31	8.86

Table 3: Conventional Store Discounts

	(a)	(b)	(c)
Constant	-2.8618*	-1.4865	-1.2116
	(1.6408)	(2.4326)	(1.8812)
Hardcover	14.1652***	14.0130***	13.3361***
	(1.9310)	(2.1804)	(1.7591)
Bestseller	4.0562*	0.7440	1.5546
	(2.1746)	(3.4821)	(2.3498)
Area	-0.2674**	-0.0860	-0.0000
	(0.0901)	(0.2021)	(0.0000)
Selection	-	-0.0580	-
		(0.0611)	
Other_Cat	7.5301***	7.9177***	1.6132
	(1.7021)	(2.4912)	(2.3824)
Bestseller*Area	0.2968**	-	-
	(0.1448)		
Bestseller* Selection	-	0.1008**	-
		(0.0532)	
Bestseller* Other_Cat	-	-	10.2677***
			(3.3824)
Competitor	-	-	-
Bestseller* Competitor	-	-	-
Mall	-	-	-
Bestseller*Mall	-	-	-
Monopoly	-	-	-
Bestseller* Monopoly	-	-	-
Topseller*Area	-	-	-
No. of observations	128	80	128
Adjusted R^2	0.4396	0.4293	0.4606
F-statistic	20.9241	10.9029	22.6926

Standard errors in parentheses
* Significant at the 90% level
** Significant at the 95% level
*** Significant at the 99% level

Table 3: Conventional Store Discounts, cont'd

	(d)	(e)	(f)
Constant	-6.8000*** (1.8153)	-2.7007 (1.7383)	-2.8618* (1.6408)
Hardcover	13.7456*** (1.7290)	13.9515*** (1.7629)	14.1680*** (1.7834)
Bestseller	8.2141*** (1.9791)	2.1179 (2.3621)	4.0531* (2.1833)
Area	-0.0288 (0.0857)	-0.2302*** (0.0837)	-0.2674** (0.0905)
Selection	-	-	-
Other_Cat	7.0538*** (1.5695)	7.4818*** (1.7692)	7.5276*** (1.7088)
Bestseller*Area	-	0.2882** (0.1406)	0.2582 (0.1728)
Bestseller* Selection	-	-	-
Bestseller* Other_Cat	-	-	-
Competitor	8.6663** (4.0973)	6.5860* (3.6218)	-
Bestseller* Competitor	-1.0437 (5.3017)	1.2665 (4.9626)	-
Mall	4.0226 (3.2092)	-	-
Bestseller*Mall	-4.3716 (4.3574)	-	-
Monopoly	-	-4.2680 (2.7149)	-
Bestseller* Monopoly	-	6.7983* (3.8504)	-
Topseller*Area	-	-	0.0774 (0.1856)
No. of observations	128	128	128
Adjusted R^2	0.4494	0.4722	0.4363
F-statistic	13.9557	13.6270	17.3796

Table 4: Online Store Discounts

	(a)	(b)	(c)	(d)
Constant	10.9894*** (3.0984)	7.7064*** (2.6851)	6.6125** (2.7964)	11.0629*** (3.5324)
Hardcover	9.8889*** (2.5863)	9.8410*** (2.6919)	9.8317*** (2.7477)	9.8867*** (2.5971)
Bestseller	-2.6096 (4.4380)	3.0363 (3.7954)	6.3192* (3.2662)	-2.6050 (4.4594)
Selection_Total	-0.0207*** (0.00641)	-	-0.00269 (0.00568)	-0.0205*** (0.00762)
Selection_Onhand	-	-0.0160** (0.00785)	-	-
Categories	0.5888*** (0.1341)	0.5734*** (0.1549)	0.3674* (0.2150)	0.5803*** (0.2108)
Bestseller *Selection_Total	0.0367*** (0.00835)	-	-	0.0362*** (0.00840)
Bestseller *Selection_Onhand	-	0.0291*** (0.00937)	-	-
Bestseller*Categories	-	-	0.4406* (0.2492)	-
Conventional _Affiliate	-	-	-	-0.2162 (3.8788)
No. of observations	87	87	87	87
Adjusted R^2	0.3636	0.3100	0.2834	0.3557
F-statistic	10.8286	8.7282	7.8037	8.9135

Standard errors in parentheses
* Significant at the 90% level
** Significant at the 95% level
*** Significant at the 99% level