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I am submitting herewith a dissertation written by Donald W. Buckwalter entitled "Geographical Changes in the Retail Structure of Medium-Sized Metropolitan Areas, 1958-1982." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Geography.

Charles S. Aiken, Major Professor

We have read this dissertation and recommend its acceptance:

Accepted for the Council:

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Dean of The Graduate School

GEOGRAPHICAL CHANGES IN THE RETAIL STRUCTURE OF MEDIUM-SIZED METROPOLITAN AREAS, 1958-1982

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee, Knoxville

Donald W. Buckwalter

June 1988

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ABSTRACT

The purpose of this study is to analyze alterations in the retail structure of medium-sized metropolitan statistical areas (MSAs) between 1958 and 1982. Medium-sized metropolitan statistical areas (MSAs) are ones with populations between 250,000 and 1,000,000. The major hypotheses of the study are that differences exist among metropolitan areas in types of retail structure and that dominant new retail districts have replaced central business districts as the foci of retail sales.

Factor analysis of data from the Census of Population and Census of Retail Trade for ninety-two medium-sized MSAs identifies five types of retail structure: 1) central business district maintained, 2) major retail center dominated, 3) dispersed within a central city, 4) multiple central city, and 5) low centralization. Internal characteristics of retail structure are examined in a sample MSA of each type. The sample MSAs are Montgomery, Knoxville, Chattanooga, Greensboro/Winston-Salem/High Point, and Greenville/Spartanburg.

Large retail districts are the appropriate units for analysis of retail structure because they are more inclusive than shopping centers or retail areas identified by the Bureau of the Census. A large retail district is defined as an area of contiguous retail land use that

contains at least twenty-five stores and is connected by at least one arterial street.

The outcome of competition among retail districts in medium-sized MSAs is determined by decisions of customers and investors. Site, neighborhood, and trade area characteristics influence the decisions. Competition among retail districts tends to decentralize retail structure while planning decisions of developers and public officials tend to centralize it. Retail sales are centralized in a dominant retail district in central business district maintained and major retail center dominated MSAs. In the other three types of MSAs, retail sales are decentralized among several districts that have a limited range of goods and services. Both centralized and decentralized retail structure in medium-sized MSAs differ from the polycentric models proposed by scholars for large MSAs. Decentralized retail structure is prevalent in nine eastern states and is associated with fragmented political structure.

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CHAPTER I

INTRODUCTION

Each American metropolitan area has a complex landscape of commercial activities, including service functions, wholesale trade, and retail trade. In the consumer-oriented economy of the United States, patterns of retail trade indicate both the economic prosperity and social character of metropolitan areas. Retail trade controls access to goods by consumers, draws money to cities from outlying areas, creates employment, and influences the function and appearance of the metropolitan landscape.

Retail establishments are ubiquitous and often dominant components of metropolitan commercial landscapes. They tend to be grouped in concentrations called retail districts that vary in volume, physical condition, and functional mix. Volume is the total retail sales in the district; physical condition is the appearance and utility of buildings, landscaping, and transportation facilities; and functional mix is the number and sales of different types of stores. The distribution of these characteristics is referred to as metropolitan retail structure in this study. Physical condition and functional mix help determine the economic and social status of a retail district. They reflect not only the range of services that are provided but also the quality of those services.

Volume is also an important measure of the success of a retail district. The distribution of retail sales affects the distribution of employment, real estate values, and tax revenues within a metropolitan area.

Metropolitan retail structure is studied at two geographical scales: an internal one dealing with intra-metropolitan comparisons and an external one dealing with inter-metropolitan comparisons. Characteristics of the retail districts within individual metropolitan areas are studied at the internal scale. Differences among retail districts result from age, nature of clientele, and investment decisions by business leaders and public officials. Differences among metropolitan areas in the patterns of distribution of retail sales are studied at the external scale. The study of retail structure at this scale reflects the development history, political structure, and prosperity of a metropolitan area relative to others in the national urban system.

Geographers recognize the forces that have affected metropolitan retail structure in the second half of the twentieth century: decline of central business districts, growth of outlying retail districts, and adaptation to the morphology of modern freeway transportation. The main purpose of this study is to classify the spatial forms of medium-sized metropolitan areas that have resulted from those forces. A second purpose is to analyze the internal

characteristics of the metropolitan areas.

Metropolitan statistical areas (MSAs) are official delineations by the United States Bureau of the Census that are composed of a county or group of counties, except in New England where towns are the political units of aggregation. They are designed to encompass a city or group of cities, called central cities, and surrounding territory determined to have close economic ties with the central cities.(United States Bureau of the Census 1983, p. A-3) Large MSAs have populations over 1,000,000 while small ones have populations under 250,000. Medium-sized MSAs are those with populations from 250,000 to 1,000,000. Of 318 MSAs recognized at the time of the 1982 Census of Retail Trade, 113 fell into this size class.(Table 1.1) They contained 23.3 percent of the nation's population in 1980: a large enough portion to merit consideration. They also grew faster than the national average during the decade from 1970 to 1980: 13.3 percent compared with 11.4 percent.(United States Bureau of the Census, 1983 and 1984b)

Ninety-two of the 113 medium-sized MSAs are used in this study. Twenty-one of the 113 were eliminated from consideration for a variety of reasons. Most of the twenty-one metropolitan statistical areas eliminated were actually components of large metropolitan areas. These situations were identified by census delineations of

Table 1.1. Population of All Metropolitan Statistical Areas and Medium-Size Class

	Number	1980 Population (millions)	Percent Change in Population 1970-80	Percent of United States Population 1980
All metropolitan statistical areas	318	169.4	10.2	74.6
Medium-size:				
250,000-1,000,000	113	53.0	13.3	23.2
Selected for study	92	42.7	14.5	18.8

Source: United States Bureau of the Census, Statistical Abstract of the United States: 1985, 105th ed. (Washington, D.C.: U.S. Government Printing Office, 1984.

consolidated metropolitan statistical areas (CMSAs) in 1983. A consolidated metropolitan statistical area consists of two or more smaller components referred to by the census as primary metropolitan statistical areas. Seventeen primary metropolitan statistical areas were eliminated from consideration. Four additional MSAs that were identified as medium-sized in 1982 were eliminated because definition changes affected their status in that size category during the study period. The remaining ninety-two are MSAs whose retail structure is focussed within their own boundaries. They are not closely tied by commuting and employment patterns to larger nearby MSAs.(Appendix A)

Existing studies provide incomplete understanding of patterns of metropolitan retail structure. Further geographical research is needed for three reasons. First, many studies of metropolitan retail structure are out of date. Second, recent empirical studies concerning retail structure have focussed on themes limited to specific retail districts.(Baerwald 1978; Erickson and Gentry 1985) These studies do not describe the retail structure of an entire metropolitan area. Third, there has been a tendency for statistical studies to use data that are inappropriate for the study of medium-sized MSAs.

The majority of scholars dealing with urban problems have focussed their research on large metropolitan areas.

They have assumed that medium-sized metropolitan areas follow the model of the large metropolises or have ignored them. Only a few have explicitly looked for different trends in different size classes.(Casparis 1967; Robertson 1983) Scholars of rural areas have limited their studies of both settlement and retail development to non-metropolitan areas.(Mason 1973; Gamble, Raphael, and Sauerlander 1966; Johnson 1985)

The assumption that medium-sized MSAs follow the spatial structure of larger cities should not be accepted without close scrutiny by geographers. Multi-nucleated conformation may be more difficult to achieve in a metropolitan area with relatively limited retail capacity. This possibility is supported by the views of scholars who see metropolitan multi-nucleation as a result of high marginal costs that result from diseconomies of scale in overcrowded city centers.(Casparis 1967; Richardson 1971; Erickson 1983, pp. 114-115) Within this school of thought, the propensity toward multi-center form is directly linked to metropolitan size: "multi-center urban forms are likely to prevail over monocentric forms when city size becomes large relative to the marginal costs of production, commuting, and residential crowding."(Odland 1978, p. 244)

Many models of urban process or structure fail to apply to medium-sized MSAs because they rely on county-level data. These data are at too coarse a scale of

generalization for analysis of geographical patterns in a class of MSAs that never encompass more than a few counties and sometimes consist of a single county. "The structure of (operational urban land-use) models is macro-behavioral rather than micro-behavioral."(Putman 1983, p. 316) The vacuum created by limited applicability of modeling analysis to medium-sized MSAs is compounded by a lack of empirical studies.(Warnes and Daniels 1980)

There are reasons to believe that medium-sized metropolitan areas are distinct from other size classes in particular economic and social characteristics. Americans are conscious of size-of-place in their expressions of residential preference.(Fuguitt 1975) Furthermore, the existence of amenities and disamenities that vary with size of metropolitan areas is well established although debates rage concerning their relative impact on quality-of-life.(Hoch 1977; Kelley 1977; Power 1981) Economic theory implies that provision of private services, such as retail trade, is sensitive to economies of scale, but that diseconomies occur in overcrowded city centers.(Casparis 1967) The concern here is not that medium-sized metropolitan areas face fundamentally different kinds of problems than larger metropolitan areas, but that they cope with those problems within a different spatial framework.

The remainder of this chapter establishes the framework within which the retail structure of medium-sized

metropolitan areas is studied. This framework has three components. The first component consists of two hypotheses that are proposed for the retail structure of medium-sized metropolitan areas. The second component is the discussion of general problems associated with metropolitan retail structure. The third component is a description of the procedure used to study the retail structure of medium-sized metropolitan areas.

Hypotheses of the Study

Two hypotheses are proposed to explain contemporary patterns of metropolitan retail structure in medium-sized metropolitan areas. The first is a comparative hypothesis that examines the inter-metropolitan aspects of retail structure. The second is a competitive hypothesis that examines the intra-metropolitan aspects.

Comparative hypothesis

The comparative hypothesis is that significant statistical differences exist among metropolitan areas in variables measuring retail structure at the external scale. These differences can be used to identify categories of MSAs. A typology of metropolitan retail structure can be devised employing economic and population variables from census data. This typology reflects differences in

economic, morphological, and social factors that can be measured at the internal scale. The comparative hypothesis contends that substantial differences in internal structure exist among the ninety-two medium-sized metropolitan areas and that these internal differences account for the differences observed in the variables measured at the external scale.

Two conditions are necessary to verify the comparative hypothesis. First, variables that measure metropolitan retail structure at the external scale must show statistically significant differences among metropolitan areas. Variables used here depict the entire MSA in terms of the spatial distribution of retail sales. Second, the categories identified using variables at the external scale must correspond with internal characteristics of metropolitan retail structure.

Competitive hypothesis

The competitive hypothesis is that dominant new retail districts have replaced central business districts as the focus of retail sales in medium-sized MSAs. Retail districts, including central business districts, are land use units that exhibit upward and downward mobility in status relative to other retail districts in a MSA. The dominant new retail districts have emerged from competition with central business districts and other new retail

districts. New retail districts vary in age but all are more recent than the central business districts.

Metropolitan retail structure changes as the relative advantages and disadvantages of locations within the MSA change. Developers of retail districts explicitly compete for locations that will permit the highest possible status for their districts. Obviously, not all developers can achieve the highest status. Therefore, different retail districts in a MSA play different roles in the retail structure.

The relative economic status of districts within a metropolitan area is determined by the number and economic status of their customers. Willingness of customers to shop in a retail district is affected by its accessibility, its attractiveness, and the variety and quality of its merchandise. The competitive process has not resulted in a stable hierarchy of retail districts but instead in a constantly changing array of winners and losers in the struggle for status. The locations of new retail districts within a metropolitan area are determined by both public and private decisions concerning investment and land use. The locations selected influence both the success of new retail districts and their impacts on older ones. Once a new retail district is established, it must compete with other districts for desirable stores and clientele that can support the stores.

The competitive hypothesis is difficult to test objectively because it involves motives and preferences that business leaders, customers, and public officials may not wish to divulge. Nevertheless, evidence of the competitive process is abundant. Two conspicuous aspects of retail structure attest to the competitive nature of the process. First a replacement sequence of retail districts is present on metropolitan landscapes. Retail districts that have been superseded by subsequent development in other locations remain, either as conversions from high-status to low-status districts or as districts with large numbers of derelict stores. Second, the trade areas of competing districts vary in population and economic characteristics. One set of social and economic characteristics identifies shopping districts that are ascending in the metropolitan retail structure, another set identifies those that are declining.

Problems Associated with Metropolitan Retail Structure

General problems associated with retail structure affect metropolitan areas of all size classes and must be discussed before the unique characteristics of medium-sized MSAs can be analyzed. Judgments concerning the relative desirability, efficiency, and necessity of alternative forms of development are made within the milieu of these

general problems. A variety of participants are involved: business leaders, consumers, and public officials. Consumers are affected by limitations on the availability of retail services and their personal mobility. Business leaders and public officials make the most significant decisions. Three types of business leaders are investors, owners of retailing firms, and real estate developers. These roles sometimes are combined by one individual and sometimes are subdivided among many in highly specialized business organizations. Three types of public officials are holders of elective office, managers of technical agencies, and planners. The variety of participants contributes to the complexity of the problems.

The judgments that must be made are controversial and subjective, partly because of conflicting economic and philosophical interests of the participants and partly because knowledge concerning metropolitan retail structure is incomplete. There are three principal types of problems about which judgments are made: 1) arrangement of retail functions within the physically built-up area of a city, 2) conversion of land from rural to urban uses, and 3) the aesthetic and social quality of a metropolitan area.

Arrangement of retail functions within the built-up area

The arrangement of urban functions within the physically built-up part of a metropolitan area determines

the amount of conflict between incompatible neighboring land uses and the efficiency of intra-metropolitan movements.(Archer 1973) Values of urban land parcels are influenced by neighboring land uses. Retail businesses can be either desirable or undesirable neighbors, exerting positive or negative influence on property values and neighborhood quality.(Clawson 1972, p. 43) New or expanding retail districts can increase land values in nearby areas if their presence increases demand and creates speculation about land use conversion. These districts can have an adverse effect on value if they cause noise and traffic increases for nearby residential property with no immediate prospect of conversion to commercial uses.(Gruen 1950) Obsolete and declining retail districts are areas of both visual and social blight that can depress values of surrounding property.

Shifts in population and income within a metropolitan area affect businesses. Retail districts become obsolete as social and economic changes occur, even when the buildings they contain remain structurally sound. This obsolescence may result in abandonment or shifts from high-status retail functions to lower status retail or non-retail commercial functions that are willing to occupy old buildings. In either case, the change alters the desirability of nearby tracts of land.

Central business districts are the most prominent

examples of obsolete retail districts in MSAs. Affluent consumers have decided to shop outside of central business districts. Newer retail districts have better building designs, have more convenient access to high capacity streets and highways, and are closer to the residences of affluent consumers. Disagreement exists among business leaders, government officials, planners, and scholars on the relative importance of various factors in the demise of retail districts. Architects and developers emphasize physical obsolescence and poor design as an explanation for retail district failure.(Gruen 1953; Gillette 1985) Economists and geographers emphasize shifts of population, selective migration of high income groups, and increased customer mobility.(Hoyt 1971; Kottis and Kottis 1972; Dawson 1974)

Knowledge of the explanations proposed for retail district decline is essential to the viability of public and private plans to alter retail structure. Efforts to rejuvenate buildings in a central business district or other retail district are futile when the decline occurred because of lack of sufficient retail trade area or poor access to the metropolitan transportation network. However, when the major reason for decline is obsolescence of structures, private and public investment in buildings can be successful. It is important to know the potential for rehabilitation of obsolete retail districts.

Successful rehabilitation can reduce the need for new districts and reduce pressure for conversion of land from rural to urban uses.

Conversion of land from rural to urban uses

Urban uses are dominant in the competition for land between rural and urban uses because urban uses command much higher prices than rural ones.(Clawson 1972, p. 30) Land must be exceptionally productive to capitalize a price of $2,000 per acre in agricultural use, but low density residential land in the suburbs of a medium-sized American city can be worth from $10,000 to $20,000 per acre. Tracts that contain retail commercial development can be worth from $100,000 to more than $300,000 per acre.(Buckwalter, 1984) The chance to realize a capital gain of several hundred-thousand dollars per acre by converting land from rural to retail commercial use is an obvious incentive to landholders. This incentive influences decisions beyond the area actually used as urban land at any time.(Boal 1970)

Retail complexes frequently are involved in direct conversion of land uses. They may appear in previously rural areas as completely new retail districts without intermediate development for residential or other urban uses. Existing retail districts may expand into nearby rural areas or attract other types of urban uses that

expand into those areas.

The retail structure of a metropolitan area has a direct bearing on the rural-to-urban land conversion process. If existing retail districts do not contain vacant land, then expansion into neighboring areas or development of new districts is necessary. Retail developers have found land assembly to be prohibitively expensive, if not legally impossible, in areas that have undergone prior urban development. Developers find it advantageous to acquire rural land that is still in relatively large cadastral units, especially if they intend to build a large facility such as a shopping center. Retail firms attempt to secure appropriate size and location by purchasing large tracts of rural land for future development.(Spears and Smith, 1970) In rural areas that are desirable for retail land uses, the price incentive to convert from rural to urban uses is much higher than in areas where the only feasible urban use is residential.

Conversion of land from rural to urban uses is permanent. This is a second reason for urban dominance in the rural/urban competition. Alteration of forest, pasture, or cropland to any type of urban use involves physical changes that are irreversible in the human time frame. Conversion to commercial urban land uses, including retail land uses, involves physical alterations that

preclude later conversion to most types of residential uses. Cadastral changes, zoning changes, and tax appraisals associated with commercial development also work against later reconversion. For both economic and technical reasons, once an area is developed as part of the retail landscape of a metropolitan area, it is likely to remain part of that retail landscape for a long time.

The amount of land removed from rural uses in the second half of the twentieth century has been great because of two aspects of urban expansion. One is the emphasis on low density development.(Clawson 1972, p. 42) This is exemplified in retailing by construction of one-or-two-level shopping centers and abandonment of multi-level stores. The second aspect is development on the urban fringe in discontinuous tracts, leaving bypassed tracts that are too small for rural uses. The amount of rural land disrupted to provide for retail uses could be reduced by more compact retail construction and development of continuous tracts. Current forms of development have been deemed more desirable than compact land use because of economic and utilitarian considerations. Judgments about the desirability of alternative forms of development are also based on subjective evaluations of attractiveness and quality.

Aesthetic and social quality

A third group of problems that involves retail spatial structure concerns the aesthetic and social quality of metropolitan areas. Retail structure has special importance in the aesthetic structure of metropolitan areas because a major component of retail marketing is an appeal to the aesthetic sense of the consumer.(Mumford 1961, p. 435) The appeal must be embodied in the setting as well as in merchandise.(Gruen 1953; Lail 1987b) Newer retail districts are more likely to be considered attractive than older ones. The inverse correlation between attractiveness and age is especially strong where investment in renovation of old facilities is lower than in new construction. This is the norm in American retailing. The inverse correlation does not hold where older facilities that have special architectural or historical attraction are renovated.

Standards vary as to what constitutes an appealing new urban landscape and what constitutes undesirable urban development. New unplanned development along major traffic routes often achieves functional success while stimulating aesthetic ambivalence.(Hart 1982; Horowitz 1985) This type of development occurs as entire retail districts and as parts of districts containing more carefully designed shopping centers. Despite controversy over what style of retail development is the most attractive, differences in quality between various parts of metropolitan areas are

unquestionably real and profound. Aversion to unpleasant settings must be considered along with attraction to pleasant ones. Settings are judged not only by artistic merits of physical facilities, but also by the social milieu in which they are found.

The effects of social attraction or aversion to retail districts can be seen in metropolitan retail structure. Affluent consumers and entrepreneurs avoid retail districts deemed to be of low quality for some combination of aesthetic, demographic, or economic reasons.(Hirschman, p. 36) Both groups perceive central business districts as unsightly, potentially dangerous places that provide retail services of lower quality or higher cost.(Rose 1971, pp. 77-80) Retail districts outside of the central business district face deterioration if their trade areas experience growth in the number or proportion of poor people. Deterioration will proceed more rapidly, and can occur in affluent trade areas, if retail districts are poorly designed, maintained, or managed.

Procedure for the Study

The United States Bureau of the Census provides data on retail structure in the form of major retail center reports from the Census of Retail Trade.(United States Bureau of the Census 1984c) Major retail center reports

are the closest approximation available in the census to a depiction of the distribution of retail sales within MSAs. They report sales for central business districts and major retail centers: areas delineated to include all or parts of retail districts. Classification of retail structure in medium-sized MSAs is achieved by analysis of the distribution of sales using statistics from the major retail center reports.

Population and retail sales census data at the external scale are analyzed first. Census delineations of central business districts and major retail centers from 1982 are used to generate a group of variables for each MSA based on distribution of sales. Additional variables are generated using 1980 population statistics for metropolitan areas and their central cities. The variables generated in these two ways are analyzed to identify different types of metropolitan retail structure. Three statistical procedures are employed: standardization of scores for each variable, correlation between variables, and factor analysis of the correlation matrix. The variables and statistical procedures used are described in Chapter IV. These statistical procedures test the comparative hypothesis by analyzing the variation between MSAs. They produce a classification of MSAs.

A sample MSA from each type of the classification is studied in detail. Population and income census tract

data are used to analyze economic and social characteristics of the sections of MSAs in which retail districts are located. Sales statistics from the census identify relative gains or losses of market share for central business districts and major retail centers. Census data are necessary but insufficient to develop an understanding of the competitive process between retail districts. Field and map analysis must also be used to develop an accurate interpretation. Field and map analysis provide additional information concerning retail districts such as accessibility, site characteristics, and changes in neighborhoods and trade areas. Indexes of roadway access are used to analyze sites. The extent and sales volume of new retail districts are estimated and compared to central business districts using city directories, field analysis, planning agency documents, and census data.

The detailed studies serve two purposes. First, they test the credibility of the categories of metropolitan retail structure to determine whether they represent real differences in location and arrangement of retail activities or merely are statistical quirks of census data tabulation procedures. Detailed study of sample MSAs supplements analysis of aggregated statistics and provides a further test of the comparative hypothesis. Second, detailed studies of sample MSAs reveal the degree of concentration of metropolitan retail structure. This is

accomplished by estimating the sales for new retail districts.

Historical census data are used to examine changes in retail structure at the internal scale from 1963 to 1982. Variables used to analyze retail sales in different retail districts can be generated for fifty-six of the ninety-two medium-sized MSAs for 1963. Data are available from 1958 in some cases, providing a twenty-five year record of competition among retail districts. These data are the sales statistics for central business districts and major retail centers in the Census of Business and Census of Retail Trade. This record shows the process by which metropolitan retail structure has developed and augments the inventory of internal characteristics contemporary with the 1982 Census of Retail Trade. Examination of historical changes and processes at the internal scale of generalization tests the competitive hypothesis.

Metropolitan retail structure is the result of a set of economic processes that are influenced by the political and social milieu. These processes are evaluated in Chapter II as they pertain to the general development in all MSAs. In Chapter III, three historical periods are identified that pertain specifically to medium-sized MSAs. These periods are then described with a historical narrative of the sequence of development in the Chattanooga MSA. The variables generated for population and sales data

are analyzed in Chapter IV. Five categories describe contemporary retail structure and sample MSAs are selected. Internal aspects--roadway access, income, and population--are analyzed in Chapter V. Three sets of internal circumstances that help determine metropolitan retail structure are identified. They are the functional nature of sites occupied by retail areas, the image of a retail area created by the surrounding neighborhood, and the character and size of potential market shares in particular trade areas.

The concepts of metropolitan retail structure developed in Chapters III through V are influenced by the nature of available census data. Chapter VI identifies the extent of retail districts based on land use information and compares them to census delineations of central business districts and major retail centers. The problems of census delineations are revealed by field and map evaluation of retail districts in the sample MSAs. The concepts developed in earlier chapters are modified on the basis of these revelations. Chapter VII outlines conclusions about contemporary national patterns.

CHAPTER II

METROPOLITAN RETAIL STRUCTURE

The characteristics of areas where retailing occurs reflect the economic and social processes that determine metropolitan retail structure.(Potter 1982) Sales volume is a valuable measure of the economic success of a retail area. The definitions that are used for delineation of retail areas determine the proportion of sales included in those areas. Consequently, the definitions must be known and used in a consistent way before degrees of centralization or total sales volume for areas can be analyzed. Definitions of functional categories are necessary to establish the limits of retail activity and for identification of specialized areas.

The first two sections of this chapter deal with functional and areal concepts of metropolitan retail structure. The first of these describes the classification of retail functions used in this study. The second discusses two ways of defining retail areas: 1) a typology of planned shopping centers widely accepted in the retailing industry and 2) the delineation of central business districts and major retail centers by the Bureau of the Census. These two sets of retail areas are used to estimate the extent and character of retail districts in Chapters V and VI. Therefore, their relationship to retail districts is also discussed.

Retail districts are the areas within which internal features of metropolitan retail structure are organized. Neither statistics nor other descriptions are available for retail districts, so surrogate areas must be used as the building blocks for analysis. Sales volume indicates the economic status of central business districts and major retail centers. Functional composition of sales and physical condition of the facilities are clues to social status that, in turn, helps to explain trends in the relative economic status of competing retail areas.

The third, fourth, and fifth sections of this chapter describe processes of competition and centralization. The third section of the chapter describes the ways in which central business districts and major retail centers statistically emerge and decline. This sequence provides only limited information about metropolitan retail structure. It does not reveal the causes of emergence and decline or the development of entire retail districts. The fourth section of the chapter discusses an adjustment process between business leaders and consumers that helps to explain how retail areas compete, why some emerge, and why others decline. The fifth section discusses the factors that contribute to centralization of stores into retail districts.

Retail Functions

Three generalized functional categories and ten detailed categories are used to classify stores in the Census of Retail Trade.(Table 2.1) Both sets of categories are generalized from a more detailed standard industrial classification.(United States Office of Management and Budget, 1972) Each category consists of stores that carry similar kinds of merchandise although they may vary in price and quality. Stores within a category may be independent or part of a multi-store firm. The store, rather than the firm, is the unit classified because some multi-store firms operate more than one type of store.

This study employs the definition of retail trade used by the United States Bureau of the Census. Retail trade "includes establishments engaged in selling merchandise for personal or household consumption, and rendering services incidental to the sale of the goods."(United States Office of Management and Budget 1972, p. 259) Stores that meet this definition are subdivided into three broad functional categories: convenience-goods, shopping-goods, and other-goods.(Table 2.1) The stores in these categories differ in their ability to pay rents. Allocation of space among these three categories, therefore, indicates different levels of success for developers of retail real estate.

Table 2.1. Functional Categories of Stores Used by the 1982 Census of Retail Trade

Description	Standard Industrial Classification
Convenience Goods	
Food	54
Eating and drinking	58
Drug and proprietary	591
Shopping Goods	
General merchandise	53
Apparel and accessory	56
Furniture, home furnishings, and equipment	57
Miscellaneous shopping goods	594
Other Goods	
Building materials, hardware, garden supply, and mobile home	52
Automotive dealers and service	55
Miscellaneous stores not in other categories	59pt.

Source: United States Bureau of the Census, Census of Retail Trade, 1982 (Washington, D.C.: U.S. Government Printing Office, 1982).

Convenience-goods stores sell frequently purchased items including beverages, drugs, and food. The preferred locations for these stores are close to residences or daily travel routes of customers. Prestige, profit margin, and rent tend to be lower than for other retail categories. Large establishments may be quite profitable, however, because of their volume.

Shopping-goods stores sell merchandise that customers prefer to buy on multi-stop trips with opportunities for comparison shopping. The prestige of a store varies along a price-quality continuum from high to low.(Hirschman 1978) Three types of department stores are included in this category: traditional, mass-merchandise, and discount. All three consist of "full-line" stores that carry a variety of apparel, household, and other lines. They vary in the type of corporation that controls them and in the lines of goods that they emphasize.

Traditional department stores emphasize fashion goods and luxury items and are usually operated by a local or regional firm. Mass merchandise stores are operated by national chains--Sears, J.C. Penney, and Montgomery Ward--that emphasize high price but low fashion goods such as appliances. They emphasize quality merchandise and provide services such as refunds for unsatisfactory purchases but invest less in customer assistance or store decor than traditional department stores. Discount stores

provide little service for the customer, and emphasize branded goods and non-branded low cost goods. Their corporate control includes national chains, regional or local chains, and factory outlet affiliations.

Specialized shopping-goods stores also occupy niches along the price-quality continuum and tend to cluster around department stores of the same status. Both traditional and mass-merchandise department stores are key tenants in large shopping centers. Discount department stores are peripheral to large shopping centers or in small retail districts distributed throughout the metropolitan area. Department stores, particularly traditional and mass merchandise ones, draw customers from longer distances than convenience-goods stores. Shopping-goods stores pay the highest rents of the three functional categories.

Other-goods stores, like shopping-goods stores, have price-quality differences and are clustered together to facilitate comparison shopping. They are dominated in sales volume and land-use area by automotive dealers. New car dealers are the highest status establishments in this functional category, rival or exceed large department stores in sales volume, and attract smaller retail stores to cluster with them. These dealers cannot compete with shopping-goods stores for the highest priced retail sites because of large land requirements.

Some detailed functional statistics are reported by

the Census of Retail Trade; however, disclosure rules frequently cause gaps. Data are suppressed for areas that contain only one or two stores of a particular type. Detailed functional categories are always available for MSAs, usually available for cities and counties, but often unavailable for central business districts or major retail centers. The more aggregated functional breakdown--convenience, shopping, and other-goods--is usually, though not always, available for central business districts and major retail centers.

Retail Areas

The functional categories, management, and size of stores are used to define retail areas in three different ways. First, shopping centers are planned retail areas that can be classified into three types based on the functional category, size, and number of key tenants. Second, central business districts and major retail centers are more inclusive definitions of retail areas. Political structure of central cities is the criterion for identification of central business districts while functional category, size, and number of stores are used as criteria in delineation of major retail centers. Third, retail districts are defined in terms of economic, land-use, and transportation relationships.

The distinction between shopping centers and retail districts used in this study is adopted from the retail marketing and shopping center industry and has been clarified by geographers who study retailing.(Dawson and Lord 1985, p. 1) Shopping centers are planned collections of establishments, usually under some form of collective management. Retail districts are larger areas that may include one or more shopping centers in addition to concentrations of individual retail establishments. They may also include one or more major retail centers. Central business districts and major retail centers are intermediate in size between shopping centers and retail districts, and vary in the proportion of a retail district that they include. Some include little beyond the boundaries of a planned shopping center while others include several shopping centers and most of the full extent of a retail district. The three modes of definition form a continuum from least inclusive (shopping centers) to most inclusive (retail districts).

Retail districts are the entities of ultimate interest in this study. Central business districts and major retail centers are used in much of the analysis because they are the retail areas for which census data are available. Shopping centers must be considered because they influence the character of retail districts through their physical design, the volume of traffic that they generate,

and the types of customers that they attract.

Planned shopping centers

Three types of planned shopping centers commonly are recognized in American retailing: regional, community, and neighborhood.

A regional shopping center is a facility that is built around one or more traditional or mass merchandise department stores, has a variety of shopping goods stores, and contains at least 300,000 square feet of gross leasable area. Regional shopping centers that exceed 750,000 square feet of gross leasable area and have three or more department stores are sometimes referred to as "super-regional centers."(McKeever and Griffin 1977, p. 7) Regional shopping centers have replaced central business district department stores as the most prestigious shopping goods facilities within most MSAs. Thus, some of the control of retail structure has shifted from retailing firms to real estate firms that specialize in development for retail uses.

Regional shopping centers influence land use beyond their property boundaries through the control they exert on the movements of consumers. Locations of small shopping-goods, convenience-goods, and other-goods stores are influenced by the desire of their operators to take advantage of traffic flows created by regional shopping

centers. Therefore, regional shopping centers often form the nucleus of an extensive district that includes a periphery of less intensive retail land uses.

A community shopping center is a facility that lacks the large department stores found in regional shopping centers. Nevertheless, a shopping center must have a strong shopping-goods component to qualify for this category. In the past, this has usually been a department store with less than 100,000 square feet of floor space, a discount department store, or a variety store. Recently, some community shopping centers have developed around a group of small specialty shopping-goods stores without a department or variety store.

A neighborhood shopping center emphasizes convenience goods. The name implies small size and geographical dispersion, but these attributes are not always the case. Floor size and sales are often larger in neighborhood shopping centers that contain a supermarket than in modest community shopping centers.(National Research Bureau 1980, p. 5-613) Neighborhood shopping centers cluster around intersections of heavily travelled streets or highways.(Dawson 1983, p. 68) They also are common near regional centers, community centers, and unplanned automotive retail districts.

Census delineation of central business districts and major retail centers

Delineations of central business districts and major retail centers by the Bureau of the Census provide areal units for the compilation of statistics, but the areas fail to encompass complete retail districts. The delineations provide a classification of retail areas that include parts of complete retail districts and can be used for analysis.

A central business district is the "downtown retail area of an SMSA (standard metropolitan statistical area) central city, or other SMSA city of 50,000 persons or more."(United States Bureau of the Census 1982, p. iv) In practice, the central business district is one or more complete census tracts. A variety of land uses may be included because census tracts have somewhat arbitrary boundaries. The central business district "core" is always included. This is the old commercial district of department stores, variety stores, and other high-intensity retail facilities. Part or all of the central business district "frame" is also included. The frame is an area of lower land values that forms a periphery around the core. It has been occupied by commercial establishments that could not compete for expensive sites near the peak value intersection but still sought the closest possible locations.(Horwood and Boyce 1959)

According to the Bureau of the Census:

> A major retail center is a concentration of at least 25 retail stores located inside an SMSA but outside a CBD. At least one of the 25 stores must be a general merchandise store (SIC 53) with a minimum of 100,000 square feet of total under-roof floor space.(United States Bureau of the Census 1982, p. iv)

Major retail centers rarely or never encompass a complete census tract but often occupy parts of more than one. Delineation of major retail centers is conducted by census statistical areas committees. These committees consist of local officials, usually planners, who survey retail areas and file reports according to census guidelines. The guidelines allow interpretation of how many major retail centers to designate and how much area to include. No attention is paid to census tract boundaries.

Neither type of census delineated retail area perfectly coincides with retail districts. The sales statistics that are available from the census for central business districts and major retail centers are not available for either shopping centers or retail districts from the census or any other source. That is why much of the analysis of metropolitan retail structure at the external scale is conducted using central business district and major retail center data. The analysis at the internal scale is used to resolve discrepancies between census delineated retail areas and retail districts in Chapter VI.

Central business districts were still the leaders in

retail sales in medium-sized MSAs in 1963. All fifty-six medium-sized MSAs had greater sales in their largest central business districts than in their largest major retail centers. By 1982, however, this lead had shifted to major retail centers. Only eighteen of ninety-two had greater sales in their largest central business district than in their largest major retail center. Despite their lead over central business districts, major retail centers accounted for less than half of the sales volume in all but one of the ninety-two medium-sized MSAs in 1982.

Two aspects of census delineations help to account for the relatively low proportion of volume. First, the large number of retail stores in locations that are peripheral to planned shopping centers results in the exclusion of many from major retail centers. Second, high-volume retail districts that are not organized around large shopping-goods facilities are not recognized as major retail centers by the census definitions.

A MSA is likely to have a high proportion of its sales in major retail centers if shopping-goods sales are concentrated in regional shopping centers. This proportion is also likely to be high if convenience-goods and other-goods stores are located close enough to regional shopping centers to be included as parts of the major retail center. Convenience-goods and other-goods stores may be excluded from major retail centers even if they are

located close to a planned regional shopping center. Such omissions can involve large sales volumes.

Major retail centers exert influence that is greater than their share of total sales because they attract traffic necessary to support other stores within a retail district. Delineations by the Census of Retail Trade that under-bound retail districts result in statistics that understate the importance of major retail centers in metropolitan retail structure. Major retail centers can dominate metropolitan retail structure even when they account for less than half of all retail sales.

Emergence and Decline of Central Business Districts and Major Retail Centers

The emergence and decline of central business districts and major retail centers are measured by their share of MSA sales and play important roles in changing metropolitan retail structure. Major retail centers increased their share from 10 percent to 18.4 percent while central business districts declined from 18.2 percent to 4.7 percent in medium-sized MSAs between 1963 and 1982.(Tables 2.2 and 2.3)

Following the sales statistics of individual central business districts and major retail centers from census to census reveals that both emergence and decline can occur in several ways. Statistical emergence obviously occurs when

Table 2.2. Percent and Rank of Metropolitan Statistical Area Sales in Central Business Districts and Major Retail Centers, 1963

Metropolitan Statistical Area	Sales Centralized in Central Business Districts		Sales Centralized in Major Retail Centers		All Centralized Sales	
	Percent	Rank	Percent	Rank	Percent	Rank
Montgomery	36.7	(2)	9.5	(29)	46.2	(1)
Fort Wayne	27.2	(9)	16.4	(4)	43.6	(2)
Macon	33.7	(3)	8.0	(38)	41.7	(3)
Spokane	31.9	(6)	8.8	(34)	40.7	(4)
Charlotte/Gastonia	33.6	(4)	6.9	(44)	40.5	(5)
Des Moines	32.1	(5)	7.2	(43)	39.3	(6)
Greensb./W.S./H.P.	37.0	(1)	1.4	(54)	38.4	(8)
Youngstown/Warren	18.1	(27)	14.1	(5)	32.2	(14)
Lansing/East L.	13.0	(46)	18.3	(3)	31.3	(16)
Memphis	11.7	(52)	18.6	(2)	30.3	(22)
Toledo	10.5	(53)	19.7	(1)	30.2	(23)
Mean for 56 MSAs	18.3		10.0		28.3	

Note: the metropolitan statistical areas included in this table are the top five for each of the three variables.

Table 2.3. Percent and Rank of Metropolitan Statistical Area Sales in Central Business Districts and Major Retail Centers, 1982

Metropolitan Statistical Area	Sales Centralized in Central Business Districts		Sales Centralized in Major Retail Centers		All Centralized Sales	
	Percent	Rank	Percent	Rank	Percent	Rank
Omaha	3.7	(61)	50.9	(1)	54.6	(1)
Columbia	5.4	(35)	39.9	(2)	45.3	(2)
Birmingham	7.1	(20)	35.2	(4)	42.3	(3)
Binghamton	4.1	(52)	36.3	(3)	40.4	(4)
Lansing/East L.	4.4	(47)	35.2	(5)	39.6	(5)
Spokane	15.8	(1)	10.5	(75)	26.3	(29)
McAllen/Pharr/Ed.	11.6	(5)	13.2	(58)	24.8	(33)
Eugene/Springfield	12.0	(4)	11.3	(72)	23.3	(36)
Appleton/Oshkosh	12.6	(3)	10.3	(76)	22.9	(40)
Charleston WV	13.9	(2)	3.5	(88)	17.4	(66)
Mean for 92 MSAs	4.7		18.4		23.1	

Note: the metropolitan statistical areas included in this table are the top five for each of the three variables.

a new development is recognized as a major retail center by the census. A major retail center is recognized when a group of stores that meets the census criteria forms outside of the central business district. Although the presence of a planned shopping center is not a census bureau requirement, there is at least one in virtually every major retail center. The most frequent reason for recognition of a major retail center is the construction of a new regional shopping center. Any retail area that meets the definition of a regional shopping center also qualifies as a major retail center.

Recognition of a new major retail center can occur when a retail district that has been functioning for several years is recognized for the first time. Most community shopping centers do not qualify as major retail centers unless stores outside the property boundaries of the planned shopping center are also included. Major retail centers sometimes have been recognized where the number of stores has gradually increased in an area surrounding a community shopping center.

After a major retail center has been recognized, it may continue to emerge or begin to decline depending on whether its sales increase more rapidly or more slowly than sales for the MSA. Emergence is facilitated if subsequent census delineations add to the area of the major retail center. Existing major retail centers can emerge by more

rapid expansion of sales than the metropolitan area, or by combination with neighboring major retail centers.

Some retail districts decline because of competition from more successful ones. Decline by loss of market share occurs when competing major retail centers are established or expanded but does not necessarily involve an absolute reduction in sales volume. Central business districts and relatively old, small major retail centers consistently lose market shares between censuses. Major retail centers invariably lose market shares to other major retail centers, not to central business districts.

Both central business districts and major retail centers experience store closings. The census bureau does not eliminate central business districts but does eliminate major retail centers that fall below the minimum criteria. Closing of a department store results in the demise of a major retail center, its removal from the census, when no other key facility is present. When the demise of a major retail center is due to store closings, the result is a derelict major retail center.

Some of the small shopping-goods, convenience-goods, or other-goods stores included in the major retail center also close when the key facility is lost. Others remain, however, and the closed stores are frequently replaced with stores in different functional categories. The total number of stores in a retail area often remains stable and

may even increase after demise of the major retail center, although the price-quality characteristics decline. The presence of derelict major retail centers thus tends to coincide with a high proportion of total retail sales that are in neither central business districts nor major retail centers.

The demise of a major retail center can occur even when derelict stores are not prominent. Changes in the Bureau of the Census criteria for major retail centers reflect alterations in the scale of activities required to maintain a significant role as a catalyst for retail development. The criterion of at least one department store with over 100,000 square feet of usable space was implemented in the 1982 Census of Retail Trade. (United States Bureau of the Census 1982, p. 3) Prior to that census, a smaller department store could meet the census criteria for the key store.

Change in definition reflects alteration in the scale of retail activities. A 50,000 to 100,000 square foot department store located in a community shopping center could attract customers to shop for merchandise near the top of the price-quality continuum in 1963. There were few larger stores outside of central business districts in medium-sized metropolitan areas. Regional shopping centers with department stores containing more than 100,000 square feet of floor space were common by 1982, however, and

smaller department stores were no longer competitive. Many major retail centers established in the 1950s and early 1960s declined in both market share and price-quality characteristics. Elimination from the census of retail trade signals their demise as major retail centers.

Changes in criteria for a major retail center create some inconsistency in definition, as does discretion exercised by local census statistical areas committees in interpreting the criteria. Despite inconsistencies in definition, central business districts and major retail centers consistently have identified retail facilities that compete for dominance of shopping-goods functions. Most of the larger retail districts that developed between 1958 and 1982 have been identified, if not exhaustively delineated, by census procedures. Retail districts most likely to be overlooked because of inconsistencies in census definitions are either small in size or are specialized in functions other than shopping-goods.

The increase in size requirements has not prevented a long-term increase in the number of major retail centers in medium-sized MSAs. The number of major retail centers increased from 197 in 1963 to 317 in 1982 in the fifty-six medium-sized MSAs for which data were available in 1963. The net increase of 120 is less than the number of new major retail centers established during the nineteen-year interval, but some were lost through combination or demise.

Further increase occurred as additional medium-sized MSAs were added to the Census of Retail Trade. There were 430 major retail centers in the ninety-two medium-sized MSAs in 1982.

A rise in the proportion of MSA sales in major retail centers has coincided with decline of the proportion in central business districts. Metropolitan statistical areas that have the highest centralization of retail sales in the combined total of central business districts and major retail centers show this change.(Tables 2.2, p. 38; Table 2.3 p. 39) This group consisted of the MSAs with the highest proportion of sales in central business districts in 1963. It consisted of those with the highest proportion of sales in major retail centers in 1982. None of the five with the highest proportion of sales in major retail centers in 1982 had more than 7.1 percent of their sales in a central business district.

Toledo had the highest proportion of sales in major retail centers, 19.7 percent, for any of the fifty-six medium-sized MSAs in 1963. Despite well developed major retail centers, the Toledo MSA ranked only twenty-third in overall centralization. Toledo failed to rank higher because central business districts still had greater centralization of sales than major retail centers.

The rise of major retail centers and decline of central business districts in metropolitan areas with high

centralization of sales reveals the existence of competition among retail districts. Outlying retail districts have generally been more successful than central business districts in this competition. There is competition among outlying retail districts in addition to competition between them and the retail core of the central business district. Older retail districts must maintain a high level of investment to compete with newer ones for control of high income trade areas because shopping facilities become obsolete within a few years of construction or remodelling.(Dawson and Lord 1985, p. 228) Retail districts that fail to attract investment decline in status and market share.

The active parties in this competition are consumers and retail developers. Both groups make decisions that strengthen some retail districts and weaken others. The choice by consumers is where to shop and the choice by retail developers is where to invest.

Adjustments Between Retail Developers and Consumers

Metropolitan retail structure is the result of an adjustment process that occurs between consumers and retail developers. Consumers consider location in choosing stores. A store is not chosen unless it is within an acceptable travel distance, but the closest option within

that distance is not necessarily the one selected. Retail developers consider location in determining where market control and profits can be maximized. The developers must consider how far consumers are willing to travel and how their choice of stores is influenced by competition.

In a short time frame, consumers react to retail structure established by developers, but in a longer time frame developers react to consumers behavior patterns. Stores and shopping centers must establish trade areas and capture sufficient market shares within them to succeed financially. Consumers choices determine trade areas and market shares.(Rushton 1969, p. 391) Retailers adjust by opening, closing, and relocating stores and shopping centers. These adjustments are based, in part, on knowledge about economic and social characteristics of potential trade areas.

Openings, closings, and relocations continually alter metropolitan retail structure, and consumers continually revise trade areas and market shares through their reactions. The competition that occurs among retail districts reflects the adjustment process between business leaders and consumers. Competition results in emergence and decline of individual central business districts and major retail centers as succeeding generations compete with each other for trade areas and market shares. The locations of derelict or declining major retail centers

are useful in reconstructing a sequence of development of metropolitan retail structure that was caused by the process of adjustment between consumers and retail developers. The driving forces for the adjustment process are consumer choices and attempts by business leaders to anticipate or exploit those choices.

Consumer choices

Changes in shopping behavior have followed fundamental changes in the demographic and economic geography of American metropolitan areas. The migration of population and jobs from inner-cities to suburbs preceded shifts in retail structure in the twenty-five years following World War II.(Erickson 1983)

Specific explanations for spatial changes in shopping behavior have not been thoroughly developed. This lack is not surprising because consumer shopping constitutes complex and subjective behavior. Changes in social attitudes about inner-city residents by affluent consumers are not nearly as well documented as demographic and economic changes, but they contribute to the decline of retailing in central business districts and other retail districts located in poor residential areas. Surveys of consumer behavior reveal different trade areas for different goods, frequent purchases at stores other than the nearest to a customer's residence, and the importance

of multi-purpose trips.(Bacon 1984) Such surveys do not reveal the motives behind consumer choices although they provide information about the circumstances of shopping.

Traits that can be identified as having an influence are income, ethnicity, social class, household size, age, personal taste, and mobility.(Potter 1982, p. 137) When these traits vary substantially among different metropolitan areas, retail structure also varies. Traits associated with wealth and personal mobility are conducive to success of large, labor-efficient retail facilities. Restricted mobility leads to less efficient retail structure with numerous small stores, even when per capita wealth is high.(Takeuchi and Bucklin 1977)

Information concerning the location and quality of stores modifies consumer behavior beyond the constraints imposed by mobility and wealth. Consumers choose among known stores on the basis of price and quality perceptions.(Schuler 1979) A consumer's qualitative assessment is based partly on the physical and social setting and partly on differences in merchandise and service. Consequently, consumers require knowledge of merchandise and service in addition to awareness of a location. Stores and their merchandise tend to be better known when they are near to other stores.(Hanson 1976)

Functional and qualitative attributes of central business districts and major retail centers are closely

associated with the social and economic character of their trade areas. Specialized retail areas of low quality are often found, for example, in inner-city areas of low residential quality.(Davies 1968; Pred 1963) Retailers in these areas deal in low quality goods and services that are of interest only to consumers in low economic and social classes. Higher quality retail areas are found in higher-quality residential zones.(Potter 1981, p. 214) Quality of the merchandise and of the establishments providing goods and services influences the distances consumers will travel. Potter has argued that "as the qualitative level of a retail establishment increases, so there will be a commensurate tendency for the spatial range of the establishments to increase."(Potter, 1980, p. 208)

Positive correlation between quantity of sales in a retail district and total personal income within the trade area is an axiom of retail location and assessment research. Location decisions for large stores are made on the assumption that declining income results in declining sales. Demographic changes of inner-city populations that consist of immigration of low-income groups and emigration of high-income groups contribute to the decline of central business districts. Even owners of small stores find inner-city trade areas to be inhospitable environments. "The savage attrition that has taken place in central-city resident incomes as a function of selective migration has

reduced the opportunities for small-scale service operations."(Sternlieb and Hughes 1983, p. 465)

Exceptions to the axiom of correlation between sales and income contribute to the problems of central business districts. The affluent residents that are highly visible in many inner cities are among the most mobile in the MSA. Their presence may exaggerate statistically the potential demand for a large department store in the central business district because they do not shop in their neighborhood of residence.

The reasons that affluent customers do not shop in low income areas has not been clearly established. Customer perception of high crime rates is a possible explanation, but crime rates can be high in thriving major retail centers that are located in affluent neighborhoods.(Marcum 1987) The coincidence of declining central business districts with increasing black populations in American central cities suggests racial prejudice as a cause, but studies of racial attitudes fail to substantiate a direct relationship. White Americans did not perceive retail stores as institutions of segregation, and black Americans declined to cite retail services as an activity directly affected by racial prejudice in a series of public opinion surveys conducted in the late 1960s and early 1970s.(Pettigrew 1973) The influence of racial prejudice has been demonstrated more strongly for housing

decisions than for shopping trip decisions.

Social aversion of affluent customers to the presence of non-affluent customers may exert stronger influence than racial prejudice on consumer behavior. Economic and social class segregation occurs irrespective of race in many housing markets. Retail customers also face economic and social risks because of the money and prestige that can be lost by an unsatisfactory purchase. Avoidance of social risk is a plausible motive for consumer behavior, particularly in fashion goods and luxury items where conspicuous consumption and prestige are important objectives.(Schnore 1973; Hirschman 1978, p. 36) It is significant that high-price, -quality goods are affected by social aversion because they attract the traffic that draws other types of retail functions.

Consumer spatial behavior is influenced by a desire to maximize trip efficiency and minimize travel time. A common strategy by consumers is the multi-stop shopping trip.(Hanson 1980; Bacon 1984) The stops may be for comparison shopping at more than one store dealing in the same merchandise or may include a variety of destinations with different retail functions. Store size and the tendency to cluster in retail districts are directly influenced by multi-purpose trip behavior. The proportion of customers at a store that are on multi-stop trips varies with the function of the store.

It is in the best interest of business leaders to locate stores where consumers want to shop. Studies of shopping behavior have become standard parts of store and shopping center location research. Such studies are part of a process that involves detailed research and elaborate strategies.

Business decisions

A decision made by a business leader or firm controls only the location of a store, shopping center, or chain of stores owned by the same firm. Collectively, however, such decisions control the location, quality, and size of retail districts. The success of a retail district in competing with other districts depends on the success of its components. Individual shopping centers and stores succeed or fail, to a high degree, on the wisdom of their initial location. They may fail because they are located in a declining retail district or because they have a poor location within a retail district.

Location decisions often are made on the basis of trial and error or the judgement of developers and executives. These methods have been partially replaced because the process of making decisions was altered by changes in corporate structure, marketing strategy, and store technology between 1958 and 1982. Attempts to locate shopping centers and stores on the basis of scientific, or

at least systematic, analysis of market areas and sales potential increased during this period.

The second half of the twentieth century has seen changes in the business environment that encourage rigorous methodology in retail location analysis. Small companies managed by an entrepreneurial founder have been replaced by large multi-division corporations.(Mercurio 1984, p. 238) Large corporations have the resources to invest in location studies. They also need a systematic and documented procedure because decisions may require approval by administrators not directly involved in the operation of a particular store or chain of stores. Increasing dominance of retail trade by chain stores and franchise establishments has accompanied the trend toward control by large corporations. The tendency of firms to put several stores in a metropolitan area requires geographical coordination of store locations.

Changing corporate structure has coincided with a trend toward larger, more expensive stores and shopping centers. Large stores, such as department stores, new car dealers, and supermarkets can fail because of inappropriate location. The parent firm suffers a large financial loss when they fail. That is why retail firms that operate large stores invest substantial amounts of resources in store location research and assessment.(M. Simmons 1984, p. 263) The impact of this research is

magnified because firms that do not perform location analyses sometimes imitate the location strategies of firms that do.

The effects of business decisions are apparent on retail landscapes, but the strategies that create those landscapes must be inferred. The consultants surveys, marketing surveys, and business speculations that form the basis for decisions are frequently closely guarded trade secrets.(Davies 1984, p. 1) Even more frequently, marketing research is focussed narrowly to solve specific business problems. Consequently, retail decision making provides little public information that contributes to a comprehensive understanding of metropolitan retail structure.

Systematic evaluation of retail locations was first implemented by large supermarket chains and has since been applied to other types of retail facilities. This field of study has evolved with two basic approaches: analog models and mathematical models.(Davies 1984; Thompson 1982) The analog approach compares potential new locations with locations of existing facilities.(Applebaum 1966) Trade areas are delimited by plotting results of customer surveys on maps, representing trade area characteristics cartographically, and forecasting sales at a proposed location from sales at existing stores in similar types of locations.(Davies 1984, pp. 3-4) The analog method has

been widely accepted because it has been practiced skillfully and because it allows non-technical executives to interject their professional judgments into the evaluation.

Mathematical models have usually been studied within the framework of either central place theory or general interaction theory based on gravity models.(Davies 1976, p. 5) Central place theory assumes mutually exclusive trade areas, an assumption that is unrealistic regarding competition among retail districts. Metropolitan population densities support several retail districts within the maximum distance customers would travel for most goods if no closer sources were available. Trade areas are delimited by factors other than range of a good.

Gravity models have been used to estimate consumer choices based on probabilities in overlapping trade areas. These models assume that volume of trade corresponds positively with size of a retail facility and buying power in the trade area. The proportion of the buying power that the facility attracts declines with distance.(Simons 1973, p. 69) Probabilistic assumptions about trade areas are more realistic in metropolitan settings than the assumptions of central place theory, and gravity models have been applied in both public and private planning studies.(Lakshmanan and Hansen 1965) Nevertheless, they yield inconclusive and, sometimes, inconsistent

results.(Simons, p. 74) A common criticism of the gravity models used in retail location is the difficulty in establishing attraction and deterrence variables.(Rogers 1984b) Attraction and deterrence to consumers based on aesthetic and social factors are of critical importance but are difficult to quantify. Measurements of stores using physical dimensions or technical capacity (such as number and type of check-out lanes) are commonly used as proxy indexes.

Gravity models chronically arrive at solutions where predicted sales are proportional to proxy indexes of attraction and deterrence. The solution that sales are proportional to attraction and that attraction is proportional to sales does not reveal what causes a location to be attractive to customers. Gravity models are often not useful to firms that are locating new stores. They are more effective in analyzing the performance of existing stores because actual sales volume can be compared to predictions. The method reveals sales performance relative to store size and calls attention to possible marketing and management problems.

Retail location and assessment research has been conducted by retailers and public planners. Disparate objectives exist in the application of these techniques. Public planners have emphasized the issue of impact on existing retail facilities while retailers are more

interested in store performance models.(Breheny 1983) Neither emphasis yields comprehensive assessment of metropolitan retail structure.(Davies 1984, p. 294)

The most powerful interaction between private business and public policy is public investment in facilities necessary for development. The example of the western suburbs of Knoxville, Tennessee, that was cited in Chapter I, once again is illuminating. The change in land values from a few thousand dollars to more than $100,000 per acre was caused in part by construction of an interstate highway. Conversion from rural to retail land uses and increases in land value occur rapidly for tracts close to new freeway interchanges.(Spears and Smith 1970) Major shopping centers cannot hope to survive and are not constructed on sites that lack access to major highways or public utilities.(Flessner 1986) Land owners and developers, therefore, have strong incentives to attempt to influence policy decisions. The decisions are controversial because resources are limited and a choice that benefits one group of people will almost invariably have adverse consequences for others.

Business decisions are guided by practical and legal restrictions on the operation of retail facilities. These restrictions have a strong geographical component. They are responsible for concentration of retail establishments and the formation of retail districts.

Forces Contributing to Centralization of Retailing

Retail districts occupy less than ten percent of the built-up part of a metropolitan area; but they have impacts on employment, surrounding land uses, and traffic disproportionate to the area that they occupy.(Berry 1963; Nelson 1958; Potter 1982) Almost all retail establishments are located in retail districts. Very few establishments stand alone surrounded by other land uses. There are three reasons for the tendency of retail establishments to agglomerate in districts: complementarity, accessibility, and regulation.

Complementarity

Complementary relationships among retail stores exist for three reasons. A group of stores benefits from economies of shared advertising, satisfies customers desire for comparison shopping, and provides the opportunity to conduct multi-stop trips.(Nelson 1958, p. 58; O'Kelly 1983) Stores serving different but related functions frequently locate together. For example, some retail districts contain drug stores and grocery stores that carry mutually exclusive lines of goods. Both stores carry frequently used household items and are often patronized by the same customer on a single trip.

Complementary relationships also occur among stores in the same functional category. Large shopping-goods stores attract high volume customer traffic through advertising and reputation. The presence of more than one large shopping-goods store in a retail district usually generates enough additional traffic, over that generated by a single store, to more than compensate for losses of customers from direct competition. Department stores like to locate in planned shopping centers that have at least one other large department store.(McDonald 1970, p. 234) The presence of smaller specialty stores provides additional complementary shopping opportunities.

Accessibility

Retail districts tend to develop at points of high accessibility or high traffic flow in the metropolitan transportation network and may include stores with few complementary links to other stores in the district. The presence of a large number of stores generates traffic that is often sufficient reason for alteration of the road network. The increase in accessibility that results contributes to growth of the retail district by attracting more stores. In some cases the pattern of accessibility is fixed and retail structure can only react. Intersections of major urban arterials and interstate highway interchanges are points of high accessibility whose

locations are usually not modified once they are constructed. Intersections and interchanges become foci of retail firms competing for prime locations.

The tendency of discount department stores to cluster around regional shopping centers may be due to accessibility considerations more than to complementarity considerations. Many discount department stores survive in locations with high traffic roadways but without other large shopping-goods facilities. The difference between discount department stores and traditional or mass merchandise department stores on the price-quality continuum restricts the potential for comparison shopping, as does the fact that the former are usually excluded from direct pedestrian access to planned shopping centers. Discount department stores gain access to a different segment of the market via the same transportation facilities used by the regional mall.

Regulation

Public regulation of land use affects the tendency of retail establishments to cluster. Public regulation has been effective at localized scales in discouraging incompatible land uses although it has been ineffective at controlling the general pattern of metropolitan retail structure. Planning agencies attempt to control retail development through zoning, building permits, and other

mechanisms. In most metropolitan areas, taxation has exerted greater influence than planning restrictions, but this has been the inadvertent effect of a tax structure designed for other purposes.(Carey 1976, p. 260; Rugg 1979, p. 242)

The influence of public regulation on retail structure varies with the political structure of the metropolitan area. Political fragmentation disperses planning authority among numerous local governments and creates fiscal disparities in taxation and public expenditures. State governments indirectly influence metropolitan retail structure by establishing a legal framework for municipal incorporation and annexation.(Colman 1975, p. 2)

Most planning agencies discourage freestanding stores in residential neighborhoods and encourage retail establishments to locate in planned shopping centers or along designated commercial streets. The policies have not drastically altered the location of large retail facilities in most metropolitan areas. They have pushed small retail facilities into retail districts to varying degrees, depending on the precise policies and enforcement procedures of the individual political entities.

By encouraging retail trade to concentrate, complementarity, accessibility, and regulation establish limits within which retail location strategies must operate. Some locations within a metropolitan area are

better suited than others to the formation of a district and retailers seek those locations.(Haig, p. 420; Alonso 1964) The relative suitability of locations for retail development has changed historically. Metropolitan retail structure has changed as location strategies are altered to take advantage of changing consumer shopping patterns, corporate structure, store technology, and transportation systems. Periods of distinctly different retail location strategies and corresponding forms of metropolitan retail structure can be identified. These periods are considered in Chapter III.

CHAPTER III

HISTORICAL DEVELOPMENT OF RETAIL DISTRICTS

Retail districts have held a strong position in the land use structure of metropolitan areas in the United States for a long time.(Proudfoot 1937) That strong position has been accentuated by the social importance of shopping in a consumer-oriented society. Retail districts are the location of civic, recreational, and social activities in addition to retail trade.(Muller 1981, p. 127; Gruen and Smith 1960, p. 23)

Although constant in their importance, retail districts have changed repeatedly in form and location during the twentieth century. The accumulated changes reflect competitive strategies and, to a lesser degree, planning controls on retail location decisions. Changes in competitive strategies define three periods of retail district development for medium-sized metropolitan statistical areas. After these periods are discussed, the Chattanooga MSA is analyzed to illustrate the historic patterns.

Three Periods of Retail District Development

The effects of changing retail location strategies on medium-sized MSAs can be generalized into three periods of retail district development: central business district

dominance from 1900 to 1945, careful retail district development from 1946 to 1970, and speculative retail district development from 1970 to the present. These periods correspond roughly with three phases of the suburban space economy: spill-over and specialization from 1920 to 1940, dispersal and diversification from 1940 to 1960, and in-filling and multi-nucleation from 1960 to the present.(Erickson 1983, p. 95-96)

Two distinctions must be made between the periods of retail district development and the phases of the suburban space economy. One is that suburban space economy phases apply to employment shifts in manufacturing and services as well as in retail trade. Another is that the suburban space economy phases were based on evidence from large rather than medium-sized metropolitan areas (12 of the 14 largest in population in 1940). Consequently, the dates of the suburban space economy phases are inappropriate for retail structure in medium-sized MSAs. Metropolitan statistical areas adopted innovations in retail structure at different times as a function of their size and regional location.(Cohen 1972; Lord 1985, p. 217) The dates assigned to the three periods of retail district development are generalized for the ninety-two medium-sized MSAs and are later than would be appropriate for comparable periods in large MSAs. They do not always correspond with periods covered by data used in the analysis of

metropolitan retail structure because they are intended to reflect qualitative shifts in the strategy of retail development rather than statistical breaks in development trends.

Period of central business district dominance, 1900-1945

The first half of the twentieth century was an era in which central business districts dominated retail trade. The dominance of central business districts had been established as part of the urban structure of the nineteenth century. It was perpetuated by the continued use of nineteenth century transportation technology into the twentieth century.(Yeates and Garner 1980, p. 192) With railroads and streetcars as the dominant modes of transportation, maximum accessibility to consumers meant proximity to a single central location for retail establishments.(Nelson 1958) Large scale merchandising developed within that central location. Some small retail shops followed population to the suburbs even as central business districts developed.(Dawson 1974, p. 161) A distinction emerged between the locations of small convenience-goods stores and large shopping-goods stores. The latter created the identity of the central business district as the focus of retail trade. Although decentralization of large-scale shopping-goods functions has frequently been attributed to the advent of automobile

transportation, central business district dominance persisted for several decades after automobiles became common.

Internal structure of the central business district was complex, but was focused on a peak property-value street intersection. This intersection was the point of maximum accessibility around which urban structure was assumed to be organized.(Murphy and Vance 1954) Theoretical models based on this period depict the central business district as the dominant location of retail activity and usually are too generalized to acknowledge the existence of small outlying retail districts. The concentric zone theory of Burgess identified the central business district as the focus of commercial activities, including those retail facilities capable of drawing customers from the entire metropolitan area. The remainder of the metropolitan area was assigned to bands of similar land use based primarily on residential quality.(Burgess 1925, pp. 54-56)

The concept of a single point of maximum accessibility was a convenient assumption for mathematical models of urban structure. Bid rent models used this assumption and analyzed competition for space among land uses in terms of desire for access to a central location.(Alonso 1960) The result of this competition was the allocation of land in concentric rings based on ability to profit from, and pay

for, proximity to central location. Retail activities, among the highest rent payers, were assigned to zones at or near the center of the model. To the extent that the assumption of monocentric structure was valid, these models provided a logical explanation of the central business district as the focal point for retail activity. The convenience of the monocentric simplifying assumption encouraged the use of such models long after the nature of cities had changed.(Levin 1979; Odland 1978, p. 234)

Even before the retail dominance of central business districts was shattered, the concept of retail structure concentrated in a neat cluster at the center of the city was no better than a useful simplification of reality. Alternative theoretical approaches from the period of central business district dominance included the sector theory of Hoyt and the multiple-nuclei theory of Harris and Ullman.(1945) Sector theory recognized that high levels of investment in development occurred in certain preferred directions from the urban core. Hoyt devised this theory to explain residential patterns, but was aware that retail development also tended to show selective location preferences outside of the central business district.(Hoyt 1939, p. 20) Multiple-nuclei theory acknowledged the existence of several focal points of high accessibility. Functional specialization, dominated by retail trade, was identified around those focal points. The bid rent model,

concentric zone theory, sector theory, and multiple-nuclei theory have been widely accepted as components of geographical theory about metropolitan structure.(Yeates and Garner 1980, pp. 198-206; Hartshorn 1980, 213-214, 218-220; Rugg 1979, 215-222, 241) The theoretical models emphasized the role of the central business district because outlying retail districts did not rival it in either function or volume at the time the models were devised.

Empirical studies also recognized the central business district as dominant in the general retail pattern. Outlying retail districts served a supporting role during the period of central business district dominance. Such districts, referred to as "local business centers" or "satellite business centers," were noted in the 1920s and probably existed earlier in cities with populations that exceeded 100,000.(Nelson 1958) Outlying districts developed at railway stations, streetcar line intersections, and automobile highway junctions.(Hoyt 1939, p. 20) Business thoroughfares outside of the central business district and even outside of the central city offered high consumer accessibility because of the growing number of consumers with automobiles.(Proudfoot 1937) The outlying shopping districts during the period of central business district dominance emphasized convenience-goods sold in small establishments. The average employment and

sales per retail establishment in incorporated suburbs was about half that per retail establishment in central cities in 1930.(Erickson 1983, p. 98)

The competition that outlying retail districts provided for central business districts was indirect. Customers were offered alternative functional categories of stores, not replicas of the shopping-goods stores in central business districts. Proliferation of automobiles influenced the nature of outlying retail districts. Retail expenditures on automobiles grew from 18.2 percent to 25.5 percent of metropolitan retail sales between 1929 and 1967. Central business district general merchandise stores were poorly equipped to capture a share of this sector because of inappropriate building design and space restrictions. Meanwhile, general merchandise sales declined from 18.7 percent in 1929 to 10.5 percent in 1954, before beginning a period of recovery associated with shopping center development.(Bucklin 1972) Part of the recovery was accounted for by development of automotive departments, a strategy permitted by the greater space available in planned shopping centers than in old downtown areas.

General merchandise sales and other shopping-goods functions were concentrated in the core of the central business district. Some of the automotive dealers and stores located in the central business district frame. Other automotive dealers and stores, along with many

convenience-goods stores (especially groceries and drugs), located outside the central business district and captured a share of consumer's disposable income that formerly had been spent downtown. The increase in automotive sales at the expense of general merchandise sales resulted in decline of the central business district's share of metropolitan sales without radical changes in the locations of particular retail functions.

Until the late 1940s, traditional department stores remained concentrated in the central business district. Mass merchandising chains, notably Sears, were exploiting the mobility of an automotive clientele with freestanding interceptor stores located along heavily travelled access routes leading to and from central business districts.(Nelson 1958; McDonald 1970) These stores were referred to as interceptor stores because their locations were designed to provide an intervening opportunity to customers driving from outlying areas to shop in central business districts.(Cohen 1972, p. 27) This strategy precluded development near the fringe of the built-up area. While the location of interceptor stores was designed to take advantage of traffic generated by central business districts, their merchandise lines generally did not compete with the high-price, quality establishments.

Although interceptor stores were outside the central area, their viability was dependent on central business

district dominance of metropolitan retail structure. Some of the stores were so close to the central business district that they coalesced with the larger retail district. For these reasons, interceptor stores are appropriately considered as a variation of the location strategies responsible for central business district dominance, not as a radical departure from those strategies.

The selection of a location for Country Club Plaza, constructed in Kansas City in 1925, was a radical departure from central business district strategies. It was the nation's first planned regional shopping center, duplicating the central business district in function with department stores, variety and apparel stores, and other high status retailing. The location of Country Club Plaza differed from the central business district by being away from major streetcar, subway, or elevated railway routes. A few other planned shopping centers of similar function and size were developed in the next twenty years, but the phenomenon remained rare until after 1946.(Hoyt 1971, p. 201)

Interceptor stores and planned shopping centers were developed in large metropolitan areas earlier than in medium-sized or smaller metropolitan areas. However, these early experiments outside of central business districts spread to medium-sized MSAs. They foreshadowed the

widespread development of outlying retail districts in the period from 1946 to 1970.

Period of careful retail district development, 1946-1970

Decentralization of retail trade accelerated after World War II. Competition between retail districts became direct as the functional categories of stores in new districts duplicated those in the central business district and other new districts. During the period of careful retail district development, construction of stores and shopping centers followed the profound changes in population and income patterns caused by suburban residential migration.(Gruen and Smith 1960, p. 21) The objective of retail location strategies was no longer access to central business district traffic but access to traffic from affluent residential neighborhoods. Regional and community shopping centers were located to serve shopping-goods customers who were not going to, or coming from, the central business district. Consequently, these centers were free to locate at the periphery of the built-up area where large tracts of land in rural uses were readily available.

Dawson provides a succinct summary of five frequently-cited reasons for the decentralization that occurred in both the United States and the United Kingdom.(Dawson 1974, pp. 155-175) First, consumer demand

moved because of population shifts to the suburbs and because the growing suburban population had above average incomes. Second, automobile and freeway development increased personal mobility, altering the relative accessibility of locations within metropolitan areas. Third, central business districts declined because of obsolete buildings, accessibility changes associated with highway construction, and aversion by affluent shoppers to increasing populations of inner-city residents in low economic and social groups. Fourth, sites for construction of large, modern stores were more readily available at the periphery of the built-up area of the city. Fifth, planning control and high taxes of inner cities were deterrents to developers of new shopping facilities.

Much of the increased development was in the form of planned shopping centers. About 8,000 were constructed in the United States between 1946 and 1964.(Hoyt 1971, p. 86; Walker 1981, p. 65) Almost all of them were outside central business districts, and many introduced shopping-goods and other high-prestige types of retailing to locations substantial distances from the old commercial core.

Although this development represented a dramatic alteration of metropolitan retail structure, it was conservative in two respects. First, decentralization of

retail trade lagged behind the movement of population to the suburbs. Second, despite the important role of department stores in many of the new shopping centers, decentralization of shopping-goods sales lagged behind the overall decentralization of retail trade.(Dawson 1974, p. 163)

Decentralization of population was ahead of decentralization of retail trade in 1948. Empirical time-series data for a sample of forty-six Midwestern MSAs that include a mixture of size classes illustrate the lag of retail development.(Steinnes 1982, p. 406) In 1948, only 54 percent of the population resided in central cities, but 62 percent of the small retail establishments and 76 percent of the large retail establishments were there. Decentralization of small retail establishments was ahead of decentralization of large retail establishments. The figure for large retail establishments, those with a payroll, is the most significant in terms of retail structure because such firms usually account for more than 95 percent of the sales volume in a MSA. Small stores followed population shifts first because they involved low levels of investment and, consequently, were willing to risk unproven markets.(Erickson 1983, p. 98)

The emphasis on convenience-goods stores that emerged in outlying locations during the period of central business district dominance was modified only gradually during the

period of careful retail district development. Steinnes data show continued decentralization from 1948 to 1972, with only 45 percent of the population in his Midwestern sample residing in central cities by the latter year. Decentralization of small retail establishments occurred even more rapidly, and by 1972 equalled the decentralization for population. Large retail establishments continued to lag, however, and 58 percent remained within central cities in 1972.

The forms of retail districts during the period of careful retail district development reflected a transportation system based on automobile traffic, but they were not yet adapted to freeways and interstate highways. Four conformations of retail districts were identified in the 1950s and 1960s. These were: 1) nucleated shopping centers, 2) urban arterial business districts, 3) highway-oriented business districts, and 4) automobile rows.(Berry 1959, 1963) The nucleated shopping center closely resembles the spatial structure envisioned by bid rent models. The other three were linear assemblages of retail activity and fit better with the sector model of urban structure, particularly when the axes of development radiate away from nodal centers. They differed from each other in either functional specialization or the type of road followed, and they played specialized roles in different parts of the same metropolitan area. A study in

Calgary, Alberta, revealed two ribbon developments in different sectors of the city. These two had markedly different functional characteristics that were tied to different types of customer linkages.(Boal and Johnson 1965)

The classification of retail districts that was developed in the 1950s and 1960s emphasized land use patterns that had evolved along urban arterials and highways without controlled traffic access. This classification provided empirically based analyses of the impact of automobile mobility on the retail structure of cities.(Berry 1963; Simmons 1964) Although the effects of interstate highways were considered, this work was too early to incorporate the influence of a completed system on metropolitan retail structure. Dramatic changes have occurred in the metropolitan landscape since the 1960s, and models of retail district morphology that were useful then are now obsolete.

The shopping-goods facilities in new shopping centers were frequently variety stores or small department stores constructed as branches of larger department stores in the central business district. These small shopping-goods stores were particularly popular in medium-sized MSAs because retailers were not confident that new trade areas created by income and population migration were sufficient to support large department stores outside of central

business districts. Sales volume in the new stores did not equal sales volume in larger central business district stores. Furthermore, small shopping-goods facilities did not generate enough traffic to stimulate significant retail development in the immediate vicinity. Some shopping centers with small shopping-goods stores as key tenants were smaller than those with convenience-goods stores.(Hayes and Schul 1965)

During the period of careful retail district development, many retailers doubted the ability of outlying retail districts to attract high prestige clientele away from central business districts, although some shopping center developers were aware that such a phenomenon was already underway.(Gruen 1953, p. 37) Department store developers waited for market areas to be proven by either overwhelming population growth or conspicuous success of smaller shopping-goods stores before risking the investment required for large stores in outlying shopping centers. Conservative estimates by economic consultants may have contributed to the conservatism of retailers. In the early 1950s, one consultant estimated that the maximum sales volume for Northland Center near Detroit would be $50 million after five years of operation. Actual sales exceeded $100 million for the first year and increased after that.(Gruen 1973, p. 26)

Cautious strategies of retail district development did

not mean that the rate of development was slow. The rapidity of population shifts to outlying areas during the twenty-five year period following World War II created an imbalance between metropolitan retail structure and the distribution of purchasing power. The combination of rapid population shifts and the care exercised by developers in locating large shopping-goods facilities eventually led to rapid development that began toward the end of the period of careful retail district development. Shopping centers were constructed in the late 1950s and 1960s at a rate faster than the growth of population and market potential, a "catchup phase" of development.(Tucker 1981, p. 46)

The rapid development of new retail districts in medium-sized MSAs began with construction of regional shopping centers in the mid-1960s. These centers still represented a cautious development strategy because they were located on the basis of pre-existing trade areas. Nevertheless, regional shopping centers generated enough traffic to stimulate significant growth in the surrounding area and new retail districts developed rapidly around them. In some cases, the new retail districts were better situated to capture established trade areas than were central business districts.

The phase of rapid development foreshadowed the end of the period of careful retail district development. Developers started to anticipate population growth. The

nature and function of retail facilities in outlying areas had changed since the period of central business district dominance. New retail districts now attract non-retail development. This role as a leading economic sector foreshadowed the next period of shopping district development.

Period of speculative retail district development, 1970-present

The period of careful retail district development has been succeeded by a period of commercial development of unprecedented scale and character. Nationally the most rapid growth in the number of shopping centers occurred during the 1970s.(Walker 1981, p. 80) Recently developed planned shopping centers have incorporated a diversity of retail functions, many of which were bulwarks of the central business districts. Suburban shopping centers have particularly come to dominate apparel and general merchandise functions, the highest status components of the retail segment of the economy. The location of the greatest intensity of retail activity has moved far away from the central business district in almost every MSA in the United States.

Shopping center development in medium-sized metropolitan areas since 1970 has followed trends that emerged in large metropolitan areas a decade earlier. It

has not been restricted to locations in well-populated suburban areas but has included speculative expansion into rural-urban fringe areas in anticipation of population growth.

> Catalytic-commercial sprawl...is seen as a major force that acts as a spur for further urban growth. This type of commercial development, characterized by the large shopping center, can produce commercial concentration as well as commercial sprawl, but in all cases is related to settlement pattern and especially to highway systems, thereby providing growth nuclei within the market areas.(Epstein 1967, p. 97)

Some real estate analysts believe that a fundamental change in the thinking of shopping center developers occurred during the 1970s. Developers came to hold four assumptions that motivated expansion into the rural-urban fringe where market support was not convincingly established.(Abbey 1981, p. 78) One was the anticipation that urban sprawl would continue to build the trade-area population. Second was the belief that easy interstate highway access would entice shoppers from continually increasing distances. Third, developers assumed that the market would continue to expand through real increases in the purchasing power of households. Fourth, developers believed they could make older shopping centers appear obsolete to consumers and usurp their clientele.

The period of speculative retail district development has resulted in new urban nuclei that augment or replace

the central business district in retailing and other functions. Some of these are planned as mixed use commercial developments, others emerge from a series of specialized developments in the same district. Both modes of development are part of a general shift of former central business district functions, including many non-retailing functions, to suburban locations.(Daniels 1974; Witherspoon, Abbett, and Gladstone 1977) New urban nuclei include a wide range of retail goods and non-merchandise retailing such as entertainment. They also include financial services, hotels and motels, and office complexes.

Regional shopping centers play a key role in the nucleus-developing process.(Logan 1984) Construction of Cumberland Mall in the rural-urban fringe of Atlanta, Georgia, created confidence among managers of smaller enterprises that the area would develop the facilities, image, population, and traffic necessary for commercial success. The location decision for a large shopping center influences location decisions by numerous other commercial enterprises.

Much of the relocation of activity is closely associated with interstate highways and, more specifically, interstate highway interchanges.(Muraco 1972) Interstate highways reduced the relative accessibility advantage of central business districts by providing better access to

other parts of metropolitan areas. They also directly disrupted central business district land use patterns and, when improperly designed, actually may restrict access to central business district retail facilities.(Horwood and Boyce 1959, p. 116) Principle freeway interchanges now serve as foci of land markets much as the peak value intersection did in the core of a central business district during the period of central business district dominance.(Erickson and Gentry 1985, p. 20) Erickson and Gentry emphasized accessibility to transportation as an incentive to participate in this competitive land market, but acknowledge the existence of another factor: external economies from location proximity between different commercial functions.

The formation of nuclei with several urban functions puts retail functions in direct competition for land with the other types of functions. The land obviously becomes quite expensive, but retail establishments must participate in this competition because they need the advantages of agglomeration with other retail and non-retail establishments. The keen competition among retail districts created by market saturation accentuates the need for retailers to compete with other commercial functions for the best sites.(Young 1985, p. 243) Failure to acquire a favorable site in a new urban nucleus puts retailers at a disadvantage in competition with retailers in other nuclei.

Recent empirical studies have examined new nodes of commercial development within large metropolitan areas. In many cases, these can be identified by the same criteria that formerly distinguished central business districts such as high levels of employment and retail sales.(Green 1980) In the location process, retail firms face different pressures than manufacturing firms, wholesaling firms, or office complexes.(Erickson 1986, p. 333) Retail firms have market areas that are only a portion of the metropolitan area but compete for land with firms that have regional, national, or international market areas. For this reason, the revenue of retail firms is more sensitive to location within a metropolitan area than the revenue of other types of firms in an urban nucleation. Retail firms are willing to pay more for land at the most accessible locations.

Baerwald emphasizes the importance of the new retail developments by referring to the Interstate Highway 494 corridor in the Minneapolis-St. Paul metropolitan area as "a new downtown."(Baerwald 1978) This characterization implies relocation of the urban retail core rather than its disintegration. He implies that the core of high-threshold activity has become no less centralized, but has changed in location and form. His case study provides a prototype for MSAs whose commercial functions are dominated by a major retail district outside of the central business district. Such a district may include more than one

regional shopping center.(Dawson 1983, p. 68)

Erickson and Gentry argue for the applicability of the bid rent model to suburban nucleations.(Erickson and Gentry 1985) This argument implies the relocation of an urban core but does not indicate whether there is a single dominant one or parity among several. Erickson and Gentry elaborate on Baerwald's concept, using the type of highway access available to a suburban retail agglomeration to identify three alternative forms. One of these is the "suburban freeway corridor," Baerwald's concept, which occurs where a frontage road parallels a freeway and provides access between that freeway and retail establishments. Second is the elongated arterial pattern, the contemporary manifestation of the commercial ribbons observed by Berry. Third is a concentric pattern focused on a feature of high accessibility such as an interstate highway interchange. This form of agglomeration usually includes a large anchor facility which draws workers or shoppers and, consequently, smaller retail establishments to take advantage of the traffic.

Studies concerning new urban commercial nucleations do not examine metropolitan retail structure at the external scale and are inadequate for comprehensive analysis at the internal scale. These studies help to update the classification of retail districts that was used in the 1950s and 1960s. They incorporate the impact of freeways

and non-retail commercial functions and are informative about the internal structure of urban sub-centers in large MSAs. None of the studies addresses possible differences in medium-sized MSAs. A more serious limitation is the failure to assess the status of urban nucleations in the retail structure of an entire MSA. Consequently, it is impossible to compare metropolitan retail structure in Baltimore with that in Minneapolis/St. Paul even though these MSAs were used in two of the most detailed studies of new urban nucleations.(Baerwald 1978; Erickson and Gentry 1985)

Retail Districts Emerging From the Three Periods in the Chattanooga MSA

The historical pattern of retail district development is complex. Metropolitan retail structure still reflects all three periods. Chattanooga (Alabama, Georgia, and Tennessee) provides a relatively clear example of what has been a complex sequence of events in many medium-sized MSAs. In 1982, the Chattanooga MSA contained three major retail centers and a central business district. It had two other retail areas that once were prominent enough to be delineated by the Bureau of the Census as major retail centers.(Figure 3.1) In 1982, major retail center 2, major retail center 4, and major retail center 5 were active. Major retail center 1 was excluded from the census because

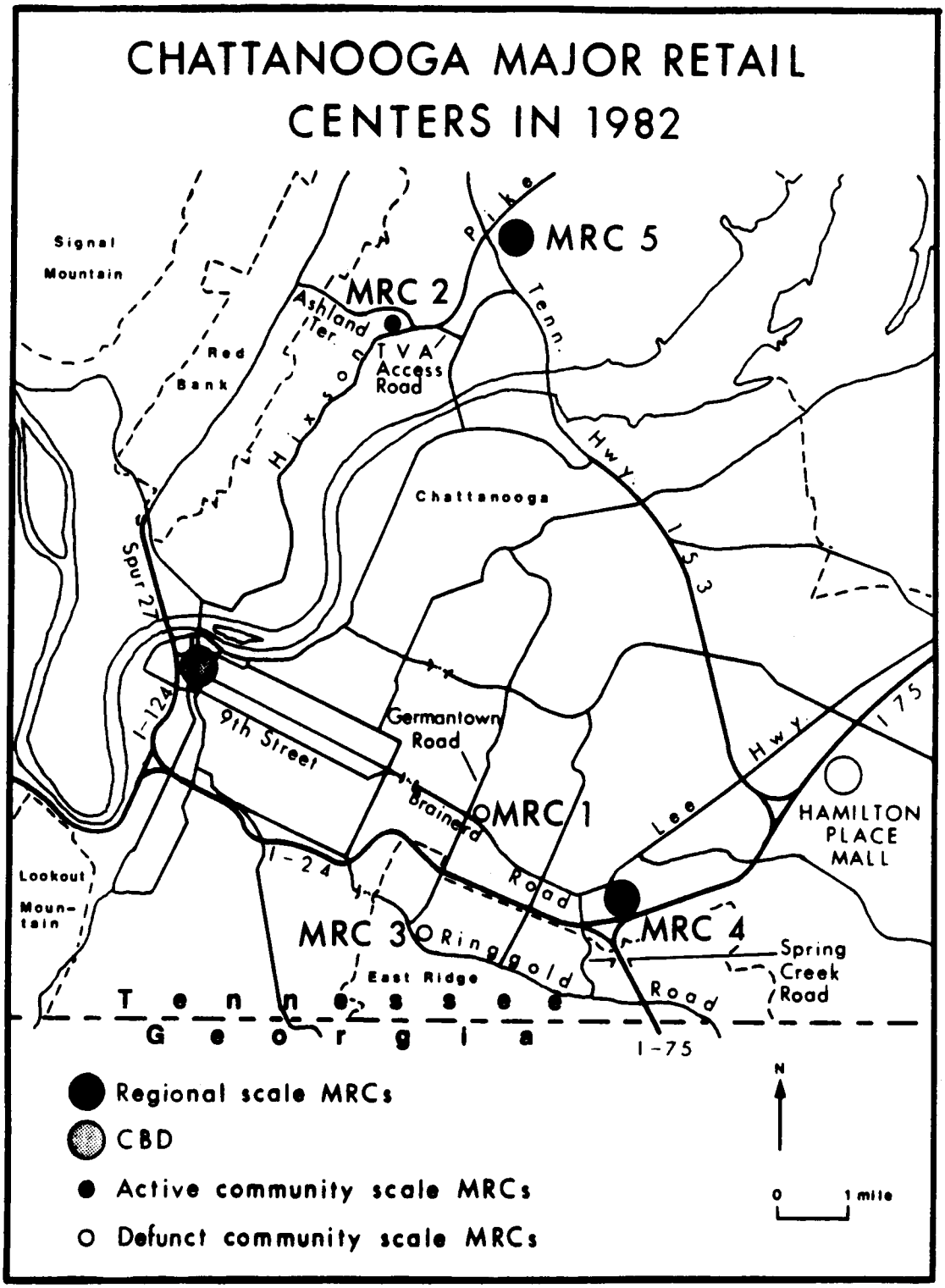


Figure 3.1. Chattanooga Major Retail Centers in 1982.

The Vogue department store had closed; major retail center 3 was excluded because the Loveman's department store was too small to meet the new definition. Sales volume figures for three census years show the sequence of emergence and decline of major retail centers and the precipitous decline of the central business district.(Table 3.1)

The process of competitive shopping district development was already well underway at the time the 1958 Census of Business first delineated major retail centers in the Chattanooga MSA. The central business district was the dominant retail district, but three outlying districts had developed in the 1940s and 1950s. Two major retail centers were recognized by the Bureau of the Census in 1958. Major retail center 1 included Brainerd Shopping Center (opened in 1951) and The Vogue, a small department store that was neither a branch of a central business district firm nor a part of a planned shopping center. Major retail center 2 had Highland Plaza (opened in 1958) as its nucleus and included other nearby establishments. A third retail area developed around Osborne Center (opened in 1949) and Loveman's, a branch of a central business district department store.(National Research Council 1970) This area was not designated as major retail center 3 until the 1963 Census of Business. Highland Plaza, the largest of the three shopping centers that served as nuclei for retail district development, had only 185,000 square feet (gross

Table 3.1. Retail Sales in Major Retail Centers of the Chattanooga Metropolitan Statistical Area

	All Sales (Thousands of 1967$)	Percent of Total Sales	Types of Goods (%) Shopping Goods Stores	Convenience Goods Stores	Other Stores
1958 MSA total	358,156	100	39	24	37
Chattanooga CBD	73,581	20.5	11	75	14
MRC 1	10,867	3.0	62	26	12
MRC 2	1,943	0.5	d	d	d
1963 MSA total	406,314	100	33	23	44
Chattanooga CBD	63,435	15.6	10	79	11
MRC 1	9,688	2.4	59	25	16
MRC 2	8,054	2.0	42	47	11
MRC 3	8,215	2.0	48	33	19
MRC 4	15,573	3.8	27	58	15
1972 MSA total	714,446	100	33	26	41
Chattanooga CBD	64,240	9.0	d	81	d
MRC 2	15,690	2.2	29	62	9
MRC 3	8,772	1.2	58	31	11
MRC 4	42,875	6.0	d	72	d
MRC 5	19,207	2.7	18	80	2
1982 MSA total	708,817	100	36	24	40
Chattanooga CBD	19,291	2.7	13	82	5
MRC 2	9,877	1.4	30	57	13
MRC 4	41,874	5.9	14	81	5
MRC 5	35,976	5.1	12	86	2

Note: d indicates data withheld because of census disclosure policy.

Sources: compiled from U.S. Censuses of Business and Retail Trade for 1958, 1963, 1972, and 1982.

leasable area). All three major retail centers, however, had smaller shopping centers or individual establishments located close to the main shopping center or department store.

The three major retail centers were the functional equivalents of community shopping centers because they had small department stores as key tenants. These major retail centers represent the early phase of the period of careful retail district development. They depended on access from major arterial streets and, presumably, drew on a trade area extending for a three-to-five mile radius.(McKeever and Griffin 1977, pp. 35-36) Each of the three faced an arterial street but lacked access to controlled access divided highways. Sales in all three had a strong convenience goods component in 1963, with only major retail center 2 showing a slightly higher shopping-goods total.

In some metropolitan areas, retail districts have evolved as their main shopping centers have grown from community to regional status.(McKeever and Griffin 1977, pp. 54-55) This did not occur for major retail centers 1, 2, or 3 in the Chattanooga MSA. Development of major retail center 4 in the early 1960s two miles east of major retail center 1 preempted significant expansion of both 1 and 3.

The development of major retail center 4 is an example of the catchup phase during the period of careful retail

district development. The regional shopping center was a significant expansion of the retail facilities in the MSA but was constructed only after other commercial development had established trade area viability. Brainerd Village, a community-scale shopping center anchored by a Service Merchandise discount department store, opened in 1960 at 5700 Brainerd Road.(Figure 3.2) Jubilee City, a 60,000 square foot discount department store opened at about the same time only three blocks away on Lee Highway.(National Research Bureau 1963, p. 291)

Eastgate Shopping Center was constructed on a site immediately adjacent to Brainerd Village with Millers, a regional department store, opening in August, 1962.("Millers Opened First at Center" 1965, p. 35) Eastgate Center did not achieve the status of a regional shopping center, however, until completion of a 340,000 square foot addition in August 1965. That addition brought the total floor space to 582,000 square feet.("New $10-Million Eastgate Open Today" 1965, p. 1) Ironically, Jubilee City and other commercial establishments on Lee Highway were excluded from the census delineation of major retail center 4 in 1963 and all subsequent censuses.(Figure 3.2)

The transportation pattern created by interstate highway construction caused a competitive disaster for major retail centers 1 and 3.(Figure 3.1) Total volume

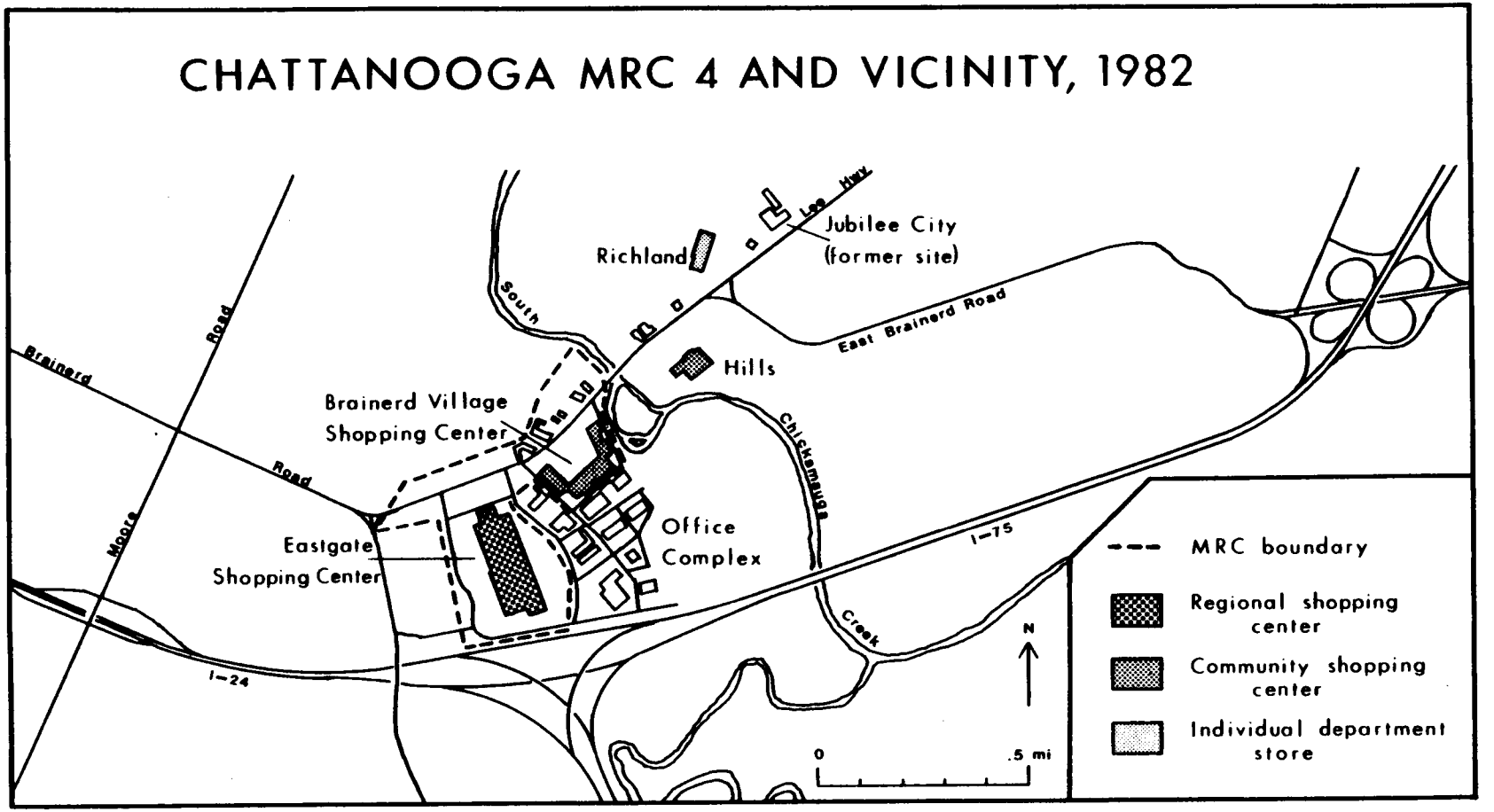


Figure 3.2. Chattanooga Major Retail Center 4 and Vicinity, 1982.

of traffic in the Chattanooga MSA increased between 1963 and 1982. Major retail centers 1 and 3 relied on the traffic on Brainerd Road and Ringgold Road as their source of customers. Increased traffic on these arterial streets was necessary to maintain the competitive status of major retail centers 1 and 3, but decreases occurred. The route of Interstate Highway 24, parallel to and midway between Brainerd Road and Ringgold Road, caused their traffic to decline but provided easy access to neither major retail center 1 nor 3.

This diversion effect was not apparent in a traffic survey conducted in 1963 because a segment of Interstate Highway 24 remained incomplete. Brainerd Road, the main arterial street in major retail center 1, averaged over 30,000 vehicles per day; Ringgold Road, the main arterial street in major retail center 3, averaged about 20,000 vehicles per day; but the completed section of Interstate Highway 24 that paralleled these two arterials carried only about 5,000 vehicles per day.(Tennessee Department of Transportation 1963)

Interstate Highway 24 was completed in the mid-1960s. By 1982, Brainerd Road in the vicinity of major retail center 1 carried 21,000 vehicles per day, and Ringgold Road in the vicinity of major retail center 3 carried 19,000 vehicles per day. These modest declines in traffic volume are drastic declines in the proportion of metropolitan

traffic. The parallel section of Interstate Highway 24 carried 70,000 vehicles per day.(Tennessee Department of Transportation 1982) Most of this was local traffic. The inter-metropolitan traffic, represented by traffic counts outside of the built-up portion of the MSA, was less than 30,000 vehicles per day.

Construction of large stores at major retail center 4 made the more modest facilities at major retail centers 1 and 3 obsolete. Congestion made expansion at the two older sites difficult and lack of easy access to a high-speed roadway contributed to their inability to attract additional investment. The result was evident by 1972. Closure of the anchor department store, The Vogue, at major retail center 1 rendered it defunct as a census delineated retail district. Major retail center 3 declined in MSA market share to 1.2 percent (from 2.0 percent in 1963), although its small department store remained open.(Table 3.1, p. 88) Because the 1982 Census of Retail Trade raised the minimum square footage required for the largest store in a major retail center to 100,000 square feet, major retail center 3 was eliminated.

The location of major retail center 4 differed from the locations of the three previous major retail centers in the Chattanooga MSA. It was at the interchange of Interstate Highway 75 and Interstate Highway 24. Sales totals for 1963 show the superiority of this major retail

center to the others even though the largest section of the shopping facility had not yet been constructed.(Table 3.1, p. 88) By 1972, major retail center 4 had defeated major retail centers 1 and 3 for control of the trade area in the eastern part of the MSA and was challenging the central business district in sales volume.

Development of major retail center 5 in 1972 captured the trade area of major retail center 2 just as development of major retail center 4 had captured the trade area of major retail centers 1 and 3. The components of major retail center 2, Highland Plaza shopping center and nearby retail establishments, exhibited growth from 1958 until 1972.(Table 3.1, p. 88) This major retail center had larger and stronger facilities than either major retail center 1 or 3. Highland Plaza contained a branch J.C. Penney department store and two variety stores. A large K-Mart discount department store (constructed sometime between 1967 and 1971) was located outside of Highland Plaza shopping center but close enough to be included in the major retail center. Because of these four stores, major retail center 2 had a higher proportion of sales in shopping goods than in the convenience-goods or other-goods categories combined in 1972. The site characteristics of Highland Plaza were not suited to major expansion. Neither was major retail center 2 located near enough to a high-speed transportation route to serve as one of the

leading retail districts in the MSA.

J.C. Penney abandoned major retail center 2 in 1972 and opened a large new store in Northgate Mall in major retail center 5. Although the operator of Highland Plaza was able to find a new department store tenant (Lovemans), major retail center 2 was not able to compete with major retail center 5. With the new census definition in 1982, only the K-Mart qualified as a major shopping-goods facility in major retail center 2. Highland Plaza has lost several of its shopping-goods stores since the 1982 census, and has been only partly able to fill the vacancies with convenience-goods and other stores. This major retail center has survived only through modification of function that removes it from direct competition with Northgate Mall in major retail center 5.

Construction of Northgate Mall as the nucleus of major retail center 5 in 1972 occurred during the period of speculative development of new urban nucleations. Despite its role in replacing an older, smaller, center, major retail center 5 does not have location characteristics identical to those of major retail center 4. At the time of construction, the location of major retail center 5 was not in a densely populated area. It had then, and still has, substandard transportation facilities for a regional shopping center. The best access is by Tennessee Highway 153, an upgraded four-lane highway that is not constructed

to controlled-access, high-speed standards although it permits higher traffic speeds than most urban arterials. Despite these difficulties, the location of the district facilitated land acquisition, avoided traffic congestion, and minimized the possibility of social aversion by affluent customers.

The sequence of development of the regional shopping center and peripheral commercial development reversed the sequence followed in major retail center 4. In major retail center 5, the regional shopping center was constructed first and served as a catalyst for later development. Two discount department stores were constructed in the early 1980s. Developers of Northgate Mall, unlike the developers of Eastgate Shopping Center, did not wait for proof of the viability of the trade area from other commercial ventures or for high population density close to the development site. The population within a four-mile radius of major retail center 5 in 1980 was 36,323. This was less than half the population within four miles of major retail center 4 (73,818) when that retail district was inaugurated in 1960.(Appendix B)

The historical sequence of retail structure in the Chattanooga MSA was influenced by the economic and social status of trade areas. The significance of these factors to emergence and decline of central business districts and major retail centers is more complex than the significance

of the highway network. Major retail centers 1 and 3 both declined between 1963 and 1982, but only major retail center 1 experienced significant economic and social changes in nearby neighborhoods. Changes in the proportion of the population that is poor do not correspond as clearly as transportation developments with emergence and decline.

A poverty index for census tracts is calculated by dividing the proportion of poor persons in a tract by the proportion in the MSA.[1] The index shows the economic status of the tract relative to the rest of the MSA and standardizes the data to overcome comparison problems that arise from inconsistency in the definition of poor people between censuses.

In 1960, the poverty index was 51 percent for census tracts nearer to major retail center 1 than to the central business district or any other major retail center. It was 93 percent for census tracts nearer to major retail center 3. In 1980, the index had risen to 110 percent for tracts nearer to major retail center 1 indicating substantial increase in the proportion of poor people in the area. The index was 90 percent for census tracts nearer to major retail center 3.(Table 3.2) Major retail center 5 was established in an area that had a high poverty index of 112

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[1]For 1980, the Bureau of the Census designation of persons in poverty can be used to enumerate poor people. No such designation is available in the 1960 census so household income of $2,000 or lower is used.

Table 3.2. Poverty Indexes for "Nearest Opportunity" Trade Areas of the Central Business District and Major Retail Centers in the Chattanooga Metropolitan Statistical Area, 1960 and 1980

	1960		1980	
	Percent of Population with Income Less Than $2,000	Index	Percent of Population in Poverty	Index
MSA total	15.8	100	13.5	100
Chattanooga CBD	23.1	146	23.7	176
MRC 1	8.1	51	14.9	110
MRC 2	7.3	46	7.7	57
MRC 3	14.6	93	12.2	90
MRC 4	2.9	71	7.5	56
MRC 5	17.7	112	9.5	70

Note: index values are the percent for the central business district or major retail center divided by the percent for the metropolitan statistical area, multiplied by 100. "Nearest opportunity" trade areas consist of census tracts closer to the central business district or major retail center than to any other census delineated retail area.

Source: United States Census of Population, 1960 and 1980.

in 1960, but a low index of 70 by 1980.

Major retail center 1 was located within a densely populated but affluent area in 1960. The affluence of the trade area had eroded by 1980 and so had the significance of the major retail center. Major retail center 1 is closer than major retail center 3 to Chattanooga's densely populated, poor, inner city neighborhoods. Expansion of these poor neighborhoods into census tracts near to major retail center 1 altered its poverty index.

The trade area of major retail center 3 was densely settled and contained about average numbers of poor people in both 1960 and 1980. The poverty index was 93 percent in 1960, 90 percent in 1980. This major retail center declined in share of metropolitan sales despite the economic stability of its trade area.

Major retail center 5 was constructed in an area that was sparsely populated and had a high proportion of poor people in 1960. The area had grown by 1980, and the new residents were more affluent. In major retail centers 1 and 5, trends in retail sales mirrored trends in economic status of residents within the trade area, but the direction of cause and effect is not clear. In major retail center 3, factors other than economic status of the trade area were clearly responsible for demise.

Despite the influence of national trends in location strategies, retail structure in the Chattanooga MSA is not

entirely predictable without knowledge of local factors affecting retail districts. The success of major retail center 4 and failure of major retail center 2 in expanding from community-scale to regional-scale retail activity occurred largely because of local differences in site and access to high-speed roadways.

The site of Highland Plaza in major retail center 2 is bordered by hilly terrain to the south, a dual barrier of arterial streets and hilly terrain to the east and north, and a school to the west. These features made expansion of the shopping center economically unfeasible and rendered the major retail center unattractive to firms seeking the advantages of agglomeration of a large shopping center. The only large store installed in major retail center 2 after construction of Highland Plaza, a K-Mart, may have been attracted to the location because of favorable zoning rather than functional complimentarity with existing stores. K-Marts are frequently located away from other shopping-goods facilities, and the fact that this particular store is not visible from Highland Plaza supports the inference that it does not depend on the shopping center to generate customer traffic.

Major retail center 4 was located on a much different site. The floodplain of Chickamauga Creek contains no serious physical barriers, assuming flood control measures are effective, and lacked non-retail land uses capable of

competing with shopping centers in the early 1960s. After Brainerd Plaza was established as a successful community shopping center, large tracts of level land were available for the construction and subsequent expansion of Eastgate Mall. Additional land was available for an office park and retail development beyond the major retail center boundary. Furthermore, Interstate Highways 24 and 75 intersect at the site of major retail center 4. Although access ramps are more than one-half mile from the major retail center boundary, the interstate highways provide transportation access far superior to that of major retail center 2 which is located three miles from the nearest high-speed highway.

A new phase in competition between major retail centers is now occurring in the Chattanooga MSA. Major retail center 4, centered on Eastgate Mall, faces competition from Hamilton Place Mall, a new shopping center that opened in August of 1987.(Flessner 1987d) Hamilton Place Mall contains 1.4 million square feet of floor space, approximately twice that of Eastgate Mall.(Flessner 1987b) The new shopping center includes two department store chains that are new to the Chattanooga MSA, Belk and Parisian. It contains two other department stores that directly replace stores located elsewhere in the metropolitan area. Hess's in Hamilton Place replaces Miller's in Eastgate and Sears in Hamilton Place replaces

the central business district Sears.[2](Vass 1987b) Furthermore, opening of the Loveman's in Hamilton Place will probably be accompanied by closing of some other Loveman's store in the Chattanooga metropolitan area although specific plans have not yet been announced.

Hamilton Place Mall is three miles from Eastgate Mall in a location that draws traffic from the same roads that serve the older shopping center. Interstate Highway 75, Tennessee Highway 153, and Lee Highway (U.S. 11) are all major routes that serve both sites. The major difference is that Hamilton Place has direct access to Interstate Highway 75 and indirect access to Lee Highway whereas Eastgate had direct access to Lee Highway but only indirect access to Interstate Highway 75. Lee Highway is a four-lane urban arterial street with frequent stoplights. Consequently, Hamilton Place has a substantial advantage over Eastgate in access to a high speed road. Selection of the location of Hamilton Place was based on the accessibility created by the intersection of Interstate Highway 75 and Tennessee Highway 153.(Flessner 1986) This accessibility is enhanced by construction of new entrance and exit ramps connecting Hamilton Place with Interstate Highway 75.

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[2]The Miller's chain has been purchased by Hess's and all Miller's stores are being renamed. Hess's decided to exercise an option they acquired in the Miller's transaction to open a new store in Hamilton Place Mall and replace the Miller's in Eastgate Mall.

Hamilton Place replaces Eastgate as the leading planned shopping center in the Chattanooga MSA because of superior accessibility and newer facilities. It meets the criteria of a major retail center although no major retail centers will be delineated in the 1987 Census of Retail Trade.(Poyer 1987) Hamilton Place is the focal point of development of a new urban nucleation. At least six neighborhood or community shopping centers are being developed to take advantage of the traffic created by Hamilton Place and several non-retail commercial buildings are being constructed within a one mile radius.(Vass 1986; Flessner 1987b; Wilson 1987)

The success of the new retail district focussed on Hamilton Place Mall will come at the expense of major retail center 4. Only one of four key tenants at Eastgate Mall, J.C. Penney, is likely to maintain operation with an unaltered market strategy. The presence of a key tenant insures that Eastgate Mall will continue to be occupied by retail tenants, but its role in the metropolitan retail structure of Chattanooga will change.

Eastgate loses one key tenant in 1988 as Miller's moves to become Hess's at Hamilton Place. Two other key tenants of Eastgate Mall, Loveman's and Sears, have larger more modern facilities at Hamilton Place. The Eastgate branches of these two firms will suffer severe losses of market share and will have to close or alter their

marketing to a discount price strategy. The majority of stores of all sizes at Eastgate will shift to a lower position on the price-quality continuum. The shift to discount price strategy may occur under the same firm management that once operated higher price-quality stores. Firms are likely to abandon Eastgate, however, once Hamilton Place establishes control of a satisfactory market share because operation of a low quality store can damage a firms image among customers seeking high-quality goods and services.(Gruen 1973) Stores at Eastgate, particularly the large anchor facilities, will become vacant or be occupied by firms that specialize in discount price strategies.

Pervasive trends in urban organization, the decentralization of population since 1950 and the importance of interstate highways and other high-speed roads, have controlled the reorganization of metropolitan retail structure in a general way. Location decisions for specific stores or shopping centers are often influenced by individual features of the metropolitan area in which the facilities are located. Similarly, consumers respond to individual features of retail districts. The historical sequence of retail district development in Chattanooga illustrates how the retail structure of a particular MSA is caused by interaction of local features with national trends. Other metropolitan areas have local features that are equally significant to retail structure but of an

entirely different nature. That is why the retail structure of all metropolitan areas is not the same.

The scholarly literature on retail structure fails to compare the retail structure of different metropolitan areas. Analysis that defines the types of structure in medium-sized MSAs and identifies the members of each type is needed. Such an analysis is conducted in the following chapter.

CHAPTER IV

RETAIL STRUCTURE DIFFERENCES AMONG MEDIUM-SIZED METROPOLITAN STATISTICAL AREAS

Medium-sized metropolitan statistical areas (MSAs) in the United States are in different local and regional settings that result in variation of retail structure. This variation is reflected in the degree of central business district decline, level of development of retail districts outside the central business district, and location of outlying retail districts relative to political boundaries. It is possible to classify medium-sized MSAs on the basis of differences in retail structure.

Recently, geographers have emphasized similarities of metropolitan retail structure such as the "striking sameness across the country in design and tenant composition" of enclosed shopping malls.(Lord 1985, p. 211) Common elements do not, however, eliminate a need for understanding inter-metropolitan variation. Specific problems associated with retail structure are not uniform for all MSAs even though they fall within the three types of problems identified in Chapter I. A classification that incorporates both political units and retail districts is needed to distinguish metropolitan areas with different sets of problems.

The political units of primary interest are central cities within MSAs because of their size and historical

role in the development of retail structure. Political structure is significant to classification of retail structure in two ways. First, the boundaries of political units are locational references for the distinction between retail sales within and beyond the boundaries of central cities. Second, actions of public officials alter retail structure, and the configuration of political units influences the identity and interests of these officials. That is why political structure affects the ways in which public policies address problems.

Classification is accomplished by analysis of retail sales statistics from the 1982 Census of Retail Trade and population data from the 1980 Census of Population. (United States Bureau of the Census 1983, 1984a, 1984b) The sales data are total sales for each MSA plus sales for subdivisions within the MSA: the central city or cities, the central business district or districts, and the major retail centers. Population data are for entire MSAs and central cities. Although two years separate the data sources, they are considered temporally equivalent for the purposes of this study. Because population statistics are less volatile than retail sales statistics, variables derived from combination of population and sales figures are more valid for 1982 than for 1980.

Major retail centers represent decentralization of sales from the central business district, but represent

centralization in areas that meet the census criteria. Scholarly literature on retailing frequently analyzes the decentralization away from central business districts without clearly recognizing that alternative forms of centralization can develop.(Clark 1984, p. 113) A distinction between centralization and concentration is used in the discussion of distribution of retail sales within metropolitan areas. Centralization refers to sales that occur within a specific retail area such as a central business district, major retail center, or retail district. Concentration refers to sales within a political unit such as a central city or a county.

Two geographical concepts of retail centralization can be analyzed. One defines centralization as the proportion of sales within a single central business district or major retail center. This concept corresponds with the monocentric urban structure assumed by both traditional urban theory and some mathematically-based land use models.(Burgess 1925; Alonso 1960; Odland 1978) The second defines centralization as the proportion of sales in all central business districts and major retail centers. This concept corresponds with polycentric urban structure.(Muller 1981; Erickson 1986)

Statistical Analysis of Variables

Five types of retail structure are defined by a series of statistical procedures. The procedures are performed on twenty-one variables that pertain to metropolitan retail structure.(Table 4.1) These variables are measurements of sales for central business districts and major retail centers and of population and sales for central cities. Variables are calculated for absolute values and for proportions of MSA totals.

Variables measuring population and sales of largest central cities in MSAs do not measure identical sets of central cities. The distinction had little effect, however, on the analysis. The central city with the largest population differed from the one with the largest amount of sales in only four of ninety-two medium-sized MSAs in 1982.[1] Preliminary analysis conducted with variables for population in the largest central city measured by sales and for sales in the largest central city measured by population yielded redundant results. These variables were, therefore, omitted from further analysis.

In several cases, two or more variables measure

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[1]The four exceptions are the Appleton/Oshkosh, Wisconsin; Johnson City/Kingsport/Bristol, Tennessee and Virginia; Newburgh/Middletown, New York; and New London/Norwich, Connecticut and Rhode Island MSAs.

Table 4.1. Variable Abbreviations and Definitions for Medium-Sized Metropolitan Statistical Areas in the Sample of Ninety-Two

Abbreviation	Definition
Pop	Population
PoCC	Total population in central cities
PoCCp	Proportion of population (Pop) in central cities.
PoCC1	Population of the largest central city
PoCC1p	Proportion of population (Pop) in the largest central city
Percap	Per capita retail sales
SaTOT	Total retail sales
SaCC	Total retail sales in all central cities
SaLCC	Total retail sales in the largest (by sales) central city.
SaCBD	Total retail sales in all central business districts
SaLCBD	Total retail sales in the largest (by sales) central business district
SaMRC	Total retail sales in all major retail centers (excluding central business districts)
SaLMRC	Total retail sales in the largest major retail center
SaALLC	Total retail sales in the combined total of central business districts and major retail centers
SaCCp	Proportion of MSA retail sales (SaTOT) in all central cities
SaLCCp	Proportion of retail sales (SaTOT) in the largest (by sales) central city.
SaCBDp	Proportion of retail sales (SaTOT) in all central business districts
SaLCBDp	Proportion of retail sales (SaTOT) in the largest central business district
SaMRCp	Proportion of retail sales (SaTOT) in all major retail centers (excluding central business districts)
SaLMRCp	Proportion of retail sales (SaTOT) in the largest major retail center
SaALLCp	Proportion of retail sales (SaTOT) in central business districts and major retail centers

similar aspects of metropolitan retail structure in slightly different ways. This is particularly apparent where a variable for absolute values and another for proportion of MSA total are both calculated from the same datum. The statistical collinearity that results from these similarities does not compromise the analysis because factor analysis is used and because the results are used to generate a typology rather than a prescriptive model.

The analysis is performed in two stages. First, a correlation matrix is derived to indicate the relationship between variables. Second, factor analysis is performed to identify the principal factors of variation within the correlation matrix. Variable loadings on the factors identify three key variables used for assigning MSAs to categories. Key variables are used because a lack of simple structure may complicate interpretation of factor scores.(Johnston 1980, p. 174) Error resulting from the use of surrogate variables is acceptable because each has a factor loading of .91 or greater.

Correlation between variables

Statistically significant relationships in the correlation matrix reflect the effects on retail structure of competitive processes, size of metropolitan areas, and political structure.(Table 4.2) Correlation coefficients indicate success of major retail centers, a tendency toward

Table 4.2. Correlation Matrix for Ninety-Two Medium-Sized Metropolitan Statistical Areas, 1982 Data

Variable	Pop	PoCCp	PoCC1p	SaTOT	SaLMRC	SaCBDp	SaMRCp	SaLMRCp	SaALLCp
Pop	1.00	.01	.02	.95	.42	- .31	.14	- .36	.05
PoCCp	.....	1.00	.93	.07	.20	- .01	.14	.11	.14
PoCC1p	.....	.....	1.00	.09	.24	- .05	.20	.14	.18
SaTOT	.....	.....	.....	1.00	.40	- .31	.09	- .41	- .01
SaLMRC	.....	.....	.....	.....	1.00	- .32	.66	.62	.57
SaCBDp	.....	.....	.....	.....	.....	1.00	- .25	- .03	- .08
SaMRCp	.....	.....	.....	.....	.....	.....	1.00	.57	.94
SaLMRCp	.....	.....	.....	.....	.....	.....	.....	1.00	.58
SaALLCp	.....	.....	.....	.....	.....	.....	.....	.....	1.00

Note: Minimum absolute values of the correlation coefficients that correspond with particular significance levels are as follows: .18 is significant at .1; .21 is significant at .05; .28 is significant at .01; .33 is significant at .001.

both more and larger major retail centers in larger MSAs, and a weak but positive relationship between inclusive central cities and retail centralization.

Competition exists between major retail centers and central business districts, and the former clearly have been more successful. The negative correlation between proportion of sales in major retail centers (SaMRCp) and proportion of sales in central business districts (SaCBDp) is an indication of the competitive relationship.

The success of major retail centers over central business districts is apparent when sales distribution is analyzed using the concept of polycentric structure. The variable for proportion of retail sales in the combination of central business districts and major retail centers (SaALLCp) depicts the degree of centralization based on the concept of polycentric structure. This variable has a strong positive correlation with proportion of sales in major retail centers (SaMRCp) and an insignificant correlation with proportion of sales in central business districts (SaCBDp).

There is no significant correlation between size of the MSA and the degree of centralization based on the concept of polycentric structure. Neither population (Pop) nor total retail sales (SaTOT) have a significant correlation with proportion of retail sales in the combination of central business districts and major retail

centers (SaALLCp). There is significant correlation between size of the MSA and degree of centralization based on the concept of monocentric structure. Because of the dominance of major retail centers and the demise of central business districts, this concept is best represented by the proportion of retail sales in the largest major retail center (SaLMRCp). Both population and total retail sales of the MSA had negative correlations with this variable.

Total retail sales (SaTOT) indicates demand in the ninety-two medium-sized MSAs. The range of this variable in 1982 was from $937 million (Johnstown) to $5,714 million (Oklahoma City). Metropolitan statistical areas with large demand require greater sales facilities than smaller ones. The former satisfy demand by having both more and larger major retail centers than the latter. Proportion of sales in the largest major retail center (SaLMRCp) has a correlation with total retail sales (SaTOT) of -.41 indicating that the size of the largest major retail center is not in linear proportion to demand in the MSA. This finding supports the idea that scale diseconomies, or at least developers perceptions of them, inhibit the growth of retail districts beyond a certain size.

The proportion of retail sales in the combined total of central business districts and major retail centers (SaALLCp) tends to remain constant with MSA size indicating that polycentric structure is more developed in larger

MSAs. Even so, the largest major retail centers are in the largest MSAs. Total retail sales in the largest major retail center (SaLMRC) had a positive correlation with both population (Pop) and total retail sales (SaTOT) of the MSA.

Underbounding by central cities is a chronic feature of American MSAs. Underbounding refers to the failure of political boundaries of the central city to encompass all of the built-up area of the city. In some cases the underbounded portion of the built-up area is within the boundaries of incorporated suburbs. In other cases it is unincorporated. There is no indication that degree of underbounding is related to size of a MSA. Neither proportion of population in all central cities (PoCCp) nor proportion of population in the largest central city (PoLCCp) registered a significant correlation with either population or total retail sales for the ninety-two sample MSAs. Within the limits of the size class studied here, central cities of larger MSAs appear neither more likely nor less likely to underbound population and sales than central cities of smaller MSAs.

There is an indication that political underbounding of central cities is related to retail decentralization outside of central business districts and major retail centers. Metropolitan statistical areas whose largest central city encompasses a large share of the total

population have a tendency toward centralization of retail sales. This propensity for centralization of sales is not as likely where multiple central cities account for a high proportion of the population. Proportion of retail sales in the combination of central business districts and major retail centers (SaALLCp) has a weak positive correlation of .18 with proportion of population in the largest central city (PoCC1p) but an even weaker correlation of only .14 with proportion of population in all central cities (PoCCp).

Strong correlations provide evidence of a competitive process among retail districts and imply a compound process whereby growing MSAs meet increasing demand for retail goods through both major retail center expansion and multi-nucleation. Weaker correlations hint that centralization of sales in central business districts and major retail centers is stronger in MSAs where the largest central city encompasses a high proportion of the total population. Factor analysis is required to reveal the patterns of variation among MSAs.

Four principal factors

The objective of this analysis is to find fundamental aspects of metropolitan retail structure that are indicated by some subset of the twenty-one variables. Factor analysis is the appropriate statistical tool to meet this

objective.(Johnston 1980, p. 162) The analysis uses a principal components factor analysis procedure with varimax rotation.[2] Cumulative proportions of eigenvalues of the reduced correlation matrix are examined to determine the appropriate number of factors to extract.(Table 4.3) Three factors explain 76 percent of the variance in the correlation matrix, and a fourth factor explains an additional 13 percent; but the fifth and sixth factors explain only an additional 4 percent and 3 percent. Eigenvalues are all greater than 2.5 for the first four factors and less than 1.0 for the fifth and sixth factors. Four appears to be the most appropriate number of factors to balance explanation of a high percent of the variance against maintenance of a parsimonious set of factors.

Factor loadings from twenty variables reveal the nature of the four factors.(Table 4.4) The descriptive names assigned to the factors are interpretations of their significance to retail structure.

Factor two, the size factor, is the least useful of the four factors for understanding variation in metropolitan retail structure and, for that reason, is not used to define types. This factor has very high loadings

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[2]Only twenty of the twenty-one variables pertaining to metropolitan retail structure could be used in the factor analysis. The variable for total sales in all central business districts and major retail centers combined (SaALLC) was so highly correlated with other variables that it was excluded from the analysis.

Table 4.3. Cumulative Percentage of Variance Explained by Factors Using SAS and SPSSX Statistical Programs

Number of Factors	Eigenvalues		Percent of Variance	
	SAS	SPSSX	SAS	SPSSX
1	9.0	9.0	42	41
2	3.9	3.8	60	58
3	3.6	3.5	76	74
4	2.8	2.7	89	86
5	0.9		93	
6	0.5		96	

Table 4.4. Varimax Rotated Factor Pattern: SAS Principal Factors Program

Variable	Factor 1 (Central City)	Factor 2 (Size)	Factor 3 (Major Retail Center)	Factor 4 (Central Business District)
SaLCCp	.97	-.02	.10	.05
PoCC1p	.94	.11	.11	.01
PoCCp	.93	.10	.05	-.01
SaCCp	.93	-.04	.01	.04
SaLCC	.72	.66	.06	.02
SaTOT	-.03	.98	.00	.01
Pop	-.12	.95	.09	-.01
PoCC	.60	.73	.09	-.03
SaCC	.63	.71	.00	.02
SaMRC	.05	.70	.65	-.01
PoCC1	.66	.67	.12	-.01
Percap	.27	.34	-.28	.03
SaMRCp	.08	.11	.94	-.11
SaALLCp	.08	.01	.94	.19
SaLMRC	.15	.37	.75	-.19
SaLMRCp	.14	-.44	.74	-.14
SaLCBDp	.09	-.30	-.07	.91
SaCBDp	.02	-.32	-.09	.91
SaLCBD	.06	.43	-.01	.87
SaCBD	-.02	.47	-.02	.85

from two variables that measure size of the MSA. Population (Pop) and total retail sales (SaTOT) have loadings of .95 and .98. Variables that indicate the size of components are more pertinent than ones that indicate total size of the MSA to identifying distinctive patterns of retail structure, but the former have lower loadings on factor two than the latter.

Size of central business districts is indicated by sales in all central business districts (SaCBD) and by sales in the largest central business district (SaLCBD). These two variables have loadings of .47 and .43. Size of central cities is indicated by four population and sales variables. They are population in the largest central city (PoCC1), sales in the largest central city (SaLCC), population in all central cities (PoCC), and sales in all central cities (SaCC). The central city variables have similar loadings on factor two, from .66 to .73. Size of major retail centers is indicated by two variables. Sales in all major retail centers (SaMRC) has a loading of .70, sales in the largest major retail center (SaLMRC) has a loading of .37.

The size factor appears to strongly depict only variation in aggregate size of the MSA and, therefore, adds little to the understanding of metropolitan retail structure. Differences in aggregate size of the MSAs were readily apparent prior to the factor analysis.

Consequently, no key variable is identified for factor two. The other three factors are more revealing. Each has a key variable that indicates something about the spatial distribution of retail sales within MSAs. The key variable is the one with the highest loading.

The factor that explains the largest amount of variance, factor one, is a central city factor.(Table 4.4) It has high loadings from all variables that measure some aspect of population or sales in the central cities of the ninety-two medium-sized MSAs. The political structure of a metropolitan area is reflected in factor one because proportions of population and sales reflect the degree of underbounding of the built-up area by the central city. If the central city contained all of the built-up land in a MSA, it would also contain all of the population and sales. Variables that measure proportions of population or sales within central cities measure the degree of underbounding. These variables have higher loadings on factor one than variables that measure totals of population and sales.

The variable for proportion of retail sales in the largest central city (SaLCCp) was selected as the key variable for the central city factor because it has a higher loading than any other and because analysis of a sales variable is more directly relevant to retail structure than analysis of a population variable. The key variable for factor one is used to indicate the

relationship between political structure and retail structure.

Factor three has high loadings from variables that measure sales in major retail centers. The variable with the highest loading is the proportion of retail sales in all major retail centers (SaMRCp). Proportion of retail sales in the combined total of central business districts and major retail centers (SaALLCp) had a loading that was only slightly lower. The similarity indicates the insignificance of central business districts and the latter variable is a redundant measure of the former. That is why the variable for proportion of retail sales in all major retail centers (SaMRCp) is used as the key variable for factor three.

Factor four has high loadings from variables that measure sales in central business districts. Two variables had loadings of .91: the one for proportion of retail sales in all central business districts (SaCBDp) and the one for proportion of retail sales in the largest central business district (SaLCBDp). The loading is slightly higher for the latter than for the former when calculated beyond two decimal places.

The key variable for factor four is the one for proportion of retail sales in the largest central business district (SaLCBDp). This variable indicates the strength of an area that, in most cases, is historically the primary

retail district of the MSA. Use of this key variable for the central business district factor allows comparison of the degree to which MSAs have maintained sales volume in the historical location of retail dominance.

Assignment of Metropolitan Statistical Areas to Categories by Type of Retail Structure

Results of the statistical analysis are used to assign the ninety-two medium-sized MSAs to categories based on five types of metropolitan retail structure.(Figure 4.1) Three types are defined by standardized scores of key variables, one is defined by standardized scores of other variables, and one consists of MSAs with retail structure that does not qualify for any of the other four.

Fifty-five of the ninety-two MSAs have standardized scores of .50 or greater on at least one of the three key variables and are assigned to categories employing these scores. It is necessary to establish priorities because twenty-two MSAs have standardized scores greater than .50 for more than one key variable.

Metropolitan statistical areas are assigned to the "central business district maintained" and "major retail center dominated" types first because central business districts and major retail centers indicate the location of retail sales more precisely than do political units. The proportion of retail sales in the largest central business

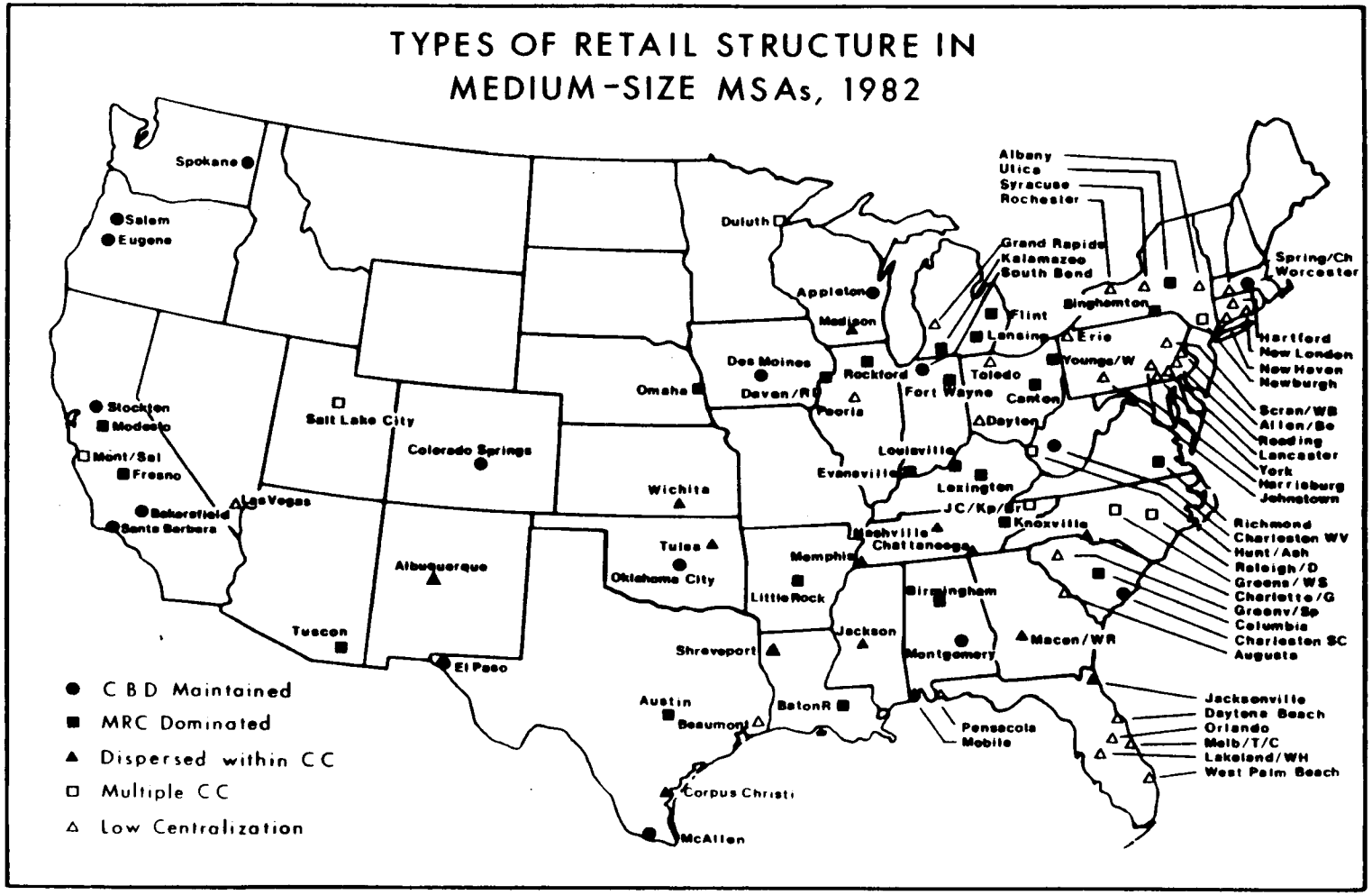


Figure 4.1. Types of Retail Structure in Medium-Sized Metropolitan Statistical Areas in 1982.

district (SaLCBDp) is the key variable employed to assign MSAs to the "central business district maintained" type while proportion of retail sales in major retail centers (SaMRCp) is the one employed for the "major retail center dominant" type. Metropolitan statistical areas that qualify for both categories are assigned employing the key variable for which they have the higher standardized score. Seventeen MSAs are assigned to the "central business district maintained" category and twenty-four are assigned to the "major retail center dominated" category.(Table 4.5a and 4.5b)

Standardized scores of the third key variable, the one for proportion of retail sales in the largest central city (SaLCCp), are used to identify members of the "dispersed within a central city" type. Only the fifty-one medium-sized MSAs not included in the first two types were considered for this one. The score of .50 is, once again, used as a lower limit and fourteen MSAs are included within the type.(Table 4.5c)

Thirty-seven of the ninety-two MSAs do not have a standardized score of .50 or greater in any of the three key variables. Eight of these exceed .50 in either proportion of retail sales in all central business districts or proportion of retail sales in all central cities. These eight are assigned to the "multiple central city" category.(Table 4.5d)

Table 4.5. Classification of Metropolitan Statistical Areas Based on Standardized Scores, 1982 Data

MSA	Standardized Score	MSA	Standardized Score
a. Central business district maintained MSAs (SaLCBDp > .5)		b. Major retail center dominated MSAs (SaMRCp > .5)	
	SaLCBDp		SaMRCp
Appleton/Oshkosh	.87	Austin	.89
Bakersfield	1.68	Baton Rouge	.96
Charleston, SC	.96	Binghamton	1.97
Charleston, WV	3.25	Birmingham	1.85
Colorado Springs	.53	Canton	1.26
Des Moines	2.40	Columbia	2.36
El Paso	.95	Davenport/R.I./Mo.	1.34
Eugene/Springfield	1.18	Evansville	.94
McAllen/Pharr/Edin.	2.47	Flint	.86
Montgomery	.83	Fort Wayne	1.42
Oklahoma City	.54	Fresno	.83
Salem	2.26	Kalamazoo	1.29
Santa Barbara/S.M./L.	1.11	Knoxville	1.11
South Bend	.66	Lansing/East Lansing	1.85
Spokane	3.89	Lexington	.69
Stockton	1.40	Little Rock/N.L.R.	1.26
Worcester	1.55	Louisville	1.50
		Modesto	1.21
		Omaha	3.55
		Richmond	.54
		Rockford	1.81
		Tucson	.52
		Utica/Rome	.68
		Youngstown/Warren	.72

Note: variable SaLCBDp is the proportion of metropolitan statistical area (MSA) sales in the largest central business district. Variable SaMRCp is the proportion of MSA sales in all major retail centers. Five MSAs had standardized scores of over .5 for both SaLCBDp and SaMRCp. These five were assigned to a category according to the higher of the two standardized scores. The five MSAs and their standardized scores for SaLCBDp and SaMRCp respectively are: Birmingham, .92, 1.85; El Paso, .95, .91; Kalamazoo, .79, 1.29; Louisville, .62, 1.50; and Stockton, 1.40, 1.07.

Table 4.5 (continued).

MSA	Standardized Score	
c. Dispersed within a central city MSAs (SaLCCp > .5)		
	SaLCCp	PoCC1p
Albuquerque	2.08	2.08
Charlotte/Gastonia	.91	.79
Chattanooga	.87	.26
Corpus Christi	1.60	1.98
Jackson	1.60	1.55
Jacksonville	1.36	2.09
Macon	.95	.59
Madison	.61	.97
Memphis	1.45	1.96
Mobile	.91	.55
Nashville	.89	1.01
Shreveport	.88	1.07
Tulsa	1.11	.94
Wichita	1.77	1.79

Note: variables SaLCCp and PoCC1p are the proportion of sales in the largest (by sales) central city and the proportion of population in the largest (by population) central city.

Table 4.5 (continued).

MSA	Standardized Score	
d. Multiple central city MSAs (either SaCBDp or SaCCp > .5)		
	SaCBDp	SaCCp
Duluth/Superior	1.23	
Greensboro/Winston-Salem/High Point		.85
Huntington/Ashland	1.50	
Johnson City/Kingsport/Bristol		.83
Newburgh/Middletown	.71	
Raleigh/Durham		.61
Salinas/Seaside/Monterey	1.09	
Salt Lake City/Ogden	.67	

Note: variable SaCBDp is the proportion of metropolitan statistical area (MSA) sales in all central business districts. Variable SaCCp is the proportion of MSA sales in all central cities.

Table 4.5 (continued).

MSA	Standardized Score	
e. Low centralization MSAs (Fail to qualify for other categories)		
	SaALLCp	SaCCp
Albany/Schenectady/Troy	.31	-1.17
Allentown/Bethlehem/Ea.	-.21	- .81
Augusta	-.36	-1.43
Beaumont/Port Arthur	-.83	.40
Dayton	-.19	-1.36
Daytona Beach	-1.14	- .58
Erie	-.15	- .50
Grand Rapids	-.21	-1.12
Greenville/Spartanburg	-.77	- .36
Harrisburg	-1.39	-1.90
Hartford	-.70	-1.87
Johnstown	-.56	-1.45
Lakeland/Winter Haven	-.91	.10
Lancaster	-.82	-1.43
Las Vegas	-.95	- .58
Melbourne/Titus./Cocoa	-1.22	.01
New Haven/Meriden	-.86	-1.09
New London/Norwich	-1.11	- .81
Orlando	-.21	-1.16
Pensacola	.24	-1.04
Peoria	-.11	- .34
Reading	-.43	-1.38
Rochester	-.31	-1.50
Scranton/Wilkes-Barre	-.74	-1.18
Springfield/Chi./Holy.	-.65	.09
Syracuse	-1.19	-1.24
Toledo	-.63	- .34
West Palm Beach/B.R.	-1.12	- .98
York	-.79	-1.97

Note: variable SaALLCp is the proportion of total retail sales in the metropolitan statistical area in the combined total of major retail centers and central business districts. Variable SaCCp is the proportion of MSA sales in all central cities.

The remaining twenty-nine MSAs are assigned to the "low centralization" category.(Table 4.5e) Although this category is derived by a process of elimination, it consists of MSAs that have low scores in at least one of two variables. All twenty-nine have a standardized score of less than zero in either the proportion of retail sales in the combined total of major retail centers and central business districts (SaALLCp) or in the proportion of retail sales in all central cities (SaCCp). All but six had negative scores in both of these variables. These low scores indicate a type of retail structure with below normal development of central business districts and major retail centers and underbounding of retail sales by central cities.

Central business district maintained metropolitan statistical areas

One type of retail structure, called the "central business district maintained" MSA, continues to have strong sales volume in the largest central business district. The strength of central business districts in this type of MSA is relative to contemporary central business districts, not to contemporary major retail centers or central business districts in previous periods. All of the central business districts in this type of retail structure declined in share of MSA sales between 1963 and 1982, but at a slower

rate or from a stronger base than ones in other types of MSAs.

Few "central business district maintained" MSAs have traditional central business districts that function as they did in the period of central business district dominance, with a core of free-standing department stores and smaller shopping-goods stores surrounded by a frame of other retail activities.(Murphy and Vance 1954) They can, however, maintain central business district sales in a variety of other ways.

In some central business districts, old retail buildings in the core have been successfully renovated into planned shopping centers. Others retain a strong contingent of automotive stores in the frame that has remained viable as the shopping-goods core has deteriorated. Another possibility is deterioration of both historical components but development of a modern shopping center in the frame. The modern shopping center may occupy a new building or a renovated one converted from some other use such as a train depot or warehouse. Many redevelopments of older buildings in either core or frame locations are too small, however, to affect the type of retail structure in the MSA.

The seventeen MSAs assigned to the central business district maintained type have populations that are, on the average, smaller than for the ninety-two--360,000 compared

to 464,000. This finding corresponds with a trend observed in previous research that central business district demise occurs later in smaller metropolitan areas.(Robertson 1983) Central cities in this category, however, average about the same size as those for the entire sample--155,000 compared to 164,000.

Regional distribution of "central business district maintained" MSAs is uneven. They are common in the western states and rare in the eastern states, possibly because central business districts in western metropolitan areas are relatively new and less obsolete than their eastern counterparts.(Figure 4.1, p. 124) They have experienced slower than normal decline, not dramatic growth, of the proportion of retail sales in the largest central business district. In 1982, the largest central business districts contained an average 8.6 percent of all retail sales in the seventeen members of this category while major retail centers contained an average of 12.1 percent.

Despite the trend of central business district demise, some still enjoy advantages over major retail centers in medium-sized MSAs stemming from accessibility, centrality, infrastructure, or history.(Kellerman 1985) Some central business districts declined more drastically than others from 1963 to 1982 because they lacked these advantages.(Tables 4.6 and 4.7) Fifty-six of the ninety-two medium-sized MSAs had central business district

Table 4.6. Retail Sales by Census Delineated Area in 1963

Area	Sales in $ 1,000s	Sales in $1,000s of 1967	Percent of MSA Sales
Albuquerque Metropolitan Statistical Area			
CBD	64,342	68,741	16.6
MRC1	28,437	30,381	7.3
MRC2	8,710	9,306	2.3
CBD + MRCs	101,489	108,428	26.2
Totals	387,408	413,897	100.0
Knoxville Metropolitan Statistical Area			
CBD	83,074	88,754	18.0
MRC1	18,004	19,235	3.9
MRC2	14,933	15,954	3.3
MRC3	5,574	5,960	1.2
MRC4	7,008	7,487	1.5
CBD + MRCs	128,593	137,390	27.9
Totals	461,192	492,727	100.0
Worcester Metropolitan Statistical Area			
CBD	87,198	93,160	19.1
MRC2	12,853	13,732	2.8
MRC3	9,087	9,708	2.0
MRC4	13,730	14,669	3.0
MRC5	19,625	20,967	4.3
CBD + MRCs	142,493	152,236	31.2
Totals	456,727	487,956	100.0

Table 4.7. Retail Sales by Census Delineated Area in 1982

Area	Sales in $ 1,000s	Sales in $1,000s of 1967	Percent of MSA Sales
Albuquerque Metropolitan Statistical Area			
CBD	16,271	6,168	0.7
MRC1	101,764	38,576	4.3
MRC3	161,719	61,304	6.9
MRC5	35,309	13,385	1.5
CBD + MRCs	315,063	119,433	13.4
Totals	2,346,655	889,558	100.0
Knoxville Metropolitan Statistical Area			
CBD	84,403	31,997	3.4
MRC1	31,882	12,087	1.3
MRC2	49,170	18,640	2.0
MRC3	75,147	28,488	3.0
MRC4	72,230	27,382	2.9
MRC5	37,923	14,377	1.5
MRC6	13,406	5,082	.5
MRC7	239,993	90,981	9.6
MRC8	139,309	52,812	5.6
MRC9	51,152	19,392	2.1
CBD + MRCs	794,615	301,238	31.8
Totals	2,498,382	947,137	100.0
Worcester Metropolitan Statistical Area			
CBD	159,276	60,378	8.9
MRC2	58,772	22,280	3.3
CBD + MRC	218,048	82,658	12.2
Totals	1,783,489	676,076	100.0

delineations in 1963.(Appendix A) Twenty actually had increases in absolute sales volume (not adjusted for inflation) of their largest central business district between 1963 and 1982. Different rates of increase show that the role of central business districts in retail structure differed among MSAs.

Central business districts show relative decline in MSAs where they have continued to grow in absolute sales volume because major retail centers have grown more rapidly. The Worcester MSA is an example.(Tables 4.6 and 4.7) The proportion of MSA sales in the Worcester central business district declined from 19.1 percent in 1963 to 8.9 percent in 1982.

The Worcester central business district retained a significant role in retail structure and the MSA qualified for the central business district maintained category. The sales figures adjusted by the consumer price index for commodities show, however, that sales in the Worcester central business district were not growing. Using 1967 dollars, sales in the Worcester central business district dropped from ninety-three million in 1963 to sixty-one million in 1982.

Central business districts have ceased to function as important retail districts in other MSAs and the sales declines are much more drastic. Adjusted retail sales in the Albuquerque central business district dropped from

sixty-nine million dollars in 1963 to only six million dollars in 1982. The percent of total sales shows that the relative decline of the central business district was even greater than the absolute decline adjusted for inflation. The central business district declined from 16.6 percent in 1963 to only 0.7 percent in 1982.

Major retail center dominated metropolitan statistical areas

Twenty-four medium-sized MSAs are assigned to the "major retail center dominated" category. The proportion of retail sales in all major retail centers (SaMRCp) in this group more than doubles that of the other sixty-eight medium-sized MSAs, 30 percent compared to 14 percent. The high proportion of sales in major retail centers indicates that central business districts have been replaced by one or more outlying areas.

A type of medium-sized MSA with sales centralized in major retail centers is significant to a national question concerning retail structure. Scholars have noted the development of retail facilities in outlying and suburban areas.(Kellerman 1985) These retail facilities are often found close to other types of high-intensity urban uses in "minicities".(Muller 1981) It has not been established, however, whether the predominant metropolitan trend in retail sales volume is toward decentralization or the

formation of one or more new centers. Studies analyzing decentralization have emphasized a central city-suburban dichotomy.(Young 1985) The "major retail center dominated" type demonstrates that suburbanization of retail sales is not necessarily synonymous with either random dispersal or emphasis on small facilities.

The twenty-four members of the "major retail center dominated" category contained, on the average, both more and larger major retail centers than the other sixty-eight medium-sized MSAs.(Table 4.8) The mean number of major retail centers per MSA and mean sales in the largest major retail center distinguish this category. Spatial centralization of MSAs with this type of retail structure is strongest in the states that constitute the North Central census division, but they are present in seventeen states.(Figure 4.2) This is the widest distribution of any of the five types of retail structure. Because most major retail centers are delineated around planned shopping centers, ubiquitous distribution of "major retail center dominated" structure is a logical consequence of widespread development of planned centers.(Cohen 1972; Lord 1985, p. 224)

The change to "major retail center dominated" retail structure from the period of central business district dominance has been to centralize sales in new locations rather than to disperse retail structure. If major retail

Table 4.8. Comparison of the "Major Retail Center Dominated" Type with Other Medium-Sized Metropolitan Statistical Areas

	Number of MSAs	Mean Pop. (1,000s)	Number of MRCs	Mean no. of MRCs	Mean Sales ($1,000s) in Largest MRC	Sales ($1,000s) Per MRC
MRC Dominated	24	462	170	7.1	198,983	94,250
Other MSAs	68	465	260	3.8	134,941	85,750

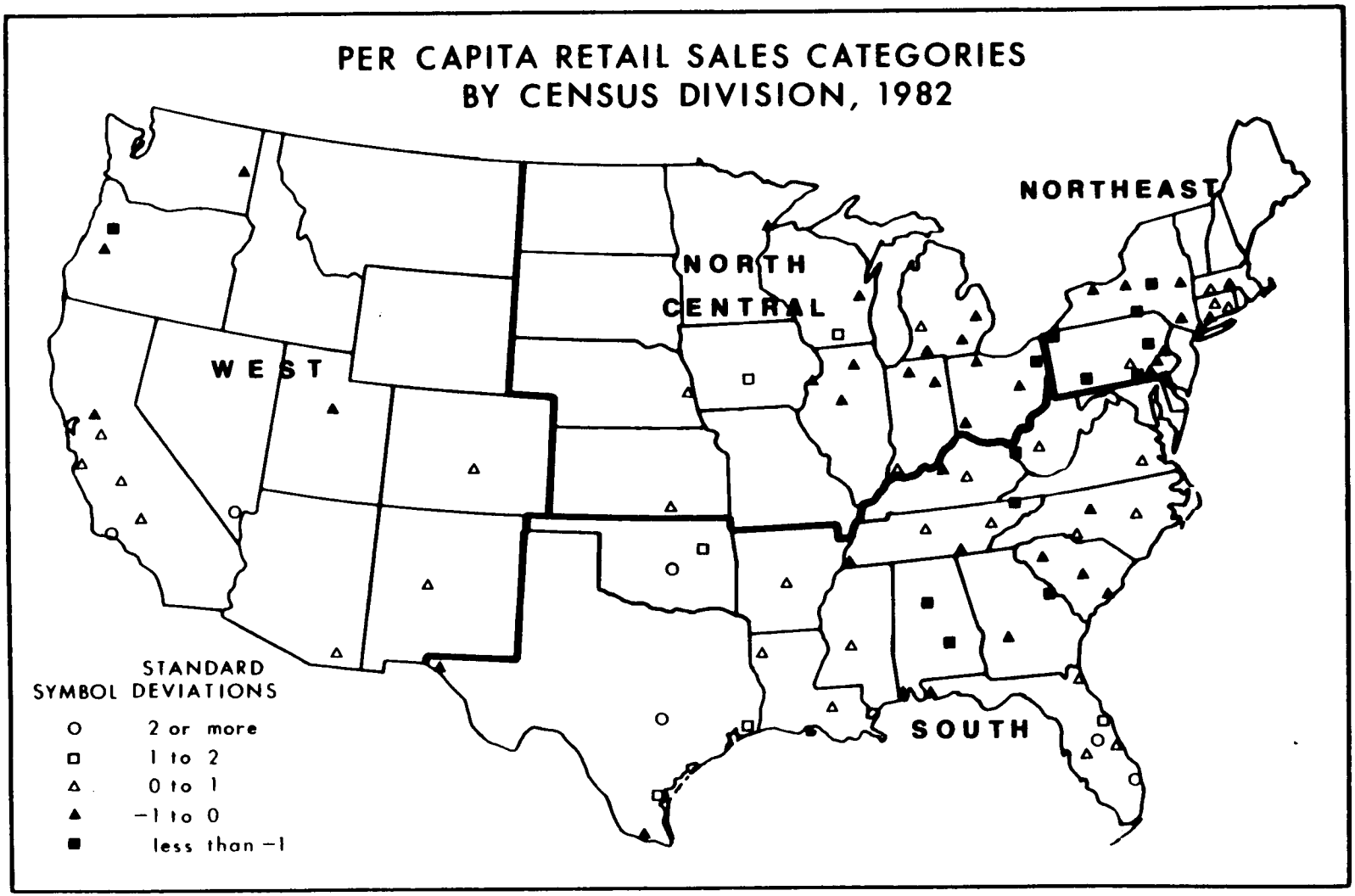


Figure 4.2. Per Capita Retail Sales Categories by Census Division.

centers are interpreted as independent land use units, this type of retail structure appears to coincide with the polycentric concept of retail centralization. Such an interpretation is not always correct. Studies of retail land use reveal that large shopping centers sometimes locate close to each other.(Baerwald 1978) Two or more major retail centers may actually be part of a single retail district.

There is little discrepancy in mean population between the "major retail center dominated" type (462,000) and the other medium-sized MSAs (464,000). "Major retail center dominated" MSAs are also undistinguished in political structure measured by proportion of population in central cities (PoCCp) and proportion of population in the largest central city (PoCC1p). The means of these variables for the type are 40.9 percent and 38.2 percent, while for the ninety-two MSAs they are 39.5 percent and 35.3 percent.

Major retail center dominance of retail structure emerged in medium-sized MSAs between 1963 and 1982. Eighteen of the twenty-four in the "major retail center dominated" category can be compared for these two years. In 1963, the largest central business district had more sales than any major retail center for all eighteen. At least one major retail center became larger than the central business district in seventeen of the eighteen by 1982. The lone exception is the Birmingham MSA.

The Knoxville MSA illustrates the change to major retail center dominance.(Tables 4.6, p. 133 and 4.7, p. 134) Retail sales in the Knoxville major retail centers accounted for 9.9 percent of all sales in the MSA in 1963 when the national mean for major retail center sales was 10 percent. The number of major retail centers increased from four to nine during the nineteen-year interval, and their share of total sales increased to 28.4 percent. Emergence of new major retail centers was more important than growth of existing ones to the growth of total retail sales from 1963 to 1982. The five new major retail centers accounted for 82.8 percent of the increase.

The combined sales total of central business districts and major retail centers constitute less than 20 percent of all sales in 39 medium-sized MSAs. Aggregate sales of central business districts and major retail centers was only 23 percent of sales in all ninety-two. For many MSAs, neither of the two types discussed so far are appropriate. The other three better describe more dispersed patterns of retail structure.

Dispersed within a central city metropolitan statistical areas

The fourteen MSAs assigned to the "dispersed within a central city" category lack centralization in either central business districts or major retail centers but have

a high proportion of their retail sales within the political boundaries of the largest central city. Annexation and spatial concentration of sales account for this high proportion. Retail sales are more concentrated than population in the central cities of these fourteen. Mean proportion of sales in the largest central city (SaLCCp) is 73 percent while proportion of population in the largest central city (PoCC1p) is only 59 percent. The discrepancy between concentration of sales and concentration of population is only slightly less, however, for all ninety-two medium-sized MSAs.

The largest central cities of the ninety-two medium-sized MSAs contain a greater proportion of total retail sales than of total population. The mean proportion of population in the largest central city (PoCC1p) was 35.1 percent, while the mean proportion of retail sales in the largest central city measured by sales (SaLCCp) was 46.2 percent.

Annexation distinguishes the fourteen "dispersed within a central city" medium-sized MSAs from the other seventy-eight. All fourteen have higher proportions of population within the largest central city (PoCC1p) than the mean for the ninety-two medium-sized metropolitan areas. If the largest central city includes an exceptionally large proportion of the population of the metropolitan area because it has annexed, it will also

include an exceptionally large proportion of the retail sales. This situation can occur in the absence of any genuine spatial concentration. The Jacksonville MSA is a prime example of extensive annexation.(Table 4.9) Jacksonville includes virtually all of Duval County, Florida, and encompasses an area that accounts for nearly equal proportions of MSA population and retail sales. "Dispersed within a central city" retail structure is a southern phenomenon.(Figure 4.1, p. 124) Albuquerque, Madison, and Wichita are the only MSAs in the type outside of the Southern census division.(Figure 4.2, p. 139) Historical and political factors help explain this pattern because they have made annexation by central cities easier in the South and West than in other census divisions. Most medium-sized MSAs in the West qualified for either the "central business district maintained" or "major retail center dominated" types and consequently were not considered for the "dispersed within a central city" type.

Two extreme cases showed a tremendous range in the share of both population and sales within central cities. Proportion of population in the largest central city (PoCClp) varied from 88.5 percent at El Paso to 8.8 percent at Newburgh/Middleton. Proportion of retail sales in the largest central city (SaLCCp) varied from 97.1 percent at El Paso to 11.7 percent at York.(Table 4.9) The range within each of these variables illustrates contrasts

Table 4.9. Metropolitan Statistical Areas Ranked by Concentration of Population and Retail Sales in the Central City, 1980

MSA	Percent of 1980 Population in Largest Central City (PoCC1p)	(Rank)	Percent of 1982 Sales in Largest Central City (SaLCCp)	(Rank)
El Paso	88.5	(1)	97.1	(1)
Albuquerque	73.0	(2)	91.6	(2)
Colorado Springs	67.8	(6)	89.3	(3)
Wichita	67.7	(7)	85.0	(4)
Tucson	62.3	(12)	82.1	(5)
Jacksonville	73.3	(2)	76.0	(12)
Chattanooga	39.8	(35)	65.4	(22)
Newburgh/Middle.	8.8	(92)	20.3	(84)
Hartford	18.7	(72)	13.8	(89)
Harrisburg	11.8	(86)	13.1	(91)
York	11.8	(87)	11.7	(92)
Mean for 92 MSAs	35.1		46.2	

NOTE: The examples include the top five and the bottom 2 ranked metropolitan statistical areas in SaLCCp, the lowest ranked metropolitan statistical area in PoCC1p, and three other metropolitan statistical areas that have particularly large discrepancies in rank between the two variables.

in political structure among medium-sized MSAs. Variation in degree of underbounding is controlled by the political and social history of the central city, the timing of economic development, and idiosyncracies of local or state laws concerning annexation.(Jackson 1985; Teaford 1979)

Recent annexation has occurred in most of the "dispersed within a central city" MSAs. If existing retail structure developed in the past during a period of much different political structure, it may be inappropriate for current development policies, tax structure, or zoning codes. Significant potential may exist in this type of retail structure for new development to augment or replace existing retail facilities. Lack of transportation or utilities and zoning restrictions of small incorporated places, for example, may have discouraged development of large planned shopping centers in the past but cease to present a restriction under a new political entity. Annexation by a central city may also bring increased restrictions to development.

Spatial concentration can occur in ways that do not meet the census definitions for central business districts or major retail centers. Retail districts with high volumes but without department stores do not qualify as major retail centers. These include districts with a mixture of convenience-goods, small shopping-goods, and other-goods stores and also include specialized districts

with concentrations of new car dealers.

In the Chattanooga MSA, both annexation and spatial concentration of retail sales occurred in ways that do not meet the census definitions for central business districts or major retail centers. The proportion of retail sales within the central city (SaLCCp) is 65.4 percent, and Chattanooga ranks twenty-second among ninety-two MSAs despite the fact that most of the metropolitan population lives outside the central city.(Table 4.9) The Chattanooga MSA ranks thirty-fifth in proportion of population in the largest central city (PoCC1p) with 39.8 percent.

Multiple central city metropolitan statistical areas

The "multiple central city" MSAs have a distinctive retail structure because of unusual political structure. The eight assigned to this type do not contain contiguous built-up areas that could easily be incorporated as one city. In only one of the eight (Duluth/Superior) do two central cities share a common corporate boundary; in that instance, it is also a state boundary. The remainder contain central cities that are separated from each other by either smaller incorporated places or unincorporated areas. The central cities are from ten to thirty miles apart. "Multiple central city" MSAs are in all four census divisions, but four are located in a five state area of the

South.(Figure 4.1, p. 124; and Figure 4.2, p. 139)

The "multiple central city" type is not representative of the multi-nucleated structure that is discussed in contemporary urban geography literature concerning large metropolitan areas.(Muller 1981, p.7; Odland 1978; Erickson 1986) A process of new development away from central business districts, not coalescence of formerly independent cities, has been assumed in both empirical and theoretical work.(Erickson and Gentry 1985; Von Borenter 1976) "Multiple central city" MSAs closely resemble urban forms suggested by the dispersed city hypothesis.(Burton 1963) Assignment to the "multiple central city" category, however, does not require retail functional specialization by cities, a key component of the dispersed city concept. Trade areas of central cities overlap, for example, in the Greensboro/Winston-Salem/High Point MSA, but little functional specialization exists in the three central business districts.(Hayes 1976)

"Multiple central city" MSAs have central business districts or central cities that, if combined, would exhibit centralization or concentration of retail sales. The presence of more than one central city can statistically obscure retail centralization in central business districts or concentration in central cities because sales totals are divided. The census bureau usually delineates a central business district for each

central city. Politically fragmented MSAs do not always qualify for the "central business district maintained" type even if they contain a relatively well-maintained central business district. Central city sales are also split by political fragmentation, causing some MSAs not to qualify for the "dispersed within a central city" type.

The phenomena obscured by political fragmentation are revealed by variables other than the three key ones in the factor analysis. Eight MSAs failed to qualify for the first three categories of retail structure and had standardized scores of greater than 0.5 for either proportion of retail sales in all central business districts (SaCBDp) or proportion of retail sales in all central cities (SaCCp). These eight constitute the "multiple central city" category.

Rank order of MSAs is different for the variable that combines all central city sales than for the variable that measures only the largest central city. The Greensboro/Winston-Salem/High Point MSA ranked sixty-fourth in proportion of retail sales in the largest (by sales) central city (SaLCCp), but nineteenth in proportion of retail sales in all central cities (SaCCp). Greensboro accounted for 31.3 percent of the MSA total, but the three central cities combined accounted for 70.8 percent of the total. The Huntington/Ashland MSA ranked thirty-fourth in proportion of sales in the largest central business

district (SaLCBDp), but eighth in proportion of retail sales in all central business districts (SaCBDp). The Huntington central business district accounted for 5.0 percent of the MSA total. The combined Huntington and Ashland central business districts accounted for 9.8 percent.

Low centralization metropolitan statistical areas

Twenty-nine MSAs whose retail structure does not meet the criteria of the previous four types are assigned to the "low centralization" category. Although the category is defined by a process of elimination, its members have common characteristics.

Kruskal-Wallis analysis of variance tests were used to compare the twenty-nine "low centralization" medium-sized MSAs with the other sixty-three. The tests revealed that the "low centralization" category represented a different population than the others on four variables.(Table 4.10) The variance in these four variables reveals two basic features of this type of retail structure: 1) weak central business districts and major retail centers and 2) severe underbounding of central cities.

"Low centralization" MSAs have neither a strong central business district nor a strong major retail center. The mean proportion of retail sales in the largest central business districts (SaLCBDp) and the proportion of retail

Table 4.10. Mean Values by Type of Metropolitan Statistical Area and Kruskal-Wallis One-Way Analysis of Variance for "Low Centralization" Metropolitan Statistical Areas

Variable	PoCCp	SaCCp	SaLMRCp	SaALLCp
Category	Aggregate percent of MSA total			
CBD Maintained	45.3	63.1	5.9	21.3
MRC Dominated	40.9	55.3	9.0	34.6
Dispersed within CC	60.9	75.6	6.6	19.4
Dispersed Multi-CC	33.4	57.6	6.1	20.8
Low Centralization	27.0	32.5	5.4	17.7
Ninety-two MSAs	39.5	52.4	6.7	23.1
Category	Mean Rank			
Low Cen. (N = 29)	25.8	21.5	33.5	28.0
Other MSAs (N = 63)	56.0	58.0	52.5	55.0
Test statistic	25.5	37.2	10.0	20.3
α	<< .001	<< .001	.002	<< .001

Note: The four variables considered in this table are proportion of total population in central cities (PoCCp), proportion of total sales in central cities (SaCCp), proportion of total sales in the largest major retail center (SaLMRCp), and proportion of total sales in central business districts and major retail centers combined (SaALLCp). The ninety-two metropolitan statistical area sample was analyzed in two groups: low centralization metropolitan statistical areas and other metropolitan statistical areas. The Kruskal-Wallis procedure determines the probability that the two groups may be considered to be from the same population by analyzing the ranks of observations in each group.(Hammond and McCullagh 1974, p. 187)

sales in the largest major retail center (SaLMRCp) were 2.8 percent and 5.4 percent, in both cases the lowest mean for any of the five types. Means for the ninety-two MSAs were 4.1 percent and 6.7 percent for these two variables. Proportion of retail sales in the combined total of central business districts and major retail centers (SaALLCp) is only 17.7 percent, the lowest value for this variable among the five types. Twenty-seven of the twenty-nine members of the "low centralization" category were below the mean for the ninety-two medium-sized MSAs.(Table 4.5e, p. 129)

The second characteristic of "low centralization" MSAs is severely underbounded central cities. Only 27.0 percent of the population resides in central cities. This proportion is lower than the mean value for any other category. Underbounding of population coincides with underbounding of retail sales. Proportion of retail sales in all central cities is only 32.5 percent, making this the only type of metropolitan retail structure with less than half of all sales within central cities.

The Greenville/Spartanburg MSA is an example of central city underbounding. The central business districts of Greenville and Spartanburg have ceased to function as significant retail districts. Regional planned shopping centers have been constructed in both central cities: McAlister Square in Greenville and Westgate Mall in

Spartanburg. Two other regional shopping centers, Haywood Mall and Greenville Mall, have been constructed in unincorporated suburbs near Greenville. All four regional shopping centers are located between the Greenville and Spartanburg central business districts. Each is competing for the best location to capture a dominant share of the metropolitan trade area, but none has succeeded. Instead, the competition has fragmented retail sales resulting in a "low centralization" type of structure.

Retail sales usually are more concentrated than population in central cities, but this relationship is weak in "low centralization" MSAs. The difference between proportion of population in all central cities and proportion of retail sales in all central cities is between 15 and 25 percent for the other four categories, but only 5.5 percent in the "low centralization" category.(Table 4.10)

Although particular mean statistics for "low centralization" MSAs imply reasonably strong common characteristics, closer inspection reveals very different types of places within the category. Mean per capita retail sales of $4,889 indicates a group that is near the national average of $4,891 for the size class. Despite this similarity, the "low centralization" type included four among the top seven and four among the bottom nine in per capita retail sales of the ninety-two medium-sized

MSAs. Variation within the category raises the possibility that decentralized retail structure has been created by different processes in different places.

"Low centralization" retail structure is most common in ageing industrial regions and, ironically, in prosperous retirement-tourism regions.(Figure 4.2, p. 139) The ability of a central city to annex depends on historical circumstances and legal procedures established by state governments.(Jackson 1985) "Low centralization" retail structure, and the associated characteristic of underbounded central cities, are especially conspicuous in Florida and Pennsylvania. Florida contains seven medium-sized MSAs and Pennsylvania contains eight. All but one of these fifteen (Jacksonville, Florida) are the "low centralization" type. Twelve of the fourteen "low centralization" MSAs in these two states have less than 28 percent of their population in central cities (PoCCp). The mean for the ninety-two is 40 percent.

Per capita incomes illustrate regional differences among "low centralization" MSAs. Seven of the eight members of this type in Pennsylvania had per capita incomes of less than $5,000 while five of six in Florida had per capita incomes greater than $5,000 for 1982. The Orlando, Florida and Scranton/Wilkes-Barre, Pennsylvania MSAs are similar in population (700,000 and 640,000) and percent of population in central cities (PoCCp equals 18 percent and

22 percent). They differed drastically in per capita income in 1982: $6,198 for the Orlando and $4,179 for the Scranton/Wilkes-Barre MSAs.

The variation in economic base of low centralization MSAs contrasts with their similarities in political structure and implies a role for the latter factor in determining retail structure. The frequency of this type of retail structure in a few eastern states and the irregular distribution of other types raise questions about the role of economic, physical, political, and social characteristics in individual metropolitan areas.

Selection of Sample Metropolitan Statistical Areas from the Five Types

Population and sales variables are used in this chapter to define the five types of metropolitan retail structure. The validity of the five types can be evaluated if the statistics used in their derivation are better understood. Five MSAs, one from each type, are selected as a sample for more detailed analysis of the statistics and the economic, physical, political, and social characteristics they represent. Two criteria are employed in the selection: 1) standardized scores in the appropriate variables that are representative of the type, and 2) accessibility to the investigator. All five categories are represented in the southeastern United

States.

The MSAs selected for each type are: Montgomery for "central business district maintained"; Knoxville for "major retail center dominated"; Chattanooga for "dispersed within a central city"; Greensboro/Winston-Salem/High Point for "multiple central city"; and Greenville/Spartanburg for "low centralization". The Greensboro/Winston-Salem/High Point MSA qualifies for the "multiple central city" type on the bases of combined central city sales, not on the basis of combined central business district sales. These five sample MSAs are used for investigation of the internal manifestations of retail structure and for evaluation of the five categories.

CHAPTER V

INTERNAL MANIFESTATIONS OF METROPOLITAN RETAIL STRUCTURE

Some retail areas occupy better locations than others for capturing a large market share within a MSA. The adequacy of locations is measured by variables referred to as internal characteristics of retail structure. Internal characteristics influence the success or failure of individual retail areas. Analysis of internal characteristics for entire MSAs reveals inter-metropolitan differences that help to explain the five different types of metropolitan retail structure identified in Chapter IV. The analysis also reveals differences in the degree of impact of internal characteristics on retail structure. Accessibility, neighborhood image, and trade area demand are analyzed for the five sample MSAs: Montgomery (central business district maintained), Knoxville (major retail center dominated), Chattanooga (dispersed within a central city), Greensboro/Winston-Salem/High Point (multiple central city), and Greenville/Spartanburg (low centralization).

Variables Used to Analyze Internal Characteristics of Metropolitan Retail Structure

Internal characteristics of metropolitan areas affect central business districts and major retail centers in

three ways. First, the functional nature of sites is determined by access to transportation and other public facilities, tenure arrangements, and the type and age of store buildings. Second, image is influenced by social and visual qualities of surrounding neighborhoods. Third, the number and size of stores that can succeed depends on the amount of demand within the potential trade area. Three types of variables are selected for analysis from many that play a role. Roadway access indexes represent the functional nature of sites, income levels of persons within various radii represent neighborhood image, and income and population totals represent demand within trade areas. The three types of variables are selected because they are relevant to the success or failure of retail areas. Other variables that could be used, such as consumer trip patterns and details of trade area composition, require substantial investments for data collection.[1](Hanson 1976; Applebaum 1970)

Functional aspects of sites are analyzed using roadway access indexes. "Site" is the area containing physical structures that are part of, or close to a central business

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[1]Studies of consumer information levels in a single city within a metropolitan area require several months of data collection. Trade area studies for a single shopping center require several months of work by marketing research firms and are sometimes not completed in time to provide useful information for retail developers. The results of surveys limited to a single city or shopping center are of little use for comparison of retail structure in several metropolitan areas.

district or major retail center. Tenure arrangements affect sites. Planned shopping centers usually control site characteristics more effectively than do groups of individual stores. The success of planned shopping centers is evidence of the importance of site development in the competitive strategy of stores. Retail districts that are built around a large planned shopping center have different site characteristics than those composed entirely of small shopping centers or individual stores.

Other research has used different techniques (including size, shape, and arrangement of stores) to evaluate location and site characteristics of stores and shopping centers.(Nelson 1958, p. 55; Snow and Scott 1984) Roadway access indexes, however, can be calculated quickly enough to allow comparison of all central business districts and major retail centers in the five sample MSAs.

Neighborhood image and trade area demand are analyzed using income and population data. These data depict the social and economic status of the neighborhood and trade area surrounding a central business district or major retail center. Neighborhood image and trade area demand of a central business district or major retail center are closely intertwined but arbitrarily separated to permit analysis. Precise boundaries are difficult to determine for both neighborhoods and trade areas. The neighborhood consists of a portion of the trade area closest to the

central business district or major retail center.

Four income and population variables are calculated from census data: per capita income, percent of population in poverty, total population, and total income. The first two are used to analyze neighborhood image, the latter two to analyze trade area demand. Two different measures of poverty population are used because the Bureau of the Census did not enumerate persons in poverty before the 1970 Census of Population. The number of families below $2,000 income is used as a surrogate measure of poverty population in 1960.

Center points represent locations of census tracts, central business districts, and major retail centers in the analysis of income and population. The distance from census tracts to central business districts and major retail centers are measured. Per capita income, persons in poverty, total income, and total population are compiled for radial distances from the central business districts and major retail centers. Neighborhoods are analyzed by examination of characteristics within specific radii of the central business districts and major retail centers.

Alternative radii are examined because the range of neighborhood effect on the image of retail facilities is relative, not absolute. Poor people are less mobile and more likely than the affluent to shop at the stores nearest to their residences. The most intense effect of

the poor is exerted within distances that can be traversed by pedestrians. That is why a two-mile radius encompasses the neighborhoods that influence image the most. Poor people have at least limited access to vehicular transportation, however, and can travel further to shop. When the nearest central business district or major retail center is more than two miles from a concentration of poor people, it suffers neighborhood image effects from the presence of many poor shoppers even though it is more accessible to the affluent. A four-mile radius is analyzed where competing retail districts have similar neighborhood characteristics within two miles.

Mutually exclusive trade areas are defined for central business districts and major retail centers in two ways. One technique, the "nearest opportunity" trade area, assigns each census tract in the MSA to the nearest central business district or major retail center and indicates market share control. The other, the "close" trade area, assigns only census tracts within a critical travel distance of four miles and indicates the efficiency of distribution of central business districts and major retail centers.

Visibility, volume of traffic flow, and ease of access distinguish site quality of central business districts and major retail centers. Roadway access incorporates components of all three criteria. Visibility and ease of

access are related to distance of major roadways from the central business district or major retail center and the design of connecting roads. Potential traffic volume is determined by the kind of major thoroughfares.

Two basic elements of design help planned shopping centers achieve functional characteristics superior to those of central business districts. Deliberate separation of vehicular and pedestrian traffic and the availability of parking close to stores help planned shopping centers gain an advantage in visibility to approaching traffic, volume of traffic flow on adjoining streets, and ease of access to high-speed highways.(Snow and Scott 1984) Separation of vehicular and pedestrian traffic extends beyond the planned shopping center boundaries. Design of adjoining streets virtually eliminates pedestrian traffic but enhances access by vehicular traffic to high-speed highways and other arterial links of the metropolitan road network.

Roadway Access

A roadway access index, an interval scale that measures accessibility to a location from a road network, is used to rank central business districts and major retail centers in the five sample metropolitan statistical areas. Roadway access indexes must be interpreted differently for central business districts and major retail

centers. Central business district boundaries are drawn more inclusively than ones for major retail centers. Roadway access indexes are calculated on the basis of access to outer boundaries of central business districts and major retail centers. For most major retail centers, this boundary is within the area of retail land use and close to the major shopping-goods facilities that form the core of the retail district. For many central business districts, the outer boundary is several blocks away from the major department stores and in an area that is not part of the retail district in terms of land use.(Figure 5.1)

Roadway access is provided to central business districts and major retail centers by a combination of thoroughfares and connector roads. Thoroughfares include all major arterials and controlled access, high-speed highways. Connector roads include ramps, streets, or frontage roads that link with thoroughfares.

Roadway access values are enumerated on a ten-point scale. The number of points assigned to an access route is based on quality of the thoroughfare, quality of connector roads, and distance that must be travelled on connector roads. The best possible situation for traffic going to a retail district is direct access from a controlled access, high-speed highway that is part of the urban interstate highway system. This type of situation is awarded ten points.(Table 5.1) Thoroughfares of lower

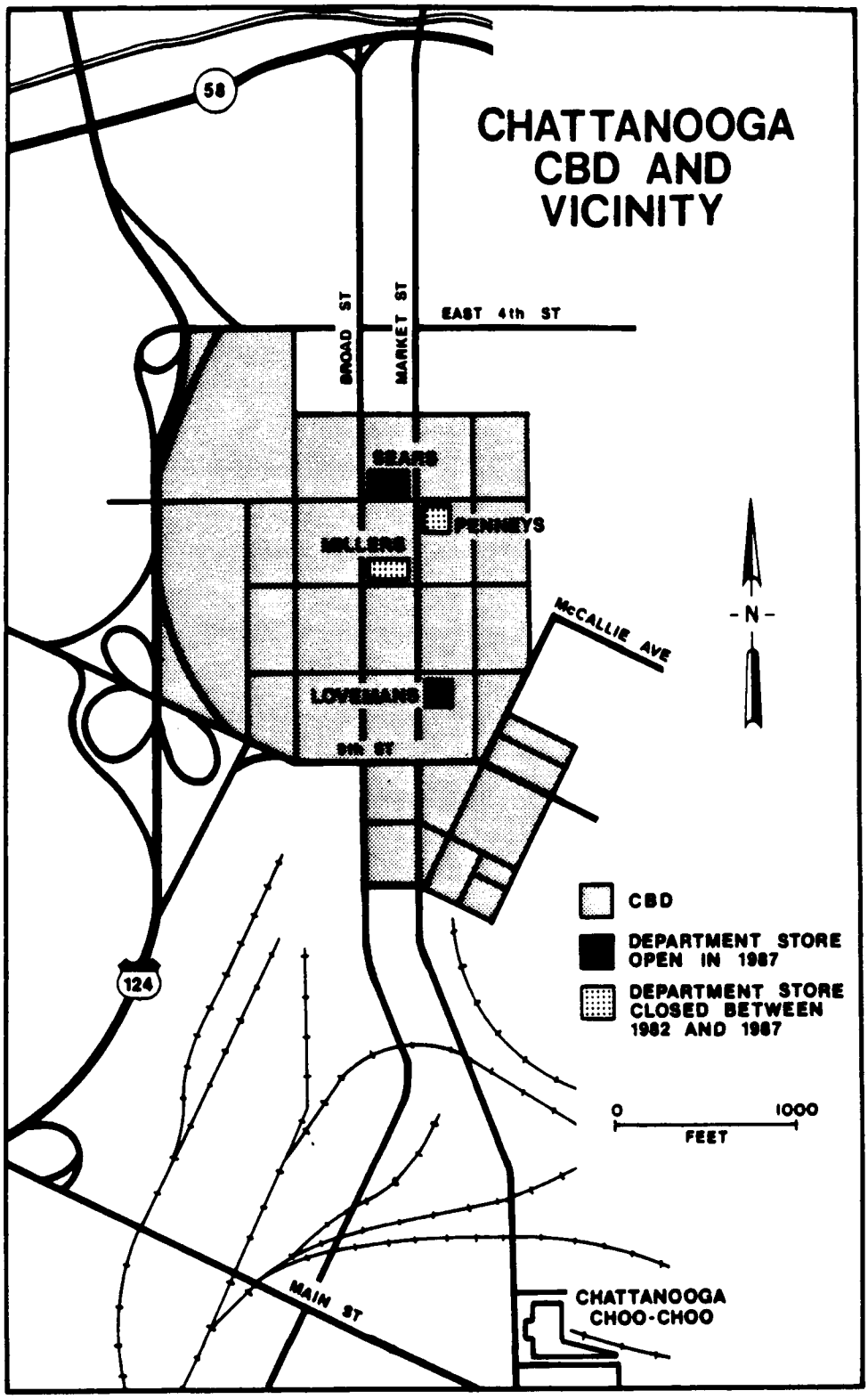


Figure 5.1. The Chattanooga Central Business District and Vicinity.

Table 5.1. Roadway Access Index Key

Number of points awarded to the best access route in each of four ninety-degree quadrants.		
Interstate Highway--direct	10	
Interstate Highway--indirect	9	-1 per .2 mi. of link -2 if link is < 4 lanes
Upgraded 4-lane--direct	6	
Upgraded 4-lane--indirect	5	-1 per .2 mi. of link
Other major arterials	3	

Note: upgraded 4-lane indicates high quality highways with four or more lanes that have some combination of divided lanes and controlled access ramps sufficient to permit highway-speed driving with less than one traffic light per mile.

quality are awarded lesser numbers of points.(Appendix C) Points are subtracted from the thoroughfare rating where connector roads provide indirect access. The amount subtracted varies with the length and quality of the connector.

The principal thoroughfare and connector road combination is evaluated in four ninety-degree quadrants with the center point of the central business district or major retail center as a vertex. The roadway access index reflects accessibility from all directions and has a maximum possible value of forty. Measurements are obtained from United States Geological Survey topographic maps and city street maps. Site visits are used to determine if physical barriers or traffic control devices (entrance and exit ramps or traffic lights) that would alter the results of the map analysis are present.[2]

Traffic capacity of thoroughfares serving central business districts and major retail centers contributes to site accessibility. Number of lanes, speed limit, and the nature of traffic control devices indicate capacity.

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[2]Quality factors other than distance and traffic capacity must be evaluated subjectively. An example of a subjective decision is whether a spur from the interstate highway is an integral part of the metropolitan interstate highway system or an indirect link connecting a retail district with that system. In the former case it is classified as a thoroughfare; in the latter case it is classified as a connecting road. Such distinctions are aided by observation where judgments concerning convenience of access can be made.

Thoroughfares are rated as interstate highways, roads with four or more lanes that have been upgraded by traffic dividers or controlled access, and other major arterials. This rating of roadway types is obtained from maps and field investigation and is well suited to interval comparison. Actual traffic counts are examined but not used to classify roadways because they can be the result rather than the cause of a retail district's attraction or lack of attraction to customers.

Roadway access indexes were compiled for the five sample MSAs.(Appendix D) The results correspond with the historical sequence of major retail center development. In the Chattanooga MSA, defunct major retail centers 1 and 3, and marginal major retail center 2, have the lowest roadway access indexes.(Table D.1) Major retail center 4 has the highest roadway access index of the major retail center sites and the highest sales volume.

Roadway access indexes must be interpreted differently for central business districts and major retail centers. A deviation from the expected correspondence between roadway access indexes and sales volume occurs in the Chattanooga central business district. It has a higher roadway access index than any major retail center in the Chattanooga MSA but a historical pattern of drastic decline in retail sales. The MSA falls into the "dispersed within a central city" type of retail structure and was below the

national average in proportion of sales in the central business district in 1982 (2.8 percent), ranking sixty-fifth among the ninety-two medium-sized MSAs.

The census method of delineating central business districts explains the disparity between sales trends in the Chattanooga central business district and the roadway access index. Roadway access to the central business district boundary leaves shoppers several blocks from the actual retail core, so the department stores have lower accessibility than the index implies.(Fig. 5.1)

Roadway access for central business districts and major retail centers can be compiled into indexes for MSAs.(Table 5.2) Three different combinations are relevant to the five types of metropolitan retail structure: the central business district or districts, all active major retail centers, and all central business districts plus all active major retail centers. Mean indexes are used for major retail centers in all five sample MSAs with more than one central city. The comparative hypothesis contends that the typology of metropolitan retail structure should correlate with internal retail structure. High roadway access indexes should be associated with census delineated retail areas that are in a strong competitive position if the comparative hypothesis is correct.

"Central business district maintained" MSAs are represented by Montgomery, and "major retail center

Table 5.2. Mean Roadway Access Indexes for Combinations of Central Business Districts and Major Retail Centers in Five Sample Metropolitan Statistical Areas, 1982

MSA	Type of Structure	CBDs	Active MRCs	Active MRCs + CBDs
Montgomery	CBD Maintained	25.0	17.5	20.0
Knoxville	MRC Dominated	17.0	19.2	19.0
Chattanooga	Dispersed within CC	19.0	15.0	16.0
Greens./WS/HP	Multiple-CC	17.3	15.0	15.8
Greenv./Spar.	Low Centralization	12.0	18.6	16.7

dominated" MSAs are represented by Knoxville.(Tables 5.2, D.4, and D.5) The comparative hypothesis is supported by the high index for the Montgomery central business district (25.0) compared to indexes for central business districts in the other four test MSAs, ranging from 12.0 in Greenville/Spartanburg to 19.0 in Chattanooga. The hypothesis is also supported by a mean index for major retail centers of 19.2 in the Knoxville MSA, the highest for any of the five sample MSAs. The Chattanooga MSA, representing the "dispersed within a central city" type, and the Greensboro/Winston-Salem/High Point MSA, representing the "multiple central cities" type, shared the lowest average roadway access indexes for active major retail centers (15.0). These two MSAs also have the lowest average roadway access indexes for central business districts and major retail centers combined: 15.8 for the Greensboro/Winston-Salem/High Point MSA, and 16.0 for the Chattanooga MSA.

"Low centralization" MSAs should have low roadway access indexes for both central business districts and major retail centers. The major retail center index for the Greenville/Spartanburg MSA is 18.6, surprisingly close to the one for the Knoxville MSA. In this case, the simplicity of the index fails to expose the magnitude of differences in retail structure between two MSAs that are similar in size. The Knoxville and Greenville/Spartanburg

MSAs had populations of 465,000 and 570,000 in 1980, and they had retail sales volumes of $2.50 billion and $2.56 billion in 1982.

The anomaly in roadway access indexes occurs because the Knoxville MSA had nine active major retail centers while the Greenville/Spartanburg MSA had only five. The five largest major retail centers in the Knoxville MSA had an average roadway access index of 23.8, much higher than the index for the five major retail centers in the Greenville/Spartanburg MSA. The dominance of major retail centers in the Knoxville MSA is closely associated with good roadway access to the five largest centers. Poor roadway access to the four smallest centers reduces the average, but the four accounted for only one-third of the discrepancy in proportion of sales in major retail centers (SaMRCp) between the Knoxville and Greenville/Spartanburg MSAs.(Appendix E)

Per Capita Income and Poverty Population of Neighborhoods

The social and visual qualities that create a neighborhood image affect the sales of central business districts and major retail centers. Customers are unwilling to shop and retailers are unwilling to invest in stores located in or near areas with many poor people. This unwillingness is a manifestation of social aversion

because it affects central business districts and major retail centers even where demand, measured by total income, remains high. These effects were obvious in the historical development of the central business district and major retail centers in the Chattanooga MSA and also appear in the other four sample MSAs.

Neighborhood characteristics affect the success of central business districts and major retail centers regardless of whether the direct cause is consumer or investor choice. The attraction of newer major retail centers may be caused by direct customer aversion to the neighborhoods surrounding central business districts and older major retail centers. It is also possible that investors are more sensitive than customers to neighborhood characteristics. Investors reacting to neighborhood characteristics or customer behavior determine the location of the most accessible, most modern, best advertised, and, therefore, most attractive stores.

The percent of poor people is a particularly important measure for evaluating the social status of a neighborhood because it indicates the presence of groups who are socially and economically distinct from more affluent components of the population. The poverty population encompasses many different demographic groups that can be identified by age, education level, race, and other criteria. These groups are considered collectively because

their presence has a common effect on retail districts.

A large population of poor people can restrain the success of retailing regardless of which demographic segment they represent. Limited per capita demand causes the poor to patronize stores that are low on the price-quality continuum. Even if high population density results in high total trade area income, a poor neighborhood will not support the most prestigious types of stores. Retailers see poor people as a specialized and limited market.(Mercurio 1984, p. 242) Furthermore, the presence of many poor people is a distraction from the carefree spending atmosphere that retailers strive to promote.

Neighborhoods are analyzed by examining per capita income and poverty population in census tracts whose center points fall within two miles of central business districts and major retail centers.(Appendix B) A neighborhood defined by a two-mile radius is expected to indicate the image of a central business district or major retail center better than one defined by a longer radius because the effect of unfavorable social or visual qualities decreases with distance. The spatial extent of neighborhoods that affect the image is influenced by the awareness of consumers to local conditions and the degree to which they associate those conditions with specific stores.

A neighborhood contains non-retailing activities. Some of these activities enhance image for retailing while

others detract. The impact of neighborhood characteristics on the social status of retail areas has not been directly examined in marketing geography studies but is indirectly incorporated into the analog approach to store location research. Sales forecasts are based on the performance of stores in similar neighborhoods. Affluent residences or modern offices enhance retailing while poor residences, industrial areas, warehouses, or dilapidated offices provide visual blight and create a perception of a threat to personal security by customers from more affluent parts of the metropolitan area.(Applebaum 1966)

Percent of persons in poverty, per capita income, and population density varied at the time of the 1980 Census of Population for neighborhoods within two-and-four-mile radii of central business districts and major retail centers in the five sample MSAs. The fundamental characteristics of neighborhoods close to central business districts are large poverty populations, high population density, and low per capita incomes. A two-mile radius from the Chattanooga central business district encompasses 8,846 persons in poverty, more than three times the total within that distance of any active major retail center in the Chattanooga MSA in 1980.(Appendix B) Per capita annual income within two miles of the Chattanooga central business district ($4,338) was more than $2,000 lower than for any major retail center including the two defunct ones, 1 and

3.

There is no constant relationship between degree of success of a major retail center and distance to neighborhoods with many poor people. Success depends on situation relative to other major retail centers that are in direct competition. Neighborhood characteristics that place a retail district at a disadvantage in one MSA can be superior to characteristics that constitute an advantage in another MSA. Greenville/Spartanburg major retail center 2 (in Spartanburg) is prosperous despite a poverty population of 10,636 within a four-mile radius. Remoteness from major retail centers with better neighborhood image enables this one to succeed.(Figure 5.2)

Montgomery major retail center 1 has neighborhood characteristics similar to those of major retail center 3. Major retail center 1 had, however, the lowest population and income within two-, four-, six-, and eight-mile radii.(Appendix B) It has an advantage over the Montgomery central business district and major retail center 3 because of greater distance from high-poverty neighborhoods. The advantage is reflected in attractiveness to the most prestigious functional category. Montgomery major retail center 1 had more shopping-goods sales in 1982 than major retail center 3 and nearly tripled the shopping-goods sales of the central business district.(Table 5.3) Its advantage over the central business district is a much lower poverty

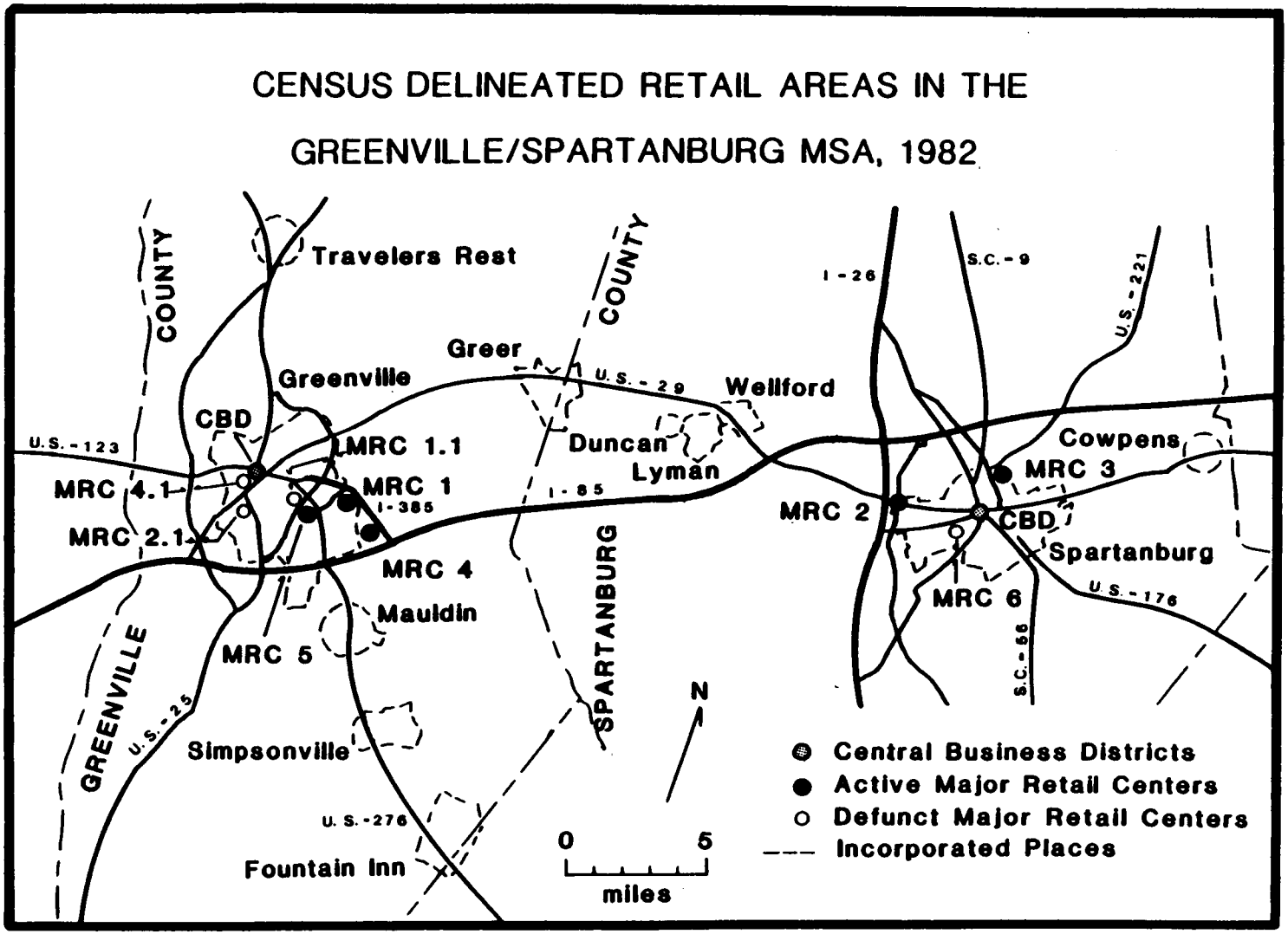


Figure 5.2. Central Business Districts and Major Retail Centers in the Greenville/Spartanburg MSA, 1982.

Table 5.3. The Relationship of Shopping-Goods Sales to Per Capita Income and Proportion of Persons in Poverty within Two-and-Four-Mile Radii of the Montgomery Central Business District and Active Major Retail Centers, 1982.

	Per capita income		Percent of persons in poverty		Percent of MSA shopping-goods sales
MSA	6,352		18.3		
	2 miles	4 miles	2 miles	4 miles	
CBD	4,380	5,848	36.1	25.9	7.7
MRC 1	8,293	8,709	4.7	5.4	21.8
MRC 3	10,644	8,418	3.4	11.1	16.2

population and higher per capita income within two-and-four-mile radii.

Major retail centers 1 and 3 are in neighborhoods that both have favorable characteristics within a two-mile radius but differ within a four-mile radius. Major retail center 3 has per capita income that is higher within two miles and only slightly lower within four miles than major retail center 1. For major retail center 3, percent of persons in poverty is lower within two miles but much higher within four miles than for major retail center 1. The high poverty neighborhoods within four miles of major retail center 3 give major retail center 1 an advantage in attracting prestige-conscious retailers and customers. Both major retail centers are located within a single retail district along East Boulevard, but construction of Eastdale Mall in major retail center 1 shifted the core of that district to a location more remote from poor neighborhoods. Spatial extent and sales volume of the East Boulevard retail district are discussed in Chapter VI.

Per capita income and percent of persons in poverty within two-and-four-mile radii reveal the social image and status of a central business district or major retail center. They do not reveal the total demand in its trade area because population density varies.

Income and Population of Trade Areas

Income and population totals indicate demand for retail goods within trade areas. The amount of income per unit of area (income density) and population per unit of area (population density) both contribute to density of demand for retail goods and services. High correlations between change in income density and change in density of retail establishments in suburban municipalities demonstrate that demand influences the location decisions of retail firms.(Erickson 1986, p. 339) Marketing studies oriented to retail structure have consistently found high correlations between total income levels and volume of sales within specific areas.(Ingene and Lusch 1981, p. 110)

The relationship between trade area demand and retail district success is not a simple one. Empirical studies for individual stores and shopping centers indicate a positive relationship between total retail sales and per capita income of the trade area.(Ingene and Yu 1979) During the speculative period of retail district development, location in trade areas with high per capita incomes was favored more than location in trade areas with high density of demand.

Population density is a better indicator of demand than income density for convenience-goods such as drugs and groceries, shopping-goods at the lower end of the

price-quality continuum, and other-goods such as automotive fuel and parts. Discount department stores and associated shopping-goods stores may be more successful in low or middle income areas than in high income areas.

Limits of trade areas are established by the distances that customers are willing to travel and by competition among central business districts and major retail centers. The distance people will travel for a specific good, the range of a good, varies for different items. Residents of areas out of range for a significant number of the goods carried by a particular central business district or major retail center will make shopping trips to that destination less frequently than residents of closer areas.(McKeever and Griffin 1977, p. 25)

The maximum distance that will not deter any consumers from making multi-purpose trips is a critical distance that falls within the trade areas of large shopping-goods facilities. A widely accepted critical distance is four miles. This distance is obtained from shopping center industry guidelines rather than geographical theory.(McKeever and Griffin 1977, p. 35) When the nearest central business district or major retail center is beyond the critical distance, the total number of consumer trips to a large shopping-goods facility is reduced. Consumer income is shifted to more ubiquitous retail goods, non-store retailing (catalog purchases), or non-retail

expenditures.

Travel time may be substituted for distance in the analysis of individual trade areas where the preponderance of customers uses the same mode of transportation. Delineation of trade areas by travel time becomes extremely complex if customers use different modes of transportation. A central business district has one trade area boundary for pedestrian traffic, another for public transportation riders, and a third for customers driving automobiles. Linear distance is arbitrary and not always proportional to accessibility, but it provides a more convenient tool for simultaneous analysis of several trade areas. Analysis is simplified by assuming that persons within four miles have high access to a retail district while persons further away have access that is diminished to some degree.

Analysis of the emergence and decline of central business districts and major retail centers employing income and population data requires comparison of potential trade area characteristics for alternative locations. The methods must apply to a diverse group of stores and a long time frame and, therefore, omit variables of shopping center or store size that are used in many retailing studies. General interaction theory has commonly applied gravity models to retail location problems.(Davies 1976, p. 5) This approach derives short-run solutions by estimating sales volume of a particular shopping center or

store based on its size and the distribution of population in the surrounding area. Sales forecasts require precise definitions of existing trade areas and predictions of actual consumer movements.(Davies 1976, p. 34; Breheny 1983) Gravity models are not designed to analyze long term changes in retail structure associated with geographical changes in demographic and economic characteristics, and analysis of attractiveness based on characteristics other than size is impractical within their formal mathematical framework. That is why gravity models are not used in this study.

Evaluation of potential trade areas of a central business district or major retail center is more useful than evaluation of existing ones for determining the potential for successful competition within a MSA. The data required for potential trade area analysis are more general than for analysis of actual trade areas but are examined for a wider variety of potential sites.

Two simplifying assumptions enable analysis of data for potential trade areas. One is that central business districts and major retail centers are equally attractive to consumers except for location. This assumption is obviously false but useful for inferring the reasons that investment in retail facilities has been made in some places and not in others. A second assumption is that central business districts and major retail centers have

discrete trade areas. The hypothetical trade areas analyzed here are derived by assuming that consumers will shop at the district nearest to their residence. Probabilistic models based on overlapping trade areas of various goods are certainly more realistic descriptions of actual consumer shopping patterns, but discrete trade areas permit tabulation of totals for combinations of central business districts and major retail centers within the MSA. These totals are useful for analysis of how trade patterns might differ if the economic and social landscape of the metropolitan area were different.(Craig, Ghosh, and McLafferty 1984, p. 8) The location of central business districts and major retail centers relative to demand can be evaluated in terms of potential attraction to customers. Nearest opportunity trade areas reveal size of the trade area for each retail area while close trade areas reveal efficiency of distribution throughout a metropolitan area if investment is sufficient to equalize site and neighborhood characteristics.

Nearest opportunity trade areas

Analysis of nearest opportunity trade areas indicates the motives for location decisions by retail district developers. Retailers strive for control of trade areas that extend beyond the critical distance for customer travel. Although distant customers travel to a retail

district less often, the retail district achieves a greater share of the metropolitan market and larger profits if there are no closer alternatives. Estimates of total income and population for nearest opportunity trade areas reveal substantial differences in the competitive advantages and disadvantages of alternative locations.(Table 5.4)

In the Chattanooga MSA, the strength of major retail center 5 relative to major retail center 2 is apparent in the nearest opportunity trade area data. Although the nearest opportunity trade area of major retail center 2 has high per capita income, it's extent is constrained by an intervening opportunity location strategy used by the developers of major retail center 5. Such strategies frequently lead to asymmetrical trade areas outside of central business districts.(Applebaum and Cohen 1961, pp. 80-81) The location for Northgate Mall, the core of major retail center 5, did not minimize travel distance for shoppers but instead maximized the number of shoppers closer to Northgate Mall than to Highland Plaza, the core of major retail center 2.

Chattanooga major retail centers 2 and 5, have similar neighborhood characteristics. These two are located only two miles apart and draw customers from overlapping trade areas characterized by low population densities, high per capita incomes, and low poverty populations.(Figure 3.1, p.

Table 5.4. Population and Income for "Nearest Opportunity" Trade Areas in the Chattanooga Metropolitan Statistical Area, 1980

Retail District	Number of Tracts	Population	Income ($000s, 1967)	Per Capita Income	Percent of Persons in Poverty
Chattanooga CBD	36.5	135,545	311,508	2,298	22.7
MRC 2	9	34,194	114,471	3,348	8.0
MRC 4	28.5	159,106	456,588	2,870	1.8
MRC 5	13	97,695	293,193	3,001	9.5
Chattanooga MSA	87	426,540	1,175,759	2,757	13.5

Source: compiled from the 1980 Census of Population and the 1982 Census of Retail Trade.

86) Major retail center 2 had a poverty population of only 768 in 1980; major retail center 5 had only 725. The much larger nearest opportunity trade area of major retail center 5 explains its relative success much better than neighborhood image, income density, or population density.

The location of major retail center 5 allowed it to capture much of the trade area from major retail center 2 and still be the nearest major retail center for large areas of the rural-urban fringe that had high per capita incomes. The same location strategy enabled major retail center 4 to capture much of the trade areas of major retail centers 1 and 3, yet also be the nearest major retail center to the eastern portion of the rural-urban fringe.(Figure 3.1, p. 86) This location strategy is being used once again by a new shopping center, Hamilton Place, recently constructed near I-75 just three miles northeast of major retail center 4.

The nearest opportunity trade area does not encompass population of 150,000, the minimum required to support a regional shopping center, for either the Chattanooga central business district or major retail center 5.(McKeever and Griffin 1977) Only one of the two retail areas, therefore, can include a collection of stores equivalent to a regional shopping center. Low sales in the Chattanooga central business district indicate that it serves a diminished function because its nearest

opportunity trade area is divided between major retail centers 4 and 5. The two large major retail centers have captured the trade of census tracts that are nearer to the central business district. Demand in the nearest opportunity trade area of the Chattanooga central business district remains higher than in the one of the much more successful major retail center 5. Decline of sales in the central business district and increase of sales in major retail center 5 coincide much better with neighborhood characteristics and roadway access indexes than with proximity to demand.

The Knoxville central business district also lost attraction to customers. It has a nearest opportunity trade area that encompassed 14.0 percent of total income in 1980 but accounted for only 3.3 percent of all sales in the MSA in 1982.(Table 5.5) Major retail center 7 in the Knoxville MSA has a nearest opportunity trade area that encompassed only 7.9 percent of the total income but accounted for 9.4 percent of all sales. The Knoxville central business district has ceased to draw customers who reside nearer to it than to major retail centers, while major retail center 7 draws customers from beyond its nearest opportunity trade area.(Figure 5.3)

Nearest opportunity trade areas indicate the competitive advantages or disadvantages of locations with similar neighborhood characteristics. A large income or

Table 5.5. Population and Income for "Nearest Opportunity" Trade Areas in the Knoxville Metropolitan Statistical Area, 1980

Retail District	Number of Tracts	Population	Income ($000s, 1967)	Per Capita Income	Percent of Persons in Poverty
Knoxville CBD	19	75,103	193,499	2,576	20.1
MRC 1	10.5	30,255	54,012	1,785	30.2
MRC 2	4	14,498	47,822	3,298	11.5
MRC 3	11	54,040	163,570	3,027	12.1
MRC 4	17	77,770	217,555	2,797	12.5
MRC 5	10	35,652	98,802	2,771	14.3
MRC 6	10	49,161	145,638	2,962	14.7
MRC 7	7	28,943	109,091	3,769	9.8
MRC 8	8	45,577	177,980	3,906	5.0
MRC 9	16.5	65,521	175,087	2,672	12.1
Knoxville MSA	113	476,520	1,383,057	2,902	14.2

Source: compiled from the 1980 Census of Population and the 1982 Census of Retail Trade.

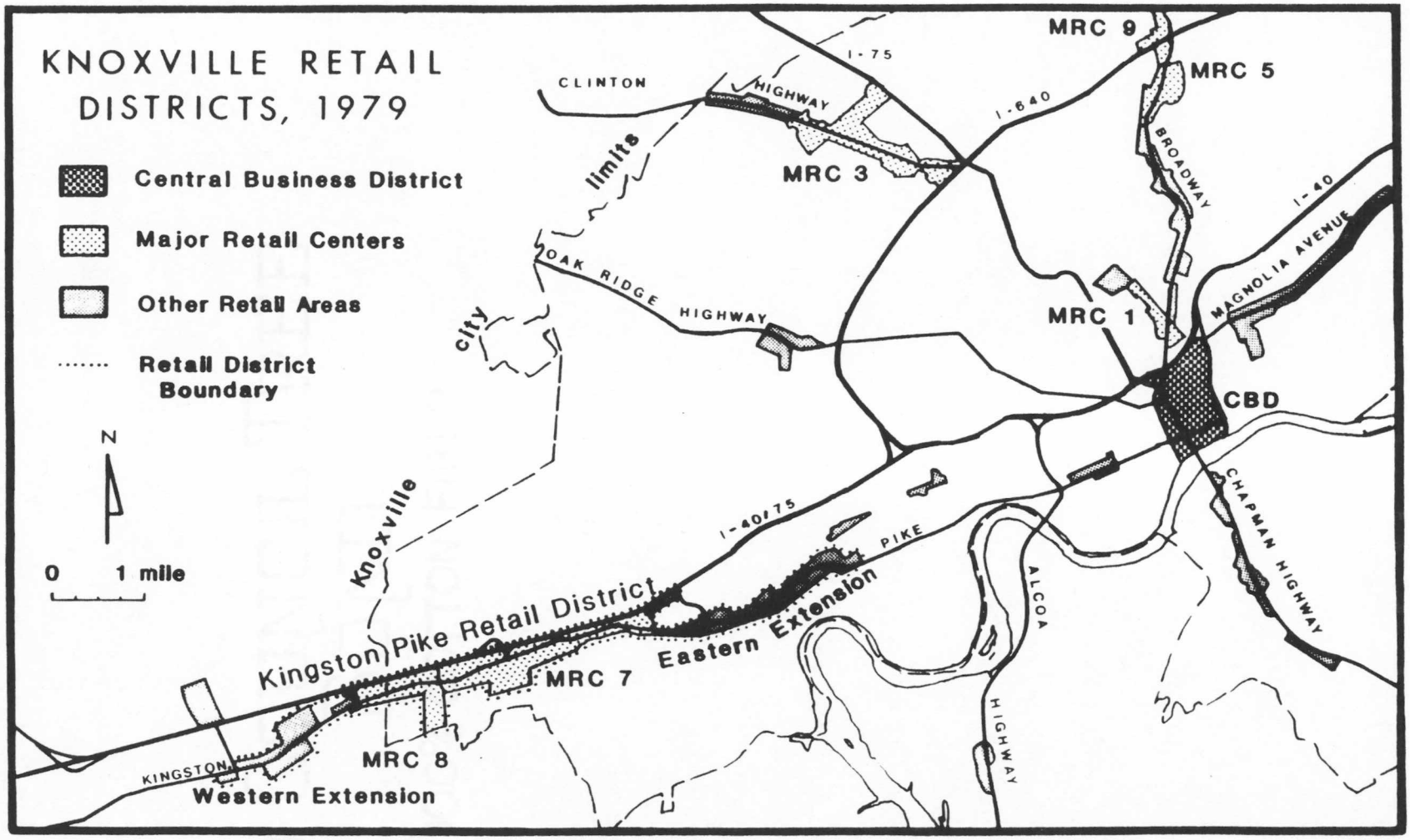


Figure 5.3. Knoxville Retail Districts Compiled From a 1979 Knoxville-Knox County Planning Commission Land Use Map.

population total does not, however, negate the effects of unfavorable neighborhood image. Large nearest opportunity trade areas serve retail developers objectives of market control and profit but do not serve consumers interest in efficient access to stores or a broader economic objective of efficient distribution of goods and services.

Close trade areas

The efficiency of spacing of central business districts and major retail centers can be evaluated using close trade areas. Analysis of close trade areas indicates the efficiency of retail structure in making high price-quality retail services available to all consumers and in maximizing retail sales. The area within the critical distance is the most important part of a trade area because it is the source of most shopping trips.(Applebaum 1966, p. 127) The close trade area is defined as those census tracts whose center points are within four miles of a central business district or major retail center and are closer to it than to any other. Close trade areas are comparable to the concept of primary trade areas used in retail location analysis, but the latter are usually defined on the basis of market share surveys. High percentages of demand in a close trade area give a central business district or major retail center an advantage in achieving sales.

Percentages of total MSA income and population in the close trade areas of active central business districts and major retail centers indicate the amount of demand located within a critical distance of the most important retail facilities. The percentages vary among sample MSAs.(Table 5.6) The patterns of variation are the same for both variables and are consistent with sales patterns reflected by the five types of metropolitan retail structure.

The central business district close trade area had a higher proportion of total income and population (25.6 and 34.1 percent) in the Montgomery MSA than in the other sample MSAs. High percentages are consistent with results of the analysis in Chapter IV that identified Montgomery as a "central business district maintained" MSA, because they indicate unusually large demand close to a relatively strong central business district. Distribution of the central business district and major retail centers in the Montgomery MSA is conducive to centralized retail structure because their combined close trade areas encompass 66.0 percent of MSA income and 61.7 percent of MSA population. Both percentages are the highest among the five sample MSAs.

The Knoxville MSA had the highest proportions of income and population within close trade areas of major retail centers among the five sample MSAs, 53.8 and 50.7 percent.(Table 5.6) These proportions are higher than in

Table 5.6. Close Trade Area Income and Population as a Percent of Metropolitan Statistical Area Total

MSA (Type)		Largest CBD	Other CBD(s)	Active MRCs	CBDs + MRCs
Montgomery	Income	25.6	-	40.4	66.0
(CBD maintained)	Population	34.1	-	27.6	61.7
Knoxville	Income	8.7	-	53.8	62.5
(MRC dominated)	Population	10.5	-	50.7	61.2
Chattanooga	Income	14.4	-	31.4	45.8
(Dispersed...central city)	Population	18.7	-	26.5	45.2
Greensboro/W.-S./H.P.	Income	7.8	6.0	33.4	48.2
(Multiple central city)	Population	9.8	9.8	25.8	45.4
Greenville/Spartanburg	Income	12.0	6.9	26.7	45.6
(Low centralization)	Population	13.4	7.3	22.8	43.5

combined close trade areas of central business districts and major retail centers in three of the five sample MSAs. This distribution of total income and population is consistent with results of the analysis in Chapter IV that identified Knoxville as a "major retail center dominated" MSA because a higher percent of demand is close to the centers than in other MSAs.

Greenville/Spartanburg had income and population distribution consistent with its classification as a "low centralization" MSA. It had the lowest proportion of total income and population within close trade areas of all major retail centers (26.7 percent) and of central business districts and major retail centers combined (45.6 percent). The Chattanooga and Greensboro/Winston-Salem/High Point MSAs had low proportions of their income and population within close trade areas of central business districts and major retail centers, results consistent with their failure to qualify for either the "central business district maintained" or "major retail center dominated" types.

Close trade areas reveal differences in the effectiveness of central business district and major retail center locations. Nearest opportunity trade areas indicate the individual competitive status of retail areas, but close trade areas indicate the collective status and can be used to compare MSAs.

Effects of Internal Characteristics on Metropolitan Retail Structure

The five types of metropolitan retail structure differ in distribution of central business districts and major retail centers relative to roadway access, neighborhood image, and trade area demand within the MSA. No single internal characteristic of MSAs adequately explains patterns of retail districts, but the analysis indicates the priority of their importance. Adequate roadway access and trade area demand are prerequisites but do not ensure success where neighborhood image has declined. High income totals are incongruous with the decline of central business districts and some major retail centers. High demand in a trade area is not as important as favorable neighborhood image because consumer mobility allows shopping across close and nearest opportunity trade area boundaries.

Neighborhood image provides a better explanation than trade area demand for the success and failure of central business districts and major retail centers. Low per capita income and high poverty population in nearby neighborhoods have more adverse effects than low aggregate demand within a two-or-four-mile radius. All of the sample MSAs had high income totals within four-mile radii, yet rapidly declining sales in their central business

districts. Percent of poverty population is higher in neighborhoods surrounding defunct major retail centers than in those surrounding active major retail centers in all four sample MSAs that have both active and defunct ones.(Table 5.7) This relationship is true for neighborhoods within a two-mile radius and within a four-mile radius.

Low percent of population in poverty within the two-mile radius appears to be more important than within the four-mile radius for the success of a major retail center. Mean percent of population in poverty within two miles of active major retail centers is lower than both the percent within four miles and the percent for the entire MSA in all five sample MSAs.(Table 5.7) Since the presence of a large proportion of poor people does not preclude high total income and a major retail center draws customers from a trade area of several miles, high poverty population within two-mile radii is not an indication of restricted demand. It is significant to retail structure because it indicates neighborhoods with unfavorable images.

High poverty populations were present close to declining retail districts with high aggregate incomes in the Chattanooga, Montgomery, and Greenville/Spartanburg MSAs. Three declining retail areas in the Chattanooga MSA, the central business district and defunct major retail centers 1 and 3, were higher in poverty population than any

Table 5.7. Percent of Population Below the Poverty Level in Neighborhoods within Two-Mile and Four-Mile Radii of Major Retail Centers, 1982

	Percent of Population in Poverty				
	Total MSA	Active, 4 miles	Active, 2 miles	Defunct, 4 miles	Defunct, 2 miles
Montgomery	18.7	8.2	4.1	18.9	13.7
Knoxville	14.2	14.6	13.6	_	_
Chattanooga	13.5	9.8	6.4	17.6	12.5
Greens./WS/HP	10.8	12.2	9.0	14.2	14.1
Greenv./Spar.	11.9	14.3	10.7	16.5	21.0

of the other major retail centers at every radius up to eight miles.(Appendix B) Major retail centers 1 and 3 ranked first and second in the Chattanooga MSA in total income within two-, four-, and six-mile radii.

Poverty populations within two miles of Montgomery major retail center 2 increased from 313 families (about 1,500 people) in 1960 to 4,231 people in 1980. Total population of that area changed very little: from 31,798 in 1960 to 32,541 in 1980. The large increase of poverty population within two miles coincided with the demise of major retail center 2 despite the maintenance of high per capita income. It was $8,669 in 1980, $2,317 above the average for the Montgomery MSA.

Per capita income and population in poverty for the Greenville/Spartanburg MSA are $6,494 and 11.9 percent. Within a two-mile radius of the Greenville central business district per capita income is only $5,071 and persons in poverty constitute 27.3 percent of the population. Despite the high incidence of poverty, total income in this area ($197 million) is greater than within a two-mile radius of major retail center 1 ($154 million). Although demand within a two-mile radius was sufficient to maintain a strong retail district in 1980, sales in the Greenville central business district declined, in 1967 dollars, from 17.9 million in 1977 to 10.9 million in 1982.

Successful major retail centers are located in areas

with low poverty populations and high per capita incomes. Major retail center 5 is the second largest in the Chattanooga MSA. Ironically, it has the lowest total income within the four-, six-, and eight-mile radii of all census delineated retail areas. This center depends on a clientele that must travel long distances, but the attractiveness of the retail facilities and their location are sufficient incentives. Greenville/Spartanburg major retail center 1, consisting entirely of Haywood Mall, was constructed in a neighborhood that did not have the liability of high poverty population. Only 3.9 percent of the population within two miles of major retail center 1 were in poverty in 1980. Major retail center 1 was the largest in the Greenville/Spartanburg MSA by 1982 with sales in 1967 dollars of 35.7 million.

Inefficient distribution of central business districts and major retail centers is indicated by the proportion of income and population not within any close trade area and varies with the type of retail structure. The most efficient adjustment would have all customers included in a close trade area. Distribution of demand among trade areas of central business districts and major retail centers would be equal but one retail district would dominate in types of stores that require the entire metropolitan area to meet threshold requirements. Competition by retailers attempting to establish large nearest opportunity trade

areas inhibits adjustment to equal distribution.

High roadway access indexes correspond with successful central business districts and major retail centers. Roadway access is the easiest of the three internal characteristics to change and is, in some cases, the result rather than the cause of retail district success. Failure of high roadway access indexes to account for more than a slight slowdown in the rate of central business district collapse is evidence of their secondary importance to neighborhood image. Roadway access is more important than high demand in a close or nearest opportunity trade area because customers travel to attractive stores from beyond these areas.

In Montgomery, a high roadway access index and high income in the close trade area combined to maintain a central business district with high retail sales relative to ones in other medium-sized MSAs. These characteristics are not sufficient, however, to offset unfavorable neighborhood image characteristics. The Montgomery central business district has lost prominence as a retail district compared to other districts in the MSA.

The Knoxville MSA is dominated by major retail centers that have high roadway access and an exceptionally high percent of MSA income within close trade areas. The urban interstate highway network has created several sites that have favorable access in areas with favorable neighborhood

characteristics. The result is a larger proportion of sales in the largest major retail center and more areas that qualify as major retail centers than other MSAs with similar retail demand.

The Chattanooga, Greensboro/Winston-Salem/High Point, and Greenville/Spartanburg MSAs all exhibit lower roadway access and income in close trade areas than either the Knoxville or Montgomery MSAs. Old major retail centers with poor roadway access or unfavorable neighborhood characteristics had become defunct in all of the sample MSAs but Knoxville by 1982. Poor roadway access contributes to inefficient distribution of major retail centers because the demise of some leaves areas that are not within close trade areas.

Census delineations of central business districts and major retail centers appear to have statistical validity as representations of retail districts. Examination of land use patterns reveals, however, that actual retail districts are sometimes much more extensive than the census delineations. This discrepancy helps to account for retail sales outside of central business districts and major retail centers. These sales account for over half of the MSA total in ninety-one of ninety-two medium-sized MSAs.[3] The statistical analyses in Chapter IV and the

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[3]The lone exception is the Omaha, Nebraska and Iowa MSA.

analysis of internal characteristics of income and population are based on census data. Therefore, it is necessary to examine the census definitions as they apply to specific cases in order to understand how they can be interpreted and used. The impression of internal metropolitan retail structure yielded by field investigation modifies the one derived from analysis of census units.

CHAPTER VI

ANALYSIS OF METROPOLITAN STRUCTURE USING RETAIL DISTRICTS

The strength of the propensity toward centralized retail structure in medium-sized MSAs is revealed better by retail districts than by central business districts and major retail centers. Retail districts extend beyond Bureau of the Census delineations of major retail centers and often encompass more than one center, while most central business districts overbound the downtown retail district. The former tendency is more significant to contemporary retail structure because major retail centers contain much greater sales volume than central business districts.

The first two sections of this chapter examine the nature of inaccuracies in census delineations and refine the definition of a retail district proposed by retail geographers.(Dawson and Lord 1985, p. 1) The definition, presented in Chapter II, identifies a retail district as a concentration of retail stores that may or may not include one or more planned shopping centers. No qualifications concerning number or functional type of stores are specified. Dawson and Lord's definition of retail districts includes many areas excluded by census delineations such as small clusters of convenience-goods stores, collections of automotive dealers, and large agglomerations that include many functional types.

The third section of this chapter employs analog techniques to estimate sales volume in the largest retail district in three of the sample MSAs. The three are the Montgomery (central business district maintained), Knoxville (major retail center dominated), and Chattanooga (dispersed within a central city) MSAs. The Chattanooga, Knoxville, and Montgomery MSAs represent types of retail structure defined by the three key variables identified in Chapter IV. They are the appropriate MSAs in which to examine degree of centralization because each has only one central city and, therefore, fewer complications of political structure than the Greensboro/Winston-Salem/High Point MSAs.

Retail districts in the Greensboro/Winston-Salem/High Point (multiple central city) and Greenville/Spartanburg (low centralization) MSAs are separated by distances of fifteen to twenty-five miles.(Figure 5.2, p. 175) The political structure causes customers to patronize nearby stores instead of more distant ones even if the latter provide better goods and services. Because of the distances, retail districts compete only in goods with the longest ranges and highest thresholds. The spatial monopoly caused by distance prevents control of a large percentage of MSA sales by a single retail district.(Table 6.1) A twelve-mile radius from the largest major retail center encompasses only half of MSA income and population

Table 6.1. Percent of 1980 Total Income and Population within Eight-and-Twelve-Mile Radiuses and Percent of 1982 Total Sales for Central Business Districts and Largest Major Retail Centers of the Five Sample MSAs

		Eight-mile radius		Twelve-mile radius	
	Sales	Income	Pop.	Income	Pop.
Chattanooga					
Central Business District	2.7	52.5	51.5	72.7	69.9
Major Retail Center 4	5.9	50.1	50.9	74.9	72.1
Greensboro/Winston-Salem/ High Point					
Greensboro CBD	1.3	28.0	25.5	32.6	29.9
Winston-Salem CBD	1.7	23.6	22.3	33.8	31.8
High Point CBD	1.4	14.6	14.5	27.7	27.5
MRC 6 (Greensboro)	2.8	26.1	23.5	34.0	31.4
MRC 7 (Winston-Salem)	3.2	23.2	21.5	30.9	28.8
Greenville/Spartanburg					
Greenville CBD	1.3	38.8	36.7	50.8	48.4
Spartanburg CBD	1.9	19.1	18.6	27.7	27.8
MRC 1 (Greenville County)	3.7	38.9	36.9	50.0	47.8
MRC 2 (Spartanburg)	3.6	21.7	21.3	28.5	28.4
Knoxville					
Central Business District	3.3	46.2	47.1	67.1	66.8
Major Retail Center 7	9.4	42.5	39.5	69.4	66.8
Montgomery					
Central Business District	6.9	73.3	73.3	81.3	77.9
Major Retail Center 1	6.7	64.8	59.8	78.1	75.2

in Greenville/Spartanburg and less than one-third in Greensboro/Winston-Salem/High Point. Population and income percentages are higher at shorter radiuses for the largest major retail centers in the three sample MSAs with only one central city.

Census Methodology

Both the number and sales volume of major retail centers are controlled by Bureau of the Census procedures. The agency publishes definitions of central business districts and major retail centers that are distributed to census statistical areas committees composed of local officials.(U.S. Bureau of the Census 1982a) The committees compile maps delineating major retail centers based on their knowledge of the local area, field observation, and air photo interpretation.(Kelly 1986)[1] Census delineation procedures result in three types of error: 1) central business districts differ from major retail centers in degree of coincidence with retail districts, 2) shopping-goods stores are emphasized while convenience-goods or other-goods stores are neglected, and 3) contiguous retail districts are divided.

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[1]The 1982 Census of Retail Trade was the last to delineate central business districts and major retail centers. Retail sales will be reported by zip code area in the 1987 Census of Retail Trade.

Error is more significant near major retail centers than near central business districts. Major retail centers are found in the parts of MSAs that had the fastest growth in retail sales from 1958 to 1982. Their accuracy in depicting the sales volume of new retail districts is an important issue in the analysis of metropolitan retail structure. The number of new retail districts differs from the number of major retail centers. Central business districts are less subject to inconsistent interpretation and their numbers correspond closely with the number of central cities. Also, sales volume of central business districts is affected little by the location of their boundaries because of overbounding and a paucity of new retail development.

Difference between central business districts and major retail centers in coincidence with retail districts

The Census of Retail Trade uses entire census tracts as units of aggregation in delineating central business districts. Substantial areas that are not in retail uses and stores that are spatially detached from the main retail district are included. The detached stores often fall into the convenience-goods or other-goods categories, while shopping-goods stores historically have located in the core of central business districts. Abandonment of that core by most shopping-goods stores has left central business

districts composed of scattered stores whose significance to the metropolitan area is small.

Census tract boundaries are ignored in the delineation of major retail centers. No major retail center in the five sample MSAs includes more than a small portion of an entire census tract. Also, major retail centers underbound retail districts in the five sample MSAs although the degree of underbounding varies considerably. Major retail center 2 in the Knoxville MSA consists almost entirely of the Downtown Shopping Center in Oak Ridge, Tennessee and excludes numerous nearby retail stores on Oak Ridge Turnpike and Illinois Avenue.(Figure 6.1) Adjacent land on the northeast side of Illinois Avenue is controlled by the shopping center developers and has been withheld from use. The southeast side of Illinois Avenue, directly across from the shopping center land, contains the largest group of excluded stores.

The excluded stores on Illinois Avenue are concentrated in a four-block strip that came close to meeting the minimum requirements of a major retail center in 1982.(Table 6.2) Census guidelines specify a minimum of twenty-five retail establishments including one or more general merchandise stores with at least 100,000 square feet total floor space.(U. S. Bureau of the Census 1982a, p. 3) In 1982, the Illinois Avenue strip contained twenty-four retail stores including two supermarkets, three

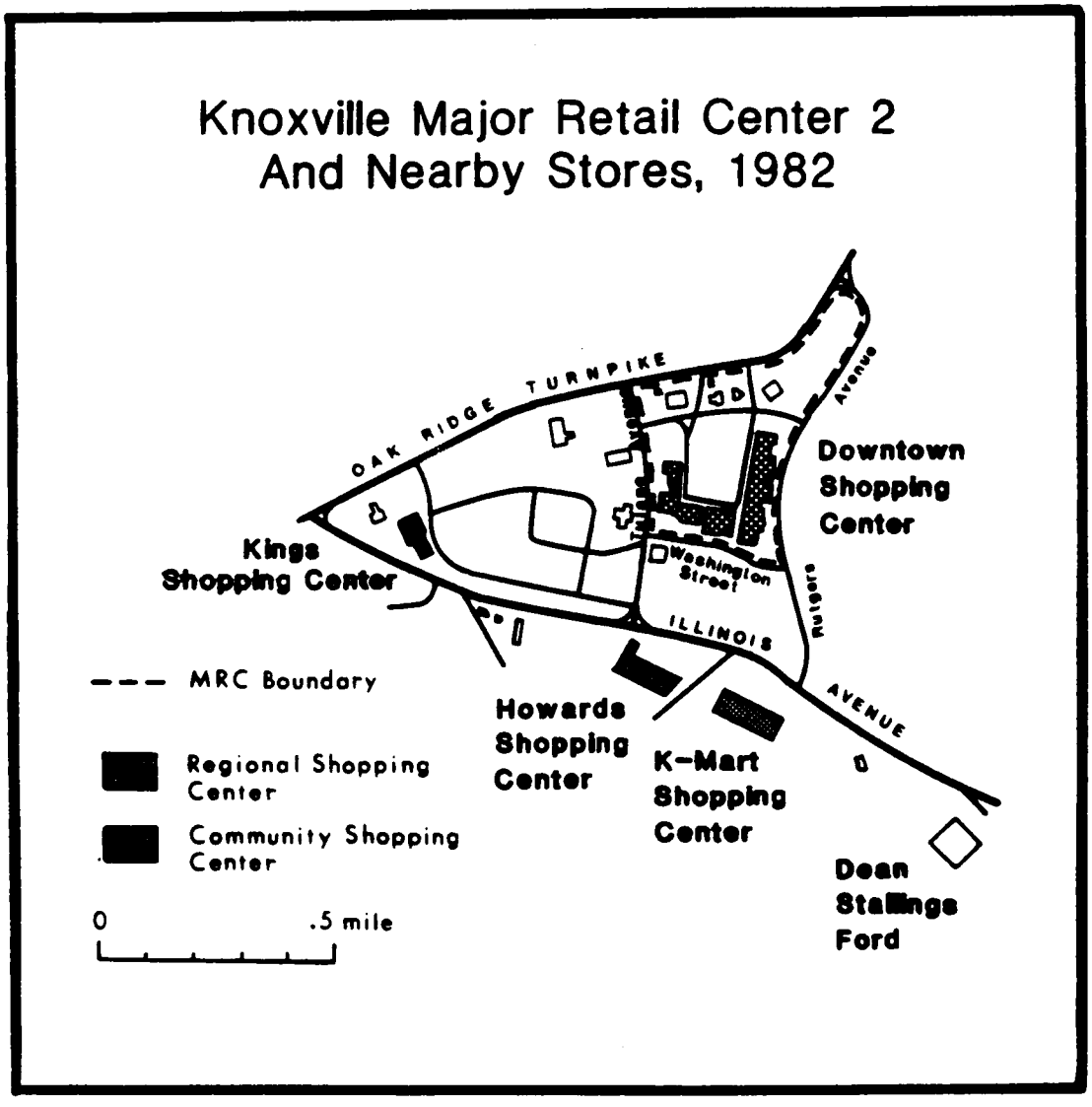


Figure 6.1. Major Retail Center 2 of the Knoxville MSA and Nearby Establishments in Oak Ridge, Tennessee.

Table 6.2. Retail Stores on South Illinois Avenue, Oak Ridge, Tennessee, that are Excluded from Major Retail Center 2 in the Knoxville Metropolitan Statistical Area

Address	Name	First Census Year in Operation
115	King's Department Store	1972
117	White Stores (grocery)	1972
119	Treasury Drug Center	1972
200	E Z Mart Food Store	1977
202	J's Illinois Package Store	1977
202a	Time Out Deli	1982
204	Shoney's Big Boy Restaurant	1972
210	Edward's Restaurant	1982
212	Pizza Inn	1972
216	Howard's Discount Department Store	1972
240	Sterchi's Furniture	1982
246	Kroger (grocery)	1982
302	K-Mart Discount Department Store	1982
303	Alan's Liquor Store	1972
303 #2	Murray's Beer Package Store	1972
310	Winn-Dixie Deli-Bakery	1982
320	Goody's (variety)	1982
324	Fantastic Sam's	1982
352	Neal's Jewelry	1982
400	Pantry Food Store	1982
420	ASA Gallery	1982
430	Duraclean Carpet Care	1982
480	Dean Stallings Ford	1982
490	Bonanza Steak House	1982

Source: Oak Ridge, Tennessee, City Directory for 1982, 1978, 1976, and 1974; and Oak Ridge Telephone Directory, 1986.

discount department stores, and a new car dealer. The largest store was a 77,000 square foot "K-Mart" discount department store. The twenty-four stores on Illinois Avenue and a smaller number on Oak Ridge Highway, account for substantial amounts of retail sales that are excluded from major retail center 2. The stores were excluded because the census statistical areas committee, in this instance, interpreted the census definitions in such a way that the major retail center extends little beyond a planned shopping center.(Figure 6.1)

Major retail center 7 in the City of Knoxville is more inclusively defined. It contains a regional shopping center but also extends for more that two miles along Kingston Pike, the major commercial street of Knoxville.(Figure 6.2) Two discount department stores and numerous smaller establishments are included but would have been excluded if the boundaries had been drawn as exclusively as those of major retail center 2. Even so, retail land uses continue unbroken along Kingston Pike to the east beyond the boundary of major retail center 7. More than two miles of the Kingston Pike retail district is excluded.(Figure 5.3, p. 188)

Emphasis on shopping-goods, neglect of other retail types

Census definitions of central business districts and major retail centers emphasize the importance of department

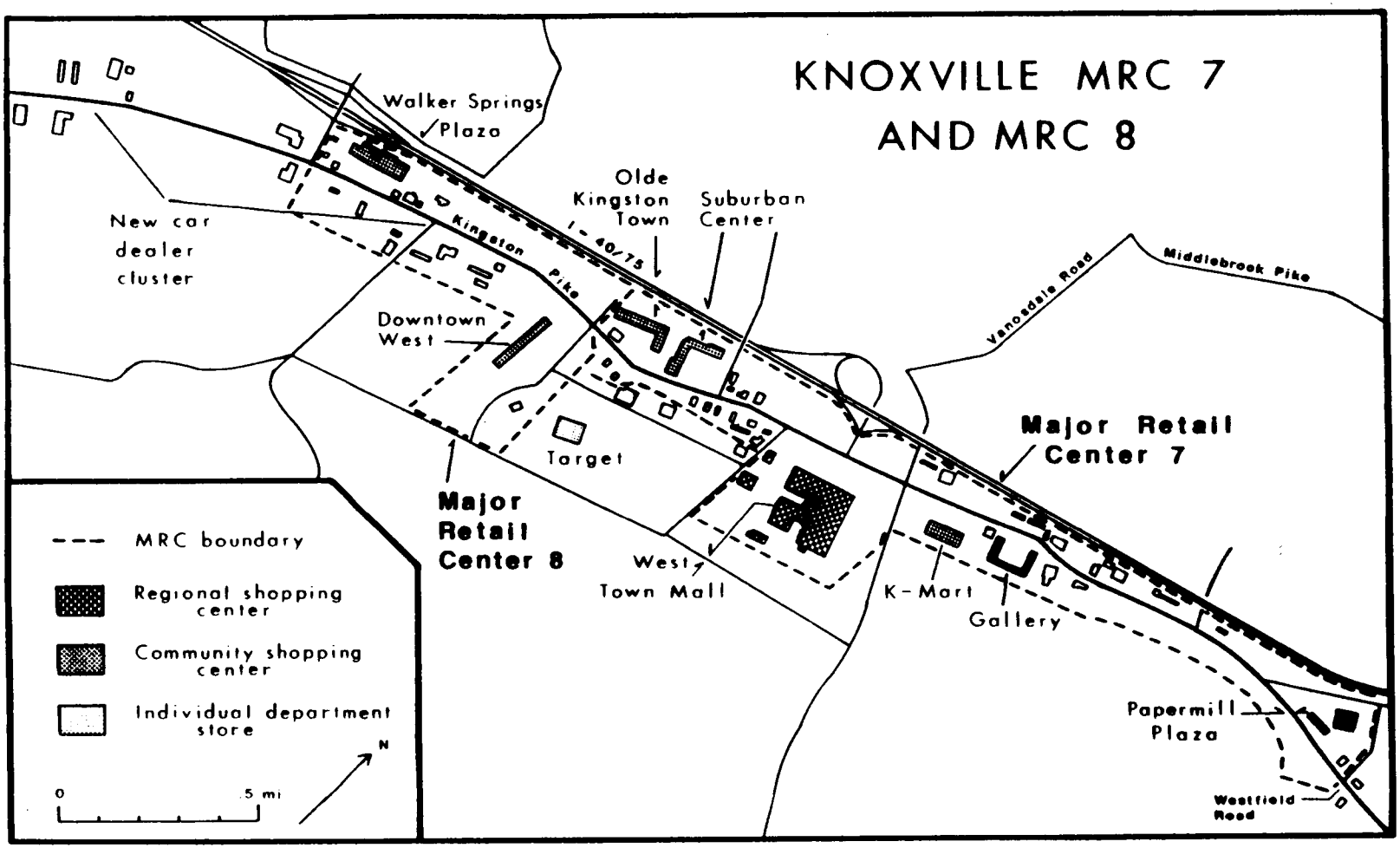


Figure 6.2. Knoxville Major Retail Center 7 and Major Retail Center 8.

stores. A cluster of department stores still exists in many central business districts.(Figure 5.1, p. 163) These are derelict stores and functioning remnants of the largest stores operated during the period of central business district dominance. Major retail centers have been recognized almost every place outside of the central business district where a mass-merchandise or traditional department store opened. Discount department stores are less universally recognized but often are the largest store in a major retail center.

Emphasis on department stores by the Bureau of the Census often results in exclusion of agglomerations of new car dealers from major retail centers. New car dealers located in the frame around downtown retail cores usually were included as part of the central business district by the Bureau of the Census. New car dealers have abandoned central business districts for sites in outlying areas. The resulting clusters of car dealers constitute distinct groups of stores with similar functions. They conduct joint advertising campaigns without formal organization that planned shopping centers provide for shopping-goods stores. These clusters are in the same retail district as large shopping-goods facilities in some places, but form distinct specialized retail districts in others.

Exclusion of new car dealers from major retail centers by the Census of Retail Trade obscures their size and

propensity to agglomerate. Automotive dealer sales are reported for MSAs and central cities with no indication of location within the units. Statistics for central business districts that have retained new car dealers after large department stores have closed can be used to estimate relative sales volumes of the two types of establishments.

Retail sales in the Montgomery central business district totalled more than fifty-two million (1967 dollars) in 1977.(Table 6.3) Automotive dealers accounted for about eighteen million, including parts, repair, and service stores. General merchandise stores accounted for about nine and one-half million, and these were heavily concentrated in three department stores.[2] By 1982, the three department stores all had closed and central business district total sales had dropped to about thirty million in 1967 dollars. General merchandise sales were not disclosed for 1982.

New car dealers equal or exceed department stores in sales and account for the majority of the automotive dealers category. Constant 1967 dollar sales by automotive dealers in the Montgomery central business district decreased from eighteen million in 1977 to fifteen

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[2]The exact amount was withheld by the census, but five years earlier, in 1972, the three department stores accounted for 86 percent of the general merchandise sales in the central business district.

Table 6.3. Montgomery Central Business District Sales and Number of Stores in Selected Standard Industrial Codes (SIC)

Sales figures are in thousands of 1967 dollars.

SIC	53 General Merchandise		531 Department Stores		55 exc. 554 Automotive Stores		Total Sales
	Sales	(Stores)	Sales	(Stores)	Sales	(Stores)	
1972	11,420	(7)	9,766	(3)	33,662	(36)	74,881
1977	9,527	(6)	d	(3)	18,312	(29)	51,850
1982	d	(2)	_	(0)	15,360	(18)	29,938

Source: Census of Retail Trade, Major Retail Centers in MSAs for 1972, 1977, and 1982.

million in 1982 as the number of dealers declined from 29 to 18. The eleven automotive dealers that closed between 1977 and 1982 accounted for less than twenty percent of the 1977 sales in that category. Three new car dealers that remained open in 1982 probably accounted for at least ten of the fifteen million in automotive sales.(Montgomery City Directory 1982, p. 112)

The central business district does not contain the largest grouping of new car dealers in the Montgomery MSA. The new location for most of Montgomery's new car dealers is a strip approximately two-thirds of a mile long on East Boulevard. This four-lane divided thoroughfare connects the two largest major retail centers in the Montgomery MSA, but the new group of automotive dealers is not included in either center.(Figure 6.3) Groups of new car dealers are present in the other four sample MSAs and are usually excluded from major retail centers.

Systematic exclusion of new car dealers from major retail centers statistically obscures their importance in retail districts. A group of three or four new car dealers and nearby smaller retail establishments accounts for retail sales volume comparable to that of major retail centers. New car dealers are like department stores that generate customer traffic and support other stores. Specialized automotive retail districts were recognized by Berry twenty-five years ago, but their importance to the

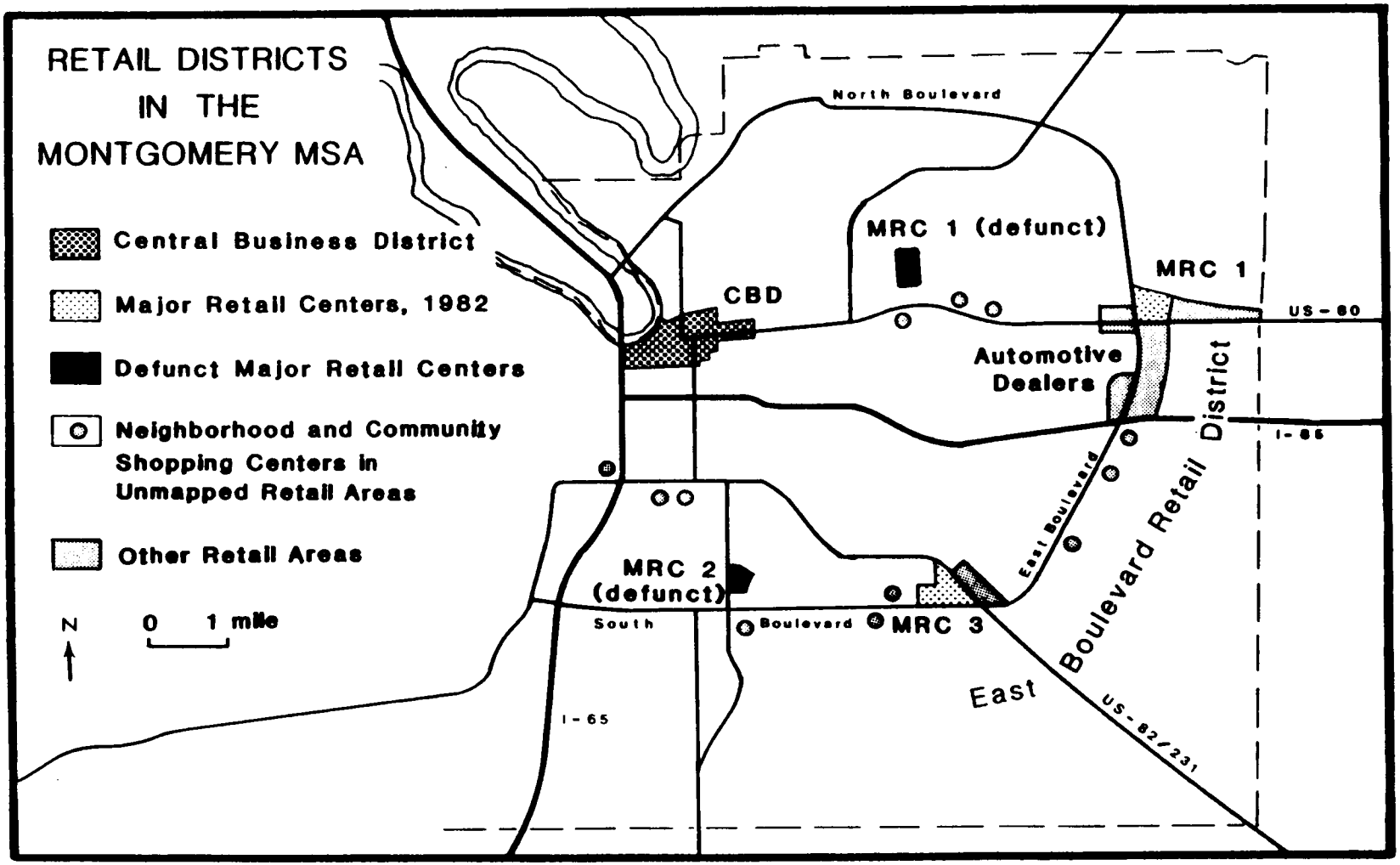


Figure 6.3. Retail Districts in the Montgomery MSA Compiled From a 1986 Montgomery Planning Commission Commercial Development Study and Field Observations Conducted in August of 1986.

sales volume of a MSA has not been documented and still is not apparent in census data.(Berry 1963)

Division of contiguous retail districts

Arbitrary placement of boundaries can split contiguous areas of retail land use into two or more major retail centers. Division of a retail district into two active major retail centers misrepresents metropolitan structure by understating the size of large concentrations and by inflating the number within a MSA. The boundary between major retail centers 7 and 8 in the Knoxville MSA is an example of arbitrary splitting.(Figure 6.2, p. 210) The boundary is the eastern property line of lots on the eastern side of Downtown West Boulevard, a short street that has retail facilities located on both its eastern and western sides. Members of the census statistical areas committee for the Knoxville MSA did not recall why the decision was made to identify two major retail centers instead of one.(Beal 1986; Kelly 1986)

In the Greenville/Spartanburg MSA, different local planning agencies delineated major retail centers in Greenville and Spartanburg counties in 1982. Their results reflect inconsistent interpretation of the census definitions. Delineations in Greenville County made major retail centers coincide more closely with planned shopping centers than with retail districts. Major retail centers

were more inclusive of stores outside of planned regional shopping centers in Spartanburg County where major retail center 2 was delineated to include most of the district it occupied. The sales volume of major retail center 2 was similar to that of major retail center 1 in Greenville County although the former is actually located in a smaller retail district.(Table 6.4) Major retail center 2 has a smaller planned shopping center as its core and much lower income and population totals within the critical distance of four miles.

The Laurens Road/Pleasantburg Drive retail district in Greenville County contains a defunct major retail center adjacent to an active one. Initially, the retail district developed around the Pleasantburg Shopping Center and occupied the southwestern quadrant of the intersection of two thoroughfares, Laurens Road (U.S.-276) and Pleasantburg Drive (U.S.-29 bypass). The first Bureau of the Census delineation of major retail centers for the Greenville MSA was conducted for 1967 and designated the area that contained Pleasantburg Shopping Center as major retail center 1. This was a community shopping center with a small branch of a downtown department store (Belk-Simpson) as the key tenant. A regional shopping center, McAlister Square, was constructed in the southeast quadrant of the intersection of Laurens Road and Pleasantburg Drive between 1967 and 1972. McAlister

Table 6.4. Inclusively Bounded and Underbounded Major Retail Centers in the Greenville/Spartanburg Metropolitan Statistical Area

Major retail center	Sales, 1982 ($000s)	Population within 4 miles, 1980	Income within 4 miles, 1980 ($000s)	Number of stores in largest planned shopping center	Gross leasable area in largest planned shopping center
Spartanburg County (inclusively bounded)					
2	91,016	52,695	288,315	76	825,377
3	52,538	71,897	476,657	39	192,000
Greenville County (underbounded)					
1 *	94,077	79,068	651,707	129	954,000
4	38,846	53,226	442,909	86	507,306
5	59,634	93,693	663,971	60	570,000

* 1982 delineation

Square was designated as major retail center 5, resulting in two major retail centers at the same intersection.

Arbitrary division of the Laurens Road-Pleasantburg Drive retail district continued in the 1977 Census of Retail Trade, but the small department store in the Pleasantburg Shopping Center had closed by 1982. Belk-Simpson became one of three key tenants in McAlister Square, shifting its location from the central business district and maintaining its Pleasantburg Square store as a warehouse. Pleasantburg Square became a neighborhood shopping center that functions in a complementary relationship with McAlister Square. The designation of major retail center 1 was reassigned to a retail district elsewhere in the Greenville/Spartanburg MSA. That is why there are simultaneously an active and a defunct "major retail center 1" at different locations in the Greenville/Spartanburg MSA.

The full areal extent and sales volume of the Laurens Road-Pleasantburg Drive retail district is understated because of the omission of defunct major retail center 1 from major retail center 5. Combination of major retail center 1 and major retail center 5 into a single major retail center in 1972 would have been more consistent with census definitions and would have reduced underbounding by the 1982 census.

Refined Definition of Retail Districts

The definition of a retail district as "any concentration of stores and shopping centers" can be refined to a measurable form. Such refinement is necessary to obtain an accurate test of the competitive hypothesis: that single new retail districts have replaced central business districts as the foci of retail sales in medium-sized MSAs. Part of the refinement is identification of the districts that are the most significant to metropolitan retail structure.

The most significant retail districts are referred to as "large retail districts." A district qualifies for this class only if it contains more than twenty-five stores including ones with large sales volume--supermarkets, department stores, or new car dealers. A large retail district must also contain at least one arterial street that accommodates high traffic volume and provides access to individual stores and shopping centers. In some MSAs, large new retail districts dominate retail structure with a proportion of sales and strength in high price-quality shopping-goods similar to central business districts during the period of careful retail district development.[3] A

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[3]Fifty-six of the ninety-two medium-sized MSAs had central business district delineations in the 1963 Census of Retail Trade. The largest central business district was the largest census delineated retail area in each of the fifty-six, with a mean of 16.8 percent of all sales.

large retail district must contain hundreds of stores, include numerous large-volume stores, and have at least fifteen percent of all sales to dominate a medium-sized MSA. Such districts reflect the scale of land use units created by customer reliance on the automobile as a mode of transportation.

In this study a "large retail district" must have at least one retail establishment per city block.[4] An area of two or more adjacent city blocks, each containing no more than two small retail establishments, is considered to be a break in contiguity. In some cases, interactions among stores are more significant than breaks in contiguity. An exception is made if the break is no more than one-quarter mile and the separate retail clusters on either side contain large-volume stores that are likely to benefit from proximity to each other.

"Downtown retail districts" are the oldest large retail districts of central cities. Census delineations of central business districts do not coincide precisely with downtown retail districts. The term "central business district" is used in urban geography literature to refer to areas that coincide more closely with the downtown retail district than with the area the Bureau of the Census calls

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[4]A city block is defined as an increment of 100 in street address numbers.

the central business district.(Murphy and Vance 1954) Despite confusing terminology, the census delineation of the central business district encompasses enough of the stores and sales in the downtown retail district for the two terms to be used interchangeably. "New retail districts" are large districts that developed after the downtown retail districts. New retail districts emerged during the periods of careful and speculative retail district development. The degree of centralization of sales that occurs in new retail districts is recognized only when they are delineated as inclusively as central business districts.

Three characteristics of retail districts--functional mix, physical condition, and sales volume--are not well portrayed by central business district and major retail center data. Most of the discrepancy occurs between new retail districts and major retail centers. A more accurate assessment can be achieved when data from the Census of Population, map analysis, and field analysis are considered. The functional mix and physical condition of retail districts, are considered together because they can be observed visually and because they are controlled, at least in part, by retailers.

Dominant new retail districts resemble the central business districts of earlier periods in some functional and physical characteristics, and differ in others. The

dominant new retail districts exhibit internal sorting of land uses that is analogous to the "core-frame" concept, but they differ from central business districts in scale of development and arrangement of stores.(Horwood and Boyce 1959)

A core consists of stores that have high volumes of sales per square foot and are high on the price-quality continuum. The central business district core of department stores and nearby specialty shops has been succeeded in new retail districts by the planned regional shopping center. Areas around planned shopping centers are functionally similar to frames of central business districts. The new frame areas consist of stores that have lower sales per square foot, pay lower rents, and are in different functional categories or lower on the price-quality continuum than ones in the planned shopping center. The stores include automotive dealers, discount department stores and supermarkets.

The physical differences between central business districts and new retail districts reflect contrasting types of planning. In central business districts, store locations and designs were selected to accommodate the city street pattern and the space limitations it created. Street patterns in planned shopping centers allow the core areas of new retail districts to expand horizontally instead of vertically. Furthermore, planned centers are

more explicitly designed to provide an attractive, comfortable, convenient, and safe environment for shoppers through greater specialization of function. Planning often extends beyond the boundaries of the shopping centers to include the design of access roads and other facilities.

New retail districts are larger in land area than central business districts and are constructed to the geometry of limited access highways and frontage roads rather than grid street networks.(Figure 6.2, p. 210) The new retail district frames have lower building density and more widely spaced street patterns than central business district frames. The former must, therefore, cover larger land areas to have the same amount of frontage.

Large-volume retail facilities have a strong role in the formation of large retail districts. Analysis of metropolitan retail structure should incorporate the significance of large-volume functional types other than department stores. Each of the three major functional types of retail trade has a specific type of large-volume retail facility that attracts development of other stores. For convenience-goods stores it is the supermarket, for shopping-goods stores it is the department store, and for other-goods stores it is the new car dealer. The importance of department stores is acknowledged by both shopping center analysts and the census, the importance of supermarkets is acknowledged by shopping center analysts,

but the importance of new car dealers is overlooked by both.

There are three reasons for the neglect of new car dealers. First, they rarely form planned shopping centers. Second, the large tracts required for automotive sales and service dilute some of the standard measures of intensity such as sales per square foot or sales per frontage foot. Third, new car dealers usually occupy an elongated area along an arterial roadway, a form that scholars are reluctant to describe as centralization. The relative lack of explicit planning and distinct morphology of new car dealers have caused them to be thought of as forms of urban sprawl more often than as forms of centralization.

New car dealers are catalysts for centralized retail structure for three reasons. The dealers agglomerate in well defined groups that cover a small portion of the retail land in any medium-sized MSA yet contain a large portion of the total automobile sales, attract complementary retail establishments, and are often located between or adjacent to planned shopping centers. New car dealers contribute to the attraction of large retail districts where the primary stores are in planned shopping centers. Examples are the East Boulevard (Montgomery MSA) and Kingston Pike (Knoxville MSA) retail districts. New car dealers are the primary stores in other retail districts.

Degree of Centralization of Sales Within Retail Districts

Retail sales remain spatially centralized within some MSAs despite the demise of central business districts. The degree of centralization in the largest retail district is analyzed for the three sample MSAs with single central cities--Montgomery (central business district maintained), Knoxville (major retail center dominated), and Chattanooga (dispersed within a central city). A more accurate analysis of metropolitan retail structure is possible for degree of centralization measured by retail districts than by major retail centers.

The proportion of retail sales within largest retail districts can be estimated by analysis of census data and land use data. Portions of retail districts excluded from major retail centers are identified with land use analysis. The sales of these portions are estimated using 1982 statistics for major retail centers as analogues. Boundaries of retail districts are determined from land use maps, city directories, and field investigation.(Knoxville-Knox County Metropolitan Planning Commission 1980) Three new retail districts are examined, the largest ones in the Chattanooga, Knoxville, and Montgomery MSAs.(Table 6.5) The largest retail district was, in each case, the central business district in 1963

Table 6.5. Estimated Sales Volume of Dominant Retail Districts in the Chattanooga, Knoxville, and Montgomery Metropolitan Statistical Areas, 1982

District component	Sales ($millions)	Percent of MSA
Knoxville MSA, Kingston Pike retail district		
Major retail center 7	240	9.6*
Major retail center 8	139	5.6
Eastern extension	75	3.0
Western extension	75	3.0
District total	529	21.2
Montgomery MSA, East Boulevard retail district		
Major retail center 1	77	6.7*
Major retail center 3	62	5.4
Other excluded stores	50	4.3
Excluded auto dealers	132	11.4
District total	321	27.8
Chattanooga MSA, Brainerd Road/Lee Highway retail district		
Major retail center 4	110	5.9*
Brainerd Road/Lee Highway extensions	100	5.3
District total	210	11.2

* Largest major retail center in the metropolitan statistical area.

and a new retail district in 1982.

Maps prepared by local planning agencies in the Chattanooga and Knoxville MSAs provide delineations of commercial but not specifically retail land use.(Chattanooga-Hamilton County Regional Planning Commission 1987) Local planning agencies have not prepared comprehensive land use maps for the Greenville/Spartanburg, Greensboro/Winston-Salem/High Point, or Montgomery MSAs.(Greenville County Planning Commission 1986; Lewis 1988; Phillips 1988) Approximate delineation of retail districts in the Montgomery MSA is possible employing the city directory, field investigation, and planning agency documents because this is the smallest and least complicated of the five sample MSAs.(Planning Controls Division 1986) The delineation is approximate because land parcel boundaries are not always apparent.

The Kingston Pike retail district dominated retail trade in the Knoxville MSA in 1982.(Figure 5.3, p. 188) It included four spatial components: major retail centers 7 and 8, an eastern extension, and a western extension of auto dealers. The proportion of total retail sales in the four components of the district is estimated to be twenty-one percent.(Table 6.5)

The eastward extension includes planned shopping centers and individual retail establishments on Kingston Pike and several intersecting streets. In 1982, 187

retail establishments were in this component.(City Directory Company of Knoxville 1982) The largest establishments were a new car dealer and a supermarket, both located 1.7 miles east of Westfield Road. The continuation ends abruptly at a zoning change 2.1 miles east of Westfield Road. Sales are estimated by assuming that the eastern extension has at least the sales volume of major retail center 3, a convenience-goods dominated retail district with only 77 retail establishments.

The western extension consists of six new car dealers and intermingled retail establishments located west of major retail center 8. The census included four new car dealers within major retail center 8, and they are the basis for estimating sales volume of the fourth component. Fifty-three percent of the sales in major retail center 8 were by other-goods stores, a category dominated by automotive dealers. The four new car dealers in major retail center 8 accounted for $50 to $70 million in sales in 1982, assuming that the proportion of other-goods sales accounted for by new car dealers is about the same here as in the Montgomery central business district.

This comparison yields an estimate of $75 million for the fourth component. It also illustrates the functional difference between major retail centers 7 and 8. Only seven percent of all sales in major retail center 7 occurred in other-goods stores, and the automotive

dealers' portion of these sales were negligible at the metropolitan scale. The automotive dealers in major retail center 8 accounted for fourteen percent of all automotive dealer sales in the Knoxville MSA. The functional relationship supports the core-frame concept for the Kingston Pike retail district. Major retail center 7 encompasses the core, the West Town Mall shopping center, and part of the frame. Major retail center 8, the eastern extension, and the western extension are the remainder of the frame. The core-frame relationship contributes to centralized metropolitan retail structure by accommodating different functional types of stores in a district.

The East Boulevard retail district contained 27.8 percent of all retail sales in the Montgomery MSA in 1982.(Table 6.5) The area facing East Boulevard is considered to be a single retail district because of the number of large stores and the strong transportation link between major retail centers 1 and 3.(Figure 6.3, p. 215) Non-retail commercial developments such as motels and office buildings are common along East Boulevard and help generate the customer traffic that supports the district.

Montgomery, with a population of 272,687, is an example of a tendency among smaller medium-sized MSAs to have monocentric retail structure. Smaller MSAs in the sample of ninety-two are also more likely to be "central business district maintained" MSAs. The high proportion of

sales in the East Boulevard retail district does not contradict the type of retail structure because slower than normal decline of the central business district does not imply central business district dominance. A shift is occurring from the central business district to a single dominant new retail district, not to polycentric retail structure. The Montgomery MSA is not large enough to support more than one large retail district. The relatively well-maintained central business district now specializes in low price-quality shopping-goods and small automotive stores.

The East Boulevard retail district, like the Kingston Pike retail district in the Knoxville MSA, includes four spatial components, two of which are major retail centers. A planned regional shopping center (Eastdale Mall) constitutes most of major retail center 1 and another (Montgomery Mall) constitutes most of major retail center 3. A nearby convenience-goods shopping center (Governors Square) is included in major retail center 3. The arrangement of major retail centers in the East Boulevard district differs from that of the Kingston Pike district. The two along East Boulevard are not contiguous but are four miles apart. Also, the East Boulevard major retail centers were delineated more restrictively than the Kingston Pike ones.

Convenience-goods and shopping-goods establishments

Kingston Pike ones.

Convenience-goods and shopping-goods establishments near to major retail centers 1 and 3 form the third component of the East Boulevard district. Eastdale Mall has as close neighbors three discount department stores (Service Merchandise, TG&Y, and Wal-Mart), two supermarkets, and other retail stores that were excluded from the major retail center. Montgomery Mall has convenience-goods stores nearby that were excluded from the major retail center. A neighborhood shopping center, a community shopping center, and individual stores on East Boulevard between major retail centers 1 and 3 also are part of this component.

Major retail center 3 in the Greenville/Spartanburg MSA is an analog for retail sales in the third component of the East Boulevard retail district. The major retail center in Spartanburg contains about the same number and similar types of stores. Three key tenants--K-Mart, Sky City, and Roses--accounted for more than half of the $23.6 million in shopping-goods sales in 1982. The $23.6 million was 45.0 percent of the major retail center total. Six food stores, the largest a Winn-Dixie, accounted for $14.3 million, 27.3 percent of the total.

The fourth component of the East Boulevard retail district consists of the new car dealer district described earlier in this chapter.(Table 6.5, p. 228) The sales

automotive dealers of $215 million. The ten new car dealers constitute seventy-seven percent of the new car dealers in the county, and new car dealers are assumed to account for eighty percent of the sales in the automotive dealer category.

The Brainerd Road/Lee Highway retail district in the Chattanooga MSA reflects the low degree of centralization expected in the "dispersed within a central city" category. The district contained 11.2 percent of all MSA sales in 1982. The primary reason for the difference in sales between this new retail district and those in the Knoxville and Montgomery MSAs is the absence of a large group of new car dealers. Brainerd Road/Lee Highway had only three while both the Kingston Pike (Knoxville MSA) and East Boulevard (Montgomery MSA) retail districts had eleven.

There are only two components of the Brainerd Road/Lee Highway retail district, major retail center 4 and excluded establishments. The excluded establishments are located in extensions of retail land uses from major retail center 4 to the west along Brainerd Road and to the northeast along Brainerd Road and Lee Highway. The extension to the northeast is the most significant part this component, containing all three new car dealers and three discount department stores.

Sales volume of the excluded establishments is estimated by comparison with major retail center 8 in the

Knoxville MSA which has similar types and numbers of stores. Sales volume for the excluded establishments was probably less, however, because the component lacked the number of small shopping-goods facilities found in its Knoxville counterpart. The estimate is reduced to $100 million from the $139 million total for major retail center 8 in 1982.

Although the percent of sales in a major retail center understates the percent in a retail district, there is a relationship between the two variables. Agglomeration of different functional types of large stores increases the share of metropolitan sales in a retail district. It also increases the probability that a major retail center will encompass supermarkets or new car dealers. The increased proportion of sales in major retail centers affects the type of retail structure of a MSA. Major retail center 8 in the Knoxville MSA was delineated by the Bureau of the Census because it contained Walker Springs Plaza, a community shopping center with "Steinmart" and "Service Merchandise" discount department stores. Four nearby new car dealers and smaller stores contribute substantially to the sales in major retail center 8.

The increase in sales for major retail center 8 caused by functional agglomeration inflates the proportion of sales in major retail centers (SaMRCp) in the Knoxville MSA. The increase is reflected in type of metropolitan

retail structure because it affects the key variable for "major retail center dominated" MSAs. Major retail centers 7 and 8 included 14.2 percent of MSA total sales equaling the seven other major retail centers.(Table 4.7, p. 134) A high degree of development in one large retail district contributes more than development of a large number of separate retail districts to the Knoxville MSAs type of retail structure.

Trends of Centralization Indicated by Analysis of New Retail Districts

Analysis of large new retail districts confirms that central business district decline is not synonymous with retail decentralization. The relationship between downtown retail districts in 1963 and new retail districts in 1982 provides a basis for assessment of change. Development of new retail districts has resulted in decentralization in some medium-sized MSAs but has not in others.

The sales estimates for new retail districts in the Chattanooga, Knoxville, and Montgomery MSAs show only modest changes in the degree of centralization from 1963 to 1982 despite dramatic shifts in the location of retail activities. Retail structure in the Knoxville and Montgomery MSAs is monocentric. The Kingston Pike and East Boulevard retail districts in the Knoxville and Montgomery MSAs encompassed 21.2 and 27.8 percent of total

sales in 1982. Each was the largest retail district in its MSA in sales volume. The Kingston Pike retail districts' share of sales in 1982 was 3.2 percent greater than the Knoxville central business districts' share in 1963. The East Boulevard retail districts' share was 8.9 percent less than the Montgomery central business districts' share in 1963 but 11.0 percent greater than the mean proportion of sales in the largest central business district of the fifty-six medium-sized MSAs.

The Knoxville and Montgomery MSAs reveal the value of examining retail structure at the internal scale. In both cases, census data for central business districts and major retail centers indicate centralized retail structure but fail to reveal the nature of centralization. In the Montgomery MSA, census data indicate a "central business district maintained" type. Investigation at the internal scale reveals that the Montgomery central business district is a remnant of monocentric structure in the period of central business district dominance. Centralization continues but in a different location and a different type of retail district.

Retail sales are more decentralized in the Chattanooga MSA than in the Montgomery or Knoxville MSAs. Although the Brainerd Road/Lee Highway retail district was the largest in the Chattanooga MSA in 1982, it accounted for only 11.2 percent of retail sales. This low proportion is consistent

with a low proportion in the Chattanooga central business district in 1963, less than sixteen percent. The largest new retail district was not much weaker in 1982 than the central business district in 1963 indicating continuation of decentralized retail structure.

Retail structure remains decentralized in the Chattanooga MSA because competition results in relocation of major retail centers instead of continued growth in retail districts. Instability among retail districts results partly from a shortage of high-prestige retailing in the MSA. Chattanooga is lowest among the five sample MSAs in percent of sales by shopping-goods stores.(Table 6.6) Executives of firms not previously represented in the MSA opened stores in Hamilton Place Mall because they believe that Chattanooga has an underdeveloped retail sector.(Flessner 1986, p. B1) A shortage exists at the top of the price-quality continuum in stores large enough to encourage agglomeration.

The size and location of Hamilton Place Mall may change the type of retail structure in the Chattanooga MSA. Retailers will be influenced to locate near to the new mall instead of in smaller retail districts elsewhere in the MSA. The short distance between Hamilton Place Mall and major retail center 4 makes coalescence of a large retail district possible but not inevitable. If roads and retail stores are not developed between major retail center 4 and

Table 6.6. Percent of Sales in Shopping-Goods Stores in the Five Sample Metropolitan Statistical Areas

MSA	1963	1972	1982
Montgomery	27.5	30.8	25.1
Knoxville	24.5	27.8	24.9
Chattanooga	22.2	25.6	23.5
Greensboro/Winston-Salem/High Point	31.8	26.9	24.3
Greenville/Spartanburg	_	26.4	23.6

Note: percentages fluctuate because of changes in the proportion of sales in types of stores and because of changes in Bureau of the Census definitions of retail functional categories. The definitions are consistent among MSAs for each year so comparisons reflect only differences in the proportion of sales in types of stores.

Hamilton Place Mall, the two will be more competitive than complementary, and retail structure will remain decentralized.

The variables used to classify MSAs in Chapter IV tend to depict proper rank order of MSA centralization. They misrepresent the kind of centralization, however, indicating polycentric retail structure in places where it does not exist. In the Knoxville and Montgomery MSAs, delineation of major retail centers implies polycentric retail structure, but a single new retail district is much larger than any other. Also, the proportion of MSA sales actually located in retail districts is greatly understated by the total sales of central business districts and major retail centers.

Estimates of sales in new retail districts are useful for identifying variation in metropolitan retail structure at the external scale. Analysis of retail districts in the Chattanooga, Knoxville, and Montgomery MSAs generally supports three of the five types of metropolitan retail structure despite exposing flaws in the census data. Montgomery, the "central business district maintained" MSA has the monocentric structure expected although the central business district is no longer dominant. Knoxville, the "major retail center dominated" MSA, has a dominant new district that developed with two major retail centers. Chattanooga, the "dispersed within a central city" MSA,

lacks a dominant retail district but has several smaller ones.

Types of retail structure based on analysis of central business districts and major retail centers provide a reasonable basis for comparison. Census delineations accurately identify the most important shopping-goods areas by focusing on planned shopping centers with large department stores. The major elements of metropolitan retail structure including convenience-goods and other-goods stores are depicted, at least partially, by the delineations.

The competitive hypothesis is supported for medium-sized MSAs with "central business district maintained" and "major retail center dominated" types of retail structure. These types represent centralization, and in metropolitan areas of this size centralization coincides with emergence of a single dominant retail district. The competitive hypothesis is not supported for medium-sized MSAs with the "dispersed within a central city," "multiple central city," or "low centralization" types of retail structure. Competition among retail districts prevents the formation of a dominant retail district. The competition is caused by retail strategies designed to capture trade areas from poorly located districts and encouraged by political structure with multiple or underbounded central cities. The variables used to classify MSAs in Chapter IV are valid

in an ordinal sense for determining relative degrees of centralization.

CHAPTER VII

CONTEMPORARY PATTERNS IN RETAIL STRUCTURE OF MEDIUM-SIZED METROPOLITAN STATISTICAL AREAS

The geography of retail structure in medium-sized metropolitan statistical areas (MSAs) has changed drastically in the United States since World War II. Nationally, medium-sized MSAs in the South and West are leaders in per capita retail sales, a shift from earlier decades when those in the North Central and Northeast were leaders.(Figure 4.2, p. 139) Retail structure within MSAs no longer resembles monocentric models based on central business district dominance. Location and form of the largest retail district has changed in most medium-sized MSAs. Although old patterns of retail structure have disappeared, the new structure is not formless or disorganized. New patterns exist at both external and internal scales.

Centralized Retail Structure in Medium-Sized Metropolitan Statistical Areas

The comparative hypothesis, that significant differences in retail structure exist among metropolitan areas, is confirmed by statistical analysis in Chapter IV and supported by study of internal characteristics in the

five sample metropolitan areas in Chapters V and VI. There are differences among metropolitan areas in the proportions of sales within retail districts after the inaccuracies of central business districts and major retail centers are corrected. The "central business district maintained" and "major retail center dominated" types encompass forty-one medium-sized MSAs that have centralized retail structure. The "dispersed within a central city," "multiple central city," and "low centralization" types encompass fifty-one medium-sized MSAs that have decentralized retail structure.

The competitive hypothesis, that dominant new retail districts have replaced central business districts, is confirmed only for MSAs with centralized retail structure. Analysis of competition among retail districts reveals processes that have prevented dominant new ones from forming in MSAs with decentralized structure. The degree of centralization in the largest retail district in medium-sized MSAs did not uniformly decrease between 1958 and 1982. In some MSAs a deteriorating central business district was replaced by a dominant new retail district while in other MSAs smaller dispersed new districts replaced the central business district.

Centralization can occur within either monocentric or polycentric structure. To constitute polycentric metropolitan retail structure, the retail districts within a metropolitan area must exhibit a degree of parity in

function, status, and volume of sales. A collection of several competing retail districts with stores at the top of the price-quality continuum may exist in large metropolitan areas. In medium-sized metropolitan areas, competition among districts results in differentiation, not parity. Differentiation occurs as functional specialization with separate automotive, shopping-goods, and other-goods districts. It also occurs as price-quality specialization with discount and traditional department stores located in separate districts. Under these circumstances, retail districts are smaller and less diverse than in larger metropolitan areas.

Competition among retail districts disrupts formation of a hierarchy consistent with the principles of central place theory. In the limited markets of medium-sized MSAs, competition among retail districts results in a lack of development at the top of the price-quality continuum. Retail activities with high thresholds do not develop because the metropolitan market is subdivided and no retail district has sufficient traffic to support high-volume sales of high price-quality merchandise and services.[1] Incomplete retail structure occurs when the largest district does not contain the highest order activities that

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[1]In some MSAs, small isolated stores sell expensive merchandise but do not provide the services of comparison shopping opportunities, convenient access, or multi-purpose shopping opportunities. Consequently, they are not the top of the price-quality continuum.

population and purchasing power in a MSA could support. A MSA that is dominated by a single district, such as Knoxville, is likely to achieve threshold demand levels necessary to support retail functions that are high on the price-quality continuum.

Much of the current literature on urban geography emphasizes poly-centrism or multinucleation in the commercial and retail structure of metropolitan areas. The concept of polycentric or multinucleated cities has been developed by scholars examining MSAs that have populations of more than 1,000,000. Metropolitan structure is organized, according to this school of thought, around a series of commercial nodes, mini-cities, or suburban downtowns. Each of these nodes contains retailing and other functions formerly associated with central business districts.

If the concept of polycentric retail structure is accurate for large MSAs, then retail structure of medium-sized ones is different. Monocentric retail structure is still common in this size class. The two sample MSAs that showed strong centralization tendencies, Knoxville and Montgomery, had only one dominant retail district. In each case, the central business district diminished as the new retail district developed. Development of new retail districts resulted in succession and inequality rather than parity among them. Detailed

analysis of retail districts in the five sample MSAs reveals that retail structure is more centralized than census data indicate and that monocentric structure is more common than the number of major retail centers indicate.

Despite the factors that encourage centralization in medium-sized MSAs, fifty-one of the ninety-two have decentralized types of retail structure. Decentralized structure is different, however, from polycentric structure. Medium-sized MSAs with decentralized retail structure do not have a proliferation of fully developed districts with a complex assortment of goods and services. Instead they tend to lack them.

Effects of Public and Private Decisions on Metropolitan Retail Structure

Retail structure is controlled by a combination of public and private decisions. Public officials often lack the power to implement plans that contradict the private plans of business leaders. An understanding of the relationship between competition and retail structure helps public officials take advantage of the desirable aspects and neutralize the detrimental effects of private retail development plans.

A distinction must be made between two forms of competition that determine whether retail structure is centralized or decentralized. One is competition among

stores or planned shopping centers within the same retail district. The other is competition among stores or planned shopping centers in different retail districts. The former case tends to promote centralization that can be beneficial to all of the competing firms through increased customer traffic. The latter case promotes decentralization and results in distinct winners and losers as customers decide among retail districts.

Some medium-sized MSAs lack centralized retail structure because idiosyncrasies of development prevent the emergence of a single dominant retail district. "Dispersed within a central city," "multiple central city," and "low centralization" types of retail structure have historical patterns of competition among retail districts. Political fragmentation, peculiarities of the metropolitan transportation system, individual development decisions, and physical barriers contribute to this form of competition.

Both public and private leaders who desire an efficient retail structure have an interest in preventing competition that decentralizes retail structure. Decentralizing competition creates blighted retail districts and preempts development of the highest order stores. It also causes isolation of inner-city residential areas from high or medium price-quality stores by dispersing retail development to outlying locations that

are difficult to serve with public transportation.

Competition among retail districts results in declining proportions of MSA sales for downtown retail districts and the earliest of the new retail districts. Decline of new retail districts is reflected by defunct major retail centers. Despite a reduction in the level of services they provide, defunct major retail centers continue to function as small retail districts. Their presence reduces the proportion of retail sales concentrated in newer districts.

A crucial issue regarding metropolitan retail structure is the choice between investment in renovation of facilities in existing retail districts or construction of additional retail districts. The former strategy favors centralized retail structure, the latter decentralized. Restoration of viable retail functions in older parts of cities also requires investment to improve neighborhood quality. Attempts to re-establish downtown or other deteriorating retail districts in inner cities are unsuccessful when investment is not sufficient to create favorable site and neighborhood characteristics. The amounts required to renovate entire neighborhoods are much greater than private developers are willing to invest and are often beyond the means of local governments.

Public development decisions are part of the retail investment decision process. For example, new road

construction can increase competition among retail districts. The Knoxville and Chattanooga MSAs illustrate the effects of this factor. In the Knoxville MSA, the location of an interstate highway contributed to centralization of retail trade by enhancing the position of an existing retail district. Retail development existed along Kingston Pike in 1954 prior to construction of the interstate highway. Construction of the interstate highway parallel to Kingston Pike contributed to retail expansion. The retail district was a commercial ribbon of motels and convenience-goods stores in 1954, but it became the Knoxville MSAs dominant large retail district in shopping-goods and other-goods sales after the interstate highway was constructed.

In the Chattanooga MSA, two existing retail districts were bypassed by interstate highway construction, and a competing location was created. Both the Ringgold Road and Brainerd Road retail districts are separated from the interstate highway route by residential neighborhoods. The two retail districts are now the sites of defunct major retail centers 3 and 1. The competing location is the intersection of Lee Highway and the eastward extension of Brainerd Road near an interstate highway interchange. This location, the site of major retail center 4, was close enough to the older retail districts to capture much of their trade areas, but was not close enough to encompass

them in a large retail district.

Private development decisions exercise an even greater impact on metropolitan retail structure than public ones. Business leaders vie for control of the most propitious locations for retail facilities. The reward for success is higher price of land for real estate speculators and developers; it is higher profit margin for store owners. Both types of business leaders face a conflict between aesthetics and economics in their decisions. Investment can result in a loss if the market has been overestimated or the location is susceptible to competition. Lower quality development is safer but offers lesser rewards.

The Knoxville and Montgomery MSAs are examples of interaction between public and private forces. Development of the new retail districts occurred in each because the central business district was an undesirable site for modern retail facilities. Public policy contributed to a new large retail district in each MSA by establishing road systems that form an axes of development. Different configurations of Interstate-40/75 in Knoxville or East Boulevard in Montgomery might have resulted in decentralized retail structure.

Public policy does not always contribute to efficient retail structure. Political fragmentation contributes to competition among retail districts because different political entities want to gain the aesthetic, economic,

and social status associated with a large retail district. Competing local governments also seek tax revenues generated by retail districts. Competition among central business districts of neighboring cities existed before the development of regional shopping centers. Such competition consisted of efforts by each central business district to expand its trade area at the expense of the others. Competition among different political units has intensified where new retail districts develop in incorporated suburbs or unincorporated areas.

Retail Districts as Units for Analysis of Metropolitan Retail Structure

Metropolitan retail structure should be analyzed with retail districts as the fundamental units of study instead of census delineated retail areas, individual stores, or shopping centers. Retail districts are defined in terms of land use and functional interactions, not arbitrary boundaries or contractual business arrangements. That is why they are the best spatial units for analysis of the geography of retailing.

Retail districts can be used to analyze complementarity, agglomeration, and competition among stores. Medium-sized MSAs constitute limited market areas in terms of total purchasing power and distances consumers must travel. Complementarity among retail stores can be

realized in a single dominant district better than in several smaller ones because some types of stores cannot be supported if the metropolitan area market is divided. A retail district large enough to dominate sales in a medium-sized MSA still is not large enough to create unmanageable levels of traffic or congestion.

Advantages of agglomeration are more apparent than diseconomies of scale in the dominant retail districts of the Knoxville and Montgomery MSAs. Neither the Kingston Pike (Knoxville) nor East Boulevard (Montgomery) retail district has produced congestion or traffic sufficient to deter customers. Furthermore, neither has achieved the development of high-price, high-quality merchandise lines that represent the top of the retail hierarchy in larger metropolitan areas. There is potential for further growth without an increase in the number of retail districts. In the Knoxville and Montgomery MSAs, the periods of retail district development represent a sequence of replacement. The central business district has ceased to function as a retail district of metropolitan significance and a large new one has assumed dominance.

The importance of a new large retail district in the Montgomery MSA may not be typical of the "central business district maintained" type. The Charleston, West Virginia MSA has a new regional shopping mall within the central business district. Strong central business district

development restricts potential for development of a large new retail district elsewhere in the MSA.

Retail districts provide a spatial concept that can be used to analyze data from several sources. Census data can be augmented by data from other sources not restricted to the spatial units of aggregation employed by the Bureau of the Census. Geographers will have to use census data aggregated by zip code areas in the future because central business districts and major retail centers are no longer delineated.[2] City directories, land use maps, topographic maps, shopping center guides, and field investigation provide data concerning the distribution of retailing.

Analysis of retail districts reveals situations of potential change in metropolitan retail structure. A metropolitan area with poorly located retail districts is susceptible to decentralization of its retail structure. New shopping centers form cores for retail districts in locations selected to exploit the opportunity. A competitive location strategy by developers of new shopping centers is especially likely when competition among stores

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[2]The Bureau of the Census could have provided more useful information about retail structure by acknowledging the importance of large automotive dealers and supermarkets. A more flexible approach to delineation of central business district and major retail center boundaries would have depicted retail structure more realistically. Political and budgetary constraints prevent compilation of data that are better suited for geographical analysis.

within a retail district is restricted by management or site factors. Market entry by a new firm into an established planned regional shopping center is rare, as are sites for new regional shopping centers in established retail districts. The entry of new firms triggers competition among retail districts.

The Chattanooga, Greensboro/Winston-Salem/High Point and Greenville/Spartanburg MSAs had decentralized retail structure in 1982. Their retail trade was divided and no single, dominant retail district existed. The Chattanooga MSA, however, possessed greater potential for centralization because of recent annexations by the central city. The annexations strengthened the political power of central city officials and brought a good location for large-scale development within their jurisdiction. Private developers constructed Hamilton Place Mall with significant assistance from local public officials.

National Patterns of Metropolitan Retail Structure

Regional patterns are apparent in the variations of retail structure that exist among medium-sized MSAs. The processes of retail district development that operate at the internal scale are affected by political structure and the timing of urban growth. Regional differences in political structure and the history of urban development

influence the formation of new retail districts by affecting the distribution of neighborhood and trade area characteristics and by determining the nature of public planning. Metropolitan areas that have grown rapidly in recent decades are more likely to have centralized retail structure than ones where growth occurred earlier.

Differences in urban political structure account, in part, for the regional patterns of types of metropolitan retail structure. Adjustment of urban political boundaries is easier in some states than in others because of differences in laws governing annexation. National patterns of retail structure also follow state boundaries. Metropolitan statistical areas with centralized retail structure, the "central business district maintained" and "major retail center dominated" types, are rare in the states along the east coast. Nine eastern states (Connecticut, Florida, Georgia, Massachusetts, New York, North Carolina, Pennsylvania, South Carolina, and Virginia) contain thirty-five medium-sized MSAs but only six of the MSAs have centralized retail structure.(Figure 4.1, p. 124)

The timing of urban growth is less significant than political structure in influencing retail structure. Eight of the nine eastern states contain some of the oldest cities in the country; however, Florida has cities that have developed recently. The common element of

metropolitan areas in the eastern states is political structure organized around central cities that severely underbound the built-up area. In only three of the thirty-five MSAs is more than fifty percent of total retail sales in the largest central city. Jacksonville, Florida; Macon, Georgia; and Charlotte, North Carolina have reduced underbounding through annexation, but they have not developed centralized retail structure. Annexation is still too recent to have an impact on large retail districts.

Fifty-seven medium-sized MSAs are located in the remainder of the United States. Thirty-four of them have centralized and twenty-three have decentralized retail structure. Underbounding by central cities is less common in the rest of the nation than in the eastern states. Twenty-three of the thirty-four centralized and eleven of the twenty-three decentralized MSAs have more than fifty percent of total retail sales in the largest central city.

The degree of concentration of retail sales in central cities has implications for local governments. Retail sales tend to be more concentrated than population in the central cities of the ninety-two medium-sized MSAs. Planners and other public officials must cope with a variety of situations created by different degrees of concentration of population and retail sales in central cities and, in many cases, the presence of more than one

central city.

The range in potential for public policy control of retail structure is illustrated by El Paso, Texas and York, Pennsylvania. In the El Paso MSA, the central city encompassed 97.1 percent of total retail sales in 1982, but in the York MSA the figure was only 11.7 percent. The mean for largest central cities in the ninety-two medium-sized MSAs was 46.2 percent in 1982. The potential for regulating retail land use or collecting revenue from retail activities at the municipal level is obviously more limited in the York than in the El Paso MSA.

The Knoxville and Montgomery MSAs, with centralized retail structure, have higher than average concentration of sales within the central city, 80.5 percent in Montgomery and 58.9 percent in Knoxville. They reflect success by public planning officials who prefer centralized retail structure. They also reflect state annexation laws that favor central cities. Although the Chattanooga MSA has a high proportion of sales within the largest central city (63.4 percent), it has decentralized retail structure. Chattanooga and other "dispersed within a central city" MSAs have potential for change in the retail structure because of increased planning effectiveness obtained by central city governments from recent annexations.

The Greensboro/Winston-Salem/High Point and Greenville/Spartanburg MSAs, with decentralized retail

structure, have central cities that must cope with both underbounding and political fragmentation. The largest central city encompasses only 31.3 and 28.6 percent of total retail sales in the Greensboro/Winston-Salem/High Point and Greenville/Spartanburg MSAs. The "low centralization" type of retail structure in the Greenville/Spartanburg MSA is a product of weak public planning. Combined retail sales in the central cities is higher in Greensboro/Winston-Salem/High Point (70.8 percent) than in Greenville/Spartanburg(45.4 percent). Greensboro, Winston-Salem, and High Point control a higher percentage of total sales than central cities in seventy-three of the ninety-two medium-sized MSAs. However, the existence of three separate cities hinders planning that might encourage centralization. The separation of urban development into three distinct built-up areas ensures that if retail centralization occurs it will be polycentric rather than monocentric.

Regional differences of retail structure in medium-sized MSAs reveal a segment of the urban geography of the United States. The absence of centralized retail structure and preponderance of underbounded central cities illustrates the obsolescence of political structure in eastern metropolitan areas. The political structure of six of the seven medium-sized MSAs in Florida indicates that management and planning problems could become severe if

economic prosperity fades. Distribution of the "central business district maintained" and "dispersed within a central city" types indicates less physical obsolescence of downtown retail districts and greater political flexibility in the South and West than in the North Central and Northeastern census divisions. Ubiquitous distribution of "major retail center dominated" MSAs reflects the diffusion of planned shopping centers.

Geographical changes in retail structure during the past thirty years have affected both large and small metropolitan statistical areas, although not to the same degree. Just as models developed for large MSAs are not always useful for medium-sized MSAs, the relationships of the competitive process among retail districts may be different in large MSAs than medium-sized ones. Still, the analysis of retail structure of entire MSAs and comparison of the structure at the external scale are perspectives that have not been provided previously. The perspectives of this study should be useful to the understanding of retail structure for metropolitan areas of all size classes.

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APPENDIXES

APPENDIX A

MEDIUM-SIZED METROPOLITAN STATISTICAL AREAS NOT INCLUDED IN CONSOLIDATED METROPOLITAN STATISTICAL AREAS IN 1982

Metropolitan Statistical Area Central Cities	Number of CBDs/MRCs 1982	Number of CBDs/MRCs 1963
Albany/Schenectady/Troy, NY	3/7	3/4
Albuquerque, NM	1/3	1/2
Allentown/Bethlehem/Easton, PA	3/6	3/2
Appleton/Oshkosh, WI	2/1	n.a.
Augusta, GA	1/3	n.a.
Austin, TX	1/7	1/2
Bakersfield, CA	1/3	n.a.
Baton Rouge, LA	1/7	1/2
Beaumont/Port Arthur, TX	2/4	2/4
Binghamton, NY	1/8	n.a.
Birmingham, AL	1/12	2/3
Canton, OH	1/7	2/3
Charleston, SC	1/0	n.a.
Charleston, WV	1/1	n.a.
Charlotte/Gastonia, NC	2/5	1/4
Chattanooga, TN	1/3	1/4
Colorado Springs, CO	1/2	n.a.
Columbia, SC	1/6	n.a.
Corpus Christi, TX	1/3	1/2
Davenport/Rock Island/Moline, IL IA	3/4	n.a.
Dayton, OH	1/11	1/10
Daytona Beach, FL	1/1	n.a.
Des Moines, IA	1/3	1/1
Duluth/Superior, MN WI	2/2	n.a.
El Paso, TX	1/6	1/2
Erie, PA	1/3	1/3
Eugene/Springfield, OR	2/1	n.a.
Evansville, IN	1/4	1/2
Flint, MI	1/5	1/3
Fort Wayne, IN	1/4	1/4
Fresno, CA	1/6	1/3
Grand Rapids, MI	1/4	2/1
Greensboro/Winston-Salem/High Point, NC	3/6	3/4
Greenville/Spartanburg, SC	2/5	n.a.
Harrisburg, PA	1/3	n.a.
Hartford, CT	1/5	1/6
Huntington/Ashland, WV KY	2/1	n.a.
Jackson, MS	1/3	1/0

Metropolitan Statistical Area Central Cities	Number of CBDs/MRCs 1982	Number of CBDs/MRCs 1963
Jacksonville, FL	1/5	1/4
Johnson City/Kingsport/Bristol, TN VA	1/2	n.a.
Johnstown, PA	1/2	n.a.
Kalamazoo, MI	1/4	n.a.
Knoxville, TN	1/9	1/4
Lakeland/Winter Haven, FL	2/2	n.a.
Lancaster, PA	1/3	n.a.
Lansing/ East Lansing, MI	2/7	2/3
Las Vegas, NV	1/5	n.a.
Lexington, KY	1/4	n.a.
Little Rock/North Little Rock, AR	2/6	1/1
Louisville, KY	1/15	1/9
Macon, GA	1/2	1/2
Madison, WI	1/3	1/3
McAllen/Pharr/Edinburg, TX	1/2	n.a.
Melbourne/Titusville/Cocoa, FL	2/4	n.a.
Memphis, TN	1/11	1/8
Mobile, AL	1/2	1/1
Modesto, CA	1/2	n.a.
Montgomery, AL	1/2	1/2
Nashville, TN	1/9	1/3
Newburgh/Middleton, NY	2/2	n.a.
New Haven/Meriden, CT	2/2	1/1
New London/Norwich, CT	2/2	n.a.
Oklahoma City, OK	2/9	1/3
Omaha, NE	2/18	2/3
Orlando, FL	1/10	n.a.
Pensacola, FL	1/3	n.a.
Peoria, IL	1/5	1/3
Raleigh/Durham, NC	2/8	n.a.
Reading, PA	1/2	1/1
Richmond, VA	1/8	1/4
Rochester, NY	1/8	1/9
Rockford, IL	1/6	1/4
Salem, OR	1/1	n.a.
Salinas/Seaside/Monterey, CA	2/3	n.a.
Salt Lake City/Ogden, UT	2/7	1/3
Santa Barbara/Santa Maria/Lompoc, CA	1/0	n.a.
Scranton/Wilkes-Barre, PA	2/4	1/0
Shreveport, LA	2/0	1/1
South Bend, IN	1/2	1/2
Spokane, WA	1/3	1/2
Springfield/Chicopee/Holyoke, MA	3/3	1/6
Stockton, CA	1/4	n.a.
Syracuse, NY	1/4	1/8
Toledo, OH	1/8	1/11
Tucson, AZ	1/9	1/1
Tulsa, OK	1/5	1/3

Metropolitan Statistical Area Central Cities	Number of CBDs/MRCs 1982	Number of CBDs/MRCs 1963
Utica/Rome, NY	2/5	2/3
West Palm Beach/Boca Raton, FL	2/4	n.a.
Wichita, KS	1/5	1/4
Worcester, MA	1/1	1/4
York, PA	1/5	n.a.
Youngstown/Warren, PA	2/8	2/8
Totals	127/430	71/195

Note: In 1982, 63 MSAs had only one central city, 19 MSAs had two central cities, and 10 MSAs had three central cities.

APPENDIX B

INCOME AND POPULATION WITHIN DIFFERENT RADII OF CENTRAL BUSINESS DISTRICTS AND MAJOR RETAIL CENTERS, 1980

Chattanooga Active Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
CENTRAL BUSINESS DISTRICT				
2	29,833	129,425	4,338	8,846
4	103,088	552,564	5,360	24,556
6	162,447	1,050,561	6,467	28,986
8	219,559	1,442,985	6,572	33,912
10	240,007	1,597,478	6,656	35,518
MAJOR RETAIL CENTER 2				
2	13,315	112,081	8,418	725
4	63,142	475,645	7,533	7,120
6	145,231	998,350	6,874	19,271
8	190,814	1,296,017	6,792	29,072
10	251,534	1,720,106	6,838	34,931
MAJOR RETAIL CENTER 4				
2	29,455	231,975	7,876	2,519
4	87,443	618,180	7,070	9,373
6	154,486	931,250	6,028	26,439
8	217,238	1,377,296	6,340	33,716
10	281,094	1,853,899	6,595	38,864
MAJOR RETAIL CENTER 5				
2	14,807	131,575	8,886	768
4	36,323	288,781	7,950	2,689
6	103,549	768,469	7,421	11,010
8	179,777	1,229,683	6,840	22,753
10	246,230	1,672,308	6,792	34,405

Defunct Chattanooga Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
MAJOR RETAIL CENTER 1				
2	36,050	257,977	7,156	4,572
4	104,464	631,570	6,047	17,253
6	179,258	1,097,517	6,123	31,255
8	251,727	1,650,377	6,556	36,868
10	275,813	1,846,104	6,693	38,375
MAJOR RETAIL CENTER 3				
2	48,447	342,705	7,074	5,907
4	116,256	692,801	5,959	21,693
6	184,644	1,143,646	6,194	31,964
8	223,368	1,407,361	6,300	35,271
10	259,391	1,697,511	6,544	37,658
Total for MSA	426,540	2,750,313	6,448	57,390

Active Greensboro/Winston-Salem/High Point
Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
GREENSBORO CENTRAL BUSINESS DISTRICT				
2	51,543	313,863	6,089	9,358
4	123.887	899,404	7,260	16,369
6	166,216	1,244,120	7,485	19,421
8	210,752	1,621,519	7,694	22,284
10	223,984	1,729,556	7,722	22,951
WINSTON-SALEM CENTRAL BUSINESS DISTRICT				
2	41,995	222,080	5,228	10,754
4	96,677	650,858	6,732	17,899
6	151,304	1,109,089	7,330	21,564
8	184,380	1,366,136	7,409	23,554
10	235,918	1,766,785	7,489	26,795
HIGH POINT CENTRAL BUSINESS DISTRICT				
2	33,858	200,791	5,931	6,701
4	68,516	451,524	6,950	9,319
6	91,054	625,044	6,865	10,815
8	120,059	845,060	7,039	13,465
10	162,328	1,121,368	6,908	16,196
MAJOR RETAIL CENTER 1 (GREENSBORO)				
2	33,708	223,920	6,643	3,285
4	88,327	636,204	7,203	10,331
6	158,532	1,233,985	7,784	17,436
8	204,047	1,586,121	7,773	21,382
10	238,932	1,833,472	7,674	24,140
MAJOR RETAIL CENTER 2 (GREENSBORO)				
2	22,070	141,568	6,414	3,196
4	75,363	510,851	6,779	10,795
6	142,149	1,068,584	7,517	17,678
8	173,337	1,281,075	7,391	20,228
10	208,446	1,578,322	7,572	22,124

Active Greensboro/Winston-Salem/High Point
Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
MAJOR RETAIL CENTER 3 (HIGH POINT)				
2	21,401	192,872	9,012	1,140
4	62,210	421,689	6,778	8,417
6	85,030	600,465	7,072	10,150
8	119,152	841,369	7,061	13,512
10	179,747	1,280,376	7,123	17,317
MAJOR RETAIL CENTER 6 (GREENSBORO)				
2	46,567	498,435	10,704	2,634
4	123,585	1,020,299	8,256	12,434
6	177,518	1,355,820	7,638	19,599
8	194,518	1,512,100	7,774	20,760
10	231,615	1,787,407	7,717	23,390
MAJOR RETAIL CENTER 7 (WINSTON-SALEM)				
2	17,051	192,461	11,287	939
4	79,050	723,613	9,154	7,890
6	134,201	1,038,029	7,735	17,839
8	177,721	1,346,966	7,579	22,472
10	214,993	1,617,243	7,522	24,723
MAJOR RETAIL CENTER 10 (HIGH POINT)				
2	20,124	147,952	7,352	2,612
4	66,825	441,249	6,603	9,043
6	90,015	590,822	6,563	11,726
8	123,491	834,328	6,756	13,749
10	157,440	1,080,881	6,865	15,469

Defunct Greensboro/Winston-Salem/High Point
Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
MAJOR RETAIL CENTER 4 (WINSTON-SALEM)				
2	29,968	284,584	9,496	3,526
4	89,829	706,598	7,866	13,561
6	147,112	1,109,567	7,542	20,594
8	174,633	1,297,633	7,431	22,904
10	216,140	1,625,775	7,522	25,538
MAJOR RETAIL CENTER 5 (WINSTON-SALEM)				
2	27,993	184,150	6,578	4,169
4	81,624	569,712	6,980	13,610
6	145,473	1,083,983	7,451	20,461
8	165,294	1,227,873	7,428	22,260
10	232,139	1,731,758	7,660	25,959
MAJOR RETAIL CENTER 7.1 (ASHEBORO)				
2	9,640	74,050	7,682	784
4	15,465	113,055	7,310	1,555
6	25,827	181,912	7,043	2,354
8	33,637	227,827	6,774	3,097
10	47,582	304,927	6,409	4,540
MAJOR RETAIL CENTER 9 (GREENSBORO)				
2	21,890	194,941	8,905	1,734
4	85,749	702,204	8,189	7,678
6	157,938	1,310,265	8,296	14,411
8	208,539	1,619,596	7,766	21,548
10	238,326	1,816,896	7,624	24,413
MAJOR RETAIL CENTER 11 (WINSTON-SALEM)				
2	31,524	137,632	4,366	8,781
4	72,019	472,063	6,555	14,355
6	145,960	1,071,108	7,338	20,955
8	182,258	1,332,625	7,312	24,057
10	222,852	1,647,505	7,393	26,319
Total for MSA	827,175	5,797,377	7,009	89,335

Active Greenville/Spartanburg Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
GREENVILLE CENTRAL BUSINESS DISTRICT				
2	38,761	196,562	5,071	10,599
4	116,742	762,094	6,528	18,962
6	175,733	1,186,581	6,752	22,997
8	208,799	1,435,087	6,873	25,241
10	242,738	1,663,130	6,851	28,214
SPARTANBURG CENTRAL BUSINESS DISTRICT				
2	36,481	191,463	5,248	8,494
4	80,952	534,995	6,609	12,854
6	-	-	-	-
8	105,609	707,605	6,700	15,270
10	134,321	877,713	6,534	18,867
MAJOR RETAIL CENTER 1 (GREENVILLE)				
2	14,824	153,713	10,369	572
4	79,068	651,707	8,242	7,718
6	160,106	1,137,515	7,105	20,257
8	210,074	1,438,182	6,846	25,955
10	254,789	1,734,604	6,808	30,029
MAJOR RETAIL CENTER 2 (SPARTANBURG)				
2	15,109	107,925	7,143	1,492
4	52,695	288,315	5,471	10,636
6	90,475	559,000	6,179	14,255
8	121,115	803,361	6,633	16,820
10	144,373	948,557	6,570	19,281
MAJOR RETAIL CENTER 3 (SPARTANBURG)				
2	25,334	131,464	5,189	5,742
4	71,897	476,657	6,630	12,469
6	105,609	707,605	6,700	15,270
8	123,974	818,602	6,603	17,445
10	129,246	851,647	6,589	18,017

Active Greenville/Spartanburg Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
MAJOR RETAIL CENTER 4 (UNINCORPORATED NEAR GREENVILLE)				
2	11,853	117,510	9,914	406
4	53,226	442,909	8,321	4,442
6	124,942	945,511	7,568	13,676
8	192,868	1,335,274	6,923	24,219
10	255,194	1,736,768	6,806	29,912
MAJOR RETAIL CENTER 5 (GREENVILLE)				
2	33,340	260,436	7,812	4,510
4	93,693	663,971	7,087	14,826
6	172,313	1,188,224	6,896	22,033
8	208,799	1,435,087	6,873	25,241
10	244,952	1,675,830	6,841	28,526

Defunct Greenville/Spartanburg Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
MAJOR RETAIL CENTER 1.1 (GREENVILLE)				
2	35,703	273,037	7,647	5,175
4	100,287	701,294	6,993	15,601
6	179,434	1,234,262	6,879	22,872
8	208,799	1,435,087	6,873	25,241
10	244,952	1,675,830	6,841	28,526
MAJOR RETAIL CENTER 2.1 (GREENVILLE)				
2	37,391	243,599	6,514	7,763
4	107,350	671,811	6,258	17,791
6	158,017	1,037,602	6,566	22,284
8	204,395	1,403,697	6,868	24,512
10	227,307	1,553,616	6,835	26,806
MAJOR RETAIL CENTER 4.1 (GREENVILLE)				
2	39,319	216,479	5,506	10,148
4	117,476	728,171	6,198	19,575
6	167,987	1,108,810	6,601	22,782
8	204,395	1,403,697	6,868	24,512
10	226,511	1,554,162	6,861	26,689
MAJOR RETAIL CENTER 6 (SPARTANBURG)				
2	27,076	143,799	5,311	6,155
4	69,348	427,929	6,171	11,688
6	101,202	674,446	6,664	14,946
8	105,609	707,605	6,700	15,270
10	143,676	943,120	6,564	19,331
Total for MSA	569,066	3,695,289	6,494	67,987

Active Knoxville Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
KNOXVILLE CENTRAL BUSINESS DISTRICT				
2	47,654	186,091	3,905	14,656
4	117,740	633,074	5,377	26,970
6	169,401	1,037,313	6,123	32,474
8	224,378	1,493,972	6,658	37,165
10	263,951	1,762,269	6,677	40,460
MAJOR RETAIL CENTER 1 (KNOXVILLE)				
2	47,654	186,091	3,905	14,656
4	113,275	601,529	5,310	26,615
6	172,122	1,063,318	6,178	32,609
8	225,781	1,504,579	6,664	37,158
10	266,064	1,774,580	6,670	40,652
MAJOR RETAIL CENTER 2 (OAK RIDGE)				
2	9,588	78,890	8,228	1,132
4	25,300	226,773	8,963	2,306
6	35,385	287,374	8,121	4,096
8	45,302	363,785	8,030	4,770
10	55,191	435,364	7,888	5,750
MAJOR RETAIL CENTER 3 (KNOXVILLE)				
2	22,086	154,283	6,986	3,265
4	82,199	499,703	6,079	16,692
6	177,656	1,159,850	6,529	30,264
8	242,194	1,623,439	6,703	38,282
10	273,295	1,876,923	6,868	40,624
MAJOR RETAIL CENTER 4 (ALCOA)				
2	14,209	88,229	6,209	2,447
4	31,798	204,450	6,430	4,723
6	48,610	333,951	6,870	6,870
8	62,178	416,763	6,703	7,554
10	75,546	547,116	7,242	8,576

Active Knoxville Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
MAJOR RETAIL CENTER 5 (KNOXVILLE)				
2	31,808	193,713	6,090	4,808
4	110,816	627,326	5,661	23,457
6	172,608	1,052,466	6,097	32,208
8	213,289	1,371,061	6,428	36,072
10	268,997	1,762,974	6,554	42,117
MAJOR RETAIL CENTER 6 (OAK RIDGE)				
2	9,878	90,605	9,172	735
4	25,305	205,300	8,113	3,071
6	40,653	329,340	8,101	4,567
8	46,850	365,022	7,791	5,441
10	69,690	509,505	7,311	8,579
MAJOR RETAIL CENTER 7 (KNOXVILLE)				
2	15,826	159,647	10,088	1,172
4	59,951	556,397	9,281	4,437
6	121,613	968,823	7,966	14,130
8	188,337	1,375,498	7,303	28,829
10	264,253	1,865,552	7,060	39,109
MAJOR RETAIL CENTER 8 (KNOXVILLE)				
2	12,150	116,880	9,620	553
4	52,408	488,952	9,330	3,254
6	86,892	797,028	9,173	6,827
8	159,547	1,246,957	7,816	20,395
10	245,799	1,767,016	7,189	36,230
MAJOR RETAIL CENTER 9 (KNOXVILLE)				
2	23,491	159,181	6,776	3,050
4	87,309	529,271	6,062	14,769
6	158,986	940,498	5,916	28,668
8	202,618	1,250,668	6,172	34,972
10	256,889	1,696,597	6,604	40,143
Total for MSA	476,520	3,235,221	6,789	67,622

Montgomery Major Retail Centers, 1980

Miles	Population	Income ($1,000)	Per Capita Income ($)	Persons in Poverty
MONTGOMERY CENTRAL BUSINESS DISTRICT				
2	46,483	204,720	4,370	16,786
4	111,600	652,617	5,848	28,896
6	157,832	1,021,402	6,471	31,985
8	192,334	1,269,603	6,601	35,754
10	199,060	1,321,292	6,638	36,371
MAJOR RETAIL CENTER 1 (MONTGOMERY)				
2	15,920	132,030	8,293	743
4	50,693	441,495	8,709	2,745
6	113,470	885,231	7,801	15,576
8	163,147	1,122,766	6,882	30,143
10	178,369	1,195,008	6,700	33,307
MAJOR RETAIL CENTER 1.1 (MONTGOMERY, DEFUNCT)				
2	39,628	265,693	6,705	5,717
4	93,001	692,909	7,451	14,848
6	161,064	1,108,468	6,882	29,596
8	187,563	1,254,616	6,689	34,743
10	190,235	1,267,373	6,662	35,322
MAJOR RETAIL CENTER 2 (MONTGOMERY, DEFUNCT)				
2	32,541	282,114	8,669	4,231
4	113,433	742,388	6,545	24,811
6	160,630	1,076,325	6,701	31,070
8	177,640	1,180,953	6,648	33,028
10	182,002	1,215,354	6,678	33,755
MAJOR RETAIL CENTER 3 (MONTGOMERY)				
2	30,377	323,354	10,644	1,023
4	84,720	713,195	8,418	9,383
6	148,450	1,054,006	7,100	25,121
8	175,541	1,178,723	6,715	32,596
10	177,683	1,190,027	6,697	33,185
Total for MSA	272,687	1,732,235	6,352	50,035

APPENDIX C

AN EXAMPLE OF SELECTION OF THOROUGHFARES FOR CALCULATION OF ROADWAY ACCESS INDEXES: MAJOR RETAIL CENTERS 1 AND 4 IN THE CHATTANOOGA METROPOLITAN STATISTICAL AREA

The selection of thoroughfares for calculation of roadway access indexes was based on subjective evaluation of the roads leading to each central business district and major retail center. Two major retail centers from the Chattanooga metropolitan statistical area are used as an example of how these decisions were made. Major retail center 1 is a relatively simple case, major retail center 4 is a more complex one.

Selection of the thoroughfare to use for each quadrant was obvious in major retail center 1. The road network approximates a grid oriented to the cardinal directions, in this case, and the major retail center is centered at the intersection of two arterial streets. Such simple road networks are not efficient movers of large traffic volumes, however, and the more successful major retail centers present more complex choices. In major retail center 4, a complex road network presented several alternatives in selecting the thoroughfare to be used for a specific quadrant.(Figure 3.2, p. 91) Roadway access index points were calculated for two or more alternatives in such cases, but only the thoroughfare-connector combination with the highest point total was included in calculation of the

roadway access index.

Both I-75 and Spring Creek Road approach major retail center 4 from the south. Both are used by customers from the southeastern part of Chattanooga; other parts of Hamilton County, Tennessee; and the Georgia portion of the metropolitan statistical area. Spring Creek Road and I-75 were both evaluated in order to identify the best access route to major retail center 4 from the south. Spring Creek Road forms the western boundary of the retail district.(United States Bureau of the Census 1984c, I-1) It provides direct access to the retail district but is classified as an arterial street, the lowest road quality ranking used in the indexes. Interstate-75 has the highest road quality ranking but its traffic has only indirect access to major retail center 4. Northbound traffic on I-75 must use I-24, Moore Road, and Brainerd Road as connectors before reaching the boundary of major retail center 4 at the intersection of Brainerd Road and Spring Creek Road. This circuitous route covers over two miles. The distance deduction specified in the roadway access index key eliminates all value for I-75 as a thoroughfare for traffic from the south to major retail center 4.(Table 5.1, p. 170) Access to major retail center 4 from the northbound lanes on I-75 is seriously constrained, and that Spring Creek Road is the appropriate thoroughfare to evaluate for that quadrant.

The roadway access index key is objective in design but subjective in application. Both evaluation of roads and delineation of central business districts and major retail centers are exercises in subjective judgement. Census delineations of major retail centers involve subjective judgments. Both are tailored to idiosyncrasies of a particular site. The indexes derived by this method are, however, the best means of comparing accessibility for a large number of sites that otherwise lack any consistent data source.

APPENDIX D

ROADWAY ACCESS INDEXES FOR CENTRAL BUSINESS DISTRICTS AND MAJOR RETAIL CENTERS

Table D.1. Chattanooga Metropolitan Statistical Area Roadway Access Compilation

Quadrant:	Southern	Northern	Western	Eastern	Total
District					
CBD	10	3	3	3	19
MRC 1 (D)	3	3	3	3	12
MRC 2	3	3	3	3	12
MRC 3 (D)	0	3	3	3	9
MRC 4	3	3	6	6	18
MRC 5	6	3	3	3	15
Average for active major retail centers					15.0
Average for all active CBDs and MRCs					16.0
Average for defunct major retail centers					10.5

Note: D denotes defunct MRCs. The thoroughfares used for the southern, northern, western, and eastern quadrants of each retail district are as follows. CBD: I-124, Spur 271, Ninth Street, Ninth Street; MRC 1: Germantown Road, Germantown Road, Brainerd Road, Brainerd Road; MRC 2: Hixson Pike, Hixson Pike, Ashland Terrace, TVA Access Road; MRC 3: none, Germantown Road, Ringgold Road, Ringgold Road; MRC 4: Spring Creek Road, Lee Highway, I-24 via Moore Road and Brainerd Road, I-24 via Moore Road and Brainerd Road; MRC 5: Highway 153, Highway 153, Hixson Pike, Hixson Pike.

Table D.2. Greensboro/Winston-Salem/High Point Metropolitan Statistical Area Roadway Access Compilation

Quadrant:	Southern	Northern	Western	Eastern	Total
District					
Greensboro CBD	3	3	3	3	12
Win.-Sal. CBD	4	4	9	10	27
High Point CBD	3	3	3	4	13
MRC 1	3	3	10	8	24
MRC 2	6	5	3	0	14
MRC 3	3	3	3	3	12
MRC 4 (D)	3	0	10	9	22
MRC 5 (D)	5	3	6	6	20
MRC 6	5	3	3	3	14
MRC 7	3	6	7	4	20
MRC 9 (D)	3	3	3	3	12
MRC 10	3	3	0	0	6
Average for active major retail centers					15.0
Average for all active CBDs and MRCs					15.8
Average for defunct major retail centers					18.0

Note: D denotes defunct MRCs. The thoroughfares used for the southern, northern, western, and eastern quadrants of each retail district are as follows. Greensboro CBD: Eugene Street, Summit Avenue, Friendly Avenue, Market Street; Winston-Salem CBD: Gold Expressway via Fifth Street, Gold Expressway via Fourth Street, Interstate 40 via Cherry Street, Interstate 40; High Point CBD: Main Street, Main Street, English Road, Temporary I-85 via Main Street; MRC 1: High Point Road, High Point Road, Interstate 40, Interstate 40 via High Point Road; MRC 2: O'Henry Boulevard, O'Henry Boulevard via Cone Boulevard, Cone Boulevard, none; MRC 3: Main Street, Main Street, Lexington Avenue, Lexington Avenue; MRC 4: Stratford Road, none, Interstate 40, Interstate 40 via Stratford Road; MRC 5: Salisbury Road via Peters Creek Parkway, Peters Creek Parkway, Silas Creek Parkway, Corporation Parkway; MRC 6: Wendover Avenue via Friendly Avenue, Benjamin Parkway, Friendly Avenue, Wendover Avenue; MRC 7: Stradford Road, Silas Creek Parkway, Interstate 40 via Silas Creek Parkway, Silas Creek Parkway via Stradford Road; MRC 9: Spring Garden Street, Chapel Road, West Market Street, West Market Street; MRC 10: Westchester Drive, Westchester Drive, none, none.

Table D.3. Greenville/Spartanburg Metropolitan Statistical Area Roadway Access Compilation

Quadrant:	Southern	Northern	Western	Eastern	Total
District					
Greenville CBD	3	3	3	3	12
Spartan. CBD	3	3	3	3	12
MRC 1	3	3	9	8	23
MRC 1.1 (D)	3	3	3	3	12
MRC 2	10	7	3	3	23
MRC 2.1 (D)	3	3	0	0	6
MRC 3	3	5	3	3	14
MRC 4	7	8	3	3	21
MRC 4.1 (D)	3	3	0	0	6
MRC 5	3	3	3	3	12
MRC 6 (D)	0	0	3	3	6
Average for active major retail centers					18.6
Average for all active CBDs and MRCs					16.7
Average for defunct major retail centers					7.5

Note: D denotes defunct MRCs. The thoroughfares used for the southern, northern, western, and eastern quadrants of each retail district are as follows. Greenville CBD: Business Route 129, Business Route 129, U.S. Highway 123, Peak Street; Spartanburg CBD: Church Street, Church Street, Main Street, Main Street; MRC 1: Haywood Road, Haywood Road, Interstate 385 via Haywood, Interstate 385 via Haywood; MRC 2: Interstate 26, Interstate 26 via Ezell Boulevard, Ezell Boulevard, Ezell Boulevard; MRC 3: Burns Boulevard, Interstate 585 via Burns Boulevard, Pearl Street, Garner Road; MRC 4: Interstate 85 via Woodruff Road, Interstate 85 via Woodruff Road, Woodruff Road, Woodruff Road; MRC 5: Pleasantburg Road, Pleasantburg Road, Laurens Road, Laurens Road.

Table D.4. Knoxville Metropolitan Statistical Area Roadway Access Compilation

Quadrant:	Southern	Northern	Western	Eastern	Total
District					
CBD	3	3	5	6	17
MRC 1	3	3	4	0	10
MRC 2	0	0	3	3	6
MRC 3	9	10	3	9	31
MRC 4	3	3	3	3	12
MRC 5	3	3	9	8	26
MRC 6	3	3	3	3	12
MRC 7	3	3	10	10	26
MRC 8	3	3	10	8	24
MRC 9	3	3	10	10	26

Average for active major retail centers	19.2
Average for all active CBDs and MRCs	19.0
Average for defunct major retail centers	none

Note: D denotes defunct MRCs. The thoroughfares used for the southern, northern, western, and eastern quadrants of each retail district are as follows. CBD: Chapman Highway, Broadway, Interstate 40/75 via Western Avenue, Interstate 40 via Downtown Loop; MRC 1: Broadway, Broadway, Interstate 40/75 via Baxter Avenue and Interstate 75, none; MRC 2: none, none, Oak Ridge Highway, Oak Ridge Highway; MRC 3: Interstate 75 via Clinton Highway, Interstate 75, Clinton Highway, Interstate 640 via Clinton Highway; MRC 4: U.S. Highway 129 via Calderwood Avenue, U.S. Highway 129 via Calderwood Avenue, Calderwood Avenue, Calderwood Avenue; MRC 5: Broadway, Broadway, Interstate 640 via Broadway, Interstate 640 via Broadway; MRC 6: Illinois Avenue, Illinois Avenue, Oak Ridge Highway, Oak Ridge Highway; MRC 7: Morrell Road, Buckingham Road, Interstate 40/75, Interstate 40/75; MRC 8: Gallaher View Road, Walker Springs Road, Interstate 40/75, Interstate 40/75 via Walker Springs Road; MRC 9: Broadway, Broadway, Interstate 640, Interstate 640.

Table D.5. Montgomery Metropolitan Statistical Area Roadway Access Compilation

Quadrant:	Southern	Northern	Western	Eastern	Total
District					
CBD	10	9	3	3	25
MRC 1	5	5	3	3	16
MRC 1.1 (D)	3	3	0	0	6
MRC 2 (D)	3	3	3	3	12
MRC 3	5	3	6	6	19
Average for active major retail centers					17.5
Average for CBD and all active MRCs					20.0
Average for defunct major retail centers					9.0

Note: D denotes defunct MRCs. The thoroughfares used for the southern, northern, western, and eastern quadrants of each retail district are as follows. CBD: Interstate 65, Interstate 65 via Bell Street, Business Route of U.S. Highway 80; MRC 1: East Boulevard via U.S. Highway 80, East Boulevard via U.S. Highway 80, U.S. Highway 80, U.S. Highway 80; MRC 1.1: Coliseum Boulevard, Coliseum Boulevard, none, none; MRC 2: Norman Bridge Road, Norman Bridge Road, South Boulevard via Norman Bridge Road, South Boulevard via Norman Bridge Road; MRC 3: Troy Highway, McGehee Road, South Boulevard, East Boulevard.

APPENDIX E

RETAIL SALES BY CENSUS DELINEATED AREAS IN FIVE SAMPLE METROPOLITAN STATISTICAL AREAS

Montgomery Metropolitan Statistical Area

Area	Sales in $ 1,000s	Sales in $1,000s of 1967	Percent of MSA Sales
1963			
CBD	87,189	93,118	36.7
MRC 1.1	7,816	8,347	3.3
MRC 2	14,840	15,849	6.2
CBD + MRCs	109,845	117,314	46.2
Total for MSA	237,882	254,057	100.0
1972			
CBD	90,535	74,881	17.0
MRC 1.1[1]	10,035	8,300	1.9
MRC 2	15,136	12,519	2.8
MRC 3	43,955	36,355	8.2
CBD + MRCs	159,661	132,055	29.9
Total for MSA	533,981	441,656	100.0
1982			
CBD	79,137	30,001	6.9
MRC 1	77,238	29,281	6.7
MRC 3	62,400	23,656	5.4
CBD + MRCs	218,755	82,938	18.9
Total for MSA	1,155,057	437,882	100.0

[1]The retail area with Eastbrook Shopping center as its core was designated as major retail center 1 in the 1958 Census of Retail Trade. It was a defunct major retail center by 1982 and is designated as major retail center 1.1 to distinguish it from the new major retail center 1 focused on Eastdale Mall.

Knoxville Metropolitan Statistical Area

Area	Sales in $ 1,000s	Sales in $1,000s of 1967	Percent of MSA Sales
1963			
CBD	83,074	88,754	18.0
MRC 1	18,004	19,235	3.9
MRC 2	14,933	15,954	3.3
MRC 3	5,574	5,960	1.2
MRC 4	7,008	7,487	1.5
CBD + MRCs	128,593	137,390	27.9
Total for MSA	461,192	492,727	100.0
1972			
CBD	71,654	59,265	7.6
MRC 1	30,741	25,426	3.2
MRC 2	32,192	26,626	3.4
MRC 3	34,098	28,202	3.6
MRC 4	47,483	39,273	5.0
MRC 5	16,276	13,462	1.7
MRC 6	5,628	4,655	0.6
MRC 7	51,133	42,292	5.4
CBD +MRCs	289,205	239,201	30.5
Total for MSA	947,962	784,059	100.0
1982			
CBD	84,403	31,997	3.3
MRC 1	31,882	12,086	1.3
MRC 2	49,170	18,640	1.9
MRC 3	75,147	28,488	2.9
MRC 4	72,230	27,382	2.8
MRC 5	37,923	14,377	1.5
MRC 6	13,406	5,082	0.5
MRC 7	239,993	90,981	9.4
MRC 8	139,307	52,811	5.4
MRC 9	51,152	19,392	2.0
CBD + MRCs	794,613	301,236	31.0
Total for MSA	2,560,171	970,561	100.0

Chattanooga Metropolitan Statistical Area

Area	Sales in $ 1,000s	Sales in $1,000s of 1967	Percent of MSA Sales
1963			
CBD	59,396	63,435	15.6
MRC 1	9,071	9,688	2.4
MRC 2	7,541	8,054	2.0
MRC 3	7,692	8,215	2.0
MRC 4	14,581	15,573	3.8
CBD + MRCs	98,281	104,965	25.8
Total for MSA	380,444	406,314	100.0
1972			
CBD	77,669	64,240	9.0
MRC 2	18,970	15,690	2.2
MRC 3	10,606	8,772	1.2
MRC 4	51,838	42,875	6.0
MRC 5	23,222	19,207	2.7
CBD + MRCs	182,305	150,784	21.1
Total for MSA	863,796	714,446	100.0
1982			
CBD	50,885	19,291	2.7
MRC 2	26,055	9,877	1.4
MRC 4	110,458	41,875	5.9
MRC 5	94,898	35,976	5.1
CBD + MRCs	282,296	107,019	15.1
Total for MSA	1,869,737	708,817	100.0

Greensboro/Winston-Salem/High Point
Metropolitan Statistical Area

Area	Sales in $ 1,000s	Sales in $1,000s of 1967	Percent of MSA Sales
1963			
Greensboro CBD	96,837	103,422	16.2
Winston-Salem CBD	85,984	91,831	14.3
High Point	38,772	41,408	6.6
MRC 4	5,481	5,854	0.9
MRC 5	10,553	11,271	1.7
MRC 6	8,270	8,832	1.4
MRC 11	9,062	9,678	1.5
CBD + MRCs	254,959	272,296	42.6
Total for MSA	598,358	639,046	100.0
1972			
Greensboro CBD	93,246	77,124	5.7
Winston-Salem CBD	88,519	73,214	5.4
High Point CBD	35,514	29,374	2.2
MRC 4	29,089	24,060	1.8
MRC 5	28,801	23,821	1.8
MRC 6	34,916	28,879	2.1
MRC 7.1[2]	9,357	7,739	0.6
MRC 9	9,218	7,624	0.6
MRC 10	16,096	13,313	1.0
MRC 11	12,867	10,642	0.8
MRC 13	8,978	7,426	0.6
CBD + MRCs	366,601	303,216	22.6
Total for MSA	1,623,824	1,343,065	100.0
1982			
Greensboro CBD	48,741	18,478	1.3
Winston-Salem CBD	66,378	25,164	1.7
High Point CBD	54,366	20,610	1.4
MRC 1	79,527	30,149	2.1
MRC 2	44,600	16,908	1.1
MRC 3	64,900	24,604	1.7
MRC 6	107,658	40,813	2.8
MRC 7	124,401	47,160	3.2
MRC 10	32,458	12,305	0.8
CBD + MRCs	623,029	236,191	16.1
Total for MSA	3,874,379	1,468,777	100.0

[2]The Asheboro CBD in Randolph County was designated major retail center 7 in the 1972 Census of Retail Trade.

Greenville/Spartanburg Metropolitan Statistical Area[3]

Area	Sales in $ 1,000s	Sales in $1,000s of 1967	Percent of MSA Sales
1967			
Greenville CBD	49,668	N.A.	12.1
MRC 1.1	12,572	N.A.	3.0
MRC 2.1	5,992	N.A.	1.5
CBD + MRCs	68,232	N.A.	16.6
Total for MSA	411,402	N.A.	100.0
1972			
Greenville CBD	33,058	27,342	3.2
MRC 1.1	16,567	13,703	1.6
MRC 4.1	11,695	9,673	1.1
MRC 5	25,526	21,113	2.4
MRC 6	5,807	4,803	0.6
CBD + MRCs	92,653	76,634	8.9
Total for MSA	1,040,465	860,569	100.0
1982			
Greenville CBD	28,837	10,932	1.1
Spartanburg CBD	48,411	18,353	1.9
MRC 1	94,077	35,665	3.7
MRC 2	91,016	34,504	3.6
MRC 3	52,538	19,917	2.1
MRC 4	38,846	14,727	1.5
MRC 5	59,634	22,607	2.3
CBD + MRCs	413,359	156,705	16.2
Total for MSA	2,558,383	969,883	100.0

[3]The Greenville standard metropolitan statistical area consisted of Greenville and Pickens counties in 1967. Spartanburg County, including the central city of Spartanburg, were added in 1972. The Spartanburg central business district was first delineated in 1982.

VITA

Donald W. Buckwalter was born in Los Angeles, California, on August 23, 1948. He attended school in Quincy, Illinois, and Lincoln, Nebraska, graduating from Lincoln High School in June, 1966. He enrolled in The University of Nebraska, Lincoln, receiving a Bachelor of Arts degree in Geography in May, 1973. Employment at the Conservation and Survey Division of The University of Nebraska, Lincoln, from 1973 to 1982 coincided with work on a Master of Arts degree in Geography at that university. The degree was conferred in May, 1981.

Mr. Buckwalter accepted a teaching assistantship and began study at The University of Tennessee, Knoxville, in September, 1983. He was awarded a University of Tennessee, Knoxville, National Alumni Association fellowship for the 1986-87 academic year and received a Ph.D. degree in Geography in June, 1988.

The author is past president of the Iota Theta chapter of Gamma Theta Upsilon and member of the Agricultural History Society, American Geographical Society, American Society of Photogrammetry, Association of American Geographers, and Southeastern Division of the Association of American Geographers. Mr. Buckwalter is an assistant professor in the Department of Geography and Regional Planning at Indiana University of Pennsylvania.