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FSRG Publication

Structural Changes in Food Retailing:

Six Country Case Studies

edited by

Kyle W. Stiegert

Dong Hwan Kim



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Kyle Stiegert
kwstiegert@wisc.edu

Dong Hwan Kim
dhkim@anyang.ac.kr

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Food System Research Group
Department of Agricultural and Applied Economics
University of Wisconsin-Madison
<http://www.aae.wisc.edu/fsrg/>

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Contributors

Danilo R.D. Aguiar is an Associate Professor at Federal University of Sao Carlos, Sorocaba Campus, Brazil. danilo@ufscar.br

Garry Griffith is Principal Research Scientist with the Productivity and Food Security Research Industry and Investment, NSW Department of Primary Industries, University of New England, Armidale, Australia. garry.griffith@industry.nsw.gov.au

Roland Herrmann is a Professor at the Institute of Agricultural Policy and Market Research at the University of Giessen, Germany. Roland.Herrmann@agrar.uni-giessen.de.

Vardges Hovhannisyan is a Ph.D. student in the Agricultural and Applied Economics Department at the University of Wisconsin-Madison, USA. hovhannisyan@wisc.edu

Dong Hwan Kim is a Professor in the Department of International Trade and Distribution, Anyang University, South Korea, and Director of the Agro-food New Marketing Institute, South Korea. dhkim@anyang.ac.kr

Anke Möser is a Research Fellow at the Center for International Development and Environmental Research, Germany. Anke.Moeser@zeu.uni-giessen.de

Kyle Stiegert is an Associate Professor in the Agricultural and Applied Economics Department, and Director of the Food System Research Group, at the University of Wisconsin-Madison, USA. kwstiegert@wisc.edu

Sascha Weber is a Research Fellow at the Institute for Market Analysis and Agricultural Trade Policy at the Johann Heinrich von Thuenen-Institute, Federal Research Institute for Rural Areas, Forestry and Fisheries, Germany. sascha.weber@vti.bund.de

Vic Wright is an Adjunct Associate Professor, School of Business, Economics and Public Policy, University of New England, Armidale, Australia. vwright@une.edu.au

Chapter 1: Introduction and Literature Review

Kyle Stiegert

1. INTRODUCTION

Since the 1990s, the progress of increased globalization and foreign direct investment (FDI) has altered considerably the economic landscape for most nations. These changes are noteworthy for the food retailing sector due primarily to the introduction and expansion of multinational, large scale food retailers. Consolidation of the food retailing sector has left many countries with only a handful of large-scale domestic and foreign retailers in dominant market positions. This has led to increased concern about the market power of food retailers, both as sellers and buyers. Consumers, farmers, food processors/manufacturers and other intermediaries in the food retail system often perceive limited options to confront this new and emerging market structure. The early stages of this trend began when large-scale European retailers such as Carrefour, Metro, and Tesco opened stores in overseas markets. In recent years, major US retailers like Wal-Mart and Costco also have been active in locating stores in foreign countries. The entrance of foreign retailers significantly affects the competitive structure among food retailers and the marketing system of host countries. It is, therefore, of considerable interest to investigate the internationalization process within food retailing. For selected countries, this book describes the characteristics and market structure of food retailing and analyzes factors affecting structural change, including the internationalization process.

2. OUTLINE OF THE BOOK

The book uses six country case studies to examine structural change in food retailing and its impact on agricultural producers and the national economy. Country case studies were selected to provide coverage of different continents and differing levels of national development. As developed countries, United States, Germany, and Australia represent North America, Europe, and Oceania. As newly industrialized countries, Korea and Brazil represent Asia and South America. Poland is included to represent a nation transitioning from a Soviet-style command economy to a capitalist one.

Each of the case studies presents a general trend toward a more concentrated food retailing structure. Although there are many differences among cases, the unmistakable march toward a food industry with dominant domestic and international food retailers is presented and discussed. The evidence to date indicates that these changes have not been translated into significant price hikes at the retail level. In many ways this is not surprising. In an effort to establish a market footprint, new entrants often compete on price terms, which may cause short-term periods of competitive conditions. However, once these markets settle into relatively stable structures, oligopoly firms are less apt to compete on price. While some cases provide empirical evidence of significant vertical market power exercised by concentrated food retailers, other country cases showed opposite or ambiguous results regarding this relationship.

Major findings from country case studies follow. In Germany, the most important structural change in food retailing during the last four decades is an increasing concentration of stores with a rising store size, combined with the growing role of discount stores. Consumers benefited from an intensive price competition despite the higher market shares of leading food retailers. The analysis of market conduct, in terms of price formation and pricing strategies, revealed a typical situation of imperfect competition. However, the German experience highlighted that increasing concentration in food retailing does not necessarily imply that more market power is exerted at the expense of consumers. Competitive markets can be associated with a high concentration level as long as a strong competitive fringe, e.g., discounters, challenges the large chains in food retailing.

In Australia, food retailing is highly concentrated. With strong takeover and merger activities, the two dominant supermarket groups (Coles and Woolworths) now control about 80 percent of grocery sales. The high market shares of the two dominant supermarket chains, and allegations of uncompetitive conduct in dealing with suppliers, has resulted in a number of government enquiries into the retailing sector. The major winners from this expansion of market share by the major chains were consumers, in terms of deregulated trading hours, greater product choice, lower prices, and the convenience of one-stop shopping. On the other hand, although there was little formal evidence, it was widely believed that large retailers have the capacity to exercise market power against input suppliers, including farmers, and that they use this market power to reduce input prices.

In Korea, the entrance of major global retailers facilitated rapid development of discount stores and large-scale retailers. The development of large-scale food retailers has significantly affected consumers, producers, and the overall food marketing system. As the number of stores operated by large-scale retailers has increased, more fresh food items are shipped directly from shippers in producing areas to the retailers. Consumers have apparently benefited from lower prices while agricultural producers have received higher prices. As the market shares of major supermarket and discount store chains increased sharply in recent years, food handlers and farmers have been concerned about market power exercised by dominant food retailers. Local shippers complain about trade practices of large-scale retailers, and, more fundamentally, are concerned about possible market power exercised by dominant large-scale food retailers.

The Brazilian retail sector has been concentrated since 1990. As a consequence, three firms have dominated the retail market. The increase in market concentration may strengthen firms' market power, allowing them to earn large profits. However, the intense process of turnover can coerce firms to seek efficiency as a growth strategy and may preclude them from using market power. The main issue is to identify which effect has prevailed in Brazilian retail. The empirical analysis carried out in this study as well as other empirical analyses using aggregated variables appear to indicate the prevalence of efficiency gains. In opposition, some studies that used less aggregated variables found support to the market-power hypothesis. In addition, the Brazilian experience suggests that

retailers use their market power mainly by means of transferring their costs to suppliers, which cannot be identified through price behavior. Several mechanisms are employed by retailers to obligate suppliers to be responsible for cost items that had traditionally been a retailer-incurred cost.

In Poland, structural change in grocery retailing has been particularly rapid given the transformation from a socialist to a market economy. In the first half of the 1990s, the number of stores increased sharply due to deregulation. In particular, the number of very small stores grew and then declined again, but nevertheless remained at a much higher level than under socialism. A parallel boom occurred in the case of large retail outlets, in particular hypermarkets and supermarkets. This positive development raised the overall sales area in Poland's retailing sector and was driven by high FDI from major European food-retailing chains. Thus, the Polish food-retailing system is characterized by a dual structure of small shops and a growing proportion of large store types. This development has been accompanied by increasing concentration ratios.

The US chapter contains a detailed historical view of food retailing trends, a discussion of major antitrust disputes, and a review of the current competitive condition. The US food retailing sector remains dominated by domestic chains but the advent of supercenters such as Wal-Mart has provided for significant restructuring. The top four retail chains control over half the US market. More importantly, many parts of the country are only served by one or two food retailers opening up the case for greater market power in those regions. While pricing patterns do not signal a major concern about market power in response to increased concentration, more research is needed to determine if any cost savings or gains from buyer power resulting from these structural changes are not passed to consumers in the form of lower prices.

3. IMPACT OF DOMINANT FOOD RETAILERS: REVIEW OF THEORIES AND EMPIRICAL STUDIES

3.1. Market Power vs. Efficiency

There are two opposite perspectives on the competition of food retailing industries. While one group of industrial organization scholars are concerned about the existence of market power of concentrated food retailers, industry people and the other group of scholars focus more on efficiency gain due to increased concentration.

In estimating retail market power, the traditional structure-conduct-performance (SCP) approach can be applied by aggregating prices of products sold in supermarkets into indices. These studies seek to explain the relationship between grocery prices and market structure variables along with demand and cost variables. Studies such as Hall et al. (1979), Lamm (1981), Newmark (1990), Marion et al. (1993), and Binkley and Conner (1998) have examined the relationship between average retail food prices and four firm concentration ratios, using cities as the unit of observation.

There are several cross-sectional empirical studies that show a significant positive relationship between industry concentration and prices charged by retailers. Using a market-basket price index of 94 branded food products (excluding meat and produce),

Marion et al. (1979) found that both four-firm concentration and firm market shares were positively related to the price index. In their study, retail concentration was measured based upon metropolitan-area sales concentration data. Cotterill (1986) verified these results for a sample of 35 stores in 18 mostly small, isolated Vermont towns and cities. Cotterill and Harper (1994) further verified positive concentration-price relationship for a sample of 34 local markets in and around Arkansas. Cotterill (1999) also reached similar conclusions as to the impacts of retailer concentration on food prices.

However, Kaufman and Handy (1989), studied 616 supermarkets chosen from 28 cities, found that both firm market share and a four-firm Herfindahl index were negatively but insignificantly correlated with price. Newmark (1990) also obtained a negative and insignificant coefficient on four-firm concentration in a study of the price of a market basket of goods for 27 cities.

Some researchers tried to prove the existence of food retailers' market power utilizing New Empirical Industrial Organization (NEIO) frameworks. Park and Weliwata (1999) developed an empirical model of the US food retailing industry examining industry competitive conditions and shifts in the index of market power. In this study in which industry demand function and marginal cost equation was jointly estimated, index of market power was estimated low although significantly different from zero over the period from 1983 to 1992 when mergers and acquisition were widespread in the food retailing industry.

Developing and estimating an empirical model of pricing behavior for food retail firms in France, Gohin and Guyomard (2000) reported evidence that French food retail firms did not behave competitively. They estimated that more than 20 and 17 percent of the wholesale-to-retail price margins for dairy products and meat products respectively, can be attributed to oligopolistic and oligopsonistic distortions.

In the case of produce, there are two studies to estimate monopolistic and monopsonistic power of retailers to producers using NEIO frameworks. Richards and Patterson (2003) examined retailer market behavior in the selling and buying of apples, oranges, grapes, and grapefruits. Sexton et al. (2003) examined the market for iceberg lettuce, packaged salads, and tomatoes.

These two studies estimated the degree of monopolistic and monopsonistic power based upon estimated costs of retailers and the retail data set containing weekly price and sales information on selected produce commodities. Retail data were obtained from Information Resources Incorporated for 20 retail grocery chains, operating in six metropolitan markets (Albany, Atlanta, Chicago, Dallas, Los Angeles, and Miami) over a two-year period (January 1998-December 1999). Within these regions, the data cover small, medium, and large supermarket retailers. Mass merchandisers, such as warehouse clubs and supercenters, are not represented.

The results of these two empirical studies can be summarized as follows. Consumer prices in excess of competitive prices were evident for Washington state apples, California oranges, Florida grapefruit, California fresh grapes, California and Florida tomatoes, and California and Arizona iceberg lettuce. Retailers' ability to hold shipper prices below

competitive prices were found in Florida grapefruit, Washington state apples, and iceberg lettuce, but not for California and Florida tomatoes, California grapes, and California oranges.

Contrary to academics' concern about market power of concentrated retailers, there is widespread agreement within food retailing that competition has intensified in recent decades (Food Marketing Institute, 2005 and Deloitte, 2005). Rationale is as follows. They point to the more than a dozen types of retailers that vie for market share. Food retailers today include conventional supermarkets, superstores, natural and organic outlets, limited assortment stores, convenience stores, farmers markets, internet shopping, and gasoline/convenience stores. The competition with food service, including fast foods, has also intensified as 45 percent of food expenditures are spent on food service. The growth of the US population is minimized, so food retailers can grow only by taking business away from competitors. Industry margins are so thin that several food chains have gone bankrupt. While these are reasonable and predictable reactions from the owners of food industry capital, they are not sufficient to insure the public that food markets are structured to always provide the best prices and qualities. Firms exit the market for many reasons, and the effect of a market exit may be to the detriment of consumer welfare. While having differentiated retail formats may lead to greater competition, differentiation as a rule is a source of market power.

3.2. Vertical Relationship between Food retailers and Food producers: Vertical Restraints, Fees and Services Enforced by Retailers

Fees and Services

There have arisen many concerns about the growing unbalanced relationship between large-scale food retailers and agricultural producers/processors as food retailers consolidate. Retail buyer power can drive procurement prices lower leading greater consolidation in food processing, lower farm prices, and lower land values. In dealing with the issues related to consolidation in food retailing and dairy, Hendrickson et al. (2001) addressed negative aspects of food retailing concentration as follows. Because of consolidation, retailers are now in a position to dictate terms to food manufacturers who then force changes back through the system to the farm level. Perhaps 50-75 percent of the total net profit for large retailers comes from retailer fees from slotting allowances, display fees, presentation fees, "pay-to-stay" fees and failure fees.

As the balance of power shifts to retailers, smaller entities in all parts of the food system are placed at a disadvantage. The retailer fees in place at most of the larger retail stores present barriers to smaller processors and/or farmers wishing to place products on the retail shelf. Such restructuring presents critical problems for consumers and communities in inner urban and rural areas that are no longer profitable for global food clusters.

The US House of Representatives (1999) also raised concern about consolidation among agribusiness, questioning the economic viability of small farms and rural communities threatened due to horizontal mergers and acquisitions among food marketing

firms, and vertical integration among handlers and producers. Among issues related to consolidation among food marketing firms, one central issue is the slotting fee charged by grocery chains to food manufacturers. Defined as a lump sum, upfront payment that a food manufacturer must pay to a supermarket for access to its shelves, the slotting fee has been controversial, is it anticompetitive or not?

The slotting fee itself is lawful unless it is a form of commercial bribery. It can be regarded as an ordinary price discount that is likely to be passed through to consumers if retail market is competitive. Although the slotting fee is anticompetitive in the sense that it could block the sales of small manufacturers through exclusive arrangement, it is argued that industry concentration matters when explaining the characteristics of the slotting fee. If retailers are competitive, it is more likely that an exclusive agreement is not harmful for consumers.

Agricultural producers are basically against slotting fees. Fresh fruit and vegetable producers regard slotting fees as off-invoice fees which reduce prices paid to producers as a result of the buying group's market power. Producers also think that slotting fees and off-invoice payments to secure business relationships result in reducing consumer choice and access to produce. Today, produce companies are being asked by some retailers to pay flat fees apart from the invoice costs just to continue to do business. These rebates and allowances were once tied to promotions, advertising and sampling programs; today they are more likely to be flat fees unrelated to any incentives or performance. Small- to medium-sized grower-shippers are particularly vulnerable to these demands, but even the largest produce companies are concerned about such practices.

Besides fresh food producers, processed food producers see slotting fees as anticompetitive practices that raise retail prices and limit consumer choices. They also argue that slotting fees make it hard for producers to increase product lines.

However, retailers justify the existence of slotting fees in highly competitive market conditions. They regard slotting fees as inevitable since producers are competing for limited shelf space and there are costs and risks of introducing new products, such as unsold items, warehouse slots, and category management. Retailers also recognize that small producers began complaining about slotting fees as they lost competitiveness in the market in terms of quality, variety, and competitive pricing.

To better understand trade practices between retailers and shippers in the marketing of fruits and vegetables, Economic Research Service (ERS) of USDA and its cooperators conducted personal interviews with shippers, supermarket retailers, and wholesalers (Calvin et al., 2001). Produce-marketing, retailer-shipper agreements traditionally centered on quantity and price considerations, and now more off-invoice marketing and trade practices are included in retailer and shipper transactions. Trade practices cover both fees (such as volume discounts and slotting fees) and services such as automatic inventory replenishment, special packaging, and requirements for third-party food safety certification. Trade practices also refer to the overall structure of a transaction such as long-term relationships or contracts versus daily sales with no continuing commitment. The specific provisions of transactions between buyers and sellers are, however, not open

to the public. By surveying shippers, wholesalers, and retailers, this study compared trade practices in 1999 with those prevalent in 1994.

The study indicated that most shippers believed that the number of retail customers had declined, and the majority viewed this as harmful. With declining retail customers, most shippers thought they had less negotiating power and were more fearful of losing accounts if they did not comply with buyer requests. In terms of marketing channels, it was shown that the share of sales to conventional retailers was either stable or declining for all products, and the share of shipper sales to mass merchandisers increased across all commodities. While the total number of buyers may not have changed much for most shippers over the last five years, the importance of the largest buyers has increased slightly. In the case of vertical coordination methods, it was reported that using contracts was becoming more common, while daily sales and advance sales declined.

The study also reported that the incidence and magnitude of fees and services associated with transactions had increased from 1994 and to 1999. Fees paid to retailers are usually around 1 percent of sales for grapes, oranges, grapefruit, and tomatoes, and range from 1 to 8 percent for bagged salads. Forty-eight percent of the fees requested by retailers were new during the last five years and 41 percent of shippers had lost accounts when they did not comply with a fee request from a retail or mass-merchandise buyer.

The most frequent type of fee is the volume discount, a trade practice that has been used for years. Volume discounts might not be anticompetitive because volume incentives can promote a more stable relationship between suppliers and retailers. As the retailer buys more units from the supplier, costs per unit decline. Shippers and retailers may both gain efficiencies in marketing by increasing the size of accounts.

Supermarkets recently began using slotting fees, long used for dry grocery items, for procuring fresh produce. Slotting fees are common for fresh-cut produce and may be either requested by retailers or offered by shippers. Bagged-salad shippers reported that shippers, not retailers, first introduced slotting fees in an attempt to increase market share from their competitors. Slotting fees were reported to range from \$10,000 to \$20,000 for small retail accounts, and up to \$2 million to acquire the entire business of a large multiregional chain. Slotting fees are, however, not reported by grape, orange, grapefruit, and tomato shippers.

During study period, requests for marketing services by retailers increased. Shippers seems to believe they receive more benefits from providing services than from paying fees, as they may obtain advantages relative to competitors. According to shippers, the most common service requested is third-party food safety certification, followed by returnable plastic containers. Meanwhile, retailers reported that they requested shippers provide such services as private-label product items, category management, electronic data interchange, special transportation arrangements, new types of packaging, and third-party food safety certification. Although increased fees and services are reported in the produce industry, it is still unclear whether these new trade practices are the results of increased retailer market power over shippers.

Coalescing Power

If both retailers and producers have market power, we may have a different situation. Concentration on both sides of a market would produce coalescing power, i.e., the adversaries would combine to effectively increase the existence of power against others in markets up or down the market channel (Cotterill, 2006). The existence of coalescing power is analyzed as a factor leading to increases in consumer prices and decreases in raw product prices paid to farmers. Dobson and Waterson (1997) showed theoretical coalescing power is the outcome in a wholesale market where manufacturers and food retailers are locked in a bilateral monopolistic situation. Although they did not analyze the symmetric issues for the raw product market, it is expected that coalescing power between retailers and manufacturers would lower raw material product prices paid to farmers. Cotterill (2006) showed actual cases of coalescing power in the New England fluid milk market in the United States since 2000.

3.3. Market Power Studies

The literature on food retail pricing under imperfect competition is extensive and, in many ways, captures advances in the general theories of industrial organizations and in the econometric methodologies used to evaluate those theories. The early literature viewed the structure of an industry as a stage for firm conduct and eventual performance. Thus, the fewer firms in the industry, the higher the prices and, subsequently, the higher the profits. This eventually became a foundation for the reduced form equation estimation in the structure-conduct-performance (SCP) paradigm. Early studies tested the SCP paradigm across multiple industries, in an attempt to determine if increasing or larger levels of concentration led to higher firm profits. The Demsetz (1973) critique suggests that higher profits may be due to the superior efficiency of firms, not due to their use of market power. The use of accounting data to compute the firm's or industry's profit margin rarely equals true economic profit and may not represent costs correctly. Thus, accounting profits may not represent the true relationship between concentration and economic profits (Anderson, 1993). This, along with difficulty in interpreting the results of concentration-profit studies, decreased interest in performing research that concerned the relationship between concentration and profits.

As concentration-profit studies began to lose their appeal, those who believed in the SCP paradigm decided it was only natural to examine the relationship between price and concentration, instead of profits and concentration. Price is an embedded component in the price-cost margin used in concentration-profit studies. This allowed an easy extension of the SCP paradigm since price data was generally easier to access, and interpretations were easier to formulate. Since the first price-concentration study by Stigler (1961), well over 100 concentration-price studies have been performed across numerous industries, including cement, gas stations, airlines, banking, and supermarkets, where the results "seem to give overwhelming support to the concentration-price hypothesis" (Weiss, 1989). It is easy to demonstrate the relationship between market concentration and prices. Following Cowling and Waterson (1976), we consider the generalized Cournot model,

with constant and different marginal costs across firms and homogeneous goods. Firm profits are

$$\pi_i = pq_i - c_i q_i \quad (i = 1, \dots, n) \quad (1)$$

where p is the inverse demand function

$$p = p(Q) = p(q_1, q_2, \dots, q_n) \quad (2)$$

Assuming profit-maximizing behavior, the first-order conditions are

$$\frac{\partial \pi_i}{\partial q_i} = p + q_i p'(Q) \frac{\partial Q}{\partial q_i} - c_i = 0 \quad (3)$$

where

$$\frac{\partial Q}{\partial q_i} = 1 + \frac{\partial \sum_{j \neq i} q_j}{\partial q_i} = 1 + \lambda_i \quad (4)$$

and λ_i is the i^{th} firms conjectural variation, which represents the aggregated response of all firms in the industry to the quantity decisions of firm i . Rearranging (2-3) and dividing by p , we arrive at

$$\frac{p - c_i}{p} = -\frac{s_i}{\eta} (1 + \lambda_i) \quad (5)$$

where η is the market elasticity of demand. Summing across all firms in the industry, we can define the average industry markup as:

$$\frac{p - \bar{c}}{p} = -\frac{HHI}{\eta} (1 + \lambda) \quad (6)$$

where \bar{c} is industry marginal costs and $HHI = \sum_{i=1}^n s_i^2$ which is the Herfindahl-

Hirshman Index of market power. If the industry follows a Cournot strategy where $\lambda = 0$ (firms choose quantities assuming other firms will not react), industry profitability is a simply ratio of seller concentration (as measured by the Herfindahl-Hirschman Index) over the demand elasticity, consistent with the SCP framework..

To our knowledge, the earliest price-concentration study in grocery retailing (Mori and Gorman, 1966) tested the relationships between various structural characteristics and market performance for 23 cities. Essentially, they concluded that market share held by the largest firms in a market was not an effective variable in explaining differing price levels among cities. Furthermore, they concluded that the degree of price competition was found to be largely individual city structural relationships dependent on possible factors such as independent firm management goals, market area growth, and recent entry of new firms. A study commissioned by the US Joint Economic Commission (Marion et al., 1977, 1979a,b) focused on the organizational and competitive performance of the food retailing industry from 1970-74, focusing particularly on the price and profit performance of large US grocery chains, and the impact on the competitive environment. The price-performance section of the study performed an analysis of competitive forces on the grocery-price level of three grocery chains located in 36 US metropolitan areas. The level of prices in different

markets was examined by computing consumer cost for a market basket containing 110 products. The authors revealed that, *ceteris parabis*, prices were positively related to the CR4 variable and relative firm market share. It was estimated that monopolistic price overcharges, which were calculated over 263 Census metropolitan statistical areas (MSA) in 1974, were roughly \$662 million. The conclusion was that substantial market power exists in grocery retailing in many markets, which results in consumers paying considerably higher prices than if competition were more effective. They concluded that food prices and retail operating expenses would be significantly reduced by actions leading to lower market concentration and lower market shares for firms that now hold dominant positions in some markets.

Other studies in the SCP tradition followed. Hall et al. (1979) tested the relationship between wholesale-retail marketing margins and concentration for the US retail beef industry across different retailing regions of the United States. The null hypothesis that higher retail concentration did not influence the beef wholesale-retail marketing margins was rejected. They estimated that a 10 percent increase in the concentration level in a metropolitan area would increase the price margin by over four percent. The authors concluded that “the degree of concentration existing in a market does appear to be an important factor affecting the price-cost marketing margin in a particular region” (Hall et al., 1979). Lamm (1981) looked at the nature of the price-structure relationship for the food retailing industry using firm market shares and one- through four-firm concentration ratios as structural measures. The analysis indicated that the choice of a market structure measure is important for determining the nature of the structure-price relationship in the food retailing industry.

An equally important finding was the identification of a positive relationship between food prices and market concentration, providing further evidence that a higher degree of seller concentration is one cause of differences in intercity food prices. While Lamm’s results are usually recognized as evidence of a positive relationship between food prices and market concentration, he compared the CPI-Food CPI at Home index across markets, which the BLS specifically states is not an acceptable procedure. The CPI series data are not meant to perform cross-sectional analysis; they are MSA specific and are not consistent with other MSA index numbers, which questions the validity of Lamm’s results. Cotterill (1983) studied price and service levels in Arkansas as well as neighboring cities from surrounding states. He found that a firm’s price level is positively related to HHI, in most cases at the one-percent significance level. The warehouse supermarket binary variable was negative and significant, while warehouse store impact was negative and significant. Neither growth nor per capita income had a statistically significant impact on prices. Square feet of selling space was estimated in quadratic form as well, which was highly significant, suggesting that average store size is strongly related to price. Cotterill (1983) ran many smaller subsample regressions as well, with similar results occurring for most regressions. However, the subsample of only Arkansas retailers revealed that prices were negatively and significantly related to income, which was a rather “astounding result.” (Cotterill, 1983)

Meyer et al. (1983) examined the extent to which a high degree of local concentration would raise prices and lower quality, while presenting a new geographic definition of the relevant retailing market. The data used consisted of 183 item prices collected from multiple stores in the two California cities analyzed. Using paired t-tests, Meyer et al. (1983) found a strong significant price difference between concentrated and unconcentrated markets. In the study, the neighborhood was the market extension, not the entire metropolitan area as in other studies, so they assumed that neighborhoods with high concentration levels had significantly higher prices.¹ The authors also observed (but did not test empirically) that stores in monopoly locations offered the lowest level of services. Meyer et al. (1983) suggested that future analyses view market power at a very local level, not on the larger defined metropolitan statistical areas, which may understate the effects of concentration on price.

Cotterill (1986) studied Vermont supermarket retailers with respect to 1) how the price level of a firm in a market relates to measures of local market structure, 2) how prices of firms are related to firm-specific characteristics, and 3) which measures of market concentration are most strongly related to price level and how they compare to firm market share. Eighteen different markets across Vermont were used in the analysis, which consisted of 35 supermarkets. Cotterill (1986) found, after controlling for the variation in firm-specific characteristics, that market concentration, as measured by the HHI or concentration ratios, had a significant positive impact upon firm price levels. He concluded that Ravenscraft's 1980 study, which tried to isolate the independent effects of cost economies and market power on profitability, may not be generalized to markets with imperfect information and/or product heterogeneity. Cotterill (1986) concluded that profitability related to market share is due to share related market power, not cost economies.

In two studies, Marion (1993, 1998) used updated data to evaluate the role of warehouse store market share in supermarket pricing. His results from these studies generally supported the hypothesis that the introduction of warehouse stores and the increase in warehouse store market share affect food prices negatively. However, when the warehouse share exceeded 30 percent, the annual change in price became positive, indicating that the market's reaction to the warehouse store format had played out. Marion's results were consistent with the hypothesis that warehouse stores constitute a strategic group that is sufficiently interdependent with other supermarket formats and is an important competitive force that increases rivalry and leads to substantial consumer benefits.

Binkley and Connor (1998) examined the long-run supermarket-pricing pattern across different US markets. The "new competitive environment," as they called it, was the new food retailing market where warehouse stores and fast food restaurants compete with supermarkets for consumer food purchases. The intent was to study market characteristics that explained the long-run average retail prices of two broad classes of grocery goods: "wet" or fresh, perishable goods and "dry" or pre-packaged, branded foods. Additionally,

¹ Neighborhoods were defined as an area where residents were likely to confine their shopping.

they attempted to assess the impact of fast-food restaurants in the food retailing market. They found evidence that the nature of retail market competition affects different price groupings in different ways. The dry goods were less strongly affected by market competition, which reflects that branded goods are priced more uniformly across the US than are produce and other non-branded items. A positive significant value was found for concentration with respect to dry goods, but a negative insignificant value was found for wet goods. Binkley and Connor (1998) also determined that supermarkets responded to warehouse store competition by lowering prices more for wet goods, which the warehouse stores typically do not stock. They believed that huge differences observed in the analysis reflected discriminatory pricing patterns. The use of selected prices from store advertisements generated an image of strength and low prices for supermarkets, in goods of interest aimed at particular consumer segments. The results depicted a changing market, with serious competition arising from not only new formats of grocery retailing, such as the warehouse store, but also from the restaurant industry.

Due to the model identification problems associated with the SCP framework, researchers specified the new empirical industrial organization (NEIO) model, which explicitly uses the structure of the oligopoly model, to test economic theory. The NEIO econometric models utilize the first order conditions for profit maximization, a market demand function, and an endogenous relationship for the conjectural variation variable (Wen, 2001). These models then produce an estimate for the conjectural variation, which is the degree to which a firm takes into account its rivals' reactions to its own output choices.

To better understand the NEIO approach, we demonstrate the relationship between market share and prices, utilizing framework of Harris (1986, 1988), and later revisited by Cotterill (1993a), which used a dominant-firm oligopoly model under product differentiation.

Consider the profit-maximizing pricing decision of a dominant firm engaged in competition with a few rival firms (i.e., a member of a dominant oligopoly group, such as a supermarket submarket). We can define the dominant firm's demand as:

$$q_1 \equiv q(q_m(p_1, \dots), q_r(p_1, \dots)) \quad \text{Eq. (13)}$$

where

q_m = market demand

q_r = rival's summed supply

p_1 = price received by firm 1

Differentiating (Equation 13) with respect to p_1 gives us:

$$\frac{\partial q_1}{\partial p_1} = \frac{\partial q_1}{\partial q_m} \frac{\partial q_m}{\partial p_1} + \frac{\partial q_1}{\partial q_r} \frac{\partial q_r}{\partial p_1} \quad \text{Eq. (14)}$$

Then, noting that optimal inventory decisions are made at

$$q_r = q_m - q_1 \quad \text{Eq. (15)}$$

in equilibrium. It then follows that:

$$\frac{\partial q_1}{\partial q_m} = 1 \quad \text{and} \quad \frac{\partial q_1}{\partial q_r} = -1 \quad \text{Eq. (16)}$$

Multiplying and dividing through (Equation 14) with q^m and q^r yields the own-price elasticity of demand

$$\eta_1 \equiv \frac{\partial q_1}{\partial p_1} \frac{p_1}{q_1} = \frac{\partial q_m}{\partial p_1} \frac{p_1}{q_m} \frac{q_m}{q_1} - \frac{\partial q_r}{\partial p_1} \frac{p_1}{q_r} \frac{q_r}{q_1} \quad \text{Eq. (17)}$$

or

$$\eta_1 = \eta_m \frac{q_m}{q_1} - \theta_p^s \frac{q_r}{q_1} \quad \text{Eq. (18)}$$

where

η_1 is the own-price elasticity of demand for the dominant firm

$\eta_m < 0$ is the elasticity of market demand with respect to the dominant firm price.

$\theta_p^s \begin{matrix} > \\ < \end{matrix} 0$ is the conjectural own-price elasticity of rival supply. It is the perceived percent change in rival supply for a one percent change in dominant firm price.

Now, recognizing that $\frac{q_m}{q_1}$ is the inverse market share of the dominant firm $\left(\frac{1}{s_1}\right)$, it

follows that $\frac{q_r}{q_m}$ is equal to $1-s_1$, the market share of the remaining firms, leading to the following result:

$$\eta_1 = (\eta_m - \theta_p^s(1-s_1))/s_1 \quad \text{Eq. (19)}$$

We see that the dominant firm's own-price elasticity is a function of its market share, elasticity of market demand, and rival's supply conjecture.

The profits for the dominant firm are:

$$\pi_1 = p_1 q_1 - c(q_1) \quad \text{Eq. (20)}$$

Therefore, the dominant firm would set its profit-maximizing price where

$$\frac{\partial \pi_1}{\partial p_1} = q_1 + \left(p_1 - \frac{\partial c}{\partial q_1} \right) \frac{\partial q_1}{\partial p_1} = 0 \quad \text{Eq. (21)}$$

Then, from (Equation 15), it follows that $\frac{\partial q_1}{\partial p_1} = \frac{\partial q_m}{\partial p_1} - \frac{\partial q_r}{\partial p_1}$, then (Equation 21)

becomes

$$q_1 + \left(p_1 - \frac{\partial c}{\partial q_1} \right) \left(\frac{\partial q_m}{\partial p_1} - \frac{\partial q_r}{\partial p_1} \right) = 0 \quad \text{Eq. (22)}$$

Rearranging (Equation 22) and dividing by q_1 reveals

$$\left(p_1 - \frac{\partial c}{\partial q_1} \right) \left(\frac{\partial q_m}{\partial p_1} - \frac{\partial q_r}{\partial p_1} \right) \frac{1}{q_1} = -1 \quad \text{Eq. (23)}$$

Then multiplying and dividing through by q_m and q_r , and multiplying through by p_1 yields

$$\left(\frac{\partial q_m}{\partial p_1} \frac{1}{q_1} \frac{q_m}{q_m} \frac{q_r}{q_r} p_1 - \frac{\partial q_r}{\partial p_1} \frac{1}{q_1} \frac{q_m}{q_m} \frac{q_r}{q_r} p_1 \right) = - \frac{p_1}{\left(p_1 - \frac{\partial c}{\partial q_1} \right)} \quad \text{Eq. (24)}$$

Which, following from (Equations 17 and 18), reduces to

$$\eta_m \left(\frac{1}{s_1} \right) - \theta_p^s \left(\frac{1-s_1}{s_1} \right) = - \frac{p_1}{\left(p_1 - \frac{\partial c}{\partial q_1} \right)} \quad \text{Eq. (24)}$$

Then, inverting (Equation 24) and multiplying by -1 yields

$$pcm_1 = \left(\frac{p_1 - MC_1}{p_1} \right) = \left(\frac{-\eta_m + \theta_p^s (1-s_1)}{s_1} \right)^{-1} \quad \text{Eq. (25)}$$

or

$$pcm_1 = \frac{1}{\eta_1}$$

where pcm_1 and MC_1 are the price-cost margin and marginal cost for the dominant firm, respectively. Assuming the simplest case of identical marginal costs across firms, the profit maximizing price-cost margin may be written as:

$$pcm_1 = \frac{(p_1 - MC)}{p_1} = \frac{1}{\eta_1} = \frac{s_1}{-\eta_m + \theta_p^s (1-s_1)} \quad \text{Eq. (26)}$$

The firm price-cost margin equals the inverse of its own price-elasticity of demand.

Solving for p_1 from (Equation 26) gives us:

$$\frac{(p_1 - MC)}{p_1} = \frac{1}{\eta_1} \Rightarrow 1 - \frac{MC}{p_1} = \frac{1}{\eta_1} \Rightarrow 1 - \frac{1}{\eta_1} = \frac{MC}{p_1} \Rightarrow p_1 = \frac{MC}{1 - \frac{1}{\eta_1}} \quad \text{Eq. (27)}$$

$$\text{or } p_1 = \frac{MC}{1 - \frac{s_1}{-\eta_m + \theta_p^s (1-s_1)}}$$

In the special case where the firm's conjectural rival supply response elasticity, θ_p^s , is zero, which implies no perceived change in the rival's supply responses due to the dominant firm's actions, then (Equation 27) reduces to:

$$p_1 = \frac{MC}{1 - \frac{s_1}{\eta_m}} \quad \text{Eq. (28)}$$

Even in a constant marginal cost case, a firm's price can vary, and is a positive function of market share. Cotterill (1993a) argued that the higher prices that large profit-maximizing firms charge are due to the market power that differentiation confers; not higher costs.

By taking the partial derivative of (Equation 26) with respect to market share, we get:

$$\frac{\partial pcm_1}{\partial s_1} = \frac{-\eta_m + \theta_p^s(1-s_1) - s_1(-\theta_p^s)}{(-\eta_m + \theta_p^s(1-s_1))^2} \quad \text{Eq. (29)}$$

which reduces to:

$$\frac{\partial pcm_1}{\partial s_1} = -\eta_1^{-2}(\eta_m - \theta_p^s)s_1^{-2} \quad \text{Eq. (30)}$$

which is > 0 if $\theta_p^s \geq 0$ or $\eta^m < \theta_p^s < 0$

Because costs are constant in (Equation 26), this implies that the partial derivative of price with respect to market share is positive. Harris (1988) also demonstrated that pcm_1 is positively related to market share when marginal costs are not constant. In retrospect, when market share is a function of costs, as hypothesized by Demsetz (1973), we have an ambiguous sign for the price share derivative. Demsetz (1973) hypothesized that higher market share firms have higher prices due to product differentiation and market power and/or higher costs, or they may have lower prices due to lower costs. Many papers have used the NEIO approach to evaluate many specific food products. The purpose of this book is to provide important perspectives about macro-trends in food retail pricing. Thus, our discussion here will cover a representative sample of the NEIO work in a way that captures the breadth of analytical methods and topics covered.

Concerns about the altered structure in the food retailing industry due to leveraged buyouts, mergers, acquisitions and financial restructuring during the 1980s, as well as increasing concentration levels resulting from the altered structure led Park and Weliwita (1999) to examine competitive conditions in the US food retailing industry from 1967 to 1992. A model of firm conduct incorporated financial variables into the industry cost function to control for the effect of changes in industry financial structure on the costs. They found that, because of merger activity and leveraged buyouts, financial leverage increased and shifted from short-term liabilities to long-term debt. This allowed the industry to become more concentrated and segmented, which led to the exertion of market power.

Analyzing the wholesale beef market, Schroeter, Azzam, and Zhang (2000) addressed the problem of measuring bilateral market power. Three equilibrium benchmarks (bilateral price-taking, manufacturer price-taking, and retailer-price taking) were evaluated. The authors conclude that food retailers enjoy buyer market power in the wholesale market, but manufacturers do not have any form of a countervailing market power. A study by Kadiyali, Chintagunta, and Vilcassim (2000) measured the power of market channel members in an attempt to understand the reasons for market power in the refrigerated juice and canned tuna markets. They found that market power has increasingly shifted from manufacturer to retailer due in part to intense competition among manufacturers, the introduction of private label brands, and increased concentration at the retail level.

Several studies focused on the topic of asymmetric price responses. This condition arises when cost increases are found to quickly lead to price increases but cost decreases do not quickly lead to price decreases. Carman and Sexton (2005) focus on market power in their analysis, looking at prices of milk with different fat contents. Their results suggest

the existence of imperfect competition among retailers. Azzam (1999) focused on spatial competition in the presence of re-pricing cost, where the decision to buy from a particular store is based on the cost of the milk and the travel cost to the store. To analyze the issue of asymmetric price transmission, both short-run and long-run transmission will be analyzed. Hansen et al. (1994) differentiated between short-run and long-run asymmetry, where short-run asymmetry is a result of quicker response to increases or decreases in cost than that of the opposite movement in the same periods, initial months. In the presence of short-run asymmetry, long-run asymmetry could, or could not occur. Long-run asymmetry results if after full adjustments to an increase and decrease in equal-size cost has transpired, the resulting retail price is different from what it was before the changes in cost happened. Like with short-run asymmetry, long-run asymmetry can occur without short-run asymmetry. Overall, short-run asymmetry is seen as a temporary effect, while long-run asymmetry is seen as a permanent effect. See also Kinnucan and Forker (1987) and Romain et al. (2002) for additional analysis of the price asymmetry phenomena.

Unlike previous studies that focused on specific markets or industries, Peltzman (2000) looked for evidence of asymmetric price transmission in 77 consumer and 165 producer goods categories in an attempt to generalize how prices respond to cost changes using monthly data from 1978 to 1996. The results of the consumer and producer goods categories overwhelmingly pointed to positive asymmetric relationships in the respective markets, suggesting positive asymmetry is a fact of life in industrial markets. Only after long time lapses, eight months, was there evidence of the gap narrowing between input price increases and decreases. Peltzman (2000) also estimated how quickly a change in the wholesale price of a typical brand was reflected in the retail price of that brand in a specific store, using 357 pairs of individual UPCs at four stores from a leading supermarket chain in the Chicago metropolitan area. The results indicated there was no evidence of asymmetric behavior; there was a complete absence of any systematic asymmetry when the response of a single decision maker to its own costs was studied.

Peltzman (2000) found that, with respect to producer goods, less input volatility was associated with more asymmetry, and the structure of the market “matters” but in a way that resists easy labeling. Fewer competitors (in numbers) were associated with more asymmetry but a more concentrated market (in HHI) was associated with less asymmetry. It also appeared that the more fragmented the supply chain to retailers, the more asymmetric the price changes realized.

Price dispersion studies focus on the distribution of prices across sellers of the same item. When price dispersion is present, it allegedly reflects market inefficiency, a direct violation of the Law of One Price (Stigler, 1961). The dispersion is attributed to search costs, market power, or attributes of the item sold or retailer involved in the selling process. Early studies presented mixed results on whether a price gap between sellers exists. Groom (1966) and Alcala and Klevorick (1971) found no relationship between market prices and average incomes, while Kureuther (1973) found that poor neighborhoods had higher food prices. In a study of the Irish grocery market, Walsh and Whelan (1999) modeled the price dispersion between related brands within product categories for

independent Irish retailers. Since the shops in the study were small “corner grocer” stores, the shops did not carry the full range of available brands; subsequently, the presence of price dispersion between related brands in the market reflected different price patterns of averaged brand prices across different shops or consumer groups. The focus was to determine whether the dispersion in the market price of related brands within products in the Irish grocery market was an outcome of “monopoly type” or “competitive type” pricing over heterogeneous consumer segments. Their results provided evidence that product category brand specialization leads to price dispersion within products of the market. However, price dispersion between related brands within products was estimated to increase with the level of brand choice and firm competition in the product, which was consistent with “competitive type” pricing across consumers. Additional evidence suggests that imperfect consumer switching abilities become more elastic in some consumer segments compared to others in response to competitive forces. They revealed that brand pricing across consumer groups induced different degrees of localized imperfect price competition rather than pricing across segments that extract consumer willingness to pay.

Hayes (2000) examined whether food prices are higher in poor, urban neighborhoods compared to more affluent locations. His results suggested that food stores offer discounts to consumers who have greater price elasticities of demand and not to consumers with inelastic demand. Additionally, poor white, and Hispanic neighborhoods had market prices considerably lower than those found in affluent white neighborhoods, while prices in poor black neighborhoods did not significantly differ from affluent white neighborhoods.

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Chapter 2: The Case of Australia

Garry Griffith and Vic Wright

1. INTRODUCTION

Australia has experienced a half-century of retail development, which has seen supermarkets move to predominance in food retailing. Prior to the 1950s self-service food retailing was unknown in Australia. Stores were then characterized by considerable specialization with customers needing to visit a grocery store, a fruit and vegetable store and a butcher's shop to satisfy household food needs. Most stores were independently owned.

Rapid urbanization in Australia in the 1950s and 1960s created economic conditions, which favored the establishment of supermarkets as the dominant food store format. However the nature of the market environment means that the variety of food retail stores is relatively narrow in Australia. Traditional markets have never played a significant role, hypermarkets are rare, and deep-discount retailers are a relatively recent phenomenon. This reflects the high degree of urbanization and suburbanization, small aggregate population and geographical isolation from other Western culture food markets.

Further, these same characteristics of the market have provided strong incentives for takeover and merger activity such that the two dominant supermarket groups (Coles and Woolworths) now control something in the order of 80% of grocery sales, depending on definitions. Conversely, supermarket dominance has not provided sufficient incentives for foreign investment until very recently, with the entry of Aldi from Germany, Pick'n Pay from South Africa, and Costco from the United States.

A recent government enquiry into the retailing sector (Parliament of Australia 1999) concluded that the major winners from this expansion of market share by the major chains were consumers, in terms of deregulated trading hours; a greater product choice; lower prices; and the convenience of one-stop shopping. On the other hand, although there is little formal evidence, it is widely believed that the large retailers have the capacity to exercise market power against input suppliers, including farmers, and that they use this market power to reduce input prices.

The following section looks at the changing nature of the food retailing sector in Australia, while section 3 identifies and summarizes the impacts that supermarkets have on their supply chain partners, including consumers. Available empirical evidence is reviewed in section 4.

2. STRUCTURE OF FOOD RETAILING IN AUSTRALIA

2.1 Industry Definition of Food Retailing

Food retailing in Australia is defined, under the Australian and New Zealand Standard Industrial Classification (Australian Bureau of Statistics, 2006b), to include supermarkets and grocery stores (including convenience stores) and specialized food retailers. Specialized food retailers include retailers that sell fresh meat, fish and poultry, fruits and

vegetables, confectionary, liquor, non-alcoholic drinks, small goods, baked goods (provided they are not manufactured on the same premises), and any other specialized food items. Excluded are food vending machines and retailers selling food for immediate consumption or takeaway consumption (such as restaurants, cafes, bars, etc.).

The defining characteristic of supermarkets and grocery stores as a class is that they sell groceries or non-specialized food lines. Under this definition selling may be self-serve or not.

2.2 Basic Structure of Retail Food Stores

In 2003-04 there were some of 235,000 retail businesses in Australia (Australian Bureau of Statistics, 2006a), employing 1.4 million people, or 15% of the workforce, more people than any other industry (Australian Bureau of Statistics, 2006c).¹ Of these businesses, 57,000 (24.2%) were food retailers. In that year 30% of the businesses reported a loss and 69% a profit; figures which closely approximate retail figures overall (29% and 70% respectively) (Australian Bureau of Statistics, 2006a). In 2003-04 food and liquor retailing comprised 45.9%, by value, of all retailing sales (Spencer, 2004).

Australia has experienced a half-century of retail development, which has seen supermarkets move to predominance in food retailing. Prior to the 1950s self-service food retailing was unknown in Australia apart from moves from 1949 in some department stores to make their food sections self-service. The first full self-service grocery store opened in Sydney in 1950 (Parliament of Australia, 1999).

To satisfy household food needs, customers needed to visit a grocery store, a fruit and vegetable store and a butcher's shop. Most stores were independently owned.

Rapid urbanization in Australia in the 1950s and 1960s created economic conditions that favored the establishment of supermarkets as the dominant food store format.

By the end of the 1960s Coles and Woolworths, the two largest food store chains in Australia, had moved from variety store bases to supermarket operations through acquisition of small chains and organic growth. They had also acquired in-store butchers who had previously operated as franchisees (Parliament of Australia, 1999).

Nominally discount supermarket chains (Bi Lo, Shoeys, Franklins, for example) sought to compete with a somewhat lower-priced, lower-service offers but did not succeed. Occasionally, new discount stores opened and were declared to be "half-case discount stores" (i.e., offering deep quantity discounts) but were nothing of the sort. Some, such as Franklins for a time, kept costs down by not stocking fresh fruit and vegetables or fresh meat.

Now, in addition to all fresh and packaged foods and grocery items, the major supermarket stores offer newspapers and magazines, health and beauty products (with pressure to move directly into pharmacy operations to compete with legislatively-protected specialist pharmacy [chemist] stores), discounted petrol for store customers (through alliances with major petrol refiners/retailers and some petrol store ownership under those brands: Shell for Coles and Caltex for Woolworths), alcoholic beverages and some

¹ Employment in Australia is defined as paid employment of one hour or more per week.

banking services via electronic funds transfer at point of sale (EFTPOS) systems which have been commonplace in store since the 1990s. In-store bakeries are also common.

The evolution of supermarkets has led to substantial declines in the market shares of the specialized food retail stores that preceded them. In 1998-99 the market shares, by value, of supermarkets and grocery stores, and relevant specialized retailers, respectively, were for fresh meat 61.7% and 37.8%, for fresh poultry 73.7% and 24.2%, for fresh seafood 27.9% and 70.1% and, for fresh fruit and vegetables, 68.2% and 31.3% (Australian Bureau of Statistics, 2006d). Between 1992 and 1999 the number of independent fruit and vegetable retail stores fell by 56% from 3,670 to 1,611 (Wade, 2002). Food retail sales by value in 1998-99 and 2004-05 were distributed across outlets as shown in Table 1.

Table 1. Retail Sales by Store Type

Store type	1998-99 (%)	2004-05 (%)
Supermarket and Grocery	80.5	79.5
Specialized	19.5	20.5
<i>Fresh Fish, Meat and Poultry</i>	4.5	n.a.
<i>Fruit and Vegetable</i>	3.6	n.a.
<i>Liquor¹</i>	5.5	7.6
<i>Bread and Cake</i>	2.4	n.a.
<i>Specialized n.e.c.</i>	3.5	n.a.
Total Value (AU\$m.)	47,604.8	71,487

Table 1. It should be noted that Coles and Woolworths have moved heavily into liquor retailing over the last five years or so. Total liquor sales are estimated to be about AU\$11.5 million p.a. with the two largest supermarkets having a combined market share of about 45% (Jones, 2005).

Source: derived from Australian Bureau of Statistics (2006d) and Australian Government Department of Agriculture, Fisheries and Forestry (2005).

Types of food retail stores are relatively narrow in Australia. Traditional markets have never played a significant role, hypermarkets are rare, and deep discounters a relatively recent phenomenon. The limited types of food retailers reflect the high degree of urbanization and suburbanization, small aggregate population and geographical isolation from other Western culture food markets.

The population of Australia is slightly more than 20 million (Australian Bureau of Statistics, 2006c). At 92% in 2003 (World Bank 2005, p.166), Australia had a high level of urbanization. With 61% living in urban agglomerations with populations of more than one million, and 23% living in the largest city (Sydney), Australia is also highly suburbanized (World Bank 2005, p. 166). Comparable figures for the United Kingdom are 23% and 14%, and for the United States, 42% and 8% (World Bank 2005, p. 168).

Jointly, these demographic characteristics have fostered intense competition and created little real incentive for foreign investment in the sector. Most consumers frequent supermarkets within a few kilometers of their home (Cotterill 2006, p.19).

Some segmentation occurs in department stores such as David Jones, which offer limited ranges of up-market foods, including fresh foods. However, these types of food retail markets are limited and seemingly fragile, with store commitment to the food department variable.

Farmers' markets are increasing in number. In 2005 there were about 80 across Australia. Almost half of them, 46%, were in rural towns, 26% in regional centers, 17% in suburban areas and 11% in metropolitan central business districts (CBD). Farmers' markets are estimated to have aggregate sales of about AU\$40 million, a tiny proportion of total food sales. Two-thirds of these markets were formed in 2003 or later. Over half (59%) operate on a monthly or bi-monthly basis with the highest frequency (weekly or twice-weekly) operations comprising 16% of markets (Coster and Kennon, 2005).

2.3 Food Store Formats

Conventional supermarkets dominate Australian food retailing. The majority of non-supermarket grocery stores are scaled-down imitations of supermarkets with the greatest differences in offerings of fresh meats, fruits and vegetables. Few offer any fresh meat. Margins, and prices, tend to be higher with few instances of deep discounting on particular product lines, such as cola drinks, as seen in supermarkets. Competition is entirely on the basis of location and trading hours.

The steady relaxation of government controls on trading hours of supermarkets (while smaller stores were unregulated) has eroded bases of convenience for competing grocery stores. Supermarkets now typically operate seven days per week, open as long as 24 hours per day, if demand warrants it. Location advantage, and related speed of shopping encounter, is the main remaining competitive advantage of independent grocery stores. This has moved grocery stores to compete more closely with convenience stores (corner stores), which have very restricted product ranges, in that store attractiveness is offset by the magnitude of the intended goods to be purchased. As the quantity of products to be purchased in a visit increases, high prices and limited range become increasingly problematic.

Exacerbating this effect has been the move of Coles and Woolworths into "express" or "metro" stores. These are partly scaled-down supermarkets located in high-traffic metropolitan areas offering a better-balanced portfolio of products with high convenience and prices approaching convenience-store levels. Stores within petrol retailers owned by, or in alliance with, these chains are also within this store category. The appeal is strong for small, higher income households that are "time poor." The competing store type is more likely to be grocery stores or convenience stores en route from workplace to home, than full-sized supermarkets.

While convenience has increasing appeal to customers, the response of major supermarket chains with extended hours of operation and their metro or express formats, coupled with the high location appeal of corner stores, has accelerated the collapse of the niche previously occupied by non-supermarket grocery stores.

Private labels continue to expand in supermarket product portfolios. Aldi leads, with about 80% of sales (Ritson, 2006). Coles aspires to 30% of sales being private label (house brand) and Metcash has declared its intent to match Coles (McMahon, 2006) sales. Both Coles and Woolworths offer a number of house brands at different price/quality points. It is estimated Woolworths has around 800 products under its upmarket *Select* brand and a further 800 products under the *Homebrand* (Carson, 2008). Woolworths expects sales of its private labels to double over the next three years. Coles has around 2,600 products under its *Select* and *You'll Love Coles* brands, and plans to expand this further under new owner Wesfarmers.

The evidence to date suggests that the private label strategy of the major chains is working. Retail data suggests that the share of the AU\$1.6 billion bread market held by private labels grew from 11% to 19% last year while the share held by major manufacturer Goodman Fielder fell from 42% to 34.5% over the same period (Carson, 2008). This further indicates the shift in market power in the Australian food-value chain from manufacturers to retailers (Messinger and Narasimhan, 1995).

2.4 Market Share and Foreign Direct Investment

In 2007 there were three major supermarket chains in Australia, as measured by share of the supermarket and grocery store retail sales. Constraints on Australia's market share data include no concentration ratios published on a consistent basis, little official manufacturing or retailing data because of confidentiality provisions preventing publication, and little firm level data in those industries of interest. With greater legislative requirements on government agencies to consider the competitive behavior of food markets, the public data collection and distribution system has become more relaxed, and confidentiality restrictions prevent the publication of data which are likely to be most useful for the type of research required. In other countries such information is more widely available. So when the literature mentions "shares" of sales in particular sectors, the information is based on in-house collections by the major firms or on surveys undertaken by private data firms such as ACNielsen, Ibis World and Retail World.

These data restrictions also significantly limit academic research of the Australian retail food chain. Work on food procurement and distribution channels, demand studies of disaggregated product groups and second generation NEIO explanations of market power have all suffered (Cotterill, 2006, Piggott et al., 2000).

The three major supermarket chains are Coles (now part of Wesfarmers Limited; WES on the Australian Stock Exchange), with about 35% of the market, Woolworths Limited² (WOW on ASX), with 41%, and Metcash (MTS on ASX), with 18.5% (Round, 2006) (Metcash Limited, 2006). Numbers of stores in different categories are shown in Table 2.

² Woolworths Limited is not related to other Woolworths around the world, being initially named, whimsically, after the US Woolworths chain as a dare/in-house joke (Parliament of Australia 1999).

Table 2. Store numbers operated by the major supermarket chains

Chain	Supermarkets	Liquor stores	Hotels (pubs)	Convenience & petrol
Coles	737	735	69	c.600
Metcash ¹	1209	1647	372	
Woolworths	738	1015	250	491

Table 2. Metcash uses a franchise model for its retail activities; these stores and hotels are outlets, owned by independent retailers, who draw on the full marketing, branding, logistical and distributional support of Metcash. Metcash is the main wholesaler for some 2,700 stores in Australia. It supplies over 13,000 licensed premises with liquor. Metcash, through IGA, also offers petrol discounts but is not tied to any specific oil major.

Source: Annual Reports, 2006 of Coles Myer Limited, Metcash Limited and Woolworths Limited.

The other distinctive chain, and the only foreign participant operating nationally, is Aldi (not traded on ASX) with 120 stores and the same discount supermarket format as elsewhere around the world: limited product assortment (about 700 product items) and service, many private label products, and low prices. It has about 4% market share (Ritson, 2006).

At a national level the concentration of Coles and Woolworths appears high but is “not relative to countries, like the Netherlands, or regions, like California or Florida in the United States, with similar populations” (Spencer 2004, p.113).

Major retailers have protested that the market share figures commonly reported for them are inflated by the focus on their specific sector, to the exclusion of other food retailing stores in Australia. They assert that, between them, Coles and Woolworths hold less than 50% of the whole food-liquor-grocery market (Spencer, 2004). Woolworths claims that independent grocers and specialty food stores hold just under 50%’ share of the food-liquor-grocery market and that its own share is less than 30% (Woolworths Limited 2006, p.22).

In 1975, Coles and Woolworths, jointly, commanded a 40% share, around half of the current level. Their expansion over the past two decades has been through consolidation by acquisition, and to a degree, organic growth.

Coles and Woolworths trade under their own brand names. Coles has run dual brands, Bi-Lo (its acquired discount supermarket chain) at the budget end, and Coles at the full-service end. Significantly, in 2006 Coles decided to abandon the Bi-Lo brand, re-branding as Coles supermarket. This re-branding exercise was abandoned in mid-stream while takeover discussions proceeded, indicating a high degree of strategic uncertainty. This action could be seen as a response to the steady growth in Aldi’s share of the discount segment.

Metcash trades principally under IGA (Independent Grocers of Australia, fashioned on, and linked to, the international Independent Grocers Alliance). Metcash was a South African company (Metro Cash and Carry) that acquired a major Australian grocery wholesaler, Davids Holdings, in April 1998. Davids Holdings had a near monopoly over packaged grocery products distribution to independent Australian grocery retailers. It also,

like Metcash in South Africa, held the national franchise for Independent Grocers Alliance. Metcash bought out the South African company's holding and is now Australian-owned.

Most Metcash stores are independently owned and operated, with Metcash providing joint promotional activity and wholesale supply. The market share of Metcash is a recent achievement (up five percentage points in one year through acquisition), and is raising competitive pressure in the retail sector (Metcash Limited, 2006).

Metcash's increased market share allayed immediate concerns about Coles and Woolworths market concentration and calmed the need to provoke Australia's Competition and Consumer Commission (the federal government corporate conduct watchdog) and the Australian Consumers Association (Round, 2006).

Aldi is one of three foreign corporations that have directly invested in grocery retailing in Australia. It entered the Australian market in January 2001.

Pick'n Pay, from South Africa, entered the Australian market, only in New South Wales (NSW), in 2001 by acquiring some of the 200 Franklins stores being sold by the Hong Kong firm Dairy Farm International. This firm entered the Australian market by full acquisition of Franklins in 1979, but decided to exit from this market in 2001 after a string of losses. Pick'n Pay operated 77 stores in NSW by end-2006. (Woolworths also acquired 80 Franklins stores from Dairy Farm International.) In mid 2009, the United States retailer Costco Wholesale Corporation (a wholesale membership warehouse club) opened its first Australian store in Melbourne and announced plans for further expansion (Mitchell, 2009).

During 2006 and 2007, there was talk in the media of Wal-Mart contemplating a takeover of Coles or Woolworths, particularly since the company left Germany (Evans and Askew, 2006). The only takeover move in 2006 was on Coles and was from a "private equity" (i.e., leveraged buyout) consortium led by the US firm Kohlberg Kravis Roberts. There was also media talk that the major UK retailer Tesco was a potential partner in this consortium, but this was not confirmed. In any case, the offer was rejected without shareholder consideration (Askew, 2006).

However, potential suitors still set sights on the Coles Group following several years of distinctly inferior competitive performance against Woolworths, most notably in supermarket trading. Coles enjoyed only slightly more than half the price/earnings multiple on the ASX that Woolworths did during late 2006 and 2007. In September 2007, Wesfarmers Limited, a diversified Australian company, offered a takeover deal for Coles involving cash and shares. Wesfarmers is very effective in discount hardware and garden care retail through its subsidiary Bunnings (Wesfarmers, 2007). Coles recommended the offer to shareholders and in November 2007 they voted to accept. Australian supermarkets continue to be substantially Australian-owned.

On the other hand, Woolworths has moved significantly into grocery retailing in New Zealand. Woolworths held 43% of the New Zealand supermarket sector in 2007 with the balance held by a single New Zealand firm, Foodstuffs (Speedy, 2007).

Cultural similarity appears to be important to successful market entry in this sector. Its absence has been suggested as a problem leading to Wal-Mart's exit from Germany and could underlay the unsuccessful venture into Australia by Dairy Farm International

(Askew, 2006). South Africa, New Zealand and Australia are widely perceived to be culturally similar (and personal experience confirms the close similarity of supermarket offerings in each of these countries).

Characteristics of the Australian retail food market and the increasing dominance of the two major supermarket chains has not provided sufficient incentives for foreign investment until very recently, with the entry of Aldi, Pick'n Pay, and Costco. Another factor has been the tight regulatory framework for such investments imposed through the Foreign Investment Review Board and the Australian Competition and Consumer Commission (ACCC), although this framework appears to be more relaxed in recent years. The Australian Government, for example, has announced its intention to extend, from 12 months to five years, the period allowed for foreign supermarkets to develop acquired commercial land.

3. EFFECTS OF INCREASED FOOD RETAIL CONCENTRATION ON CONSUMERS, PROCESSORS AND SUPPLIERS

Ongoing concern about whether or not the Australian food marketing chain is competitive has heightened in recent years for a number of reasons. First, data show that nominal food product marketing margins continue to increase over time, particularly in the last decade (Griffith, 2000). Nominal retail prices have increased more rapidly than farm prices, and the farmer's share has declined. Second, regulated agricultural products marketing systems in most states have been progressively dismantled with the elimination of guaranteed farm prices, production quotas, vesting and single-desk selling arrangements. Domestic markets have been opened to greater import competition via more liberal trade agreements. Third, associated with this reform process in domestic and international agricultural markets, there has been an increase in takeover and merger activity as firms position themselves to take advantage of the new marketing environment. Examples include takeovers of smaller independent food retailers by the major chains, and their move into fuel retailing. The Joint Select Committee on the Retailing Sector was established by the Australian government to investigate and report on allegations of the growth and use of market power by major supermarket chains.

The committee concluded that the major winners from this expansion of market share by the major chains were consumers, in terms of deregulated trading hours; a greater product choice; lower prices; and the convenience of one-stop shopping (Australian Parliament, 1999). The report stated, "At the consumer level, competition in the retailing sector appears to be healthy, with retailers vigorously competing with one another on price and choice. This is evidenced by declining real prices of many grocery items over the last decade, and a massive expansion in product range to the point where major supermarkets now offer over 40,000 different items in their larger stores."

The report also recognized that the growth of supermarket chains has led to significant economies of size and scope and that these savings have been, at least in part, passed onto consumers in the form of lower prices. This implies that market power on the selling side is not a big issue.

Conversely, the large retailers have the capacity to exercise market power against input suppliers, including farmers. Financially powerful firms will invest in directions that will enhance their position. Shareholders of listed public companies not only expect these firms to be profitable, but more profitable than their competitors. If there is no room to move on raising output prices, savings have to be found on lowering input prices.

For example, large retailers have taken a lead role in tendering for the supply of eggs, milk and other food products from a much larger and diverse group of farmers and/or processors, which provides a mechanism to achieve a degree of oligopsonic behavior towards farmers. These actions are strongly linked to private label strategies discussed above. In submissions to the committee, farmer organizations were concerned that the market power of the major chains enabled them to drive very hard bargains in the purchase of produce, often in an aggressive manner. Members of some farm organizations report instances of what they believe to be abuses of market power, including significant added costs being imposed on suppliers via enhanced labeling and packaging requirements; the use of various tactics to limit the establishment of brand names by suppliers; breaches of contract; the flexible use of quality standards as grounds for product rejection; the use of exclusive supply agency arrangements in certain markets; and unfair negotiating practices (National Farmers Federation, 1999; Queensland Fruit and Vegetable Growers, 1999).

The Australian government introduced a voluntary code of conduct for major supermarket chains in 2000, but it has been largely ineffective in addressing the issues raised by the committee.

Hence, the debate has continued since the release of the committee's report. In 2001 the Australian Senate directed the ACCC to inquire into whether supplier pricing discriminated against independent retailers in favor of large supermarket chains. The ACCC indicated that major retailers such as Woolworths and Coles had buyer power but they did not find any evidence that suppliers in the Australian grocery industry favored any particular buyer. If price discrimination was found to be occurring, the ACCC concluded that it would be unlikely to breach the Trade Practices Act (ACCC 2002, 48-49).

To protect small businesses dealing with larger firms, the 2003 Independent Review of the Trade Practices Act recommended enhancements to the act. One recommendation of particular interest was a move to facilitate collective bargaining by small firms when dealing with large suppliers or customers. At the time of publication, no new legislation had been introduced by the new Federal Labour government, although it was deemed a priority.

The Australian Agricultural and Resource Economics Society hosted a session on market power in food industries at its annual conference in February 2005. Three papers from that session have since been published in the *Australian Journal of Agricultural and Resource Economics* (Cotterill, 2006, Smith, 2006, and Round, 2006). These reviews of current economic policy debates relating to the Australian retail food market provide information about and offer potential research avenues to facilitate these debates.

4. IS THERE ANY EMPIRICAL EVIDENCE OF UNCOMPETITIVE CONDUCT?

In the case of Australian food industries, only a few empirical studies of the relationship between profitability and industry structure have been undertaken. These have been reviewed by Griffith (2000) and Piggott et al. (2000).

Most have been in the area of meat marketing. Griffith and Gill (1984) investigated whether the major changes in the structure of pig meat marketing in the early 1980s had any impact on pig meat price spreads. Concentration variables relating to the retail or processing sectors were not found to have any consistent or significant separate impact on price spreads in pig meat marketing. In a similar vein, Corbett (1998) examined whether the rising proportion of beef sold by supermarkets relative to butcher shops in New South Wales, as a measure of increasing concentration in meat retailing, was able to explain any of the increase in the beef farm-retail price spread over the 1980s and 1990s. The concentration variable generally was found to be statistically insignificant. Hyde and Perloff (1998) found that the domestic retail meat market was competitive for beef, lamb and pork and that market power had not increased over time. Chang and Griffith (1998) found that the farm, wholesale and retail prices for beef moved together over time, all responding to exogenous shifts in demand and supply curves which is evidence in support of competitive price determination. Griffith (2000) found that the null hypothesis of a competitive market in both output and input markets could not be rejected for any of the meat products, fresh fruits, or fresh vegetables.

A particular area of concern in Australia in recent years has been retail fluid milk markets, and the extent to which retail prices might change because of concentration in food retailing following deregulation in various states. For the product of primary interest, carton milk, O'Donnell (1999) found significant evidence of the existence of market power but he was unable to quantify its precise magnitude or cause.

In the processed grains and oilseeds sector of the food market, Griffith (2000) and later O'Donnell et al. (2004, 2007) found some evidence of a noncompetitive buying market for the relevant farm commodities. Given the assumptions made, and the fact that the estimated coefficients reflect average behavior over a 20-year period, these results suggest that noncompetitive activity has been a persistent feature of this market sector, however it would seem to be confined to the processing sector rather than the retailing sector.

Data show that for a wide range of food products, real marketing margins have remained stable or risen slowly but real retail prices have fallen, implying real farm-gate prices have fallen at a greater rate than retail prices (Griffith 2000). However, although very few empirical studies have been done in the Australian food marketing chain, there is little evidence of any market power exerted by the increasingly concentrated food retailing firms.

5. SUMMARY AND IMPLICATIONS

Rapid urbanization in Australia in the 1950s and 1960s created economic conditions that favored the establishment of supermarkets as the dominant food store format. However the market environment is a result of a high degree of urbanization and suburbanization, small aggregate population and geographical isolation from other Western

culture food markets. This means that the variety of food retail stores is relatively narrow in Australia. There have been strong incentives for takeover and merger activity and now two dominant supermarket groups (Coles and Woolworths) control something in the order of 80% of grocery sales, depending on definitions. Until lately there has been little incentive for foreign investment, though recently Aldi from Germany, Pick'n Pay from South Africa, and Costco from the United States ventured into the Australian food retail market.

The high market shares of two dominant supermarket chains, and allegations of uncompetitive conduct in dealing with suppliers, has resulted in a number of government enquiries into the retailing sector (Parliament of Australia, 1999, ACCC, 2002, the Independent Review of the Trade Practices Act, 2003). The Select Committee concluded that the major winners from this expansion of market share by major chains were consumers, in terms of deregulated trading hours; a greater product choice; lower prices; and the convenience of one-stop shopping. On the other hand, although there is little formal evidence, it is widely believed that large retailers have the capacity to exercise market power against input suppliers, including farmers, and that they use this market power to reduce input prices.

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Chapter 3: The Case of Brazil

Danilo R.D. Aguiar

1. INTRODUCTION

The evolution of food retailing in Brazil has followed the same pattern found worldwide, whereas typical retail stores have been moving from small-scale grocery stores to supermarkets and from supermarkets to hypermarkets. Moreover, the share of foreign direct investment (FDI) has increased substantially in the retail sector especially since the middle of the 1990s.

Until the decade of 1970, most retailing was done by family-managed, small-scale, specialized food stores. Beginning in the 1970s, the trend toward supermarkets intensified in large cities, while small-scale stores prevailed in small towns. During the 1980s, supermarkets increased their importance in food retailing in both large cities and small towns, but most of the investment was still carried out by Brazilian national companies and local entrepreneurs, in the case of small towns.

The first large international retail chain to invest in Brazil was the French company Carrefour. Carrefour's presence represented a landmark in Brazilian retail industry. Since starting activities in Brazil in 1975, Carrefour has opened new stores and acquired stores from local-based supermarket chains. Beyond changing the relationship between retailers and consumers, the new pattern of competition introduced by Carrefour has changed the relationship between retailers and also between retailers and suppliers.

With this new retail pattern, consumers have access to new and improved quality products as well as lower prices. Declining prices are possible due to scale economies obtained by large supermarket chains and their increased bargaining power against suppliers.

After Carrefour, other foreign retailers have started investing in Brazil. The flow of FDI in the retail sector increased substantially after 1994 when the Brazilian government developed an economic plan (Real Plan) combining inflation control and opening the domestic economy. As a consequence, foreign retail chains such as American Wal-Mart (starting in 1995), Portuguese Sonae (also starting in 1995) and Netherlander Royal Ahold (starting in 1997), among others, entered the Brazilian market (Aguiar and Silva, 2002). In addition, the largest national retail chain, Companhia Brasileira de Distribuição (CBD), merged with French group Casino Guichard Perrachon & Cie. in 1999, in order to keep up with its transnational competitors.

In short, the sharp changes that have occurred in the retail organization have affected the strategies and the performance of the Brazilian food system since the beginning of the 1990s. Market concentration and internationalization have brought about changes not only in the market configuration but also in the way the Brazilian food marketing system operates. Rivalry among retailers has apparently brought benefits to consumers, but market power (especially monopsony power) continues to be a major concern.

In this chapter, we identify the major changes that have occurred in Brazilian retail sector since the 1990s and present general evidences of the impacts of such changes on both consumers and food suppliers, focusing on the period after 2002 for which there is no analysis in Brazil.

2. THE STRUCTURE OF FOOD RETAILING IN BRAZIL

2.1 Food Retail Definition and Data

Our analysis focuses on the supermarket sector. Every year the Brazilian Association of Supermarkets (Abras) publishes, in the April issues of *Superhiper Magazine*, the Ranking Abras, determined by research company ACNielsen, with a large range of information about the top 500 supermarket chains and the self-service sector.¹ This ranking is the major data basis used in this study to analyze the structure of Brazilian retail.

Brazilian federal law #7208, settled in November 1968, defines a supermarket as “a retailing business establishment managed by a single person or a group which, adopting a self-service system, displays and sells in the same place, continuously, food products and other utilities of household life.”. In the same law, self-service is defined as “the system of sales in which the consumer chooses and acquires the products by himself, paying when leaving the store” (see Cyrillo, 1987).

Officially, the supermarket sector and the self-service sector are considered different from each other based on the number of checkouts. The criterion adopted in the *Ranking Abras* defines a self-service store as a store with at least one checkout, while supermarkets should have at least two checkouts. Therefore, supermarkets are considered part of the self-service sector. Retail stores can also be classified based on size. *Abras* considers stores smaller than 5,000 m² as supermarkets, while stores larger than 5,000 m² are considered hypermarkets.

Most of the information published in the *Ranking Abras* is national information. Since supermarket competition occurs typically at a local basis, using national data may conceal the real level of market power present in local markets. In spite of that, most indexes calculated in this study have national scope.

In terms of food retailing, the information reported in the *Ranking Abras* shows that around 70% of the total gross revenue of the top 500 supermarket firms come from retailing food products. The remaining is obtained selling electronics, cleaning products, hygiene personal products, etc. Therefore, the organization of the supermarket sector affects mostly the marketing of food products.

2.2 Market Concentration

Table 1 reports the concentration rates (CR) calculated for the 3, 5, 10, 20, 30 and 300 largest supermarket chains (CR3, CR5, CR10, CR20, CR30 and CR300, respectively) in relation to the whole self-service sector. The various rates indicate that the largest firms’

¹ Until 2003 the results of Ranking Abras was also available at Abras homepage (ABRASNET). Since then, the information is available only on the magazine.

shares increased substantially between 1994 and 1999. In addition, it is noticeable that the CR5 increased more intensely than the remaining concentration rates: from 1994 to 1999, the increments in market concentration were 68% for CR3, 70% for CR5, 55% for CR10, 43% for CR20, 36% for CR30 and only 7% for CR300. After the intense concentration in the late 1990s, there has been a slight reduction in retail concentration since the year 2000. This process of deconcentration occurs in the participating 5, 10, 20, 30 and 300 largest firms, while shares of the three largest continued increasing until 2005.

The most substantial increasing in concentration occurred in a two-year period from 1997 to 1999, when the share of the five largest supermarket chains increased from 27% to 39%. Such amazing concentration was only possible because of the intense process of mergers and acquisitions (M&A) that occurred in Brazilian retail that time. Thus, M&A became a major strategy adopted in the Brazilian retail sector and the most important element to explain structural changes.

Table 1. Concentration rates (CR5, CR10, CR20 and CR30) in the Brazilian retail sector, 1994-2006 (in %)

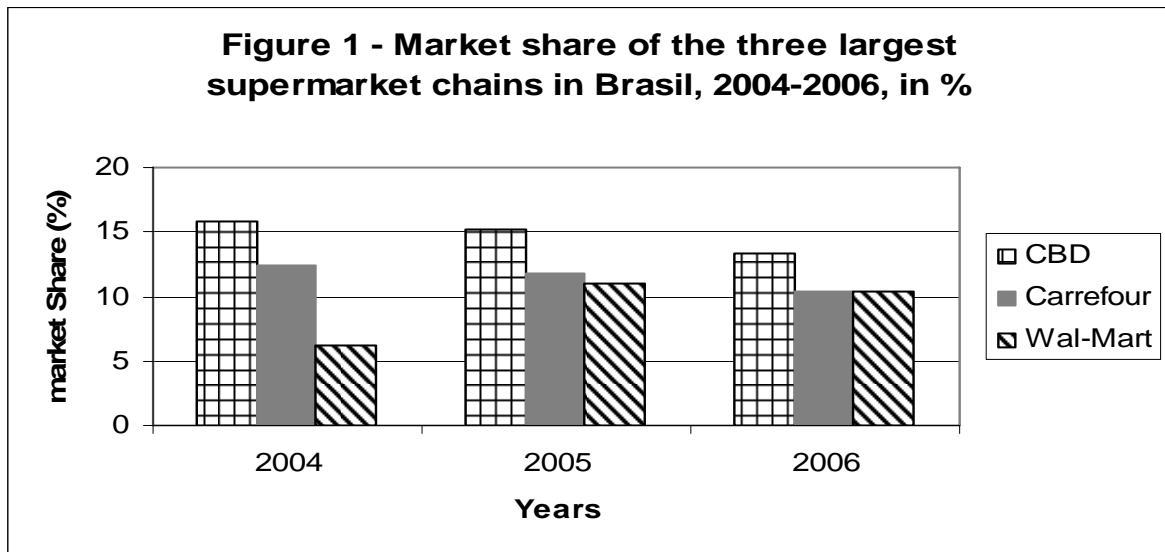
Year	CR3	CR5	CR10	CR20	CR30	CR300
1994	18.4	23.0	28.8	35.4	39.3	60.9
1995	22.9	28.0	34.8	42.6	47.1	74.0
1996	21.3	26.1	32.6	40.4	45.1	67.9
1997	22.2	27.4	33.8	41.6	46.6	68.9
1998	26.8	33.0	39.8	46.0	49.9	68.6
1999	30.9	39.2	44.8	49.9	52.6	65.4
2000	32.7	40.8	46.9	52.0	54.7	66.9
2001	31.0	39.1	45.6	51.1	53.7	65.5
2002	31.4	38.8	45.0	50.9	53.6	65.6
2003	31.6	38.1	44.8	51.3	57.9	66.8
2004	34.5	40.2	45.5	51.1	53.7	65.7
2005	38.0	40.5	45.4	50.6	53.1	64.1
2006	34.1	36.5	41.4	46.4	48.8	58.7

Source: calculated using data from *Ranking Abras* (ABRASNET and SUPERHIPER).

After a stable period in the beginning of this century, M&A regained importance in 2004, when Wal-Mart, 6th ranked supermarket company in 2003, merged with Bom Preço, which was 4th ranked that year. As a consequence, Wal-Mart assumed the 3rd position in 2004 ranking and was even able to surpass Carrefour in 2006 (Figure 1).² Also in 2004, CBD merged with Sendas, which was 5th ranked in 2003, strengthening its leadership.

² The gross revenues of Carrefour and Wal-Mart were very close in 2006: Wal-Mart sales differed by only 1,996 in Brazilian currency (less than US \$1,000).

Since the beginning of this century, an important change occurred in Brazilian retail that has not been identified by concentration rate indexes: though the CR5 has steadily maintained around 40%, the market has moved from a two-big-player to a three-big-player structure³. Till 2003, CBD and Carrefour were the only two companies fighting for the first position. Since then there has been a competition among CBD, Wal-Mart and Carrefour. In 2006, for instance, the gross revenue of the 4th ranked (G. Barbosa Comercial LTDA.) was only 11.5% of the gross revenue of the 3rd ranked (Carrefour), indicating a huge difference between the largest three and the remaining firms.

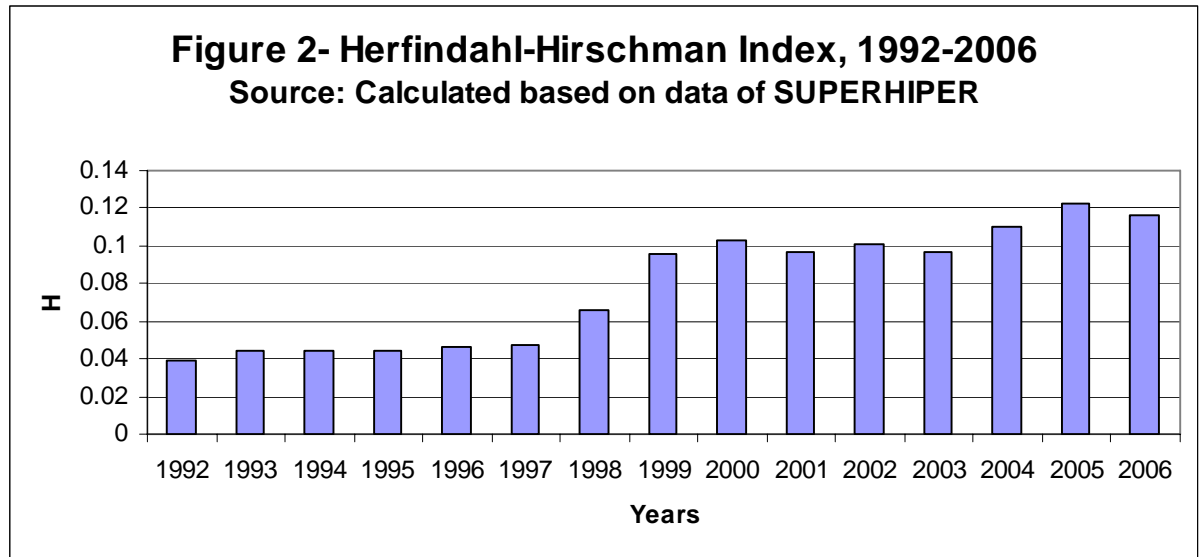


Data presented in Table 1 and in Figure 1 indicate the three largest firms reduced market share in 2006. The CR3, which had increased from 34% to 38% between 2004 and 2005, reduced to 34% in 2006. Though the three firms have increased their gross revenue, the gross revenue of the self-service sector as a whole has increased even more. Also, the estimates of the other concentration rates were four to five percent lower in 2006 in relation to 2005. Such change represents the most dramatic reduction in concentration verified since 1994.

The reduction in market concentration from 2005 to 2006 might be concealing a long-run trend of concentration. When we look at the evolution of the Herfindhal-Hirschman Index calculated for the 300 largest firms from 1994 to 2006 (Figure 2), we see that the

³ It is interesting that the process of market concentration has been a global process and that most of the industries have moved toward a structure with three leaders and a fringe of smaller firms. Such trend was identified by Sheth and Sisodia (2002), who named this phenomenon as “the rule of three.” In the case of the Brazilian retail industry, such rule seems to apply.

retail concentration has increased steadily through time.⁴ In 1994, 23 equal-sized firms would generate an equivalent H index; this number would drop to less than 9 firms, in 2006.



Despite this long-run trend, does this represent the beginning of a new trend or just a casual result? To answer this question we analyzed 2007 changes, not yet reported in the most recent *Ranking Abras*. In April 2007, Carrefour acquired a large retail company (Atacadão) and assumed the first position. Considering the gross revenues of 2006 and adding up the revenue of Atacadão to Carrefour's gross revenue, the new ranking would be as reported in Table 2. So, after the acquisition of Atacadão by Carrefour, the CR3 returned to the same level of 2005 (38%), cutting short the process of reduction in concentration.

Table 2. Simulation of the ranking of the top 3 supermarket chains after Carrefour acquired Atacadão in 2007

Firm	Gross Revenue (US\$ millions)	Market Share (%)
Carrefour	9,143.3	14.3
CBD	8,450.5	13.3
Wal-Mart	6,627.7	10.4
Total	24,221.5	38.0

Source: data in Brazilian currency provided by SUPERHIPER (2007). Average exchange rate provided by FGV (2008).

⁵The Herfindahl-Hirschman Index (H) was calculated as: $H = \sum_{i=1}^{300} s_i^2$ where s_i is the market share of each firm.

Since the beginning of the current century, with the exception of years 2003 and 2006, the CR5 has been consistently maintained around 40%. Comparing with other countries and regions, table 3 shows that the level of concentration in Brazil is still smaller than in Europe, but the increase in concentration is substantially larger in Brazil, considering the period 1996-1999.⁵ Besides, since Brazil is a lot larger than most European countries, it is natural for the concentration ratio be smaller. When we compare Brazil with the European Union (EU), we see that the concentration level in Brazil has become close to the level found in EU.

In the case of the United States, Hendrickson et al. (2001) report that the retail CR5 increased from 24% to 42% between 1997 and 2000. So the US went through a process similar to Brazil's.

Table 3. Concentration rates of the retail market in Brazil and in selected European countries, 1996-1999

Countries	CR5 (%)		Change from 1996 to 1999 (%)
	1996	1999	
Brazil	26	39	50,0
Portugal	55,7	63,2	13,5
Austria	58,6	60,2	2,7
Belgian and e Luxemburg	61,6	60,9	-1,1
Ireland	64,2	58,3	-9,2
United Kingdom	56,2	63,0	12,1
EU (average)	43,7	48,9	11,9

Source: Concha-Amin and Aguiar (2006) for Brazil; Dobson et al. (2003, p.113) for the remaining countries and for EU.

2.3 Turnover

A very important dimension of competition can be captured by means of turnover indexes.⁶ If the turnover is high, meaning that the firms change places intensely in the ranking, the rivalry present in the market can preclude firms from exerting market power. Therefore, despite the concentration level, firms have difficulty exerting market power if they are in an unstable environment characterized by intense turnover.

Joscow (1960) developed a very interesting procedure to analyze turnover by means of ranking the firms into different groups. This method was also used by Concha-Amin and Aguiar (2006) to analyze supermarkets' turnover in Brazil from 1992 to 2001. Following this approach, we divided the 300 largest supermarket chains into 12 groups and analyze how the configuration of each group changed from 2001 to 2006. The 12 groups are:

⁵ The fourth column of table 2 shows that there has been even a decreasing in concentration in some countries, like Belgium and Luxemburg, and Ireland.

⁶ See Hymer and Pashigian (1962) for a classical analysis of turnover.

Group A, the five largest firms; Group B, firms ranked from 6th to 10th; Group C, firms from 11th to 15th; Group D, firms from 16th to 20th; Group E, firms from 21st to 25th; Group F, firms from 26th to 30th; Group G, firms from 31st to 50th; Group H, firms from 51st to 100th; Group I, firms from 101st to 150th; Group J, firms from 151st to 200th; Group K, firms from 201st to 250th; and Group L, firms from 251st to 300th.

The results displayed in Chart 1 show that 140 firms which were among the top 300 in 2001 had either broken down or left the top 300 group by 2006. The numbers in the diagonal, corresponding to the number of firms that continued into the same group, show that even in the top 5 group there were sharp changes whereas only two companies continued in this group. It is also possible to identify that more firms ascended than descended throughout the period: 73 firms ascended to higher ranked groups, while only 12 descended. This result raises the hypothesis that most firms have either grown or closed, reinforcing the importance of scale and pecuniary economies in retail competition.

Chart 1. Turnover among the 300 largest supermarket chains in Brazil, 2001-2006

Groups In 2001	Position of firms into the groups in 2006													Number of firms that broke down or left the group of top 300
	A	B	C	D	E	F	G	H	I	J	K	L		
A (1-5)	2												3	
B (6-10)	3	1											1	
C (11-15)		3	2										0	
D (16-20)			2	2									1	
E (21-25)			1	2	1	1							0	
F (26-30)						2							3	
G (31-50)				1		2	4						13	
H (51-100)							5	18	3				24	
I (101-150)							3	12	11	5			19	
J (151-200)								1	11	16	1	1	20	
K (201-250)								1	4	1	8	1	28	
L (251-300)								1	2	8	10	8	28	
TOTAL	5	4	5	5	1	5	12	33	31	30	19	10	140	

Source: calculated by the author using data from Abras.

In order to compare the level of turnover verified in the beginning of the current decade with the level found in the last decade, we calculate a turnover index as:

$$Turnover_i(\%) = 100 \left(\frac{NT_i - NC_i}{NT_i} \right) \quad (1)$$

Where,

NT_i = total number of firms into group i ;

NC_i = number of firms that continued in the group i .

Using expression (1), it is possible to calculate turnover indexes as done by Concha-Amin and Aguiar. Looking at table 4 we see sharp changes between the two periods. Though the average turnover was higher in the first period, it was restricted to small and middle size firms. The top 5 firms were the same throughout the first period, when 60% of the firms (3 firms) were maintained in Group B. On the other hand, in the second period the turnover in Group A reached 60%, meaning that only 40% of the firms (2 firms) remained in this group from 2001 and 2006. The turnover in group B was also significantly larger in the second period (80%), as only one firm (20% of the group) remained in the same group. Comparing the two periods, the rate of turnover in the last period does not differ much when we compare the groups of the largest firms and the groups of the smallest firms, contrary to the pattern found in the first period.

Table 4. Turnover among the 300 largest supermarket chains, 1991-1997 and 2001-2006

GROUP	Turnover_i between 1991 and 1997 (%)	Turnover_i between 2001 and 2006 (%)
A (1-5)	0	60
B (6-10)	40	80
C (11-15)	60	60
D (16-20)	60	60
E (21-25)	80	80
F (26-30)	100	60
G (31-50)	75	80
H (51-100)	68	64
I (101-150)	76	78
J (151-200)	88	68
K (201-250)	94	84
L (251-300)	96	84
AVERAGE	81	75

Source: Concha-Amin and Aguiar (2006) for 1991-1997; calculated by the author using data from Abras for 2001-2006.

The increase in rivalry among the largest supermarket chains is one aspect identified in the recent pattern of Brazilian retail. The average turnover of the last period was quite similar to the first period, continuing to be very high, as a turnover of 75% indicates that only 25% of the firms did not move to other groups during the last five years, but later instability also reached the largest firms.

Focusing on the top five firms, Chart 2 shows that over the last 17 years nine firms have been in this group. Carrefour and CBD have been the top two retail firms in 15 of 17 years, and both have always been among the top three. Carrefour was the leader during the whole decade of 1990, and CBD has been the leader in the current decade with the

exception of year 2007. Four of the nine firms which have been among the top five were acquired by other firms: Wal-Mart acquired both Bom Preço and Sonae, while CBD acquired Sendas and Paes Mendonça.

Chart 2. Top five supermarket chains in Brazil, 1991-2007*

Year	Position				
	1 st	2 nd	3 rd	4 th	5 th
1991	Carrefour	Paes Mendonça	CBD	Sendas	Bom Preço
1992	Carrefour	CBD	Paes Mendonça	Sendas	Bom Preço
1993	Carrefour	CBD	Sendas	Paes Mendonça	Bom Preço
1994	Carrefour	CBD	Sendas	Bom Preço	Paes Mendonça
1995	Carrefour	CBD	Sendas	Bom Preço	Paes Mendonça
1996	Carrefour	CBD	Sendas	Bom Preço	Paes Mendonça
1997	Carrefour	CBD	Bom Preço	Sendas	Paes Mendonça
1998	Carrefour	CBD	Bom Preço	Sendas	Sonae
1999	Carrefour	CBD	Sonae	Bom Preço	Sendas
2000	CBD	Carrefour	Bom Preço	Sonae	Sendas
2001	CBD	Carrefour	Sonae	Bom Preço	Sendas
2002	CBD	Carrefour	Bom Preço	Sonae	Sendas
2003	CBD	Carrefour	Sonae	Bom Preço	Sendas
2004	CBD	Carrefour	Wal-Mart	Sonae	Zaffari
2005	CBD	Carrefour	Wal-Mart	Zaffari	G. Barbosa
2006	CBD	Wal-Mart	Carrefour	G. Barbosa	Zaffari
2007*	Carrefour	CBD	Wal-Mart	G. Barbosa	Zaffari

*Simulation considering the gross revenues of 2006 and adding the revenue of Atacadão to Carrefour's gross revenue.

Source: Abras.

3. PERFORMANCE

The previous section reported the evolution of the retail market structure in Brazil since 1994, when at least three phases can be identified: Phase I, from 1994 to 1999, characterized by the sharpest increase in market concentration (CR5 reaching approximately 40%) and Carrefour's leadership; (b) Phase II, from 2000 to 2004, presented a stable level of concentration (CR5 around 40%), *CBD* as the new leader followed by *Carrefour*, and a high level of turnover in the top five group; and phase III, beginning in 2005, characterized by three leaders (shared by *CBD*, *Carrefour* and *Wal-Mart*), with the leading firms changing places each year. Therefore, the structure has become more concentrated bringing about the increased opportunity to exert market power,

but there are also hints of an increase in rivalry, which may preclude the manifestation of market power.

Therefore, two different outcomes are possible. On one hand, if there is a prevalence of market power gain due to market concentration, performance indicators point to increases in the participation of retailers on consumers' expenses. On the other hand, if efficiency gains predominate over market power, performance indicators would indicate better performance. Such efficiency gains would come up due to scale economies, especially related to logistic efficiencies, as well as pecuniary gains obtained when retailers negotiate large volume purchases with their suppliers.

Several international studies have been carried out aiming to test the so-called trade-off between market power and market efficiency in the food industry, specifically the retail industry, with mixed results.⁷ Very recent studies carried out by Sharkey and Stiegert (2006) and Munisamy and Pick (2007) found support for the market power hypothesis in food retailing, while Cleary and Lopez (2007) found that the entrance of Wal-Mart in local markets reduced the collusive market power of incumbent supermarkets and promoted lower retail prices. In Brazil, a few studies carried out in the beginning of this century had non-conclusive results, as Farina and Nunes (2002) did not find evidence of market power manifestation in food retailing and two other studies, done by Aguiar and Silva (2002) and Cunha and Machado (2003), found that retailers have exerted market power.

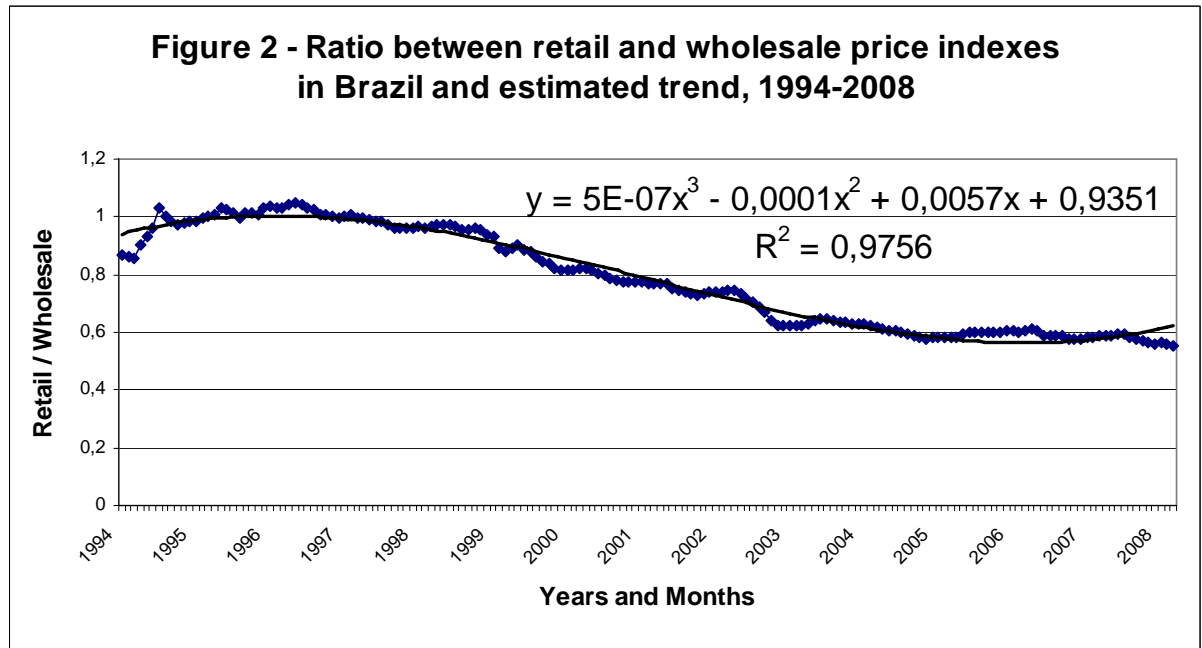
With a lack of studies capturing the effects of recent changes in Brazil's retail market structure, we will examine the behavior of some performance indicators through the beginning of 2008.

3.1 An Aggregated Performance Indicator

In order to verify if efficiency gains have predominated over market power manifestation, we investigated the behavior of an aggregate measure of performance. Figure 2 presents the pattern of a ratio of the Brazilian index of food retail prices by the index of wholesale food prices, from January 1994 to March 2008.⁸ As we can see, from 1994 to 1997 retail prices increase more than wholesale prices, decreases sharply from 1997 to 2004, and stabilized after 2004. To explore more deeply the behavior of the retail/wholesale price ratio, we estimated the best-fitting trend using a cubic function. As shown in Figure 3, this function produces a coefficient of determination larger than 0.97. Clearly, the trend implies that retail prices have not kept pace with wholesale prices. As the retail sector restructures toward greater concentration, it seems likely that the trend will eventually return back to higher levels.

⁷ See Lopez, Azzam and Lirón-España (2002) and Lopez and Lirón-España (2003), for instance.

⁸ To construct the retail/wholesale price ratio, we used both retail and wholesale price indexes provided by Fundação Getúlio Vargas (FGV).



The downward trend of the retail/wholesale price ratio may, or may not, be related to market concentration. To evaluate this possibility we estimated six models regressing the annual average of the retail/wholesale price ratio to six different concentration parameters (Table 5). As the coefficient of determination suggests, the H index and the concentration ratio of the three largest firms are the main parameters to explain changes in market performance. However, all concentration ratios, from the CR3 to the CR30, as well as the H index, present significant and negative parameters.

The negative effect of concentration on market performance gives some support to the idea that efficiency gains surpassed the losses originated by market power. This was only possible because of the increase in rivalry.

Looking specifically at the food sector, Figure 3 exhibits the behavior of an index of food prices in the retail market of São Paulo city (the largest city in the country).⁹ Food retail prices present a downward trend through the entire period, despite the increase in market concentration verified in the same period. The short increase in prices during the last few months is more related to the increase in international commodity prices than to retailing strategies. The same figure reports the trend function estimated to represent the behavior of the food prices, which is a polynomial of second degree with a coefficient of determination larger than 0.94. As the trend suggests, the food retail prices have moved downward over part of a parabola.

⁹ To construct the series showed in Figure 3 we deflated the index of food retail prices by the general consumer price index, both provided by Fundacao Instituto de Pesquisa Economica” at University of São Paulo (FIPE).

Table 5. Parameter estimations for six performance-concentration models, 1994-2006

Model*	Coefficient	Std. Error	t-Statistic	Prob.	R-squared
PERF=C(1)+C(2)*H					0.845740
C(1)	1.243710	0.059694	20.83468	0.0000	
C(2)	-5.236200	0.674260	-7.765848	0.0000	
PERF=C(1)+C(2)*CR3					0.806791
C(1)	1.526.294	0.106293	1.435.933	0.0000	
C(2)	-2.494.412	0.352379	-7.078.769	0.0000	
PERF=C(1)+C(2)*CR5					0.619779
C(1)	1.533.525	0.174690	8.778.524	0.0000	
C(2)	-2.101.333	0.496247	-4.234.451	0.0014	
PERF=C(1)+C(2)*CR10					0.558635
C(1)	1.646.853	0.227964	7.224.181	0.0000	
C(2)	-2.068.023	0.554235	-3.731.308	0.0033	
PERF=C(1)+C(2)*CR20					0.511178
C(1)	1.870.133	0.315918	5.919.683	0.0001	
C(2)	-2.272.546	0.670047	-3.391.622	0.0060	
PERF=C(1)+C(2)*CR30					0.439391
C(1)	1.942.768	0.389229	4.991.321	0.0004	
C(2)	-2.254.363	0.767771	-2.936.245	0.0135	
PERF=C(1)+C(2)*CR300					0.300866
C(1)	-0.837782	0.756173	-1.107.924	0.2915	
C(2)	2.486.180	1.142.694	2.175.718	0.0523	

* PERF = annual average of the retail/wholesale price ratio; CR3, CR5, CR10, CR20, CR30 and CR300 are, respectively, the concentration ratio of the 3, 5, 10, 20, 30 and 300 largest supermarket chains; H is the Herfindhal-Hirschman Index.



In conclusion, the exam of price indexes did not present evidence of retailers exploring market power for either general retail products or food retail products. Moreover, food prices have decreased in relation to the general consumer price index, indicating a relative enhancement of consumers' food purchase power. Such a reduction in prices is in part the result of efficiency gains at retail level and is certainly associated with high levels of rivalry in the sector.

3.2 Additional Performance Evidences

The analysis in the previous section suggests that retailers have not exerted market power in Brazil, despite the high level of market concentration. However, such results need to be evaluated carefully due to the nature of the variables employed in the empirical analysis. Performance indicators used are too aggregated, as they were built based on national level data and on a large range of products, and are restricted because they use only prices. Given such shortcomings, we can say that, in general, there is no evidence of market power use in the Brazilian retail sector, but we cannot assume that retailers are not exerting market power at all. Supermarkets may be exploring their market power in local markets where they face less rivalry and in product markets where they have stronger bargaining power. The type of analysis we have carried out does not allow us to verify such hypotheses.

Moreover, other studies carried out in Brazil have come up with contradictory results as we reported earlier. Farina and Nunes (2002) studied the food marketing system also using aggregate measures of market power and found evidence that the prices of food products have been maintained at a low level and that marketing margins have not presented upward trends. On the other hand, using less aggregated performance indicators, Cunha and Machado (2003) verified that after an increase in retail concentration in Belo Horizonte (the state capital of Minas Gerais and sixth largest city in the country), the price levels in the largest supermarket chains were larger than the price levels charged by middle- and small-size supermarkets. Likewise, Aguiar and Silva (2002), in other disaggregated study, found that the marketing margin of beef retailers in São Paulo increased around 30% from 1994 to 1997, a period when the process of retail concentration was more intense.¹⁰

The sharp difference between the studies cited above is that Farina and Nunes analyzed several aggregate indexes for Brazil and for São Paulo, while Aguiar and Silva analyzed only one sector, and Cunha and Machado analyzed separately large and small retail stores in a local market. Comparing those studies, we can raise the hypothesis that it is more likely to identify market power by means of more disaggregated variables and data. In addition, the results of Cunha and Machado showing that the largest supermarket chains charge higher prices indicate that the firms' market share might be more important

¹⁰ Curiously, Armah (2007) carried out a very similar study on the American beef industry and reached similar results.

for explaining market power in the retail sector than concentration ratios, which is consistent with results found in several other sectors and countries.¹¹

The use of price-based performance indicators also limits the study, since retailers can explore market power by means of cost reductions instead of price changes. Brazilian supermarkets commonly impose several rules to their suppliers, transferring part of retail costs to the suppliers. For instance, large supermarkets require suppliers to hire sale promoters who will work in the retail store, though paid by the suppliers. Sometimes, retailers require suppliers to pay for shelf space or require them to offer products on a free trial basis, or ask for cash contributions, to support the launching of new retail stores. Such requirements show how retailers abuse market power to the detriment of suppliers, abuses not captured by regular price analyses.

Another way supermarkets use to increase their market power is when they register a large number of potential suppliers when buying directly from suppliers/farmers. Supermarkets then request specific product requirements, but don't assure the suppliers their produce will be purchased. When the supermarket needs to buy, it carries out an auction with its potential suppliers, buying from the ones who offer the lowest price. The remaining suppliers need to sell their produce in the regular market, which will not pay adequately for the products' special attributes—originally requested by supermarkets.

4. FINAL REMARKS

The Brazilian retail sector has gone through sharp transformations since 1990. A process of market concentration has been maintained throughout the years, being more intense with the increase in the CR5 during the decade of 1990 and in the CR3 in recent years. As a consequence, the retail market has been dominated by three firms, which have changed places as the leading retailers each year. Moreover, an intense turnover process has existed in the retail industry, and such turnover has even affected the top five firms over the last few years.

In terms of performance, the increase in market concentration may strengthen firms' market power, allowing them to hold abnormal profits. However, the intense turnover process may coerce firms to seek efficiency as a growth strategy and may preclude them from using market power. The main issue is to identify which effect has prevailed in Brazilian retail. The prevalence of market power would indicate the necessity of a more severe enforcement of antitrust policy.

Nevertheless, mixed results found in the literature do not allow an accurate conclusion on the trade-off between market power and efficiency in Brazilian retail. The empirical analysis carried out in this study as well as other empirical analyses using aggregated variables appear to indicate the prevalence of efficiency gains. In opposition, some studies that used less aggregated variables found support for the market power hypothesis. In addition, the Brazilian experience suggests that retailers use their market power mainly as a means of transferring their costs to suppliers, which cannot be identified through price

¹¹ See Shepherd (1999).

behavior. Several mechanisms are employed by retailers to obligate suppliers to be responsible for cost items that should be, in fact, retailers' duty.

Future studies aiming to identify the degree of market power in Brazilian retail could try to estimate the indirect costs imposed by retailers to suppliers. Moreover, in the case of price analysis, the focus should be on local markets and/or on specific products, since retail price strategies seem to change according to the demand they face.

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Chapter 4: The Case of Germany

Roland Herrmann, Anke Möser and Sascha Weber¹²

1. INTRODUCTION

Like many other industrialized countries Germany has experienced a powerful concentration process in food retailing. There are some issues, however, which make Germany a special case in Europe and among industrialized countries in general. This holds true in terms of market structure and concentration, market development, and pricing strategies. The market share of hard discounters like Aldi and Lidl has grown continuously in recent decades and the market share of discounters in general has reached a magnitude that is well above that found in other European countries. This has led to robust price competition in German food retailing. Along with this development, it has been very difficult for inward foreign direct investment (FDI) to gain ground in the German food retailing industry. One example was the market entry by Wal-Mart which, given its initial ambitious goals, was not successful. On the other hand, German hard discounters have strongly affected outward FDI by other German food retailers. In the process of expanding into other markets abroad, these companies have had a positive impact on exporting by the German food industry.

This section describes and analyzes these major trends in German food retailing in detail. It is organized as follows. The structure of food retailing is described and explained in Section 2. Section 3 deals with the importance of inward and outward FDI in German food retailing. How increased concentration in food retailing affects the marketing chain is discussed in both sections. Price competition is intense in Germany, and studies of food pricing strategies have used scanner data. A case study in Section 4 analyzes food pricing strategies in Germany based on scanner-data evidence. The analysis shows that the pricing behavior of food retailers is characterized by the every-day-low-pricing (EDLP) strategies of discounters and the high-low-pricing (HiLo) strategies of their major competitors. The main elements of pricing policies are indicative of firms' market power: repeated price discounts for major food brands, frequent changes of loss leaders, the dominant role of psychological pricing, and a strong price rigidity for all other foods that are not on special offer. The results are summarized in Section 5.

2. STRUCTURE AND DEVELOPMENT OF FOOD RETAILING IN GERMANY

What are the characteristics and market structure of food retailing in Germany, and how did these change over time? Which factors affected structural change? These questions are addressed first at the level of store types, and then at the industry level.

¹² Thanks are due to the editors for very helpful suggestions and to Corinna Oberbeck for her able research assistance.

2.1 Structure and Changes at the Store-type Level

Structural changes at the store-type level are highlighted in this section. First, it is necessary to distinguish between different store types and to define them. **Hypermarkets** constitute the largest store type in Germany. According to ACNielsen (2004), these are stores with a sales area of at least 5,000 square meters, which provide a broad assortment of food and non-food goods with self-service.¹³ **Consumer markets** are stores that have a sales area between 1,500 and 4,999 square meters. These are followed by **supermarkets**, which are the smallest modern food-retailing stores, with a sales area between 400 and 1,499 square meters.¹⁴ An important development in food retailing is the role played by **discounters**. A discounter is a store where the discount principle is applied irrespective of the size of its sales area. The discount principle is characterized by a low-price strategy associated with a limited assortment of goods (ACNielsen 2004, p. 13). Typically, the discounters' range does not only consist of fresh or durable food products but also selected non-food goods that are sold on a changing weekly basis.¹⁵ This non-food activity is becoming more and more important in generating discounters' revenues and is a feature distinguishing them from other companies. **Remaining food stores** is a classification covering all food stores that have a sales area below 400 square meters.

German discounters are further divided into hard discounters and soft discounters. **Hard discounters** have a reduced product range, like Aldi, Lidl and Norma. In contrast, **soft discounters** traditionally have a larger product mix and depth (Bundeskartellamt 2005). Therefore, soft discounters are often called brand discounters. Examples are individual stores of Tengelmann (Plus), Rewe (Penny), Spar (Netto) and Edeka (Diska, Kondi, NP, Treff). More recently, the distinction between hard and soft discounters has blurred and it will not be used in the following analysis. Today, an increasing number of branded products are found in the stores of Lidl and Norma (Twardawa, 2006).

The changes over time in the number of establishments in the various store types are presented in Table 1. It is worth noting that German data on food retailing include the impacts of German reunification. German reunification took place on October 3, 1990, when the former German Democratic Republic was integrated into the Federal Republic of Germany. As a consequence of reunification, market size had a marked effect on both the supply and demand side from 1990 onward and, as Table 1 demonstrates, this is reflected in the high number of all store types in 1995 compared with 1990.

There are clear trends in the number and shares of store types before and after reunification. The number of stores in the categories hypermarkets/consumer markets and discounters increased, whereas the proportions of remaining food stores and supermarkets

¹³ One square meter corresponds to 10.76 square feet.

¹⁴ Another common version of store classification distinguishes between small consumer markets, ranging between 800 and 1,499 square meters of sales area, and supermarkets, with a sales area between 400 and 799 square meters (ACNielsen 2000).

¹⁵ Depending on the company, food products may be sold as private labels or as branded goods, both mostly having lower prices compared with other store types.

declined. This characterizes two major developments in German food retailing: (i) the move towards store types with a bigger sales area, and (ii) the boom in discounters.

With regard to increasing sales area, the number of hypermarkets and consumer markets rose continuously from 1,314 in 1980 to 2,558 in 2004. More supermarkets also existed in 2004 (8,620) than in 1980 (5,190). Table 1 reveals, however, that their number declined after Germany was reunited, and this trend had already begun in former West Germany between 1985 and 1990. The number of remaining food stores, which are smaller than supermarkets, dropped from a high level of nearly 70,000 stores (1980) to about 37,000 (2004) due to structural change. A peak interrupted the downward trend in 1995 after reunification.

Table 1. Number of Establishments at the Store-type Level^{a)}

Year	Hypermarkets/ Consumer Markets	Discounters	Supermarkets	Remaining Food Stores
1980	1,314	-	5,190	69,763
1985	1,513	-	9,845	58,015
1990	1,656	-	7,817	50,888
1995	2,038	10,630	9,635	54,100
2000	2,363	12,770	9,230	45,900
2003	2,494	13,750	8,790	39,900
2004	2,558	14,214	8,620	37,350

a) Excludes online shops and non-organized food retailing. After 1991, stores in the former German Democratic Republic are included, and discounters are shown separately. Remaining food stores contain discounters until 1990.

Source: EHI Retail Institute (various years).

In terms of the number of outlets, discounters are the store type that dominates German food retailing. 14,214 stores of this type existed in 2004; the number of discount stores has grown continuously and their share of all food stores even more so. However, the impressive growth of discounters slowed down at the beginning of the new millennium.

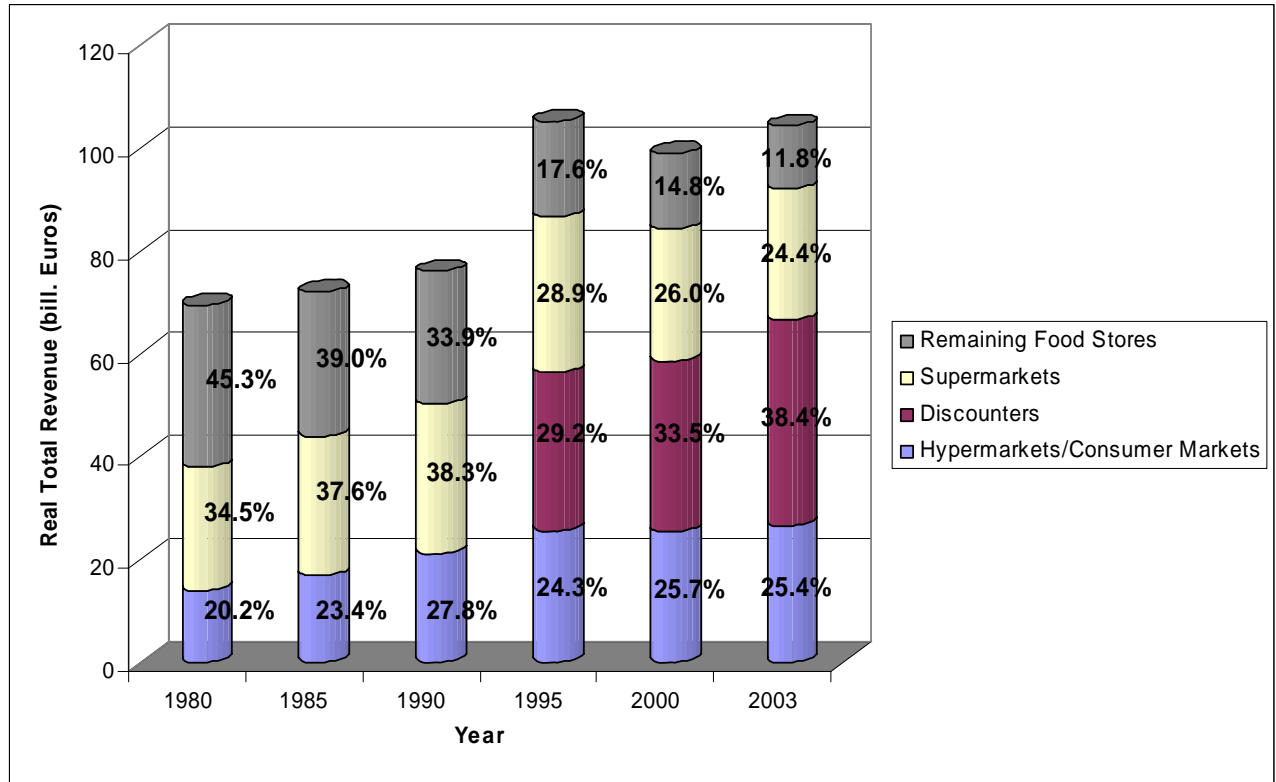
As a study by the Coca-Cola Retailing Research Council Europe (CCRRCE) also points out “the rise of discounters does not, however, herald the end to the supermarket and hypermarket formats. [...] the discount model is optimized for German shopper preferences. In other markets, the model’s advantages are significantly neutralized by a lack of shopper interest” (CCRRCE 2005, p. 12). Particularly in Germany, retailing companies have attracted bargain-pursuing customers (Koch/Friese, 2005). German customers are highly focused on price, as an analysis of the Gesellschaft für Konsumforschung (GfK) documented.

Figure 1 illustrates the real total revenue achieved by different store types over time. Supermarkets had been able to increase their total revenues from 27.3 billion euros in 1980 to 32.2 billion euros in 1995. In the following years revenues decreased to 28.3 and 27.0

billion euros in 2000 and 2003 respectively. As the number of the remaining food stores declined, their total revenues also decreased.

In contrast, the hypermarkets and consumer markets displayed an impressive development in revenue terms. Their total revenue nearly doubled in the observation period. Finally, the group of discounters had the highest total revenue, and a positive trend can still be seen. In 2003, this store type accounted for 42.6 billion euros.

Figure 1. Real Total Revenue and Market Share at Store-type Level^{a)}



a) Excludes online shops and non-organised food retailing. After 1991, stores in the new Federal States of the former German Democratic Republic are included, and discounters are shown separately. Remaining food stores include discounters until 1990.

Source: EHI (various years).

The distribution of revenue across store types has changed substantially during the last 25 years. The group of remaining food stores, which have less than 400 square meters of sales area, accounted for nearly half of total revenue in food retailing in 1980. They were followed by supermarkets, hypermarkets, and consumer markets. Supermarkets accounted for 35% of the industry's total revenue. The largest store types had a market share of 20%. Over time, supermarkets and the remaining food stores have continuously lost market share to hypermarkets and consumer markets, and certainly to discounters. As Figure 1 reveals, even the hypermarkets and consumer markets were not able to keep up with the

increasing prominence of discounters influencing consumers' buying behavior in Germany. They have lost ground to discounters since 1990, and their market share has declined from 27.8% to 25.4%.

The discounters' market share was nearly 40% in 2005, with Aldi accounting for 42% of this figure, followed by Lidl. The market leader Aldi achieved nearly complete market penetration. Indicative of discounters' importance, about 87% of all German households, or 70 million of all consumers in Germany, can reach a store of Aldi or Lidl within 15 minutes (Twardawa 2006, p. 381).

In a comparison of the two dominant firms, in 2003 Aldi's revenue was 22 billion euros compared with Lidl's 9.8 billion euros. Lidl, however, is much more aggressive in pursuing international expansion (CCRRCE, 2005). As the CCRRCE study shows, it generated 48% of its total revenue from operations outside Germany (CCRRCE 2005, p. 10). The important foreign investment activities of German retailers, not only of discounters, are surveyed in more detail in Section 3.

2.2 Changes at the Industry Level

Four decades ago, German food retailing was dominated by a multitude of small retail outlets. These small stores were mainly service-oriented. The change from service-oriented stores to a self-service system has induced some sustainable changes in the industry. Above all, as Table 2 shows, the total number of retail establishments dropped from about 92,000 in 1980 to 67,000 in 1990. The statistical peak in 1995 captures for the first time the food-retailing sector in the former German Democratic Republic. At that time, small stores were characteristic of food retailing in East Germany. After 1995, the number of food-retailing stores declined again sharply and continuously to 55,300 in 2003.

Table 2. The Development of the German Food-retailing Industry^{a)}

Year	Number of Establishments	Total Revenue (Mill. Euros) ^{b)}		Number of Employees		Sales Area 1,000 m ²	
		Total	Per Establishment	Total (1,000)	Per Establishment	Total	Per Establishment
1980	91,600	80,005	0.873	408.4	4.5	16,100	0.176
1985	77,000	77,459	1.006	414.0	5.4	17,600	0.228
1990	67,000	85,811	1.281	422.2	6.3	19,400	0.290
1995	74,300	97,800	1.317	425.2	5.7	23,800	0.321
2000	60,025	91,459	1.425	358.0	5.6	25,900	0.404
2003	55,300	90,396	1.636	365.3	6.6	26,800	0.485

a) Excludes Aldi. After 1991, the new Federal States of the former German Democratic Republic are included.

b) Real values are computed with the consumer price index and the base year 1995 (Statistisches Bundesamt 2006a).

Source: ACNielsen (various years).

The fall in store numbers accompanied an impressive increase in the total sales area from 16.1 million square meters in 1980 to 26.8 million in 2003. The general rise in sales area was a crucial factor contributing to greater competition in the German food-retailing sector. The two components, i.e. fewer stores and a rising overall sales area, gave rise to even greater expansion of the average sales area per store. Whereas the average shop had a mean sales area of 176 square meters in 1980, this figure changed to 485 square meters in 2003. This increase can be ascribed mainly to the appearance of new retail formats such as hypermarkets.

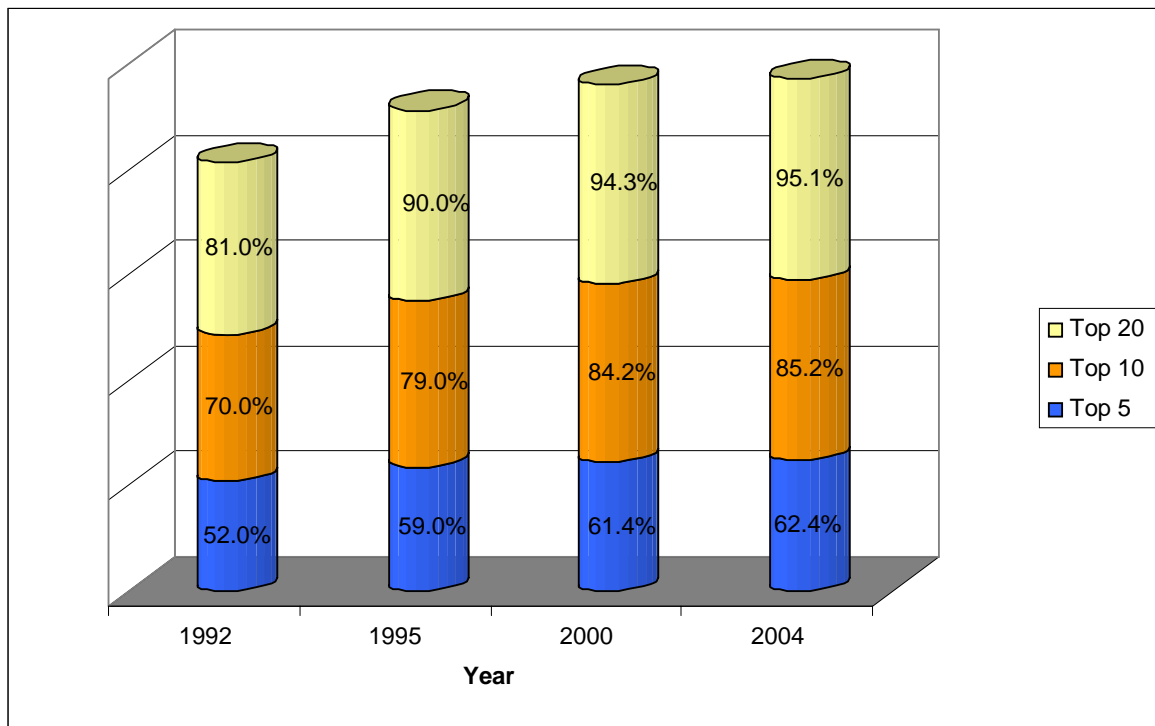
Other changes shown in Table 2 are related to revenue and employment. Neither the trend of total revenue nor the trend of the total number of employees has been uniform over the last 25 years. The decline in total revenue between 1995 and 2003 indicates, however, that a certain level of saturation occurred in the aggregate food-retailing sector. Within this period, the number of employees also dropped. The rising number of employees per store in that period is a consequence of the enormous expansion of average store size. The continuous rise of revenue per store from 0.873 million euros in 1980 to 1.636 million euros in 2003 is striking. It represents stark productivity gains in the German food-retailing sector.

These structural changes induced an intensifying market concentration among the leading food-retailing companies, which is illustrated in Figure 2. The share of the top twenty companies in total industry revenue was 81% in 1992. In 2004, the top 20 already accounted for 95.1%. The five leading companies earned half of the industry's total revenue in 1992. They further strengthened their market position in the following 12 years and earned nearly two-thirds of the industry's total revenue in 2004.

As Figure 2 shows, the German retailing industry is characterized not only by a declining number of stores, but also by the lower number being distributed over fewer companies. The individual companies' revenue shares are presented in Table 3. The leading company in Germany's food retailing industry is still Metro, which, however, lost some of its market share (-3.7 percentage points) to other competitors in the observation period. Tengelmann and Tegut lost market share, too, but only by 1.7 and 0.1 percentage points respectively. All other companies were able to maintain or expand their market share.

It is striking that most of the companies raised their market share in the period up to 2000 and then some of these gains subsequently vanished. Edeka, Aldi, Schwarz, and Norma were in a position to withstand that negative industry trend. Three of these companies have their main business domain in discounting and Edeka operates some discount stores as well as other store types. In particular Schwarz, the owner of the discounter Lidl, more than doubled its market share in terms of total revenue within ten years and produced the highest growth rate.

Figure 2. Market Share of the Leading Companies in German Food Retailing



Source: LZ (various years).

Table 3. Companies' Market Share in German Food Retailing (in % of Total Revenue)

	1994	1997	2000	2004
Metro	18.6	19.3	16.2	14.9
Rewe	13.1	13.6	14.6	14.2
Edeka/AVA	11.6	12.7	12.6	13.4
Aldi ^{a)}	9.4	9.9	10.0	10.1
Schwarz ^{a)}	4.6	5.6	6.4	9.8
Tengelmann	7.5	7.6	7.1	6.0
Spar AG ^{a)}	4.3	5.6	4.0	4.0
Globus	1.2	1.7	1.7	1.6
Wal-Mart (Germany) ^{a),b)}	-	0.7	1.5	1.3
Norma ^{a)}	1.0	1.1	1.1	1.2
Coop Schleswig-Holstein	0.6	0.6	0.7	0.6
Tegut	0.6	0.5	0.5	0.5

a) Estimated; b) Until 1998 Wertkauf Karlsruhe.

Source: LZ (various years).

Nevertheless, Aldi is the leading company among discounters. In 2005, its industry market share was 16.9%, while the remaining discounters together had only 23.0% of the industry market share (ACNielsen 2005). As Table 3 also indicates, Aldi generates only a small growth rate, and this may be due to the fact that Aldi has already attained almost complete market penetration (see Section 2.1). In contrast, Lidl, as the number two among the leading discounters, still has potential for growth.

A further feature of Germany's food-retailing industry is the relative absence of foreign food-retailing companies. The only companies that operated on the German market or tried to break into it are Wal-Mart, Delhaize¹⁶ and ITM Enterprises.¹⁷ On entering the German food-retailing market, Wal-Mart absorbed the retailing companies Wertkauf and Eurospar. However, Wal-Mart did not succeed in becoming a major player, as its market share of only 1.3 percent in 2004 indicates. It ranked ninth among the leading food-retailing companies in Germany in that year. Since Wal-Mart was not able to transfer its worldwide successful business concept to the German market, its performance in terms of earnings and market share was disappointing, and well below its own ambitious goals. In the end, Wal-Mart withdrew from the German market after eight and a half years of business. The retailing outlets were taken over by Metro, Germany's leading food-retailing company.

This failure of Wal-Mart to enter the German food-retailing market can be ascribed to imperfect adjustment to the German market and very low margins (Ferne et al., 2006; Hurth 2003). In the German industry, returns on sales in food retailing typically vary between 0.5% and 2%, whereas in Great Britain, for example, they range from 5% to 7% (Koch/Friese, 2005).

3. FOREIGN DIRECT INVESTMENT

As outlined in Section 2, the German food-retailing sector is dominated by a relatively small number of companies, which are facing robust price competition and comparatively low retail margins. This situation is an outcome of excess capacity: in Germany, there are 250 food-retailing stores with a sales area of more than 400 square meters for every one million inhabitants. For comparison, in Great Britain the ratio is only 110 stores and in France 120 shops to one million inhabitants (Koch/Friese, 2005).

In order to compensate for this difficult domestic market, German retailing companies have strengthened their international expansion activities. The real foreign direct investment (FDI) of German companies is presented in Table 4 as an indicator of this strategy. The first grey-shaded row describes the real direct and indirect investments of all German industries in the foreign retailing sector. It is apparent that the real outward FDI has increased steadily—from all industries to retailing, from the retailing sector to all industries, and from retailing to retailing.

¹⁶ Delhaize is a Belgian company which offers its customers high-quality products. Foreign specialties and an innovative ambiance are characteristic of its stores.

¹⁷ ITM Enterprises is organized as a cooperative, and it joined the German Spar cooperative. After making losses for years, ITM Enterprises withdrew from the German market.

Table 4. Real German Direct and Indirect Foreign Investment (Bill. Euros)^{a), b), c)}

From Industry	To Industry	1985	1990	1995	2000	2004
All	Retailing	18.84	25.62	29.33	60.34	66.65
	(in %)					
	EU (25)	43.4	51.8	57.1	52.4	59.1
	United States	27.5	21.1	18.1	21.7	17.3
Retailing	All	3.80	6.10	6.33	9.52	8.93
	(in %)					
	EU (25)	27.9	42.0	59.3	52.1	75.9
	United States	40.8	32.2	16.2	19.0	8.7
Retailing	Retailing	-	4.16	4.89	6.58	6.94
	(in %)					
	EU (25)	-	38.8	63.3	57.8	81.1
	United States	-	39.3	25.3	17.7	7.5

a) Including maintenance and repair of vehicles and consumer goods since 1995.

b) In 1993 and 2002 the reporting limit of total assets' investment objects rose from 0.26 to 0.5 mill. euros and from 0.5 to 3 mill. euros respectively.

c) Real values computed with the GDP deflator and the base year 1991 (Statistisches Bundesamt 2006b).

Source: Deutsche Bundesbank (various years) and own computations.

In 1985, German companies invested 18.8 billion euros in retailing abroad, and by 2004, the figure had risen by about 250% to 66.7 billion euros. Although the growth rates of real outward FDI undertaken by German retailers were lower than the total of German companies, they were still substantial. Retailers' FDI more than doubled from 1985 to 2004, indicating of course the effect of German unification on market size. Growth rates of intra-retailing FDI were below average, but even these were considerable compared with the growth of the food trade in the same period. The retailing industry had, and still has, an inclination to invest in the same industry. About 68% of the retailing industries' FDI in 1990, and 78% in 2004, went to the retailing sector abroad. In other words, the retailing industry concentrated its foreign activities on its core competence—retailing.

Only two geographical regions are of major interest as destinations of this increase in outward FDI, namely the European Union and the United States. Investment inside the EU always outperformed FDI to the US, and the latter steadily lost ground. In 2004 (1985), 17.3 (27.5)% of all investments took place in US retailing companies, whereas 59.1 (43.4)% of all FDI flows went to EU retailing companies. The concentration on the EU becomes even more important if analyzing only the retail industry's investment. The United States' investment share dropped by 31.8 percentage points from 39.3% in 1990 to 7.5% in 2004.

The increasing prominence of European retailing companies as strategic investments can be partly explained by the opening up of Eastern European countries. Former socialist countries like Poland, the Czech Republic and Hungary opened their markets and developed a more market-oriented economic policy and thus became more attractive for

foreign companies. Lower input prices for labor, real estate and energy, as well as affordable commodity prices, favored a location in Eastern Europe. Closeness to a home market and company headquarters—Germany—had a positive impact, too.

Not only do German companies invest in retailing industries in foreign countries but also the German market and the retailing industry in Germany have attracted foreign companies. But, as was pointed out in Section 2.2, the German market has its own special characteristics, like market concentration, low retail margins, the prominence of discounters, and discriminating consumers. These characteristics make entrepreneurial activity in German food retailing challenging. Most of the FDI inflows have not resulted in direct control of target companies, as the spectacular and widely discussed failures of foreign companies entering the German market document (see the case of Wal-Mart). FDI inflows steadily increased, as did the FDI outflows. In 1985, foreign companies invested 9.5 billion euros in the German retailing industry, and the real total FDI increased by nearly 300% to 36.7 billion euros in 2004. This was accompanied by a change in the proportions of FDI inflows from different regions. In 1985, three sources were of importance—the EU, the United States and Japan. Intra-EU investments became more important over time, as the increase by 25 percentage points indicates. This occurred at the expense of Japanese and American companies whose shares of FDI inflows to Germany diminished.

Table 5. Real Foreign Investment in German Food Retailing (Bill. Euros)^{a), b), c)}

From						
Industry/Country	To Industry	1985	1990	1995	2000	2004
All	Retailing	9.458	18.119	23.545	32.790	36.716
<i>(in %)</i>						
<i>EU</i>		32.6	38.7	45.2	52.7	57.6
<i>Belgium</i>		-	2.2	1.6	1.9	0.3
<i>Denmark</i>		-	1.4	2.3	2.9	2.2
<i>France</i>		10.5	9.2	8.7	8.2	7.5
<i>Italy</i>		-	3.7	2.6	1.6	1.6
<i>Luxembourg</i>		-	-	0.9	1.6	3.6
<i>Netherlands</i>		7.7	13.5	15.0	22.3	18.9
<i>Austria</i>		-	1.5	2.1	2.2	1.9
<i>Sweden</i>		-	2.1	2.4	1.6	1.0
<i>Spain</i>		-	-	-	-	1.9
<i>UK</i>		5.8	6.6	6.9	7.9	14.6
<i>Switzerland</i>		10.5	12.6	9.1	7.3	5.3
<i>United States</i>		17.1	16.3	15.4	15.9	12.2
<i>Japan</i>		21.4	21.5	18.8	15.1	15.9

a) Includes maintenance and repair of vehicles and consumer goods since 1995.

b) In 1993 and 2002 the reporting limit of total assets' investment objects rose from 0.26 to 0.5 mill. euros and from 0.5 to 3 mill. euros respectively.

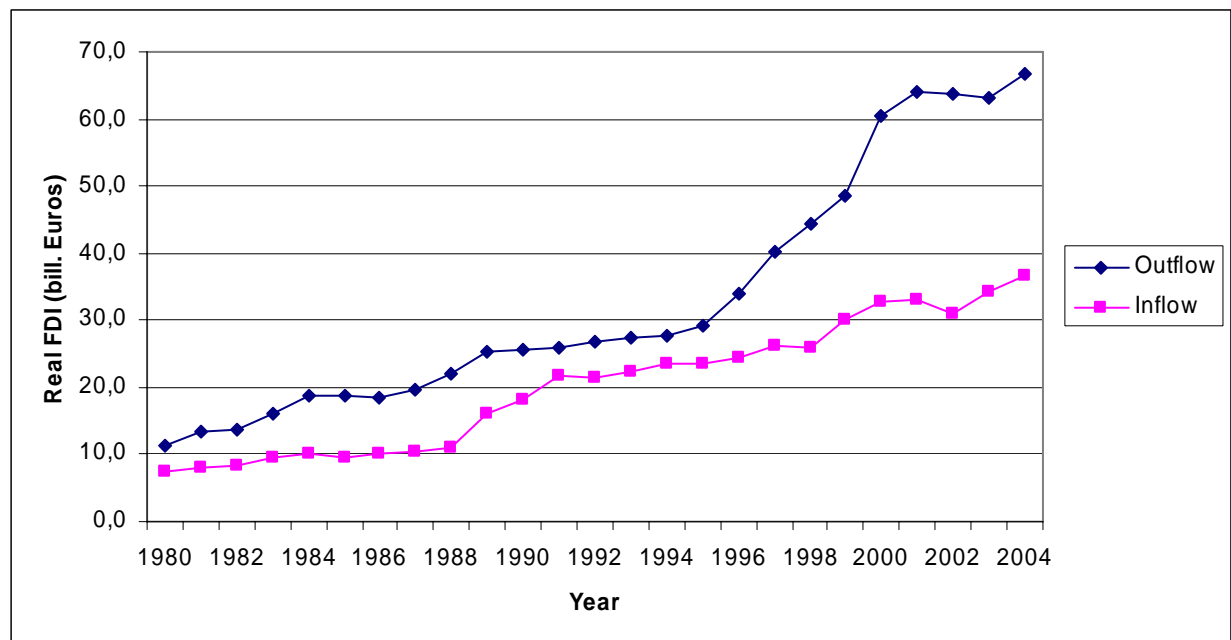
c) Real values computed with the GDP deflator and the base year 1991 (Statistisches Bundesamt 2006b).

Source: Deutsche Bundesbank (various years) and own computations.

Within the EU, the countries of origin's relative importance of inward FDI also changed. Countries like the United Kingdom (+8.8 percentage points), and to a lesser extent Luxembourg, Denmark and Austria, strengthened their share of total investment in German retailing. Dutch companies increased their share of FDI inflows until 2000 by 14.6 percentage points, but their share decreased again after 2000 from a high level of 22.3%. The Netherlands is still the most important single-country investor in German retailing. On the other hand, countries like Belgium, Italy and Sweden became less significant, and the decline of Switzerland and France in the German FDI market was even greater.

A comparison of the real total FDI inflows and outflows of all German industries to the retailing sector is presented in Figure 3. FDI outflows exceeded FDI inflows at all times. Real net FDI outflows grew over time. Three stages of FDI outflows can be identified. The first wave was 1982-1984, with a quite small increase in FDI. The second wave (1987-1989) was also small but, in contrast, the third stage (1995-2001) had the highest rate of growth and increased the divergence between FDI inflows and outflows. Only two stages are clearly visible in the development of FDI inflows—one in the period 1988-1991 and the other in the period 1998-2001. Only in the period 1988-1991 did FDI inflows correspond to the expenditure of German industries on foreign retailing companies. Not only did the second stage of FDI inflows begin four years later than the third wave of FDI outflows but its growth rate was also lower.

Figure 3. German Real FDI Outflows and Inflows to the Retailing Sector^{a), b), c)}



a) Includes maintenance and repair of vehicles and consumer goods since 1995.

b) In 1993 and 2002, the reporting limit of total assets' investment objects rose from 0.26 to 0.5 mill. euros and from 0.5 to 3 mill. euros respectively.

c) Real values computed with the GDP deflator and the base year 1991 (Statistisches Bundesamt 2006b).

Source: Deutsche Bundesbank (various years).

4. MARKET CONDUCT IN GERMAN FOOD RETAILING: RETAILERS' PRICING STRATEGIES

Strong market concentration has taken place in the German food-retailing sector, as was shown in Section 2. Market structure, however, does not necessarily determine retailers' behavior and, thus, market conduct. Under an oligopolistic market structure, for example, price formation can be similar to a competitive situation when some powerful retailers choose an aggressive low-price strategy. This may well be the case for Germany where the market share of discounters is higher than in other industrialized countries.

Given this background and the fact that scanner data have been available for at least a decade in Germany, we deal with market conduct in terms of food pricing in this section. In Section 4.1, the overall level of food prices in Germany is analyzed and compared with that in other countries. Based on the existing literature and a broad sample of foods, Section 4.2 seeks to determine the pricing behavior of German grocery retailers. In Section 4.3, we present a case study for coffee that captures empirical evidence of market conduct in German grocery retailing. EDLP and HiLo strategies, retail sales campaigns, price stickiness, psychological pricing points, and the importance of national brands versus private labels are covered. Section 4.4 presents a brief review of studies of market power in the German food economy.

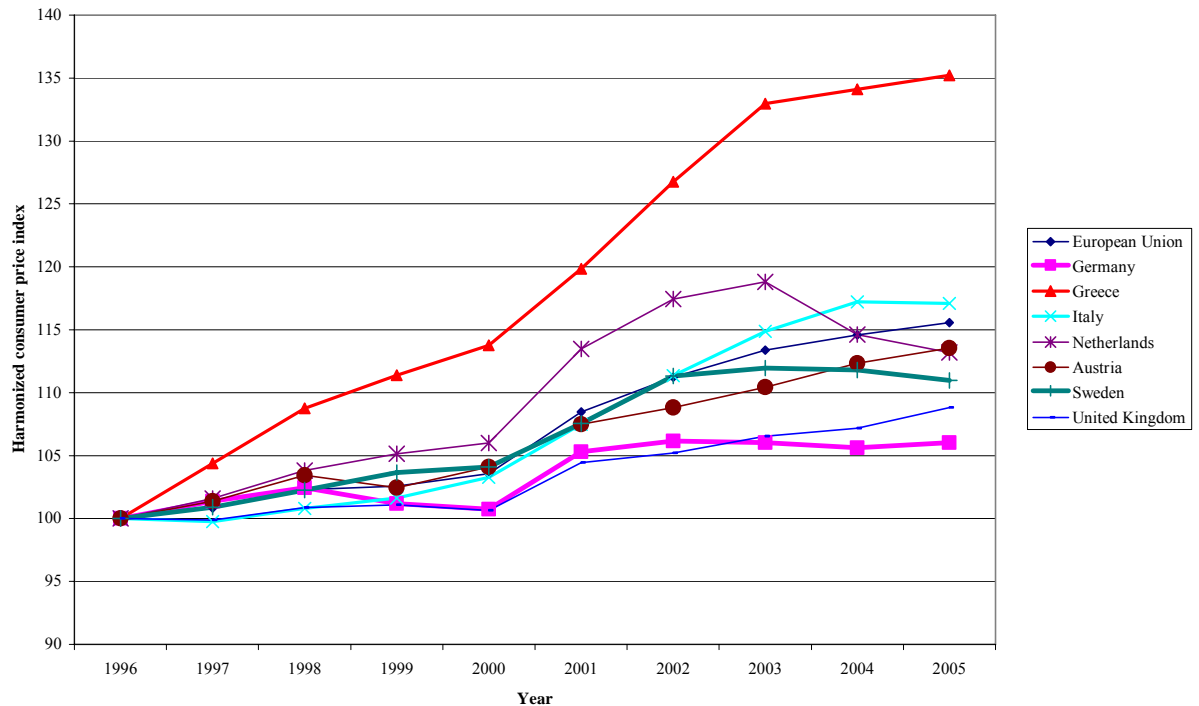
4.1 The Price Level in German Food Retailing

There is ample evidence that the law of one price does not hold in the German food-retailing sector. Buschle (1997) analyzes interregional price differences of processed food products with scanner data across several urban areas in Germany. She finds a lower price level in the Northern part of Germany and a higher price level in Berlin, Stuttgart and metropolitan areas along the river Rhine. Price differences between various store types and retailing firms are analyzed by Möser (2002), and she finds no evidence of the law of one price, either.

Over the last ten years, consumer prices for food and non-alcoholic beverages in Germany increased in real terms, but much less than in many other European countries. This is certainly due to the major role of discounters in German food retailing. Figure 4 shows the development of the harmonized consumer price index¹⁸ for food and non-alcoholic beverages as an annual average index for different European countries.

¹⁸ The Harmonized Index of Consumer Prices (HICP) is an indicator of inflation and price stability used by the [European Central Bank](#) (ECB). It is a weighted average of price indices of member states in order to show how the [consumer price index](#) develops for the entire [Euro Zone](#) (Diewert 2002).

Figure 4. Harmonized Consumer Price Index for Food and Non-alcoholic Beverages for Different European Countries, 1996-2005^{a)}



a) European Union: EC12-94, EC15-04, EU25; Germany: after 1991 includes former German Democratic Republic.

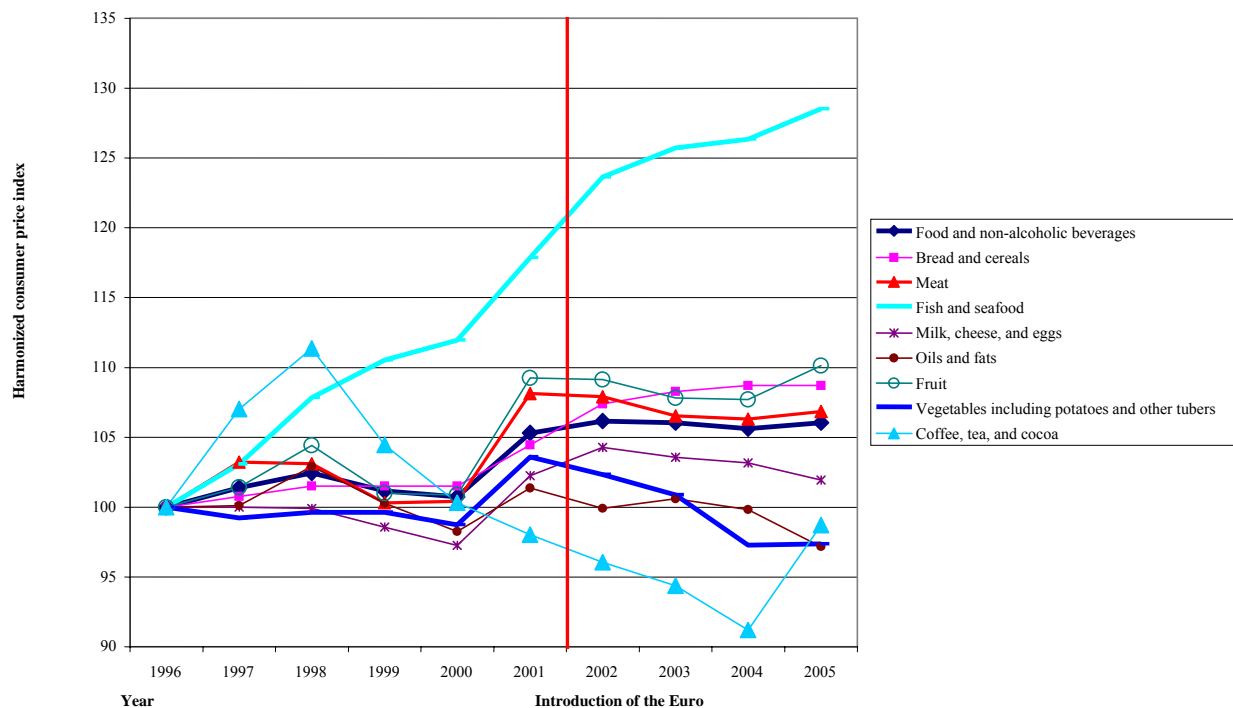
Source: Own computations using EUROSTAT-Database (2006).

Evidence presented in the last few years shows how special events, like the introduction of the euro, affect consumer prices in general and food prices in particular. The implementation of a single European currency in January 2002 has been a focus of attention by the public, the media, and academics. It has given rise to an important debate about firms' pricing strategies, and the measurement of inflation. European statistical offices and central banks argued that the introduction of the euro did not induce an extra degree of inflation. This statement is based on a comparison of consumer price indexes in the periods before and after the introduction of the euro. Compared with a two-and-a-half year period prior to the implementation of the euro, the rise in German prices for food and non-alcoholic beverages decreased from 4.3% to 3.3% after the introduction of the euro (Brachinger, 2005). The number of price adjustments peaked in the first month of the year 2002 due to the new currency but, as Statistisches Bundesamt (2002) argued, this process normalized in the following months. The number of nine-ending prices in retailing declined significantly, because most prices were translated correctly into the new currency (Deutsche Bundesbank, 2002; Diller/Brambach, 2002).

The low statistical price increase after the introduction of the euro was not consistent with the substantially higher inflation perceived by the population. Consumers realized that

retailers had already raised prices in 2001 prior to the introduction of the euro, in particular for goods with a high frequency of purchase like foods. Figure 5 also illustrates that the consumer price index rose significantly in 2001 for all categories of food and beverages except coffee, cocoa and tea. Recent studies with a statistical index of perceived inflation indicate that perceived inflation and CPI-based inflation deviated greatly in the years 2001 and 2002 around the time when the euro was introduced (Brachinger, 2005). Apparently, retailers had raised prices in advance in order to correct them downwards later to “attractive” euro prices below new pricing points.

Figure 5. Harmonized Consumer Price Index for Different Food Groups in Germany, 1996-2005



Source: Own computations with EUROSTAT-Database (2006).

Differently from food prices, the measurement of actual and perceived prices shows uniform results in other sectors of the economy. In the case of restaurants, for example, not only were menu costs attributable to the introduction of the euro passed on but the opportunity was used to raise prices by a substantially higher amount (Hobijn/Ravenna/Tanbalotti, 2006; Nierhaus, 2002).

4.2 Pricing Strategies of German Food Retailers: General Patterns

The pricing strategies employed by German grocery-retailing firms are characterized by widespread **retail sales campaigns** for branded foods, a substantial degree of **price rigidity** and the existence of **psychological pricing points**. Additionally, **private labels** play an important role in the price-setting behavior of most retailing firms. In this section, we survey these phenomena in respect to a broader sample of food products and in the next section we add empirical evidence for one product group, namely coffee.

Sales are obviously an essential part of retailers' marketing strategies. Hosken and Reiffen (2001) define a sale as a "temporary reduction in the price of an item that is unrelated to cost changes." Selected national brands are often used for sales promotions in order to attract consumers to relevant stores. With the HiLo strategies of food retailers in particular, brands are put on special offer periodically, and this raises price variability. In the case of quite a large number of national food brands, quantitative studies have revealed that the price elasticity of demand at the point of sale is above unity in absolute terms (Schäfer, 1997; Möser, 2002). Thus, price campaigns typically lead to an increase in retailers' earnings for the promoted brands (Hansen, 2006). It has also been demonstrated that food retailers either have more special offers with lower price discounts or fewer special offers with higher price discounts. In a case study for butter, Hansen (2006) produced evidence that the level of the price discount is also time-dependent and rises, for example, prior to holidays.

Möser (2002) and Herrmann, Möser and Weber (2005) show with a commercially available scanner dataset that sales promotions for branded foods are widespread in Germany.¹⁹ Using the scanner dataset, the number of price campaigns was counted for 20 national processed food products, which are well-known brands in Germany. A price campaign was defined as a situation in which the brand was priced at least 5% below the normal price.

Table 6 illustrates that, in the case of the six grocery-retailing firms, the number of price campaigns per store varies widely. Firms' promotion activities are very heterogeneous. A crucial factor is whether firms apply an EDLP or a HiLo strategy. Whereas the median number of price campaigns per store is as high as 9.6 for Firm C, the corresponding values are much smaller for Firm E (1.3). Not surprisingly, the brands differ substantially with regard to the frequency they are put into a price campaign. There is a peak value of 31 price campaigns per store within the 144-week period, whereas other brands do not feature in the promotion strategies of individual firms at all.

¹⁹ This scanner dataset captures scanner data from the German food-retailing sector for 144 weeks, i.e. the period from September 30, 1996, to June 28, 1999. Four types of retailing firm were selected for this study (i) large consumer markets (1,500 to 5,000 m² sales area); (ii) small consumer markets (800 to 1,499 m²); (iii) supermarkets (400 to 799 m²) and (iv) discounters. The empirical evidence is provided at the level of six grocery-retailing firms.

Table 6. Summary of Pricing Strategies of German Food Retailers, 20 Brands, Weekly Prices, 1996-99^{a)}

Indicators of Pricing Strategy	Statistical Measure	German Food Retailers						Median
		A	B	C	D	E	F	
Sales	Median	1.7	8.9	9.6	2.6	1.3	5.1	3.9 ^{b)}
Price Rigidity	Median	35.8	8.8	7.3	26.3	44.3	11.9	19.1 ^{b)}
Psychological Prices	Median of PSYCH	98.5	95.0	90.9	96.0	99.2	96.6	96.3 ^{b)}
	Median of CR2	91.1	66.1	79.8	83.1	98.3	61.2	81.5 ^{b)}

a) The sample period and the included stores are explained in footnote. The number of observations differs across the grocery-retailing firms and products.

b) Median of the medians, computed across firms.

Source: Herrmann/Möser/Weber (2005).

A further finding is that the importance of the sale phenomenon is strongly dependent on store type and, as illustrated by Table 7, it is most important in large consumer markets, small consumer markets and supermarkets. The median value of price campaigns per store is 7.5 for large consumer markets, but only 1.0 for discounters.

Table 7. Summary of Pricing Strategies of Four German Store Types, 20 Brands, Weekly Prices, 1996-99^{a)}

Indicators of Pricing Strategy	Statistical Measure	German Store Types				Median
		Discounters	Supermarkets	Small Consumer Markets	Large Consumer Markets	
Sales	Median	1.0	5.1	6.0	7.5	5.6 ^{b)}
Price Rigidity	Median	37.5	13.2	11.1	9.0	12.2 ^{b)}
Psychological Prices	Median of PSYCH	96.4	92.6	93.2	91.2	92.9
	Median of CR2	85.3	66.1	68.3	69.4	68.9

a) The sample period and the included stores are explained in footnote. The number of observations differs across the store types and products.

b) Median of the medians, computed across store types.

Source: Herrmann/Möser/Weber (2005).

It can be seen that promotional campaigns influence the dynamic pricing pattern, which is characterized by price instability or price rigidity. **Price rigidity** (PRIG) is measured as the mean duration of unchanged prices, following Powers and Powers (2001):

$$PRIG = w/w_{PCH}, \quad (1)$$

where w stands for the number of weeks with price observations, and w_{PCH} is the number of weeks with price changes. Besides indicators of cost or demand transmission, the mean duration of unchanged prices is typically regarded as one major element of price stickiness.

The data on price rigidity implemented by grocery-retailing firms in Germany are summarized in Table 6. The results reveal that firms' strategies again play an important role. Whereas median price rigidity is as high as 44.3 weeks in Firm E, median price rigidity in Firm C reaches "only" 7.3 weeks. In Firm E, peak values between 139 and 134 weeks for three brands indicate that prices are adjusted in some cases only very rarely, i.e. less than every two years. On the other hand, the median of unchanged prices for major brands like Dallmayr Prodomo, Rama, and Nutella ranges between 2.7 and 3.9 weeks in Firm B. It is apparent that prices are adjusted much more actively for some brands and in some firms.

Price rigidity also varies widely across store types. Discounters, a store type with a very clear every-day-low-price (EDLP) strategy, have by far the highest price rigidity: the median of periods of unchanged prices is as high as 37.5 weeks, well above supermarkets (13.2 weeks), small consumer markets (11.1 weeks) and large consumer markets (9.0 weeks). The differences between store types suggest that discounters in Germany tend to stabilize consumer prices, an effect that is getting stronger due to discounters' rising market share. The ranking of store types according to price rigidity is exactly opposite the ranking in respect to price campaigns: discounters practiced the highest level of price rigidity and had the lowest level of price campaigns per store. Large consumer markets practiced the lowest price rigidity, but had the highest number of price campaigns per store. They are at the upper and lower end of a scale characterizing EDLP versus HiLo pricing strategies.

With the help of monthly price records from national statistical offices, Dhyne et al. (2006) show that, compared with other European countries and the United States, price changes in Germany for processed and unprocessed foods are less frequent. They point out that the structure of the distribution sector plays an important role in many countries and suggest that the frequency of price changes is higher in countries where large outlets are predominant. However, Germany is characterized by a high proportion of large outlets and by relatively high price rigidity, again suggesting that discounters are largely responsible for the price stickiness measured.

Loy and Weiss (2004) refer to price rigidities and synchronization of prices in German retail stores and demonstrate that often prices were synchronized between different German food retail stores of and products. They find that only some cases of synchronization can be explained by common shocks, such as a shift in world commodity prices, suggesting that strategic goals and chain-specific menu costs are important.

Economists as well as psychologists have suggested psychological pricing points as a rationale for sticky prices (see for example Blinder et al. 1998, Stiving/Winter 1997). However, psychological reasons for “odd pricing,” “just-below-the-round-figure pricing,” or “psychological pricing” have been stressed as being more important in marketing than in the economics literature. In Tables 6 and 7, we use two different measures for psychological pricing strategies: PSYCH refers to the percentage share of important psychological prices, i.e. those prices set in at least 5% of all cases, in all observed prices. Additionally, concentration ratios for the two most important psychological prices, CR2, are provided for the six grocery-retailing firms and for the store types.

PSYCH can be interpreted as a measure of the overall importance of psychological prices. A high value of PSYCH may be compatible with the economic and the psychological hypotheses of psychological pricing. We argue that CR2 yields valuable additional information. It is CR2 rather than PSYCH that measures the economic presumption that psychological price barriers are valid. If CR2 is large, this suggests that retailers will expect a strong reaction by consumers if a psychological price barrier is exceeded. Therefore, they will only rarely move beyond that barrier.

Also, PSYCH is likely to be much higher than CR2. More prices, in some cases many more psychological prices, are then set by retailers. In this case, retailers’ pricing strategies are likely to be quite flexible and not limited by major psychological pricing points and, despite relatively frequent price changes, 9-ending or 99-ending effects do occur since customers either round down prices or apply a left-to-right comparison. This constellation implies that psychological prices are then part of a pricing strategy in which firms move from one psychological price to the next. Major price barriers, as indicated by Sweezy’s kinked demand function, cannot explain this kind of pricing strategy. It is rather the level effects explained in cognitive psychology that seem to be crucial for this type of observed behavior.

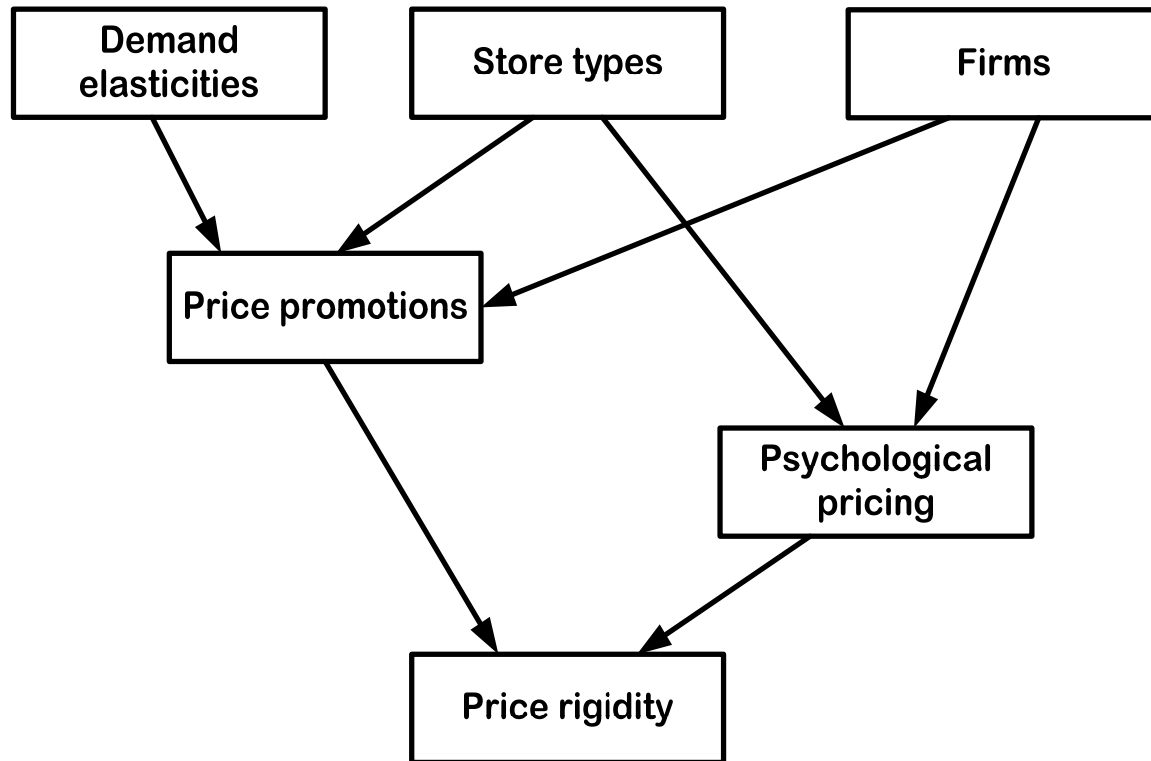
We deduce from Tables 6 and 7 that psychological prices are the rule rather than the exception in German grocery retailing and that the two most important psychological prices cover a large proportion of the prices investigated. Median values across brands are for all firms above 90%, with Firm E being extreme: in Firm E, the median of PSYCH is 99.2%. Almost all prices are psychological prices. According to Table 6, the concentration ratios for the two most important psychological prices are also high for all grocery-retailing firms. Medians range between 61.2% and 98.3%.

Table 7 shows that across stores PSYCH is higher than 90% for all individual store types, when medians across the brands are calculated. Psychological pricing is even more widespread in discounters than in the other three store types, with an impressive median value of 96.4%. The variation of CR2, however, across store types is much higher than for PSYCH. Median values for CR2 across brands are in the range between 66.1% and 69.4% for supermarkets, small consumer markets and large consumer markets, and clearly higher for discounters at 85.3%.

Herrmann, Möser and Weber discuss how variables are interrelated and analyze them within structural econometric models (2005). The general result is illustrated in Figure 6,

which shows that store types and firms choose individual price promotion and psychological pricing strategies. Price promotions are planned as a function of the price elasticity of demand for food brands, i.e. the number of promotions rises with the absolute value of the price elasticity. The number of price promotions drives psychological-pricing strategies, too. Price rigidity in German grocery retailing is then a function of psychological-pricing and price-promotion strategies.

Figure 6: Determinants of Price Rigidity in German Grocery Retailing



Source: Author Illustration

Private labels are widespread in the German retailing sector. These products, introduced as alternatives to national brands, represent a crucial element in food retailers' marketing and pricing strategies. Möser (2002) analyzes the price levels of different private labels and national brands with scanner data and finds private labels in different price segments. Ecological private label products in particular are located in the high price segment. Jonas and Roosen (2006) use consumer panel scanner data for estimating price elasticities of ecological and conventional private labels and national brands of milk. Consistent with the marketing of ecological private label milk as a premium product, the price elasticity is very high, namely -2.502.

4.3 Pricing Strategies of German Food Retailers: A Case Study for Coffee

In Germany, coffee is a typical loss-leader product for different retailing firms, which is intensively advertised and frequently sold on special offer. Furthermore, the high variation in coffee input prices leads to frequent price adjustments by the retailing sector (Möser 2002). In her detailed study of the German coffee market, Körner (2004) identifies intensive price competition for coffee in the retailing sector.

The pricing strategies of six grocery-retailing firms were analyzed in the case of five national coffee brands, which are well known in Germany, and a private label coffee brand that is distributed only by two grocery-retailing firms. Highly aggregated indicators of price rigidity (PRIG) and of the importance of psychological prices are given in Table 8 for the six grocery-retailing firms. The following main results can be derived:

The data reveal that firms' strategies play a significant role. Whereas median price rigidity is as high as 7.9 weeks in Firm D and 7.5 weeks in Firm E, median price rigidity in Firm B reaches 2.6 weeks. Median price rigidity also varies greatly across products, too. If we compute the median of the medians across brands, the mean duration of unchanged prices is 5.2 weeks. Price rigidity is much higher than 5.2 weeks for some brands (brands 1 and 6), but for other brands it is considerably lower: 2.0 weeks for brand 4, 3.5 weeks for brand 2, and 4.1 weeks for brand 3.

A comparison with price rigidity for the 20 nationally distributed brands covered in Table 6 reveals that price instability is much higher in the coffee sector. The mean duration of unchanged prices across the six coffee brands is only 5.2 weeks, but the mean duration for 20 processed products (which include also one coffee brand) is nearly 19 weeks.

It can be deduced from Table 8 that psychological prices are the rule rather than the exception in German grocery retailing. Median values across brands are above 70% for all firms, with Firm E being extreme: in Firm E, the median of PSYCH is 93.4%. Almost all prices are psychological prices. Almost all prices are also important psychological prices, because they cover 5% or more of all observed prices. Across the six grocery-retailing firms, PSYCH ranges between 71.2% (brand 4) and 92.4% (brand 6). The median across the six brands is 85.4%.

For the coffee sector it was not possible to confirm the structural relationships detected in Figure 6 between price rigidity, price promotions, psychological prices, and firms' strategies. Most likely, this is due to the fact that price promotions affect the price rigidity of **all** major coffee brands. Offer prices for major coffee brands seem to be a crucial element in the promotional activities of all firms. Thus, there is not much variation of price rigidity across coffee brands whereas differences are substantial across food categories.

Differential pricing strategies do exist, however, for private labels as opposed to national coffee brands. Möser (2002) shows that private labels are typically characterized by lower prices than national coffee brands, and also by a lower absolute and a higher relative marketing margin. However private labels differ in terms of price rigidity, too.

Table 8. Price Rigidity in Six German Grocery-Retailing Firms, Six Coffee Brands, Weekly Prices, 1996-99^{a)}

Brands	PRIG ^{b)}						Median
	A	B	C	D	E	F	
1	16.3	2.7	7.2	11.1	18.0	9.3	10.2
2	2.9	2.1	2.9	5.6	6.3	4	3.5
3	3.7	2.6	2.7	7.1	8.6	4.5	4.1
4	1.7	2	2.6	1.9	2.1	1.9	2.0
5	5.9	2.6	6.1	8.6	7.5	6.6	6.4
6	- ^{c)}	- ^{c)}	13.3	12.9	- ^{c)}	- ^{c)}	13.1
Median	3.7	2.6	4.5	7.9	7.5	4.5	4.5 ^{d)} /5.2 ^{e)}
Brands	PSYCH ^{b)}						Median
	A	B	C	D	E	F	
1	94.6	77.4	83.1	86.5	93.7	85.6	86.1
2	73.7	70.6	74.3	85.9	84.4	81.9	78.1
3	83.4	82.6	74.3	85.9	93.4	89.7	84.7
4	64.7	70.4	95.0	67.3	71.9	72.7	71.2
5	90.3	83.8	86.2	92.7	94.7	92.6	91.5
6	- ^{c)}	- ^{c)}	97.5	87.2	- ^{c)}	- ^{c)}	92.4
Median	83.4	77.4	84.7	86.2	93.4	85.6	85.4 ^{d)} /85.4 ^{e)}

a) The sample period and the included stores are explained footnote. The number of observations differs across the grocery-retailing firms and products.

b) PRIG and PSYCH are defined in the text.

c) Not distributed in this grocery-retailing firm.

d) Median of the medians, computed across firms.

e) Median of the medians, computed across brands.

Source: Möser/Herrmann (2006) and authors' computations.

Based on our scanner data set, nearly 90% of the variation of price rigidity across coffee brands can be explained with a few major variables, namely psychological prices (PSYCH), the mean price level (PRICE), whether a product is a private label (PRILABEL) and dummy variables for selected national brands (e.g., *BRAND3*, *BRAND5*). The following equation for the estimated price rigidity (*EPRIG*) includes only statistically significant coefficients:

$$\begin{aligned}
 EPRIG = & -81.2905^{***} + 0.1477^{**} PSYCH + 8.1444^{***} PRICE \\
 & (-9.57) \quad (2.98) \quad (7.19) \\
 & + 25.5353^{***} PRILABEL + 4.4233^{**} BRAND3 + 5.0918^{**} BRAND5 \\
 & (7.43) \quad (3.47) \quad (3.50)
 \end{aligned}$$

Equation (2)

$$(\bar{R}^2 = 0.86; F = 37.98^{***}; n = 32)$$

*** stands for the 99.9% level, ** for the 99% level of statistical significance, *t*-values are in parentheses.

From equation (2), we conclude that grocery retailers' coffee prices are more rigid:

- the more psychological prices are set,
- the higher the average coffee price,
- for private labels than for the reference products of national brands,
- for some national brands than for others, depending on their attractiveness for retail sales campaigns.

Apart from these variables, the number of price promotions does not play a significant role.

4.4 Market Power in the German Retailing Sector and Consequential Impacts

Changes in market structure suggest increasing potential market power: as described in Section 2, concentration in the German retailing sector has increased sharply. Unfortunately, there are very few studies that have used structural models to test whether food retailers actually exerted oligopolistic or oligopsonistic market power on either consumers or the food-processing sector in Germany. Exceptions are analyses for the coffee, meat and banana sectors.

Körner (2004) analyzes the German coffee market with various methodological approaches, for example, by testing for market behavior within a conjectural-variation approach. One general result is that price and quality competition is strong, and there is no evidence of collusive behavior. Thus, strong concentration at the retail level is combined with competitive market behavior.

In the case of the German banana market, Herrmann and Sexton (2002) test different hypotheses regarding the competitiveness of the market and analyze how welfare implications of the European Banana Market Organization are affected by those hypotheses. They conclude that, despite the high concentration in the banana economy, the imperfect-competition hypothesis is not supported by the econometric results. Market conduct at the consumer level was most supportive of a small-country, perfect-competition model.

Anders (2005) tests for market power in the retailing sector by analyzing the meat-marketing channel in Germany. Here, primary agricultural products—e.g. beef and pork—are produced by farmers and sold to meat processors. After processing and packaging, the meat products are sold by the retailing sector to consumers. The estimates of oligopsony and oligopoly retail market power reveal that perfect competition and price-taking behavior can be rejected in the beef and pork market.²⁰ As a result, beef prices per kilogram decreased at farm level by nearly 0.40 euros from a hypothetical price of 3.34 euros under perfect competition to the actual price of 2.94 euros due to imperfect competition at the retail level.

Combining the empirical results in Section 4 with the results from market-power models, we can conclude that increasing concentration in German food retailing has not negatively affected consumers. The law of one price certainly does not hold, and retailers apply their own pricing strategies. But the increasing role of discounters, with their EDLP

²⁰ For more details regarding the database and estimation procedures consult Anders (2005).

strategies, puts pressure on food prices and limits the oligopoly power that the large food retailers can exert over consumers. There is, however, a clear indication that some oligopsony market power by food retailers affects producers and processors, at least for individual product categories like meat.

CONCLUSIONS

Over the last four decades, the German food-retailing sector has been subject to continuous structural change. Most important has been the combination of increasing concentration with rising store size and the growing role of discounters implementing an aggressive EDLP pricing strategy. Thus, consumers have benefited from intensive price competition, despite the higher market share of leading food retailers. The analysis of market conduct, in terms of price formation and pricing strategies, reveals a typical situation of imperfect competition. The law of one price certainly does not hold for individual foods. Price levels and pricing strategies diverge substantially across firms and store types. There are successful retailers with an EDLP strategy, as well as others with a HiLo strategy. A major lesson to be learned from the German experience is that increasing concentration in food retailing does not necessarily imply that more market power is exerted at the expense of consumers. Competitive markets are compatible with a high level of concentration as long as a strong competitive fringe, for example discounters, challenges the large chains in food retailing.

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Chapter 5: The Case of Korea

Dong Hwan Kim

1. INTRODUCTION

Historically a large number of small-scale food retailers have dominated the Korean food retail industry. Food items were mainly sold through small-scale grocery stores, “mom and pop” stores, and traditional market places. However, the importance of small-scale food retailers decreased sharply as Western-style supermarkets and discount stores were introduced. The development of large-scale retail chains came in part from Korean companies and in part from foreign food retailers, such as Carrefour, Wal-Mart, and Tesco. For the most part, these global retailers entered the Korean market with discount store formats. The changes in food retailing occurred so fast and with so much influence on the economy, and that is often called the “distribution revolution” in Korea.

Available evidence indicates that changes in food retailing have significantly influenced consumers, producers, and the overall food marketing system. Development of large-scale retailers with supermarket or discount store formats has generated scale economies and streamlined procurement practices leading to increased consumer welfare via lower prices and improved quality. The more efficient marketing channels have also led to ancillary benefits to those upstream suppliers able to adapt to the large retail procurement format. However, as the market shares of major supermarket and discount store chains have increased sharply in recent years, there has been a growing concern for the buying power exercised by large food retailers. All supermarkets now account for 54% of all food store sales in Korea, and the largest four firms hold 43% of supermarket sales. While this is still low in comparison to many developed nations, it is changing rapidly.

Given the revolutionary changes occurring in food retailing, it is helpful to examine the nature of these changes and their impact on food producers and consumers. The experiences in Korea may provide useful insights into food retailing sector in other countries, especially developing countries. The following section contains a thorough discussion and assessment of the recent structural changes in food retailing. Section three identifies and summarizes the effects dominant food retailers have on agricultural producers, and section four discusses and examines the public policy implications of Korea’s rapidly changing food retailing sector.

2. STRUCTURE OF FOOD RETAILING IN KOREA

2.1 Industry Definition of Food Retailing

According to the National Statistical Office (NSO) of Korea, the retail industry consists of general retailing and several specialty-retailing industries. General retailing consists of large-scale general retail stores, such as department stores, discount stores and

grocery stores.²¹ Specialty retailing is classified by the type of merchandise sold in retail stores.²² In Korea, unlike the United States, automobile retailing, fuel retailing, and restaurants are not classified as part of the retail industry.

In this chapter, food retailing is defined as a subsector of the retail industry, consisting of food, beverage, and tobacco retailing, grocery stores, and the parts of large-scale retailers focused on food. Specialty retailers, food, beverage, and tobacco retailing refers to food stores that specialize in a limited assortment of food products.²³ Grocery stores are classified based upon the following definition: “a food store that sells a general line of food products, such as canned and frozen foods; fresh fruits and vegetables; fresh and prepared meats, fish, and poultry; and nonfood grocery products with [a] selling floor less than 3,000 m² (or 33,000 ft²)” (National Statistical Office of Korea, 2000). Subcategories of grocery stores include conventional supermarkets, convenience stores, and small grocery stores.

Specifically, a supermarket is defined as “a food store that sells a general line of food products and nonfood grocery products with [a] selling floor of 165-3,000 m² (or 1,800-33,000 ft²).” A convenience store is defined as “a food store that sells a general line of food products and nonfood grocery products for 24 hours under one management or the franchise system.” Small grocery stores refer to stores that sell a general line of food products and nonfood grocery products with a selling floor less than 165 m² (or 1,800 ft²).

The supermarket sector includes not only conventional supermarkets but also discount stores (or supercenters) and department stores.²⁴ Total sales of the discount store sector are included as food retailer sales because food items account for more than 50% of total sales in Korea.²⁵ Discount stores in Korea are operated like supercenters or hypermarkets where food sales account for more than 50% of total sales. According to a survey by the Korea Chamber of Commerce and Industry (2002), food items account for about 15% of total department store sales. Most department stores in Korea operate supermarkets in the basement of their stores. Therefore, 15% of department store sales are included in sales of the supermarket category.

²¹ According to Korean Standard Industrial Classification (KSIC), general retailing (KSIC 521) consists of large scale general retail stores (KSIC 5211) and grocery stores (KSIC 5212).

²² Specialty retailing consists of food, beverage and tobacco retailing (KSIC 522); pharmaceuticals, medical equipment; and cosmetic retailing (KSIC 523); textiles; clothing; footwear and leather goods retailing (KSIC 524); electronic home appliances; furniture; household appliance retailing (KSIC 525); other specialized retailing (KSIC 526); used-goods retailing (KSIC 527); and non-store retailing (KSIC 528).

²³ Sub-categories of specialty food stores include rice and grain retailers (KSIC 52211), meat retailers (KSIC 52212), seafood stores (KSIC 52213), vegetable and fruit retailers (KSIC 52214), bread and confectionary retailers (KSIC 52215), health food retailers (KSIC 52216), other food retailers (KSIC 52219), beverage retailers (KSIC 52221), and tobacco retailers (KSIC 52222).

²⁴ The term “supercenter” is often used synonymously with “hypermarket.” Hypermarket is a phrase first popularized by Carrefour’s store formats introduced in France in 1963 (Sharkey and Stiegert, 2006). Though some distinction between supercenters and hypermarkets has been attempted in the literature (i.e. floor size, product lines, appearance) the terms refer to the same basic retailing strategy.

²⁵ In discount stores, food items account for 58.6% of total sales (Korea Chamber of Commerce and Industry, 2002).

2.2 Basic Structure of Food Stores

Traditionally, small-scale stores in Korea have dominated food retailing. Food and beverage products have been sold not only in grocery stores, but also in street stalls and by peddlers, located mainly in traditional market places. According to the National Statistical Office of Korea, there were about 233,000 food retail stores in 2001, providing employment to 470,000 people. Food stores are distributed more densely in Korea than in most other countries. In 2001, there was one food store per 202 persons in Korea (National Statistical Office of Korea, 2001). While this figure is comparable to 199 persons per store in Japan, it is much less than the figure of 1,412 persons per store in the United States (Kim, 1995).

Table 1 contains information about average store size in Korea from 1981-2001. The average size of food stores is quite small compared with most developed nation counterparts. The average employment per store has only risen from 1.6 persons in 1981 to 2.0 persons in 2001. In contrast, food stores in the United States and Japan, employ, on average, 16 and 4.1 persons respectively. Kim (1995) reports that annual average sales per store are only \$438,000, which compares to \$467,000 in Japan and \$2,044,000 in the United States. In terms of floor space, average store size has increased substantially (by a factor of 2.9), reflecting the emergence of supercenters and larger supermarkets. However, most food stores remain small, family-owned businesses that also serve as the family residence. Small family-owned food shops have been historically viable due to Korea's high population density in urban areas, frequent trips to stores, and an emphasis on freshness and quality of food sold.

Table 1. Structure of Food Stores in Korea

Year	Number of Establishments	Number of Employees	Average Number of Employees per Store	Average Store Size (m ² /ft ²)
1981	241,830	392,915	1.6	19.7 (214)
1986	311,656	528,428	1.7	21.4 (233)
1991	304,971	514,430	1.7	29.0 (315)
1995	297,834	532,527	1.8	37.0 (402)
1997	293,336	529,465	1.8	48.1 (523)
2001	233,002	469,721	2.0	57.5 (625)

Source: National Statistical Office of Korea, several years.

Note: Food stores are defined as food, beverage and tobacco retailing stores, grocery stores, and a part of large-scale retailers.

Table 2 and Figure 1 contain detailed information about the changing structure of food retailing. Until the mid-1990s, two-thirds or more of food and grocery items were sold through small grocery stores and specialized food stores. In 1995, small grocery stores and specialized food stores accounted for 40.4% and 24.0% of total food store sales, respectively (figure 1, Table 2). In contrast, supermarkets accounted for 33.2%. As the

number of large-scale discount stores increased since the mid 1990s, the share of food store sales accounted for by supermarkets grew sharply. The shares of sales accounted for by supermarkets increased from 33.2% in 1995 to 53.9% in 2005. In contrast, the shares of food store sales accounted for by small grocery stores and specialty food stores decreased from 64.0% to 41.6% during the same period. As a result, supermarkets became the number one format of food stores.

Figure 1. The Shares of Food Store Sales Accounted for by Segment

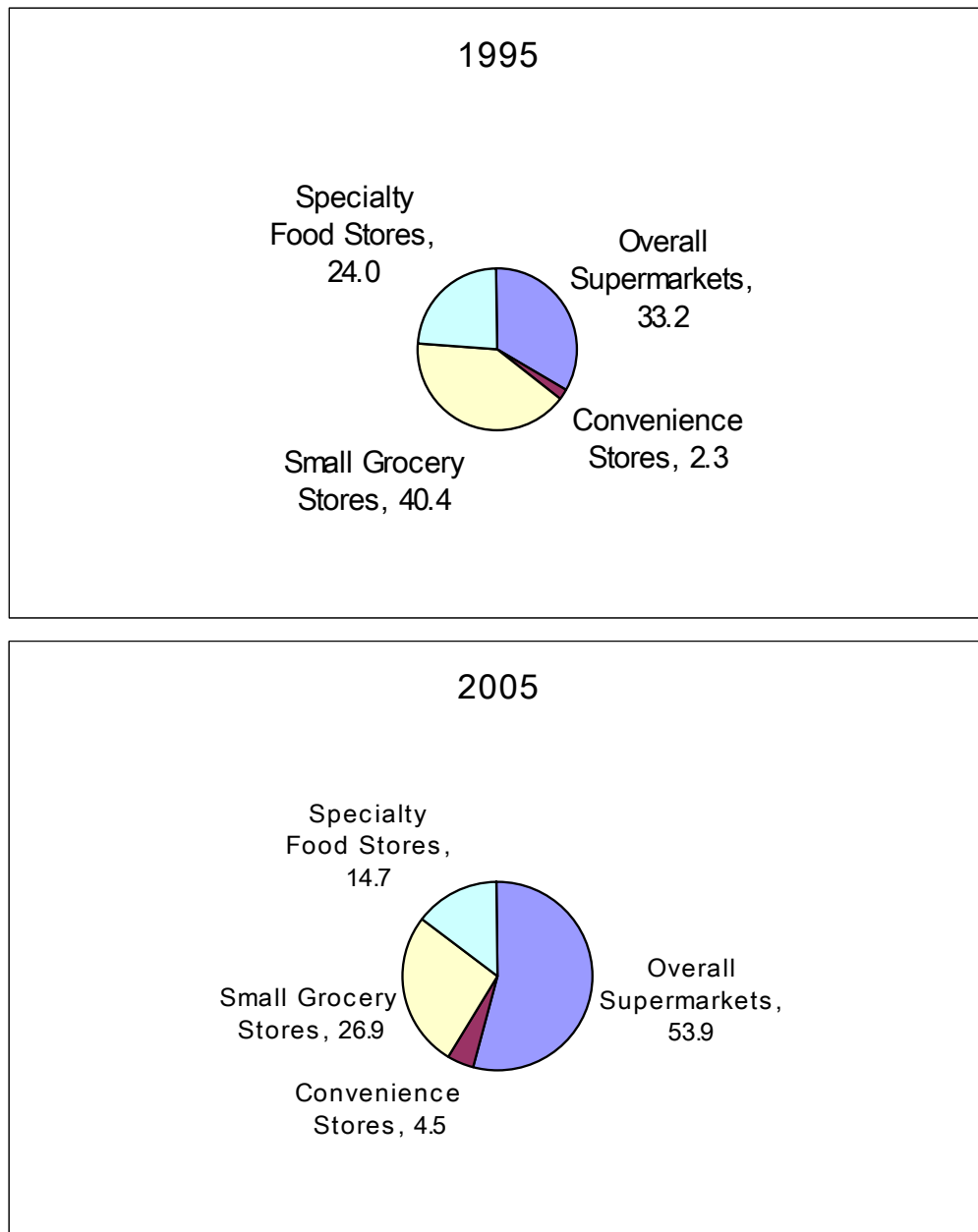


Table 2. Food Store Sales by Segment, 1995-2005.

(Unit: Trillion Won, %)

Year	Total sales of food stores	Grocery stores			Specialty food stores
		Overall Super-markets	Convenience Stores	Small Grocery Stores	
1995	29.7 (100.0)	9.9 (33.2)	0.7 (2.3)	12.0 (40.4)	7.1 (24.0)
1996	35.5 (100.0)	12.5 (35.3)	0.8 (2.2)	14.0 (39.6)	8.1 (22.9)
1997	39.4 (100.0)	14.6 (37.0)	0.9 (2.2)	15.5 (39.3)	8.5 (21.6)
1998	40.8 (100.0)	16.6 (40.6)	0.8 (2.0)	15.1 (36.9)	8.3 (20.4)
1999	45.2 (100.0)	19.8 (43.8)	0.9 (1.9)	15.2 (33.7)	9.3 (20.6)
2000	51.3 (100.0)	23.9 (46.6)	1.1 (2.0)	16.0 (31.1)	10.3 (20.2)
2001	56.8 (100.0)	28.3 (49.9)	1.6 (2.8)	17.1 (30.1)	9.8 (17.3)
2002	65.0 (100.0)	33.4 (51.4)	2.3 (3.5)	18.7 (28.7)	10.6 (16.4)
2003	69.4 (100.0)	36.4 (52.4)	2.8 (4.0)	19.8 (28.5)	10.5 (15.1)
2004	72.6 (100.0)	38.6 (53.2)	3.1 (4.3)	20.1 (27.7)	10.8 (14.8)
2005	77.4 (100.0)	41.7 (53.9)	3.5 (4.5)	20.8 (26.9)	11.4 (14.7)

Note: 1 US dollar is approximately equivalent to 1,000 won as the end of 2005.

Note: The shares of total food store sales accounted for by each format are reported in parentheses.

Source: National Statistical Office of Korea.

The overall supermarket column from Table 2 is broken out in Table 3 and Figure 2 to show significant changes that have occurred when the discount store revolution occurred. In 1995, conventional supermarkets accounted for more than 70% of total supermarket sales, but the shares of department stores and discount stores were only 16.0% and 8.3% respectively (Figure 2, Table 3). However, the shares of discount stores increased dramatically during 1995-2005 due to the sharp increase in the number of stores. While the shares of overall supermarket sales accounted for by conventional supermarkets and department stores decreased to 24.7% and 6.1% in 2005, the share held by discount stores rose to 69.2%.

Table 3. Sales of Overall Supermarket Sector by Segment, 1995-2005

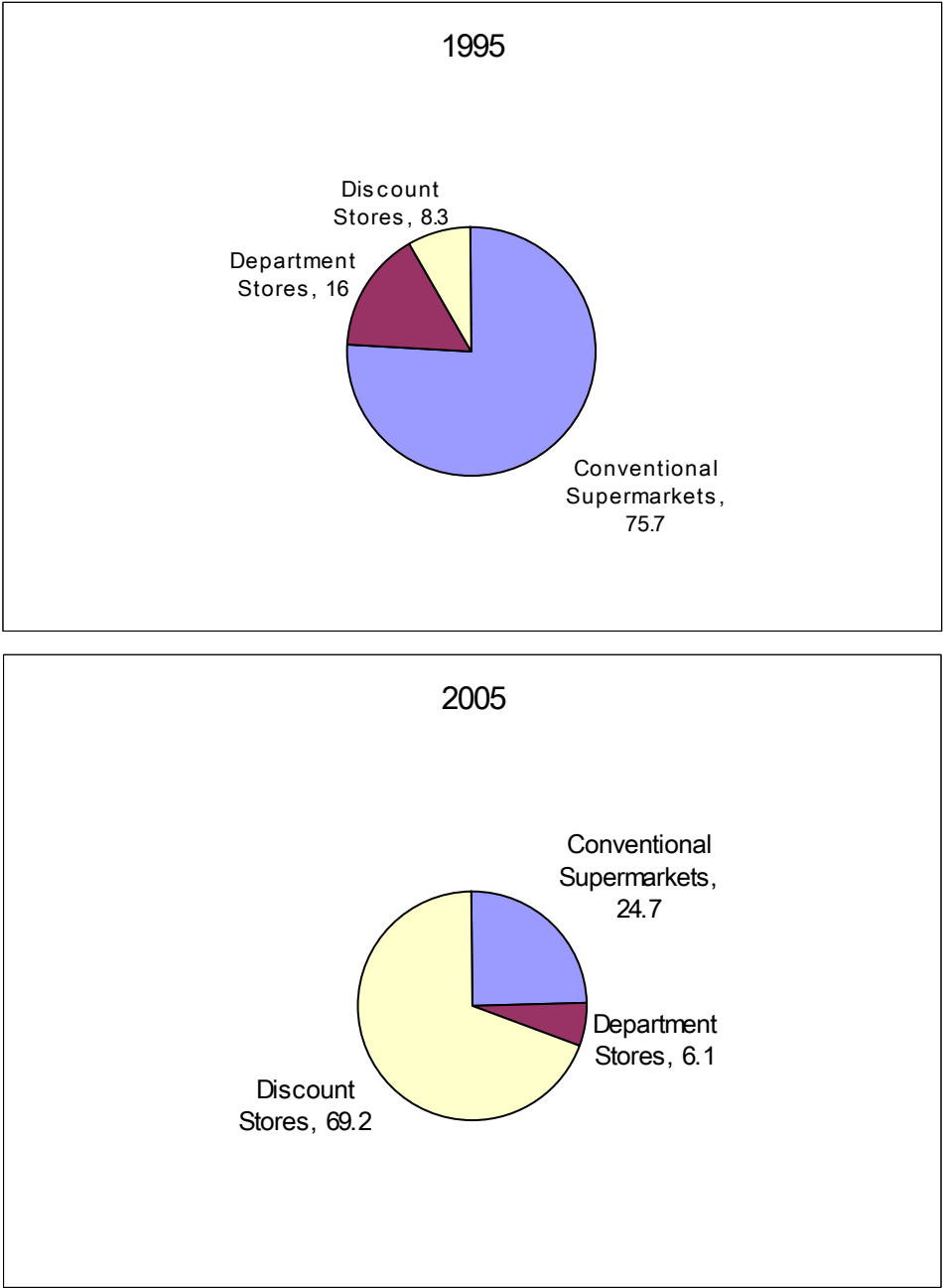
(Unit: Trillion Won, %)

	Total	Conventional Supermarkets	Department Stores	Discount Stores
1995	9.9 (100.0)	7.5 (75.7)	1.6 (16.0)	0.8 (8.3)
1996	12.5 (100.0)	8.4 (67.1)	1.8 (14.6)	2.3 (18.3)
1997	14.6 (100.0)	8.8 (60.6)	1.9 (12.7)	3.9 (26.7)
1998	16.6 (100.0)	8.9 (53.6)	1.7 (10.1)	6.0 (36.3)
1999	19.8 (100.0)	8.6 (43.7)	2.0 (9.9)	9.2 (46.4)
2000	23.9 (100.0)	8.8 (36.9)	2.2 (9.3)	12.9 (53.8)
2001	28.3 (100.0)	9.0 (31.8)	2.4 (8.5)	16.9 (59.7)
2002	33.4 (100.0)	9.5 (28.3)	2.6 (7.9)	21.3 (63.8)
2003	36.4 (100.0)	9.9 (27.3)	2.5 (7.0)	23.9 (65.7)
2004	38.6 (100.0)	9.8 (25.5)	2.4 (6.3)	26.3 (68.2)
2005	41.7 (100.0)	10.3 (24.7)	2.5 (6.1)	28.8 (69.2)

Note: The shares of total supermarket sales accounted for by each segment are reported in parentheses.

Note: Food sales of department stores are calculated based upon a share of total sales accounted for by food items in department stores (15%).

Figure 2. The Shares of Supermarket Sales Accounted for by Segment



2.3 Major Food Store Formats

Conventional Supermarkets

Unlike their US and European counterparts, conventional supermarkets are a relatively recent development in Korea. Although the supermarket format was introduced in the late 1960s, the shares of total food store sales accounted for by supermarkets never exceeded 30% until the 1980s.

In the early 1980s, the supermarket business grew rapidly owing to development of new residential/commercial areas in Seoul, the capital of South Korea. Small and medium size supermarkets were opened in apartment complexes and large supermarkets were opened as core stores in the large department stores or shopping centers located in the center of new residential areas. These modernized supermarkets gradually replaced traditional marketplaces by providing consumers with the benefits of one-stop shopping.

However, the conventional supermarket industry suffered from stagnant growth after the mid-1990s as new retail formats were introduced. Rapid expansion of discount stores and their low-price strategies triggered price competition among retailers, resulting in deteriorating profitability of conventional supermarket businesses. Because food and grocery products are major items sold in discount stores, conventional supermarkets compete directly with them. Conventional supermarkets are at a competitive disadvantage due to a poorer assortment of merchandise and higher prices, compared to discount stores.

Corporate supermarket chains operated by large enterprises have developed rapidly since the late 1990s. They have a competitive advantage against small-scale independent supermarkets or supermarket chains with a small number of stores. Corporate supermarket chains have access to abundant capital and can charge lower prices due to economies of scale in store operation and merchandise procurement. In order to compete with discount stores, supermarket chains also opened superstores, which have a more spacious selling floor than conventional supermarkets, often as large as 1,500 m² (or 16,000 ft²).

At the end of 2005, the top four supermarket chains in Korea were GS supermarket (formerly LG Mart), Seowon Distribution, Lotte Supermarket of the Lotte Retail Group, and Haitai Distribution (Table 4).

In 2005, GS Supermarket was the leading supermarket chain in Korea. It operated 83 supermarkets with sales of 695 billion won, an average of 8.4 billion won (roughly US\$8.4 million). GS Supermarket was established in 1971 and spun off the LG group in 2003. In 2005, GS Supermarket acquired nine supermarket stores from the Kolon Group, which owned and operated the supermarket chain named “Da Mart.”

The second largest supermarket chain was Seowon Distribution. Established in 1981, the stores of Seowon Distribution are mainly located in the southeastern region of Korea. It has grown to be the leading supermarket in that region by acquiring stores operated by other companies. At the end of 2005, Seowon Distribution operated 40 supermarket stores with the sales of 534 billion won, an average of 13.4 billion won (US\$13.4 million) per store.

Lotte Supermarket, the third largest supermarket chain, is a division of Lotte Shopping, Inc., which is the largest retail group in Korea. As a top department store operator, it operates not only department stores but also discount stores, conventional supermarkets, convenience stores, and even non-store retailing. Lotte Supermarket was established in 2001. To bolster its supermarket business, Lotte acquired, in 2004, 25 supermarket stores from Hanhwa distribution, which was then the number two supermarket chain. At the end of 2005, Lotte Supermarket operated 47 stores with sales of 420 billion won, an average of 8.9 billion won (US\$8.9 million) per store.

The number four supermarket chain was Haitai Stores, which was established in 1974. Excessive borrowing and overinvestment resulted in Haitai Group and Haitai Stores going bankrupt in 1997 when the foreign exchange crisis hit Korea. To improve its finances, Haitai Stores sold unprofitable stores, reducing the number of stores from 65 in 1995 to 32 in 2005. In 2005, E-Land group, a fashion conglomerate that also operates discount stores, acquired Haitai Stores.

Nontraditional Food Retailers (Discount Stores)

Discount stores in Korea have expanded rapidly since E-Mart, a subsidiary of Shinsegae Department Store, was established in November 1993. The first E-Mart store was located in the northern part of Seoul and attracted much attention from consumers because it sold necessities at lower prices than existing retail formats.

Since the introduction of the first discount store, the total annual sales of discount stores increased sharply from 0.8 trillion won in 1995 to 28.8 trillion won in 2005 (see Table 3 for details of sales figures). In other words, total volume of discount stores has expanded about 36 times in 11 years. The number of stores also increased sharply to reach 300 in 2005.

Various socioeconomic factors might have contributed to the rapid development of discount stores. Liberalization of foreign investment constraints has facilitated the development of discount stores; most foreign retailers entered the Korean market using discount store formats. Responding to these competitive forces, domestic retailers rapidly established an increased number of discount stores. The foreign currency crisis of 1997 decreased real domestic income, which encouraged Korean consumers to switch from traditional food purchasing patterns to discount stores offering lower prices. Increased use of passenger vehicles has also played an important role in the development of discount stores. As more households possessed cars, they were more likely to purchase a week's amount of food and other necessities at discount stores, even if the stores are located farther away from the home. Construction of new towns near metropolitan areas provided inexpensive land and enough space for building discount stores with selling floors of more than 6,000 m² (or 65,000 ft²). The existing retail structure also favored the rapid entrance and expansion of discount stores. Because conventional supermarkets had not emerged as a dominant format in Korea, large-scale discount stores did not have close competitors upon entry. By comparison, the emerging discount store format has not developed as easily in Japan because large-scale supermarkets already had a large market presence.

Table 4. Characteristics of Major Conventional Supermarket Chains

(Unit: Billion won)

Year	GS Supermarket		Lotte Supermarket		Seowon Distribution		Haitai Mart		Hanhwa Distribution	
	Sales	No. of Stores	Sales	No. of Stores	Sales	No. of Stores	Sales	No. of Stores	Sales	No. of Stores
1995	226	56	-	-	102	30	248	65	227	59
1996	270	62	-	-	171	28	349	69	229	45
1997	330	62	-	-	283	33	359	66	255	48
1998	354	59	-	-	344	34	310	66	240	44
1999	451	59	-	-	411	33	255	66	295	44
2000	453	56	-	-	450	37	221	57	278	42
2001	515	61	16	4	485	39	228	46	388	34
2002	606	60	66	9	508	39	173	40	317	27
2003	592	71	102	14	503	39	175	37	340	25
2004	576	82	266	41	514	37	159	32	85	-
2005	695	83	420	47	534	40	160	32	-	-

Note: Lotte Supermarkets acquired Supermarkets of Hanhwa Distribution in 2004.

Source: Company Annual Reports.

The major discount store format in Korea is the supercenter that sells food items as well as general merchandise. A supercenter combines a large supermarket with a full-line discount store. The average supercenter store size is about 10,000 m² (or 109,000 ft²), carrying 25,000-30,000 items. Major hypermarket/supercenter operators are E-Mart (a division of Shinsegae Department Store, Inc.), Homeplus (Samsung Tesco), Lotte Mart (a division of Lotte Shopping, Inc.), Carrefour, and Kim's Club (a division of E-Land, Inc.).

Although the number of stores is small, Membership Wholesale Club (MWC) is also an important discount store format in Korea. The major players in this format are Costco Wholesale and Delta Club (a division of Daegu Department Store, Inc.). The National Agricultural Cooperatives Federation (NACF) of Korea also aggressively participates in the discount store business by operating Hanaro Club, which is a discount store emphasizing sales of agro-food products produced domestically.

In Korean discount stores, food items play an important role in increasing the frequency of trips to the stores and generating sales. Because Western-style food stores are not well developed, consumers go to discount stores primarily to purchase food items. In discount stores, food items account for 58.6% of total sales. Fresh food and processed food account for 26.4% and 27.3% of total sales, respectively (Korea Chamber of Commerce and Industry, 2002).

Four major players in the discount store market are E-Mart, Homeplus, Lotte Mart, and Carrefour (Table 5).

E-Mart, the number one discounter in Korea, is operated by Shinsegae Department Store, Inc., a multi-format operator ranging from department stores, to the country's largest discount store business, to online shopping. Although Shinsegae is the oldest department store operator, with a 70-year tradition, recent growth of the company was possible through the rapid expansion of its discount division, E-Mart. At the end of 2005, E-Mart operated 79 stores with the sales of 8.1 trillion won, an average of 103 billion won (roughly equivalent to \$103 million) per store. In addition to domestic operation, E-Mart rolled out stores in China as a globalization strategy. Currently it operates six discount stores in China, most of them are located in the Shanghai area where E-Mart opened its first store in 1997.

Homeplus, the second largest discount store chain, is operated by Samsung-Tesco, which is a joint venture between Tesco of the U.K. and the Samsung Group. When entering the Korean market in 1999, Tesco bought 81% interest of Homeplus stores, which were operated by the Samsung group. From the beginning, Samsung-Tesco pursued strategies to target more up-scale customers than any other competitor. In addition to discount stores, it operates mid-size conventional supermarkets. For further expansion, Samsung-Tesco acquired Aram Mart, which was a major supermarket chain in the southeast region of Korea. At the end of 2005, Homeplus operated 40 stores with the sales of 4.6 trillion won, an average of 115 billion won (US\$115 million) per store.

Lotte Mart, the third largest discount store chain, is a division of Lotte Shopping, a multi-format retailer like Shinsegae. Emphasizing the department store side of the business, Lotte's participation in discount store retailing came later than its major competitors, and started in 2000. At the end of 2005, Lotte Mart operated 43 stores with sales of 3.2 trillion won, an average of 74 billion won (US\$74 million) per store.

The number four discount store chain is Carrefour, a global retailer that entered the Korean market in 1996. Although Carrefour started its discount store business earlier than most Korean competitors, it failed to take the leading position in the Korean market. Carrefour operated 31 stores with the sales of 2.0 trillion won in 2005, an average of 65 billion won (US\$65 million) per store.

Kim's Club, once the second largest discount store chain, went bankrupt in 1998 and was acquired, in 2004, by E-Land, Inc. Although E-Land acquired former Kim's Club stores, it has not yet become one the four largest discount stores.

Table 5. Situation of Major Discount Store Chains

(unit: Billion won)

Year	E-Mart		Homeplus (Samsung-Tesco)		Lotte Mart		Carrefour	
	Sales	No. of Stores	Sales	No. of Stores	Sales	No. of Stores	Sales	No. of Stores
1995	188	4	-	-	-	-	-	-
1996	338	6	-	-	-	-	-	-
1997	705	10	-	-	-	-	275	3
1998	1,139	14	-	-	-	-	333	3
1999	1,705	20	249	2	-	-	786	8
2000	2,886	28	561	7	563	13	1,039	15
2001	4,071	42	1,271	17	1,275	20	1,149	22
2002	5,520	50	2,147	26	1,893	28	1,375	27
2003	6,330	59	2,575	29	1,494	31	1,460	27
2004	7,170	69	3,036	36	2,329	36	1,604	29
2005	8,050	79	4,600	40	3,208	43	2,000	31

Source: Company Annual Reports.

Department Stores

Unlike department stores in the United States, Korean department stores sell food items on the lowest floor of a multi-floor selling space. Although the share of department store sales accounted for by food items is relatively small, food items might contribute to increasing the frequency of trips consumers make to department stores. According to the survey by the Korea Chamber of Commerce and Industry (2002), food items accounted for 15.1% of total department store sales. It is estimated that department stores held 6.1% of overall supermarket business in 2005.

Introduced in the 1930s, department stores have long been a leading modernized retail format. The leading retail groups such like Lotte and Shinsegae started their businesses by opening department stores. Department stores seem to contribute to modernization of Korean retail industries by adopting advanced retail technologies such as Western-style store environments, the Point of Sale (POS) system, and the credit card system. However, the status of department stores has weakened since the late 1990s. Department store sales decreased in 1998 due to the foreign exchange crisis of 1997. Since 2002, department store sales decreased further due to the rapid development of discount stores. As major discount store chains sharply increased the number of stores in recent years, total sales of discount stores surpassed those of department stores after 2003.

Department stores function as a sales outlet for high-quality fresh food products. While department stores purchase processed food and grocery items through direct

procurement, they sell fresh food items on a commission basis. Commission fees range from 25-35%.

The major department store chains are Lotte, Hyundai, and Shinsegae. These top three department store chains controlled 74.8% of total department store sales in 2005, resulting in highly oligopolistic market structure.

Lotte Shopping, Inc., the largest retail conglomerate in Korea, is the leading department store chain. At the end of 2005, Lotte operated 20 department stores nationwide with total sales of 7.2 trillion won (US\$7.2 billion), an average of 327 billion won (US\$327 million) per store (Table 6). Hyundai Department Store, Inc. was the second largest department store chain, with total sales of 3.4 trillion won (US\$3.4 billion) from 11 stores, average sales per store were 310 billion won (US\$310 million). Shinsegae, the leading discount store chain, was number three in the department store business. It operated seven stores with total sales of 2.0 trillion won (US\$2.0 billion), an average of 289 billion won (US\$289 million) per store.

Table 6. Situation of Major Department Stores

(unit: Billion won)

Year	Lotte		Hyundai		Shinsegae		Total Department Store Sales
	Sales	No. of Stores	Sales	No. of Stores	Sales	No. of Stores	
1995	1,414	6	836	5	532	4	10,520
1996	1,821	6	1,055	6	601	4	12,190
1997	1,813	6	1,227	9	749	5	12,340
1998	2,036	8	1,236	9	887	5	11,130
1999	3,195	11	2,064	10	1,376	7	13,030
2000	4,495	13	2,697	10	1,798	7	14,760
2001	6,158	15	3,370	11	1,975	7	16,100
2002	7,150	20	3,909	11	2,295	7	17,500
2003	7,100	21	3,730	11	1,999	7	16,970
2004	6,774	21	3,309	11	1,906	7	16,230
2005	7,200	22	3,410	11	2,020	7	16,880

Note: Sales figures are for total sales including food and general merchandise.

Source: Company Annual Reports.

2.4 FDI in Food Retailing

Entry Process of Foreign Retailers

Over the past few decades, the Korean government gradually liberalized foreign direct investment (FDI) in distribution industries. FDI in wholesaling and retailing is allowed for

certain types of businesses, unless it violates governmental restrictions on the number and size of stores. FDI in distribution industries began in 1981 by allowing investment in a single store of less than 300m². The restrictions on the sales floor size of stores have been gradually relaxed since then. In 1996, the restrictions on the number of stores and space of selling floor were totally lifted. In the food retailing and wholesaling industries, the government currently allows FDI in all types of businesses except cereal wholesaling and meat wholesaling. From 1996 on, FDI in all types of retail businesses and in chain stores was liberalized.

Since the liberalization of FDI in distribution industries, several large-scale global retailers have entered the Korean market. In 1996, European retailers Carrefour and Makro entered the Korean market and opened a hypermarket and a warehouse store, respectively. In 1998, Costco Wholesale entered the Korean market by acquiring several former Price Club stores that were owned by Shinsegae Department Store, Inc. Wal-Mart, the largest retailer in the world, entered the Korean market by acquiring existing Makro stores in the same year. In 1999, Tesco, one of the largest supermarket chains in the U.K., also entered by acquiring an 81% share of Homeplus, a discount store chain formerly owned by Samsung Trading Co. The joint venture was named Samsung-Tesco.

For the most part, foreign retailers operate hypermarket or supercenter type discount stores (Table 7). As discussed earlier, hypermarket or supercenter type discount stores are popular in Korea. Contrary to expectations, foreign retailers have not taken a lion's share of the Korean discount store market. The share of discount store sales accounted for by foreign retailers was only 27.1% in 2005. Samsung-Tesco held the leading position with 16.0% of discount store sales, followed by Carrefour (6.9%), Wal-Mart (2.7%), and Costco Wholesale (1.5%).

Table 7. Situation of Major Foreign Retailers that Entered the Korean Market

Company Name	Origin	Types of Investment	Entering Year	Store Format	Number of Stores*	Sales (billion won)
Carrefour	France	Single	1996	Hypermarket	31	2,000 (6.9)
Samsung-Tesco	U.K.	Joint Venture	1999	Supercenter	40	4,600 (16.0)
Wal-Mart	United States	Single	1998	Supercenter	16	780 (2.7)
Costco Wholesale	United States	Single	1998	MWC (Membership Wholesale Club)	5	440 (1.5)

Note 1: Store numbers and sales are as of the end of 2005.

Note 2: Estimates of market shares are reported in parentheses in the last column.

Source: National Statistical Office of Korea and company annual reports.

In 2006, Carrefour and Wal-Mart, the number two and three foreign retailers, decided to withdraw from the Korean market. The E-Land group, which operates fashion and retail

businesses, acquired Carrefour. Wal-Mart also disclosed plans to sell its stores to E-Mart, the leading discount store chain. Because E-Land had not held a strong position in the Korean discount business, its acquisition of Carrefour stores does not seem to affect significantly the concentration of food retailing. However, the acquisition of Wal-Mart stores by E-Mart would further strengthen the leading market position of E-Mart.

The withdrawal of Carrefour and Wal-Mart can be explained by localization failures. First, these foreign retailers failed to understand Korean consumers, whose characteristics are different from those of consumers in Western countries. In discount stores, Korean consumers want not only low prices but also good quality of merchandise. Foreign retailers failed to satisfy Korean consumers' demand for good quality, especially in fresh food items. It was reported in the media that Carrefour also withdrew from Japanese and Mexican markets because of merchandising problems. The second factor would be a failure of localization of management. Because company headquarters excessively controlled subsidiaries in foreign countries, the local management of Carrefour and Wal-Mart sometime could not make timely decisions on important managerial issues. These retailers filled important posts with managers dispatched from company headquarters.

In contrast, Samsung-Tesco has succeeded in localization and has become number two in the Korean discount store market by adopting upscale strategies. While it pursues a discount format with low prices, it also focuses on merchandise with good quality. Its store environments are also more upgraded than its competitors.

Influences of Foreign Food Retailers

The entry of foreign distributors is likely to have a significant effect not only on food retail structure but also the overall food marketing system in Korea. Above all, foreign retail firms entering the Korean market have contributed significantly to structural changes in food retail industries. Because foreign retailers entered the Korean market mostly with discount store formats, they have promoted development of the discount store and consequently contributed to upgrading the overall structure of retail industries. In fact, development of discount store business in Korea started with the liberalization of FDI in retailing industries.

Moreover, managerial skills of domestic retailers were upgraded when they competed against foreign counterparts. In order to compete with foreign retailers, domestic retailers began to adopt advanced retailing skills, such as excellent store environments, state-of-the-art information systems, advanced customer service policies, and so forth. In particular, domestic discount stores benchmarked store environments of foreign retailers, which have a more spacious selling floor than their Korean counterparts. It is therefore a plausible judgment that Korean retailers learned many aspects of store operation and store design from foreign retailers.

2.5 Concentration of Food Retailers

In Korea, there are difficulties calculating concentration ratios of food retailing industries. As far as the relevant product market, there is no clear border between conventional supermarkets and discount stores. They are direct competitors. Because food

items account for more than half of total discount store sales, it is reasonable that discount stores should be included in the category of supermarket business. In terms of geographical extent of relevant markets, it is generally argued that local or regional markets are more relevant to food retailers as sellers than national markets (Marion et al., 1979).

Unfortunately, concentration ratios at regional or local market levels are generally unavailable in Korea because of the lack of relevant data. A national concentration of food distributors may be helpful in examining the market power of large retailers as buyers, and provide some evidence of the level and trends of retail concentration in selling markets.

In this study, concentration ratios are estimated for not only conventional supermarkets but also the overall supermarket sector, including conventional supermarkets, discount stores, and food sales in department stores. Because large-scale supermarket chains are not well developed in Korea, concentration ratios of the dominant supermarket chains are much smaller than in the United States and Europe. Until the end of the 1990s, the shares of national supermarket sales accounted for by the four largest supermarket chains were less than 10%. However, the national four-firm concentration ratio (CR4) of supermarkets has increased gradually from 7.7% in 1995 to 17.5% in 2005 (Table 8). An increase in CR4 is largely due to consistent increases in sales of major supermarket chains, which were accelerated by the internal growth store numbers. Unlike in the US, it seems that mergers and acquisitions did not play a significant role in elevating the CR4 of the supermarket industry. Although Lotte Supermarket acquired Hanhwa Distribution, formerly the second largest supermarket chain, it did not contribute to an increased concentration because Lotte Supermarket was a new entrant in the supermarket industry.

Table 8. National CR4 of Conventional Supermarket Sector

(Unit: Trillion won)

Year	Sales of Largest Four Supermarket Chains	Total Conventional Supermarket Sales	CR4 (%)
1995	0.58	7.47	7.7
1996	0.79	8.41	9.4
1997	0.97	8.84	11.0
1998	1.01	8.90	11.3
1999	1.12	8.65	12.9
2000	1.12	8.82	12.8
2001	1.24	9.00	13.8
2002	1.35	9.45	14.3
2003	1.37	9.92	13.8
2004	1.51	9.85	15.4
2005	1.81	10.31	17.5

Source: National Statistical Office of Korea and company annual reports.

It is estimated that the CR4 in the discount store sector was much higher than those of conventional supermarkets. As major discount chains increase, the number of stores vary rapidly, the CR4 increased from 25% in 1995 to 62.2% in 2005 (Table 9). While the leading discount store chains like E-Mart, Homeplus, Lotte Mart, and Carrefour increased the number of stores quickly, local or minor discount store chains could not keep pace due to limited financial resources.

Table 9. National CR4 of Discount Stores

(Unit: Trillion Won)

Year	Sales of Four Largest Discount Store Chain	Total Discount Store Sales	CR4 (%)
1995	0.2	0.8	25.0
1996	0.7	2.3	30.4
1997	1.8	3.9	46.2
1998	2.9	6.0	48.3
1999	3.8	9.2	41.3
2000	5.5	12.9	42.6
2001	7.8	16.9	46.2
2002	10.9	21.3	51.2
2003	11.8	23.9	49.4
2004	14.1	26.3	53.6
2005	17.9	28.8	62.2

Source: National Statistical Office of Korea and company annual reports.

As discussed earlier, it would be more relevant to calculate concentration ratios for the overall supermarket sector. In 2005, the CR4 of the overall supermarket sector was estimated at 42.9% (Table 10). The estimates of CR4s for the overall supermarket sector were higher than those of conventional supermarkets but lower than those of discount stores (Figure 3). Because conventional supermarket chains have a much smaller sales volume than discount stores, the four largest discount store chains occupy the four largest firms in the overall supermarket sector.

Because the overall supermarket sector accounted for only 54% of all food retail store sales in 2005 (see Table 2), the largest four sellers represented only 23% of all food store sales, nationally. However, the shares of total food store sales accounted for by the four largest sellers dramatically increased from 0.7% in 1995 to 23% in 2005 (Figure 4). This suggests that the structure of Korean food retailing is changing rapidly and may be in the early to middle stage of a transformation toward large-scale retailing. It is expected that the importance of dominant food retailers will become more significant in the near future, and that the food retailing structure will become similar to that found in most European countries.

Table 10. National CR4 of Overall Supermarket Sector

Year	Sales of Four Largest Supermarket Chains	Total Supermarket Sales	CR4 (%)
1995	0.2	9.9	2.0
1996	0.7	12.5	5.6
1997	1.8	14.6	12.3
1998	2.9	16.6	17.5
1999	3.8	19.8	19.2
2000	5.5	23.9	23.0
2001	7.8	28.3	27.6
2002	10.9	33.4	32.6
2003	11.8	36.4	32.4
2004	14.1	38.6	36.5
2005	17.9	41.7	42.9

Note: Total sales of overall supermarket sector include sales of conventional supermarkets, discount stores, and supermarket business of department stores.

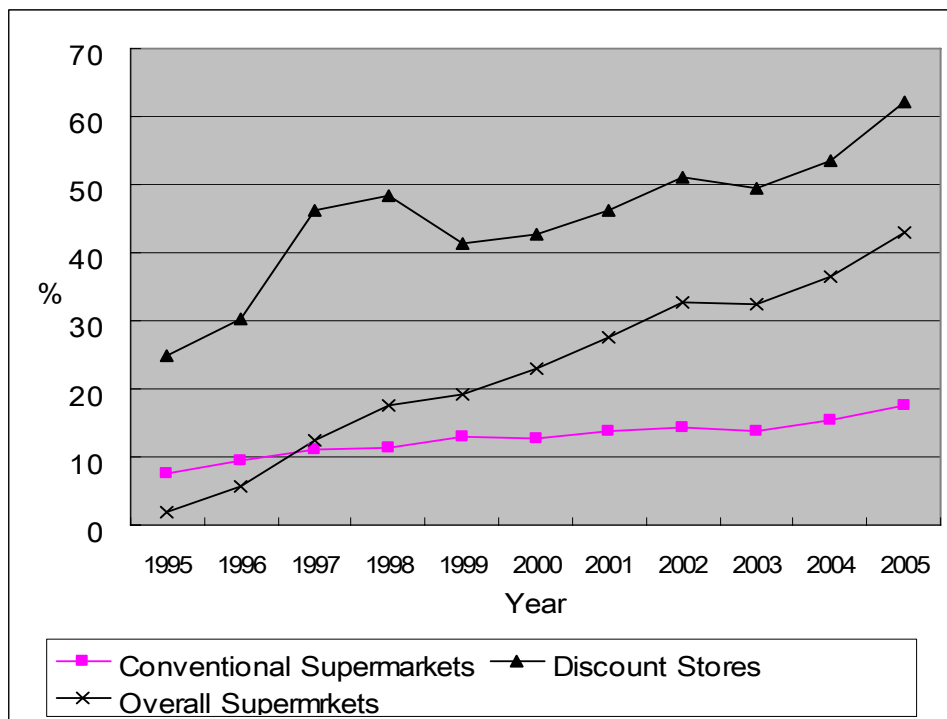
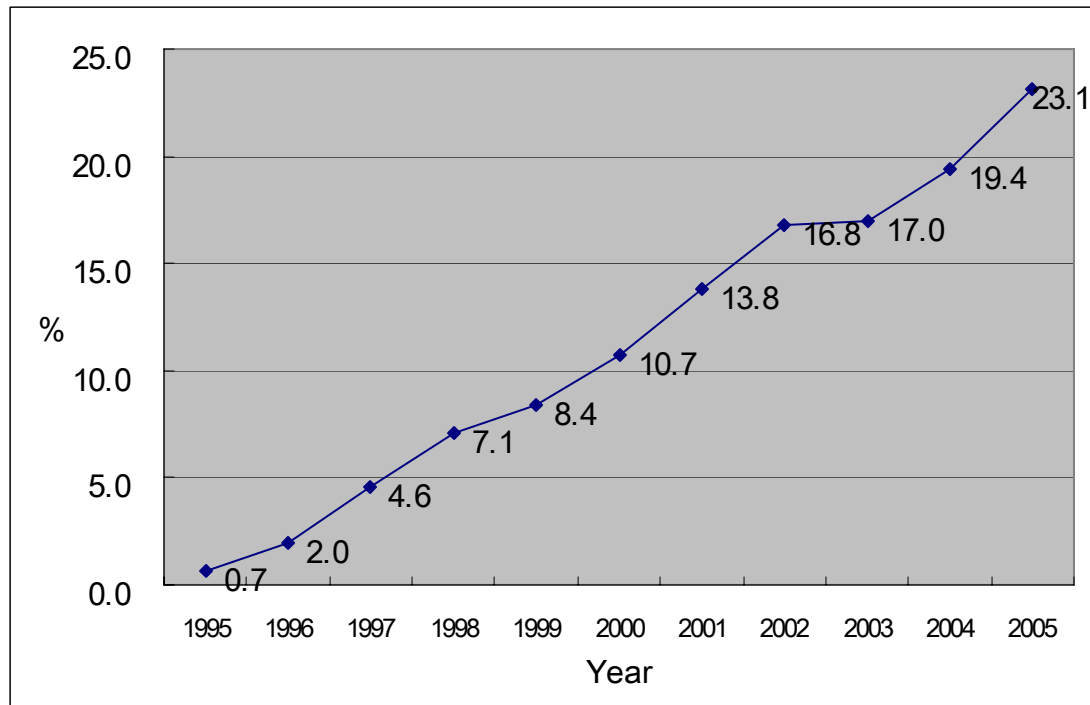
Figure 3. Trends in CR4s for Supermarkets by Segment, 1995-2005

Figure 4. Estimated Shares of Total Food Store Sales Accounted for by the Four Largest Food Retailers, 1995-2005



Although it is difficult to estimate concentration ratios for local markets, it is anticipated that local market concentration is higher than the national concentration figures in metropolitan areas, because stores of large-scale food retailers are mostly located in large cities or their vicinities. By comparison, in the rural areas, food items are mainly sold at traditional market places or small grocery stores.

It should be noted that concentration figures in supermarkets or food stores do not necessarily reflect concentration in the procurement market of fresh agricultural products. Sales in food stores include not only fresh food items but also processed foods and nonfood grocery products. It is therefore difficult to directly calculate concentration ratios in the fresh food procurement market.

3. EFFECTS OF DOMINANT FOOD RETAILERS ON PRODUCERS

3.1 General Impact of Development of Large-scale Retailers

The development of large-scale food retailers, especially discount stores and supermarket chains, has affected almost every aspect of the Korean economy. First, some analysts report that discount stores contributed to stabilizing consumer prices. The Bank of Korea estimated that expansion of large-scale discount stores lowered consumer prices 0.45% annually during 1996-1999 (Bank of Korea, 2000). Consumers benefited enormously by using discount stores especially when consumer real income decreased after the foreign currency crisis of 1997. A large number of consumers could compensate

for a decrease in real income by shopping at discount stores that sell necessities at lower prices than other types of retail stores.

In addition to the contribution to lower consumer prices, discount stores also provide manufacturers with efficient selling opportunities. Because discount stores handle a large amount of merchandise, small- and medium-sized manufacturers can save marketing and selling costs when selling through discount stores. Before the development of discount stores, these manufacturers had difficulty selling their products due to the exclusive dealership system. Large manufacturers with significant brand power built and maintained their own distribution channels, which carry their own products exclusively. For example, branded processed food items are marketed to small retailers through wholesalers that carry those products exclusively.

Some researchers argue that department stores do not provide efficient sales opportunities to small- and medium-sized manufacturers. Department stores in Korea sell merchandise mostly on a consignment basis, unlike Western counterparts, which rely mostly on direct purchase of products. Department stores charge commission fees of 25-35% depending on the bargaining power of manufacturers. In addition, manufacturers sometimes dispatch their own sales personnel to department stores and accept return of unsold merchandise. Therefore selling through department stores results in relatively higher costs than selling through discount stores.

Proponents of discount stores strongly contend that large-scale discounters have helped small- and medium-sized manufacturers by purchasing large amounts of merchandise and shortening the payment time for them compared to traditional retail formats. Traditional retailers in Korea are accustomed to pay for merchandise they purchase 30-90 days after receipt. However, discount stores usually make a payment within 30 days.

Some manufacturers are concerned about the increased bargaining power of discount stores, as major discount store chains increase market shares and compete with each other. According to a survey conducted by the Korean Federation of Small and Medium Enterprise Cooperatives (2005), 63.1% of respondents complained about unfair trade practices, such as price paid for merchandise procured, and unfair return of unsold items.²⁶ And 16.3% of respondents identified problems with requests for promotional and advertising allowances, and slotting fees (slotting fees are lump sum, upfront payments that a food manufacturer must pay to a supermarket for access to its shelves). The remaining 14.1% complained about discount stores' requests to participate in special promotional events and dispatch sales staff. In the bargaining process, small and medium manufacturers contended that they have a weaker position than discount store chains.

Upon hearing complaints from small and medium scale manufacturers, the Fair Trade Commission of Korea (2004) investigated trade practices of large-scale retailers, such as department stores and discount stores. According to the commission's survey of about 6,000 small and medium manufacturers that supply products to large-scale retailers, 44% of respondents replied that large-scale retailers conducted unfair trade practices. The

²⁶ Participants of the survey are 124 small and medium manufacturers that supply products to large retailers.

respondents pointed out unfair trade practices, such as lowering prices paid to manufacturers as a result of frequent bargain sales (42%), transferring of advertising and interior expenses to suppliers (22%), and terminating supply contracts without justifiable reasons (15%).

The Fair Trade Commission of Korea ordered large-scale retailers to stop the unfair trade practices. The Fair Trade Commission fined major discount store chains such as E-Mart, Carrefour, Homeplus in 2001 and 2005, for engaging in unfair trade practices. Cases of unlawful or unfair trade practices included reduction of prices paid to suppliers, selling merchandise at prices below purchasing prices, transfer of costs such as promotional expenses, imposing fees such as slotting fees, return of merchandise purchased, and refusal to accept merchandise ordered.

Private label products of large-scale retailers are blamed for unfair trade practices. Large-scale retailers often request the return of unsold private label products they were ordered to produce, engage in burdensome promotional allowances, and ask that manufacturers sales persons be dispatched to the stores (Hankook Daily, 2004).

There are also concerns about attempts at vertical price squeezing by large conglomerate firms. For example, it was reported that Lotte Group, which owns food manufacturing companies and retail companies, tried to discriminate against small-scale retailers by supplying their products at lower prices to their own retail stores, such as Lotte Department Stores and Lotte Mart (Maeil Economy Newspaper, 2002). By doing this, Lotte tried to strengthen its position in the retail market. Because Lotte is currently the largest department store operator, and the third largest discount store and supermarket operator, its attempts to discriminate against small retailers might increase the concentration of food retailing and consequently strengthen Lotte's superior market position. In this case, the concern about market power stems from the strategic ties between dominant manufacturers and dominant retailers.

3.2 Impact on the Food Distribution Channel

The rapid development of discount stores and structural changes in food retailing has significantly influenced the food marketing system in Korea. Traditionally, fresh food products have mostly been marketed through wholesale markets located in large urban areas. This is because the average size of producers and retailers has been so small that wholesale markets have been functioning very efficiently in assembling and distributing food products. Transactions through wholesale markets have been important because agricultural products were poorly graded and standardized in Korea. However, as large-scale retailers have increased their store numbers, a new distribution channel bypassing wholesale markets has emerged in recent years. Some large-scale food retailers have begun to purchase fresh food directly from shippers in producing areas by integrating wholesale functions vertically.

According to a survey conducted by Kim and Hwang (2000), large-scale retailers purchase 66.1% of cereal products directly from rice processing centers and 15.7% of livestock and poultry products directly from producers. While large-scale retailers buy 29.1% of fruits directly from shippers, they purchase only 17.1% of vegetable items directly from shippers (table 11).

Table 11. Fresh Food Purchasing Patterns of Large-scale retailers

Items	Shares by Purchasing Channel (%)			
	Purchasing Directly From Shippers	Wholesale Markets	Processors	NACF Marketing Centers
Cereals	66.1	7.9	23.1	2.9
Vegetables	17.1	79.2	1.6	2.1
Fruits	29.1	62.2	3.0	5.7
Livestock and Poultry Products	15.7	9.9	74.4	-

Note: NACF Marketing Centers are wholesale and retail outlets operated by National Agricultural Cooperative Federation of Korea.

Source: Kim and Hwang, 2000.

Due to an increase of direct shipments between large-scale retailers and local shippers, distribution channels of fruits and vegetables changed significantly in recent years. Although wholesale markets still play a significant role in marketing fruits and vegetables, their importance has decreased consistently as direct marketing between large scale retailers and local shipper or producers increased. While the shares of total marketed fruits and vegetables sold in wholesale markets decreased from 90.2% in 1998 to 78.0% in 2002, the shares of direct purchase by large-scale retailers, NACF (National Agricultural Cooperative Federation) marketing centers, and direct marketing increased during the same period (Table 12). The shares accounted for by direct purchase of large-scale retailers and NACF marketing centers jumped from 1.7% and 1.9% in 1998 to 5.8% and 5.4% in 2002, respectively. In addition, direct marketing between producers and consumers increased their shares from 6.2% to 10.2% during the same period.

Table 12. Market Shares by Distribution Channels, Fresh Fruits and Vegetables

(unit: %)			
Distribution Channel	1998	2000	2002
Wholesale Markets	90.2	85.8	78.0
Direct Purchase of Large-scale Retailers	1.7	3.2	5.8
NACF Marketing Centers	1.9	3.3	5.4
Direct Marketing	6.2	7.7	10.8
Total	100.0	100.0	100.0

Note: Direct marketing means direct trade between producers and consumers through farmers' markets, consumer cooperatives, mail order, electronic commerce, etc.

Source: Ministry of Agriculture and Forestry of Korea.

There is evidence that direct transactions between large-scale food retailers and local shippers increased marketing efficiency of food products. According to the survey conducted by Korea Agro-Fisheries Trade Corporation (2005), direct marketing between large-scale retailers and shippers (versus marketing through wholesale markets) reduced the share of consumer prices accounted for by marketing cost by 11.5 percentage points. While share of consumer prices accounted for by marketing cost was 55.8% in marketing through wholesale markets, it was 44.3% in direct marketing between large-scale retailers and shippers. As a result of increased efficiency, consumers buying agro-food at large-scale food retailers paid 8.8% less than when purchasing at department stores or small grocery stores. Producers also benefited from the direct marketing between large-scale retailers and shippers because they could get higher producer prices than when marketing through wholesale markets. The survey indicated agricultural producers were paid 13.1% more when they sold their products to large-scale retailers directly than selling through wholesale markets.

Direct purchase could save marketing costs because producers do not have to pay fees charged in wholesale markets. When selling products in wholesale markets, shippers have to pay an auctioning fee and a handling fee incurred when loading and unloading the products. Retailers also have to pay wholesalers' margin.

Although producers may enjoy higher prices when selling their products directly to large-scale retailers, payment by large-scale retailers is usually slower than wholesale markets. Payment in the public wholesale markets usually clears within two days after the products are sold, but payment by large-scale retailers is usually made in 10-15 days, depending on the company. Prices paid to shippers are based on cost, insurance and freight (CIF), meaning that shippers are in charge of harvesting, grading, packaging, and transportation.

There are several reasons why large-scale retailers increase direct procurement from shippers. First of all, large-scale retailers can save on distribution costs by purchasing directly as the number of stores increases. By purchasing large quantities directly from shippers, they can save on fees paid when buying from wholesale markets. By purchasing on a car-lot basis, they can also save on assembling and transporting costs. Secondly, direct procurement may be better for controlling quality. Since they can identify producers from the field, direct procurement is more reliable in terms of quality and safety. In addition, quicker transportation from shippers to the stores also contributes to improved preservation. When products are purchased through auctions in wholesale markets, delivery is sometimes delayed because the auction process requires a fair amount of time.

However, direct procurement from shippers in producing areas has some disadvantages. Since local shippers usually supply a limited line of products, large-scale retailers have to deal with a number of suppliers in order to fulfill their assortment, resulting in high assembling costs. Furthermore, it is difficult to buy well-graded products from local shippers since Korean producers and shippers are still poor in grading. It is also difficult to get information about shippers since large-scale retailers in general have not accumulated enough data for direct procurement.

Nonetheless, direct purchase by large-scale food retailers from producing areas is expected to grow rapidly. As the number of stores that large-scale retailers operate increases, it will be more cost-effective to purchase directly from shippers than from wholesale markets. In addition, direct procurement seems desirable for controlling quality and safety, which concerns modern consumers.

3.3 Impact on Agricultural Producers

The development of large-scale retailers significantly influences agricultural producers. In a positive aspect, direct transactions between large-scale retailers and local shippers contributed to increased marketing efficiency. As discussed before, producers could get prices 13.1% higher when selling products to large-scale retailers directly rather than selling through wholesale markets (Korea Agro-Fisheries Trade Corporation, 2005).

In addition to higher prices, agricultural producers benefited from price stability and ease of selling large amounts. According to the survey conducted by Kim et al. (2004), 63.5% of agricultural producers regarded price stability as the most significant advantage of direct shipping to large-scale retailers, followed by the ease of selling large amounts (24.0%), and receiving higher prices for products (9.6%).

Furthermore, large-scale retailers provide better opportunities than wholesale markets for agricultural producers to sell high quality and branded products. This is because large-scale retailers prefer, in most cases, to procure well-sorted products in consumer packages. In this sense, large-scale retailers contribute to the improvement of marketing practices of growers and shippers.

Although the development of large-scale retailers appears to increase agricultural producers' income by enhancing the marketing efficiency of food products, there may be some negative aspects. First of all, the development of dominant food retailers might promote importation of fresh food products. As trade restrictions are lifted and the number of stores increases, it would be more economical for large-scale food retailers to carry imported food products. This would be especially true for the products that are poorly standardized and quality-controlled in Korea. In discount stores, the share of total sales accounted for by imported products increased from 4.6% in 1998 to 8.1% in 2000 (Korea Chamber of Commerce and Industries, 2002).

Shippers or growers have difficulties when supplying their products to large-scale food retailers. Shippers have difficulties selling low quality products, fulfilling retailers' orders or requests, breaching supply contracts from large-scale food retailers, and collecting payment for agricultural products sold to them (Kim et al., 2004). Shippers and growers are concerned about the sales of low quality products since large-scale food retailers usually require upper grade products and there remain a large amount of lower grade products. In addition, they have difficulties in fulfilling orders from large-scale retailers when they have shortages of agricultural products during poor growing seasons. Sometimes large-scale food retailers demand excessively low prices, gifts, and giveaways during bargain sale periods. Shippers and growers sometimes suffer from unilateral breach of contract from some large-scale food retailers.

Some food producers are concerned about a possible imbalance in bargaining power between large-scale retailers and local shippers. Since shippers of agricultural products are usually small in scale and fragmented in Korea, they do not have strong bargaining power compared to large-scale distributors. Utilizing a greater trade volume, large-scale retailers can exercise market power when they purchase agricultural products directly from shippers. A survey reported that 48.6% of respondents answered that retailers have stronger bargaining power than local shippers when negotiating prices. Only 7.6% of shippers responded that shippers have a stronger bargaining power (Kim et al., 2004).

There are also concerns about trade practices exercised by large-scale food retailers. Shippers sometimes complain about trade practices such as dispatch of sales persons to retail stores, promotional allowances, return of sold products, exclusive transactions, delay of payment, changes of contracts, and excessive packaging (Kim et al., 2004).

There is some evidence that private label food products help strengthen the bargaining power of large-scale retailers. In recent years, large-scale food retailers increased sales of private label food products in categories of fresh food as well as processed food. Although sales of private label products are not significant yet, sales increased sharply in recent years. Producers and shippers of fresh food products are concerned about the growth of private label products because large-scale retailers would heavily promote sales of private label products that might incur more profit than products with producers' brands. If private label products become dominant in discount stores, producers and shippers might lose their brand power.

Shippers and growers sometimes contend that large-scale retailers try to squeeze the prices paid for agricultural products they supply, but it is difficult to make a general conclusion about this. For example, several newspapers reported rice producers' complaints about large-scale retailers. Growers and shippers argued that large-scale retailers squeezed rice prices by selling rice as a loss leader item, selling at a significantly lower price to draw consumers to their stores. However, it is technically difficult to evaluate the role of large retailer in depressing rice prices. So far it is difficult to find formal research that analyzes the existence of market power exercised by large-scale retailers.

4. SUMMARY AND IMPLICATIONS

The Korean food retail industry has long been dominated by a large number of small-scale food retailers. Small-scale grocery stores and "mom and pop" stores used be major sales outlets for food items. However in recent years, modernized supermarkets and discount stores have developed as major retail groups, such as Shinsegae and Lotte participating in the discount store business, and major global retailers, such as Carrefour, Tesco, Wal-Mart entering the Korean market. Since foreign distributors have entered the Korean market mostly with discount store formats, they have contributed to the rapid development of discount stores and large-scale retailers.

The development of large-scale food retailers has significantly affected consumers, producers, and the overall food marketing system. As the number of stores operated by

large-scale retailers has increased, more fresh food items are shipped directly from shippers in producing areas to the retailers. Direct marketing of agricultural products between large-scale retailers and local shippers has reduced marketing costs compared to distribution through wholesale markets. Consumers have apparently benefited from lower prices while agricultural producers have received higher prices. In addition, it appears that large-scale retailers contribute to the enhancement of the marketing capability of local shippers, such as agricultural cooperatives and corporate farms. When transacting with large-scale retailers directly, producers and local shippers might get accurate information about consumer preferences more quickly.

As the market shares of major supermarket and discount store chains increased sharply in recent years, food handlers and farmers have been concerned about market power exercised by dominant food retailers. Local shippers complain about trade practices of large-scale retailers, and, more fundamentally, are concerned about possible market power exercised by dominant large-scale food retailers. Although market power exercised by large-scale food retailers is not significant in fresh fruits and vegetables in which distribution channels are diverse, using market power may have a greater influence on rice prices in which a major distribution channel is direct marketing between large retailers and local rice millers. Because of this, rice producers and millers complain prices paid by large-scale retailers are squeezed. However, since vigorous statistical analysis does not yet exist, it is premature to conclude that there is market power in the food retail market of Korea. In order for us to draw more plausible conclusions, more vigorous research about the existence of market power is required.

The transformation of a food distribution system always results in somebody winning, and others losing. Almost always, there will be calls by those injured for protection. In the US, the growth of supermarket chains led to the Robinson Patman Act of 1936, which made price discrimination illegal. This is rarely enforced today because of concern that it was used to protect competitors, not competition, and discouraged price reductions. The policy measures in Korea should reflect goals for the Korean economy and society. If preserving traditional retailing is more important than efficiency and low prices, a different set of competition policies are called for than those used in the US. Identifying trade-offs and balancing different goals and interests is never easy.

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Chapter 6: The Case of Poland

Roland Herrmann, Anke Moser, and Sascha Weber²⁷

1. INTRODUCTION

Poland is the only transition country in Central and Eastern Europe covered in this book. With the transition from a socialist to a market economy, structural change in the retailing sector has been especially rapid and the new open markets in Poland have attracted foreign investors—throughout the economy in general and in the food-retailing sector in particular.

This chapter describes and analyzes the major trends in Polish food retailing. The structure of food retailing is described and explained in Section 2, first at the store level, then at the firm level. This section also covers how the powerful concentration process in food retailing has affected the marketing chain. Inward foreign direct investment (FDI) in Polish food retailing is detailed in Section 3. Given the special importance of FDI in the Polish economy during the transition process, the determinants of FDI in retailing within a cross-country dataset are analyzed in Section 4. Results are summarized in Section 5.

2. STRUCTURAL DEVELOPMENT IN THE POLISH FOOD-RETAILING SECTOR

The Central and Eastern European Countries (CEECs) experienced fundamental economic and social change in the 1990s. In the communist era, markets were centralized and put under state control, so that the private sector was suppressed. An underdeveloped infrastructure was the consequence, and business and consumer behavior deviated markedly from that in Western Europe. With the collapse of communism, the CEECs opened their markets and attracted capital, primarily from foreign enterprises, since the post-communist economies did not have sufficient financial reserves at their disposal. Within the group of CEECs, Poland is of special interest; with its 38 million inhabitants, it is the largest CEEC, and at the beginning of 1990, the country had already taken part in the first phase of the transformation process (Dries, Reardon and Swinnen, 2004). The transformation process was initiated when laws had been changed and it became possible to establish private firms.

Prior to the transformation process, the Polish retailing industry already comprised 155,000 shops and 77,000 registered kiosks and mobile traders. Of all these outlets, about 43,000 were privately owned. Thus, private enterprises already existed in the Polish retailing industry. Due to their small number and store size, however, the private sector remained relatively unimportant under communism.

The transformation started in the beginning of the last decade of the 20th century, when a law on private business was enacted, enabling entrepreneurs to set up their own businesses, employ staff without reference to central agencies, and operate business bank

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accounts. The new law had, however, only very limited impact, since its implementation was not clearly regulated (Dawson and Henley, 2002).

According to Dawson and Henley (2002), three phases of the transformation process can be distinguished: (i) a pioneer phase, (ii) a colonization phase, and (iii) a consolidation phase. The **pioneer phase** lasted from 1990 until the end of 1994. During this period, commodity prices were deregulated, export and import subsidies were removed, and there was a substantial devaluation of the domestic currency, the Zloty (Gorynia, 2002). Furthermore, large centrally organized, state-run chains were denationalized. The markets were rather unstable in this period and the consumer price index showed an extremely high inflation of about 130 percent on average. Nevertheless, individual companies entered this difficult market, such as Billa, Rema 1000 and Makro, as well as other trading ventures, which gained early experience (Dawson and Henley, 1999, Przybylska and Malina, 2000).²⁸ After further market regulations were adopted more investors were attracted to the upcoming market.

From September 1991 to the end of 1993 the initial adjustments in the move towards harmonization with the European Union were introduced (Gorynia, 2002).

In the era of **colonization**, starting in 1995, many other European enterprises followed the first movers, some of which were the French retailers Leclerc, Auchan, Dock de France, and Casino. In 1995, Jerónimo Martins, Tesco, Metro and Tengelmann also entered the Polish food-retailing market (see Table 7). This phase was characterized by a more active trade policy, which stimulated restructuring of production and exports (Gorynia 2002).

The **consolidation** process began in the late 1990s when the number of firms rose sharply, even though quite a lot of enterprises were eventually forced to leave the market again. The remaining companies began to create joint ventures, and concentrate on their most profitable areas of activity, selling the stores that did not fit their business concept (Dawson and Henley, 1999).

2.1 Structure and Changes at the Store-type Level

In the privatization process, prices were deregulated, and restrictions on product ranges, free trade and imports were eliminated (Burt, 2006). As a consequence, the total number of stores skyrocketed between 1991 and 1995. Table 1 reveals the total rose from less than 256,000 (1991) to more than 381,000 (1995), and, with much lower growth rates, to nearly 391,000 in the year 2000. Since 2000, the number of stores has declined again substantially.

The major increase in the number of stores, by about 50 % between 1991 and 1995, was the result of the privatization process. It occurred mainly in the category of retailing firms with one or two shops, at the expense of large retailing firms with 50 or more stores. In the proceeding consolidation process, the large number of newly privatized firms with

²⁸ Billa entered the market mainly by establishing supermarkets in Warsaw and Bielsko-Biala in 1990. Using a franchise system, Rema entered as a food discounter. Likewise, Makro had its beginnings in Warsaw and created its business there in 1994 (Dawson and Henley 1999: 41).

one or two stores suffered, as these could not compete with the European retailing groups that had become established in the meantime.

Table 1. Number of Shops of Retailing Firms

	1991	1995	2000	2005
Total	255,787	381,392	390,748	318,443
up to 2 shops	252,001	377,109	386,612	314,086
3-10	1,631	3,037	3,243	3,525
11-20	1,195	907	682	565
21-50	857	308	187	195
51-100	88	25	17	48
101-200	11	4	5	18
more than 200 shops	4	2	2	6

Source: CSO, various years.

The very large number of single stores in Poland after privatization was combined with small-scale and traditional organizations. The average sales area and product range was extremely low. During the 1990s, four new selling concepts were introduced in Poland, which had already been established in Western Europe as well as in other industrialized countries. These retailing formats were hypermarkets, supermarkets, discount stores and convenience stores. The Central Statistical Office of Poland defines store types as follows. In **department stores** the sales area exceeds 2000 m² and they carry a wide and universal assortment of foodstuffs as well as nonfood items. **Shopping centers** have a sales area between 600 m² and 1999 m² and they usually have the same range of goods as department stores. **Hypermarkets**, which are stores with more than 2,500 m² of sales area, sell a broad range of food and nonfood products using self-service. **Supermarkets** occupy retail space measuring between 400 and 2,499 m² and also use the self-service principle to sell a wide range of frequently purchased food and nonfood products (CSO, 2003). These store types typically use a High-Low (HiLo) pricing strategy. **Discount stores** are self-service stores that carry a range of products—mainly foods—in a low-cost style of presentation. They typically concentrate on a limited number of articles with a high turnover, and they follow an everyday-low-price (EDLP) strategy (EHI 2006). And the last classic Western store type, the **convenience stores**, are stores with less than 400 m² of sales area, typically in favorable locations. In these stores, food and nonfood products are sold, catering to consumers' daily needs (Auer and Koidl, 1997). Convenience stores are in their infancy in Eastern Europe, and therefore they have not been part of official statistics until now. **Other shops** have a retail area not larger than 119 m²—selling

a narrower range of product groups than convenience stores (CSO, 2003). This last class of shops is a relic of the old business structures (e.g., kiosks) in the communist era. Typical of this store type is a low investment in shop equipment, and a low level of service, as well as a poorly developed logistics and supply chains (Burt, 2006). In addition, many small stores exhibit a high degree of specialization. Thus, in conjunction with the new store types and their huge volume of non-specialized merchandise, they create a dual structure in retailing.

Permanent market places are separate areas or buildings where permanent or temporary outlets conduct retail sales activities every day or for several days of the week. **Seasonal markets** operate only for a defined period and are open no longer than six months each year.

Table 2 provides an overview of the relative importance of various store types in Poland from 1993-2005. The growth in the number of hypermarkets and supermarkets is striking.

Hypermarkets have only been included in the official Polish statistics since 2000, despite the fact that the first hypermarkets had already opened in the 1990s, mainly as a consequence of the large French and German retailing firms entering the market (Dawson and Henley, 1999). There were 99 hypermarkets in the urban centers of Poland when the statistics were first recorded. Since 2000, more parts of the country have opened up, and by 2005 the number of hypermarkets was 374. Large retailing firms tried to be the first to establish hypermarkets in the smaller cities (Dries, Reardon and Swinnen, 2004).

Table 2. Shops and Petrol Stations in Poland by Organizational Form, 1993-2005

	1993	1995	2000	2005
Department Stores	129	134	135	95
Shopping centers	863	780	500	462
Hypermarkets	-	-	99	374
Supermarkets	673	752	1,602	2,716
Other shops	374,327	417,079	421,723	380,354
TOTAL	375,992	418,745	424,059	384,001
Petrol stations	4,559	5,344	7,744	10,036
Permanent market places	-	2,354	2,376	2,313
Seasonal market places	-	5,060	5,164	6,729

Source: CSO, various years.

It was not only hypermarkets that experienced strong growth. The number of supermarkets in Poland more than quadrupled between 1993 and 2005. At first, supermarkets were established in the higher-income urban areas. Then locations followed in municipal areas targeted at the middle-income and later at the lower-income households.

In contrast to hypermarkets, supermarkets also penetrated the poorest regions (Reardon and Swinnen, 2004). The number of trade stores and shopping centers showed a negative trend; the number of department stores slightly increased until 2000 but fell considerably after 2000.

Apart from the stores described above, petrol stations are playing an increasing role in Polish retailing. The permanent markets have not shown substantial change over time and there are still about 2,300 of these markets in Poland. In contrast, the number of seasonal markets has increased, the figure in 2005 being 6,729. It is striking that seasonal and permanent markets were able to raise their market share between 1995 and 2005 even though foreign enterprises had successfully entered the Polish retailing sector. One important reason is the growth of tourism in Poland, mainly border tourism, which presented the permanent and seasonal markets with new opportunities.

Although Poland has seen a big increase in the number of hypermarkets, an international comparison reveals that the country still has a rather low concentration ratio. There is potential for more structural change in food retailing. In 1998, the ten most important firms among the 50 largest retailers had a market share of about 60 %. By 2002, this proportion had risen to 70 % (Slawinska and Malkowska-Borowczyk, 2006). The top five food retailers captured a 48 % market share in 2001 (Dries, Reardon and Swinnen 2004, p.536). This is again quite a low figure—for comparison, the figure in Germany is higher than 60 %.

Table 3 illustrates the strong growth of the sales area in Poland's retailing sector. Apparently, the impact of very large stores outweighed the effect of consolidation among the very small "other shops" in terms of retail space. At the end of the communist era in 1989, an average business had a sales area of 11 m² (Dawson and Henley, 2002). After more than 15 years of development and much structural change, the sales-area share of traditional shops (<100m²) declined continuously, although they still accounted for 94 % in 2005. The larger sized stores, in particular stores with more than 400 m² sales area, gained substantially in terms of market share. These exhibited the highest growth rate in retail space between 1994 and 2005 with 1.2 %.

Not only did the transformation process bring about advantages for foreign market participants, but domestic enterprises also gained, particularly with the large and growing number of small shops during the transition period and later.

It has already been mentioned that the Polish retailing sector became attractive for many foreign firms. There was great market potential. Furthermore, no effective competition existed after the collapse of the communist system and firms were able to start with a systematic penetration of the market. Table 4 illustrates the relative importance of foreign companies in the different retail formats from 2001 to 2005. It gives both an overview of the proportion of domestic and/or foreign owners according to store type and the degree of privatization within the industry. It also shows that the commercial sector has been almost completely deregulated. According to Table 4, the share of the private sector in all retailing stores and petrol stations in Poland amounted to more than 99 % every year between 2001 and 2005.

Table 3. Market Share of Sales Area (%)

	1994	1995	2000	2004	2005
Total	415,449	425,600	431,991	370,169	384,001
Sales area of shops in m²	19,177,886	19,792,640	26,933,785	26,438,595	28,064,516
below 50 m²	92.2	91.9	92.5		
50 - 100 m²	4.7	4.8	3.8	94.7	94.0
101 - 200 m²	1.9	2.0	1.8	2.4	2.7
201 - 300 m²	0.5	0.5	0.6	0.9	1.0
301 - 400 m²	0.2	0.2	0.4	0.5	0.6
above 400 m²	0.5	0.5	0.9	1.5	1.7

Source: Internal Market, various years.

Table 4 also reveals that the foreign share of all stores in the private retailing sector has increased from 0.7 % in 2001 to 1.4 % in 2005, which is still low. The major reason for the low foreign share in total stores remains the continuing predominance of the traditional and small-scale store structure.

Whereas the foreign share is negligible in the small-scale category “other stores,” the situation is very different with regard to the larger store types. As Table 4 illustrates, the foreign share was as high as 83.2 % for hypermarkets, 56.1 % for supermarkets and 20.3 % for shopping centers in 2005. Although the foreign share is clearly lower for department stores (9.5 %) and petrol stations (7.0 %), they are well above the foreign share of all shops in Poland (1.4 %).

Table 4 illustrates some interesting trends despite the short period covered. Between 2001 and 2005, the foreign share rose robustly for hypermarkets, i.e., by more than 30 %, and it declined markedly for department stores. For supermarkets (shopping centers), there was no continuous trend in the period 2001-2005, but the foreign share was clearly higher in 2005 than in 2001.

Table 4. Structure of Shops and Petrol Stations by Organizational Form and Ownership (%)

	Sector and Ownership	Total Shops	<i>Department Stores</i>	<i>Trade Stores/Shopping Centers</i>	<i>Hypermarkets</i>	<i>Supermarkets</i>	<i>Petrol Stations</i>
2001	Private sector	99.6	97.8	96.9	99.4	99.5	95.1
	domestic	98.6	59.9	83.3	53.8	16.3	72.6
	foreign	0.7	30.7	10.2	45.4	81.6	6.1
2002	Private sector	99.6	98.1	97.6	99.5	99.5	95.6
	domestic	98.6	78.3	76.8	20.8	48.7	74.2
	foreign	0.8	17.9	18.2	77.3	50.7	6.6
2003	Private sector	99.7	98.0	98.1	100.0	99.9	95.8
	domestic	98.6	79.4	72.0	17.1	50.0	76.1
	foreign	0.9	15.7	24.2	81.9	49.7	6.0
2004	Private sector	99.6	99.0	98.2	100.0	99.9	96.1
	domestic	98.3	83.8	72.3	16.0	46.0	74.4
	foreign	1.2	13.1	24.0	83.1	53.7	7.1
2005	Private sector	99.7	98.9	98.3	100.0	99.8	97.2
	domestic	98.0	87.4	76.0	15.5	43.6	76.5
	foreign	1.4	9.5	20.3	83.2	56.1	7.0

Source: Internal Market, various years.

The overall picture shows that the Polish retailing sector offers many opportunities for domestic firms even after foreign companies have successfully entered the market. The rising domestic firms' share of Polish supermarkets, i.e., 43.6 % in 2005 compared with 16.3 % in 2001, is a case in point, as is the huge number of small "other shops" operated by Polish entrepreneurs. Furthermore, Dawson and Henley (2002) state in their article that there were already seven Polish-controlled hypermarkets in 1997, and from Tables 3 and 4 it can be seen that there are significantly more today.

Another important feature of food retailing in Poland is the development of discounters. Although they are not included in the official Polish statistics, discounters have established themselves in Poland, albeit their importance lags behind that in other European countries. Dawson and Henley (2002) report that more than 500 discount stores

already existed in 1998 and six companies operated them. That number had more than doubled by 2004, as Table 5 documents. Biedronka, a subsidiary company of Jerónimo Martins, maintains most discount stores. This Portuguese company leads the market, with more than 60 % of all Polish discount food stores belonging to the chain, followed by the German retailer Plus, which maintained 160 discount stores in 2004 and achieved high growth rates in 2003 and 2004, as did the Danish retailer Netto. The most impressive market entry can be ascribed to the German retailer Lidl that opened 70 new stores in 2003. But in the following year, only two further shops were opened, indicating that Lidl has concentrated its activities on the major economic centers in Poland. The German retailer Aldi entered the Polish discount market in 2008 (LZ|Net, 28 February 2008).

Although the market segment occupied by discount stores developed dynamically, the growth rate declined in 2004. This is evidence that discounters, like companies with other store types, targeted large cities first. They are now experiencing slower growth as the remaining areas are developed.

Table 5: Number of Discounters per Retailing Company

Firm	2002	2003	2004
Biedronka	627	670	725
Netto	65	73	81
Plus	137	152	160
S-Sklepy Dyskontowe	125	125	133
Lidl	5	75	77
Total	959	1095	1176

Source: Ullmann (2004), p. 26.

2.2 Structure and Changes at the Firm Level

Powerful incentives motivated Western European retailers to enter the Polish market. Given the high ratios of supply concentration and strong price competition on domestic markets, retailing firms suffered from low profit margins and were on the lookout for promising new markets. As a result, large foreign retailers now occupy a significant position in the Polish retailing sector.

Table 6 gives an overview of the 20 most important retailing firms in Poland in terms of turnover in 2005. Metro is by far the largest retailer in Poland, followed by Jerónimo Martins and Tesco. Among the 10 most successful companies is only one domestic enterprise—Ruch. All other companies have their head offices in Western Europe. Of the top ten, four originate in Germany (Metro, Euro Cash, Schwarz-Group and Rewe), and three in France (Carrefour, Auchan and Géant). One trading venture is of Portuguese origin (Jerónimo Martins) and one is UK-based (Tesco). In contrast, there were five Polish companies (Milo, Bos, Polski Tyton, Eldorado and Polska Siec Handlowa Unia) ranking between 11 and 20 in 2005. Since 2005, new merger activities have taken place.

Meanwhile, Milo has become part of the German firm Lekkerland, which is now positioning itself in the growing markets of Central and Eastern Europe (LZ|Net 2006a), and Bos has become part of Eldorado, Poland.

The fact that four domestic companies could rank among the top 20 retailers in Poland emphasizes that the developing food markets provide new opportunities for all market participants.

Table 6: Top 20 Leading Retailers in Poland, 2005

Position	Company	Channel of Distribution	Net Sales 2005 in Mill. Euros
1	Metro	Makro Cash & Carry, Real, Media Markt, Saturn	2,907
2	Jerónimo Martins	Biedronki	1,334
3	Tesco	Tesco, Savia	1,329
4	Carrefour	Carrefour, Champion	1,168
5	Auchan	Auchan, Schiever, Elea	1,133
6	Ruch	Ruch	950
7	Géant	Géant, Leader Price	901
8	Eurocash	Eurocash, KDWT	809
9	Schwarz-Group	Lidl, Kaufland	721*
10	Rewe	Minimal, Selgros	687
11	Milo ^{a)}	Milo	679
12	Plus Discount	Plus Discount, Obi	634*
13	Bos ^{b)}	DLS, Express Podlaski, Bos, Sygel-Jool	560
14	Ahold	Hypernova, Albert	522*
15	ITM	Intermarché, Bricomarche	487
16	E. Leclerc	Leclerc	447
17	Polski Tyton	Polski Tyton	319
18	Eldorado	Eldorado, Stokrotki, Groszek	318
19	Zabka	Zabka	309
20	Polska Siec Handlowa Unia	PSH Unia	279

^{a)} Part of Lekkerland.

^{b)} In the meantime part of Eldorado. * Estimated.

Source: LZ|Net (2006b).

The general development of the Polish retailing sector can be compared with the colonization phase during the transformation process. Retailers targeted large cities first, then smaller cities and average-income regions.

Burt (2006) denominates Poland as a so-called “battleground” market (besides the Czech Republic and Hungary). The promising Polish retail market attracted most of the international players in the sector competing among each other for market shares. Three different effects influenced the process of entry, competition and finally exit or survival. A first reason for consolidation was characterized by market exits due to “strategic

realignment of activities.” The exits from the cash-and-carry sector by Karsten/Maxa (1991-1996), and Booker from the joint venture with Jerónimo Martins (1995-1998), as well as the sale of Dohle’s Hit hypermarkets to Tesco in 2002, are examples for this point.

Second, merger and takeover activity within the wider European grocery market also contributed to consolidation in the Polish market. The mergers of Billa by Rewe (1996), of Docks de France by Auchan (1996), of Allkauf by Metro (1998), and of GIB by Carrefour (2000) were cases in point. The bankruptcy of Interkontakt is also indicative of this type of consolidation.

The third type of consolidation grew from the tendency of retailing firms to concentrate on individual core areas. This led to a leaner and probably more efficient firm structure within Poland. Store types that did not belong to the core authority were sold.

Jerónimo Martins focused on discount stores and therefore took control of Metro’s discount chain TIP (1999). In contrast, the established hypermarkets and the cash-and-carry stores were sold to Ahold (2002) and Eurocash Cash & Carry (2003) respectively. Ahold concentrated on supermarkets (Albert) and on compact hypermarkets (Euronova). For this reason, the Sesam discount chain was converted into Albert supermarkets and the large hypermarkets were transferred to Carrefour (2002/03). The German retailer Rewe expanded into cash-and-carry (Selgros) and discounter markets (Penny). As a consequence, some Billa supermarkets were sold to Ahold.

Structural change in the retailing industry, precipitated by the transformation process, is not necessarily advantageous to Polish retailers only. The primary sector may benefit from this development, too. In particular, new markets will be created for the agrarian sector, provided farmers are able to meet the retailers’ requirements for local products in sufficient quantities and at a predetermined quality level. However, the necessary adjustments mean that farmers face major challenges. It may well be that smaller farmers are among the losers, as a fixed transaction cost component plays an important role in the farmer-retailer relationship, and retailers cooperating with a higher number of small farmers will have higher costs than retailers working with fewer and larger farmers. In addition, smaller farmers often lag behind in terms of investment due to insufficient financial resources and/or disadvantages in imperfect rural credit markets (Dries, Reardon and Swinnen, 2004).

The next section concentrates on foreign direct investment (FDI) flowing into the Polish grocery-retailing industry. FDI captures long-term investment by a non-resident combined with control over a share of 10 % or more. In the following section, we analyze FDI development and change during different stages of transformation and draw attention to what characterizes companies with the biggest interest in foreign direct investment.

3. FOREIGN DIRECT INVESTMENT

The rising global importance of multinational enterprises (MNEs) and the consequential increase of foreign direct investment (FDI) have been researched greatly for the last 30 years. In his basic approach, Dunning (1977) argues that an entrepreneur’s decision whether to serve a market by trade or investment depends on the possibility to

exploit ownership-location-internalization (OLI) advantages. Ownership advantages include location-independent firm-specific advantages like patent rights, strong brands, and superior management abilities, whereas location advantages might be lower wages, easier access to raw materials, favorable tax environment, and, especially important for retailing, proximity to markets and consumers. Internalization advantages occur when internal production abroad induces higher benefits, compared to other solutions like franchising, licensing or exporting. Other authors tried to integrate the theory of multinational enterprises into international trade theory. Helpman (1984) and Helpman and Krugman (1985) focused on the development of vertical MNEs via factor-price differences. Markusen (1984) concentrates on horizontal MNE due to trade costs. Further steps include the introduction of ownership and location advantages into general-equilibrium trade models (see Brainard, 1997; and Markusen and Venables, 1995 and 1996). The implicit assumptions of endogenously arising MNEs and two-way FDI were the main issues of several empirical studies using the gravity model (Brainard, 1997; Eaton and Tamura, 1996; Brenton, 1996).

Empirical studies about determinants of FDI-flows into Central and Eastern European countries show, inter alia, a strong impact of market size/potential, low unit labor costs (Bevan, 2004; Carstensen, 2004; Clausing, 2005), policy-induced incentives for FDI and the quality of institutional parameters of the host country (Disidier, 2004; Witkowska, 2007), and European Union (EU) Accession proposals (Bevan, 2004; Clausing, 2005) as main driving forces for FDI.

The reasons for foreign direct investments are multilayered and usually firm dependent. This topic is dealt with in detail in the literature on industrial organization and microeconomics. Burt (2006) elaborated that market entry by firms in CEECs was crucially affected by the following factors: a) market opportunity; b) cost advantages; c) chances for profit; d) public relations and reputation; and e) historical and cultural relationships.

Points a) and c) in particular are very relevant in the case of the Western European retailing companies (for example in Germany), since their domestic markets are often characterized by low growth rates as a consequence of high concentration ratios and strong price competition. It was a disadvantage to the domestic Polish economy that no capital reserves were formed during the communist era, or could be formed, which could have been invested when the transformation process started. Therefore, the funds urgently needed for restructuring could originate only from foreign countries (Przybylska and Malina, 2000).

Even with this working in Poland's favor, there were still obstacles to FDI. The potential barriers are, on the one hand, the culture of Poland and, on the other hand, structural and political characteristics. The problems include logistics and supply, communication, management abilities, unstable prices, hyperinflation, political and economic instability, as well as black-market and investment risks (Burt, 2006).

Economic instability is highly relevant to the initially slow progress of the Polish transformation process in the early 1990s and, for example, explains why the hypermarkets were late to enter the market.

Despite these difficulties, potential investors in Poland can see that developments in the country's structural data have been positive. Thus, the annual growth rate of real Gross Domestic Product (GDP) amounted to 4.5 % on average (1995-2007). Moreover, Poland is the largest Central and Eastern European country with a population of 38 million. Since 2000, the inflation rate has been at the same level as other European Union member states. The political risk declined substantially when Poland was admitted to the Organization for Economic Co-operation and Development (OECD) (1996) and the North Atlantic Treaty (NATO) (1997). Poland's export industry has been limited mainly to the EU, with two thirds of exports being shipped to EU countries. As stated in section 2, the crucial factor has been changes to the basic legal conditions, which have resulted in opening markets. The attractiveness of the Polish food-retailing sector lies in the high level of expenditure on food—as much as a third of household incomes (Dawson and Henley, 1999)—thus making Poland the sixth largest food-retailing market within the European Union.

Table 7 lists foreign investors and when they entered the market. In some cases, their year of withdrawal from the market is also shown. Companies from Austria (Karl Wlaschek), Belgium (GIB) and Netherlands (Karsten/Maxa) were pioneers in the Polish retailing industry. They entered the growing market as early as 1991. After 1994, large German, French and Dutch retailers followed them.

In the meantime, German and French companies have become the main foreign investors in the Polish food-retailing sector (e.g., Metro, Carrefour, Auchan). Between 1996 and 1998 in particular, German and French firms more than doubled their number of stores with high levels of financial investment (Dawson and Henley, 2002).

It seems that German retailers enjoyed a competitive advantage on the Polish market in various regions. They had already experienced privatization of the sector in the former German Democratic Republic. Additionally, German, as well as Austrian firms, benefited from their proximity to Poland, in terms of both geographical distance and cultural background. An interesting feature of competition on the Polish food market in transition was that, before larger formats followed, most retailers conquered the new market with medium-sized store types.

It is noticeable that almost all foreign companies that entered food retailing before 1994 have now left the Polish market again. There is only one exception: Metro was the only firm among the early newcomers that coped successfully with the difficulties of the Polish market in transition. Whereas Metro became the most successful retailer and a market leader in Poland, most companies withdrew from the Polish market during the second stage of the transformation process (e.g., Docks de France, Allkauf and Makro), and very few stayed until the third stage, namely reorganization (e.g., Interkontakt, Karl Wlaschek, Dohle, Edeka and Reitan).

Table 7. Western European Retailers and Year of Entry and Exit in Poland's Food-Retailing Industry

Company	Origin	Years of Entry/Business
Julius Meinl	Austria	1997
Schwarz Group	Germany	2002
Metro	Germany	1994
Rewe	Germany	1996
Tengelmann	Germany	1995
Dansk Super	Denmark	1995
Auchan	France	1996
Carrefour	France	1998
Casino	France	1996
Intermarché	France	1997
Leclerc	France	1996
Ahold	Netherlands	1995
Jerónimo Martins	Portugal	1995
Tesco	United Kingdom	1995
<i>Previously operating</i>		
Karl Wlaschek	Austria	1991-2006
GIB	Belgium	1991-2000
Interkontakt	Czech Republic	1997-1999
Allkauf	Germany	1995-1998
Dohle	Germany	1994-2002
Edeka	Germany	1997-2003
Docks de France	France	1995-1996
Reitan	Norway	1998-2003
Karsten/Maxa	Netherlands	1991-1996
Makro	Netherlands	1994-1997
Booker	United Kingdom	1995-1998

Source: Burt (2006), pp. 145 et seq.

Table 8 summarizes investment undertaken by foreign enterprises in the Polish retailing and repair sector, and the investment activities of the Polish sector abroad in the period 1994-2004. The Polish retailing and repair sector is characterized by a high net inflow of foreign capital. The ratio between the inward position, i.e., FDI stocks of foreign firms in Poland, and the outward position, i.e., FDI stocks of Polish investment abroad, was as high as 38.2:1 in 2004. The inflow of financial funds grew robustly from 161 million US\$ in 1994 to 1,482 million US\$ in 2004. The Polish retailing sector in general and food retailing in particular continue to attract foreign capital. This holds true despite rising retail concentration and increasing price competition.

Polish FDI in the retailing sector of other countries experienced ups and downs, see Table 8. There were even some years of disinvestment (1998-1999 and 2002-2003). The high increase in outward FDI in 2004 suggests a strong investment boom as a consequence of Poland joining the EU.

Table 8. Direct Investment in the Polish Retailing and Repair Sector, Million US\$, 1994-2004

1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
<i>Direct Investment from Abroad</i>										
161	512	612	433	782	834	749	824	758	699	1,482
<i>Inward position</i>										
446	885	1,335	1,704	2,767	4,708	5,720	7,386	8,186	11,087	15,310
<i>Direct Investment Abroad</i>										
6	18	15	7	-16	-5	6	24	-17	-4	205
<i>Outward Position</i>										
82	136	117	94	100	138	151	90	93	159	434

Source: OECD (2003).

Table 9 provides additional information on the significance of individual foreign retailers for and during the transformation process in Poland. This information refers to the capital invested by major foreign investors in the retailing sector, their country of origin, their activities and each firm's rank among all foreign investors in the Polish economy.

The five most important foreign investors in retailing belong to the top 50 foreign investors in the Polish economy. Two firms—Metro with 1.5 and Tesco with 1.3 billion US\$ capital invested in 2004—rank among the top-10 foreign investors. This is remarkable, given that FDI in retailing amounted to 12.2 % of total FDI in the period 1994-2002. All five leading foreign firms in the retailing sector, i.e., Metro, Tesco and the three French firms Carrefour, Casino, and Auchan, invested more than 600 million US\$ each in Poland. It is striking that 18 of the top 20 foreign investors in retailing are engaged in food retailing. Only two firms in the top 20 are nonfood retailers alone.

Table 9 also highlights the absolute dominance of EU firms in all FDI in the Polish retailing sector. Among the 26 firms listed in Table 9, all home countries of the FDI stocks are EU countries. Twenty-five of the 26 firms are from “older” EU member states and only one—Interkontakt Group of the Czech Republic—is from one of the new EU member countries. This suggests not only that the food trade is mainly intra-EU trade but also that FDI is almost exclusively within the EU.

Table 9. Major Foreign Investors in the Polish Retailing Sector, December 2004

Overall Position	Investor	Capital invested (mill. US\$)	Origin	Activities
5	Metro Group	1508.0	Germany	Wholesale and retail trade
8	Tesco	1300.0	UK	food retailing
17	Carrefour	980.0	France	food retailing
22	Casino	801.0	France	food retailing
28	Auchan	672.2	France	food retailing
51	Jerónimo Martins	386.3	Portugal	food retailing
136	Kingfisher	104.0	UK	other retail sale of new goods
143	NETTO A/S	100.0	Denmark	food retailing
212	Royal Ahold	59.0	Netherlands	food retailing
227	Rewe	53.5	Germany	food retailing
	Fegro-Markt Corporation	53.5	Germany	food retailing
230	Leclerc	52.0	France	food retailing
			Czech Republic	
289	Interkontakt Group	36.0	Republic	wholesale food
	Plus Trading Company	32.4	Germany	food retailing
				retail sale of cosmetics and toiletries
370	Rossmann	22.0	Germany	toiletries
397	Politra (Eurocash)	18.6	Netherlands	food retailing
498	KIPI (Eurocash)	12.4	Netherlands	food retailing
524	Reitangruppen	11.1	Norway	food retailing
544	Neinver	10.0	Spain	food retailing
	Julius Meinl International	6.5	Austria	food retailing
667				
863	Harris	2.8	Austria	food retailing
902	Docks de France	2.5	France	food retailing
953	Danish Fast Food	2.0	Denmark	manufacture and retail of food
				retail sale of cosmetics and toiletries
1028	HTS Duisburg	1.3	Germany	
<i>Sum</i>		<i>6227.1</i>		

Source: PAI/Z (2005), p. 10.

4. DETERMINANTS OF FOREIGN DIRECT INVESTMENT IN THE POLISH RETAIL TRADE

The objective of this section is to identify determinants of FDI in the retailing sector. Since a comprehensive dataset for FDI in Polish food retailing is not available, the analysis does not focus exclusively on Poland, but includes Poland and seven other European countries.

Table 10. Foreign Direct Investment in Selected European Countries (Average 1996-2003)

Country	Inward position of <i>FDI</i> in the Retailing and Repair sector		Inflows of <i>FDI</i> in the Retailing and Repair sector	
	FDI (Mill. US\$)	FDI/GDP (%)	FDI (Mill. US\$)	FDI/GDP (%)
Poland	4,623.80	23.79	656.80	3.65
Hungary	1,206.61	50.98	325.75	5.92
Slovakia	926.46	55.23	171.21	7.22
Czech Republic	2,615.74	48.38	645.32	10.08
Italy	4,838.23	4.69	538.73	0.46
Portugal	2,123.43	29.13	642.99	5.56
Germany	22,589.41	14.21	1,836.30	0.86
France	14,575.09	11.69	-92.17	-0.01

Source: Author computations with OECD 2004 and IMF 2007.

Comparative data on FDI in several countries are available from the OECD. Two different specifications of FDI were used in our analysis: first the inward position of direct investments from abroad as a cumulative stock, and second the inflow of FDI. In Table 10, eight-year averages of different measures of FDI reveal how countries have received various levels of foreign direct investment from abroad. Additionally, respective indicators are weighted by GDP in individual countries to account for differences in country size and economic wealth.

As described in Section 3, Poland's retailing sector received a considerable amount of FDI since the middle of 1990 and after joining the EU in 2004, in particular. Consequently, Table 10 indicates that Poland is the most important host country for FDI stocks and flows in absolute terms among the CEECs. Yet the level is still considerably lower than direct investment from abroad in Germany or France. The case of Italy illustrates the influence of different FDI indicators. Whereas the average inward position of FDI in Italy is higher than in Portugal, the average inflow of direct investment is higher in Portugal.

Section 4.1 outlines the hypotheses regarding FDI determinants and describes the model and data. Empirical results of the analysis are discussed in Section 4.2.

4.1 The Analytical Concept: Potential Determinants of Foreign Direct Investment

There is broad theoretical literature on the determinants of FDI (Markusen, 1998) as well as empirical evidence of their relative importance (e.g., Wheeler and Mody, 1992, Culem, 1988). In recent years, there has been increasing interest in what drives the location

decisions of foreign firms in the European transition economies (Bevan and Estrin, 2004, Carstensen and Toubal, 2004). Individual studies have concentrated on Poland in general (Przybylska and Malina, 2000) and on the Polish food-manufacturing sector (Walkenhorst, 2001). In the following multivariate analysis, FDI stocks and flows in the retailing sector are explained across countries and over time by structural differences in the retailing sector, including market size, proportion of specialized stores, personnel costs, and former investment behavior²⁹.

The individual explanatory variables and hypotheses regarding their marginal impact on FDI follow.

Market Size

An indicator of market size of the retailing sector is turnover. We posit that the existence of a rapidly expanding market in the host country is an important argument for the selection of the country in which FDI takes place (Przybylska and Malina, 2000, Wendt and Pederson, 2006). Therefore, increasing turnover in the retailing sector appears to be an incentive for FDI abroad. Two different indicators are included in the analysis: absolute turnover in the respective countries and years (*TURNOVER*) and the turnover per enterprise, i.e., the relative turnover (*TURNOVER_{rel}*). Data on turnover in the retailing and repair sector are contained in EUROSTAT 2007 and measured in US\$.³⁰

Proportion of Specialized Shops in the Retailing Sector

FDI in the retailing sector in Poland is concentrated in specific store types (see Section 3). The Polish retailing sector is dominated by a large number of small and specialized shops. But non-specialized stores like supermarkets, hypermarkets or discounters capture the major share of FDI, whereas specialized stores like fruit and vegetable grocers are typically not affected. Therefore, a structural indicator is incorporated which describes this dual structure in the retailing sector. Since food products are sold either in non-specialized or specialized stores, the turnover in non-specialized stores versus specialized stores is a structural indicator that characterizes the retailing sector as more modern or more traditional. Especially in Poland, the proportion of non-specialized stores compared with specialized stores was very low in the years analyzed, indicating that the retailing sector consisted mainly of specialized stores, and that it therefore follows a more traditional pattern than in other CEECs (see Table 11). In contrast, the structure of Hungarian retailing is similar to the retailing patterns in Germany and France, with a high proportion of non-specialized shops. Two different specifications of the structural indicator are taken into account in order to reflect the differential retailing sectors of the CEECs. Both indicators were computed with data from EUROSTAT 2007.

²⁹ In Central and Eastern Europe the privatisation process can be considered a major factor for attracting FDI (see Section 2). Therefore we were looking for an indicator describing the degree of privatisation in the respective countries. The European Bank for Restructuring and Development (EBRD) publishes an indicator for the degree of privatisation, which ranges from 1 to 4 (with 1 a low degree of privatisation and 4 a high one). Unfortunately, in the years from 1996 to 2003, no changes over time could be observed.

³⁰ Detailed figures for the retailing sector alone are not available (EUROSTAT 2007).

STRUCTURE1 shows the turnover in non-specialized stores in retailing which sell food and luxury articles, beverages and tobacco products (sector G5211 in the definition of EUROSTAT 2007) as a share of *TURNOVER* in specialized stores for the same category (e.g., fruit and vegetable grocers) (sector G522):

$$STRUCTURE1 = \text{TURNOVER G5211} / \text{TURNOVER G522} \quad \text{Equation (1).}$$

STRUCTURE2 reflects the fact that in Eastern Europe sales from market stalls are typical. Therefore, this indicator includes the turnover of stalls in the denominator (sector G5262):

$$STRUCTURE2 = \text{TURNOVER G5211} / (\text{TURNOVER G522} + \text{G5262}) \quad \text{Equation (2).}$$

Table 11. Average Proportion of Non-specialized vs. Specialized Stores (1996-2003), Selected Countries

Country	STRUCTURE1 (%) ^{a)}	STRUCTURE2 (%) ^{a)}
Poland	3.14	2.64
Hungary	9.12	8.12
Slovakia	5.43	4.91
Czech Republic	n.a. ^{b)}	n.a. ^{b)}
Italy	3.93	3.07
Portugal	3.44	3.21
Germany	8.36	7.01
France	12.15	9.58

^{a)} The structural indicators are defined in the text.

^{b)} Not available.

Source: Author computations with EUROSTAT 2007.

Increasing activity by foreign retailing companies in the host market raises *STRUCTURE1* and *STRUCTURE2*, as the number of non-specialized stores grows and the percentage of specialized stores declines.

Two opposing hypotheses seem plausible regarding the impact of *STRUCTURE1* or *STRUCTURE2* on FDI. First, as the number of non-specialized stores rises, the host population is becoming familiar with those store types. Consumers may increasingly value the advantages of one-stop shopping, which is what supermarkets and hypermarkets provide, and the opportunities of HiLo pricing offered by these store types. These trends in consumer behavior would favor additional FDI. Another reason for the positive impact of *STRUCTURE* on FDI could be the higher proportion of larger store types, as this means there is more potential for merger activities and for investment abroad in the host country.

Secondly, the variables *STRUCTURE1* and *STRUCTURE2* have continued to be below average for the CEECs in particular. We can expect these variables to converge at a higher level across EU countries in the medium term. Therefore, it might be that FDI is attracted more to those countries where the average store size is still low and the backlog in

investment is particularly high. This is rationale for a negative impact of *STRUCTURE* on FDI.

Personnel Costs

Personnel costs (*PC*) are considered to be another potential determinant of FDI in the retailing sector. The underlying hypothesis is that countries with lower personnel costs would attract more foreign direct investment from abroad, as the lower costs are incentive to invest in a specific location. Personnel costs in the retailing and repair sector are defined as the total remuneration payable by an employer to an employee. It includes taxes and employees' social security contributions. Relevant data are contained in EUROSTAT 2007.

Former Investment Behavior

Apart from structural differences in the retailing sector, former investment behavior is likely to influence actual decisions. As pointed out in Sections 2.1 and 3, cautious investment by foreign retailers in the initial stages of the transformation process is followed by further investment decisions as customers get used to the new retail formats, thus resulting in an increasing number of stores owned by foreign enterprises. Therefore, the stock of FDI in the previous year is included as an additional explanatory variable ($FDI_{Stock\ i,t-1}$).³¹

As explained above, two specifications of the dependent variable FDI in the individual years and countries are used: first, the inflow of direct investment from abroad and, second, the cumulative stock of FDI, analyzed in our case study. The reason for using the stock of FDI as a dependent variable is that investment behavior is unlikely to be based only on contemporary decisions but takes into account direct investment in former years.³² Walkenhorst (2001) argues that initial foreign investment triggers follow-up investment in subsequent years, for example, in order to achieve a controlling share in the foreign market or company. The use of cumulative stocks of FDI is more likely to describe this kind of investment behavior.

Based on these arguments and hypotheses, the following economic relationship is suggested:

$$FDI_{Stock\ i,t} = f(Turnover_{i,t}, Structure_{i,t}, PC_{i,t}, FDI_{Stock\ i,t-1}) \quad \text{Equation (3).}$$

$FDI_{Stock\ i,t}$ is the stock of foreign direct investment in country i in year t . *TURNOVER* _{i,t} , *STRUCTURE* _{i,t} and *PC* _{i,t} stand for the turnover in the retailing and repair sector, the proportion of specialized stores and the personnel costs in country i in year t respectively. $FDI_{Stock\ i,t-1}$ is the previous stock of foreign direct investment in country i .

³¹ Unfortunately, the consideration of former investment behaviour as an explanatory variable reduces the number of observations.

³² The decision to use the stock of direct investment from abroad as the dependent variable is justified by the statistical analysis presented in Section 4.2. The estimation with inflows of foreign direct investment as the dependent variable has a considerably lower R^2 and less significant variables.

Walkenhorst (2001) uses a panel model to investigate the determinants of FDI flows in the Polish food industry. Based on the geographical distance from Poland, he establishes three home country groups that invested in Poland and analyzes twelve food branches. Due to limited data availability, a similar Poland-specific analysis of FDI is not possible and we have selected, therefore, a cross-country dataset in which Poland is included as one of several Central and Eastern European transition countries. An econometric model is used with several dummy variables capturing the country-specific effects. The basic model is:

$$\begin{aligned}
 FDI_{Stock\ i,t} = & \beta_1 + \beta_2 Turnover_{i,t} + \beta_3 Structure_{i,t} + \beta_4 PC_{i,t} + \beta_5 FDI_{t-1, i,t} \\
 & + \beta_6 DPOLAND + \beta_7 DHUNGARY + \beta_8 DSLOVAKIA + \beta_9 DGERMANY \\
 & + \beta_{10} DFRANCE + \beta_{11} DPORTUGAL + \varepsilon_{i,t}
 \end{aligned}
 \tag{4}$$

Seven country dummies are included in equation (4), but not Italy, i.e., the benchmark country. $\varepsilon_{i,t}$ is a normally distributed error term.

4.2 Empirical Results

Based on the basic econometric model explained above, very different model specifications have been estimated. The results of four multiple regression models are presented in Table 12. Models 1 to 3 take into account that the cumulative stock of foreign direct investment is more likely to describe the underlying hypotheses that initial investments were followed by additional investments in subsequent years. Consequently, the cumulative stock of FDI is used as the dependent variable. In Models 1 and 2, the FDI_{Stock} , as well as the explanatory variables turnover and former investment behavior (FDI_{t-1} ; incorporated only in Model 1), are weighted by the GDP of the respective countries, taking into account differences in country size. In Model 3 the dependent variable FDI_{Stock} is unweighted, and in Model 4 the inflow of FDI as a share of the GDP is used as the dependent variable.

The results are largely consistent with expectations. Only one variable, i.e., personnel costs, was statistically insignificant in all specifications. This suggests that labor costs might be less relevant in retailing than in other sectors of the economy when deciding where to locate FDI. Hence, this variable was excluded from the estimations presented.

One important result in Table 12 is that the basic explanatory model for the FDI decision is clearly more suitable for FDI stocks than for FDI flows in the retailing sector. The corrected coefficients of determination are much higher for Models 1 to 3 than for Model 4. With the exception of four countries' dummy variables, the explanatory variables are not statistically significant in Model 4 and the adjusted \bar{R}^2 decreases from 0.98 in Model 1 to 0.47 in Model 4.

In Models 1 to 3, the structural variable $STRUCTURE2$ is significantly different from zero and has a positive sign. It is apparent that countries with an increasing share of unspecialized and large-scale retailers attract more direct investments from abroad than countries with a lower share of non-specialized shops. This result implies that FDI becomes more likely in a country when customers are already used to modern retail

formats, indicating that consumers value the advantages of unspecialized and large retail stores like one-stop shopping and the regular price discounts these stores offer.

Table 12. Determinants of Foreign Direct Investment in the Retailing Sector of Eight European Countries Including Four Transition Economies, 1996-2003^{a)}

Dependent Variable	Model 1: Stock of <i>FDI</i> normalized with <i>GDP</i> (<i>FDI</i> _{Stock} / <i>GDP</i>)	Model 2: Stock of <i>FDI</i> normalized with <i>GDP</i> (<i>FDI</i> _{Stock} / <i>GDP</i>)	Model 3: Stock of <i>FDI</i> (<i>FDI</i> _{Stock})	Model 4: Inflows of <i>FDI</i> normalized with <i>GDP</i> (<i>FDI</i> _{Inflow} / <i>GDP</i>)
Explanatory variables				
<i>STRUCTURE2</i>	0.5659* (2.50)	1.1104*** (7.75)	0.5840* (2.81)	0.0796 (0.10)
(<i>Turnover</i> / <i>GDP</i>)	0.8617** (3.06)	1.3902*** (5.52)	1.3423*** (3.76)	1.1513 (0.88)
(<i>FDI</i> _{Stock, t-1} / <i>GDP</i>)	0.3783* (2.53)		0.2318 (1.48)	
(<i>FDI</i> _{Inflow} / <i>GDP</i>)				20.6164 (0.26)
<i>D</i> _{Poland}	1.0892*** (3.93)	1.7040*** (12.40)	2.2762*** (3.98)	2.1333** (2.81)
<i>D</i> _{Hungary}	0.7531** (3.60)	1.0054*** (5.65)	2.5195** (3.23)	2.4296* (2.32)
<i>D</i> _{Slovakia}	1.5203*** (4.87)	2.0961*** (16.73)	4.1480** (3.39)	3.0252*** (3.53)
<i>D</i> _{Germany}	0.1866 (1.21)	0.1670 (1.02)	0.0692 (0.51)	1.3200 (1.40)
<i>D</i> _{France}	-0.2631 (-1.35)	-0.6273** (-3.48)	-0.3366(*) (-1.85)	0.8535 (0.77)
<i>D</i> _{Portugal}	0.8649** (3.27)	1.4644*** (10.83)	2.2997** (3.50)	1.8124* (2.60)
<i>Constant</i>	-2.3726** (-2.94)	-4.0915*** (-7.91)	-10.3680** (-3.02)	-6.0717* (-2.51)
\bar{R}^2	0.98	0.97	0.99	0.47
<i>n</i>	30	33	30	30

^{a)} Dependent and independent variables are defined in the text. In Model 3, the variables *TURNOVER* and former investment behavior (*FDI*_{t-1}), as well as the dependent variable, are in absolute terms. *t*-values in parentheses. - *** (**, * (*)) statistically significant at the 99.9 %- (99 %-, 95 %-, 90 %-)level.

Source: Author computations.

In each model where the stock of cumulative FDI is used as the dependent variable (Models 1 to 3), the coefficient for turnover is significantly different from zero and, as expected, has a positive sign. Thus, the existence of a large and/or rapidly increasing market in the host country influences the decision where to locate FDI and attracts it to that country.

In Model 1, the positive and statistically significant coefficient for former investment behavior implies that investment decisions are influenced by investment in previous years in the same country. Investment by foreign retailers in the early stages of the transformation process is followed by more intense investment decisions as customers get used to the new retail formats.

All coefficients of the dummy variables except for Germany and France are significantly different from zero and have a positive sign in Model 1. The interpretation of the coefficients for the dummy variables follows the procedure suggested by Halvorsen/Palmquist (1980). Among the CEECs, Slovakia is the most successful in attracting FDI in the retailing and repair sector. *Ceteris paribus*, the FDI share of GDP in Slovakia is 35.7% higher than the reference country Italy, followed by Poland with 19.7%. These results imply that country characteristics matter in the investment decision, too, even after taking structural indicator differences into account. Cultural as well as geographical proximity to the most important investing countries Germany and France might explain why Poland attracts more foreign direct investment than Hungary. The high attractiveness of Slovakia as host country for direct investment from abroad is in line with results concerning the retail transformation in CEECs reported by Dries, Reardon and Swinnen (2004). They show that Slovakia outperforms Poland and Hungary in terms of their shares of modern retail (supermarkets, hypermarkets and discount stores) and achieves more retail sales of foreign food per urban resident than Poland.

5. SUMMARY AND CONCLUSIONS

Major trends in Poland's food retailing are described and analyzed in this chapter. Structural change in grocery retailing has been particularly rapid given the transformation from a socialist to a market economy. In the first half of the 1990s, the number of stores increased sharply due to deregulation. In particular, the number of very small stores grew and then declined again, but nevertheless remained at a much higher level than under socialism. A parallel boom occurred in the case of large retail outlets, in particular hypermarkets and supermarkets. This development raised the overall sales area in Poland's retailing sector and was driven by high FDI from major European food-retailing chains. Thus, the Polish food-retailing system is characterized by a dual structure of small "other shops" and the growing proportion of large store types in the style of Western Europe. This development has been accompanied by increasing concentration ratios of returns per unit of sales area.

Some findings on FDI in Poland's retailing sector are striking. FDI in food retailing as a proportion of FDI in total retailing is very high, and major investors like Metro and Tesco ranked among the top 10 foreign investors in Poland. As in the case of the food trade, FDI in food retailing is almost exclusively intra-EU.

A more detailed analysis of the determinants of foreign direct investment in eight European countries—including Poland—yields several interesting results. The FDI stock in the retailing sector can be explained very well across countries and over time. As a percentage of GDP, FDI stocks are determined by the size of the retailing sector measured,

as a percentage of GDP, by a structural indicator of the retailing sector expressing the ratio between non-specialized and specialized stores, and by structural differences across countries. In all model specifications, the structural indicator is significantly different from zero and has a positive sign, indicating that countries with a more modern retailing structure attract more FDI than countries with a more traditional structure.

Ceteris paribus, Poland attracted more FDI—normalized with the GDP—than all other countries except Slovakia. On the other hand, the more traditional retailing structure in Poland hampered inward FDI compared with some other European Countries like Germany or France and—among the CEECs—Hungary and Slovakia.

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Chapter 7: Food Retailing in the United States: History, Trends, Perspectives

Kyle W. Stiegert and Vardges Hovhannisyan

1. INTRODUCTION: FOOD RETAILING: 1850-1990

Before the introduction of supermarkets, fast food outlets, supercenters, and hypermarkets, various other food retailing formats operated successfully in the US. During the latter half of the 19th century, the chain store began its rise to dominance as grocery retailing format. The chain grocery store began in 1859 when George Huntington Hartford and George Gilman founded The Great American Tea Company, which later came to be named The Great Atlantic & Pacific Tea Company (Adelman, 1959). The typical chain store was 45 to 55 square meters, containing a relatively limited assortment of goods. The major advantage of the chain store over its single store counterparts was its volume purchasing power. Volume purchasing allowed chains to lower overhead costs, due to the lower prices per unit charged to chains purchasing larger quantities of goods. The chain store also thrived because of changes in food production, most notably, the mass production of consumable goods.

In 1916, a major change in grocery retailing took place when Clarence Saunders opened in Memphis, TN, his patented Piggly Wiggly store; the (debatable) first “truly self-service market.” This revolutionary idea gave customers the opportunity to make direct choices of consumables without assistance of store clerks, which significantly cut labor costs. The chain store thrived and by 1930, A&P, American, First National, Kroger, Safeway, and National Tea companies combined for over 30,000 stores (Mayo, 1993).

As the US entered the great depression, negative demand shocks led to additional developments in food retailing. Michael Cullen is widely regarded as the developing the first “supermarket”, opened in 1936 under the King Kullen label. Originally an employee of Kroger, Cullen had the idea to offer lower prices, operate enough stores to reduce wholesale costs, and eliminate the need for warehousing, by using a planned retailing outlet with its store size between 470 to 580 square meters. To further lower overhead costs, self-service and cash-and-carry were fully implemented (Mayo, 1993).

Soon after the introduction and success of King Kullen, Robert Otis and Roy Dawson joined with a grocery wholesaler to form Big Bear, in Elizabeth, NJ. Otis and Dawson combined 1,350 square meters of grocery retailing with another 3,200 square meters of various departments, such as automotive accessories, hardware, and drugs. As King Kullen’s and Big Bear’s success attracted national attention, the chain stores were no longer able to ignore the supermarket experiment, and for good reason; in 1932, the Big Bear supermarket generated a sales volume equal to 100 A&P chain stores located in the same New Jersey vicinity (Mayo, 1993).

Despite its success as a retailing format, the supermarket concept drew criticism. Even though it was the size of 10 chain stores, it required significantly fewer workers. Wholesalers who refused to stop supplying supermarkets were subsequently blacklisted in

New Jersey. Pressure was placed on newspapers to stop printing advertisements for supermarkets. Legislation was also aimed at limiting the spread and number of supermarkets in various communities (Mayo, 1993). Despite numerous hurdles, the supermarket began to dominate by being a more economical vehicle for retail trade than the traditional chain grocery store.

Resistance against the supermarket by chain stores did not last long. Many chain store owners realized the benefits of converting chain stores to the supermarket format. From 1936 to 1941, A&P eliminated approximately 10,000 chain stores while building replacement supermarkets, which increased total sales from \$864 million to over \$1.3 billion (Adelman, 1959). Over roughly the same period, Kroger, Safeway, and other major chains made similar conversions to supermarkets, and subsequently grew. During this growth period, supermarkets entered into the nonfoods market, providing supermarkets further economic stability and diversity, while strengthening its hold as a one-stop shopping destination.

Major in-store developments also helped establish the supermarket as the food retailing format of the future. Sylvan Goldman, owner of Standard Food Stores in Oklahoma City, OK, noticed that customers usually quit shopping when the baskets became too heavy. In 1937, he invented the shopping cart, alleviating fatigue problems, while expanding the customer's ability to hold and purchase more goods at the same time. Gondola shelving, with cantilevered shelves that served two aisles, was introduced, allowing grocers to efficiently stack goods within a customer's reach. Store aisles were spaced at least two shopping carts wide to allow fluid movement throughout the store. The gondola shelf and shopping cart were innovations that established module dimensions on a micro scale, but were capable of being multiplied many times over to build larger supermarkets (Mayo, 1959).

Though the supermarket was introduced to many market areas in the 1930s, it wasn't until the post-WWII period that it flourished. Food production developments, changes in urban transportation, development and rapid expansion of the suburb, and newfound household affluence were influential factors that led to the continued progression of the supermarket. The sale of refrigerators in the US increased dramatically, allowing households to increase their ability to store perishable food, and thereby lowering the number and frequency of shopping trips a household had to make. As the amount of disposable income available for food and nonfood items grew, the supermarket inevitably grew as well to meet the suburban demand, increasing the average supermarket size to 1650 square meters by 1956 (Mayo, 1993). The number of items sold in supermarkets increased as well. Major corporate chains reduced the total number of stores by over 31 %, closing multiple chain stores to accommodate the larger and more efficient supermarkets. At this time, unions also became a major movement in the retail grocery trade, with grocery workers unionizing under the Retail Clerks International Association and the Meat Cutters Union (Mayo, 1993).

As the number of supermarkets grew, gaining access to preferred store sites became increasingly difficult, becoming an important barrier to new grocery entrants and limiting

the expansion of independent retailers. Sometimes, restrictive lease agreements with established firms would act to increase the market power of leading retailers by limiting or eliminating new competition from a market area. Entry barriers also existed when incumbent firms would engage in selective price cutting aimed at the new entrant's stores (Marion, et al., 1979). It was this price-cutting practice that laid the groundwork for an investigation of A&P in the early 1940s.

The National Association of Retail Grocers petitioned for an investigation of A&P pricing practices in 1939. By November 1942, a grand jury indictment was secured in Dallas, TX, charging that A&P conspired to restrain and monopolize the trade of food, in violation of sections 1 and 2 of the Sherman act.³³ The indictment was sustained by the District Court, later reversed by the Court of Appeals, and the Supreme Court denied certiorari. The case was set to go to trial in early 1944, but the Antitrust Division dropped the Dallas case, only to open a new case in the District Court of Danville, IL. The trial ended in April 1946, finding A&P guilty of violating both sections of the Sherman Act. An appeal by A&P was taken up in late 1946, but to no avail. The conviction was affirmed in February 1949, with A&P paying all fines, totaling \$175,000. Civil suits followed and a consent decree was entered by the Department of Justice and A&P in January 1954. The terms mostly imposed certain minor disadvantages on the purchasing side of the company (Adelman, 1959).³⁴

In 1946, supermarkets accounted for 3 % of the total number of grocery stores in the US, but accounted for 28 % of the total sales volume. These numbers increased to 5.1 % and 48 % respectively by 1954 (Mayo, 1993). While the total number of grocery stores in the US continued to decline, the total area of store space rose in order to match the nation's growing population. The number of items carried by supermarkets doubled from 1946 to 1966, but the ratio of the number of food items to total store area remained generally stable. Margins increased as well, driven by growing overhead costs from new developments such as air conditioning, better mechanical equipment, finer building materials, and large building lots.

Mergers were also commonplace in the supermarket trade during the postwar period. From 1949 to 1958, eighty-three companies acquired 315 grocery chains, resulting in 2,238 stores being sold that cumulatively had done \$1.9 billion in annual sales at the time of purchase. The National Tea Company, Winn-Dixie Stores, Inc., the Kroger Company, and the Grand Union Company accounted for 51 % of all mergers during this time period (Mayo, 1993). This trend gradually began to concentrate the control of space and sales into

³³ Section 1 of the Sherman act prohibits any agreement among two or more persons that restrains trade in any way (i.e. price-fixing, market division between competitors, and boycotts by competitors), while Section 2 prohibits monopolization and attempts to monopolize.

³⁴ The provisions, as given by Adelman, provided that "the company was barred from dictating systematically to ... suppliers 1) to refrain from [using] ... brokers, 2) ... offering of premium deals, 3) [increasing] the prices charged to the outside trade for store delivered ... food products" The company was also barred from "dictating systematically ... the prices or other terms or conditions of sale, upon which such suppliers shall sell or distribute ... food products to the outside trade."

fewer and more powerful chains. This spread was slowed after the 1950s, limited primarily by the federal government's stepped-up anti-merger threats.

In the early 1960s, the Federal Trade Commission (FTC) entered agreements with six food chains that prohibited future grocery store mergers without prior FTC approval for 10 years (Marion, et al., 1979). During the agreement's time period, National Tea Co. was involved in the only fully litigated case from the six chains (National Tea, 1966). The major finding of this case was that National Tea's acquisition of 26 grocery retailers violated section 7 of the Clayton Act. The FTC found that National Tea's activities portend a drastic restructuring of national food markets, achieved substantial power, and had eliminated many viable potential competitors, thus depriving consumers of the benefits of potential competition (Marion, et al., 1979).

At around the same time, the Supreme Court began to establish market extension merger standards, motivated by decisions made in the case of *US vs. Von's Grocery Co* (1966). In the case, the Justice Department challenged Von's acquisition of Shopping Bag Food Stores (see Lande, 2001 and Foer, 1999 for additional discussion). Because of the strict enforcement toward a small impact market-consolidating merger, this case is often credited as the high watermark of antitrust action in US food retailing. It was shortly after this case that the antitrust agencies, under the Department of Justice, adopted the food distribution merger guidelines, which said that any but very small acquisitions by large chains would be carefully scrutinized (Marion, et al., 1979).

Shopper preferences were also changing after the 1950s. The nation was prosperous in the 1960s and the American public wanted a more diverse assortment of goods and services than the conventional supermarket offered. Delicatessen and bakery departments were added into the supermarket to compete more closely with the growing fast food market (Mayo, 1993). Additionally, greater emphasis was placed on the quality of goods sold at supermarkets.

Technology became a driving force in grocery retailing in the 1970s. The Uniform Pricing Code (UPC) was introduced to supermarkets in the 1970s. This retailing innovation had a significant impact on the efficient use of interior space by allowing management to make exact estimates as to when and how much of a store item was needed, along with timelier warehouse deliveries. Shortly thereafter, the first supermarket checkout scanner went into operation in 1974 at Marsh Supermarkets in Troy, OH (Mayo, 1993).

Driven in part by economic recessions and energy crises of the 1970s, the warehouse supermarket format was released, which deemphasized quality design and atmosphere. In warehouse stores, sacking clerks were eliminated and a pivoting board, acting as a divider for the checker, was installed to help move customers along efficiently. The use of metal shelves, food goods in cartons, simplified designs of food departments, and the checkout stand gave bleakness to the warehouse supermarket. Store displays were straightforward, and visual absence of a concern for aesthetics gave customers the message that warehouse markets were saving them money.

In the late 1970s, new supermarket competition was beginning to surface in the form of wholesale clubs and hypermarkets. The hypermarket, predecessor of the supercenter,

first opened in 1963, in Sainte-Geneviève-des-bois, France, by Carrefour. With a floor area of 2,500 square meters, 12 checkouts and 400 parking spaces, the venture joined a nonfood retailer and a food wholesaler, completely encompassing the concept of total one-stop shopping (Carrefour, 2004). Hypermarkets typically combined 30 % dedicated floor space to food retail, with the remaining space dedicated to nonfood general retail. The hypermarket entered the US in 1984 when the Bigg's Company opened Bigg's hypermarket in Batavia, OH. The average size of a hypermarket increased to 16,000 square meters by 1989, combining as one bystander said "the supermarket, the discount store, and the shopping mall" (Mayo, 1993).

The wholesale club store began in 1976 with the opening of Price Club. Wal-Mart and Kmart followed shortly after with Sam's Club and Pace stores, respectively. Targeting customer clientele and combining wholesale and retail functions were key cost controls, making the wholesale club a profitable format. The wholesale club emphasized tight control of overhead expenses with a quick turnover of goods. Whereas large chain supermarkets contained as many as 30,000 items, warehouse clubs carried only 3,000 to 4,000 items. By 1990, warehouse clubs comprised roughly 3 % of total US food sales.

In the early 1970s, Safeway overtook A&P in total volume sales, becoming the nation's leading grocery chain, thereby ending A&P's unprecedented run since its beginning in 1859 as the leading grocery chain in the US. At the end of the 1970s, the Retail Clerks International Association and the Meat Cutters Union merged to form the United Food and Commercial Workers Union. By 1990, half of chains and 12 % of the independents were unionized (Mayo, 1993).

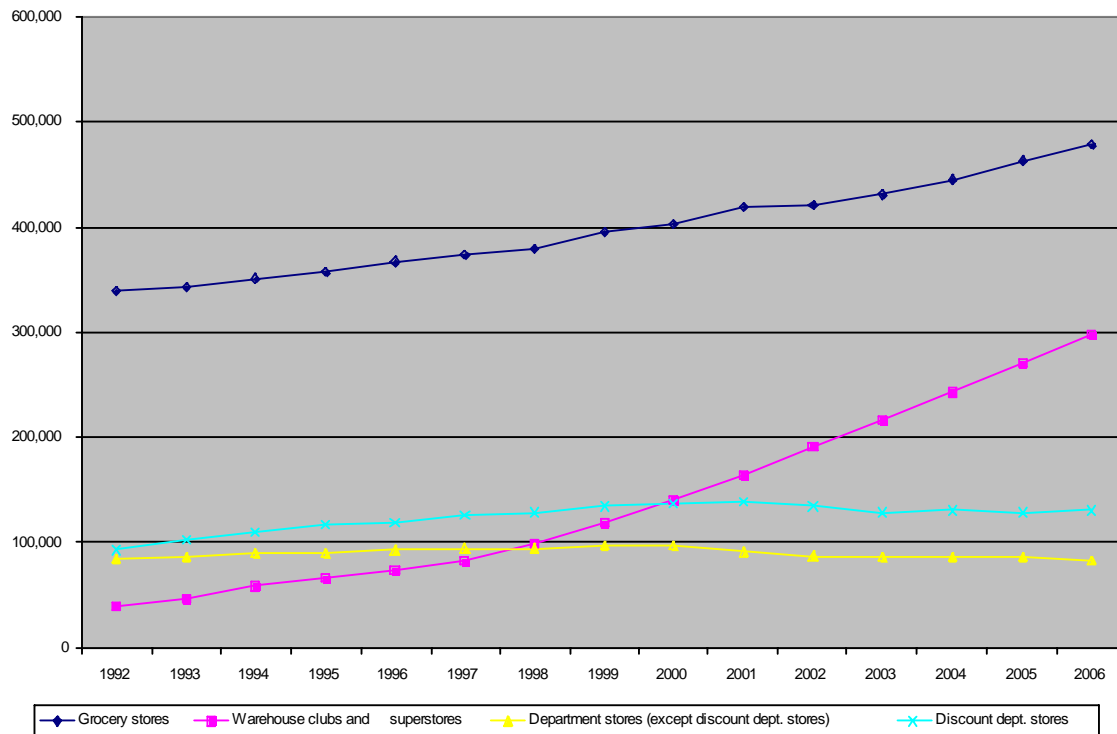
Supermarket merger analysis began to mature in the 1980s after the 1982 Merger Guideline revisions were made, with the leading example of this maturity demonstrated in California vs. American Stores Co. (1990). In the case, the FTC conducted an investigation of American Stores and its recent acquisitions, entering into a settlement with American Stores that required the divestiture of thirty-one to thirty-seven stores in California (Foer, 1999). The state of California then filed suit alleging that acquisitions made by American Stores were still unlawful and restricted competition. The Supreme Court held that divestiture was allowable, finally resolving the case by ordering a divestiture of 161 stores.

2. FOOD RETAILING 1990 TO PRESENT

The latest major advancements in food retailing in the US have been the introduction of supercenters. The supercenter, which is closely related to the hypermarket, combines food retailing with general merchandising and pharmacy under one roof, devoting up to 40 % of floor space to grocery items. The supercenter began in Grand Rapids, MI, in 1962, when Meijer opened its first Thrifty Acres store. Meijer was followed into the supercenter realm by Fred Meyer in the 1980s, becoming the two major supercenter firms. Both chains began in grocery retailing and then extended into general merchandise. Nontraditional food retailers entered the supercenter format when Wal-Mart entered the grocery sector with the Wal-Mart Supercenter, in 1988, followed shortly by Kmart and later, Target, which

signified the entry into grocery retailing by the nation's three largest general merchandisers (see Figure 1).

Figure 1 Estimated annual retail sales by kind of business (\$ million)



Source: <http://www.census.gov/svsd/retrann/view/sales.xls>.

As the supercenter segment slowly eroded away market share from traditional supermarket retailers during the 1990s, the supermarket industry underwent large mergers and acquisitions, which created fewer but larger firms. Since the late 1970s, major mergers and acquisitions included but were not limited to:

1. Safeway merged with Vons (1997), Dominick's Supermarkets, Inc. (1998), Randall's Food Markets (1999), and Genuardi's Family Markets (2001),
2. Kroger merged with Dillon Companies (1983), which included Quality Food Centers, and Fred Meyer Inc. (1999), which included Ralphs Grocery Co. and Quality Food Centers,
3. Albertson's merged with American Stores which included Acme, Jewel-Osco, Osco Drug Sav-on drug stores and Lucky stores (1999) and acquired Shaw's Supermarkets (2004),
4. Bi-Lo (1977), Giant Foods (1981), Finest Supermarkets (1988), and Stop & Shop (1996), were purchased by Royal Ahold, and

5. A&P purchased Kohl's Food Stores (1983), Waldbaum's Inc. (1986), and the Farmer Jack chain from Borman's Inc. (1989),

As the number of mergers and acquisitions increased, the concentration levels of the grocery industry increased as well. A chart of merger and acquisition activity is shown in Figure 2.

In 1992, the top five supermarket chains had control of 19 percent of the market; by 1999, that share had almost doubled to 33 percent (Bergmann, 1999). The two primary efficiencies sought by the mergers were to increase buying power and economies of scale (Balto, 2001). To some extent, the merger wave that swept the industry was a response to the supercenter format (Foer, 1999). It is also believed that retailers engaged in merger activities in pursuit of higher economies of scale and operational efficiency on the horizontal competitive landscape, and also strengthen their bargaining power in their dealings with the upstream members of the US food system (Bjornson, Sykuta, 2002).

The most current Merger Guidelines (1992, revised in 1997) stated the general standards for market concentration levels post-merger were as follows:

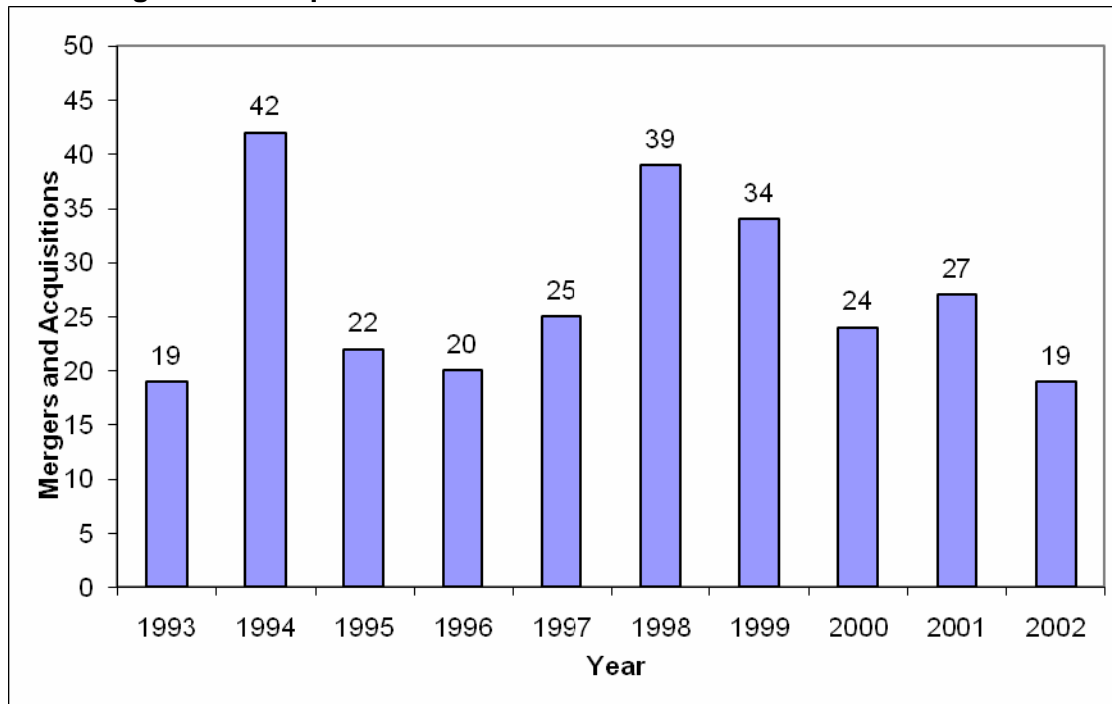
1. Post-Merger HHI Below 1000. The Agency regards markets in this region to be unconcentrated.
2. Post-Merger HHI Between 1000 and 1800. The Agency regards markets in this region to be moderately concentrated.
3. Post-Merger HHI Above 1800. The Agency regards markets in this region to be highly concentrated.

Where $HHI = \sum_{i=1}^n s_i^2$ is the Herfindahl-Hirschman Index of concentration, s_i is the market share of firm i ($0 \leq s_i \leq 100$), and Agency refers to the Department of Justice.

The latest round of merger activity has consolidated many of the nation's largest grocery retailers, leading to even fewer sellers, and hence, more concentrated markets, with many metropolitan and local markets falling into the highly concentrated range. Increased concentration may be prices tend to increase as well; therefore, it is possible that the latest merger trend will result in higher food prices for many areas of the US.

The retail grocery sector has undertaken many changes in the last century. With the supercenters accounting for 5.4 % of total supermarket sales in 2002 (Progressive Grocer, 2003), it is an unmistakable force that will likely continue to reshape the grocery sector while pushing the efficiencies of traditional supermarket retailers. Table 1 details several important expenditure trends and patterns worth additional discussion. Owing to the emergence of supercenters, the share of total expenditures on food at home (i.e., food purchased and prepared at home) accruing to food stores declined from 87.2 % in 1985 to 65.8 % in 2006. A rapidly emerging trend is the home delivery and mail order of food, which is in part due to an aging and more affluent population.

Figure 2. Mergers and Acquisitions 1993-2002



Source: The Food Institute's Food Business Mergers and Acquisitions 2002, 2003.

Although not a focus of this chapter, trends in food consumption away from home (FAFH) indicate a large and growing component of US food expenditure. Beginning only since the late 1960s, food away from home expenditure, as a percent of disposable income, rose from 3.6% in 1970 to 4.0 % in 2000. Food at home decreased from 10.3 % in 1970 to 5.8 % in 2000. Moreover, in 1967, fast food accounted for 14.3 % of total away-from-home expenditures and by 1999 it reached 35.5 % (US Department of Agriculture/Economic Research Service). The emergence of the fast food marketing platform is commonly considered a leading force in the increased incidence of obesity and diabetes in children. Bowman et al., (2004) analyzed the food consuming patterns in 6,212 children, and report: "Fast-food consumers also ate more total fat, more saturated fat, more total carbohydrates, more added sugars, more sugar sweetened beverages, less fluid milk, and fewer fruits and non-starchy vegetables, differences that were statistically significant in most age categories (p. 113-114)." They also suggest that fast-food consuming children were nearly twice as likely to become obese compared to those that did not consume fast food. Figure 3 shows the share of three categories of FAFH. As the figure demonstrates, the market shares of basic food restaurants have dramatically increased their dominance compared to hotel-related restaurants, school cafeterias, and retail-related eateries. Figure 4 compares the sales of eating establishments offering "full service" to all eateries that offer limited service (i.e., ordering from the counter, drive through pickup, etc.). Both formats maintained roughly the same market share over the last 20 years. Success of both formats is partly due to increased demand for convenience in the US, smaller families with dual

income lifestyles, and rising incomes. Although the data is not yet available, the rapidly rising fuel and food prices in the US are likely to spur many changes to the way consumers purchase food. Supercenters are usually price leaders and stand to benefit from consumers seeking lower food prices. A research study by Huang and Stiegert showed that in 2005, there was a 25 % price difference between the highest and lowest priced food retailers in Madison, WI. Thus, some consumers that have not yet switched to supercenter styled formats are more likely to do so in the near future. Consumers are also likely to change purchasing patterns to cut overall food bills. They may switch to cheaper cuts of meat, or wait for good deals and stock up before prices revert back. Consumers may shift away from pricier restaurants to those offering less service, or may curtail eating out and purchase more for in-home consumption.

Table 1: US total expenditures on food at home

	1985	1990	1995	2000	2003	2006
<i>Million dollars</i>						
Food stores ¹	209.228	256.368	275.301	303.526	323.869	364.399
Other stores ²	16.36	32.334	54.728	89.446	122.62	157.14
Home delivery and mail order	2.768	5.336	8.625	19.152	18.202	21.012
Farmers, manufacturers and wholesalers	4.637	2.784	3.487	3.908	3.894	4.382
Total sales³	232.993	296.822	342.141	416.031	468.585	546.933
Home production and donations	6.998	7.726	7.026	6.497	6.83	6.463
Grand total	239.991	304.548	349.166	422.528	475.416	553.395

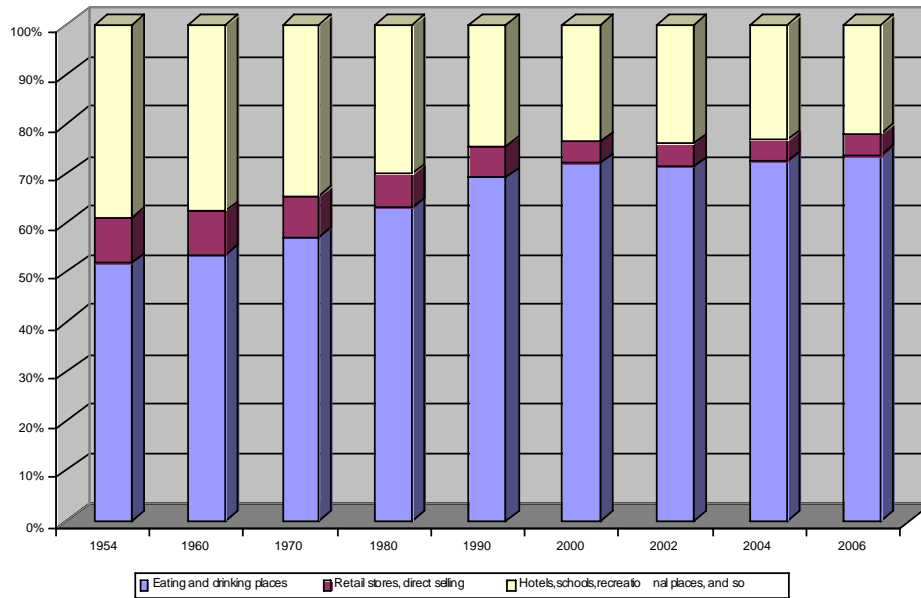
¹ Excludes sales to restaurants and institutions

² Includes eating and drinking establishments, trailer parks, commissary stores, and military exchanges

³ Computed from unrounded data

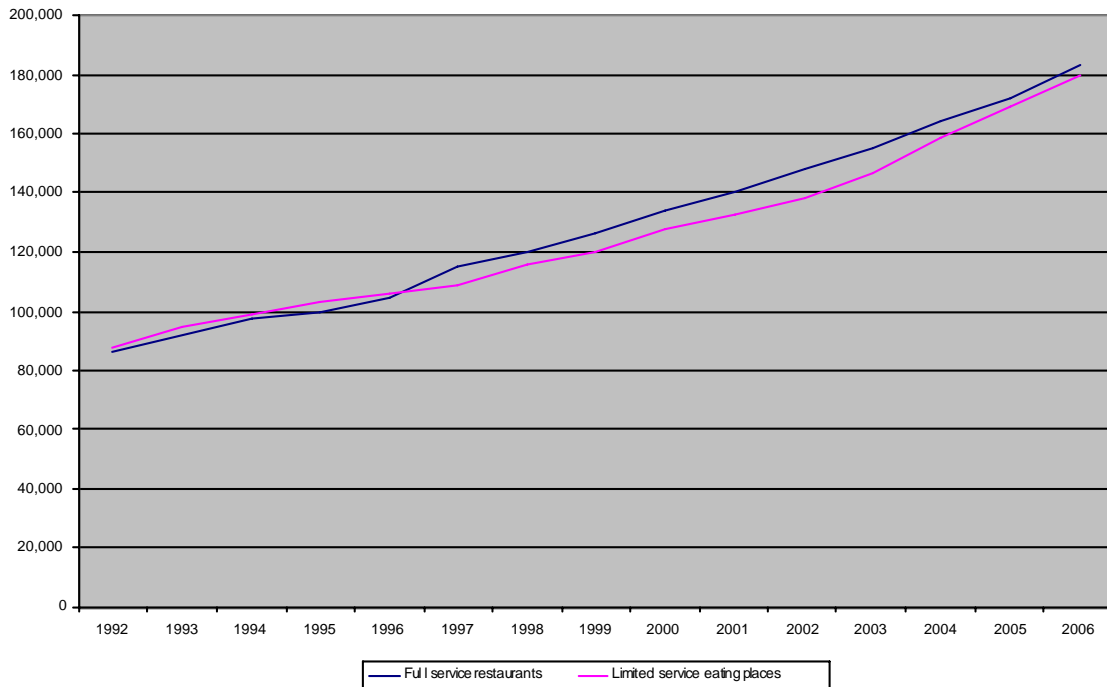
Source: USDA, ERS, <http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table2.htm>

Figure 3: Sales of food away from home by type of outlet (%)



Source: USDA, ERS, <http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/table17.htm>

Figure 4: Estimated annual food sales by kind of business (\$ million)



Source: <http://www.census.gov/svsd/retlann/view/sales.xls>

Table 3. US sales of food at home by type of outlet

	1985	1990	1995	2000	2003	2006
<i>Traditional grocery retailers</i>			<i>Percent</i>			
Supermarkets	64.7	61.9	59.4	62.5	59	57.7
Convenience stores	3.2	2.7	3.1	2.9	2.9	2.9
Other grocery	16	15.8	15.3	5.3	4.8	3.4
Specialty food stores	5.8	3.2	2.7	2.3	2.4	2.7
<i>Total traditional</i>	73.7	83.6	80.5	73	69.1	66.7
<i>Nontraditional grocery retailers</i>						
Warehouse clubs ¹ and supercenters ²	0.3	1.9	4.2	9.4	15.2	17.9
Mass merchandisers ³	1.4	1.4	2	2.3	1.9	1.7
Other stores	5.5	10.5	9.7	9.9	9	9.2
Home delivered and mail order	1.2	1.7	2.5	4.6	3.9	3.8
<i>Total nontraditional</i>	8.4	15.5	18.4	26.2	30	32.6
Farmers, processors, wholesalers, and other	2	0.9	1	0.9	0.8	0.8

¹ Includes three warehouse club chains operating in the US, namely Sam's club, Costco, and BJ's

² Such as Wal-Mart, Meijer, Super Kmart, Fred Meyer

³ Such as Kmart, Target, traditional Wal-Mart

Source: USDA, ERS, <http://ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/table16.htm>

4. PRIVATE LABELING PRACTICE IN THE US FOOD RETAILING SYSTEM

With the development of private labels (PL), whereby the retailers sell products under their own brands, the retailers may pursue lower prices, higher margins, better positioning, and enhanced customer loyalty. In Europe PL practice was introduced in the second half of 1970s, and ever since it has been growing in importance. Mostly targeted at the low end of the market initially PL products offered lower quality and prices than national brand products (NB), thus offering the consumers economic incentives to buy their products at the time of economic hardship. Over time, however, this practice changed significantly, as many big manufacturers accommodated the production of PLs in conjunction with NBs, and also huge gains in technology were utilized (Sckokai et al., 2006).

By adopting PL retailers assumed a more active role in the food marketing system, as they own and control part of the products that they channel to the final consumers. If used effectively, it can become an important competitive tool for the retail firms on the vertical competitive landscape, as it may increase their bargaining power against the NB suppliers. Meanwhile, PL can be a successful strategy to compete with other retailers by allowing them to differentiate their products (Berges-Sennou et al., 2003).

Globally PL growth rate surpassed that of NBs in 2005, making up 5 and 2%, respectively¹. As a result, the share of PLs in the value sales increased by 0.4 percentage points for the total of 38 countries and 80 product categories, reaching 17% in 2005 (figure 7).

Some important factors that might contribute to a bigger share of PL products in the market follow (Dhar and Hoch, 1997):

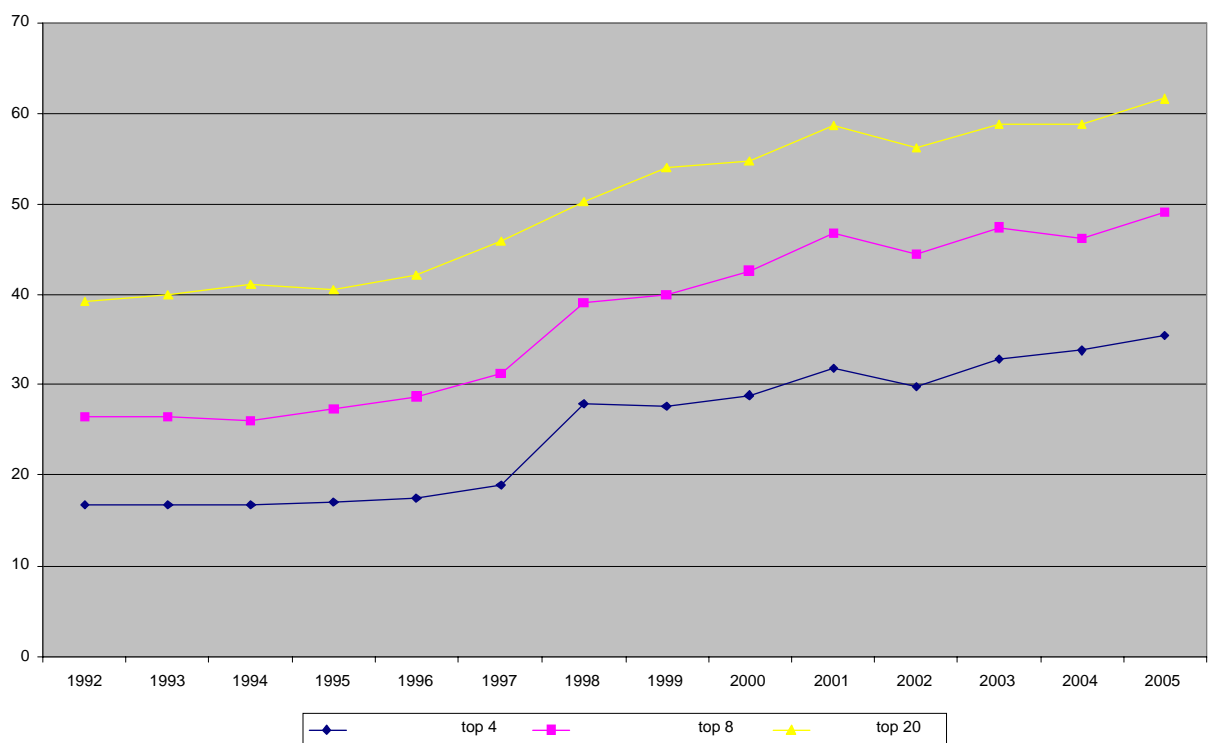
- PL products are of higher quality vis-à-vis NB

- Quality of PL products is not subject to big variations
- High sales level of the product category under study
- The share of gross margin is high
- Not many domestic food manufacturers offer the product category
- Advertising expenditures are low on the country level

3. CONCENTRATION IN THE US FOOD RETAILING

The groups of the largest four, eight, and 20 companies were experiencing relatively stable shares of US grocery store sales from 1992 to 1996 (Figure 5). However their shares increased by 18.7, 22.6, and 22.4 % , and reached 35.5, 49, and 61.6 % , respectively in 2005. Increasing concentration in the US food retailing sector is reflective of the major changes happening in the entire food retailing industry, and may result in more powerful food retailers securing better contract terms in their relationship with other food marketing channels (Harris et al., 2002). However, the impact of retail store concentration on food prices is not clear-cut, and it is ambiguous how concentration would change the profitability of food retail stores in comparison to that of food manufacturers (Kinsey, 1998).

Figure 5: U.S. food retailing concentration (% of U.S. grocery store sales)

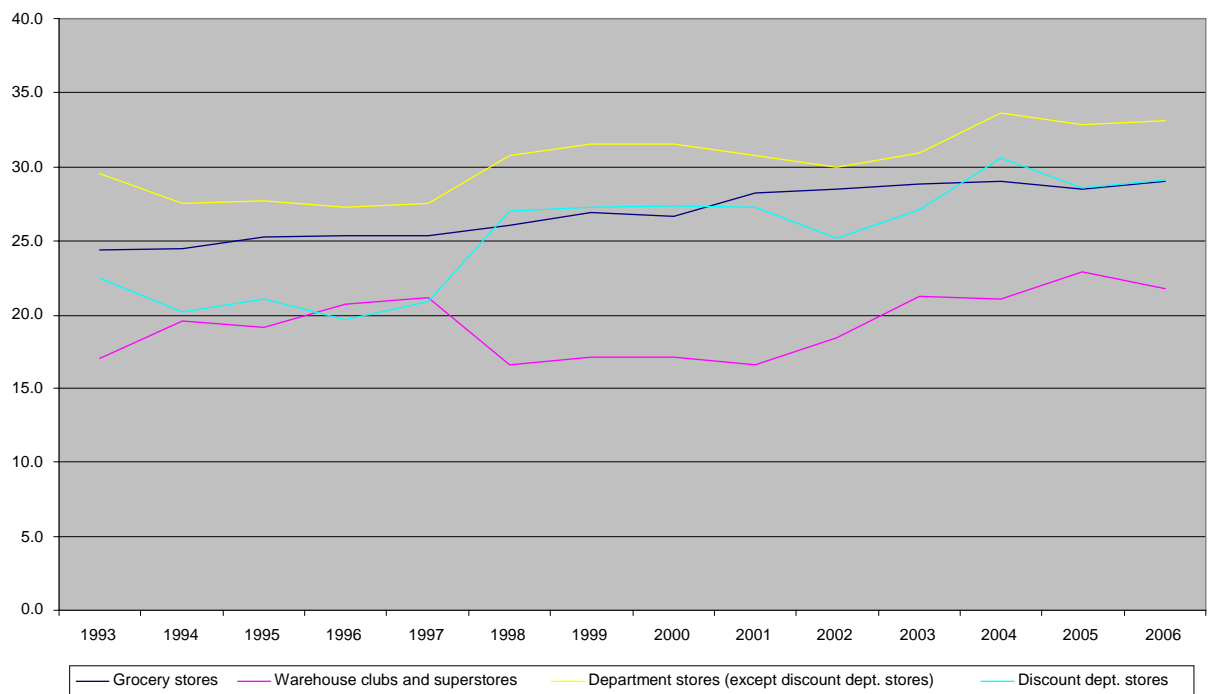


Source: USDA, ERS, <http://www.ers.usda.gov/Briefing/FoodMarketingSystem/Data/topgrocerysales2005.xls>

Estimated gross margin as a percentage of sales has been a rising trend for grocery and department stores in recent years (Figure 4). For grocery stores it increased by 4.5 percentage points in the last 13 years and reached 29 percent in 2006. This measure for warehouses and supercenters demonstrated a decrease in the period of 1998-2002, after which it increased by 3.4 percentage points and reached 21.8 percent in 2006.

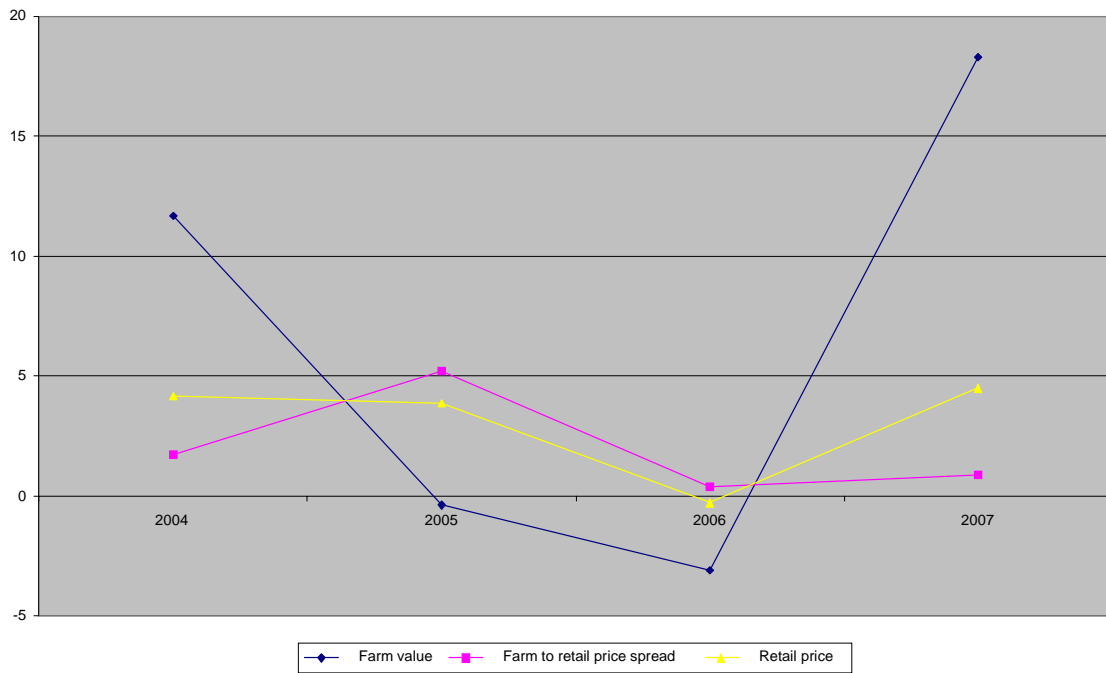
Figure 6

**Estimated annual gross margin as a percentage of sales of retail firms
kind of business (%)**



The dynamics of price indexes of farm value, farm to retail price spread, and retail prices from 2004 through 2007 speak to the ambiguity of the direction of price changes (Figure 7). The retail price index first increased in 2004 and 2005 by 4.2 and 3.9 percent, respectively, and then decreased by 0.3 percent in 2006, compared to the base period. However it regained an increase of 4.5 percent in 2007. The farm price index rose by 11.7 percent in 2004, and then declined by 0.4 and 3.4 percent in 2005 and 2006, respectively. As in the case of retail prices, the farm price index regained an increase of 18.3 percent in 2007. The index of the farm to retail price was on a continuous rise, although at a decreasing rate, during this period. Obviously, the increase in the gap between the farm and retail prices was not at the expense of farm value, which provides further evidence that increasing concentration in the level of retail stores did not lead to pressure on the prices of the upstream channels.

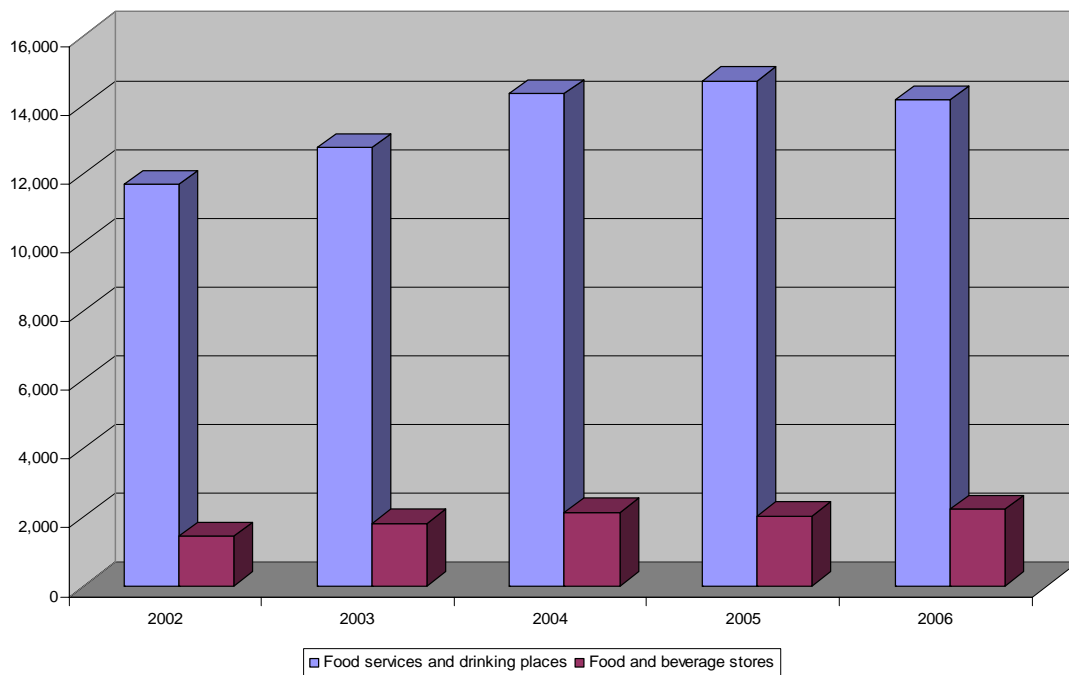
Figure 7: Changes in food price indexes (%)



Source: USDA, ERS, <http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/cpiforecasts.htm>

Figure 8

U.S. foreign direct investment in food service and food retail (\$ million)



Source: USDA, ERS, <http://www.ers.usda.gov/Briefing/GlobalFoodMarkets/Data/USFDIsectors.xls>

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