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ENTRY BARRIERS, THE QUEUE OF POTENTIAL ENTRANTS, AND ENTRY INTO FOOD RETAILING MARKETS

by

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Entry Barriers, The Queue of Potential Entrants, and Entry into Food Retailing Markets

I. Introduction

Economists have long recognized that the performance of a market depends upon the status of potential competition from firms outside the market, as well as the conduct of established firms. John Bates Clark stressed this point for markets dominated by a monopolist as early as 1887. Joe Bain expanded Clark's work to cover other types of market structure, effectively introducing the potential competition concept to the empirical analysis of market performance. Bain defined entry as the addition of new productive capacity to a market by a new firm (Bain, 1956, p. 5). According to Bain the condition of entry is a function of the height of barriers to entry and the shape of the queue of potential entrants. The condition of entry determines and is measurable by the limit price, i.e. the amount that price can be raised above minimum long run average cost without attracting entry. Empirical testing of the effect of potential competition has focused almost exclusively upon the impact of barriers to entry on actual prices and profits in markets (Bain, 1956; Mann, 1966; Scherer, 1980). Notable exceptions are Orr (1974), Duetsch (1975) and Yip (1982), and more recently Geroski and Masson (1987) and Bresnahan and Reiss (1987).

Recognizing that an analysis of entry by merger is complicated by multi-market acquisitions and by acquisitions of leading firms in some markets, we analyze only de novo entry.

For ease of exposition, this term is shortened to entry in this paper.

Analyzing entry behavior is important not only for improving strategic decision making in an industry but also for evaluating the relaxation of antitrust enforcement towards mergers. In recent cases the Justice Department and Federal Trade Commission have approved large mergers because they believe that entry into markets is relatively easy, i.e. that there are many viable potential competitors (see, for example FTC, 1983, p. 49). Specifically with regard to merger enforcement policy in food retailing, the FTC's recent decisions ignore empirical documentation that retailers with large market shares in concentrated markets exercise market power (Marion et al., 1979; Lamm, 1981; and Cotterill, 1986).

Research on entry addresses the market power question from a more dynamic perspective than traditional market structure-performance studies, and thus provides new insights. Bain distinguished between concentrated markets with effectively and ineffectively impeded entry. Firms may exercise market power in both, but in the latter, one would observe entry since long run profits are maximized by raising price above the entry forestalling level and attracting entry.

Although the empirical results reported here are for the food retailing industry, they have broader significance for four reasons. First, to paraphase Bresnahan and Reiss (1987, p. 834), in contrast to most entry studies that use aggregate cross-section data on different manufacturing industries (for example, autos and frozen french fries) we are analyzing one industry that operates in several local markets. Since all firms in the industry face similar technological opportunities, regulations, general cost and demand conditions, this study is subject to less specification error and random noise.

Secondly, this is the first study that operationalizes and tests Bain's thoughts on the impact of the shape of the queue of potential entrants upon entry. Only Hines (1957) and more recently the business strategists, including Yip (1982), have suggested that the queue of potential entrants is not perfectly elastic at the limit price.

Third, this study employs strategic group theory to specify and test a model that conforms more closely to actual industry structure and conduct than is possible in more aggregated studies of manufacturing industries.

Fourth, following the work of Orr and Yip, this study analyzes entry unadjusted for exits. Studies that focus upon net entry (e.g., Duetsch, 1975) ignore the fact that entry and exit are not symmetric. The market structure and strategies conducive to entry can be very different from those associated with exit.

In the following section we develop measures of Bain's queue of potential entrants for the grocery industry. In section three we specify a simultaneous equations model that predicts industry price levels as well as entry. Solving the model for the reduced form equation for entry produces the model that is empirically tested in section four. Section five contains conclusions.

II. Operationalizing Bain's Queue of Potential Entrants Theory

Hines (1957) first analyzed the shape of the queue of potential entrants arguing that established firms not in the market are more likely potential entrants than new firms organized from scratch. Work by the business strategists, most notably Porter and Yip, on strategic groups provides further a priori guidance on the shape of the queue. Yip argues that firms in most markets can be classified into two major strategic groups, core and fringe. With regard to entry he states:

> Frequent entry of minor competitors does not indicate low barriers for firms wishing to become major competitors. Easy entry into an industry's fringe may have little effect on the forces of competition in the core of the industry (Yip, 1982, p. 27).

Shapiro and Khemani's study of de novo entry in Canadian manufacturing substantiates this point. They found that de novo entrants tended to be small single plant firms and that they replaced other small single plant firms (Shapiro and Khemani, 1987, p. 25).

Since core firm conduct is the primary determinant of market performance, strategic group theory suggests that fringe entry is irrelevant. For the grocery industry, therefore, one cannot consider the opening of independent supermarkets or smaller food stores to be effective entry. Small operators have small and inconsequential impacts. Moreover, when entering the core of an industry, Berry suggests that large firms are less deterred by entry barriers than small firms (Berry, 1975, p. 25). Thus we identify the top twenty food retailing chains in 1972 as candidates for most likely potential entrant status. We pick 1972 because our data set monitors entry between 1972 and 1981. From the standpoint of cost efficiency each of the top twenty is large enough to attain size advantages in vertical distribution, commodity procurement, in-house manufacturing and private label programs (Cotterill, 1977, p. 108). Also, few other firms possess their combination of supermarket management skills, financial resources, and new store start-up ability (site procurement, new store design, and wholesaling support). These capabilities strongly suggest that large food chains are not only able to enter a market but also are able to become a competitive factor and influence the conduct of leading firms in the market.

Geographical proximity to a target determines which large food chains are the most likely potential entrants. A chain may find it easier to enter a nearby market because it (1) may be able to service the new market from existing distribution centers, (2) may be relatively well known by potential customers, (3) may be able to use some of its knowledge about regional tastes and preferences or (4) may be able to hire or transfer higher quality managers to a nearby market more cost effectively.

To measure the effect of potential competition we employ three alternative potential entrant variables in the model developed in the next section. Potential entrant (POT200) is a binary variable with value 1 if one or more large chains currently not in a market has a distribution center within 200 miles of the market. Variable radius potential entrant (POTVAR) allows the radius to vary in different parts of the country when defining the binary entrant variable. This recognizes the fact that population density varies and that in more densely populated areas a potential entrant's distribution center must be closer than 200 miles to compete effectively with established firms.[1/] The third measure of potential competition is the number of potential entrants (NUMPOT) within striking distance, as defined by the variable radius measure defined above.

III. Model Specification

Orr (1974) first attempted to operationalize Bain's model of entry. In his work, entry during a four year period is a function of the difference between actual profits from a prior four year period and the long run entry limiting profit level in the current period. Orr considered lagged actual profits to be exogenous. Recently Gersoski and Masson endogenized lagged actual profits in a dynamic model of entry, profits and change in four firm concentration (Gersoski and Masson, 1987). Here we endogenize lagged actual profits and entry in a long run model that is not explicitly dynamic, i.e. we do not model the impact of entry on four firm concentration. Although this approach doesn't allow us to analyze how the market adjusts to entry, it does identify the relationship between entry and the condition of

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1/ It is constructed as follows. Binary potential entrant variables, defined using different distances, were tried for each of five major region of the country to determine which distance had the greatest explanatory power for that region. POTVAR is constructed using the best fitting radius for each region.

entry (barriers and queue effects).[2/] Equations 1-3 below specify our structural model and equation 4 is the reduced form equation for entry that we estimate. Explanatory variables and the hypothesized signs for each are explained below.

1) $\text{Entry} = \gamma(\pi_A - \pi_L)$

$$\gamma > o$$

2) $\pi_A = \alpha_o + \alpha_1 \text{ GROW} + \alpha_2 \text{ CONC}$

$$\alpha_1 > o \quad \alpha_2 > o$$

3) $\pi_L = \beta_o + \beta_1 \text{ POTENT} + \beta_2 \text{ GROW} + \beta_3 \text{ SGRATIO} + \beta_4 \text{ CONC} + \beta_5 \text{ NFC} + \beta_6 \text{ MSIZE}$

$$\beta_1 < o \quad \beta_2 < o \quad \beta_3 > o \quad \beta_4 > o \quad \beta_5 > o \quad \beta_6 > o$$

4) $\text{Entry} = \gamma(\alpha_o - \beta_o) + \underset{> o}{(-\gamma\beta_1)} \text{ POTENT} + \underset{> o}{\gamma(\alpha_1 - \beta_2)} \text{ GROW} + \underset{< o}{(-\gamma\beta_3)} \text{ SGRATIO}$

$$+ \underset{\lessgtr o}{\gamma(\alpha_2 - \beta_4)} \text{ CONC} + \underset{< o}{(-\gamma\beta_5)} \text{ NFC} + \underset{< o}{(-\gamma\beta_6)} \text{ MSIZE}$$

where:

Entry is a binary variable with value 1 if an entry occurs between 1972 and 1981, 0 otherwise. Each occurence of entry in a market is recorded as a separate observation, i.e., there is 1 observation per market with no entry and x observations for each market with entry, where x = number of new entrants.

π_A is actual profit (price) level in the market.

2/ The time lag between entry and subsequent changes in concentration suggest that in fact changes in concentration resulting from entry are not simultaneously determined with the profit levels that determine whether entry occurs. Moreover, in Gersoski and Masson's relatively rapid model it takes 155 years for concentration to adjust and for profits to converge to their long run norms. They find it "hard to take estimates like this too seriously" (Geroski & Masson, 1987, p. 10). Clearly there is room for alternative model specifications.

π_L is the limit profit (price) level in the market.

POTENT is one of the three measures of the shape of queue of potential entrants developed in the prior section: POT200, POTVAR, or NUMPOT.

GROW is the percent growth in grocery store sales between 1967 and 1972.

SGRATIO is the ratio of supermarket to grocery store sales in 1972.

CONC is the four firm grocery sales ratio or grocery Hirschman-Herfindahl Index (HHI) or four firm supermarket sales concentration ratio in 1972.

NFC is the number of large food chains in the market in 1972.

MSIZE is the size of the market measured by total grocery sales in 1972.

POTENT, however measured, is hypothesized to have a positive effect on entry.

GROWTH also has a positive impact on entry. Rapidly growing markets increase established firms' profitability and reduce the displacement effect associated with entry. Entrants can gain a share of the market without reducing the dollar sales value of established firms.[3/]

SGRATIO measures the extent of supermarket penetration in a market, and as such identifies whether the key strategic group, supermarkets, is full or has space for new supermarket

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3/ See Marion (1986) for an numerical illustration of the displacement effect in grocery retailing and the resulting incentives for established firms to deter entry in highly concentrated markets.

operators.4/ It is hypothesized to be negatively related to entry, i.e., if supermarket penetration is high in a market, it will be harder for a supermarket chain to enter the market and less entry will, ceteris paribus, occur.

CONC, however measured, affects entry in two ways. As concentration increases, actual profitability in the market is likely to increase, making entry more attractive; however the limit profit rate also is hypothesized to increase because structural and strategic entry barriers are related to high concentration.[5/] Therefore the reduced form relationship between concentration and entry depends upon whether entry is, in Bain's terms, effectively or ineffectively impeded. In the former case one would observe a negative relationship; in the latter one would observe a positive relationship.

NFC measures the height of strategic barriers to entry that are associated with the size and multimarket operations of large food chains. Rhoades (1973), Salop (1979), and Encaoua et al. (1986), inter alia, note that large multimarket firms can make credible threats that deter entry if they react in a punitive fashion when entry occurs. Using cash from other markets, large

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4/ Classifying all supermarkets in a single strategic group oversimplifies the structure of the grocery industry, but this variable does capture a major distinction between small and large store formats. See Cotterill and Haller (1986) for a explanation of strategic groups within the supermarket submarket.

5/ See Cotterill and Haller (1986) and Marion (1986) for an extended discussion of entry barriers in food retailing.

food chains can cross-subsidize stepped up promotions and/or zone pricing schemes that lower prices in stores surrounding the entrant's store. This type of behavior has been documented in case studies (FTC, 1969). Therefore we expect NFC to be negatively related to entry.

MSIZE is the size of the grocery market. To the extent that it is more difficult to enter large markets, possibly due to the size of the investment necessary to attain a given market share level, one would expect it to be negatively related to entry.

IV. Empirical Results

Metro Market's Grocery Distribution Guide for each year between 1972 and 1982, the 1967, and 1972 Census of Retail Trade, and Parker (1986) provided most of the data used in this study. We also used trade publications, including Weekly Food Digest and Supermarket News. In 1972, the U. S. Census Bureau reported on retail food operations in 263 SMAs. This study examines 129 SMAs that have all the data needed and are well defined grocery markets. [6/] Since some markets were entered by more than one large chain there are 145 observations in the sample.

Table 1 provides descriptive statistics. SMA's in the sample are somewhat larger than the average size of all SMA's in

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6/ The sample does not include 53 SMA's that are not in the 1972 Grocery Distribution Guide, 28 new SMA's that do not have 1967 sales data necessary for computing market growth rates, the 26 New England SMA's because of poor correspondence between economic markets, SMA's and Metro Market's market areas, 21 SMA's that experienced major boundary changes between 1967-1972, and 6 other SMA's because of data or measurement problems.

Table 1. Descriptive Statistics for Variables Used in the Analysis of Entry by Large Grocery Chains, 1972-1981.

Variable Name	Mean Value	Standard Deviation	Minimum Value	Maximum Value
De novo entry	0.52	0.50	0	1
Binary potential entrant (200 mile radius)	0.81	0.40	0	1
Binary potential entrant (variable radius)	0.46	0.50	0	1
Number of potential entrants (variable radius)	0.64	0.85	0	3
Market growth, 1967 - 1972 (percent)	21.73	15.00	-10.6	87.7
Supermarket to grocery sales ratio, 1972	0.76	0.07	0.60	0.90
Grocery four-firm concentration ratio, 1972 (percent)	49.53	10.75	26.40	80.50
Supermarket four-firm concentration ratio, 1972 (percent)	65.06	12.58	36.10	97.30
Hirschman-Herfindahl index, 1972	894.08	373.68	312	2515
Number of large grocery chains, 1972	3.03	1.34	0	7
Market size, 1972 (Million $)	373.184	463.850	76.532	3,233.751

Note: 145 observations in sample.

1972, 263 million dollars (U.S. Census). The sample averages, however, closely approximate the population parameters for grocery four-firm concentration, (population average = 52.4 percent) and for supermarket four-firm concentration (population average = 69.5 percent) for all SMSAs in 1972 (Marion, et al., 1979, p. 220).

Since the dependent variable, entry, is a binary variable, logit is used to estimate the model. This gives the added feature that predicted levels of the entry variable represent the probability that entry will occur.

Table 2 presents estimated coefficients and accompanying statistics for alternative specifications of the entry model. The size and significance levels of all estimated parameters using the binary potential entrant variable based upon a constant 200 mile radius (POT200) are essentially identical to those reported in Table 2. Thus they are not reported here. Equations 1 through 5, and 7 through 9 use a binary potential entrant variable defined by choosing the best fitting radius in each geographical area. Our five regional models gave the following results: the Middle Atlantic and Northeast (one region), 50 miles; the Southeast region and the East of the Mississippi River North Central region, 100 miles; the Plains and Rocky Mountains region and the West Coast region, 200 miles. Equation 6 uses NUMPOT which measures the number of potential entrants within the appropriate radius for SMAs in different regions of the country.

In equation 1, the potential entrant and market growth variables are positively and significantly related, at the one percent level, to entry as hypothesized. If a large chain has a

Table 2. Logit Analysis of Entry by Large Food Chains, 1972 - 1981

Potential Entrant Measure Used	Explanatory Variables[a]								
	Potential Entrant	Market Growth	Super-market / Groc Sales Ratio	Grocery CR_4	Super-market CR_4	Grocery HHI	Number of Large Grocery Chains	Market Size (Billons)	Intercept
1. POTVAR	2.5509	0.0598							-2.3267
	(32.65)**	(13.60)**							(22.16)**
2. POTVAR	2.9004	0.06090	-10.6216						5.6028
	(32.66)**	(13.06)**	(9.90)**						(4.97)*
3. POTVAR	2.5654	0.0641		-0.0340					-0.7396
	(32.41)**	(15.10)**		(3.08)+					(0.54)
4. POTVAR	2.5360	0.0614			-0.0103				-1.6858
	(32.37)**	(14.07)**			(0.40)				(2.30)
5. POTVAR	2.5620	0.0634				-0.0010			-1.5106
	(32.17)**	(14.97)**				(2.98)+			(5.19)*
6. NUMPOT	1.5931	0.0594				-0.00102			-1.1991
	(23.00)**	(14.24)**				(2.96)+			(2.96)+
7. POTVAR	2.8158	0.0601	-9.2750				-0.3526		5.6913
	(29.30)**	(12.55)**	(6.93)**				(3.44)+		(4.80)*
8. POTVAR	2.7947	0.0599	-8.9295				-0.3339	-0.33	5.4914
	(28.72)**	(12.39)**	(6.21)*				(2.96)+	(0.19)	(4.39)*
9. POTVAR	2.7478	0.0605	-8.1080			-0.00023	-0.3302	-0.37	5.0738
	(27.53)**	(12.53)**	(4.04)*			(0.12)	(2.92)+	(0.23)	(3.39)+

Note: There are 145 observations in the sample.
a. Numbers in parentheses below coefficients are Chi-square values.
** = significant at the 1 percent level. * = significant at the 5 percent level.
+ = significant at the 10 percent level.

distribution center within the regionally estimated radius of an SMA then it is significantly more likely for the market to be entered. Market growth also is related in a strong positive fashion. In equation 2, the supermarket grocery store sales ratio is negatively related to entry as hypothesized and significant at the one percent level. Entry by these large supermarket chains is more likely where supermarkets in toto, account for a smaller share of grocery sales. Equations 3, 4, and 5 introduce the grocery four-firm (GCR4), the supermarket four-firm (SCR4), and the grocery Hirschman-Herfindahl (HHI) concentration measures to the model, respectively. SGRATIO and the number of large chains (NFC) are not included in these equations because they are collinear with these alternative measures of market structure. All concentration variables are negatively related to entry, and GCR4 and HHI are statistically significant at the ten percent level. Given that several studies have documented the existence of a positive relationship between concentration and prices/profits, if there were no barriers one would expect to see positive and significant coefficients for these variables. The results suggest that barriers do exist and that entry is effectively impeded, i.e., firms in highly concentrated markets price above competitive levels but below the limit price.

Equation 6 is the same as equation 5 except that the number of potential entrants (NUMPOT) is specified to measure the shape of the queue. The performance of the other variables changes little and the coefficient for NUMPOT is positive and significant at the one percent level.

The number of large grocery chains is introduced with SGRATIO in equation 7. NFC is negatively related to entry and significant at the ten percent level. Equation 8 introduces market size. It has the hypothesized negative sign but is not significant. Equation 9 is identical to equation 8 except that the grocery HHI is also included. Its sign remains negative, but it is not significant. Multicollinearity also reduces the Chi square value for SGRATIO by 50 percent but it remains significant at the five percent level.

The results reported in Table 2 allow us to compute a predicted probability of entry for any market. Using equation 1, assuming that there are one or more potential entrants (POTVAR = 1), and that growth is held constant at its mean value, the probability of entry occurring during the ten year 1972-1981 period is 0.849. If there are no potential entrants, the probability of entry drops to 0.239. Using equation 6 and assuming all other variables are at their mean values, when there is no potential entrant the probability of entry is 0.306. When there is one it increases to 0.684. When there are two it is 0.914; and when there are 3 entrants it is 0.981. These probabilities suggest entry is ineffectively impeded. Yet these are entry probabilities for a ten year period. As Geroski and Masson report entry still may not provide sufficient discipline to ensure timely adjustment and efficient operation of markets.[7/] Also the DOJ merger guidelines consider entry to be effectively impeded if it is unlikely within two years. Two year probabilities would be significantly lower than those estimated here. Moreover, these probabilities are computed holding other variables constant at their average values. The probability of entry when a potential entrant is present is significantly lower in markets with lower growth, higher concentration, large supermarket share, and more established large food chains.

Table 3 reports the sensitivity of the probability of entry to changes in other market structure variables by evaluating the partial derivatives of equation 4 at the mean for each variable. POTVAR is held constant at a value of 1. A 10 percentage point decrease in market growth decreases the probability of entry by 0.078. Raising the ratio of food sales accounted for by supermarkets by 10 percentage points causes a 0.136 point decline in the probability of entry. When the grocery four-firm concentration ratio increases by 10 percentage points, the probability of entry falls by 0.025. An increase in the grocery Hirschman-Herfindahl Index of 100 points decreases the probability of entry by 0.015. Increasing the number of grocery chains by one in a market decreases the probability of entry by 0.047.

V. Conclusions

Our primary conclusion from these results is that entry is clearly related to market structure. This is the first empirical study that includes structural measures of the queue of potential

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7/ See footnote 2 supra.

Table 3. Partial Derivatives of the Probability of Entry Evaluated at the Mean Values of Market Structure Variables[a]

Market Structure Variable	Mean Value	Derivative of Probability of Entry
Market growth	21.54	0.0078
Supermarket / grocery store sales ratio	0.7611	-1.36
Grocery four-firm concentration ratio	49.54	-0.0050[b]
Grocery Hirschman-Herfindahl index	894.1	-0.00015[c]
Number of large grocery chains	3.0	-0.047[d]

Note: Values computed from equation 2, Table 2, except as noted.

a. POTVAR held constant at a value of 1.

b. Computed from equation 3, Table 2.

c. Computed from equation 5, Table 2.

d. Computed from equation 7, Table 2.

entrants as well as barriers to entry, and it seems warranted. The shape of the queue of entry is the strongest determinant of entry. The probability of entry more than doubles if there is a potential entrant within striking distance of a market, and striking distance varies from 50 miles in the Middle Atlantic and Northeast region to 200 miles in the Plains, Rocky Mountains and Pacific Coast regions.

This research also suggests that barriers to entry exist in retail food markets. Entry barriers, possibly due to the displacement effect, appear to be higher in low growth markets. Although multicollinearity is a problem, barriers also tend to be higher in markets supplied primarily by supermarkets, in more concentrated markets, and in markets already supplied by large food chains.

These results are consistent with empirical research on concentration-profits and concentration-price relationships in food retailing, and in tandem they provide strong evidence that retail food markets are not contestable. Strategic choices by firms in the industry and antitrust enforcement by public agencies must be based upon a careful assessment of a market's structure, including the condition of entry, if they are to be effective.

VI. References

Bain, Joe S. Barriers to New Competition, Boston: Harward University Press, 1956.

Berry, Charles H. Corporate Growth and Diversification, Princeton, N.J.: Princeton University Press, 1975.

Bresnahan, Timothy F. and Peter C. Reiss. "Do Entry Conditions Vary Across Markets?" Brookings Papers on Economic Activity, Vol. 3, (1987), pp. 833-81.

Clark, John Bates. "The Limits of Competition", Political Science Quarterly, Vol. 2, No. 1 (1887), pp. 45-61.

Cotterill, Ronald W. "Market Structure, Performance, and Market Restructuring in the Food Retailing/Industry," Ph.D. Dissertation, University of Wisconsin, Madison, 1977.

Cotterill, Ronald W. "Market Power in the Retail Food Industry: Evidence from Vermont," Review of Economics and Statistics, Vol. 68, No. 3 (August 1986) pp. 379-86.

Cotterill, Ronald W. and Lawrence E. Haller. "Entry Patterns and Strategic Interaction in Food Retailing," in Robert L. Wills et. al., eds. Issues After A Century of Federal Competition Policy, Lexington, MA: Lexington Books, 1987.

Duetsch, Larry L. "Structure, Performance, and the Net Rate of Entry into Manufacturing Industries," Southern Economic Journal, Vol. 41, No. 3 (January 1975), pp. 450-6.

Encaoua, David, Paul Geroski and Alexis Jacquemin. "Strategic Competition and the Persistence of Dominant Firms: A Survey," in Joseph E. Stiglitz and G. Frank Mathewson, Eds. New Developments in the Analysis of Market Structure, Cambridge, MA: The MIT Press, 1986.

Federal Trade Commission. Economic Report on Food Chain Selling Practices in the District of Columbia and San Francisco. Washington, D.C.: U.S. GPO, 1969.

Federal Trade Commission. In the Matter of Grand Union Co. FTC Docket 9121. Final Order. Washington, D.C., 1983.

Geroski, P.A., and R. T. Masson. "Dynamic Market Models in Industrial Organization," International Journal of Industrial Organization, Vol. 5, No. 1, (1987), pp. 1-14.

Hines, Howard H. "Effectiveness of 'Entry' By Already Established Firms," Quarterly Journal of Economics, Vol. 71, No. 1 (February 1957), pp. 131-50.

Lamm, R. McFall. "Prices and Concentratives in the Food Retailing Industry" Journal of Industrial Economics, Vol. XXX, No. 1, September, 1981, p. 67-78.

Mann, H. Michael. "Seller Concentration, Barriers to Entry, and Rates of Return in Thirty Industries," Review of Economics and Statistics, Vol. 48, No. 3 (August 1966), pp. 296-307.

Marion, Bruce W. ed. The Organization and Performance of the U.S. Food System, Lexington, MA: Lexington Books, 1986.

Marion, Bruce, Willard Mueller, Ronald Cotterill, Frederick Geithman and John Schmelzer. The Food Retailing Industry, New York: Praeger, 1979.

Metro Market Studies. Grocery Distribution Analysis and Guide. Weston, MA: Metro Market Studies, 1972-1982.

Orr, Dale. "The Determinants of Entry: A Study of the Canadian Manufacturing Industries," Review of Economics and Statistics, Vol. 56, No. 1, (February 1974), pp. 58-66.

Parker, Russel C. Concentration, Integration and Diversification in the Grocery Retailing Industry, Federal Trade Commission, 1986.

Rhoades, Stephen A. "The Effect of Diversification on Industry Profit Performance in 241 Manufacturing Industries: 1963," Review of Economics and Statistics, Vol. 50, No. 2, (May 1973), pp. 146-55.

Salop, Steven C. "Strategic Entry Deterrence," American Economic Review, Vol. 69, No. 2 (May 1979), pp. 335-8.

Scherer, Frederick M. Industrial Market Structure and Economic Performance, 2nd edition, Chicago: Rood McNalls, 1980.

Shapiro, Daniel, and R. S. Khemani. "The Determinants of Entry and Exit Reconsidered," International Journal of Industrial Organization, Vol. 5, No. 1, (1987), pp. 15-26.

U.S. Bureau of Census, 1967 Census of Retail Trade, Washington, D.C.: USGRO.

U.S. Bureau of Census, 1972 Census of Retail Trade, Washington, D.C.: USGRO.

Yip, George. Barriers to Entry, Lexington, MA: Lexington Books, 1982.

LIST OF NE-165 WORKING PAPERS

Number	Author and Title
1.	Rogers, Richard T. and Julie Caswell. "Strategic Management and Internal Organization of Food Marketing Firms", University of Massachusetts, Amherst, MA. September 1987.
2.	Roberts, Tanya. "Salmonellosis Control: Estimated Economic Benefits", ERS/USDA, Washington, D.C. September 1987.
3.	Lee, David R. "Labor Market Dynamics in the U. S. Food Sector", Cornell University, Ithaca, NY September 1987.
4.	McLaughlin, Edward W. and Vithala R. Rao. "An Explanatory Modeling of the Decision Process of New Product Selection by Supermarket Buyers", Cornell University, Ithaca, NY September 1987.
5.	Smith, M. E., E. O. VanRavenswaay and S. R. Thompson. "Sales Loss Determination in Food Contamination Incidents: An Application to Milk Bans in Hawaii", Michigan State University, East Lansing, MI December 1987.
6.	Zellner, James A. "Some Causes and Consequences of Food Industry Conduct: A Simultaneous Analysis", University of Florida, Gainesville, FL December 1987.
7.	Caswell, Julie A. and Ronald Cotterill. "New Theoretical Approaches to Measuring Industry Performance", University of Massachusetts, Amherst, MA January 1988.
8.	Lopez, Rigoberto A. "Political Economy of the United States Sugar Policies", Rutgers University, New Brunswick, NJ March 1988.
9.	Azzam, Azzeddine, Emilio Pagoulatos and John Schroeter. "Agricultural Price Margins and Market Structure: An Application to the Hog/Pork Industry", University of Connecticut, Storrs, CT April 1988.
10.	Lopez, Rigoberto A., and Daniel Dorsainvil. "The Degree and Sources of Oligopsony Power: An Application to the Haitian Coffee Market", Rutgers University, New Brunswick, NJ April 1988.
11.	Caswell, Julie A. "A Model of the Interstate Impacts of State Product Regulations", University of Massachusetts, Amherst, MA September 1988

12. Cotterill, Ronald W. and Lawrence E. Haller. "Entry Barriers, the Queue of Potential Entrants, and Entry into Food Retailing Markets", University of Connecticut, Storrs, CT September 1988.

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