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The Evolution of Shopping Center Research: A Review and Analysis

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Abstract. Retail research has evolved over the past sixty years. Christaller's early work on central place theory, with its simplistic combination of range and threshold has been advanced to include complex consumer shopping patterns and retailer behavior in agglomerated retail centers. Hotelling's seminal research on competition in a spatial duopoly has been realized in the form of comparison shopping in regional shopping centers. The research that has followed Christaller and Hotelling has been as wide as it has been deep, including literature in geography, economics, finance, marketing, and real estate.

In combination, the many extensions of central place theory and retail agglomeration economics have clearly enhanced the understanding of both retailer and consumer behavior. In addition to these two broad areas of shopping center research, two more narrowly focused areas of research have emerged. The most recent focus in the literature has been on the positive effects large anchor tenants have on smaller non-anchor tenant sales. These positive effects are referred to as retail demand externalities. Exploring the theoretical basis for the valuation of shopping centers has been another area of interest to researchers. The primary focus of this literature is based in the valuation of current and expected lease contracts.

Introduction

Retail shopping behavior in the United States has changed dramatically over the past century. Prior to the industrial revolution retail purchases were most often made at the shopping center closest to an individual's residence (i.e., the general store). Travel to more distant shopping centers for a lower price or better selection was prohibitive due to transportation costs. With the popularization of the automobile in the mid-1920s, however, travel costs were reduced and the consumer became more mobile. With the greater use of the automobile and the use of mass transit systems, central cities became the focal point of many retail purchases, in particular purchases of high-order goods.

After World War II, the federal government embarked on a mission to increase military mobility in the United States by establishing the interstate roadway system.

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This interstate system diminished transportation costs to suburban and ex-urban areas, creating suburban corridors around cities. With families moving out of central cities, retailers in downtown locations found themselves less accessible to the consumer. By the mid-to-late 1940s many large department stores had built their first stores outside the central business district.

In 1956, the first suburban enclosed shopping center was opened near Minneapolis. The center, called Southdale Mall, was created because Dayton's Department store convinced its rival, Donaldson's, to jointly develop a shopping center in order to reduce construction costs.¹ A major turning point in the retail industry was reached when the two merchants discovered, much to their surprise, that placing two department stores in one center increased business for both stores. Over the next three and a half decades, shopping center developers and owners continued to agglomerate retailers and refine tenant mix to enhance retail sales of both large department and small specialty stores. Shopping centers are now a common feature of the American landscape. The National Research Bureau (1992) estimates that there are almost 38,000 U.S. shopping centers that contain 4.586 billion square feet of space and account for \$717 billion in retail sales.

Generally speaking, the shopping center literature has followed the historic practices of retail practitioners rather than leading them to new horizons. Shopping center research has broadly followed two separate, but in certain ways inter-linked, theoretical foundations: (1) central place theory and (2) homogeneous retailer agglomeration. Additionally, two more recent areas of shopping center research that have emerged include shopping center demand externalities and shopping center valuation.

A Brief Overview of the Shopping Center Literature

In the mid-1930s, Christaller was the first researcher to formally model the spatial behavior of retailers. Describing the relationship between retail trade area size and distance traveled to the retail area, Christaller proposed a theoretical model where consumers make single-purpose shopping trips to the nearest shopping center.² Christaller's intuitively appealing single-purpose/nearest center theory generated some empirical support. To better explain the clustering of disparate retailers in one location, other researchers theorize that consumers purchase more than one item on each retail trip. By recognizing that shoppers combine several shopping tasks into one trip, referred to in the literature as multipurpose shopping, researchers could provide empirical support for multipurpose shopping behavior. Subsequent findings reveal that the massing of retail stores in one location reduced total shopping costs for the consumer, but these empirical models of central place theory nonetheless lack complete explanatory power.

Several years prior to Christaller's work on central place theory, Hotelling (1929) set forth the conceptual ideas and the theoretical constructs of the principle of minimum differentiation, which explains why similar type retailers agglomerate. Hotelling illustrates that a small decrease in price by one retailer will not create market instability so as to drive competitors out of business. Instead, according to Hotelling's analysis

businesses compete on many non-price factors and these non-price factors prevent a lower price competitor from becoming a monopolist. Hotelling's work has since generated a prodigious amount of research. The agglomeration of retailers that sell similar merchandise in a central market has since become a necessary condition of equilibrium in many theoretical shopping center models.

Recently the literature has evolved toward the study of retail demand externalities. Retail demand externalities, or customer traffic generators, are created when customers are drawn to a particular shopping center by an external force, usually a high-order, anchor tenant retailer. The theoretical foundation of demand externalities has been in existence for decades, but only recently have demand externalities been applied to retailer behavior. Retail demand externalities emanate from customers who are drawn to a shopping center by the anchor tenant and who then shop at the smaller, non-anchor tenant retailers. The retail image of the anchor tenant has been shown to be important to the success of smaller non-anchor retailers. Measuring the image of different types of retailers, however, is often difficult when determining the magnitude of retail externalities. Nevertheless, both the theoretical and empirical research on retail demand externalities are progressing, with many of the effects of demand externalities not clearly delineated.

Shopping center valuation is another area of research interest. The literature on shopping center lease valuation originates from equipment lease research and the analysis of spatial rent patterns. Generally, shopping center value is based on the discounted value of both existing and potential lease contracts. Of particular interest to researchers in recent years has been the possibility of business value or intangible asset value in the valuation of shopping centers.

A tree diagram of the literature review is depicted in Exhibit 1. After the introduction section, this paper examines the evolution of four areas of shopping center research which include the theoretical and empirical research on central place theory in the next section. Section three discusses the theory of homogeneous retailer agglomeration and the literature of Hotelling and his successors. The emerging body of research on retail demand externalities is covered in section four. The fifth section discusses the evolving research on retail lease valuation, and section six concludes with some observations about the evolution of shopping center research.

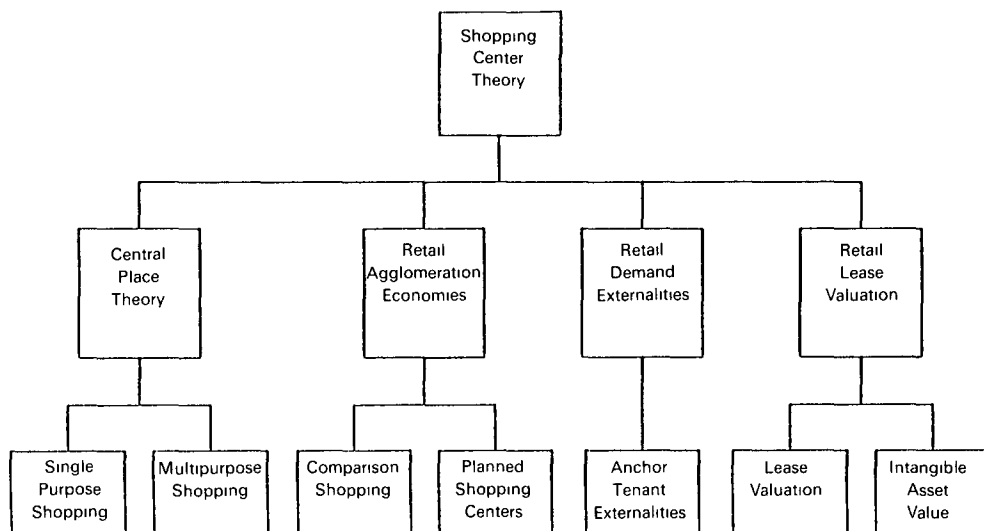
Central Place Theory

Central place theory is the most developed theory of retail location.³ Central place theory models the relationship of retail trade between towns. First proposed by Christaller in the mid-1930s, the theory earns its strength through its general structure and its ability to analyze complex locational problems under highly simplified conditions.

Range, Threshold, and Hexagonal Markets

To organize the complexity of inputs in spatial decisionmaking, central place theory examines two broad premises—range and threshold. Range is the maximum distance

Exhibit 1 Literature Review Structure



a consumer will travel to purchase a good, which for Christaller is equal to the distance to the nearest center that carries the good. The maximum range is the point where the total price of a good (mill price plus customer transportation costs) is the same as the value of the item to the consumer (i.e., the consumer surplus is zero). Threshold, the minimum demand necessary for a store to be economically viable, refers to the rational behavior of retail entrepreneurs.⁴ That is, threshold analysis determines the number and location of retail centers using the minimum return necessary for the retailer to break even.⁵

Range and threshold combine to create a market area. The shape of each market area is hexagonal, and a continuum of adjacent hexagons define the totality of market areas. Low-order goods exhibit small hexagonal market areas. High-order goods display ever increasing market areas of the same hexagonal shape that are overlaid onto the low-order central places or shopping area hexagons. To determine which shopping area individuals will patronize within the nested hexagons, central place theory reveals that shoppers select the nearest outlet that carries a desired good. Given the high cost of transportation when Christaller developed central place theory, the nearest center hypothesis was reasonable.

Early Tests of The Single-Purpose/Nearest Center Postulate

Berry and his numerous coauthors are the first researchers to empirically test the single-purpose/nearest center shopping trip postulate of central place theory.⁶ Using data from rural Iowa, Berry records on manuscript maps consumer purchasing behavior for seven retail categories. Based on the question, Where do you obtain your

...? for a variety of goods and services, Berry maps a straight "desire-line" between rural residences and the central places where goods and services are purchased.⁷ Represented in this spatial format, most of Berry's initial findings generally support central place theory and the nearest center postulate.

Multipurpose Shopping Behavior

One of the most restrictive assumptions in central place theory is that the consumer always makes a single-purpose/nearest center shopping trip. Today most consumers combine shopping trips into multipurpose shopping trips to include the purchase of a variety of retail goods. To model multipurpose shopping behavior, theoreticians need to account for the probability of consumer travel to a more distant shopping center to multipurpose shop.⁸ In explaining the preponderance of multipurpose shopping, four groups of empirical studies are of particular significance. In this review, the first set of empirical papers revisits the single-purpose/nearest center postulate, the second series of papers explores the "just noticeable distance" in selecting a shopping center, a third grouping uses empirical data from Sweden and Canada to test for multipurpose shopping, and the fourth collection examines the effects of travel and storage costs on multipurpose shopping.

Berry Revisited

Golledge, Rushton and Clark's (1966) (hereafter Golledge et al.) empirical analysis of the nearest center hypothesis uses data similar to that of Berry and his coauthors, 1961 survey data from 486 farm and 115 non-farm households in southwest Iowa. Measuring the mean distance and the standard deviation to the nearest center, Golledge et al. uncover a wide dispersion of consumer travel distances. They also show, using a rank order method to determine shopping center preference, that Iowans do not always purchase a good or service at the nearest center. Although the Golledge et al. results are important in demonstrating the potential for multipurpose shopping, their results are not statistically conclusive. In a more focused study of the nearest center postulate, Rushton, Golledge and Clark (1967) demonstrate that approximately 35% of Iowans purchased goods from the nearest grocery store. Combined, these two studies tentatively demonstrate that consumers travel farther than the distance to the nearest center for some goods and services.

"Just Noticeable Distance" in Selecting a Shopping Center

The lack of conclusive empirical support for the nearest center hypothesis has led some researchers to believe that consumers may be indifferent between two shopping alternatives if the travel distance between stores is relatively small. More specifically, if the travel distance between shopping areas is less than the "just noticeable" distance (Devletoglou, 1965; Rushton, 1969; and O'Kelly, 1981), the

consumer may be indifferent between the two alternatives. To test the just noticeable travel distance, Clark (1968), Clark and Rushton (1970), and Rushton (1971) employ several different analytical techniques on the same data set, obtained from a questionnaire sent to 521 households in Christchurch, New Zealand. The households were asked to identify where they obtained six separate goods and services: groceries, meat, vegetables, dry cleaning, beauty, and banking. Based on actual distance traveled, between 47% and 63% of the respondents indicate that they traveled to the nearest center to purchase convenience goods and services. When using the straight-line distance, however, only between 21% and 39% traveled to the nearest center to purchase both convenience goods and services.

In a second study, Clark (1968), uses the same survey information from Christchurch, New Zealand but employs different methods to test the patronage of the nearest center. Clark classifies the shopping locations by the number of retail functions. The number of functions at each location are segmented into five separate categories, ranging from one to six functions for Class I central places to greater than forty-five functions for Class V central places. Since small shopping areas are more ubiquitous, it is not surprising that between 63% and 83% of all purchases at Class I and II centers were purchased by consumers who patronize the nearest center. As the number of functions at each center increase, the percent of customers using the nearest center rapidly declines for all categories of convenience goods. For level IV and level V centers, no more than one half of all shopping center trips consist of nearest center trips.⁹

Multipurpose Shopping in Sweden and Canada

More recently, both Hanson (1980) and O'Kelly (1981) extend the literature on multipurpose shopping by assessing consumer shopping behavior for both low-order and high-order shopping goods. Reasoning from the observed complexities in consumer travel behavior, Hanson rejects the single-purpose/nearest center shopping trip assumption. Her empirical analysis arises from data collected in Upsala, Sweden and shows that 61% of all shopping trips are multipurpose trips. Concurring with Hanson's findings, O'Kelly (1981) reports that 63% of grocery store shopping trips were multipurpose trips, and 74% of shopping trips for non-grocery goods were multipurpose trips for consumers in Hamilton, Ontario. The empirical research of Hanson and O'Kelly is significant to the body of literature because it definitively observes multipurpose shopping behavior.

Multipurpose Shopping with Travel and Storage Costs

In the 1970s and 1980s numerous theoretical researchers quantify the effects of travel costs on multipurpose shopping trips.¹⁰ These investigators measure total transportation costs, including both direct transportation costs (i.e., gas, oil, automobile insurance, automobile depreciation, etc.) and the time cost to the consumer, and show that multipurpose shopping trips to clustered shopping centers offer consumers lower total travel costs.

Furthering the multipurpose shopping literature, several researchers include the cost of storing goods when calculating the optimal number of shopping trips. Theoretical research by Eaton and Lipsey (1982) addresses the simultaneous problem of transportation and storage costs in multipurpose shopping trips. Extending Eaton and Lipsey's work, Ghosh and McLafferty (1984) empirically assess the trade-off between transportation costs and costs of inventory and storage. The cost of storage combines the opportunity cost of holding inventory with the physical cost of storing goods. Although the model created by Ghosh and McLafferty is tractable for minimizing the shopping costs of a two-good market, their model becomes intractable beyond three-good and four-good markets. Ghosh (1986) and Ingene and Ghosh (1990) further the literature by overlaying a spatial context on the costs of transportation and storage. To date, the inclusion of storage costs in multipurpose shopping models has theoretical support, but has not been rigorously tested.

Analysis and Summary of Central Place Theory

The seminal works of Christaller and Losch establish the theoretical foundation for the spatial organization of retail firms. The writings of these two authors have frequently been criticized for their assumption that all consumers visit the nearest shopping center while taking a single-purpose shopping trip. Although empirical research by Berry and his coauthors supports the nearest center hypothesis, empirical analysis by Golledge, Rushton and Clark, in numerous papers, questions the single-purpose/nearest center hypothesis of central place theory and the findings of Berry. The lack of strong empirical support for the nearest center hypothesis, even when a zone of indifference is included, led other researchers to further analyze the nearest center hypothesis. A decade later, Hanson (1980) and O'Kelly (1981) show that central place theory needs to include the propensity for consumers to multipurpose shop at centers that are more distant than the nearest center. Ghosh and other coauthors also empirically find that inventory costs are an important factor in determining the frequency of multipurpose shopping trips. Although central place theory establishes the theoretical foundations for the spatial organization of shopping centers, the model does not adequately capture all aspects of consumer behavior and the interrelationships among homogeneous retailers in a central shopping area.

Homogeneous Retailer Agglomeration

Retail agglomeration, which more generally includes both the heterogeneous and homogeneous clustering of retailers, is based on both central place theory and the principle of minimum differentiation.¹¹ The clustering of heterogeneous retailers can be explained in a central place framework through the reduced travel costs of multipurpose shopping, but the agglomeration of homogeneous retailers is not addressed in central place models. The principle of minimum differentiation explains the behavior of clustered merchants who sell homogeneous products (i.e., women's apparel, shoes, jewelry, hardware, etc.) at a single location or shopping center. The clustering of homogeneous retailers in a single location is also referred to as retail merchandise

attraction. Although Hotelling (1929) first introduced the concept of clustered homogeneous firms, it is Boulding (1966) who first uses the term "principle of minimum differentiation."¹² Homogeneous retailer agglomeration establishes the theoretical basis for comparison shopping at agglomerated sites.

Homogeneous retailer agglomeration provides a simple and predictable model of the clustering of retail activities, one that minimizes the complexity of spatial purchasing patterns. Allowing for the combining of similar retailers in one location, homogeneous retailer agglomeration is a necessary condition for the existence of similar retailers at one location. Maximizing consumer utility is at the heart of homogeneous retailer agglomeration.¹³

Hotelling's Theory of Homogeneous Retailer Agglomeration

Over sixty years ago, Hotelling's model revealed that two competing firms selling a homogeneous product will agglomerate in the center of a market. Prevalent theories, prior to Hotelling's classic paper, came from Cournot (1933), Edgeworth (1925) and others who maintain that all consumers patronize the lowest price merchant, and therefore, a single, low-price merchant would survive and monopolize a cluster of retailers. Differing from his predecessors, Hotelling believed that price stability could be maintained when homogeneous products or services are slightly differentiated. More specifically, Hotelling constructed a model of retailer behavior where a slight price reduction by a rival will not drive away many customers; rather, most customers prefer to conduct business with a particular merchant due to his/her mode of doing business, the quality of goods, or other non-price-oriented factors.

Hotelling's Critics

The literature published since Hotelling's seminal paper is extensive and often critical. Many have stated that the clustering of homogeneous firms in the center of a market is socially wasteful and economically unstable for retailers. When assuming both homogeneous products and homogeneous consumer tastes, theoretical researchers as early as Chamberlin (1933) and Lerner and Singer (1937) provide examples of the nonexistence of a clustered equilibrium. Chamberlin, for instance, tests Hotelling's model with three retailers in the center of the market and finds that rivals will leap-frog one another in an attempt to capture each other's customer base, and thus arrives at a dispersed equilibrium. When assuming homogeneous products and consumers, more recent studies by Eaton and Lipsey (1975), d'Aspremont, Gabszewicz and Thisse (1979), Gabszewicz and Thisse (1986) and Economides (1984) also do not find a stable clustered equilibrium.

Eaton and Lipsey's (1979) model studies consumer shopping behavior when consumers engage in comparison shopping. Assuming fixed prices and that each consumer visits two stores prior to making a purchase, Eaton and Lipsey (1979) find Hotelling's clustering socially useful because it acknowledges the consumer's desire to comparison shop. Recognizing that positive agglomeration economies exist for a pair of homogeneous firms at the same location, Eaton and Lipsey (1979) also observe that

positive agglomeration economies are exhausted when the number of firms is two. Entry of a third retailer is of no benefit to the customer. Since prices are assumed to be fixed, the third retailer only serves to dissipate retailer profits through lower sales. Under a fixed-price/two-visit model, therefore, three or more similar retailers are socially wasteful and economically undesirable, an idea that does not agree with the broader view of the principle of minimum differentiation.

Hotelling's Supporters

Differing from those who could not find a stable or non-dispersed equilibrium, Webber (1972) shows that a stable agglomerated central market does exist when uncertainty is introduced to Hotelling's model. The comparison shopping literature frequently refers to consumer uncertainty in retail models. When consumers are not certain that they will find the desired item at a particular retailer, they often reduce their uncertainty by patronizing agglomerated retail sites where they can comparison shop, thus reducing the uncertainty of finding a desired item.¹⁴

Recent research by De Palma, Ginsburgh, Papageorgiou and Thisse (1985) (hereafter De Palma et al.) shows renewed interest in modeling consumer and retailer behavior in agglomerated retail centers. Differing from earlier papers, De Palma et al. reformulate the Hotelling's model and show that the principle of minimum differentiation is maintained when consumers and retailers are sufficiently heterogeneous. Assuming sufficient heterogeneity, De Palma et al. are able to eliminate the discontinuities in the profit function that cause most other spatial models to lack equilibrium or to include multiple equilibria.

In their model, De Palma et al. integrate the relative degree of heterogeneity in both consumer taste and retail products. The greater the heterogeneity in consumer tastes, the larger the demand for slightly differing retail products. In other words, consumers are not willing to travel beyond the nearest center for a homogeneous product, but as a product becomes more heterogeneous relative to competing products, the utility of a particular product at a more distant location becomes worth the additional travel cost. The implications of minimum differentiation under sufficient heterogeneity are summarized in the conclusion of De Palma et al. (1985, p. 779): "Not surprisingly, the degree of heterogeneity required to sustain a central agglomeration increases for larger markets and higher transportation rates. This generates a trade-off leading to the clustering of firms . . ." In summary, consumers patronize shopping centers with agglomerated homogeneous retailers in order to comparison shop and reduce search costs.

Empirical Research on Homogeneous Retailer Agglomeration

The evolution of planned shopping centers has paralleled the use of the automobile and the expansion of the highway transportation routes in the United States. Consumers are willing to travel to more distant shopping centers to comparison shop at a planned shopping center, thus reducing their search costs and the risk of not finding a desired good. Stokvis and Cloar (1991) confirm the idea of reduced search

costs in an attempt to apply the innovations of suburban shopping centers to downtown shopping areas. Citing numerous search frictions including a lack of retail information, no centralized management, no controlled leasing, and sparse parking, Stokvis and Clear state that most downtown retailing is likely to remain unsuccessful because it lacks the consumer information and good comparison shopping opportunities that are frequently found in planned shopping centers.

Comparison Shopping

Although the clustering of homogeneous retailers as a response to consumers' comparison shopping has been accepted as part of conventional wisdom, until recently comparison shopping has not been part of a well-formulated economic theory of consumer behavior. Employing the principle of minimum differentiation and agglomeration economics, Bucklin (1967) categorizes comparison shopping behavior by the type of good purchased. Bucklin segments consumer goods into three separate search categories: full search, directed search, and casual search. For full search or high-order goods, Bucklin finds that the costs of transportation involved in making multiple stops at different centers often outweigh the expected price savings of the shopping experience. For full search goods, Bucklin states that "the literature of marketing probably substantially over-emphasizes the desire to save money as a basis for shopping."¹⁵

Several more recent studies measure the structural determinants of retail sales. Employing survey data collected from consumers on five regional shopping centers in Madison, Wisconsin, Nevin and Houston (1980) find that the assortment variable (i.e., variety of retail merchandise for comparison shopping) accounted for over half of all the explained variation in shopping center sales. Although Nevin and Houston show that a "special store," usually an anchor department store, creates a customer draw, they reveal that the assortment variable exhibits a strong influence on the consumers' level of "liking" a shopping area. Hise, Kelly, Gable and McDonald (1983) confirm the findings of Nevin and Houston, demonstrating that the number of secondary competitors in a shopping center is positively correlated and significant in determining the income of a shopping center and the rate of return on assets.

In a 1984 paper, Ingene investigates the effects of household characteristics on retail sales. After obtaining poor predictive results from testing the effects of household characteristics on retail sales, Ingene added several additional variables to his retail expenditures model, including: shopping assortment, service quality, service quantity, store density, and atmospherics. Thirteen independent variables are tested against the dependent variable, retail expenditures, for eight different types of retail merchandisers: apparel, department, drug, furniture, general merchandise, grocery, hardware, and variety stores. Out of the thirteen independent variables, retail assortment is the only variable that is positively correlated and significant over all merchandise categories, a finding that clearly reveals the importance of assortment or comparison shopping in the consumer's decision to select a shopping location. Weisbrod, Parcels and Kern (1984) also find the number of stores, and in particular the number of clothing stores, to be an important determinant in a shopping center selection decision.¹⁶

The increased centralization of shopping opportunities in a clustered center increases the drawing power of a shopping center. The empirical evidence has shown that

consumers will bypass the closest shopping alternative to comparison shop at a more distant shopping center that houses a sufficiently large number of similar store retailers.

Planned Shopping Centers

A well-planned shopping center with a desirable tenant mix can also create agglomeration economies for the non-anchor tenants. In fact, shopping center developers select, through active centralized management, an appropriate set of anchor and non-anchor tenants for a given market profile. The contribution of centralized management to a planned shopping center is explored in depth in an article by West, Von Hohenbalken and Kroner (1985) (West et al. hereafter), using the theoretical framework forwarded by Eaton and Lipsey (1982). Eaton and Lipsey show that planned shopping center developers restrict the entry of low-order, convenience retailers to one per merchandise type. By restricting the entry of low-order retailers who often sell the same merchandise, shopping center developers prevent head-on price competition. Shopping center developers also enhance comparison shopping opportunities by including numerous homogeneous high-order retailers in the shopping center tenant mix.

Highlighting the importance of tenant mix in planned centers, West et al. argue that developers/owners of planned centers optimize both the tenant mix of a center as well as the location of the tenants within a center. Testing for the significance of tenant mix in planned versus unplanned shopping centers, West et al. analyze the tenant make-up of shopping centers in Edmonton, Alberta. Using a Wilcoxon rank-sum test for matched samples, West et al. prove, with a 99% level of significance, that planned shopping centers differ from unplanned centers in the type of tenants that each of the centers attract. More specifically, West et al. show that retailers depend on the appropriate level of homogeneous retailer agglomeration with limits placed on the amount of low-order retailer replication. Supporting the findings of West et al., Gautschi (1981) concludes that planned and unplanned centers are not similar retailing units, based on an empirical analysis of retail patronage in the San Francisco Bay area.

Observations about Homogeneous Retailer Agglomeration

Homogeneous retailer agglomeration is the clustering of similar retailers in a single location or shopping center. This agglomeration is dependent on the reduction of risk and search costs through more information and through comparison shopping opportunities. Comparison shopping is enhanced when shopping center developers construct an optimal mix of low-order and high-order retailers. Thus homogeneous retailer agglomeration explains, in part, why large regional and super-regional shopping centers have been so successful in the U.S. over the past several decades.

Retail Demand Externalities

Proponents of retail demand externalities believe that in large shopping centers, low-order good retailers and smaller retailers receive demand externalities from the

additional traffic that is generated by high-order anchor retailer(s).¹⁷ The retail sales of smaller non-anchor tenants increase when an anchor tenant retailer is present in a shopping center.¹⁸ According to Ingene and Ghosh (1990), demand externalities flow only in one direction from anchor tenants to non-anchor tenants. Different from the homogeneous retailer agglomeration benefits discussed in the prior section, where similar retailers benefit from the two-way flow of customers, retail demand externalities are a one-way customer draw from anchor tenants to non-anchor tenants.¹⁹

The customer draw of anchor tenants is primarily dependent on the retailer's image. Favorable retailer image, which results principally from factors under the chain's control, can draw customers from greater distances.²⁰ The superior image and tenant mix of a planned shopping center provide a convenience that in a few years can upset long-established patterns of retail dominance.²¹ In particular, it is the image of an anchor tenant(s) that draws customers away from other centers and creates demand externalities for the smaller non-anchor stores. Martineau (1958) defines the intangible traits that constitute a store's image as the store's personality that is formed in a shopper's mind. Although Martineau finds that retailers are often concerned with the tangible factors of location, price and merchandise, the intangible aspects of retailer image clearly play an important role in attracting customers to a particular store. Because no one particular image has an equal appeal to all types of customers, successful shopping center developers must select the type of retail image that best fits the type of customer base in an area.²²

Empirical Evidence of Retail Demand Externalities

In a study measuring the image of different supermarket chains, Stanley and Sewall (1976) conducted personal interviews with ninety-three women on supermarket preferences. Using a variation of Huff's (1964) gravity model to measure customer patronage, where customer utility is represented by square feet of shopping area and customer disutility is represented by distance, Stanley and Sewall add a supermarket image variable that is not included in Huff's model. Prior studies by Doyle and Fenwick (1974-75) and Marcus (1972) show that shoppers compare stores using several criteria other than distance and size, which include quality, cleanliness, location, price, friendliness, and variety. Consumer perception of a chain's personality influences patronage decisions. In their analysis of supermarket customer draw, Stanley and Sewall (1976, p. 52), conclude that "stores whose chains have strong favorable images can draw customers from longer distances than can similar-sized stores representing a chain that is perceived as mediocre." Although image is difficult to quantify, it clearly has a potentially large effect on the size of a shopping center's market.

Expanding on the survey work completed by Stanley and Sewall, Nevin and Houston (1980) completed an empirical analysis of the effects of shopping center image and tenant mix. The study uses responses from a customer survey questionnaire mailed to 2,000 homes. Nevin and Houston reveal that anchor department stores are an important shopping center draw, and possibly the primary reason for choosing a shopping area. Nevin and Houston also claim that mall tenant mix is important to the overall enjoyment level of the shopping center experience. These results are consistent

with Anderson (1985), who found that anchor department stores are an important determinant of women's apparel sales.²³

Eppli (1991) further extends the research of Nevin and Houston (1980) and Anderson (1985) by theoretically modeling and empirically testing the effects of anchor tenant size and image on non-anchor tenants in regional shopping centers. Employing an extensive database of fifty-four regional shopping centers with 4,513 non-anchor tenants, Eppli analyzes the externality effects of anchor tenants on non-anchor tenants in regional shopping centers. For shopping centers with high fashion image anchor tenants, non-anchor tenant sales increase by \$35 to \$123 per square foot. Applying a market expansion potential model to the same database as that of Eppli (1991), Eppli and Shilling (January 1993) test for the effects of anchor tenant size on nine different retailer merchandise types. Regional shopping centers with greater quantities of space devoted to anchor tenants have higher non-anchor tenant sales for eight of the nine merchandise types, with an average increase in sales of \$83.00 per square foot for centers with a higher concentration of anchor tenants.²⁴

Brueckner (1993) also develops a model to resolve the dilemma of space allocation between anchor and non-anchor tenants for shopping centers with inter-store externalities. Assuming that a particular store's sales are a function of its own space as well as the space of other retailers, Brueckner's model shows that a shopping center owner or manager will allocate space to various tenants so as to maximize the shopping center's profit (i.e., total rent minus the center's operating costs). Benjamin, Boyle and Sirmans (1992) empirically demonstrate that both anchor and non-anchor tenant externality generators pay reduced shopping center rents for their ability to draw customers to a center. Fisher and Yezer (1993) assess the determinants of shopping center sales by modeling competition in a spatial context that includes retail demand externalities. Like other researchers, they believe that tenant mix demand externalities increase the distance that consumers are willing to travel to shop at a center with a desirable mix of tenants.

The customer draw of a shopping center may also be affected by physical aspects of a center. Ordway, Bul and Eakin (1988) analyze the street visibility of fifty-four neighborhood shopping centers in Arlington, Texas and find that there is a relationship between shopping center visibility and shopping center vacancy rates. Green and Bull (1992) survey shoppers to estimate the value of parking spaces in retail properties. Not surprisingly, they find that parking stalls directly in the front of a shopping center are more valuable to a shopper than parking stalls located in the rear of a center.

Observations about Retail Demand Externalities

Historically, the explanation for bypassing the nearest center to shop at a more distant center has been attributed to the transportation cost savings from a combined multipurpose shopping trip, or possibly from the opportunity to comparison shop at an agglomerated center. Recent research has shown that the image of a particular anchor tenant in a shopping center is also important in the customer selection of a retail shopping area, and thus, can be a meaningful customer draw to the non-anchor tenant. More specifically, a supermarket or an anchor department store with a positive image can draw customers from greater distances to shop at a particular center and in

the process create a significant demand externality for the non-anchor tenants in the center through the increased consumer flow. Over the past decade, the empirical support for retail demand externalities in planned shopping centers has continued to grow.

Shopping Center Valuation

Shopping centers are valued based on an estimate of current and future cash flows. Cash flow estimates come from two primary sources: lease contracts and expected lease contracts. Existing shopping center leases usually have three areas of potential revenue. First, there is a minimum rent provision that requires that tenants pay a certain rent amount regardless of sales. Second, most retail leases include an overage or percentage rent provision. Tenants must pay an overage rent when sales exceed a predetermined amount. Overage rent is based on a percentage of sales, which usually ranges from 1% to 10%. The third area of potential lease revenue is from expense pass-throughs. In most retail leases the tenant is responsible for its pro-rata share of the shopping center operating expenses, an amount that is passed through by the owner and paid for by the tenant. In addition to the income from signed lease agreements, shopping center valuation also includes the expected rent from future leases on the retail space after the existing lease expires. Thus the valuation of shopping centers is based on the present value of both the existing lease payments and the expected stream of cash flows from future lease agreements.

Shopping center leases in many ways are similar to financial leases. Financial leases are generally long term and are used as a source of financing.²⁵ Financial theorists have developed substantial literature on leasing.²⁶ The bulk of their efforts, however, concentrate on the lease-versus-purchase decision.²⁷ These authors commonly employ net present value (NPV) analysis to determine whether or not there exists a net advantage to leasing when making a lease-versus-purchase decision. Although the lease-versus-purchase decision is not of direct interest to this paper, this early lease valuation research establishes the theoretical foundations for McConnell and Schallheim's (1983) paper on Equilibrium Lease Payments (ELPs), which serves as the theoretical basis for many retail lease decisions.

The Equilibrium Lease Payment

McConnell and Schallheim (1983) develop a method for estimating the ELP, which is the long-run, risk-free lease payment. Their work is significant, because, before a specific lease provision or option can be valued, the risk-free, option-free lease payment must first be calculated. Once the risk-free ELP is determined, McConnell and Schallheim use a compound options framework to value the renewal options in long-term, non-cancelable financial leases. Although McConnell and Schallheim estimate the value of financial leases, not real property leases, their methods can easily be applied to real property leases.

Lease Valuation and Lease Provisions

In the valuation of a lease contract, typically contractual lease provisions are taken to be exogenous to the lease-versus-purchase decision. Nevertheless, Smith and Warner (1979), Myers (1977), and others indicate that provisions in contracts similar to leases, such as bond indentures, affect the nominal contracting costs and thus the rate charged.²⁸ Further, Smith and Wakeman (1985) suggest that contractual provisions in leases help to determine lease rates.

Smith and Wakeman (1985) investigate the non-tax determinants of lease structure by reviewing the role of late payment fees, security deposits, cancellation clauses, and sub-lease restriction provisions in the pricing of financial leases. Observing that lessees have little incentive to maintain their leased property because they have no claim on the residual asset's value, Smith and Wakeman suggest that assets that have a specific use create contracting costs. These contracting costs arise from conflicts between the lessor and the lessee and are reflected in negotiation, administration and enforcement costs.

Emphasizing the competitive nature of leasing markets, Miller and Upton (1976) show that the equilibrium rental payment on a single-period lease depends on the characteristics of the asset being leased and on aggregate asset market conditions, but is independent of lessee characteristics. Extending Miller and Upton's analysis intertemporally, McConnell and Schallheim (1983) demonstrate that the equilibrium rent depends on the provisions contained in the lease contract. Schallheim, Johnson, Lease and McConnell (1987) (hereafter Schallheim et al.) argue that rent should also depend on the lessee's financial condition because this presumably reflects the probability of default, but they find little evidence to support this prediction when it is tested against actual rents for a range of leased assets. Schallheim et al. do, however, find some evidence supporting the predictions of Miller-Upton and McConnell-Schallheim. Chiang, Lai and Ling (1986) apply the contingent claims analysis of McConnell and Schallheim to value retail leasehold interests by analyzing both base lease payments and percentage lease payments, but neglect the spatial aspects of leases and the valuation of lease provisions.

Miceli and Sirmans (1992) examine landlord/tenant leasing arrangements and inter-store demand externalities in shopping centers. The success of a shopping center depends on inter-store externalities or the extent to which tenants can generate sales from other tenants' customer traffic. Miceli and Sirmans reveal how the combination of base plus an overage rent induces tenants to internalize the inter-store externalities. These authors view the leasing of shopping centers as an example of a common agency problem where multiple interdependent principals (the tenants) coordinate their behavior through a common agent (the landlord).

Evidence on Leasing and Lease Provision Valuation

Financial lease empiricists have not been quick to follow the financial theorists. Copeland and Weston (1988, p. 632) observe that there is "scant" empirical literature on leasing or leasing-related issues. According to Schallheim et al. (1987), theoretical research on leasing has proceeded more rapidly than empirical work because data on leasing arrangements is not easily obtainable. The authors point out, however, that the

role of transaction, information, and search costs, along with default risk must be considered when valuing leases. In support of this realization, the researchers show that their proxies for transaction and search costs are statistically significant while default risk proxies have mixed outcomes.

Schallheim et al. test the hypothesis of Miller and Upton (1976) and McConnell and Schallheim (1983). They investigate whether the yields of financial leases are a function of the risk-free interest rate and the discounted value of the nondiversifiable risk of the asset's residual value. Using a sample of 363 financial leases originated from 1973 through 1982, the authors find results consistent with their hypotheses.

Although there has been little other empirical analysis of financial lease provisions, there has been recent interest in empirically testing retail lease provisions. Benjamin (1988) extends the financial lease literature into the shopping center arena. Employing a data set of 103 retail leases from five neighborhood shopping centers in Greensboro, North Carolina, Benjamin estimates hedonic price equations using Schallheim's equilibrium lease payment model. Estimating the value of lease provisions to explain retail rent rate variation, Benjamin tests the significance of retail lease provisions. One of the more significant variables in Benjamin's hedonic model is a shopping center customer draw variable, which indicates that low-order, convenience retailers are willing to pay a rental premium to locate in planned shopping centers.

Following Benjamin's initial work, Benjamin, Boyle and Sirmans (1990) test the rent trade-off between base rent and percentage (or overage) rent. Benjamin et al. regress base rents on percentage rents, threshold sales levels (the critical sales level beyond which a lessee pays a percentage of sales rent), and a number of other factors that their model suggests might be important in determining base rents. The empirical model finds that base rents are negatively related to percentage rent rates and positively related to threshold sales levels, suggesting that shopping center leases requiring high (low) base rents specify low (high) percentage rent liabilities.

Benjamin, Boyle and Sirmans (1992) develop a simple model of shopping center rent determinants for homogeneous retailers in an imperfectly competitive market. The model predicts that landlords use lessee characteristics, such as default probability and customer traffic-generating potential, to set lease rental rates in a discriminatory manner. Empirical evidence by Benjamin, Boyle and Sirmans supports the existence of price discrimination in shopping center leases. Differences in lease provisions, however, do not appear to explain the lower rents paid by tenants favored by price discrimination (national and local chain stores), but are of importance for setting the rental liability of other tenants (independent stores).

Sirmans and Guidry (1993) investigate the determinants of shopping center rents by using data from Baton Rouge, Louisiana. Variables representing customer drawing power such as leasable area, center age, building design, type of anchor, as well as center location and general economic conditions are demonstrated to influence tenant rent in a positive and significant manner.

Generally speaking, empirical research on shopping center leasing behavior has revealed rational retailer behavior. First, low-order retailers are willing to pay a premium to locate in planned shopping centers with high-order retailer customer draw. Second, empirical results suggest that retail tenants are willing to trade off percentage rent for base rent payments. Third, physical building characteristics are important in establishing retail rental rates.

Business Value in Shopping Centers

In recent years, there has been a sizable interest in the possibility of business value in regional shopping malls.²⁹ Business value is broadly defined as intangible asset value that is not attributable to the site and structure. Highlighting the importance of the allocation of business value and real property value in regional shopping centers, in 1990 three super-regional shopping center assessments in the Milwaukee metropolitan area were challenged on the basis that the tax assessor included business value in the real property assessment. Also, in recent procedural mandates and guidelines, both the federal government and the appraisal organizations have recognized the problem of including business or intangible asset value in real property appraisals.³⁰ This section examines the allocation of value in shopping centers to real property value and to business value.

Babcock (1932) was one of the first researchers to recognize the need to distribute value in real estate enterprises to both real estate and an operating business.³¹ In 1932, Babcock delineated methods for valuing and distributing income between an operating business and real estate. Babcock first recommends using the cost approach to determine the underlying value of the real property. Then to determine the intangible or business value of a property, the value of the real property is subtracted from the value of the total real estate enterprise, the residual being the business value component.

Fisher and Kinnard (1990) and Fisher and Lentz (1990) cite Babcock in stating the need to separate business value and real estate value. The term *business value* has been used as a "catch-all" term that includes all intangible asset value in many different types of real estate enterprises.³² In other words, business value is value in excess of the contribution made by tangible real property³³ and includes value from entrepreneurial profit,³⁴ going concern,³⁵ and goodwill.³⁶ Fisher and Kinnard identify several specific sources of potential business value including operating agreements,³⁷ tenant mix,³⁸ promotional acumen,³⁹ and profit from the sale of utilities.⁴⁰ Because intangible asset value represents the residual position in the valuation of operating real estate enterprises,⁴¹ Fisher and Kinnard recommend that the residual value be allocated to business value, not to the land as has traditionally been the case with municipal assessors. Since the entrepreneurial component bears a considerable portion of the risk in the development and the operation of a real estate enterprise, Fisher and Kinnard believe the entrepreneur, not the land, should receive the residual value of the enterprise.⁴² The American Institute of Real Estate Appraisers's (1987) text, *The Appraisal of Real Estate*, supports Fisher and Kinnard, recognizing that land no longer maintains a residual position and stating: "Land has first claim to any income generated by the property and has priority over any return on the improvements."⁴³

Kinnard (1990) also submits that business value exists in planned shopping centers, although his approach to measuring business value is different from that of Fisher and Kinnard (1990). Kinnard measures business value by fine-tuning each of the three approaches to value and attributes a portion of each of the three valuation methodologies to business value. Critically reviewing the appraisal process, he finds that oftentimes the appraiser naively includes business value in the appraisal of real property.⁴⁴ In a recent paper examining the critical importance of management expertise to the success of a shopping center investment, Gelbtuch (1989) argues that the value of management expertise should be capitalized separately from the real estate.

Attempting to empirically measure business value, Fisher and Lentz (1990) compare the renewal rents of existing tenants with the rent paid by new tenants. Fisher and Lentz hypothesize that if existing tenants are willing to pay more rent than new tenants, then the rent premium existing tenants are willing to pay over new tenant rents is a rent premium for a well-managed center, and thus attributable to management expertise, not the land. Studying three regional malls over a period of three years, Fisher and Lentz compare forty-two lease renewals with fifty-nine new tenant leases. After regressing the log of rents on six predictor variables (four of them dummy variables), they reveal that existing tenants pay 13.6% higher rents than new tenants and conclude that this finding substantially supports the idea of a business value in regional shopping centers.

Eppli and Shilling (April 1993) extend the research of Brueckner on inter-store externalities. They first determine the optimal space allocation and revenue structure in a shopping center without the existence of anchor tenant externalities and then determine the space allocation and revenue structure with anchor tenant externalities. They find that profit is maximized when inter-store externalities are optimized. Additionally, Eppli and Shilling find that anchor tenant externalities are likely to be captured by the developer.

The research on business or intangible asset value is in its infancy. Although Babcock recognized some of the problems of separating business value and real property value over fifty years ago, only recently has the literature directly addressed this problem. Because economists no longer recognize developable land as the residual form of production, another form of production must be capturing the residual value in shopping centers. Several researchers have theoretically and empirically tested for the existence of business value in shopping centers with findings that support the need to allocate real estate enterprise value to its component parts: business value and real property value.

Summary and General Observations

Retail research has evolved over the past sixty years. So too have shopping behaviors. Christaller's single-purpose/nearest center shopping trip has evolved into a multipurpose trip at a distant, agglomerated shopping center. Hotelling's work on competition in a spatial duopoly has been realized in the form of numerous homogeneous retailers in a single regional shopping center. The literature that has followed Christaller and Hotelling has been both broad and deep, including literature in geography, economics, finance, marketing, and real estate.

The early literature on central place theory, with its simplistic combination of range and threshold, has been advanced to include complex consumer shopping patterns and retailer behavior in shopping centers with retailer agglomeration. The ubiquity of the automobile and the mobility of the consumer, has brought with them new research challenges that include such issues as transportation costs to more distant agglomerated centers and costs to consumers of storing purchased goods. From the early desire-line maps of Berry to the theoretical findings of Eaton and Lipsey, research on the spatial behavior of both consumers and retailers has extended and expanded the theory of central places. Future research on central place theory will be greatly

enhanced by geographic information systems and other advances in spatial decision-making.

While the central place literature has advanced the understanding of the agglomeration of heterogeneous retailers, central place theory does not explain the clustering of homogeneous retailers. Prior to Hotelling (1929), the agglomeration of similar merchandise type retailers in the center of the market was criticized as socially wasteful. Even after Hotelling, most economists dismissed Hotelling's model as highly stylized. Over the past thirty years, literature on information costs, search costs, and uncertainty costs has proliferated in the economic journals. When these costs are included in consumer shopping patterns for the purchase of high-order goods, the clustering of homogeneous retailers has been justified as socially useful. The comparison shopping literature, which is primarily found in marketing journals, originated from the economic and economic geography literature. The clustering of homogeneous retailers increases the selection of a particular merchandise type, thus reducing both search and uncertainty costs. The costs of information are also reduced at planned shopping centers where retailer names and locations are clearly displayed. As comparison shopping is now firmly entrenched in the literature, future researchers will likely attempt to isolate the effects of information costs, search costs, and uncertainty on consumer and retailer behavior.

In combination, the extensions of the comparison shopping literature and central place theory have clearly furthered the understanding of both retailer and consumer behavior, but numerous researchers recently assert that large anchor tenants often positively effect smaller non-anchor tenants. This most recent focus of the retail literature has been on retail demand externalities. To date, most of the research on retail demand externalities has attempted to measure the effect of large anchor tenant customer draw on the smaller non-anchor tenant sales. In determining the origins of retail demand externalities, both the size of the anchor tenant and anchor tenant image emerge as important to customer draw. Although anchor tenant size is easily determined by square feet occupied, measuring the image of anchor tenants has been difficult. As consumer preferences change from market to market, anchor tenant image also must change. Additionally, some researchers have also begun to explore the possibility of non-anchor tenant customer draw. These theoretical and empirical findings which support retail demand externalities provide a base for the further modeling of shopping center location and tenant mix.

Exploring the theoretical basis for the valuation of shopping centers, we find that shopping center value is clearly based in the present value of current and future lease obligations. The financial lease literature provides the basis for determining the value of both the risk-free, equilibrium lease payment and the value of retail lease provisions. Recent empirical analysis of shopping center leases has focused on the effects of homogeneous retailer agglomeration and anchor tenant externalities. Of particular interest to some researchers is the study of business value or an intangible asset value in shopping centers. The business value component emanates from the enhanced value of a shopping center resulting from a superior tenant mix, excellent management, and other non-site-specific factors. Early empirical results on the existence of business value in shopping centers provide a foundation for future research.

Over the past century retailers have gone from the general store, to the central city, to suburban shopping centers. Similarly, consumers have traded in the horse and

buggy for mass transit, and they currently rely on complex roadway systems to travel to a wide range of retail outlets. Researchers have attempted to explain the ever-increasing complexity of retailer and consumer behavior in a discussion of a range of shopping center issues. Future shopping center research will continue to refine the established theoretical foundations of central place theory and the clustering of homogeneous retailers to include an ever-increasing diversity of human behavior. The recent focus on retail demand externalities and shopping center valuation undoubtedly will proliferate as shopping center development continues to undergo a metamorphosis.

Notes

¹Garrett, Hogan and Stanton (1976)

²Christaller (1966) translates the original book titled *Die Zentralen Orte in Sudddeutschland*.

³For more on the retail location process see Craig, Ghosh and McLafferty (1984) and Vandell and Carter (1993).

⁴Losch (1954).

⁵Berry and Garrison (1958).

⁶Berry and Garrison (1958), Berry and Barnum (1962), Berry, Barnum and Tennant (1962), and Berry (1967).

⁷Berry (1967, p. 10).

⁸Curry (1967), Parr and Denike (1970), O'Kelly (1983), Mulligan (1983a, 1983b), Kohsaka (1984), Ingene (1984b), Thill (1985) and Storbeck (1990).

⁹This result may explain why the large shopping mall has been so successful in the U.S. over the past several decades.

¹⁰See Bacon (1971), Bell, Lieber and Rushton (1974), Lentnek, Harwitz and Narula (1981), Bacon (1984), Mulligan (1984a, 1987), and Mulligan (1987).

¹¹Different from Brown (1989), who views the principle of minimum differentiation and agglomeration economies as separate concepts, we find the basis for retail agglomeration and the principle of minimum differentiation inseparable.

¹²Boulding (1966, p. 484) writes that, "The general rule for any new manufacturer coming into an industry is: 'Make your product as like the existing products as you can without destroying the differences'."

¹³See Mulligan (1984a) and Brown (1989) for a review of the agglomeration literature. Several theoretical papers on agglomeration include Papageorgiou (1979), Pascal and McCall (1980), Goldstein and Gronberg (1984), and Hall (1989).

¹⁴See Stigler (1961), Nelson (1970), Lippman and McCall (1979), Hart (1980), Diamond (1982), Stahl (1982), and Benjamin and Lusht (1993) for an overview of the economics of consumer search.

¹⁵Bucklin (1967, p. 41).

¹⁶Also see Cottrell (1973), Davies (1973), and Ingene and Yu (1981).

¹⁷In his classic text book, *Economics*, Samuelson (1976, p. 449) defines an external economy as a favorable effect on one or more persons or firms that comes from the action of a different person(s) or firm(s).

¹⁸Ghosh (1986, p. 91) defined the one-way customer draw of the anchor tenants to the non-anchor tenants as follows:

“Realizing that the low-order store benefits substantially from associating with it [the high-order store], the high-order store may claim part of the excess revenue [to the low-order firms] as subsidies or side payments [to the high-order firms]. In practice such side payments often take the form of rental subsidies. Developers of shopping centers offer land parcels to high-order stores—typically “anchor” department store—at rates substantially less than those available to lower-order stores.”

¹⁹For an analysis of the determinants of department store sales, see Ingene and Lusch (1980).

²⁰See Nelson (1958), Marcus (1972), Doyle and Fenwick (1974–75), and Stanley and Sewall (1976).

²¹See Thompson (1976, p. 43).

²²See Rich and Portis (1964).

²³For supporting anecdotal evidence of anchor tenant draw see Trachtenberg (1990). For anecdotal evidence rejecting anchor tenant customer draw see Schwadel (1990).

²⁴See the Urban Land Institute (1990, 1985) for an overview of the shopping center development process and shopping center sales and operating costs; also see Martin (1985) and Whaley (1990) for an analysis of regional shopping center development potential.

²⁵Financial leases are also known as capital or full payout leases.

²⁶Ang and Peterson (1984); Bower (1973); Brealey and Young (1980); Copeland and Weston (1982); Lewellen, Long and McConnell (1976); McConnell and Schallheim (1983), Miller and Upton (1976); Myers, Dill and Bautista (1976); Schall (1974, 1985, 1987); Schallheim, Johnson, Lease and McConnell (1987); Smith and Wakeman (1985); and Weingartner (1987) are some of the researchers who have analyzed leasing practices.

²⁷For a review of the lease-versus-purchase literature see Johnson and Lewellen (1972); Schall (1974); Gordon (1974); Miller and Upton (1976); and Kim, Lewellen and McConnell (1978).

²⁸Although a long-term lease is similar to secured debt in a number of ways, it also differs. In the event of default, a secured creditor has a claim on the defaulting firm’s other assets while a lessor’s claim on the defaulting lessee is usually limited to one year’s lease payments (see Brealey and Myers (1988), p. 632). Additionally, if the lessee defaults or declares bankruptcy, it is easier for the lessor to acquire possession of the leased asset than for a creditor to regain the collateral.

²⁹The ULI (1985) defines regional shopping malls as a shopping center with one to two full-line department stores and also providing a full range of specialty stores. Similarly, a super-regional shopping mall has an extensive variety of specialty stores, but is built around three or more full-line department stores. The terms *regional shopping malls* and *super-regional shopping malls* will be used interchangeably in this paper as they are similar in function.

³⁰See American Institute of Real Estate Appraisers (1985), Appraisal Foundation (1985), Federal Home Loan Bank Board (1986), and Fisher and Webb (1992).

³¹A real estate enterprise is any site where income is produced jointly by the real estate and a business.

³²Business value is thought to exist in many different real estate uses, including: hotels (Rushmore and Rubin, 1984; Rushmore and Arasi, 1986; and Nelson, Messer and Allen, 1988; congregate care facilities (Brown, 1987); and campgrounds (Keesey, 1984).

³³See AIREA (1983, p. 61), *The Appraisal of Real Estate*, which states: “A parcel of real estate that supports a business may have a value in excess of the contribution made by its assets.”

³⁴See Acolia (1984) for further discussion on the entrepreneurial profit factor in real estate enterprises.

³⁵See Gomes (1988). In an article defining goodwill and going concern value he states: “Going concern value, in contrast to goodwill value, represents the incremental value of the firm’s assets that accrues as a result of the configuration of those assets into a productive operating system.” Going concern value is also defined in *The Appraisal of Real Estate* (1987, p. 22), as: “Going

concern value is the value created by a proven property operation; it is considered a separate entity to be valued with an established business. This value is distinct from the value of the real estate only”

³⁶Weygandt, Kieso and Kell (1987) define goodwill as “the value of all favorable attributes that relate to a business enterprise. These include exceptional management, desirable location”

³⁷McElveen and Diskin (1990, p. 2) state that: “it is the agglomeration economies, which are partially created by the operating agreement, that is the heart of the earning capability of a mall and, therefore, its value.”

³⁸Garrett, Hogan and Stanton (1976) view a shopping center as a merchandising venture.

³⁹Graaskamp (1981).

⁴⁰Graaskamp (1981) discusses the income attributable to entitlements and permits. For example, the mall owner may have the right to purchase electric power for the mall at wholesale prices and resell the electricity at retail to the mall tenants.

⁴¹Desmond and Kelley (1977), Ch. 9, use the residual approach, or the difference between the purchase price and the total cost of identifiable assets, as the method for valuing intangible assets.

⁴²Samuelson (1976) in Chapter 28 concludes that: “The same general principles determining land rent also determine the prices of all inputs” As such, the supply curve for land prices is positively sloped and not vertical (inelastic). Therefore, land does not receive pure economic rents and is not the residual.

⁴³American Institute of Real Estate Appraisers (1987, p. 300).

⁴⁴Gossett (1984), Beebe (1988), Lafakis (1988), and Wood (1988) review numerous legal cases outlining the many problems with shopping center and department store assessments.

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