Slotting Fees for Organic Retail Products: Evidence from a Survey of U.S. Food Retailers

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Introduction

Since their inception in 1984[1], slotting fees have been a topic of some controversy. Slotting fees are payments that are made by manufacturers (suppliers) to retailers in order to ensure shelf space for their products. In addition to the grocery industry, slotting fees have also been found in bookstores, drug stores, and record stores (Foros, Kind, and Sand 2009). The Federal Trade Commission (FTC) notes that a distinction can be made between shelf-space fees paid for new products versus fees paid for continuing products, but claims that pay-to-stay fees for continuing products are very rare (FTC 2003). In its 2003 study based on interviews and data from seven retailers, the FTC (2003) finds that frequency of slotting fees ranges from 50 percent to 90 percent of all new grocery product introductions. Israilevich (2004) reports that 85 percent of retailers use slotting fees. Despite this documented prevalence, however, empirical analyses of slotting fees are somewhat rare, and the results are mixed. The rarity of empirical results may be caused by the proprietary nature of information and the potential for controversy. The mixed results may arise from an important disagreement over the underlying rationale for slotting fees. As the FTC (2003) explains, researchers disagree on whether or not slotting fees are consistent with competitive behavior by aiding the efficient allocation of shelf space, or if instead they are anticompetitive.

Because slotting fees are almost always targeting new products, the fast growing organic food sector would seem a likely candidate for slotting fees. According to the U.S. Department of Agriculture's Economic Research Service (USDA/ERS 2007), the number of new organic products introduced in one year increased from 290 in 1997 to 1,107 in 2007, with beverages, prepared foods, and snacks leading the organic product introductions in 2007. While no

[1] Sullivan (1997) presents some documentation for the 1984 date for the introduction of slotting fees.

empirical research yet exists that investigates slotting fees in the organic sector, several news sources briefly mention this topic. Some news sources associate organic products with a lack of slotting fees, while others do not. For example, Kowitt (2010) states that Trader Joe's, a retailer that carries organic products, does not charge slotting fees. Similarly, Davis (2008) reports that the New York-based retailer Fairway Market carries organic products but does not charge slotting fees. The trade publication Progressive Grocer (2008) reports that slotting fees are less prevalent with "natural" retailers. On the other hand, other news sources discuss slotting fees in relation to organic products. For example, Webb Pressler (2004) notes slotting fees associated with the brand, Honest Tea, a manufacturer of organic tea. Similarly, Peters (2005) discusses slotting fees in association with organic retail products in general.

The purpose of this paper is to investigate the prevalence of slotting fees in organic packaged and prepared products, and identify the factors that influence the relative size of slotting fees. Based on a 2009 survey of U.S. food retailers, we find that 31 percent of surveyed retailers accept slotting fees for organic packaged and prepared products. We find also find that the magnitude of slotting fees for organic products, relative to their non-organic counterparts, depends on a number of retailer characteristics, including among others the number of stores in the retailer's chain, a retailer's total sales, and the size of its organic marketing budget. The remainder of this paper discusses the survey methodology and results, the econometric tools used to analyze the survey data and the econometric results. First, however, we provide some background discussion on potential rationales for slotting fees and how these rationales may or may not pertain to the organic sector.

Economic Rationale for Slotting Fees' Presence and Size

Previous research on slotting fees addresses two main issues: First, it addresses the economic purpose of slotting fees and their theoretical rationale; and second, it empirically investigates how characteristics of a retailer, its stores, its suppliers and its products affect the existence and magnitude of slotting fees. To our knowledge, there is no academic literature that specifically discusses slotting fees as they pertain specifically to organic retailers.

The theoretical rationale for slotting fees can be divided into two schools of thought. Bloom, Gundlach and Cannon (2000), the FTC (2003), and Foros, Kind and Sand (2009) provide summaries of the two rationales. On one hand, slotting fees are thought to promote efficiency by signaling or screening the risks and rewards associated with new products, thereby leading to more efficient shelf space allocation (see, for example, Sudhir and Rao, 2006). One of the earliest papers in this group, Sullivan (1997) argues that slotting fees are part of competitive behavior and occur when there is an increase in the supply of a product but not a corresponding increase in the sales. She develops a model where slotting fees equate retail demand for products with the manufacturer supply of products, and supports her conclusions by qualitative data. Devuyst (2005, p. 14) develops a model showing that properly designed slotting fees "induce manufacturers to reveal product demand distribution information and either to propose or not propose new products" in a way that solves adverse selection problems. The efficiency rationale suggests that slotting fees can be welfare enhancing. An example of this rationale is Norwood (2006), who argues that slotting fees are a mechanism to curb an excessive variety of products that could actually decrease a consumer's welfare.

One the other hand, Shaffer (2005), Foros and Kind (2008), and Bloom, Gundlach and Cannon (2000) suggest ways in which slotting fees are a manifestation of retailer market power

or some other anticompetitive practice. One possibility is that slotting fees are used as a means of retailer-based non-linear pricing and price discrimination (Cannon and Bloom 1991). Alternatively, it is possible that slotting fees are compensation for higher wholesale prices and "soft competition" among manufacturers (FTC 2003). The FTC (2003) also suggests that slotting fees can exclude small manufacturers from accessing retail shelf space.

Regarding the magnitude of slotting fees, Rao and Mahi (2003, p. 250) argue that slotting fees are higher when a retailer is uncertain about the performance of the new product, when the retailer is uncertain about whether or not the manufacturer "will fulfill post-launch support commitments." They also argue that slotting fees compensate retailers for the costs of launching a new product, which implies when the retailer's operating costs are high slotting fees tend to be higher. The FTC (2003) states that slotting fees are higher when the difficulty or cost of introducing a new product is higher. For example, slotting fees are expected to be higher for frozen and refrigerated products because, for these products, "more limited and more costly" (FTC 2003, page 53). Items that do not require freezing or refrigeration and items that are distributed through direct store delivery should have lower slotting fees.

Translating the economic rationales for slotting fees into similar rationales for slotting fee magnitudes can yield mixed predictions. Kuksov and Pazgal (2007) argue that retail competition, bargaining power, larger retailer fixed costs, retailer market share, operating costs, location, retailer size and lower marginal costs of retailing have a positive impact on slotting allowances. Conversely, Foros and Kind (2008) argue that retailer size, in fact, has a negative impact on slotting allowances. Marx and Shaffer (2010) argue that slotting fees are related to a retailer's bargaining power in a fairly complicated fashion. For example, a retailer with high bargaining power has no need for slotting fees to get more money from suppliers. Marx and Shaffer (2010,

p. 600) also state that “conditional on receiving slotting allowances...retailers with low bargaining power vis-a-vis their suppliers will tend to negotiate roughly the same level of slotting allowances as retailers with high bargaining power, whereas retailers with moderate bargaining power will be able to negotiate the highest slotting allowances.”

Given competing rationales and implications for slotting fees, an empirical analysis of slotting fees can hardly be expected to resolve questions of why slotting fees may or not be present, and why they may be large or small. However, the empirical analyses mentioned above do provide insight into retailer and manufacturer behavior. In this paper, we review previous research in an attempt to link economic rationales with empirical predictions on slotting-fee behavior by U.S. food retailers concerning organic product offerings. In Table 1, we summarize the many economic rationales and their logical implications for slotting, and finally pose several conditional hypotheses about organic product slotting fees.

The first column in Table 1 lists the economic rationales posed by previous literature, classifying the rationales into two general types, efficient allocation of shelf space, and strategic use of market power. For each of these general rationales, the literature suggests specific reasons for slotting fees:

(A.1) Signaling or screening for new product success. This reason would suggest that retailers with little information on and limited ability to research a new product’s potential success would need to charge higher slotting fees to compensate for this information disadvantage. In this way, slotting fees can be thought of as the cost of screening.

(A.2) Solving the moral hazard problem of weak post-launch efforts by manufacturers. Manufacturers may convince retailers that a new product introduction will be supported with strong marketing support. However, a moral hazard problem exists if the manufacturer fails to

follow through. Following this logic, slotting fees compensate retailers for potentially weak post-launch efforts by the manufacturer. Retailers with limited ability to prevent this behavior would be expected to charge higher slotting fees.

(A.3) Covering high operating, inventory, or shelving costs. This reason suggests that new products that require higher with shelving costs would generate higher slotting fees. To the extent that retailers have heterogeneous inventory and shelving costs, it also suggests that retailers with higher costs will charge higher slotting fees.

(B.4) Rationing shelf-space strategically. Like the screening/signaling rationale in (A.1), this reason suggests that manufacturers with more information and more confidence in their new product's success will pay higher slotting fees. However, unlike (A.1), Marx and Shaffer (2010) suggest that retailers might act strategically to limit their shelf space, thereby creating more intense competition among manufacturers for shelf space. More intense completion leads to higher slotting fees. In this case, strategic behavior to limit or ration shelf space, and the potentially higher slotting fees associated with it, can be an anticompetitive practice.

(B.5) Rent seeking by non-linear price discrimination. This reason can seem like a straight forward use of market powers. Retailers with higher bargaining power relative to manufacturers can use slotting fees as part of a two-part pricing scheme. Retailers with more bargaining power can charge higher slotting fees. However, there is a second line of thinking that extends this logic further and generates a potentially opposite conclusion. Retailers with extreme bargaining power relative to manufacturers, the reasoning goes would have little need for two-part pricing. These powerful retailers would simply extract more rent by forcing concessions from the wholesale price.

The second, third, and fourth columns in Table 1 represent the authors' attempt to extrapolate from these five rationales to slotting-fee behavior in organic products. For example, food retailers have varying levels of experience marketing organic products. Those with a lot of experience may have an easier time screening for a new organic product's success. Therefore, it would be a logical extension of reason A.1 to hypothesize that retailers with more years of experience marketing organic products would have less need for slotting fees if they in fact compensate for screening costs. The same logic might apply to for retailers that carry more organic items. Another example relates to rationale A.2, solving a moral hazard associated with product launches. Retailers with a severe moral hazard problem might be forced to budget more own funds to support organic marketing efforts. Hence, rationale A.2 could be extended to hypothesize that retailers with higher organic marketing budgets will charge higher slotting fees. In Table 1, we list and explain a wide number of firm-level factors that both potentially impact slotting fees and are consistent with at least one of the five economic rationales listed in the first column.

While we will revisit these hypothesized factors in the econometric modeling section of this paper, a few additional notes will help clarify the Table 1. First, some of the potential factors identified in Table 1 are not unique to the organic sector, while others are. For example, because of decreasing returns across all operations, not just organic, the number of stores owned or controlled by a retailer is thought to potentially decrease operating costs and possibly lead to lower slotting fees. One the other hand, a retailer's cumulative years of experience marketing organic products, which could decrease product search costs in the organic sector, are naturally specific to the organic sector.

Second, several potential factors for organic slotting fees appear linked to more than one economic rationale category. Moreover, when a factor does appear in multiple categories, it is possible for the potential impact to be positive in one case, and negative in another. An example of this is the number of stores owned by a retailer. On one hand, this factor could proxy lower operating costs (due to scale efficiencies). According to the efficiency rationale, lower costs should be associated with lower slotting fees. Alternatively, the number of stores could proxy retailer power and the ability to price discriminate among manufactures. With this rationale, more stores could be associated with higher slotting fees. Because this and other examples lead to conflicting predictions, any empirical result must be interpreted carefully.

A Survey of U.S. Food Retailers About Organic Practices

Because slotting fees are not generally disclosed, most empirical studies rely on surveys of retailers or manufacturers. This study relies on a survey administered in 2009 aimed at organic marketing and procurement by U.S. retailers. Two of this study's co-authors developed a 45-question survey that asks food retailers questions about 2008 practices. Target survey respondents were presidents or managers of companies with food retail stores; however, only those stores selling certified organic food products were asked to fill out the survey. The survey population was developed using two sources: (1) approximately 700 food retailers listed in the Marketing Guidebook, which covers most of the food retailing industry (published by Trade Dimensions/Nielsen and later acquired by Stagnito Media) and (2) a list of approximately 200 cooperative grocery stores provided by the National Cooperative Grocers Association (http://www.cooperativegrocer.coop/index.html). The survey was mailed to this population of food retailers throughout the United States. A Web-based version of the survey was made

available as well. Individuals could choose to respond to the survey by filling out the paper survey or by completing it on the Web.

A four-contact mailing was implemented in the study: a pre-notification letter, a first mailing of the survey, a reminder postcard, and a final mailing of the survey. Based on the initial contact update, 896 retailers were sent a survey packet. As an incentive to complete the survey, a $5 bill was included in the packet. In both the pre-notification letter and the first survey mailing cover letter, survey recipients were also told that if they completed the survey, their name would be entered in a random drawing for one of 10 Visa gift cards valued at $50. Near the end of the implementation period, a follow up phone component was planned for a sample of 552 non-respondents. Retailers that were described as cooperatives were not included in the phone component as their level of response was higher than that of other retailers. The overall response rate was 26 percent with grocery chains having the lowest response rate (19 percent) and cooperative food stores having the highest response rate (38 percent).

Companies responding to the survey operated an average of 37 stores (although the median was 4 stores), with an average square footage (in individual company stores) of 23,699. In addition, the companies' stores carried an average of 2,231 organic food items (e.g., distinct products, SKUs, or PLUs) in 2008 and 18,151 non-organic food items. Of the respondents, many were small companies with gross sales under $12 million (33 percent) or from $12 to $20 million (5 percent). Seventeen percent had sales between $20 million to $50 million. Another 28 percent of companies had sales in the largest gross sales categories over $50 million.

Although there is no data that can be used to compare our respondent population directly with all food retailers in the United States, a few observations can be made. First, the median average store square footage (Food Marketing Institute, 2008) in 2008 was 46,755, much higher

than the square footage reported by our respondents, providing some evidence that perhaps our respondent population is made up of smaller retail companies than the national average.

That said, contradictory information about the size of the respondent population is evident. While independent grocery companies (those with 10 or fewer stores as defined by the Progressive Grocer Marketing Guidebook) account for 18 percent of all retail stores nationwide, they account for only 11 percent of the total stores reported by the respondents. (Note that we defined independent grocery stores as under 12 stores.) In our population, one percent of stores were cooperative stores, and grocery chains accounted for 87 percent of the total stores reported operated by the companies.

The survey contained a single question on slotting fees for organic packaged products. Survey participants were asked to compare slotting fees for organic packaged products against their non-organic counterparts. Thus, the slotting fee question was framed relatively. The intention behind this relative wording was to improve the frequency of question response. As Rao and Mahi (2003) note, confidentiality and controversy over slotting fees are legitimate concerns, and can hamper the ability to collect useful information on slotting fees. The exact wording is as follows: "In 2008, were slotting allowances or similar payments for organic packaged food items generally lower, equal to, or higher than payments for similar non-organic items?"

As a result of this wording, survey responses can be classified in ordered categories: (i) no slotting fees for organic products, (ii) organic slotting fees that are lower than non-organic products, (iii) organic slotting fees equal to non-organic products, and (iv) organic slotting fees higher than non-organic products. Of the 159 useable responses to this survey question, 68.6 percent of retailers said they paid no organic slotting fees, 15.7 percent said organic slotting fees

were lower, 10.1 percent said they were equal, and 6.7 percent said they were higher than non-organic products.

An Econometric Model of Ordered Slotting Fee Responses

Consider a latent variable, y_i^*, that might reflect the actual but unobserved organic-to-non-organic slotting fee ratio, the following linear model:

$$y_i^* = \mathbf{x}_i'\boldsymbol{\beta} + \varepsilon_i \,,$$

where **x** is a vector of firm-specific attributes (and does not include an intercept) and *i* indexes individual firms (Cameron and Trivedi 2005). According to the ordering of the slotting fee question, the observed variable y_i is defined as the following:

$$y_i = j \text{ for } j = 1, 2, 3, \text{or } 4 \text{ if } \alpha_{j-1} < y_i^* \leq \alpha_j \,,$$

where $\alpha_0 = -\infty$ and $\alpha_4 = \infty$. When F is the cdf for ε_i,

$$\begin{aligned} \Pr[y_i = j] &= \Pr\left[\alpha_{j-1} < y_i^* \leq \alpha_j\right] \\ &= \Pr\left[\alpha_{j-1} < \mathbf{x}_i'\boldsymbol{\beta} + \varepsilon_i \leq\right] \\ &= F(\alpha_j - \mathbf{x}_i'\boldsymbol{\beta}) - F(\alpha_{j-1} - \mathbf{x}_i'\boldsymbol{\beta}) \end{aligned}$$

When ε_i follows a logistic distribution, the model is an ordered logit. If **x** has *K* regressors excluding intercept terms, then a four-choice ordered logit has *K* plus three parameters to estimate. The sign of the parameters in $\boldsymbol{\beta}$ determine whether or not a regress has a positive or negative impact on the latent variable. Alternatively, one can calculate marginal effects based on the derivative of *F*.

We describe and summarize the dependent variable, y_i, and independent variables, $\mathbf{x}_i$, in Table 3. Many of the variables from Table 3 have a counterpart in Table 1. Hence, recovered coefficients from an estimated model can provide insight into economic rationale for organic slotting fees: *Numstores* fits under rationales A.3 and B.2, and is expected to be negative if more

stores equate economies of scale in inventory or shelving costs, or a positive estimated coefficient if it indicates increasing bargaining power. *Yrsorg* fits with rationale A.1 and is expected to be negative. Table 1 summarizes how these and other variables listed in Table 3 can be linked to economic rationales for (organic) slotting fees.

In addition to variables based on the literature described in Table 1, we include the variables *Snackorgpct, Packorgpct,* and *Plpct* (retailer's percent of organic sales from snack products and packaged products and prevalence of private label products respectively) in order to further differentiate between types of stores. For example, our data does have dummy variables for food retailers with 12 or more stores (*Groc*) and those with less than 12 stores (*Indep*). These dummy variables do not provide much information on store format. Hence, percentage of organic sales from snack, packaged, and overall private label products are added to help differentiate store types. Finally, we also include the variable, *Numstoresyrsorg*, which is a variable that interacts the number of stores a retailer owns with the number of years of experience a retailer has with organic products.

Results

The econometric model from the previous section was estimated using the variables described in Table 3. Table 4 presents the ordered logit estimation. In total, 11 of 14 regressors are found to be significantly different from zero at the 90 percent level or better.[2] A number of these individually significant estimates are consistent with the efficiency rationale, which hypothesizes that slotting fees help signal or screen for successful products, solve moral hazard problems associated with new product promotion, and cover shelving and operating costs.

[2] The authors also used the same 14 regressors to estimate a logit where the dependent variable was transformed from ordered levels of slotting fees to a binary variable, where a zero indicated that slotting fees were not present (or equal to zero) and a one indicated that slotting fees greater than zero were present. All the estimated coefficients in the logit model were the same sign as the ordered logit in Table 4. However, instead of ten, only seven of the regressors are significant at the 90 percent level or better.

Results consistent with the efficiency rationale include the following: (i) a negative coefficient associated with number of stores (*numstores*) because economies of scale may lower inventory or operating costs; (ii) a negative coefficient on the number of organic items (*orgitems*) carried by a retailer because more experience with organic products may help to lower screening costs associated with new organic products; (iii) a positive coefficient on a retailer's organic marketing budget (*orgbgt*) because a higher budget may be compensating for weak post-launch marketing efforts by suppliers; (iv) a negative coefficient on a retailer's frequency of out of stock organic products (*oos*) because shelf vacancies may indicate successful sales by organic products; (v) a positive coefficient on the retailer being and independent retailer (*indep*) because smaller retailer chains may incur higher distribution and inventory costs, on average; and (vi) a negative coefficient on the ease of finding shelf space for organic items (*shelfeasy*) because greater ease is akin to lower costs for new organic products. However, similar rationales and arguments would have implied that estimated coefficients for two other variables, the number of years of experience marketing organic products (*yrsorg*) and the percentage of suppliers with direct supply (*percentdirect*), would be negative. The coefficient for *yrsorg* is in fact negative, but not significant. However, the coefficient for *percentdirect* is positive and significant.[3]

On the other hand, some other individually significant estimates are consistent with the market power/strategic behavior rationale. A positive coefficient on *percentdirect* can indicate that suppliers are better able to pay slotting fees. A positive coefficient on the retailer's sales, *lnsalesm*, can indicate that high volume, high sales retailers have a stronger better ability to price

[3] The positive association between slotting fees and *percentdirect* is inconsistent with findings in the FTC (2003) report. However, Foros, Kind, and Sand (2009) present an interesting discussion related to direct delivery. These authors say that perishable goods, where slotting fees are less perishable, are commonly distributed by direct store delivery.

discriminate. The negative coefficient for *numstores*, the negative coefficient on *oos*, and the positive coefficient on *indep* are inconsistent with the market power/strategic behavior rationale.

The interaction variable, *numstoresyrsorg*, is found to be positive and significant. This indicates that while per-unit inventory costs go down as number of stores goes up (as suggested by the negative coefficient for *numstores*), the decrease in costs moderates as the amount of experience marketing organic products increases. This may suggest that the inventory cost savings due to a high number of stores is not as great for firms with many years of experience with organic products.

Conclusions

We find that slotting fees are present in the organic food retailing sector with 31 percent of survey responders reporting the presence of slotting fees for organic products. While lower than percentages found by the FTC (2003) for an intensely studied group of five non-organic products, this percentage represents a substantial change in the conventional thinking regarding organic products and slotting fees. This finding came directly from a new survey of U.S. food retailers. To induce responses to a survey question on organic slotting fees, retailers were asked how slotting fees on organic products compared relative to their non-organic counterparts. The relative nature and structure this survey question also allows us to investigate how firm attributes might be linked to both the rationale for slotting fees and the relative magnitude of slotting fees. Literature on slotting fees provides convincing arguments for two rationales, one focused on the role slotting fees play in establishing an efficient allocation of shelf space for new products and the other focused on how slotting fees can be used strategically to price discriminate or otherwise increase rents to parties with more bargaining power. Our study finds that certain retailer characteristics are related to the relative magnitude of slotting fees in the organic sector, and in

many ways our results are generally consistent with these economic rationales for slotting fees. An ordered logit regression of the relative magnitude of slotting fees on retailer characteristics yields coefficient estimates that are mostly consistent with the economic efficiency rationale, with a few estimates being consistent with the market power/strategic behavior rationale.

Our results suggest that, while the efficiency rationale is more prevalent, the efficiency and market power/strategic behavior rationales are not necessarily mutually exclusive. Foros, Kind and Sand (2009, p. 266) note, however, that the two rationales – one anticompetitive and one efficiency-based – may "certainly coexist." Indeed, our results suggest that both rationales cam be supported by our survey data. For example, the magnitude of a retailer's total sales, which could reflect increased bargaining power, is positively associated with the relative magnitude of slotting fees. However, we also find that the number of stores in a retail chain, which could indicate either increased bargaining power or lower average operating and inventory costs, is negatively associated with the relative magnitude of slotting fees. Thus, we conclude that both rationales are at work in our data.

Based on our results, manufacturers of organic products can expect to pay slotting fees if certain retailer characteristics, such as the retailer being an independent retailer or having a high organic marketing budget, are present. Manufacturers may be able to avoid paying organic slotting fees if other retailer characteristics, such as a high frequency of out of stock items or a high number of organic items, are present. Retailers, also, may gain insight into whether their competitors are likely to pay slotting fees. .

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Table 1: Summary of Economic Rationales for Organic Slotting Fees and Empirical Predictions

Economic Rationale and Literature examples	Potential Factor for Organic Slotting Fees	Potential Impact on Slotting Fees	Explanations
A. Efficient allocation of shelf space			
A.1 Signaling or screening for product success Devuyst (2005) Sudhir and Rao (2006) FTC (2003)	Years of experience with organic products (*Yrsorg*)	–	Retailers with more experience with organic products may be better able to screen products than retailers with less experience.
	No. of organic items carried by retailer (*Orgitems*)	–	A higher number of organic items may indicate a stronger organic marketing presence and more experience with organic.
	Retailer's frequency of organic out of stock items (*OOS*)	–	A product being out of stock is an indication of high demand for the product, which is an indication of success of the product.
A. 2 Solving moral hazard problem of weak post-launch effort by manufacturers Sudhir and Rao (2006) Rao and Mahi (2003)	Retailer's organic marketing budget (*Orgbgt*)	+	A higher organic marketing budget may indicate weak post-launch efforts by a manufacturer.
A. 3 Covering high operating, inventory, or shelving costs Rao and Mahi (2003) FTC (2003) Kuksov and Pazgal (2007)	No. of organic items carried by retailer (*Orgitems*)	–	A higher number of organic items may indicate more experience with organic products, which may imply lower product search costs.
	Years of experience with organic products (*Yrsorg*)	–	See previous
	Percent suppliers delivering direct (*Percentdirect*)	–	Direct delivery implies lower costs.
	Ease of finding shelf space (*Shelfeasy*)	–	If finding shelf space is easy, the costs for adding new items will be lower.
	Number of stores owned by retailer (*Numstores*)	–	More stores controlled by a retailer can decrease average costs (due to scale efficiencies)
	Type of retail store (*Groc* or *Indep*)	+ or –	Different types of stores may incur different costs – for example, small cooperatives may have higher costs.

B. Strategic use of market power			
B.1 Shelf-space rationing strategy Marx and Shaffer (2010) Sullivan (1997) Bloom, Gundlach and Cannon (2000) Norwood (2006) Sudhir and Rao (2006)	Retailer's frequency of organic out of stock items (*OOS*)	–	A higher frequency of out of stock items can imply that shelf space was not strategically rationed
B. 2 Non-linear price-discrimination by retailers Cannon and Bloom (1991) Marx and Shaffer (2010) Bloom, Gundlach and Cannon (2000) Kuksov and Pazgal (2007)	Number of stores owned by retailer (*Numbstores*)	+	A large number of stores may indicate high bargaining power.
	Retailer's total sales (*Lnsalesm*)	+	High sales may indicate high bargaining power.
	Type of retail store (*Groc* or *Indep*)	+ or –	The type of retailer may indicate the amount of bargaining power – for example, small, independent retailers may have less bargaining power than larger retailers
	Percent suppliers delivering direct (*Percentdirect*)	+	Direct delivery may indicate that the supplier is in a good position and therefore has a higher ability to pay slotting fees

Table 2: Survey Responses by Retailer Type

	Number of Responses	% of Responses
Conventional mass market	1	0.5 %
Cooperative stores	74	35.7 %
Independent grocery (12 or fewer stores)	78	37.7 %
Grocery chain (over 12 stores)	54	26.1 %
All Cases	207	100.0 %

Table 3: Variables Used to Estimate the Ordered Logit

Variable Name	Definition	Useable Obs.	Mean	Std. Dev.	Min	Max
Slotfee_order (y_i)	1= no organic slotting fees; 2 = less than, 3 = same as, 4= greater than non-organic fees	159	1.53	0.89	1	4
Numstores	Number of stores operated	201	37.00	185.56	1	2500
Yrsorg	Years the retailer has sold organic products	180	16.30	11.94	1	39
Packorgpct	% of total organic sales in the packaged and prepared foods category	155	17.60	15.36	0	70
Snackorgpct	% of total organic sales in the snack food category	154	7.18	8.41	0	75
Orgitems	Average number of organic food items sold in 2008	148	2362.84	3203.20	5	20000
Percentdirect	% of organic sales through suppliers delivering direct to store	175	16.81	22.312	0	100
Shelfeasy	1 if retailer says it was fairly simple to provide shelf space for new organic products	189	.6085	0.49	0	1
OOS	1 if retailer had significant out-of-stocks for at least one organic product	186	.24	0.43	0	1
Orgbgt	% of retailer's promotional and marketing budget allocated to organic products in 2008	165	17.43	27.22	0	100
Plpct	% of retailer's total gross organic sales accounted for by private label products	164	6.00	15.11	0	90
Lnsalesm	log of total sales (in millions)*	196	3.69	1.81	1.79	9.18
Groc	1 if a retailer is classified as a grocery chain with 12 or more stores	207	.2608696	.4401734	0	1
Indep	1 if a retailer is classified as independent (< 12 stores)	207	0.38	.49	0	1
Numstoresyrsorg	interaction terms					

Note:

* For total sales, we used data directly from the Marketing Guidebook (published by Trade Dimensions/Nielsen Nielsen) when possible. When that information was unavailable, we used the midpoint of the following total sales categories from the survey: Under $12 million, $12 - $20 million, $20 - $50 million, $50 - $100 million, $100 - $500 million, and over $500 million.

Table 4: Ordered Logit Results

Variable	Coefficient Estimate	z-stat
numstores	-0.0125029	-2.4**
yrsorg	-0.0831676	-1.23
numstoresyrsorg	0.0016984	2.94***
packorgpct	-0.0326986	-1.76*
snackorgpct	0.1766634	2.85***
orgitems	-0.0002988	-2.19**
percentdirect	0.0305176	2.59***
shelfeasy	-0.9900334	-1.65*
oos	-1.93427	-2.44**
orgbgt	0.0596174	3.34***
plpct	0.0201615	1.16
lnsalesm	0.4393049	1.74*
groc	1.151626	0.76
indep	3.255888	2.61***
α1	4.283138	
α2	5.922086	
α3	7.320215	
Number of Observations	103	
Pseudo R2	0.2984	

Notes: * indicates significance at 10%; ** indicates significance at 5%; *** indicates significance at 1%