The Bricks, Clicks, Economics and Mortar of Contemporary Retail:
The Consequences that Retailer Storing Strategies and Retail Performance across Markets have on Real Estate Investments

by

Kevin William Fagan
B.S., Architectural Engineering, 2001
University of Texas at Austin

Submitted to the Program in Real Estate Development in Conjunction with the Center for Real Estate in Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE IN REAL ESTATE DEVELOPMENT

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

FEBRUARY, 2011

Signature of Author_____

Center for Real Estate
January 10, 2011

Certified by_____

William C. Wheaton, Ph.D.
Professor of Economics,
M.I.T. Department of Economics
Thesis Supervisor

Accepted by_____

David Geltner, Ph.D.
Chairman, Interdepartmental Degree Program in
Real Estate Development

The Bricks, Clicks, Economics and Mortar of Contemporary Retail:
The Consequences that Retailer Storing Strategies and Retail Performance Across Markets have on Real Estate Investments

by

Kevin William Fagan

Submitted to the Program in Real Estate Development in Conjunction with the Center for Real Estate on January 10, 2011 in Partial Fulfillment of the Requirements for the Degree of Master of Science in Real Estate Development

ABSTRACT

The retail industry in the 21st century is undergoing a confluence of transformative changes. In this paper we discuss particularly noteworthy changes related to demography, retail economics and the Internet. We note how, in reaction to those transformations, brick-and-mortar retailers have developed innovative strategies to maintain growth and store performance, such as urban market penetration and multi-channel selling. We also have done a rigorous analysis of retail performance across major U.S. markets to determine the *ex post* and *ex ante* effects of trends and strategy changes. The hypothesis of this paper is that the conventional definition of "good" retail real estate has substantially changed in the last decade.

The analytic approach of this paper is to: 1) observe broad retail industry trends, 2) conduct industry interviews to identify corresponding retailer strategy shifts, 3) perform cross-metro analysis of retail performance and 4) extrapolate meaningful effects on retail real estate. This provides owners, operators and developers of retail properties insight into the evolving characteristics and needs of tenants as they adapt to the new retail environment.

Conclusions include description of the attributes of markets, properties, tenant mixes and amenities that best support contemporary retailing. Commentary and analysis is also provided on the impact of e-commerce and bricks-and-mortar retailers' adoption of multi-channel selling.

Some results are that larger, denser markets have less consumption per capita, but those markets are generally underserved and have greater store gross revenues. Retailers are motivated to enter urban markets with flexible prototypes and online platforms. Population growth serves as a wealth proxy and corresponds strongly with sales growth. Housing prices are positively correlated to retail sales. Income growth has a much stronger relationship to sales performance than static income levels. Ethnicities and incomes are sorted and stratified in dense markets, making performance forecasting more nuanced. Relatively higher Internet usage in a metro corresponds to significantly higher brick-and-mortar retail sales.

Thesis Supervisor: William C. Wheaton

Title: Professor of Economics

TABLE OF CONTENTS

TABLE OF FIGURES

ACKNOWLEGEMENTS

This thesis was possible primarily due to a number of individuals and organizations that supported me in this endeavor. I extend sincere appreciation to my thesis advisor, Professor Bill Wheaton for his sharp mind and ability to see clearly through small mountains of data and focus on that which is important. Special thanks goes to the staff at ING Clarion, particularly David Lynn, Tim Wang, Bohdy Hedgcock and Chris Roscoe, for the providing support and access to data sources. I'd also like to thank Ai Kong for providing a basis for the cross-sectional approach taken in this thesis.

I thank the various retail and real estate investment firms that contributed input and interviews. Their generosity of time and willingness to provide expertise and opinions established a great deal of practical substance in this research.

I would also like to thank all of my friends, family, classmates and the MIT faculty and staff for making my graduate school experience productive and memorable. I especially thank Christina DiPierro for all the food, love and smiles. It would take another 100 pages to list the ways she helped me over the last year. Also, I offer special mention to Professor David Geltner, the most dedicated educator I've ever met.

Finally, I give very special thanks to my mom and dad, Linda and Joe Fagan, who are always there for me in one way or another.

CHAPTER 1: INTRODUCTION

1.1 Research Motivation

The retail industry in the 21st century has experienced what some in the business have described a "sea change". In this paper we discuss particularly noteworthy changes affecting the retail industry such as large demographic shifts, discretionary income trends, increased competition and specialization of firms and centers, diminishing store growth opportunities in traditional type markets and the onset of the Internet era with widespread consumer access to high-speed broadband and retailers adopting online as a viable selling channel. We then examine how, in reaction to those transformations, brick-and-mortar retailers have developed innovative strategies to maintain growth and store performance, such as entry into urban markets and adoption of online selling channels. Finally, we explore the effects of these changes in a real estate context and describe the role they play in successful real estate investment strategy. This also gives owners, operators and developers of retail properties insight into the evolving characteristics and needs of successful tenants as they adapt to the new retail environment. The hypothesis of this paper is that the conventional definition of "good" retail real estate has substantially changed in the last decade.

The approach of this paper is to identify significant shifts in retail strategies and trends and determine how they fit within empirical retail performance across major metropolitan statistical areas (MSAs). This determines some *ex post* and *ex ante* effects of those strategies and trends, and what economic attributes of cities will best support contemporary retailing. Finally, given the strong relationship between tenant and landlord in the retail sector, this analysis is then used to answer fundamental questions about the consequences to retail real estate.

1.2 Background

Beginning roughly a decade before the Great Recession of 2008, there were indications that the relationship between consumers and brick-and-mortar retailers was in the process of considerable change. Industry competition increased while shoppers became more educated and demanding. In the 2000's, bankruptcies of U.S. retail companies escalated, marked notably by the fall of major retailers such as Kmart, Linens 'n Things and Circuit City. Nationally, the gap between store closings and store openings consistently widened over the last 15 years.

Part of this competitive pressure stems from scarcity of viable land for store expansion due to overdevelopment of particular types of shopping centers. At least thirty years of rapid suburban growth caused rampant, sometimes speculative development of generic large format stores in regional and power centers to the point of market saturation.

Suburban market saturation of power centers was accompanied by the rise of the "category killer" retailers. These are large national retail chains that focus on a particular retail category, using economies of scale for competitive advantage in pricing and branding. This drove significant industry consolidation, and ultimately only a handful of retailers dominated certain categories. This left consumers with a lack of product differentiation from the select few stores in the marketplace. On top of diminished product differentiation, design of shopping centers became largely formulaic and offered little diversity of experience for consumers. Therefore, due to similarity of both product and experience, a given suburban retail center may often be in direct competition with a large number of other centers in an oversupplied trade area.

Then the boom of e-commerce, particularly over the last decade, added another viable shopping channel to direct selling, catalogue mail order and physical stores, further increasing the effective number of firms selling in the marketplace. However, the cannibalistic effect of e-commerce on bricks-and-mortar retail has been modest thus far. Many traditional retail firms have successfully incorporated their own online retailing platforms. So perhaps more significant than the direct competition e-commerce has posed to brick-and-mortar retailers is that the Internet became a source of abundant product information and pricing transparency. This was also more easily utilized by the Internet savvy "Echo Boomers", who have now entered the marketplace as wage earning consumers. They are a generational cohort equal in size to the Baby Boomers and the first consumers to grow up with the Internet and mobile technology.

The Great Recession exacerbated these new challenges facing retailers. In 2008 and 2009, total national retail sales[1] exhibited the first consecutive year-over-year decrease since the 1960's. As unemployment increased to double digits and wages showed no signs of increasing, savings rates and consumer deleveraging increased dramatically, starkly contrasting a long-term trend to the opposite. With that additional economic pressure, many retail businesses did not

[1] Non-inflation adjusted.

survive if they had not reacted adeptly to the changing retail environment in the last decade. Moving forward, retailers that have weathered the storm thus far are adapting to the changing industry landscape in many ways.

In addition to economic, competitive and consumer demand pressures, retail firms have also been challenged to anticipate the changing nature of United States demographics as the 76.5 million Baby Boomers (aged 46 to 64) file into retirement and the 73.2 million Echo Boomers (aged 16 to 32) become the next working class and majority of U.S. consumption. The Baby Boomers, soon to be retired "Golden Boomers", still have the largest buying power of any cohort in the United States. On the other hand, the Echo Boomers are beginning to reach peak household buying power in the next decade. This presents an interesting transition period as retailers and retail real estate owners must find a harmony between the demands of two very large, very different groups of consumers. Given that retail is tied to demography, the obvious question is, where will these cohorts choose to live? Proponents of urbanization espouse as "conventional wisdom" that Baby Boomers are moving to center cities for urban amenities and access to health care, while Echo Boomers will move inward to urban cores for economic opportunity. However, the ultimate net migration behavior of these two population cohorts is unclear.

Regardless, the retail industry in general clearly perceives their growth to be within urban cores and fringes as anecdotally many retailers, such as Target, Best Buy and Staples have clearly implemented urban store formats. Although clear demography data supporting widespread urbanization is not yet available, there are other trends supporting a shift to urbanity, including: public subsidies for urban infill and revitalization, increased high density mixed-used and transit-oriented projects in private real estate development, declining vehicular use resulting from increased congestion and gas prices and national surveys indicating preference toward urban environments.

In summary, the retail industry has undergone substantial change in the last decade. The purpose of this paper is to identify new retail strategies and analyze them in the context of empirical retail performance across major MSAs and infer consequences to real estate. Since in the retail sector the landlord shares much of the business risk of the tenant, this analysis is then used to answer fundamental questions about the retail asset sector: What are the characteristics

of quality retail properties? What are the attributes of the best performing markets? What type of space and amenities will retailers need? What tenant mixes will translate to the best performing retail centers? What are the biggest concerns for operators and asset managers?

1.3 Methodology

To answer these questions the approach of this study is divided in two parts: strategy identification (Chapter 3) and performance analysis (Chapter 4). Evidence of the former is provided through industry interviews and citation of relevant anecdotes and trends in relevant data. Evidence of the latter is provided by multivariate OLS regression modeling of the variance of retail performance in three (3) dependent variables and eight (8) corresponding independent climate and economic variables across 66 MSAs. This analysis is done for both 2002 and 2007 Economic Census retail data and the '02-'07 change between these datasets.

The combination of these two sections will give the context to determine the effects of the new retailing environment on real estate. This extrapolation will be presented in Chapter 5.

Refer to Chapter 2 for a full description of the methodology and data.

1.4 Summary Conclusions

The demographic shifts of Baby Boomers retiring, Echo Boomers becoming wage-earners and growth of nonwhite populations are large considerations for retailers as they locate stores to target these demographics. Long-term consumer trends indicate that there may be less discretionary income for retailers to capture in the near to long-term. Income stratification makes it important to look at both mean and median income in target markets. Ethnicity is also important and certain groups, such as Hispanics have more rapidly increasing household incomes.

The retail industry is has undergone a long period of consolidation and heightened competition. Specialty, "category killer" retailers and power centers have greatly diminished growth opportunities in traditional, suburban markets. This specialization has led to an abundance of similar offerings of products and experiences.

E-commerce has proven to be a revolutionary force in the industry. While there is cannibalization in some retail categories, overall the Internet is a net positive to brick-and-mortar

retailers. Retailers are successfully implementing multi-channel platforms to develop strong branding and offer better shopping experiences. One of the most salient conclusions of this paper is that e-commerce is a buttress to brick-and-mortar retail, and retailers that adopt well-integrated multi-channel selling platforms will be the most successful in the future.

Another primary finding of this research paper is that retailers are implementing new strategies for entering urban markets. These new strategies are in reaction to oversupply of retail in suburban markets and an anticipation of demographic changes towards higher density, urban living. General strategies include using smaller, flexible store prototypes, more rigorous definition of trade areas and incorporation of online platforms for supplemental sales, marketing, inventory control and supply chain management. Real estate practitioners are beginning to take on similar strategies.

The results of the cross-city regression analysis show that if costs of urban market entries can be offset, store performance will be greater in larger, denser markets. The cross-metro analysis implies that "strong" markets for store performance have large, growing populations with high and growing mean incomes. Employment levels are important for only certain categories of sales. Median home prices are a strong predictor, but not driver of retail sales. Population growth and home prices may serve as a proxy for the "wealth effect". Availability of broadband access is a strong compliment to physical store sales. Access to online information decreases search costs and drives more offline retail sales.

For real estate, most domestic development in the foreseeable future it will occur in densely populated markets, frequently as part of mixed-use projects with amenities such as public transit, walkability and proximity to entertainment. Existing assets with competitive advantages in "strong", supply-constrained markets may be candidates for improvement or renovation to better suit the contemporary retailers' space needs and create better shopping experiences. Value should be placed on assets with flexibility to adjust to shrinking and shifting space needs.

Tighter asset control and management will be required due to increased volatility in the retail industry and higher costs of turnover and design changes in urban markets. Also, trade areas in urban markets require more thorough understanding in regards to income and ethnic

profiles and traffic patterns. Control over tenant mixes, common areas and design should be more adamantly negotiated in leases. Retail centers can be differentiated by typical power centers and malls by using public areas for social gather or programmed events.

Determining tenant mixes will require careful balancing given increased volatility in the retail industry. Firms selling inelastic goods such as grocers and value-oriented retailers will provide rent roll that is more resistant to economic downturns or lagging discretionary incomes. The most viable retail tenants are large, specialty retailers that dominant their category. Retailers with a highly integrated online platform are expected to perform the best. There are also opportunities for niche or new concept retailers with particularly differentiating qualities such as a unique offerings or shopping experiences.

1.5 Thesis Structure

The remainder of this paper is organized as follows: Chapter 2 describes the methodology and data collection in further detail. Chapter 3 provides evidence of industry trends and presents interviews of practitioners. Chapter 4 discusses the results of regression analysis of retail data across major MSAs. Chapter 5 summarily combines empirical results from Chapter 3 and 4 to extrapolate conclusions on the effects on real estate. Chapter 6 concludes.

CHAPTER 2: METHODOLOGY AND DATA

2.1 Introduction

The primary hypothesis of this thesis is that the conventional definition of good retail real estate has substantially changed in the last decade. To test that hypothesis, the approach of this paper is to examine broad changes in the retail industry (Chapter 3), put them in an empirical economic context and make *ex post* an *ex ante* conclusions on contemporary retailing (Chapter 4). From those conclusions we can extrapolate effects to the underlying real estate that retailers occupy (Chapter 5). A shopping center developer or investor will have traditional parameters with which they vet sites or properties, i.e. how they define a "good" retail center. Given the conclusions derived from this paper, we will determine if there have been substantial revisions to that set of parameters. Specifics on the methodological approach and collection of evidence and data are presented in the remainder of this section.

2.2 Observe Broad Industry Trends

Because the business of retail can change within short periods of time, it is important to identify broad trends that could indicate shifts in the way retailers occupy space. For this purpose, we have gathered data on the following topics for presentation:

- Long-term history of national retail sales, incomes, personal savings rates and population
- Long-term history of stock of shopping centers
- Historical annual store closings and openings
- Urbanization trends and historical city densities
- Anecdotal examples of flexible store prototype and urban storing strategies
- Internet and e-commerce sales and retailing strategies and citation of previous studies on effects

Sources for these topics are cited throughout the paper. Data for consumer behavior, population, density and e-commerce was compiled from various departments within the U.S. Bureau of Census (BOC), the Bureau of Labor and Statistics (BLS), the Federal Reserve Board,

and the Bureau of Economic Analysis (BEA). Data regarding shopping centers and store openings and closings was compiled from the International Council of Shopping Centers (ICSC) and the CoStar Group. Various other sources of data in this section include news articles, surveys and academic and industry research studies.

2.3 Conduct Industry Interviews

Chapter 3 concludes with the presentation of industry feedback from a standardized series of short interviews. The purpose is to understand "on the ground" strategy given the context of the broad trends national laid out in the first part of Chapter 3. Interviews were conducted with decision makers from both retail companies and real estate companies in the retail sector.

The participants in the interviews represent a cross-section of the retail business that gives varying perspectives on contemporary storing strategies. The participants are retail storing strategists, retail REITs, real estate equity investors, shopping center developers and designers. The participants are strategists in the following firms: Walmart, Staples, PetSmart, Kohl's, BJ's Wholesale Club, Stop & Shop, Ivanhoe Cambridge, General Growth Properties, Simon Properties, ING Clarion, Vornado, WS Development, Samuels & Associates, Linear Retail and Elkus Manfredi Architects.

The interviews themselves were designed tube succinct and focused on the broad topics identified in the first part of Chapter 3. The interview templates can be found in Appendix B. There are four (4) questions designed to cover the general topics of growth, urbanization, physical store strategies and multi-channel retailing.

Interviews were performed over the phone and were only recorded via note-taking. No audio recordings were made. Therefore, the responses to the interview questions are reported in paraphrased transcripts with some direct quotes. These distilled transcripts were sent to the interviewees for approval and/or revision. The interview transcripts are presented beginning with the name and position of the interviewee and a brief description of the firm.

2.4 Perform Cross-Metro Analysis of Retail Data

Chapter 4 in this paper examines the relationship between city climate and economic data with corresponding retail performance data. This analysis is based on a multivariate ordinary

least squares (OLS) regression model of three (3) sets of data, each with eight (8) independent control variables (city attributes), three (3) dependent variables (measures of retail performance) across 11 different retail categories for approximately 66 MSAs. The variables are shown in Figure 1. Summary statistics of datasets for each of the variable are shown in Figure 21of Chapter 4 to provide context of scale and variability for the results section.

The primary sources for these data were various departments of the U.S. Bureau of Census (BOC) and the Bureau of Labor and Statistics (BLS). Retail data is from the 2002 and 2007 Economic Census which provides detailed microdata on retail sector sales and establishments every five years. Home price data is from the National Association of Realtors (NAR). Climate data is primarily sourced from the U.S. National Oceanic and Atmospheric Administration (NOAA). Specific departmental sources of the data are compiled in a table in Appendix A.

Legend of Regression Data[a]

Dependent Variables	**Abbreviations**	**Description**
Y1	S/P	Sales per capita
Y2	St/P	Stores per capita
Y3	S/St	Sales per store
Independent Control Variables		
X1	Temp	Long-term Average Temperature
X2	Precip	Long-term Average Precipitation
X3	Density	MSA Central City Density
X4	Broadband	% MSA HHs that use Broadband at home
X5	Emp/pop	Percent Employment of the MSA Population
X6	Inc/pop	Average Income of the MSA Population
X7	Population	MSA Population
X8	Home	Median Existing Single-Family Home Price
Datasets		
	2007 Dataset	2007 750k+ Population Dataset of 66 MSAs
	2002 Dataset	2002 750k+ Population Dataset of 64 MSAs
	0207Delta	Percent increase/decrease from 2002 to 2007 in all variables

[a] Refer to Appendix A to see further description of data including units and sources.

Figure 1: Legend of Regression Model Variables and Datasets

The combination of these variables resulted in a total of 99 OLS regression equations, 33 per dataset. This is three (3) dependent variable equations for 11 different retail categories for three (3) different datasets. The regression equation takes the following form, where "j" and "I" correspond to the variable number indicated in Figure 1.

$$Y_j = \beta_0 + \beta_i X_i + \ldots + \beta_n X_n + e_j$$

In this equation, a unit increase in X_i is associated with a mean β_i increase in Y_j. However, the data variance of control variables in this regression model can be significantly larger for depending on the size of the MSA. Therefore the 2002 and 2007 static datasets were log transformed to control for relatively greater variability. In the resultant regression equations, a 1% increase in X_i is associated with a β_i% increase in Y_j. Both the independent and dependent datasets were log transformed to yield the following regression equations.

$$\ln(Y_j) = \beta_0 + \ln(\beta_i X_i) + \ldots + \ln(\beta_n X_n) + e_j$$

The summary results of these equations are broken down by independent variable in Chapter 4. In each section, the role of an independent variable is described by showing their elasticities of retail supply and demand relative to the dependent Y_j.

The dependent variables of retail performance were examined because of their interactive relationship to each other. In the results tables, a column is included with the heading "ExpBeta". This essentially represents the expected beta of the X variable in the Sales per Store (S/St) Y3 results table. This column is the difference between the corresponding beta in the Y1 and Y2 results tables. That is, $(\beta_{i,S/P} - \beta_{i,St/P}) = \beta_{i,S/St}$ for the "ExpBeta" column. This is discussed further in Chapter 4.

The 66 MSAs were selected because they have populations of over 750,000 or greater. The first run of this analysis included approximately 250 MSAs with populations 100,000 or greater; however the inclusion of relatively small MSAs caused noisy results due to the idiosyncratic and sometimes parasitic nature of small metropolitan areas. For example, if a substantial shopping center is added to a small MSA, it could drastically affect the total amount of sales and stores relative to the MSA's economic characteristics which could cause misleading results in the overall OLS equations. Also, many small MSAs are effectively satellites of larger ones. This will cause some spurious correlations to be drawn, particularly regarding

employment since a person that lives in a small MSA will travel to a nearby large MSA for work. Also, Las Vegas was omitted from these datasets due to the tourism expenditures skewing the amount of consumption demand relative to the cities indigenous economic variables.

Finally, the data for the retail performance was examined results across all retail categories as defined by the North American Industry Classification System (NAICS). We performed these additional layers of analysis because retail is a segmented business in regards to shopping behavior and economic influences. For example, people may shop less in rainy areas, but need to buy more of certain goods due to increased wear and tear. Other examples are that some goods may be more frequently bought online or some goods may have very high income elasticity where others may not. The analysis denotation and official NAICS title and description of the categories are provided in Figure 2below.

Abbreviation	Retail Category - NAICS Sector Title	Description
TOT	Total Retail	Includes all retail stores less automotive and non-store retail. This includes categories below plus miscellaneous establishments.
FURN	Furniture and home furnishings	Stores include furniture stores; home furnishings stores; floor covering stores; and window treatment stores.
ELEC	Electronics and appliance	Stores include household appliance stores; radio, television, and other electronics stores; computer and software stores; and camera and photographic supply stores.
BLDG	Building material, garden, supplies	Stores include home centers; paint and wallpaper stores; hardware stores; lawn and garden equipment stores; outdoor power equipment stores; and nursery and garden centers.
FOOD	Food and beverage	Stores include grocery stores; supermarkets; convenience stores; meat and fish markets; fruit and vegetable markets; retail bakeries; confectionery and nut stores; and beer, wine, and liquor stores.
HLTH	Health and personal care	Stores includes pharmacies and drug stores; cosmetics, beauty supplies, and perfume stores; optical goods stores; and health food supplement stores.
CLTH	Clothing and clothing accessories	Stores include men's and boys' clothing stores; women's and girls' clothing stores; children's and infants' clothing stores; family clothing stores; clothing accessories stores; shoe stores; jewelry stores; and luggage and leather goods stores.
BOOK	Sporting goods, hobby, book, and music	Stores include sporting goods stores; hobby, toy, and game stores; sewing, needlework, and piece goods stores; musical instrument and supplies stores; bookstores; news dealers and newsstands; and prerecorded tape, com- pact disc, and record stores.
GEN	General merchandise	Stores include department stores; discount department stores; national chain department stores; warehouse clubs and superstores; and miscellaneous general merchandise stores.
RESTR	Food services and drinking places	Stores include establishments that prepare meals, snacks, and beverages to customer order for immediate on-premises and off-premises consumption.
HOTL	Accommodation	Stores include establishments that provide of lodging or short-term accommodations for travelers, vacationers, and others and any supplementary services.

Figure 2: NAICS Retail Categories

2.5 Extrapolate Consequences to Real Estate

Chapter 5 of this paper is will summarily review and combine results from Chapters 3 and 4 in a real estate context. We will examine if the trends and strategies discussed in Chapter 3 are evident in the results presented in Chapter 4. This will yield an *ex post* viewpoint of effects of trends and strategy. However, because the trends and strategies from Chapter 3 are very contemporary shifts, there may be no apparent effect in data analysis presented in Chapter 4. That being said, some of the results in Chapter 4 may support logical constructs of past economic models of retail and may have implications to future retail performance if the Chapter 3 strategies are implemented, giving an *ex ante* viewpoint.

Using both the *ex ante* and *ex post* conclusions, we will extrapolate how real estate will be affected in the long term – that is, over the next 10-20 years. Where will retailers look to expand? What will they expect of the spaces they occupy? Given their product and business model, what types of retailers will provide stable rent through economic cycles and which ones have the greatest opportunity for growth?

CHAPTER 3: RETAIL STRATEGIES – INDUSTRY TRENDS AND INTERVIEWS

3.1 General Changes in the Retail Industry

Retail is one of the largest sectors of the United States economy, constituting a $4.4 trillion industry with over 1.1 million business establishments and 15.5 million employees. Even though the industry has such enormous size, it is a fast-paced, volatile business that relies on a number of ephemeral drivers. Some of these drivers are cyclical on a longer-term basis such as national economic health, interest rates and consumer confidence. Others are very short-term such as consumer fads and tastes. These metrics of demand are crucial to retailers but often will not matter to real estate owners or developers, even though they essentially participate in the same business. Their products are fundamentally different. Retail products are mobile, dynamic and the supply can be adjusted daily, whereas the real estate products are fixed, very inelastic and decisions are essentially irreversible, at least in the short-term.

2007 Rank of Core Business Sectors in the United States

NAICS code	Description	Establishments	Revenue	Employees
21	Mining, quarrying, oil & gas	15	14	14
22	Utilities	16	11	15
23	Construction	4	4	7
31-33	Manufacturing	10	1	3
44-45	**Retail trade**	**1**	**2**	**2**
48-49	Transportation and warehousing	11	8	9
51	Information	12	7	11
52	Finance and insurance	7	3	8
53	Real estate and rental and leasing	9	12	12
54	Professional, scientific, and tech services	2	6	6
56	Admin, Support, Waste Mgmt, Remediation	8	9	5
61	Educational services	14	16	16
62	Health care and social assistance	3	5	1
71	Arts, entertainment, and recreation	13	15	13
72	Accommodation and food services	5	10	4
81	Other services (except public admin)	6	13	10

Source: U.S. Census Bureau, 2007 Economic Census

Figure 3: 2007 Rank of Core Business Sectors in the United States

Therefore, in this chapter we seek to identify long-term industry trends and shifts in retail strategy that are relevant and meaningful to real estate investors. Specifically, we attempt to

report trends that ultimately affect the "storing strategy" of retailers. Storing strategy refers to the mid to long-term plans that retailers devise regarding where and when they open (or close) what type of stores. Also part of this strategy is the design of store "prototypes", which includes floorplate size and layouts, lighting, ceiling height, inventory, et al. In other words, storing strategy decides the location, size and design characteristics of the properties the retail stores will occupy. This obviously affects real estate owners directly.

The timelines and metrics retail firms use to formulate storing strategy are much more aligned with those used in real estate decisions. Retail companies will typically make one, three and/or five year plans for stores, which get revised based on general market and competitive conditions. Like in real estate firms, decisions on stores pass through an investment committee approval process in large retail firms. In real estate rent and absorption forecasts, pipelines and competitive properties will drive decisions. Similarly, retailers perform sales volume forecasts and competitive analyses for potential store openings. And finally, both real estate owners and retailers are concerned with the physical size, design and layout of properties and stores.

3.1.1 Long-term Consumer Trends

If, as the saying goes, "location, location, location" is always the three most important things in real estate, "demographics" may be the fourth, particularly for retail sector real estate. First of all, retail is a starkly segmented industry and different products are tailored differently by every consumer characteristic possible: age, income, ethnicity, etc. Typically the paramount consideration in retail site selection is the demographic profile in the assumed trade area. Retail firms formulate a description of their target customer and place stores where that customer lives. Then, generally speaking, store growth will continue until all market demand is captured or the distance between firms is maximized based on consumers' willingness to travel.

The demographic metric has to be measured on a case-by-case basis for a potential store or shopping center site. However, it is worth taking a looking at a "30,000 foot view" of the national population trends to see the ocean that retailers are currently swimming in. The coming 10 years will be a very interesting time in the United States demographics. In that period, the

76.5 million Baby Boomers (aged 46 to 64)[2], the largest generational cohort in U.S. history, will move *en mass* into retirement. Meanwhile their offspring, the Echo Boomers (aged 16 to 32)[3], a comparably immense cohort at 73.2 million, will mature into wage-earning adults and head towards their peak earning power years.

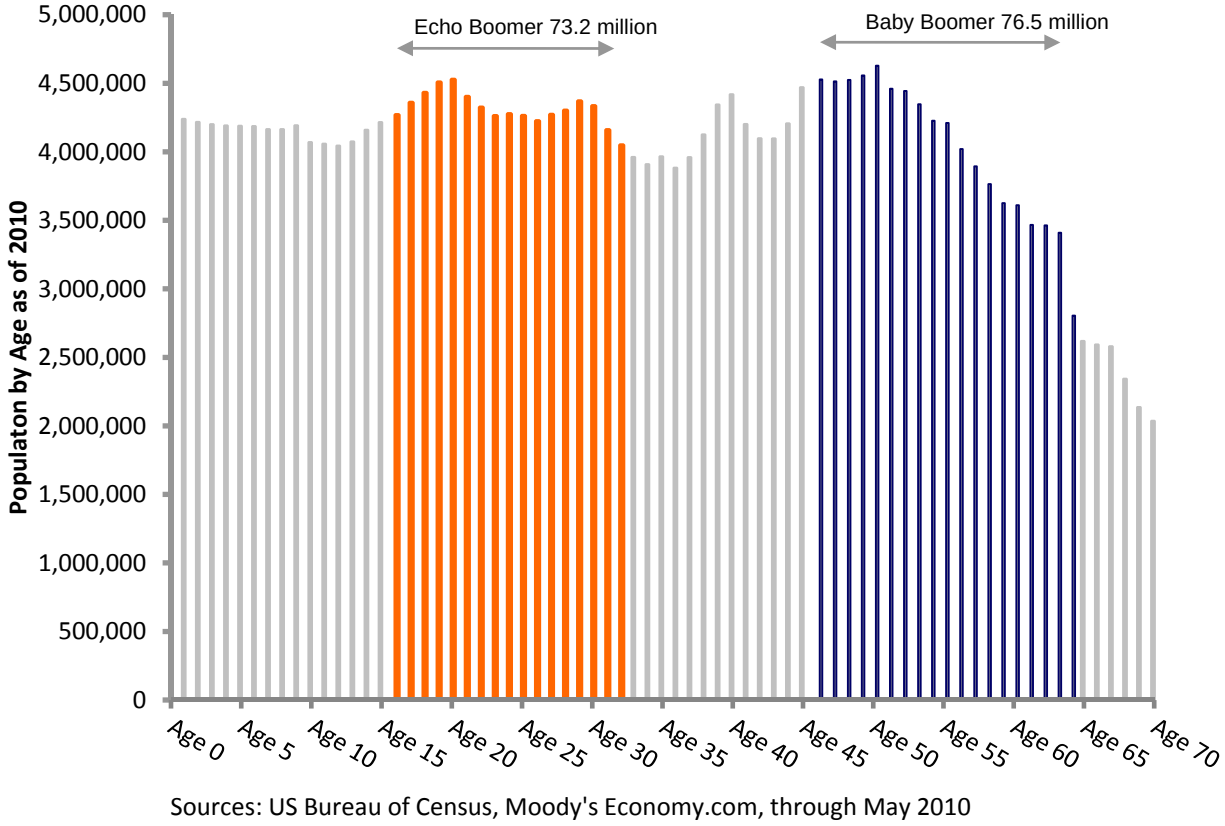


Figure 4: US Population by Age as of May 2010

[2]Although the definition varies somewhat, this is the definition presented by the US Census Bureau in their October 2001 Census Brief.

[3]There is no widely accepted consensus on the exact defining years of the U.S. Echo Boom. The definition provided here is based off of multiple sources, primarily the Bureau of Labor and Statistics and Bloomberg. The noted beginning year of the Echo Boom is 1978 as this is the first cohort of students to generally have access to the Internet throughout high school due to a 1993 federal government initiative to incorporate computers and the Internet in schools. The cohort ending year of 1994 is the first clear downward trend year of Echo Boom birthrates, and this marks the year where the youngest of the Baby Boomers turned 30, well past the national average age of 26 for "first-birther" women.

There are a lot of resources expended on the behalf of retailers trying to anticipate the spending habits, priorities, preferences and lifestyle choices of these two very different generations. Although the U.S. Bureau of Census (BOC) does not report incomes by age category, there are many speculative estimates that put the spending power (disposable income) of Baby Boomers around $2 trillion and Echo Boomers a little over $1 trillion.

When examining the volume of total national retail sales (inflation adjusted) over the past 40 years, sales per capita exhibit an average annual (real) increase of 0.78%, and the volatility is very cyclical about this mean. National average incomes per capita have a long-term (real) average increase of 1.44%, while exhibiting the same cyclical, volatile behavior but generally acting as a lagging indicator of sales, as can be seen in Figure 5 below.

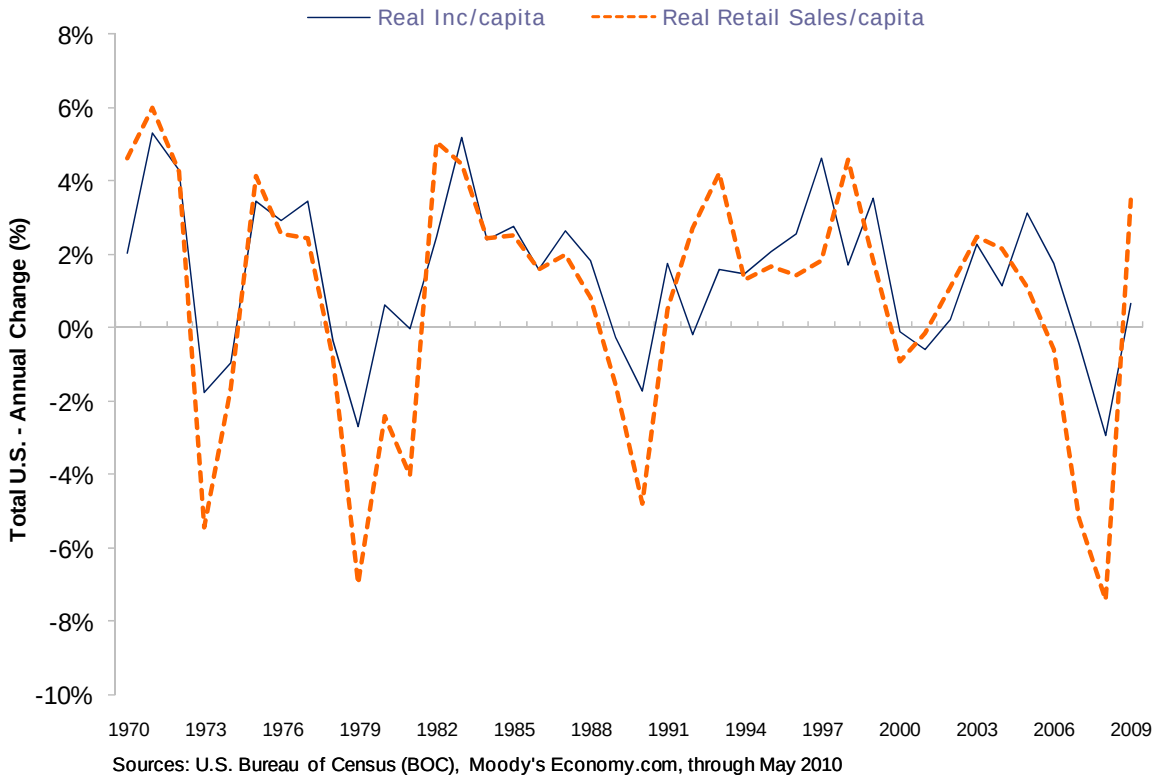


Figure 5: Annual Percentage Change in U.S. Income and Retail Sales per Capita

The strong relationship between long-term average sales and income makes income-related trends very important to retailers. Some notable recent trends are savings rates, consumer credit and socio-economic income stratification. The former two trends are often metrics

retailers will use in sales forecasting models. The latter is a trend that affects considerations in income profiling of markets in which retailers wish to enter.

Household purchases are made from "disposable income", which is defined as gross income less taxes. "Discretionary income" is defined as disposable income less savings and essential living purchases or "fixed costs", such as food, housing and some clothing. These fixed-cost, necessity goods are generally income inelastic. However, most retailers selling non-necessity goods are concerned with discretionary incomes and savings rates. As seen in Figure 6, there has been a long trend of decreased savings among Americans, bottoming out around 1% of disposable income in the last decade. The Great Recession seems to have been a wake-up call, and this non-savings trend has recently reversed. U.S. consumers are believed to have entered into a period of "deleveraging". Also, there is some evidence that Baby Boomers entering retirement will be more fiscally conservative and have higher savings rates (DeVaney 2005). Retailers will be watching this trend with great interest.

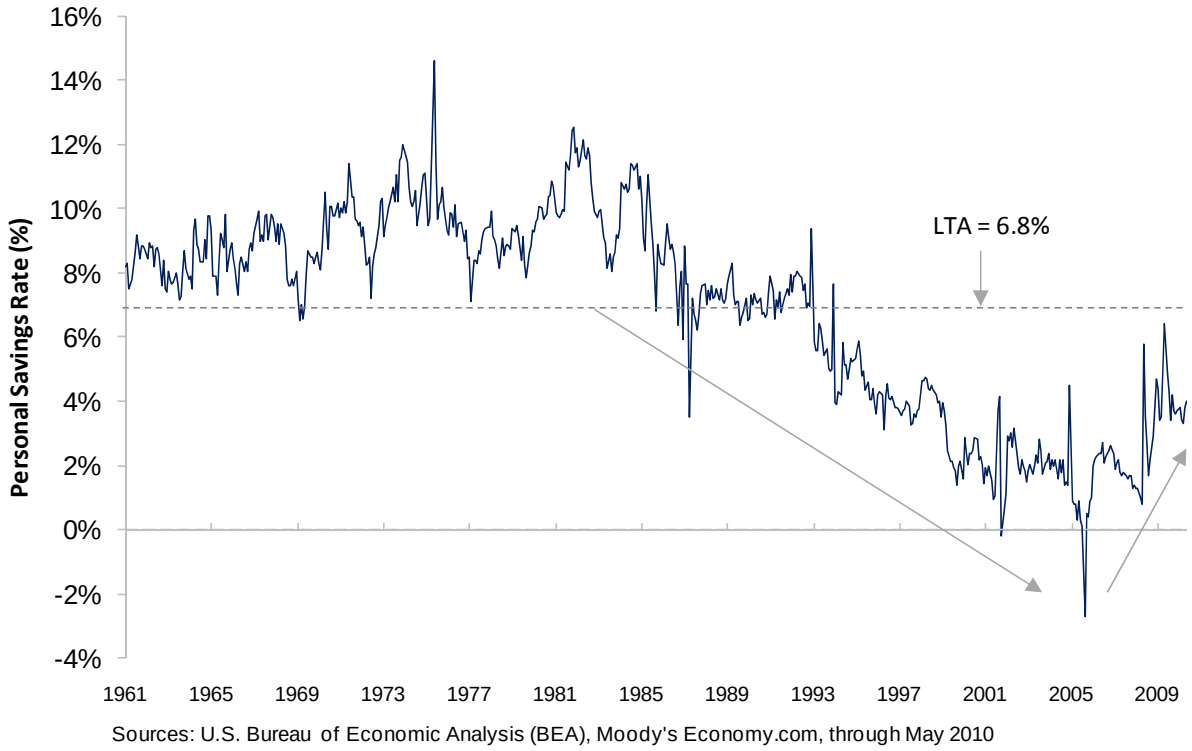


Figure 6: U.S. Average Personal Savings Rate (% of Disposable Income)

A similar trend reversal has happened with consumer credit. The advent of the credit card has helped the U.S. population rack up unprecedented amounts of revolving debt. Revolving debt includes about 98% credit card debt according to the Federal Reserve Board. In Figure 7, the amount of revolving debt is shown historically on an inflation adjusted, per capita basis. The amount of consumer revolving debt peaked at $974 billion but is now down to $800 billion. Twenty years ago this total was only $337 billion in 2010 dollars, indicating a more than 200% increase in real terms.

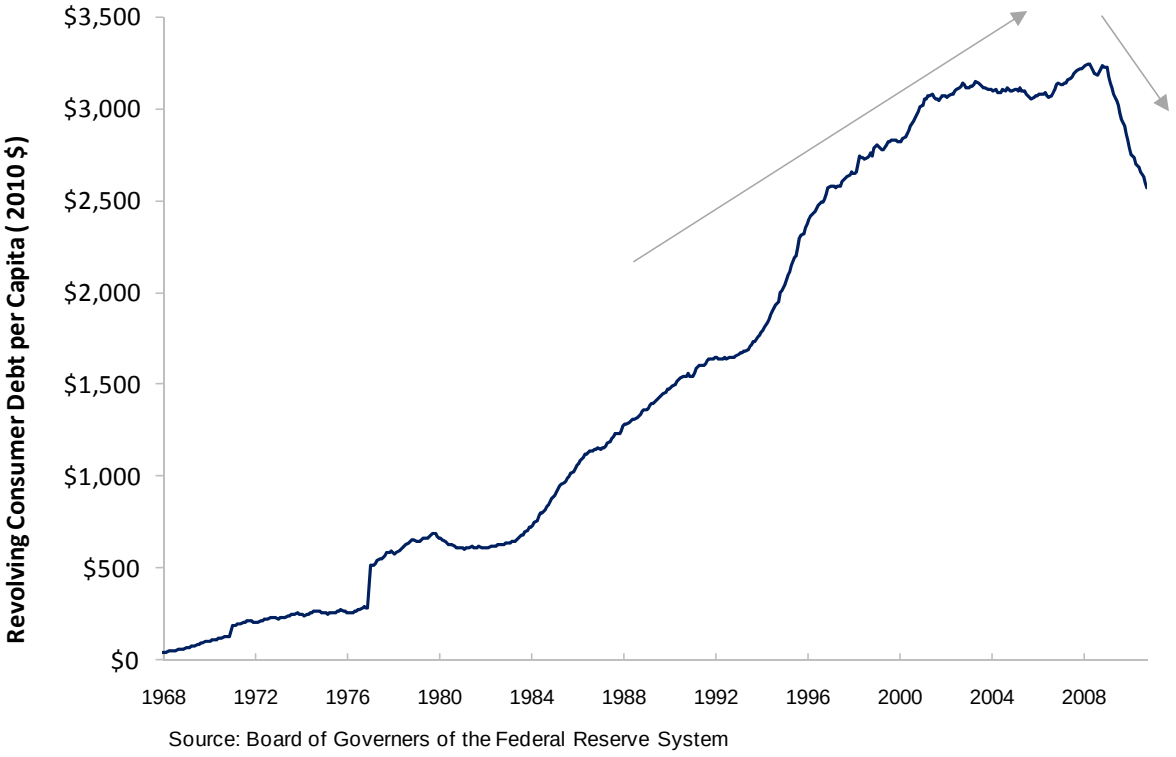


Figure 7: Revolving Consumer Debt per Capita in 2010 Dollars

For some context on what this could mean for retailers, let us consider the impact of debt burdens on discretionary incomes. In 2007, an estimated 176 million people had an average of $5500 in credit card debt with an average APR of 14%, which would take approximately 23 years to pay off with minimum monthly payments.[4] To bring this down to a more reasonable 5 year payoff, the average monthly payment would have to increase by 16%. On a broad level, this suggests that national retailers of discretionary goods are going to have a smaller pie to fight

[4] Data sources: U.S. Bureau of Census Table 1151, Federal Reserve Board, Creditcards.com, Nov. 2010

over in the short to mid-term. This implies that those retailers' storing strategies will be more conservative, focusing only on locations with unmet demand in high income areas.

This relates to another long-term national trend – income stratification. As implied by Figure 8, an increasingly smaller number of households have increasingly higher incomes. Higher income households will typically have disproportionately higher discretionary income for retail expenditures, since taxes and fixed costs may not vary as much as gross incomes. Going forward, retailers will have to find ways to sell more effectively to a shrinking population of high income families, or they will need to find higher densities of underserved low and middle income families. Another part of this is that some ethnic groups have significantly faster growing household incomes than others. In the 2000's, Hispanic and other groups classified as "nonwhite" had the fastest growing incomes in the U.S. (Bucks, et al. 2009).

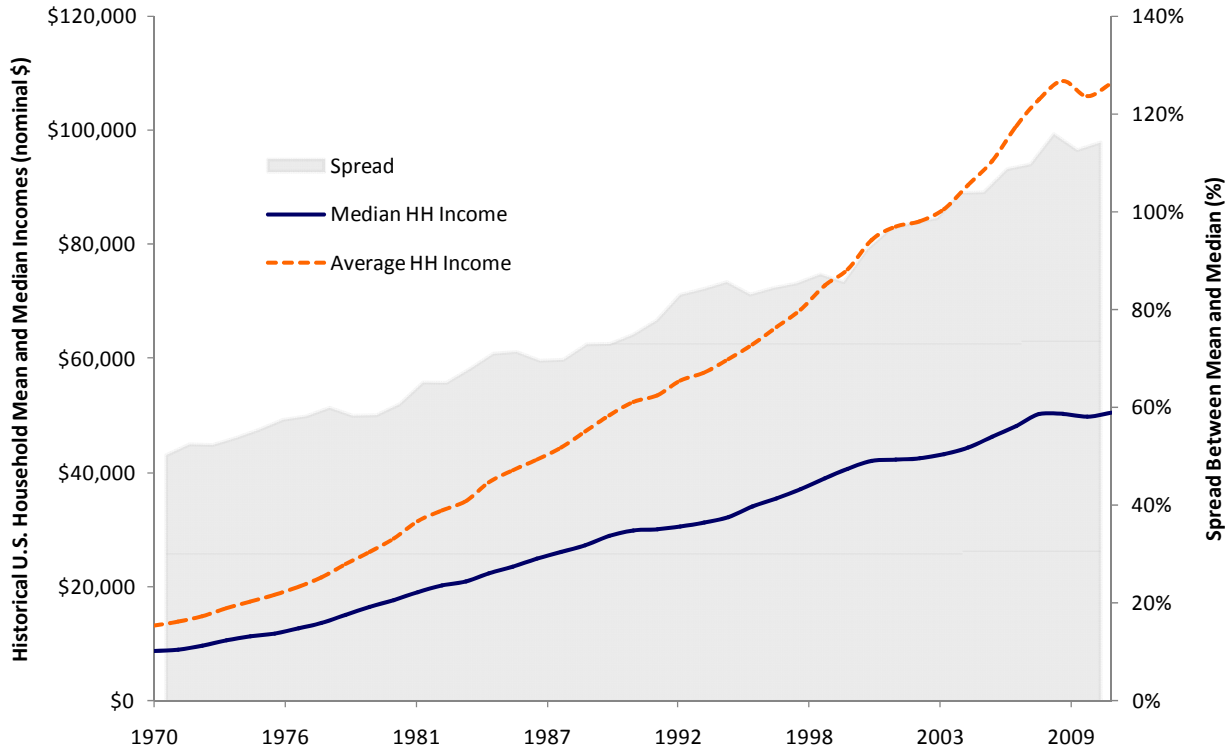


Figure 8: U.S. Household Mean and Median Incomes, 1970-2010

3.1.2 Long-term Retail Business Trends

Due to a convergence of many factors, retailing has become a sharply more competitive business environment in the last 10-15 years. This resulted in a period of a tighter margins, increased bankruptcies and consolidation.

According to an analysis of 225 publicly held U.S. retailers (Kurt Salmon Assoc 2008), the last decade has been a period of underwhelming performance by the majority of the industry. Of the 225 companies studied, 60 percent produced less than 10 percent increase in annual revenues between 1998 and 2007. Of those, 15 percent exhibited declining yearly profits. In 2007, just before the recession, 27 percent of the 225 retailers reported falling profits. In that study, the surveyed retailers themselves largely attributed poor performance numbers on an overall lack of product and shopping experience differentiation in the retail industry.

The most recent and notorious retail bankruptcies (Circuit City, Linens 'n Things and Mervyns) occurred recently in 2008. Many feel other large retailers such as Blockbuster and Jamba Juice are soon to follow. These closures are primarily associated with the recession and the brutal toll it has taken on the retail industry. However, the increased rate of retailer bankruptcies in the U.S. began a number of years before the recession.

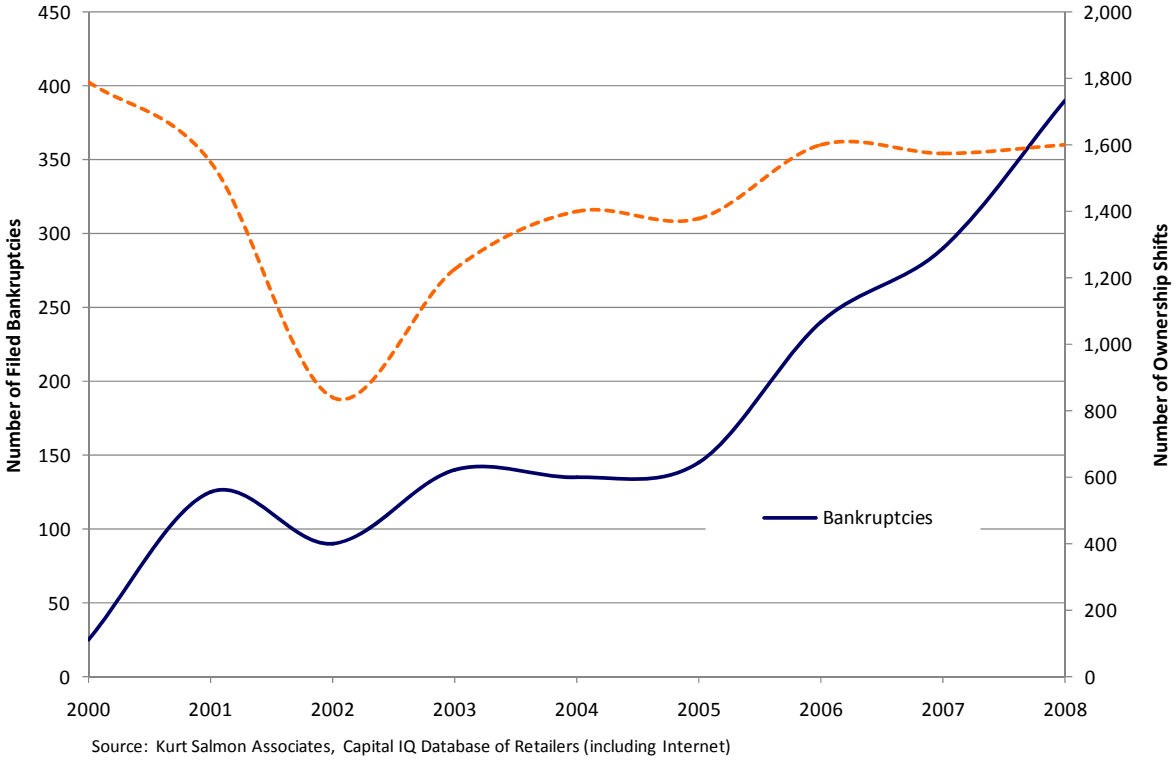


Figure 9: Retail Bankruptcies, Mergers and Acquisitions, 2000-2008

Although many of these bankruptcies and mergers represent small firms swallowed by larger firms, many large retailers were also experiencing difficulties as early as the late 1990's as seen in Figure 10. Over $44 billion in assets were filed under Chapter 11 bankruptcy protection in the 2000's before the 2008 recession took hold. This is over four times the amount that was filed in 2008 and 2009.

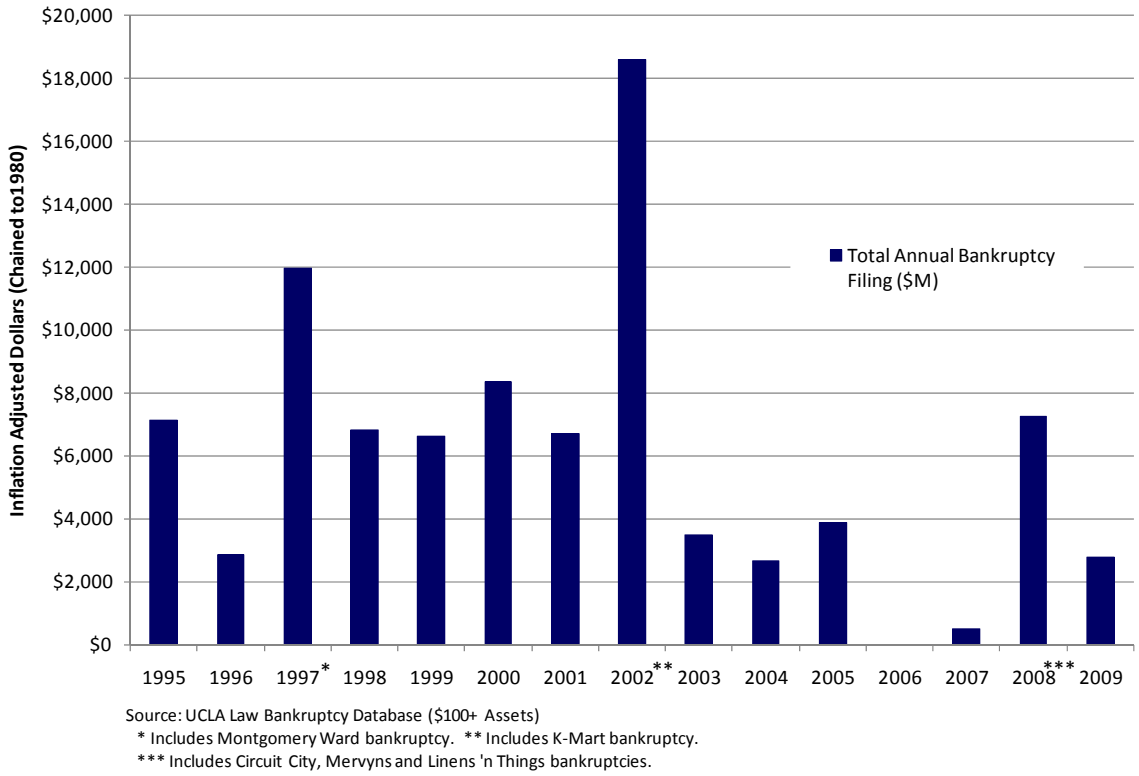


Figure 10: Retail Bankruptcies by Dollar Amount ($100M+)

A large part of what was happening with the bankruptcies and mergers was consolidation and increased specialization of the industry's largest and best capitalized firms. These retail firms were dubbed "category killers". The moniker refers to these firms' focused specialization in a particular retail category and their substantial competitive advantage in pricing and scale over smaller retailers in the same category. The rise of these retailers has corresponded to store closings increasingly outpacing store openings in the last 10 years, as seen in Figure 11.

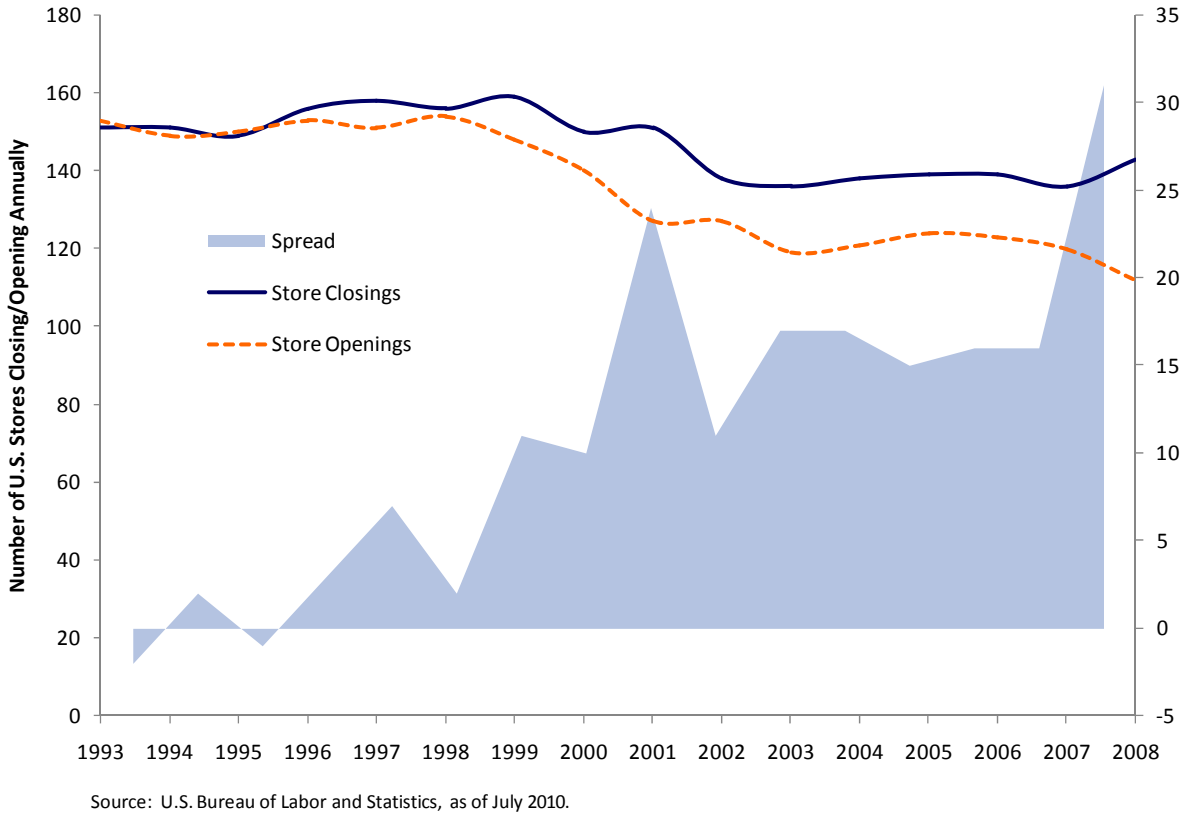


Figure 11: U.S. Store Openings and Closings, 1993-2008

Essentially what this means is that there is more homogeneity in the retail industry. While the environment is more competitive, it is also dominated by a few retailers selling similar products. Tenants that specialize effectively like the category killers represent viable tenants that are more likely to be expanding. While this specialization allows for some competitive advantage, it also narrows buying options for consumer. That presents opportunity for retail tenants that offer unique products which are differentiated from the large specialty retailers.

3.2 Shopping Center Trends

Per the CoStar Group, the current national stock of retail space is 49 square feet per capita and the stock of shopping center space is 23.3 square feet per capita. So, is the nation over-retailed? This is an often-asked, loaded question that is too abstract to have much meaning. The answer is that sometimes it is and sometimes it isn't. The stock of retail buildings and

stores is regulated by the drivers in the space market. Put simply, development will proceed or halt depending on whether market rents will sufficiently cover costs to build, where rents are determined by demand for space. In this section, we will ask it another way – has the long-term development of a particular type of retail real estate outpaced the historical demand? Since we have seen already that income is a key component of demand for retail, we will take a simple approach of observing income per capita in contrast with sales and square footage of retail per capita in the nation. The following Figure 12 exhibits an indexed value of these data with a base value of 100 in 1970. We can examine the historical rates of increase of each variable.

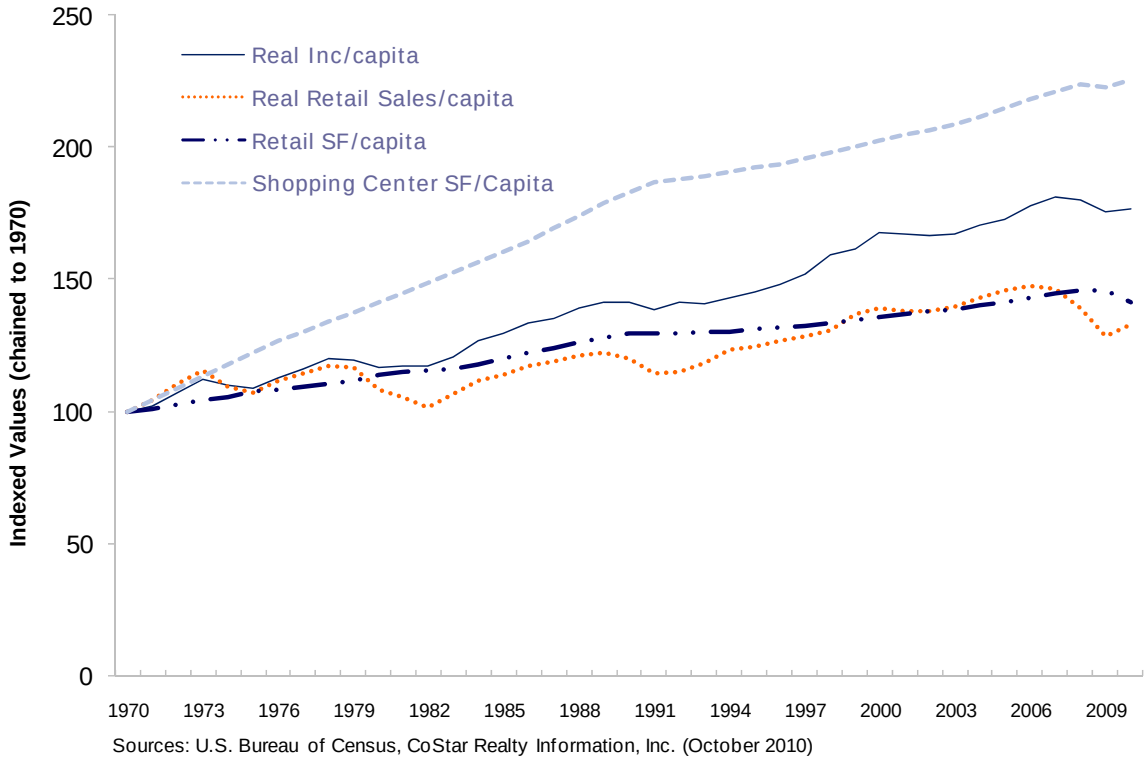


Figure 12: Index of Income, Sales and Retail Square Footage per Capita (1970 = 100)

Expectedly, the national stock of retail space moves roughly in sync with retail sales per capita. It is also unsurprising that real incomes per capita have increased at a slightly greater annual pace than stock and sales. In the last 20 years, total retail sales and square footage per capita have increased 10.7% and 9.1%, respectively, whereas income per capita increased 24.9%. This indicates that overall retail space has not increased disproportionately to demand. However, shopping centers had a boom in the 1970's and 1980's and have a rate of increase in the last 20

years of 23.3%. This is a much higher increase than overall retail stock, so next we take a deeper look at the individual categories of shopping centers. Shopping center classifications as defined by the International Council of Shopping Centers (ICSC) are included in Figure 31 in Appendix D.

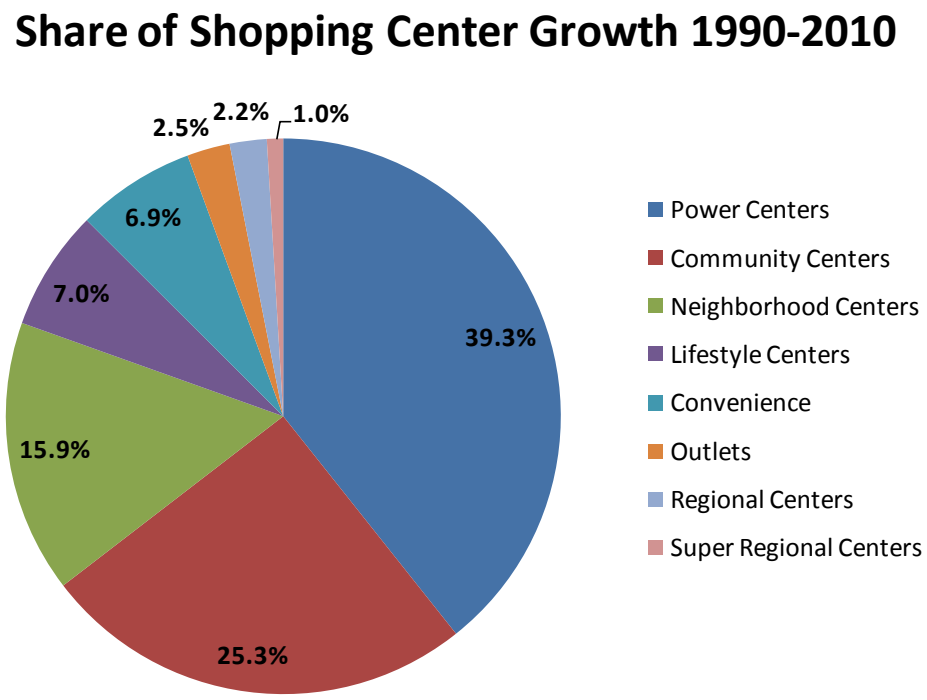


Figure 13: Share of Shopping Center Growth by Center Category, 1990-2010

Even though power centers comprise only 12% of overall shopping centers, they have accounted for a disproportionate 40% of the growth in shopping centers in the last 20 years. This means that power centers have had exponentially greater growth than malls, outlets, strip centers, etc. Therefore, we look again at square footage of retail in the context of historical income and sales, this time using the stock of the top three fastest growing shopping centers: power centers, community centers and neighborhood centers.

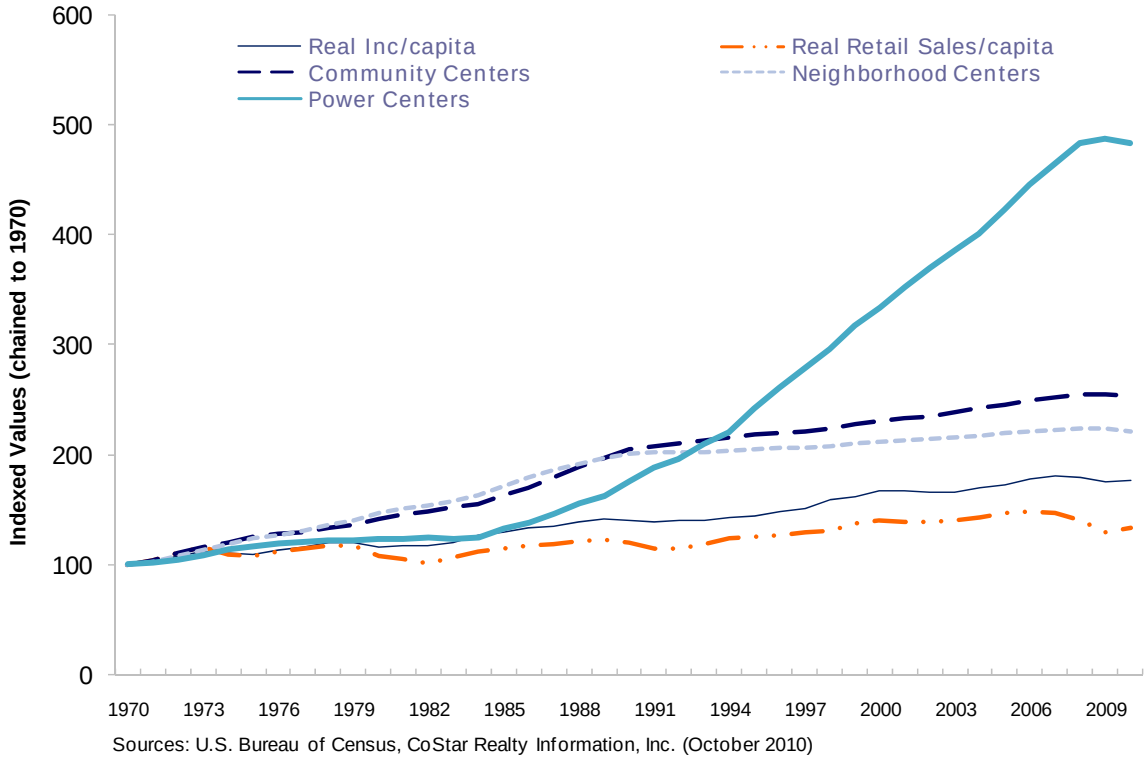


Figure 14: Index of Income, Sales and Retail Square Footage by Center Type

Clearly power centers stand out in the chart in Figure 14. Exhibiting a 176% increase in the last 20 years, they have vastly outpaced real incomes and increased their market share at the expense of other center types. They are a part of the consolidation that has occurred in the industry that was described in the previous section. Power centers are anchor dominated by category killer stores such as Lowes, IKEA, Target, Best Buy, et al. They have a typical range of 250,000 to 600,000 square feet GLA, 25 to 80 acres of site and a trade area of 5-10 miles.

This implies is that the overall market may be saturated with power centers. A number of these centers were likely developed on a speculative basis and will underperform. Future development of such centers or expansion of retailers into these centers will need to be done carefully, in strong markets. This also means that future growth opportunities may exist in higher density markets where power center formats have physical barriers to entry.

3.3 The Urban Shift in Retail

3.3.1 Brief Background of Contemporary Urbanization

An old adage in the retail business is "retail follows rooftops," meaning that people primarily shop where they live. Recently, somewhat of a conventional wisdom has developed that suburbanization has reversed and people are moving back to cities. However, this is mostly anecdotal, and there are arguments and evidence both for urbanization and continued decentralization occurring in the future.

The argument for increased urbanization is essentially that many of the factors that drove suburbanization (poor schools, services and utilities, higher taxes, congestion and crime and "white flight") have been resolved through urban revitalization, and retiring "empty nesters" and career-minded Echo Boomers will choose to live in cities to take advantage of these improvements. There are many examples of city planning boards abandoning traditional post-World War II Euclidian zoning in favor of higher density, mixed-use urban revival. To encourage economic redevelopment of some blighted downtown districts or functionally obsolescent buildings, municipalities have offered incentives to private developers through public-private partnerships, tax credits, abatements, utility discounts, or public financing.

Most architecture and planning academic institutions train new planners in the design of integrated, mixed-use communities. The vast majority of these schools teach some form of "New Urbanism", a concept in planning that espouses effective combination of density, open space, multiple transportation options and walkability among a mix of real estate uses. Real estate trade organizations, especially the Urban Land Institute, have produced countless publications and studies on the positive value of these developments.

Of theBaby Boomer generation, 17 million, or 25 percent of the cohort will be senior citizens within the next decade. There are indications these Boomers will greater desire communities that are walkable or have access to public transit. Retail consulting firms have predicted that they will seek smaller, easier shopping formats that are closer to home (DelWebb 2010). Walkability has become important enough that, as of July 2007, the popular online real estate database, Zillow, includes "Walk Scores" on their listings that give a home or property a

numerical grade from 0-100 on the walkability of the property to retail and transit infrastructure and other services.

Furthermore, increased costs of transportation and time-value of money have made long commutes from the suburbs undesirable. There are some indications that this is resulting in decreased preference towards transportation via automobile. In Appendix E, Figure 32it is clear that the amount of automobile use is decelerating over the last 20-30 years. Also, automobile sales have significantly decreased as a share of total retail sales over the last decade (Figure 33).

However, despite this convincing case for urbanization, it has not yet come to bear, and there is no statistical evidence that this is happening on a widespread basis. In Figure 15 below, some data is presented for density changes in U.S. cities. Central city densification has actually slowed in the U.S. in the 2000's. The large density increases in 1990-2000 can at least partially be explained by the fact that that decade underwent the largest population growth in U.S. history (Hobbs and Stoops, 2002, p.12).

U.S. City Density Changes, 500k+ Populations

Top 5	1990-2000	Top 5	2000-2005
Las Vegas	85.2%	Las Vegas	13.6%
Phoenix	33.6%	Phoenix	10.6%
Austin	32.7%	San Antonio	9.1%
Charlotte	31.3%	Charlotte	8.7%
Denver	18.4%	Jacksonville	6.4%
Bottom 5	**1990-2000**	**Bottom 5**	**2000-2005**
Philadelphia	-4.3%	Philadelphia	-3.6%
Milwaukee	-5.0%	Washington D.C.	-3.8%
Washington	-5.7%	San Francisco	-4.8%
Detroit	-7.5%	Boston	-5.1%
Baltimore	-11.5%	Detroit	-6.8%
Overall Average	**1990-2000**	**Overall Average**	**2000-2005**
	12.5%		2.0%

Source: U.S. Bureau of Census - City Data Book

Figure 15: U.S. City Density Changes for 500k+ Population Cities, 1990-2005

Seeking to answer if there is a relatively greater trend for central city densification, one research study shows that for 73 major MSAs, the majority of MSAs outperformed their central

cities in population growth from 2000-2004 (Nguyen 2006)[5]. Another study by the U.S. Department of Agriculture(Cromartie 2009) suggests that the U.S. population is likely to become more rural based on historical migration behavior from the 1990's, with controls for various demographic and geographic characteristics. The justification is that people will seek the housing affordability of these areas as urban markets become more expensive.

Another argument for decentralization is the onset of communications technology in business. The idea is that e-mail and video conferencing eliminates the need of informational and physical proximity afforded by central business districts (CBDs). This is supported anecdotally by the fact that many major companies now institute part time work-from-home programs.

The truth of urbanization most likely lies somewhere in between. Cities will have a combination of densification and border expansion. The extent to which one will outpace the other will depend on the metro, and both patterns of growth will present opportunities.

3.3.2 Urban Strategies in Retail

At a shareholders conference in 2008, the Walmart head of U.S. Development, Eduardo Castro-Wright said of their urban target markets, "If we had the same market share in those 15 opportunity markets as in the rest of the U.S., it would represent a larger opportunity than exists in India and Russia combined. It is a very significant opportunity for us and one you will see us invest in more in the future."

Essentially, the degree to which urbanization is occurring in a widespread fashion in the United States is not particularly paramount to retail real estate owners. What is more important is that retailers are clearly recognizing penetration into urban markets as a second growth opportunity. This is a *volte face* of previous strategy now that suburban markets have become saturated with power centers and the like. Traditionally, economics have dictated that the cost to enter these markets outweigh the revenues. One of the primary ways in which typically large format retailers are offsetting those costs is developing and implementing small, flexible prototypes.

[5] MSAs are on average four times the size of their central city per the U.S. Census City Data Book.

Prototype "flexibility" has been an industry buzzword for at least 10 years now. It was implemented for streamlining store navigation and inventories to make "high velocity" efficient formats. However, this flexibility was generally implemented on a small scale. By and large, prototypes were still used as guidelines for development of a new store. In the past, the proven prototypes were strictly adhered to by major retailers. Availability of a space that suited the requirements of the prototype would be a major part of a retailers storing strategy, i.e. where and when new store expansion would occur. In other words, maintaining the prototype was paramount. It was important for shopping center owners and developers to understand prototypes of target tenants to match their space properly.

However, as the amount of available space for large format retailers has dwindled, particularly in the strongest suburban markets, the preference for modularity has been replaced with flexibility. Now, in a real way, retailers are beginning to look for the location first and decipher how to adapt the store to the given space, whether it is an irregular shape or multiple levels. This is known in the industry as "right-sizing". The following table in Figure 16presents some anecdotal examples of contemporary prototype flexibility that retailers are using to enter new markets.

Current Examples of Prototype Flexibility in Practice

Retail Firm	Standard SF	Flexible SF	Description
Best Buy	45,000	20-30,000	Before 1999 the only format was 45,000 s.f. for large markets. In 2005 they successfully implemented 30,000 s.f. prototypes, some multi-level, in infill locations. Very recently they are pursuing finer-grained locations in 100,000 population markets with 20,000 s.f. formats.
Staples	22,000	5-14,500	Standard format was approximately 22,000 s.f. In 2003, they implemented a 14,500 s.f. model to address smaller market or urban opportunities. Recently they have also introduced standalone Copy/Print stores that are ~5,000 s.f.
Walmart	200,000	80-140,000	The standard supercenter is approximately 200,000 s.f. Recently prototypes have been adjusted to suit the urban infill opportunity. In 2004, a 99,000 s.f. store was opened in Tampa, FL and recently a 140,000 s.f. supercenter was opened in the MSA of Chicago. Infill stores there may be 80,000 s.f. or less.
Target	150-175,000	60-80,000	One of the pioneers of the compact, multi-level format department store, the standard prototype of their 150-175,000 s.f. big-box has given way to 60-80,000 s.f. urban stores.
OfficeMax	30-40,000	14-18,000	In 2007 the #3 office supplier in the U.S. began testing 18,000 and 14,000 s.f. "Advantage" stores in Minnesota in lieu of a more traditional 30-40,000 s.f. big-box format in reponse to customer preference surveys.
Walgreen Co.	15,000	7,000	In 2008 started some 7,000 s.f. stores, half the size of their standard 15,000 s.f. format. C.E.O. Jeffry Rein began mission to penetrate urban areas such as Los Angeles and New York. This effective made them the first drug chain to operate in all 48 continental United States.
Kohl's Dept Store	133,000	68-88,000	Instead of only a big box format, the retailer has developed three prototypes, which includes medium and large stores of 88,000 and 133,000 s.f., and a small, versatile store of 68,000 s.f.
DSW Inc.	25-40,000	15-19,000	SVP of real estate, Rich Golden is looking for opportunities to expand into new markets by compressing prototypes. The standard store sizes are25,000 s.f. and 40,000 s.f. New sizes in 2007 are 15,000 to 19,000 s.f.
Home Depot	105,000	26-45,000	The new urban format, now implemented in Manhattan, is 26-45,000 s.f., more than half of the typical suburban shopping center size of 105,000 s.f.
Fedex Kinko's	6,000	1,800	The small standard store of 6,000 s.f. has an even finer grained counterpart of 1,800 s.f. developed for expanding market opportunities.
SUBWAY	-	300-2,000	One of the most nimble companies in retail, they have 33,000 stores in 90 countries. President of SUBWAY Real Estate Corp., John Devine says that the key to success is their varying footprint, with the ability to take up anywhere between 300 s.f. and 2000 s.f. for a single store.
Trader Joe's	47,000	6-10,000	While the median grocery store size in the U.S. was 47,000 s.f. in 2008, Trader Joe's has a prototype that allows a footprint between 6-10,000 s.f. which is better suited for penetrating densely populated markets. Their strategy has produced sales of ~$2000/s.f., almost 4x the national average.
Whole Foods	-	10-80,000	The footprints for Whole Foods can vary from 10,000 to 80,000 s.f. and have multiple levels.
Old Navy	25,000	18,000	Similar to the mid-size boxes such as Staples and OfficeMax, Old Navy has come back off of their 25,000 s.f. prototype and looked to 18,000 s.f. formats for new stores.
BJ's Wholesale Club	120,000	64-85,000	The wholesaler's store template has been 120,000 s.f. until they recently began looking to occupy space 85,000 s.f. floorplates.
Gap Inc.	18,000	8-12,000	C.F.O. Sabrina Simmons stated that some of their typical 18,000 s.f. malls stores could easily run just as productively at 8-12,000 s.f. This is a part of C.E.O. Glenn Murphy's plan to cut Gap's total stock of store space between 10 percent and 15 percent.
Ann Taylor	~15,000	4,000	The women's retailer is testing two new stores that are 4,000 s.f., a third the average prototype size, in order to sell specialized lines in specific markets.

Sources: Various news articles and trade journals listed in bilbiography.

Figure 16: Examples of Flexible Prototypes

Another benefit to the small prototypes is that they are generally more efficient and better received by customers. Many retailers are finding they can produce the same sales volume in a quarter to a third less store space (Holmes 2010). As noted in Figure 16, BJ's Wholesale Club presents an example of this. They feel they can achieve the same productivity in their relatively new ~65,000 square foot store as in their more standard ~85,000 square foot "small" prototype. There is also a great deal of retailers that claim customers find smaller stores preferable. The idea is that people are valuing their time increasingly more, and therefore customers appreciate shorter, more efficient shopping trips.

There are challenges to penetrating urban markets besides the costs and the need to adjust floorplates. There are other physical issues like in congested urban environments there may often be increased supply chain complications and costs. However, arguably the biggest change is defining sales potential in a market. In a dense urban market, a retailer cannot simply use readily available car traffic counts as a measure of visibility and capture. Walking patterns and public transit become much more important, and the relationship of these transit modes and store visibility are much more nuanced than for road and highways. One street block could be dead, while another is bustling because it is between a major train stop and a cluster of condominiums. There are also cultural boundaries that effect shopping patterns. Being at the intersection of two such perceived boundaries may or may not limit a retailer to only one of those markets. There is not much research on shopping behaviors across perceived cultural boundaries in urban neighborhoods. The bottom line is that ethnic and income sorting happens on a fine-grained, idiosyncratic level. This is something that retailers will have to study on an *ad hoc* basis when determining potential income capture in urban markets.

In summary, while retailers may be taking less real estate per store, it allows them new potential markets for expansion. This offers opportunities for real estate owners in underserviced markets with higher costs of entry or for owners of irregular spaces in strong demographic markets.

3.4 E-commerce and Multi-channel Retailing

The introduction of the Internet, e-commerce and other various uses for online platforms has undeniably caused a revolution in the retail world. Consumers' comfort and savvy with the

Internet has increased dramatically over the last decade. Per Figure 17, percentage of people identifying themselves as Internet users went from roughly half of the U.S. population in 2000 to approximately 80% in 2008. It is notable that right on the cusp of this phenomenon is the large population wave of Echo Boomers. These were the first young people to have access to computers, Internet and mobile communications technology throughout high school, which clearly has significant impact on their shopping behavior.

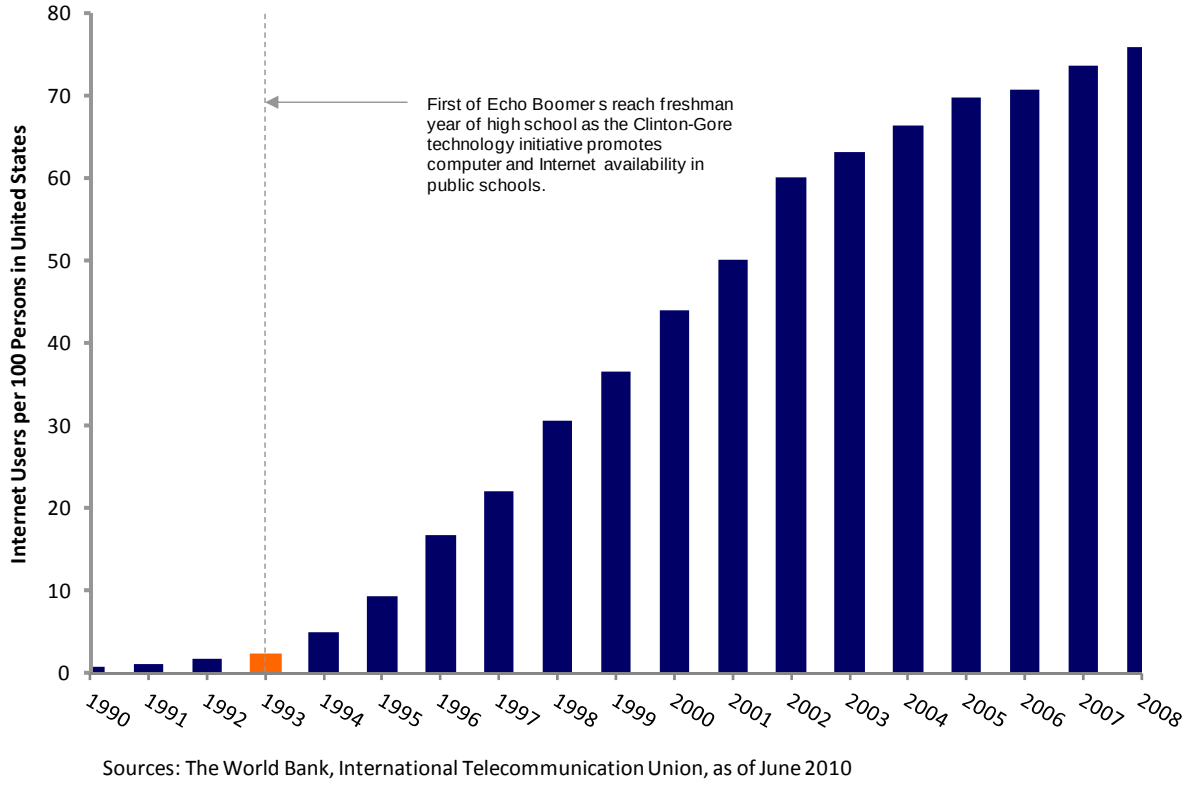


Figure 17: Historical Percent of Internet Users in the U.S.

Perhaps even more impactful than the number of people described as "Internet users" is the introduction of high speed access to the Internet in homes and offices. Broadband, DSL and other forms of high speed service has allowed the Internet to become a viable retailing channel[6].

[6]"Multi-channel" shopping as discussed in this paper refers to retailing in a manner that offers multiple means for a consumer to obtain a particular product. Traditional avenues before the 1990's included physical stores, catalogues, direct television ordering and direct selling. The additional channel of Internet shopping is generally the innovation

Below is a chart of the percent of households that use broadband at home in the 10 largest U.S. MSAs in both 2002 and 2007. This illustrates a very recent sea change in the amount of people that have the means to shop effectively online at home. They also have a virtually instant and unlimited source of product and pricing information and exponentially greater buying options.

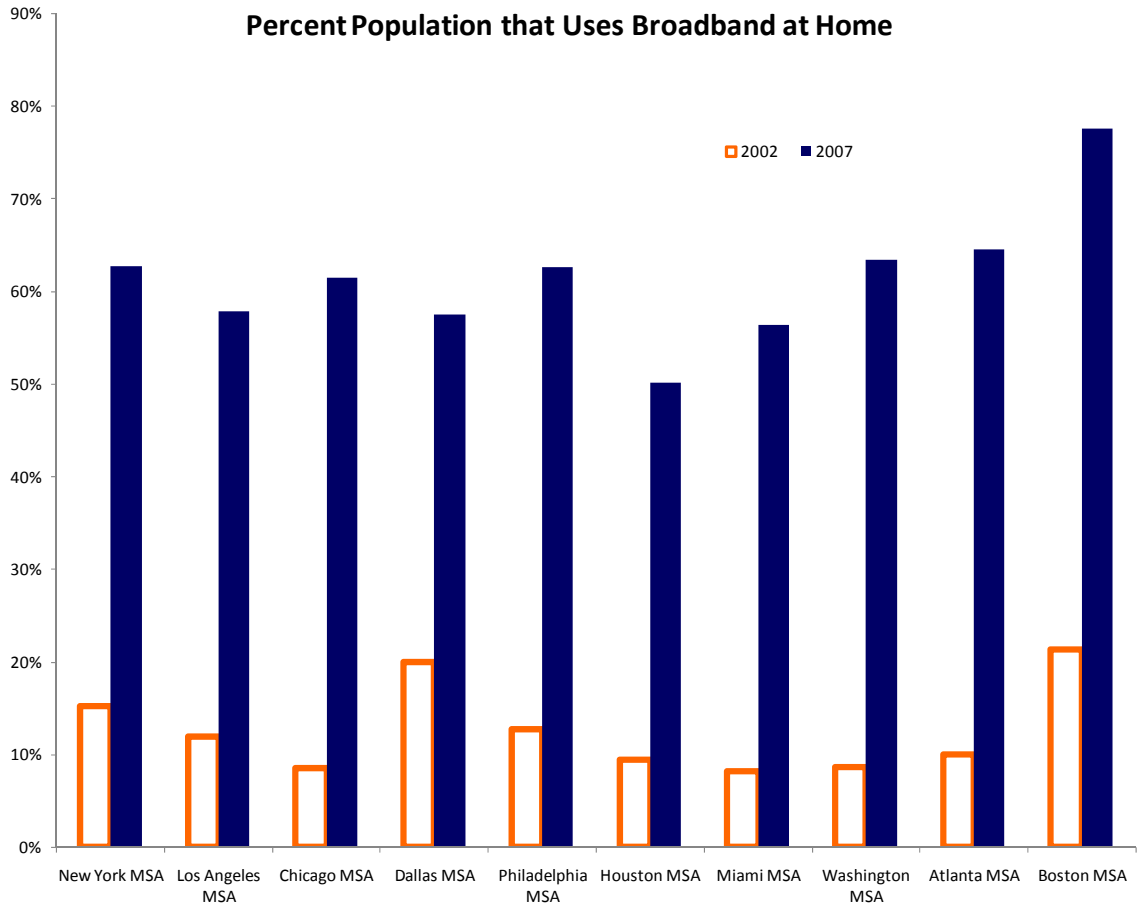


Figure 18: Percent Population in Top Ten MSAs that Use Broadband at Home

Given this growth of broadband access, e-commerce has naturally taken a greater share of overall retail. E-commerce sales have increased every year since the beginning of the decade with an average growth of 20% per year since 2001, representing a $143 billion industry in 2009. Indeed the success of online retailers such as Amazon.com and online auction houses such as Ebay.com are well known and impressive. However, the share of the total retail industry is only

---

of "multi-channel" retailing referred to in this paper. There are also many "sub-channels" of Internet shopping such as websites, Internet kiosks, mobile devices, social networking and online auctions.

4.2% as of Q3 2010 per the U.S. Bureau of Census. In Figure 19 below, this overall historical share is shown. Also presented are the shares of the four biggest e-commerce retail subsectors and their share of their respective categories.

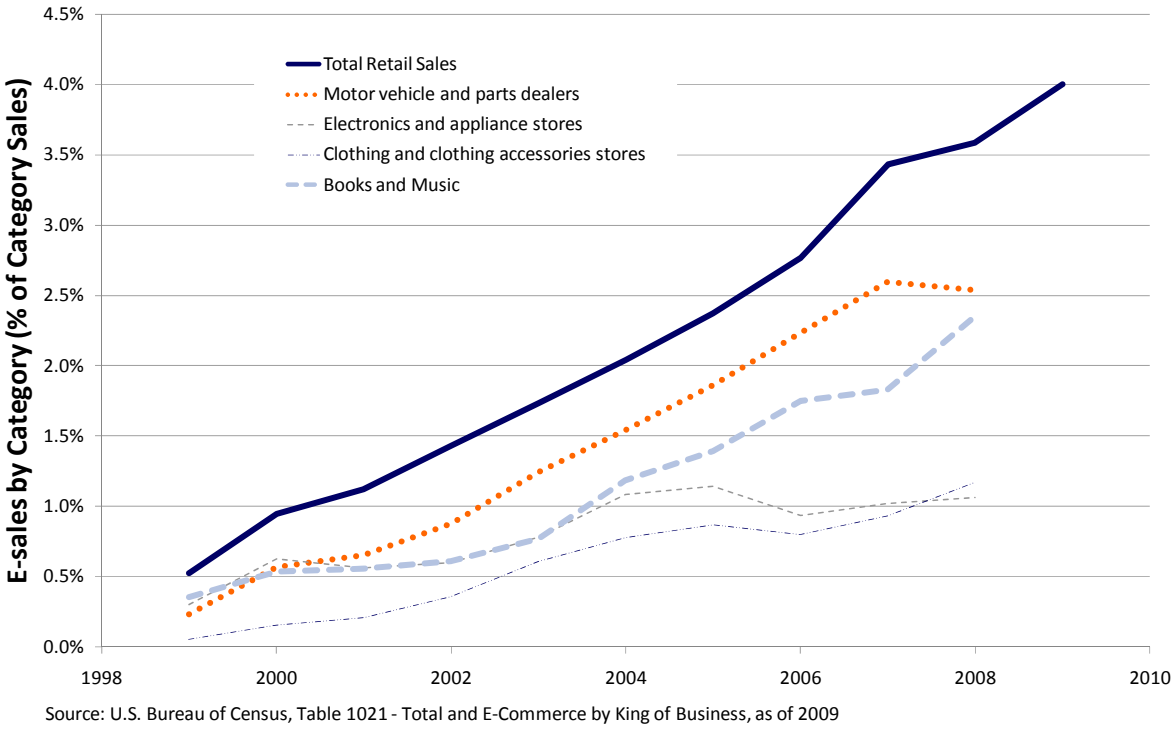


Figure 19: E-commerce Total and Categorical Share of Retail Sales

The affect of e-commerce on retailers has a great deal to do with the category of retail. The discretionary and fungible goods have had the most cannibalism from e-commerce as can be seen in Figure 19. Purchases such as books, music, clothing and electronics appear susceptible to competition from online retailers.

The overall effect this new and powerful shopping channel has had on bricks-and-mortar retailers is vast. First of all, it provides shoppers with an additional buying option. Retail centers must not only compete with neighboring centers but also, to some extent, Internet retailers. While competition with the Internet may not yet be overwhelming or direct, retail center owners must focus on shopping as an experience to differentiate from online shopping. For example, one research study examines determinants of why teenagers choose the Internet or malls as shopping channels (Lueg 2006). The findings show that interactivity was a key determinant of

preference between the two channels. They suggest offering prizes or other incentives in addition to creating a more social environment with entertainment and restaurant uses.

Although online retailing poses additional competition, the Internet has largely proven to be a complimentary tool for savvy retailers, and a very large body of research is accumulating regarding the effects of retailers incorporating online strategies. There are many difficulties with executing multi-channel retailing[7]. However, many large retailers are successfully incorporating their own websites in multi-channel strategies that effectively increase their overall profitability better than platforms of "pure play" online retailers (Petina, et al. 2009) and other retailers that do not sell on multiple-channels (Spralls, et al. 2010).

While almost every major retailer has an online presence that is growing rapidly (Kilcourse 2008), Staples is probably the best example of this. They have become the number two online retailer in the U.S. by sales revenue, second to Amazon.com. They have done this by tightly integrating their online store with their physical stores and delivery business. This trend of national retailers like Staples launching online platforms occurs across all retail categories. Even grocers like Stop & Shop, whose product is non-discretionary and perishable, have a website called "Peapod" for food purchase and delivery. Even luxury retailers, a stalwart bricks-and-mortar category, are entering the fray. Prada, who didn't have a website until 2007, expects that by 2015, 40% of its revenues in the U.S. will come from online sales. Meanwhile, CEOof Oscar de la Renta, Alex Bolen told the Economist magazine in July 2010 that, "We could not have been more wrong in our expectations of the Internet."

Besides sales, there are a number of ways retailers have incorporated e-commerce into their business model. Some retailers like Walmart have implemented a "spoke and hub" system where customers can order online and pickup their purchase in the closest store. Another creative incorporation that retailers such as Kohl's and Walmart are implementing is Internet kiosks in stores that customers can use to browse for products or order out-of-stock items. Other retailers such as Apple use their online platforms to create stronger brand identity and create an online community that follows and discusses their products. Online marketing and e-mail lists

[7] This includes but is not limited to cannibalization across channels, congruency of marketing and coupons and effective coordination of the supply chain (Ganesan, et al. 2009).

give retailers the ability to more effectively advertise and inform their customers. Finally from online sales and website trackers known as cookies, retailers can garner much more detailed "cross-channel" information about who their customers are and what they want, and that translates into better product design, pricing and inventory management in physical stores.

The bottom line is that development of multi-channel platform is very important and beneficial to both retailers and consumers. It provides better brand identity, more product awareness, better shopping experiences, enhanced customer loyalty, better customer profiling, more understanding of consumer preferences, streamlined distribution systems, more efficient inventory management and increased sales. According research studies, customers that shop across multiple channels are more profitable, and maintaining multiple channels of transaction with a customer is considered essential for sustained growth in the current competitive retail environment (Venkatesan et al. 2007; Wind and Mahajan 2002).

While the Internet is having a sweeping effect on retailing, the immediate impact to storing strategies is more subtle. It allows retailers to have smaller inventories and more efficient stores, but this does not directly equate to smaller floorplates and less real estate. It is more of an instrument to allow retailers to adapt smaller stores, rather than a cause of smaller stores.

Furthermore, the pervasiveness of online retailing does not necessarily translate into a net decrease in brick-and-mortar stores. There are many examples of online retailers establishing brick-and-mortar stores because the shopping experience and customer support is valuable to customers. Companies such L.L. Bean, Dell and Bose have successfully done this. Also, there are many advantages for physical stores such as social experience, immediate gratification and a strong preference for customers to see and feel items before they make purchases (Konus, et al. 2008). Further, there is evidence that many consumers comparison shop online and prefer to make the actual purchase in the store (Johnson 2004), (Tedeschi 2007). Part of this is that consumers feel safer buying online if they know they can return their products to the brick-and-mortar stores, which is an option now provided by most national retailers. Another part is that product information on the Internet increases customers comfort in their decisions and the perceived risk they take in making their purchase (Laroche, et al. 2005).

In summary, the consequences to real estate are limited in the short to mid-term while the long term is unclear. So far, it presents more opportunities than drawbacks. Multi-channel retailing has translated into more effective retail business models and will be a vital part of retail strategy going forward. There may be more tenants available that have built a strong online presence to successfully supplement their stores. It is highly likely that anchor and credit tenants in the future will have strong multi-channel strategies. It also means that tenants with a successful online channel may be nimble enough to take small or irregular spaces in centers or urban formats.

3.5 Industry Interviews

The remainder of this chapter is a conglomeration of industry feedback that was obtained in the form of short interviews. The questions for the interviews are provided in Appendix B. There are two interview templates: one for retailers and one for real estate practitioners. Although the specific questions are slightly different, the spirit of the interviews is to capture opinions and experience regarding the broad retail industry trends noted in the first part of this chapter. The interviews are four (4) questions covering the following topics: 1 - future long-term growth expectations, 2 - opportunities in urban versus suburban markets, 3 -changes in physical retail stores and centers and 4 - the effects of e-commerce and multi-channel retailing on bricks-and-mortar storing strategy.

Those interviewed for this thesis represent a wide range of participants in the business of brick-and-mortar retailing. Some of the interviewees are real estate strategists within retail companies and some are owners, operators, developers and designers of retail sector real estate. A list of participants can be seen in Figure 20. The intent was to gain an understanding whether some perceived transformations in retailing are significant over a cross-section of perspectives.

List of Interview Participants

Interviewee	Firm Affiliation(s)	Position
Cannuscio, Aubrey	Linear Retail	Parter, SVP Acquisitions
Capichano, Donna	Kohl's Corporation	VP of Real Estate
DeMartino, Russell	Vornado Realty Trust	VP of Development
Fleming, David	W/S Development	Director of Corp Marketing
Hallman, Clay	Simon Property Group	Director of Research
Hanley, Sean	PetSmart	VP of Real Estate
Mahoney, Tim	Stop & Shop Supermarket	VP of Real Estate
Manfredi, David	Elkus Manfredi Architects	Principal
Mosle, Robin	Samuels & Associates	EVP of Leasing
Mulleady, John	BJ's Wholesale Club	SVP, Director of Real Estate
	Wal-Mart International	Past Director of Construction
	Home Depot	Past Director of Construction
	Circuit City	Past VP of Real Estate
Post, Jordan	Wal-Mart Stores	Senior Director, Realty
Riordan, John	Ivanhoe Cambridge	Director
	ICSC	Ex-officio Life Trustee
		Past President and CEO
	General Growth Properties	Past Director
	MIT Center for Real Estate	Past Chairman
Roscoe, Chris	ING Clarion	SVP, Asset Director of Retail
Schachter, Bernie	Staples	SVP of Real Estate
Schneider, Tomas	Simon Property Group	EVP of New Development

Figure 20: List of Interview Participants and Firm Affiliations

The following subsections are presented in no particular order by the current company affiliation of the interviewee. At the beginning of each subsection is an introduction to the interviewee and their position within their company. Then we provide a short description of the firm and why that particular firm is relevant to this thesis. The remainder of the subsections contains the interviewee responses.

Because the interview questions are fundamentally interrelated, questions were not generally answered piecemeal, but rather the interviewee bounced around between the questions or focused more on nuances of questions that were most relevant to them personally. Also, no audio recordings were made. Therefore, instead of verbatim transcripts, the interview responses are reported here in synopsis form in the narrative voice of the interviewee, with some direct paraphrasing and some direct quoting identified explicitly. This is a unique way to present the

responses, allowing the writer some narrative license. However, these synopses were then approved by the interviewee prior to inclusion in the paper so accuracy of the reporting is preserved.

Finally, unless noted otherwise in the interview synopsis, the responses of the interviewees reflect their personal opinions based on their individual experience, not specific strategies or viewpoints of their firms.

Interview 1 – Wal-Mart Stores Inc.

Interviewee: Jordan Post is the Senior Director in the strategy and business development department of Wal-Mart Stores realty. His specific team name is Realty Insights and Communications, which has the primary objective of assisting senior leaders in making real estate investment decisions and setting strategic direction. They work with multiple groups including operations to work towards making strategic decisions.

Firm: Walmart is a publicly traded discount department store chain that is currently the world's largest retailer and largest corporation. Walmart is the largest employer in the U.S. at 1.4 million employees. Walmart is the largest holder of real estate in the U.S. retail sector with 4,300 stores and 682 million square feet. Walmart strategies are relevant to this thesis in two important ways. First, the scale of the company alone means that their behavior as a single entity can have impacts on the entire retail industry. Second, to become a firm of their size required a lot of ingenuity and creativity. Their strategies may serve as a bellwether for industry trends.

Response: Walmart has been "pre-public" about their plans for growth. Strategies are not kept secret by design because being a public company requires a certain amount of transparency. Also, perhaps more importantly, it is better for community outreach and developing relationships and trust if the company's plans are clear and known. CEO Mike Duke has called for three primary priorities for Walmart: growth, leverage and returns. For growth, there are still opportunities in suburban and rural, but there is a clear push for growth into urban areas, particularly in the U.S. We have identified several metropolitan "opportunity markets". Some of these are very public, like Chicago and New York. We are committed to exploring these markets, and that will affect the prioritization of our real estate decisions.

There are hundreds if not thousands of opportunities for smaller format stores. Some of those are in the already developed, "fill-in" markets. However, there is still some growth opportunity in rural & suburban markets. The proliferation of dollar stores in these markets has "drawn in some of the savings seekers" in those markets. That being said, I believe Walmart's strategy is not to focus on specific competitors as much as we try to respond to customers' needs.

That speaks to some of the motivation behind our urban market strategy. Two big drivers of retail are the macroeconomic environment and consumer preferences. The former is tied to unemployment, inflation/deflation, deleveraging and savings rates, etc. Regarding the latter, we feel that, even when the economy starts to recover, there will be opportunity to capture people seeking savings, particularly in urban markets that have relatively higher costs of living. Also, we feel that as shoppers become more educated through online and comparison shopping, Walmart will have a competitive advantage, since we strive to pass on savings to the customer as part of our EDLC (every day low cost) model.

Regarding urban market entry, we have used our small and medium formats to help us enter those markets with limited space. We also believe that, due to the unique heterogeneity of those markets, it is very important to thoroughly understand each market before entry. We believe that as our company enters these types of high-density markets, we continue to get better at identifying our trade areas and preparing specific plans for market entry. One advantage for us is that Walmart has tremendous amounts of data at our disposal to understand specific shopping behaviors of various demographic and income profiles. But stepping back, a "golden metric" is density. As we serve each market's customers in the right way, it translates directly into retail dollars.

Regarding access and transportation, we will continue to be sensitive to customers' needs for car access to our stores. A three-pronged approach to the customer experience is: parking, store navigation, and ease of check out. That being said, we are trying to be flexible and in urban markets, access by customers on foot will be a key consideration.

Regarding e-commerce and multi-channel retailing, Walmart has clearly established an online presence, and we have used it to supplement our physical stores through programs such as Site-to-Store. Online provides is pricing transparency, and we welcome that.

Additional Notes: Because Walmart is a public company, there has been much in the news and in WMT annual and quarterly reports about their plans for growth into the urban and online arenas, all of which coincides with the responses of Mr. Post. There is a particularly relevant passage in the WMT 2010 Annual Report that succinctly describes their approach to the topics raised in this paper:

> *Growth in the United States will come from additional penetration into more metropolitan markets, as well as from new formats and stronger integration with the online business. Walmart.com traffic exceeded one billion visits this past year, growing more than 15 percent over the previous year through Site-to-Store™ and home delivery.*

Interview 2– Staples Inc.

Interviewee: Bernie Schachter, Senior Vice President of Real Estate

Firm: Staples Inc. is the world's largest office supply chain store, with approximately 1,600 stores in the U.S. They are based in Framingham, MA. Staples is relevant to this thesis because they have been implementing urban and flexible prototype strategies as discussed in Chapter 3 of this paper since their inception in the 1980's. They were also one of the first to implement a supplemental online platform, and they are now the second largest Internet retailer by volume of sales, behind Amazon.com. Their real estate strategy incorporates a 10,000 square foot store suited to dense urban markets such as New York City and a new 4,000 square foot copy/print format designed for locations with high customer density.

Response: We have been very urban in our real estate strategy for a long time. It is not a new trend for us or even one that is accelerating beyond what we have been doing. However, we have been taking it to another level by entering some urban markets that other retailers wouldn't feel comfortable in, such as Compton or the Bronx. The advantage is that these trade areas are underserviced, so there is not nearly as much competition relative to the population and sales potential. Staples in the only office superstore in the Bronx, for instance, and we have five stores there. The key is knowing how to operate – multi-lingual personnel, different signage, etc. We also have 26 of the copy/print, 4,000 square feet stores in Boston, New York and L.A., and we are looking to expand the number of those formats.

One challenge with dense urban areas is that is it much more difficult to forecast sales than in suburban areas. The specific site characteristics are very important: walking patterns, visibility, and frontage, which is key to merchandising. Some locations are obvious winners, but may be too expensive. Another challenge is that ideal locations rarely match up with the perfect layout for the given standardized store format. For example, ideally we would never operate on two levels. But, in some Manhattan or Boston locations we've determined that those sacrifices are balanced by what we believe we can do in performance.

Regarding e-commerce and multi-channel retailing, Staples.com came very early into the online business and has grown dramatically. We are now the No. 2 online retailer (including all of our websites & delivery businesses) after Amazon.com and ahead of Dell, Target, Walmart, etc. Clearly it's been a huge success.

Has it taken away from bricks & mortar? Our average sales grew substantially in both online and stores up until the recession. What we've seen is that customers doing online research is very frequent, but they still come into the store to buy. Small business buys all the things we sell in stores and also tend to use the online option for a lot of purchases. Our very best customers are multi-channel shoppers. We don't feel that the Web has taken away; actually has allowed us to strengthen our relationships and have a bigger percent of their purchases. If customers perceive Staples the best for a number of products, they'll use either the store or our website. There is no question online has been a net positive. It does a particularly good job of integrating and building a relationship with customers thru rewards program & communicating with email & direct mail. Also we advertise a lot less with TV and radio because of increased emphasis on online advertisements and direct email offers.

In regards to Internet relationship to the supply chain, our delivery business is separate from our retail business. We have four large distribution centers that handle all the stores in the U.S. and many warehouses for delivery. Stores only need delivery in 3-5 days, so they can wait for product from the big distribution stores. The inventory for the delivery has to be close to the customer because it's constant, immediate demand and we promise next day delivery. Average inventory is much lower now, but there are a number of factors that affect that. Overall, communications technology has helped make planning more streamlined, but this doesn't have to do with Internet, except for certain product categories like furniture. You don't want it taking

up a lot of space, so may look to have lower the inventory and focus that on delivery. The Web has definitely helped there.

Interview 3 – PetSmart

Interviewee: Sean Hanley, Vice President of Real Estate; in Mr. Hanley's 10 years with PetSmart, he has seen the firm double in size.

Firm: PetSmart is North America's leading specialty provider of pet products, services and solutions. They currently operate approximately 1,150 stores in 26 million square feet of retail space. PetSmart is relevant to this thesis due to their scale of operations, and that they have recently adopted flexible prototypes to adjust to new market opportunities.

Response: PetSmart is similar to Staples in the types of real estate we occupy, simply due to the nature of our product and the similarly targeted customer. Our customers are likely to exit the store with a 45lb. bag of dog food, which requires the use of a shopping cart and convenient access to parking. So, our typical model store has been in suburban strip shopping centers or freestanding units that have parking and are suitable to customers that are driving to the store. However, we just opened first Manhattan store, and we're starting to think about entering urban areas. Urban markets will challenge our merchandise and operations teams. They are familiar with prototype, cookie cutter store formats that follow a formula. These make supply chain, inventory, size of delivery trucks, etc. easier to plan. We will probably see more future urban growth. We are also expanding in Canada and are entering Puerto Rico, so international growth is happening on some level as well as growth in new markets.

We are looking to open roughly 50 stores this year and, most likely, a similar number next year. Many of those new stores will still be in strip centers, but we will open more urban stores as well. Physical obstacles such as the lack of typical loading, smaller floor plates, and multi-level stores have made it hard to enter urban markets. Greater New York areas like Nassau, Brooklyn, etc. have a lot of density, and they are underserved. We are working on our urban concept to serve those people. We acquired a company in Canada a few years ago that uses 12,000 SF floorplates, where we had typically occupied approximately 20,000 SF. That acquisition has helped us figure out smaller formats. It is helpful to have lower fixed costs associated with smaller floorplates as we look to new markets.

Regarding multi-channel retailing, PetSmart does have an online platform, but the delivery of heavy pet food and our various services don't work. One thing that has made us relatively more immune to the "clicks" is our service piece. We have grocery, specialty and hard goods in combination with our services (a mix of vet services, grooming, training, and adoption services) that brings our customers, people and pets, to our stores. This keeps our edge over online retailers.

Interview 4 – BJ's Wholesale Club

Interviewee: John Mulleady, Senior Vice President, Director of Real Estate and Property Development. Mr. Mulleady was also former Director of Construction for Walmart International and Home Depot International and Domestic and former Vice President of Real Estate for Circuit City. Mr. Mulleady's experience over the past 25 years in the retailing and real estate industries provides a cross-sectional perspective of large scale retailing strategy. Note: Mr. Mulleady's responses are his personal views of the retail industry and do not necessarily reflect specific strategy or viewpoints of BJ's Wholesale Club or other past affiliations.

Firm: BJ's Wholesale Club is a membership-only warehouse club chain on the U.S. East Coast. BJ's was listed as #269 on Fortune magazine's 2009 listing of America's 500 largest public corporations. They operate approximately 190 stores which include full-sized warehouse clubs that averaging approximately 113,000 square feet and 20 smaller-format warehouse clubs that averaged approximately 72,000 square feet.

Response: I think on the immediate horizon a major focus is on urban development particularly in the New York, Washington DC, Dallas, Los Angeles, Houston areas. Retailers still need to figure out how to crack the urban code. When you open there, the costs are high, but you can still be guaranteed to get a good return. But that's short term because of space availability. A lot of retailers are focusing on urban, but they will realize soon that the space is very limited.

In the long run, more expansion will happen in suburban areas. This will be driven by the mid-sized boxes: the Kohl's, TJMaxx's, and JCPenny's of the world. The difference is that that growth will be a lot slower than in the '90s. It used to be "build it and they will come". With slowed population growth, the demographics will have to be studied a lot more. Urban will

get saturated, so there will be renewed suburban expansion after that. Then international will really be the next horizon. It has to be.

Also, there will be a lot of redevelopment instead of new development. For example, Chicago has a backlog of retail space for the next 10 years. An incredible amount of retail was built in Chicago's "third ring" in the last five years. Every few miles you can see a Target, Lowes or Home Depot anchored development, but they're all at 40% occupancy right now. Developers assumed if they got the anchors, the junior boxes would follow. They didn't.

Regarding specific tactics employed for stores entering urban markets, not much sticks out regarding particularly different storing strategies retailers take. So far it's completely driven by site availability. That's the scary part. There are issues that need to be considered besides space availability.

Regarding e-commerce, it's here to stay. It will be the future. Retailers are still trying to get a handle on it and figure out the right balance of their shopping channels. Overall, I don't think online is cannibalistic and it won't slow physical store growth; it will change it. People like to go and shop, but online will cause a "recalibration" of stores. In other words, I think they will become little distribution centers that work hand-in-hand with their online platform. It will probably decrease store areas and increase warehouse areas. Key to success for any retailer in the future is e-commerce. They have to have that technological platform.

For example, at one of my previous retail firms, we did a study that showed if they could successfully use an online platform it would be great because the costs are relatively negligible. We implemented a "hub-and-spoke" approach, where customers can order online and pick up their items in the store. I think this is a great concept, and I believe in it. But the execution wasn't there and caused the program to fail. People would order online, go in to the store and the product wouldn't be there. Then people just stopped using it.

In general, there is a *lot* of turmoil in the industry. I'm not sure the retail industry has ever seen so much unknown before. Retailers will disappear over the next 10 years like they did in the last 20 years. The difference now is that we have overbuilt in the last 15 years, the population growth is much slower, and e-commerce is here to stay. Shakeouts are going to happen much faster and be much more widespread.

Interview 5 – Kohl's Corporation

Interviewee: Donna Capichano, Vice President of Real Estate

Firm: Kohl's Corporation is a value-oriented department store chain. They operate approximately 1,100 stores in 49 states and occupy 80 million square feet of retail space. Stores range in size from approximately 88,000 gross square feet of retail space, serving 150,000 to 200,000 person trade areas. "Small" stores are approximately 64,000 square feet, serving trade areas of 100,000 to 150,000 people, and there is a "mini" concept of approximately 55,000 square feet serving smaller markets. "Urban" stores in New York and Chicago serve very dense trade areas of up to 500,000 people and can be as large as 125,000 gross square feet of retail space. Also, Kohl's e-commerce revenues increased 38.0% to $492 million for 2009, while net sales per selling square foot decreased only 2% to $217 in 2009.

Response: Retail growth over the next decade? That's a loaded question. Real estate (and retail) is cyclical. It's interesting because when you look at the world of yesterday for retailers, we were *going, going, going*, then the recession hit. The biggest problem now is ground-up new centers. Developers can't get financing so that's slowed down their growth. For retailers growth really depends on the category. Value-oriented companies like Kohl's are still doing 30-40 stores per year. Retailers are also up against stiff competition in their specific categories. Prototypes are no longer as accessible in creating the ground-up opportunities. The next three years in retail will entail creative use of store space. The next 10 years is difficult to forecast.

That being said, urban market penetration is a real trend. The biggest complication is availability of space. The real challenge of urban is how to find and afford locations. The recession has caused some land prices to drop, and that has helped. However, the higher costs of urban locations can still be financially challenging. A lot of creativity is going on as retailers are getting more educated in working within non-prototypical floorplates. For example, such retailers as Target and Wal-Mart are taking multi-level and non-prototypical floorplates and making it work. Manhattan is the real hub of creativity. For instance, JCPenny's just went into the Manhattan Mall with no storefront. You have to enter the mall and then go down into the basement to get to their store.

At Kohl's, we have also been creative with our floorplates. We have a store in Valley Stream, NY that has two entrances, but you have to take escalators up to the main store space. The new floorplate is 55,000 SF. We will also consider doing a35,000 SF on a two levels or 10,000 SF at grade and down into a 67,000 SF, for the right opportunity.

Market targeted demographics are really the same in urban environments for us except we may have more of a mix of customers. Our market research department really drills down into identifying our target markets to understand exactly who she is.

What is also interesting about urban markets is that in the past you would target a bigger store in urban environment with higher density. But, we are now looking at some of our smaller prototypes to penetrate these urban environments. For example, we have a New Jersey test store we will be opening in a 64,000 SF space that we would typically target for our 87,000 SF prototype. If it works, it will help with the challenge of entry into these physically tighter markets.

We also absolutely look at traffic patterns in urban environments. We always ask, "Where are they coming from, and how do they get here?" It's really the same measure as suburban; the means of travel is just different. For example, in Manhattan, a key component is knowing the particularities of the subway system to know where you place your store.

Regarding the Internet, it's interesting because at one point, some may have thought that the Internet could possibly dip into their store sales (bricks and mortar) but we don't. We don't see it as cannibalistic at all. We're actually seeing it as a great tool for us in combination with our brick-and-mortar stores. We created a "kiosk" online system in our stores. We were unsure about their performance at first, but they were a huge success in test stores. Then we place them in all our stores, and in the first year they produced double the sales activity we expected. Now we've placed two in every one of our stores across the country. If a customer can't find their size or color, they can order online and have it delivered free to their home. Lately we've been considering taking it one step further with little kiosks in other locations like airports, or in malls that we can't get actual stores in right now.

Bottom line, our e-commerce growth has been phenomenal. For us, we've just found a way to integrate the two channels.

Interview 6 – Stop & Shop Supermarket Company

Interviewee: Tim Mahoney, Vice President of Real Estate

Firm: Stop & Shop is the largest food retailer in New England, operating in over 380 stores with over $10 billion in annual revenue. Their parent company, the Dutch food giant Ahold, is the 8th largest food retailer in North America with over 560 stores and approximately $600 average net sales per square foot.

Response: Thinking about growth, you have to look at the country as a market, and break that down into A,B and C markets. "A" is "Main-and-Main", has good incomes and density, not too much competition. "B" is the inner cities & outer suburbs that are not great location, the population is not growing and incomes are not that good. "C" is a rural/urban market with a low population basis and poor incomes and that really requires a niche or regional tenant with very strong drawing power.

There is no development in "C" locations, unless you're a niche type store. "B" locations may work for expansion based tenants provided the landlord provides a very attractive deal. This is because there are very few retailers in expansion mode, and these tenants don't want to and, in most cases, don't have to take any risk. So they demand a low cost basis to ensure adequate returns on investment.

At "A" locations, it's somewhat "business as usual". The opportunities don't come along every day, and when they do, retailers will go for it, particularly if the area is dense enough and incomes are high like in Cambridge. Traditionally, tenants would bid up prices quite a bit for these locations, but there are less interested retailers and they are just not doing that anymore. Thus great sites are more affordable for good credit retailers. The long-term trend will be that retailers will grow again (they have to for their investors), but they will grow at a more conservative pace and do it with more consideration of minimizing risk. As an example, look at A&P closing stores and going bankrupt, and Supervalu selling their Shaw's stores in Connecticut and closing stores in DC, PA, NJ, RI and MA. Many of these closed stores are still vacant or our becoming non-food retail establishments. It's an indication that some markets have become oversaturated and many stores have become too expensive to operate and remain competitive.

The difference between urban versus suburban markets is a finer point. The majority of expansion over the next several years for food retailers will occur as chains take the empty boxes of failed retailers or redevelop vacant shopping centers. Again, this will be focused primarily in "A" markets, both urban and suburban.. It helps retailers like Stop & Shop that supermarket-anchored shopping centers are the "top of the hill" right now for financial transactions. They are the preferred investment for buyers and sellers, achieving best loan terms for debt & cap rates on sale, so supermarket anchors are the most attractive tenant for owners/developers. This is applicable for most strong performing or investment grade credit supermarket chains. It allows a credit tenant like Stop & Shop to compete for markets at an acceptable operating cost, in which they wouldn't have been able to afford or compete for previously. Prior to 2008 many supermarkets would have been forced to include a percentage rent kicker in order to compete for "A" market sites. Now that there are not as many players for these big boxes retailers have the negotiating leverage not to include percentage rent in their leases and, in many cases to negotiate lower rents than the previous tenant had been paying. Sometimes we'll agree to pay a percentage rent if the base rent is low enough in a prime market to offset a disagreement as to what is "market" rent. In those cases we have reduced our risk if the deal doesn't perform as projected, and the landlord gets some additional benefit if we are successful.

So while "A" suburban markets will be the primary area of growth, there is a trend for supermarkets to figure out how to penetrate urban markets with smaller footprints and less parking. Food retailers have done this in a number of ways and what it boils down is that supermarkets are figuring out how to be profitable with less. Less labor and operating costs through better use of technology and building in operational and energy efficiencies. And yes, formats have been shrinking in supermarkets.

The biggest joke in the industry is that a chain has a "prototypes" which is usually good for about 24 hours. The trend in size is back to a basic supermarket that doesn't have a lot of household products general merchandise like books, cards, kitchen utensils, appliances, etc. That means going from a 55,000 -60,000 SF or greater floor plate to 38,000 SF or less. This is more of a "sea change" than the "tinkering" to the prototype that goes on all the time.

This is driven by three things. One, the competition in general merchandise is too rough from discount department stores like Walmart, Target, Kohl's, etc. Two, people are pressed for

time and like the smaller format for a quicker shopping trip. And three, smaller stores increase the ability to get into urban areas and other places where land is scare and entry barriers are high.

Finally, another big change in our industry is that many of the site location "drivers" from 10-15 years ago have become secondary now. Visibility, location, access, store navigation standards are not as stringent as they once were. Now, it's all about the price. Walmart or Target, Price Rite or Sav-A-Lot, BJ's or Costco can all take a "B" site and make it work with the right price points. With pricing, you can take some shortcuts you never would have taken 10-15 years ago.

Regarding e-commerce, this has actually been a help to use. Stop & Shop has their online ordering and home delivery system called Peapod. We were the first food company to make a profit with a grocery home delivery system. We use online as a help. Both sides of our business continue to grow.

Interview 7 –Ivanhoe Cambridge / GGP / ICSC

Interviewee: John Riordan, Ivanhoe Cambridge Board of Directors Member; former Director of General Growth Properties; former President and CEO of the International Council of Shopping Centers (ICSC); former Chairman of the MIT Center for Real Estate. Mr. Riordan is also an owner, developer and operator of malls worldwide and an affiliate of the Caisse de dépôt et placement du Québec, a major pension fund manager based in Montreal, Canada.

Firm(s): Ivanhoe Cambridge is a retail property management and development firm based in Montreal, Canada and is a subsidiary of the Canadian pension fund, Caisse de dépôt et placement du Québec. They currently have ownership interest in 92 retail properties worldwide, which accounts for approximately 45,000,000 of leasable square feet. They have significant presence in Canada, Brazil and Germany. They were also named among the top 50 private companies in Canada.

General Growth Properties (GGP) is a publicly traded REIT and the No. 2 shopping mall operator in the U.S. The company owns or manages malls 143 shopping malls in 43 states. In 2004 it was involved in the largest retail real estate merger by acquiring The Rouse Co, while in 2010 GGP emerged from the largest real estate filing in U.S. history. While GGP retail

properties are primarily regional shopping centers, a number are festival market places, urban mixed-use centers and strip/community centers in urban markets. They also have a (now separate) arm that owns master planned communities.

Response: You have to look at the demographics first of all and realize the changes happening. First if you look inside at ethnicity of the population, Asians and Hispanics are growing the fastest. Second, there is an increasing degree of growth in urban areas. And finally, there is a large and growing number of people whose motivation is to be able to get around without an automobile, which makes walkability in the retail environment very important.

So what does that mean for real estate? I do not expect to see much large greenfield development except where demand is large in some random gaps of the suburbs. We may see some particularly functionally obsolescent properties in suburbs scraped away for other uses.

We will also see some more experimentation in new formats and product types in retail. So when you think about things in general, shift in the retailing side of strategy, not the development side, will affect investments and will affect existing real estate. So you have to keep an eye on what they're doing. There are many things to watch depending on the retail category. For example, there will still be the tried and true grocery anchored shopping centers, but there are changes in the grocery world. Now, some of the major "everyday pricers" like Walmart and Target, are expanding into food, including what retailers refer to as "wet" retail, which means fresh grocery. This is a large scale move, partly in response to similar moves by discount clubs such as Costco and BJ's. Newcomer to the U.S., Tesco, is also experimenting with large format grocery. This indicates a trend away from smaller neighborhood grocery stores.

There are other examples of innovation and changes in formats such as clothing stores. They will look and behave a lot like grocery stores rather than typical retailers. They are becoming extremely more sensitive to tastes and adept at reacting to the marketplace. Department stores will have to differentiate themselves. The "department store" is really going away. Macy's is the last true department store.

Another big change for retail is that many people want to live in an environment where they're not dependant on the automobile to live their lives. This may be particularly true for

some older people. If you're 75 you don't necessarily want to drive as much. Hudson County, New Jersey is a good example of the importance of walkability in future development (and retail). On the western bank of the Hudson River, an industrial area is now being converted to thousands of residential units. Those types of infill developments will be big expansion opportunities for retailers. I know Walmart, in particular, is aware of this. There is going to be a colossal amount of walkable, mixed-used development with a focus on access to public transportation. This is helped by the fact that public policy has shifted to funding development of high-speed train services and restoring current low-speed trains. Again, Hudson County, New Jersey is an example of this, as they have built an extensive network of light rail.

Another thing that urban, or mixed-use high density projects offer is access to services. Retail will be a part of this. Proximity to the office and healthcare will be big, particularly for elderly people. Pulte, Related and other residential homebuilders, developers and investors are keyed into this. GGP has been separated by spinning off its land holdings into the Howard Hughes Corporation, and they will also be focused on this.

Overall, many of these changes won't affect GGP's investment strategy too much. There will be less new development except for renovations and some of this urban infill type activity I mentioned (conversions of warehouse and industrial districts). Companies have set aside some capital for renovations, but nothing substantial for new, ground-up development. So therefore, the focus is going to be on returns, not growth. Operations and property management is going to be the most important thing for a while.

Also, a lot of growth is going to be international. GGP has some joint ventures in Brazil and Turkey. Simon also has some international presence. China is tough, though. Among other complications, the middle class just isn't there yet. But there are strong retail markets like Brazil to be explored, and companies with GGP's scale can do that.

In regards to e-commerce, it's very meaningful. Again, look at the demographics. The younger people are much more attuned to this. There are things being developed that my generation would not use but probably will be by this generation. For example, Google just announced their "image-recognition technology" in the Wall Street Journal. Shoppers can look for products just based on color and size or what not. Basically, this kind of online shopping

convenience means that certain "replaceable items" will be pure e-commerce. Also, delivery methods will change and that could be good for industrial real estate. Other categories will not lend to home delivery via Internet purchase. But, the social aspect of shopping will not change. What will change is how consumers search for what they buy.

Interview 8, 9 – Simon Property Group

Interviewee(s): Tomas J. Schneider, Executive Vice President - Development; Clay Hallman, Director of Research

Firm: Simon Property Group is a publicly traded REIT and the No. 1 shopping mall operator and owner in the nation. In all, the company owns or has interest in 382 properties worldwide, including regional malls and outlet centers. Simon is an S&P 500 company and the largest public U.S. real estate company. Simon is a fully integrated real estate company which operates from five retail real estate platforms: regional malls, Premium Outlet Centers, The Mills, community/lifestyle centers and international properties. It currently owns or has an interest in 387 properties comprising 263,000,000 square feet

T.S. Response: Growth in retail. Well, some retailers will continue to grow because their financials are better. They've trimmed costs and inventories, and their sales beginning to pick up a bit. The "pie" has shrunk because of bankruptcies and consolidations. So for example, if Best Buy's sales are up, considering the Circuit City bankruptcy, are consumer electronics sales up in total?

There is not going to be much new development in the foreseeable future. The "growth" is in the redevelopment in "better centers" where we have the opportunity to expand and modernize our better performing existing assets. Select opportunities for expansion exist within the retail world, mostly in parallel with the fashion industry. Retailers that have done better are experiencing some growth resulting from incremental spending and, to some degree, consolidation.

In the real estate business, like any in business, success is easier when times are terrific. No matter what you do, itmay turn out ok. The downward cycle creates more challenge and is a more exacting process. I've been in the shopping center business since 1973. Since then, we've

all seen many cycles. Perspectives change as cycles change. Simon has done well because we got very conservative about five years ago, when we started accumulating cash. When planning a new development or redevelopment, one is shooting at an opening date 5-10 years down the line. We haven't got there yet. Setting policy and direction is crucial as we will be beginning a development process for retail space to be delivered in 2014 and beyond. What will the world be like then?

Regarding urban versus suburban, I have no real strong opinion. Fundamentals in retail development are much the same, only costs differ. Urban locations with density of population may certainly present viable retail opportunities. This is true of suburbia, as well. That being said, there will be no significant expansion of suburban retail inventory. It's really going to be more redevelopment of existing centers. Some of those may be in urban locations with opportunities for tenants to backfill space. Regarding changing floorplate sizes of individual retailers, it's hard to say what is happening there except anecdotally. Our research department can give more enlightenment on trends there. But in general, I'd say that more square feet have been taken out of service than has been put back into service by retailers.

Does any of this translate into opportunity for urban locations? Sure. Take a look at the Back Bay area and Copley Place, which we own. The area is a hub with an incredible amount of residential population. We have a great center in a prime area. So, we would definitely look to expand, and it's a good candidate to be redeveloped and modernized with new formulas and formats. Some other urban situations that pop up could be some infill development of older districts. A parallel exists in the suburbs. Staying in Boston, one could point to a location in Burlington where there is going to be some office demolition with entertainment and retail being developed in its place. The development will be driven by the demographics and the retail success in the area. This "new development" is a further consolidation, in a great area, with the newly redeveloped Burlington Mall enhancing the location.

Regarding strategy affects due to these changes, we are spending and budgeting a large amount of development dollars in two areas: 1- we're building a new Premium Outlet center in Merrimac, NH (our only domestic new development project), and 2- we have identified 16 projects as "transformational", and we're spending a lot of dollars improving, expanding and renovating those assets. That is the foreseeable future for development as I see it today.

Actually there's a great quote that I always remember. Mace Siegel (founder of The MaceRich Co.) summarizes this philosophy when he said, "You can always make good real estate better; it's very hard to make bad real estate good." Most of our "transformational" properties are dominant centers, and all of them are situated in terrific markets. We're striving to make those properties even better and more successful.

We spend a lot of time thinking about access to centers and transportation modes. Our trade areas are defined by the origination of 80% of our shoppers. Using empirical data and mall surveys, we can draw a pretty accurate map of where shoppers come from, how they get there, their driving times, traffic patterns and socioeconomic patterns. The differences are really dependent on the specific site and market, and it's not clearly different for urban versus suburban. For example, at Roosevelt Field on Long Island, two million people a year are coming there by public transit alone. This isn't urban versus suburban - it's both. The culture of the market matters. One project we developed in Florida, we couldn't capture people from north of our site because they wouldn't travel south. We had an opportunity to purchase land a few miles north, but this fact weighed on the decision. We could capture the north market, but if we moved north, could we capture the south? Note that this decision can also be impacted by the line-up and reach or our anchor tenants.

E-commerce is clearly a medium that has shown consistent & impressive growth. Regarding real estate, the biggest impact has been tenancy. If you look at the historical tenancy of a regional mall, you'll see it's changed fairly dramatically. For example, twenty years ago it wasn't unusual to see 10 shoe stores in a mall. That's not evident today. Tenants that do well in malls change over time. Success depends on what you're selling. It seems that more fungible commodities may have outlets that present great opportunities, in addition to the mall. One thing that is constant is change.

There are other reasons that online retailers might lease real estate space, as well. Maybe they supplement sales with bricks-and-mortar sales or offer bricks and mortar locations for a convenience to their customer. In any event, there's simply a lot of infrastructure involved even if somebody is in e-commerce (i.e. distribution, etc.). Also, brick-and-mortar retailers themselves are experiencing lots of growth on the e-commerce side. They often supplement with services in the store, so you can buy online and do whatever service you need at the local store.

C.H. Response: There is a lot of talk about urbanization in urban planning circles these days. It is true that a lot of suburban areas are changing, and that some people are moving back to the city. The realistic expectation is that we won't have a boom of growth back to 8-10 percent any time soon. It will only pick up slowly.

For retail there will be a lot of focus on curtailing operation costs rather than "growth". That means cut backs on SG&A, inventory, and capital allocation. There will be a lot of complimentary e-commerce incorporated.

Urban growth will continue in the future, but there won't be new regional malls built in cities, but rather small infill retail centers. This is likely to happen along train lines in larger cities. The size of market matters. Larger scale markets will have more of the infill type of behavior. Mid-size markets (1.5 million or less) without a strong urban node (or nodes) might not see the same trend as the larger cities, but will have retail demand in smaller, mixed-use developments.

Places that we're considering expanding right now are not dependent on growth, but are current strong nodes for demographics, traffic patterns, and confluence of development. This isn't typically in downtowns or older, first tier suburban markets, but it could be.

So far, "traffic" for us means cars. Mass transit is just a 'nice thought' right now, not a primary driver. It certainly helps to have public transit, but it's not critical, for example, at a place like Buckhead[8] in Atlanta. However transit may be more important for some of our centers in major cities with a lot of ridership. For example, Fashion Mall at Pentagon City in D.C. has a train stop below, which has been a great bolster to foot traffic.

Regarding trade area analysis, the size of our trade areas has not changed. Penetration may be lower because of the Recession, but the trade areas are similar in size.

Retail footprints have gotten smaller. More efficiency in planning and allocation systems has allowed stores to have more manageable inventories. So, less stuff in the store means

[8] Buckhead is a large upscale district in Atlanta that is comprised of about 40, mostly suburban neighborhoods. It has a substantial network of roads and highways, which are the primary means of transportation.

smaller floorplates. However, this has only been a big push for retailers in the last year and we haven't had to take back too much space.

Regarding e-commerce, this affects retailers more than real estate owners in most cases, but it does depend on the category. A big advantage that e-commerce has right now is that in many cases shoppers don't have to pay sales tax.

Interview 10 – ING Clarion

Interviewee: Chris Roscoe, Senior Vice President and Asset Director of Retail

Firming Clarion is the U.S. arm of ING Real Estate Investment Management, the world's largest real estate investment management company. ING Clarion invests private equity in real estate through commingled funds and separate accounts for institutional investors. They currently hold approximately $42 billion assets under management. A substantial portion of their overall portfolio is retail sector real estate, including a $1.4 billion portfolio of 22 regional malls.

Response: The Great Recession has been a wake-up call that has caused a "sea change" in the retail industry. Retailers are figuring out that they don't need all the current shelf space, and that less goods actually leads to less customer confusion and a better shopping experience. So they've become very efficient with inventory management, and with the possible exception of the discounters and bulk merchants, everybody is looking to downsize.

Regarding markets for expansion, there is just not a lot of "oversupply" out there in typical "primary" areas. Retailers are getting forced out of these markets when looking for growth. In other words, one thing that we don't have to deal with in this recession versus the most previous ones is a big oversupply of retail space. From my perspective, this translates to limited opportunities for retailers to grow domestically, particularly in primary markets.

Therefore, as the economy warms up and retailers "start their expansion engines", limited opportunities will force them to look into markets they traditionally have stayed away from: secondary and tertiary markets and expansion opportunities abroad. So for instance, retailers may look at secondary and tertiary markets for six or sub-six yields going-in. For example, in Cahaba Village in Birmingham, AL, a secondary market, Whole Foods is doing well, and the

first year it stabilized at roughly a 7.5 yield. A center of ours in Eugene, OR, a tertiary market, is anchored by local grocer doing $940/SF.

In "primary markets", there is a clear shift in shopping patterns. Customers love the urban infill, walkable shopping experience. Think of Michigan Avenue, Fifth Avenue, Rodeo Drive and Newbury Street. Also, most new formats are "urban" in design. The roofs are coming off malls, like in our two most successful projects in upscale areas of Chicago: Oakbrook & Old Orchard. The mall is not dead, but it is from development perspective. The advantages to this format are that customers like them and you have less expenses (CAM[9], taxes & insurance). So even though you may be a little off in sales as compared to a traditional mall, your overall health ratio[10] will still be relatively better.

There are demographic drivers of the urban infill growth as well. Echo Boomers are a part of it, as they become working adults and move near their jobs. Another big part is "empty nesters". While the "empty nester" effect is debated, it is happening for a fact. For example, the Denver Pavilions project is being developed specifically for that target markets. Older Baby Boomers need services and amenities close at hand, and that is available in more urban environments.

The real sea change in retail is less square footage per tenant. While this means less real estate per tenant, it offers some opportunities if we are nimble. For example, in one property in Los Angeles, we're converting one of our smaller anchor spaces into a Target. You could not have done that in LA five years ago. It's an indication that the urbanization effect is becoming prevalent. So moving forward, we will have to look at existing assets and identify where we don't have the flexibility to reduce or slice up the square footage to accommodate new tenant space demands. Some assets may just be functionally obsolete, even if they're in a core market, and we'll have to decide what to do with those assets.

[9] CAM is common area maintenance with is usually added to a tenant's base rent, and it is paid by all tenants on a pro rata share. The reference is means that the less the managed common area, the less the CAM.

[10] "Health ratio" refers to the ratio of retail tenant's cost of occupation of space to their gross revenues. This is a common metric landlords use to measure tenant performance. It is also sometimes called an "occupancy ratio".

Public transportation will be key as we move forward and the green movement becomes more recognized. As people are spending less time in the cars and paying less for gas, trains will become a lot more important than in the past. For example, one of the most compelling things about our Chevy Chase asset in the D.C. metro area is that it's a mixed-use project with a metro station just below it. So we have inherent demand and customers can easily get to and from D.C. via the metro. An interesting international example is that 50-60% of customers to our developments in Mexico get there by some other way than car.

The effect of e-commerce is much debated. It started as a supplement to bricks & mortar. Now customers got comfortable, and Internet sales are growing. The bottom line is that effects are category specific and based on that, different retailers have had to react in different ways.

Interview 11– Vornado Realty Trust (VNO)

Interviewee: Russell DeMartino, Vice President of Development

Firm: Vornado Realty Trust is a fully-integrated REIT. VNO is one of the largest owners and managers of commercial real estate in the United States with a portfolio totaling over 100 million square feet, and a REIT market cap of $15 billion. While they a mostly own office properties in the New York and Washington, DC areas, VNO owns and manages 163 retail properties of 22.9 million aggregate square feet, located in 21 states.

Response: Growth in quite a broad concept and retail industry growth is tied to the overall economy and consumer preference. But in regards to retail from a real estate perspective, you have to look locally. Development is going to be driven on whether a market is over or under-served. That will determine growth. Currently, suburban rings on a per capita basis are over-served. So, by the same logic business will go to urban core, where dense urban centers are traditionally underserved with retail. Until the growth trend of residential development goes back to the suburban ring, it will most likely happen in the urban core. This is also tied to what type of retail you're talking about. Vornado has many relationships with credit tenants that are public and required to grow. A common current strategy for most of them is to grow their sales per store rather than grow their total number of stores. In other words, instead of expanding square footage, they seek to increase the quality of square footage. In today's market, that means getting out of the suburban type areas and into the denser locations.

They have had to gear their store prototypes towards the particularities of urban markets. The box companies like TJX, Target and Walmart pretty much have their store layouts down to a science where they drop them down out in the suburbs. Now a lot of them have been trying to adjust, and they are in the process of learning how to deal with the urban floor plates and multi-floor layouts. It can be a sacrifice for them to go urban. The paradigm (for lack of a better word) is shifting, but the big national retailers don't quite have it figured out yet. What they do know they get higher sales per square foot in urban areas.

Our philosophy is somewhat 'old school': it's about location. The locations where our company is most comfortable are high density areas with constraints against other real estate competitors. Vornado isn't a greenfield developer. Our markets are "gateway urban areas" like D.C., New York, Boston, L.A., San Francisco and Chicago. Those markets have high density and are getting denser. Because the demographics are so strong, we feel we are more protected and these are forgiving markets. In other words, you can buy an asset in those markets and make mistakes in terms of price or cost or lease terms, but the demographics are unquestionable. The persons per store will make it work and will keep retailers coming back to that property.

For example, Downtown Crossing obviously had issues, mostly due to financing externalities and market timing, and this had to do with the other non-retail uses on the site. If we had purchased the property from Federated as only a retail property it may have been less affected by the economy. The point is that demand for the retail space hasn't diminished compared to other real estate types (office, condo and hotel) and there is still a lot of interest from retailers. The reason is that the density is just so high and it has all the urban amenities like public transit, entertainment and proximity to open space. Retailers know this and know that stores will be successful there. So, potential rents haven't suffered as much for the project going forward.

Now think about the same project given the same timing in Westwood, MA. You have to compete with all the other centers out there like the Natick Mall, Westwood Station, etc. In the same timeframe we were doing Downtown Crossing, out there you might proforma rents around $40-50 per square foot, but in this market likely to get $25 per square foot. You can't continue with a project when expected rents get cut in half. At Downtown Crossing, rents have been shaved only slightly because of the demand for this urban location. So, the point is that

underwriting will have fewer and less volatile sensitivities in urban areas in terms of initial tenant roster or layout or even costs. Look at it from an ownership point of view: when the economy turns down, you'll be the last one to suffer and the first one out. It will always be good real estate.

In urban versus suburban leases, we try to write the same lease. But, what we care more about in urban sites is that tenants have less control of the overall project. It is so much more expensive for things to change in these projects than in a suburban location. Co-tenancies are tough because they are driven by the immediate moment. Vornado always tries to say no to co-tenancies because it is just too hard to predict the future of retailers. Sometimes Vornado may sign co-tenancies that don't cite the specific name of a required co-tenant, but leases may stipulate a certain percentage of the center to be leased-up with "like kind" tenants. This gives the tenant more flexibility and hedges our risk. Again, this is always location driven. In a downtown center it may be easier to say no to co-tenancy, versus a suburban location that needs the grocer or entertainment to be the draw.

Regarding e-commerce, it's not clear that there's a direct correlation between online sales growth and real estate. It is certainly category specific and some retailers like Borders have stopped growing because of it. It hasn't played a large part in planning our development tenant rosters though. Vornado didn't exclude Borders; Borders took themselves off the list.

Looking down the line, there is even divergence of opinion in our own company regarding the impacts. Some think that it will absolutely shrink the world of retail real estate and make things more challenging for retail property owners. On the other hand, this may bring about new opportunities for retailers that incorporate e-commerce into their bricks-and-mortar strategy. Or, there are online retailers that want to use a brick-and-mortar store to increase their margins with the experience and services offered by a physical store. In the meantime, we will have to wait and see how well retailers can use online as a supplement. The verdict isn't in, but it most likely will shrink the requirement real estate space.

Interview 12 – W/S Development

Interviewee: David Fleming, Director of Corporate Marketing

Firm: W/S Development is one of the largest private, "build-to-own" retail development firms in the United States. W/S has a portfolio of approximately 80 properties totally 17 million square feet that they developed, own, manage and lease. Their property types include lifestyle centers, power centers, community centers, and mixed-use developments. They are listed as one of the ICSC's Top 50 shopping center owners.

Response: W/S has projects in both suburban and urban. A good location is a good location. If there are strong demographics, good highway access and the price is right, we will look at that no matter where it is. So for instance in 2007 we opened two successful suburban projects, a 675,000 SF center in Wareham and a 380,000 SF center Mansfield, MA. Both of these have great demographics and highway access. Now as these types of opportunities have become fewer, a big part of our business will be indentifying and acquiring properties with these good market and access characteristics that are financially distressed or underperforming. We will use our expertise to go in and renovate or re-tenant these centers.

That being said, it does seem to us that people are moving back to the cities, and the bottom line is our business goes where people live. We feel that homebuilders have gone too far from the CBD in a lot of cases. Also, traditionally, urban markets are underserved with retail whereas a lot of suburban markets are saturated now. Best example is our Seaport Square project which is still in planning phases but will be total 6.5 msf project with 1.3 msf of retail, some with two levels and some with residential above. This is a great urban location with baked-in density, good access for cars and transit and all the urban amenities. We also have sort of "fringe" urban projects that have been very successful like Legacy Place in Dedham. In the urban locations, retailers are taking smaller spaces, and this makes sense for them.

Regarding e-commerce and multi-channel retailing, online is obviously a big deal. It gives shoppers more ways to buy and by 2015 online sales are supposed to be up to a $250 billion industry. Also, if you look at "Black Friday" as a barometer, online sales were 9% of total Black Friday sales in 2009 and grew to 13% this year.

However, this hasn't directly reduced real estate. From the perspective of a retail developer, it hasn't changed our strategy - it's more at the retailer level. Using the Black Friday analogy, you can see that shopping is still an experience. People almost treat Black Friday like a

sport – the "Superbowl of shopping". Also, we've seen that a lot of customers just use online to pre-shop and visit the stores after.

So while it hasn't changed our real estate strategies, our tenants have incorporated the Internet in all sorts of ways. American Eagle uses it for marketing to email coupons and send deal alerts to mobile devices. LL Bean started as a catalogue and online company and moved to bricks-and-mortar.

Interview 13 – Samuels & Associates

Interviewee: Robin Mosle, Executive Vice President of Leasing

Firm: Samuels & Associates is a private, full-service New England real estate company that specializes in the retail sector. They have a portfolio of 18 commercial and residential properties comprising three million square feet. They are experts at urban and mixed-use development that focuses both on internal project synergy and integrating their projects into the neighboring communities to add value.

Response: The growth I see is in the innovation of new product. People will always consume things, but I don't see a whole lot of additional retail stores or net growth of stores. I expect different, evolved replacement stores with new concepts. Owners and developers will constantly refresh and focus on getting the best tenant mix. They will need more control baked into leases and they will have to focus on getting mixes right.

There are really too many shopping centers as it is, so I can see a lot of malls being threatened. The "if we build it they will come" strategy can't be counted on anymore. A lot of retailers did go back to malls for more predictable sales, but they only went to "A" malls with good tenancy in dominant markets.

Urban is where the most growth is. From a demography perspective, empty nesters are moving into the city and younger parents staying in urban areas longer. Basically, where people live, they need stuff. Our Fenway Trilogy project is a great example. We've put in 800 housing units on Boylston and have another 1,000 planned. The housing helps create a critical mass, and allowed box-type retailers there, which is unusual for urban areas. The restaurants were also key in creating a buzz. This is another different aspect of urban retailing. Retail is the street level

public space, and it is a supplemental part of an overall mixed-use project. The retail is important because it is either accretive or dilutive to the success of the overall project.

This interactive effect between retail and the project and the project and the community has to do with our investment strategy. Our goal at Fenway Trilogy is to make that the coolest neighborhood in Boston. We believe that a developer that invests in the whole neighborhood works on a canvass that can create a meaningful impact on the entire community, and ultimately this is far more effective than doing one-off buildings.

Another aspect of urban markets is that getting around is actually more convenient because the suburbs, where cars are generally the only form of transport, are often more congested. People are more time deprived so travel time is becoming more important. So, like at Fenway Trilogy, there is a transition away from reliance on vehicular access. The volume of pedestrians and transit-users are increasingly driving the retail. A great example of the time-saving effect is Union Square in Manhattan. Rents of apartments over Whole Foods are much higher than even across the Square. People pick where they live based on how far they are to grocery, entertainment and the fastest mode of transit.

E-commerce is an interesting phenomenon, but our customer is the tenant not the consumer. We are selling our product (real estate) to the Gap or H&M, not you, the consumer. We focus on creating great real estate spaces where people want to shop, and in turn retailers want to be there. That being said, there is a shrinking pool of retailers, which is probably partially due to multi-channel retailing. So, it doesn't affect me, except make it a little harder to do my job.

Interview 14 – Linear Retail

Interviewee: Aubrey Cannuscio, Partner and Senior Vice President of Acquisitions

Firm: Linear Retail is a specialty real estate company that owns and operates shopping centers in New England. The company's portfolio consists of 52 properties valued in excess of $300 million. They specialize in convenience shopping centers and retail in urban mixed used properties.

Response: Linear started seven years ago, developing suburban strip centers. We don't see a lot of that development in the next decade. Three to four years ago we started to focus on buying existing retail properties in urban markets like downtown Boston. We believe that retailers want to be where people want to live, and there is just a limited amount of good retail as you get closer to city CBDs. The target market of Linear and our competitors has gotten tighter than seven years ago, and we're definitely staying within the Route 128 ring.

The overall affect for our investment strategy is just more competition for deals. Also, we have started looking to retail space at the base of condo buildings where we buy a partial interest in the property. This causes some headaches as we have to deal condominium associations, documents and bi-laws. For example, in Lincoln Plaza near South Station, we're in the first floor of an 8-story residential condo building and due to the rules and regulations of the condo documents, we may not be limited to "non-restaurant" uses.

Regarding e-commerce, Linear does convenience-oriented, immediate-purchase type retail, so we just aren't affected like the big box guys. Some retailers are shrinking stores, but the liquor, hair, convenience and drug stores don't seem to be doing that.

Interview 15 – Elkus Manfredi Architects

Interviewee: David Manfredi, FAIA, Principal at Elkus Manfredi Architects, is a renowned architect with substantial experience in design of celebrated mixed-use projects that have transformative and energizing retail environments. Mr. Manfredi's projects have been in both suburban and urban markets. Some recognizable retail projects: The Grove in Los Angeles, Downtown Disney in Anaheim, the Manhattan Mall renovation in New York and The Americana at Brand in Glendale, California. Notable urban projects under development are Fan Pier and One Franklin Street in Boston.

Firm: Elkus Manfredi Architects

Response: My thoughts regarding growth are formed by observation and interaction with developers and tenants. Over the next five years, store shopping center growth will be very slow. Much of the country is overbuilt from a retail point of view, certainly from a traditional mall point of view. Although growth will be slow, there are both urban and suburban opportunities.

Some of those opportunities are in niche demographic demand gaps like Legacy Place in Dedham, MA. Very few retailers are taking larger than normal spaces, with a few exceptions like Forever21. Most retailers are saying they can produce equal revenue with 25% less floor space. Some of that is due to e-commerce.

Other growth will come from specialty kinds of environments - not malls with traditional anchors - where something other than a retailer is an anchor, like a university or other institution looking to have retail as a neighborhood amenity. Retail is being used to create a common, shared amenity between a university population and the surrounding community. For example, Ohio State University has built retail with a cinema and grocery. It has helped break down the edge between a highly educated population of 70,000 students, faculty and staff and the deteriorated adjacent neighborhood. This investment is a way to stimulate private investment in the surrounding community, which is desirable to the university. The University feared the loss of student and faculty because of the absence of diverse housing options and the appropriate social environment. So, the development of a mixed-use retail, residential, office environment represented an investment to change their surroundings.

Yes, retail expansion is becoming more urban to the extent that retail follows demographics. It's all about following the residential trends. For instance, in a suburb of D.C. called Chevy Chase, MD, there is a project called Wisconsin Place with about 500 apartments, and several hundred thousand square feet of office. They also built a Whole Foods, Bloomingdales and 100,000 square feet of other retail. In D.C. there has been a real growth in apartments (because there are jobs there), and the retail is just following that residential trend.

In urban locations, the retailers find the real estate first and manipulate their formats. Whole Foods tries to figure out the ethnicity of a neighborhood and have a certain percentage of SKUs for that ethnicity. Bloomingdales adjusts the looks of their urban and suburban stores. Target stores in suburbs have to strictly be a certain size and configuration with surface parking, but they will adjust their suburban rules to fit into a desirable urban location.

E-commerce is obviously growing and has many advantages like convenience and 24/7 accessibility. Some types of retail like bookstores are cutting back their stores as leases expire. The change is drastic. The percentage of internet sales of books and the use of Kindle devices

has increased quickly. The best retailers are trying to figure out how to be in both places. Bricks-and-mortar retailing is going to be more interactive and more connected to the e-commerce experience, with the immediate impact of fewer and smaller stores. The long-term is probably far more complicated and sophisticated. I've also been hearing about some e-commerce companies looking to have brick-and-mortar stores. They will likely build some very non-traditional stores with more interaction and much more non-store tie-ins. So, there will always be a place for bricks-and-mortar retail because it is very social - part community, part entertainment. People like to stroll streets because they have some sort of shopping mission, but also a social mission as well. In the future, there will likely be much more integration and connection between those different forms.

3.6 Chapter Summary

This chapter has presented significant evidence that retailing strategy has shifted in recent history due to broad changes in the industry, national demographic trends and technology. Although the changes are not ubiquitous or absolute for all players in the retail industry, a clear pattern has emerged. Due to competitive forces and lack of suburban growth opportunities, retailers are shifting their strategy to locate in dense urban markets. To do this retailers have developed flexible prototypes, fine-grained market analysis and online platforms for sales, marketing and supply chain management.

This segues to the question of how retail performance varies with regards to certain attributes of cities, and what corresponding effects are implied by these trends and strategies.

CHAPTER 4: RETAIL ECONOMICS – PERFORMANCE ACROSS MARKETS

4.1 Introduction

The primary purpose of this analysis is to identify behavior of retail performance across markets to glean insights as to what drives performance and how particular attributes of cities correlate to performance. This analysis will also present a relationship between consumption demand, supply of stores and resultant performance of stores.

The results presented in this chapter were derived from a multivariate ordinary least squares (OLS) regression model of three (3) sets of data: 2002, 2007 and 0207Delta. Each of these datasets contain eight (8) independent control variables (city attributes), three (3) dependent variables (measures of retail performance) across 11 different retail categories for approximately 66 MSAs. The variables and retail categories are listed and described inFigure 1and Figure 2of Chapter 2 and Appendix A. Summary statistics of datasets for each of the variables are shown below in Figure 21to provide context of scale and variability for the results presented herein. Results from a total of 99 regression equations are included. The data from each of the dependent and independent variables was log transformed to yield the following general regression equation:

$$\ln(Y_j) = \beta_0 + \ln(\beta_i X_i) + \ldots + \ln(\beta_n X_n) + e_j$$

Summary Statistics for Economic and Retail Datasets

Dataset	Variable[a]	Descrip	N	Mean	Mdn	Stdev	Min	Max
2002	X1	Temp (LTA)	64	56.96	56.95	11.45	13.30	79.20
	X2	Precip (LTA)	64	36.65	39.46	13.66	8.29	65.15
	X3	Density (P/SqMi)	64	5142	3856	4180	834	26404
	X4	Broadband (%)	64	13.0%	12.4%	5.6%	2.6%	25.1%
	X5	Emp/pop (%)	64	48.0%	48.2%	5.1%	30.4%	56.3%
	X6	Inc/pop ($/P)	64	33688	32968	5581	25023	59976
	X7	Population (1000s)	64	2588	1611	2922	755	18600
	X8	Home ($1000)	64	181.0	146.1	91.6	86.4	543.2
	Y1,TOT	S/P ($/P)	64	6646	6621	570	5426	8867
	Y2,TOT	St/P (St/1000P)	64	2.68	2.67	0.28	1.85	3.43
	Y3,TOT	S/St ($1000/St)	64	2498	2491	221	1983	3055
2007	X1	Temp (LTA)	66	57.23	57.13	11.38	13.30	79.20
	X2	Precip (LTA)	66	36.59	39.46	14.34	6.49	65.15
	X3	Density (P/SqMi)	66	5095	3793	4089	875	26848
	X4	Broadband (%)	66	60.2%	61.0%	7.9%	35.6%	77.7%
	X5	Emp/pop (%)	66	47.8%	48.2%	5.4%	30.4%	58.2%
	X6	Inc/pop ($/P)	66	41835	39947	8036	29238	80852
	X7	Population (1000s)	66	2662	1665	2962	773	18910
	X8	Home ($1000)	66	262.8	226.1	157.0	102.6	833.3
	Y1,TOT	S/P ($/P)	66	7810	7669	762	5924	10586
	Y2,TOT	St/P (St/1000P)	66	2.59	2.56	0.30	1.77	3.36
	Y3,TOT	S/St ($1000/St)	66	3032	3024	260	2470	3578
0207Delta[b]	X1	Temp	na	na	na	na	na	na
	X2	Precip	na	na	na	na	na	na
	X3	Density	64	1.70%	0.79%	5.70%	-6.81%	19.92%
	X4	Broadband[c]	64	47.53%	48.01%	7.06%	28.10%	60.24%
	X5	Emp/pop	64	0.30%	-0.02%	2.61%	-6.06%	8.36%
	X6	Inc/pop	64	24.87%	25.03%	6.42%	12.00%	51.23%
	X7	Population	64	5.64%	4.81%	6.22%	-15.17%	21.33%
	X8	Home	64	41.60%	38.29%	29.92%	-12.92%	114.04%
	Y1,TOT	S/P	64	18.12%	18.27%	7.14%	3.35%	44.18%
	Y2,TOT	St/P	64	-2.79%	-2.72%	3.64%	-9.51%	11.66%
	Y3,TOT	S/St	64	21.59%	21.27%	7.37%	2.38%	40.23%

[a] Full description of variables in Chapter 2 and Appendix A.

[b] 0207Delta based off on magnitude of increases and may appear inconsistent with differentials between static 2002 and 2007 stats above.

[c] Broadband 0207Delta data based on simple percentage difference not magnitude change due to 2002 values being too minmal to have magnitude changes be meaningful.

Figure 21: Summary Statistics for Regression Model Datasets

4.2 Results Presentation Format

The sections of this chapter are segmented by descriptions of results by independent control variable (city attributes). This presents a picture of what a given MSA attribute suggests regarding retail sales and store performance. The results are presented at the beginning of each

section. The remainder of results is the logged beta coefficients and t-stats for the independent variables. As described in Chapter 2, the log transformation of the data yields beta coefficients that represent relative predicted change in a dependent variable given a change in a particular independent variable. In other words, a 1% increase in X_i is associated with a β_i% increase in Y_j , or if X_i doubles Yj can be expected to increase by (100 x β_i)%.

The betas and t-stats are presented for the average of the 2002 and 2007 datasets and for the 0207Delta dataset. The former is labeled as "Static" results and indicate the effect of the *static* characteristics of an independent variable relative to other MSAs' dependent variable *static* characteristics. The latter results are labeled as "Growth" results and indicate the effect of the *growth* of an independent variable relative to other MSAs' dependent variable *growth*.

The t-stat is a measure of the significance of the beta coefficient. The sample size in this analysis, if the absolute value of the t-stat is greater than 1.65, the relationship β_i between X_i and Y_j is statistically significant with a 95% confidence, the conventional confidence interval used in statistics. These values are highlighted in the results tables. For reference, if the absolute value of the t-stat is greater than 1.28, the relationship is statistically significant with a 90% confidence.

Excluded from the results in this chapter are the adjusted R square and the Y-intercept values for the regression equations. However, they are included in Figure 29 and Figure 30 in Appendix C, which presents the same results as this chapter, sorted by 2002, 2007 and 0207Delta datasets and by retail category, rather than by control variable. The adjusted R squared value indicates the percent variance in the dependent variable Y_j dataset can be explained by the combined variance in the independent variable $X_{i,n}$ datasets. Adjusted R square values are substantial for this model. The average "Static" adjusted R square is 0.44 and the average "Growth" adjusted R square is 0.27. The Y-intercept coefficient is the base value assuming all independent variables are zero. Since this is never the case, this is not particularly useful for results interpretation. While these statistics are important, we have chosen to focus on the elasticities of the independent variables in this chapter.

Another key inclusion in the following results is the interaction effect of the dependent variables and the expected store performance as measured by Sales per Store (S/St). In the column labeled "ExpBeta", we examine the differential between beta coefficients for the

regression formulas for Sales per capita (S/P) and Stores per capita (St/P). With the logarithmic results, this allows us to clearly see the magnitude of effect on store performance as measured by Sales per Store (S/St). In other words, with logarithmic results, the difference between $\beta_{i,S/P}$ and $\beta_{i,St/P}$ is expected to be the relative change in the ratio of total sales to total stores, $\beta_{i,S/St}$, given the change in city attribute X_i and all other independent variables held equal. Therefore, if the model is a good predictor of S/St given the empirical data, the measured $\beta_{i,S/St}$ should be approximately equal to $\beta_{i,S/P} - \beta_{i,St/P}$. Even if some beta coefficients are not statistically significant, it is noteworthy if this relationship holds. Clearly, if it does hold, it means that retailers want to be located in areas where the city attributes correspond to S/P that are larger than or are growing faster relative to St/P, where the stores are likely to perform better in terms of S/St.

4.3 Role of Income Elasticity

Results for [X6] Control Variable: INC/P Sales/Capita [Y1]					
INC/P-Y1	02-07 STATIC		02-07 GROWTH		
	AvgBeta	AvgTstat	Beta	Tstat	
TOT	0.164	1.897	0.683	5.268	
FURN	0.813	3.209	1.438	3.748	
ELEC	0.271	1.153	1.768	5.399	
BLDG	0.577	2.505	1.774	3.813	
FOOD	0.279	1.092	-0.156	-0.547	
HLTH	0.202	0.719	0.943	3.461	
CLTH	0.151	0.659	0.714	3.304	
BOOK	0.348	2.030	0.699	2.318	
GENR	-0.338	-1.753	0.316	1.446	
HOTL	-1.206	-1.388	-0.326	-0.320	
RESTR	-0.090	-0.284	0.305	1.991	
Store/Capita [Y2]					
INC/P-Y2	02-07 STATIC		02-07 GROWTH		
	AvgBeta	AvgTstat	Beta	Tstat	
TOT	0.036	0.314	0.023	0.295	
FURN	0.614	2.165	-0.087	-0.533	
ELEC	-0.090	-0.414	0.138	0.518	
BLDG	0.560	2.678	0.618	4.267	
FOOD	-0.038	-0.097	-0.105	-0.537	
HLTH	0.108	0.500	-0.003	-0.019	
CLTH	-0.077	-0.176	0.288	1.756	
BOOK	0.139	0.648	-0.112	-0.747	
GENR	-0.022	-0.342	0.068	0.258	
HOTL	-0.847	-2.200	0.166	0.736	
RESTR	-0.052	-0.211	-0.032	-0.290	
Sales/Store [Y3]					
INC/P-Y3	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
TOT	0.128	1.117	0.128	0.680	4.148	0.660
FURN	0.095	0.744	0.199	1.640	4.204	1.525
ELEC	0.361	1.589	0.361	1.556	3.517	1.630
BLDG	0.017	-0.027	0.017	0.906	2.297	1.157
FOOD	0.317	0.845	0.317	-0.048	-0.140	-0.050
HLTH	0.094	0.490	0.094	0.924	2.670	0.946
CLTH	0.228	1.542	0.228	0.354	1.578	0.426
BOOK	0.180	1.175	0.209	1.030	2.652	0.811
GENR	-0.316	-0.976	-0.316	0.261	0.896	0.248
HOTL	-0.360	-0.457	-0.360	-0.547	-0.586	-0.492
RESTR	-0.038	-0.123	-0.038	0.327	3.175	0.337

Figure 22: Summary Results for Income per Capita Variable

4.3.1 Sales per Capita (S/P)

For retail S/P, the majority of results have a significant t-statistic. In both the Static and Growth results, Hotel is among the categories that do not have significant t-stats, which is

expected since sales in those categories are not related to local incomes of a city. Food, Clothing and Health goods may be insignificant because they are staple goods in which variance in sales may not be as dependent on incomes as for more discretionary goods. The Static beta for General Merchandise is negative, which indicates that it is inferior to other retail categories. This category includes primarily department stores, so the negative beta may reflect the decline of department stores given their competitive disadvantage to specialty category killer retailers.

Some of the significant betas for the Growth income elasticities of demand were greater than one. These include Furniture, Electronics and Building Materials. This indicates that these are elastic luxury goods. As incomes increased from 2002 to 2007, people spent a disproportionate amount on these items.

4.3.2 Expected Sales per Store (S/St)

The ExpBetas are very consistent with the actual betas across retail categories. In Total retail, the Static results show that a 100% increase in Inc/P will result in a 16.4% increase in S/P, but only a 3.6% increase in St/P. This results in an expected and actual 12.8% increase in S/St. In other words, stores perform better in markets with relatively higher average incomes.

In the Growth results, a 100% increase in Inc/P will result in a 68.4% increase in S/P, but only a 2.3% increase in St/P. This corresponds to an expected increase in S/St of 66%, which is approximately equal to the actual 0.68 beta. This suggests that relatively higher income growth in a market versus other markets is an important indicator of store performance.

In the Static results the Furniture and Book categories had actual betas that were less than the ExpBeta, 0.095 versus 0.199 and 0.18 versus 0.209, respectively. This indicates that either sales are lagging for those categories or that retailers are opening too many physical stores given the income-related demand for those retail goods. This could indicate the effect of consumers' ability to purchase those items online and a resultant curtailing of brick-and-mortar store expansion.

On the other hand, in the Growth results, the actual beta for Furniture exceeded the ExpBeta. This indicates that Furniture stores were shrinking at a fast enough pace during increased income demand that the overall S/St increased. Electronics and Building Material

stores ExpBetas were greater than actual betas. This suggests that due to internal capital reasons or available space, these categories were not able to expand physical stores enough to capture sales demand from income growth.

4.4 Role of Employment Elasticity

Results for [X5] Control Variable: EMP/P Sales/Capita [Y1]						
EMP/P-Y1	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat		Beta	Tstat	
TOT	0.159	1.913		0.500	1.477	
FURN	0.133	0.497		0.806	0.846	
ELEC	0.551	2.157		0.796	0.979	
BLDG	-0.209	-1.064		1.054	0.913	
FOOD	-0.270	-1.203		1.042	1.478	
HLTH	-0.244	-0.758		0.428	0.633	
CLTH	0.433	1.664		0.850	1.585	
BOOK	0.757	4.154		-0.184	-0.246	
GENR	0.510	2.553		0.335	0.619	
HOTL	1.670	2.079		1.537	0.608	
RESTR	0.584	3.400		0.183	0.483	
Store/Capita [Y2]						
EMP/P-Y2	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat		Beta	Tstat	
TOT	0.150	1.189		-0.101	-0.497	
FURN	-0.133	-0.500		-0.658	-1.628	
ELEC	0.284	1.514		0.687	1.038	
BLDG	-0.200	-1.002		0.084	0.233	
FOOD	-0.322	-1.342		0.051	0.104	
HLTH	0.009	0.039		-0.276	-0.712	
CLTH	0.330	1.196		-0.248	-0.611	
BOOK	0.631	3.662		0.262	0.700	
GENR	-0.014	-0.013		-1.003	-1.534	
HOTL	0.329	0.894		-0.046	-0.082	
RESTR	0.280	1.973		0.016	0.059	
Sales/Store [Y3]						
EMP/P-Y3	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
TOT	0.009	0.084	0.009	0.668	1.559	0.602
FURN	0.282	1.308	0.267	1.857	1.918	1.464
ELEC	0.267	1.184	0.267	0.177	0.161	0.109
BLDG	-0.010	-0.028	-0.010	1.167	1.192	0.970
FOOD	0.053	0.168	0.053	1.034	1.201	0.992
HLTH	-0.253	-0.971	-0.253	0.724	0.843	0.704
CLTH	0.103	0.683	0.103	1.154	2.072	1.098
BOOK	0.221	1.225	0.126	-0.592	-0.614	-0.445
GENR	0.524	1.784	0.524	1.322	1.826	1.338
HOTL	1.341	1.919	1.341	1.105	0.477	1.583
RESTR	0.304	2.017	0.304	0.142	0.555	0.167

Figure 23: Summary Results for Employment per Capita Variable

4.4.1 Sales per Capita (S/P)

Most of the Static results in show that Emp/P has a significant relationship to S/P. Notably, Food (as in food products eaten in) has a negative, nearly significant beta, while Restaurant has a positive significant beta. This indicates that as there is greater employment there is less time to prepare food at home. Restaurants stand to gain from a larger amount of people eating out. Hotels have an employment elasticity of demand greater than one. This indicates and elastic demand for business travel is required for cities that having higher employment. The Books (hobbies and sporting goods) and Electronics categories have very significant positive betas. This indicates that with higher rates of employment, there is a stronger demand for goods related to extracurricular activities.

The Growth results have no significant results for any category. This could be a factor of the period of time observed in the datasets. From 2002 to 2007, the average change in the national unemployment rate was a net zero[11], and similarly the average change in Emp/P was only 0.3% where it was 18.12% for S/P (per Figure 21). Employment changes on different intervals than average incomes and generally influences less than a tenth of the population.

4.4.2 Expected Sales per Store (S/St)

The ExpBetas are very consistent with the actual betas across retail categories in the Static results. For Total retail S/P, the Static results show that the level of employment in a MSA has little cumulative effect on store performance. A 100% increase in Emp/P will result in a 15.9% increase in S/P a 15% increase in St/P which equates to no real difference in overall S/St.

The expected and actual betas for S/St are quite large and significant for the General, Hotel and Restaurant categories in the Static results. This signifies that the greater the employment, the greater the demand for General goods but department stores cannot locate as easily in high economic activity areas, so the performance of existing stores in terms of revenue is higher. Demand for travel and eating out is generated by higher employment, but demand outpaces the supply of those establishments, which results in better overall store performance.

[11] Source: U.S. Bureau of Labor and Statistics – Current Population Survey, Moody's Analytics

In the Growth results, there are significant elastic increases (betas greater than one) for furniture and clothing. This implies that as more people are hired, they buy new home furnishings and new clothes for work. This is reflected in General Merchandise as well since many of these purchases may come from department stores.

As with Inc/P, the only discrepancy between the expected and actual betas is in the Furniture and Book categories. The difference is slight in the Furniture category, but large in the Book category as the ExpBeta is 0.126 versus the actual 0.221. This indicates that the demand for Books (and music, hobbies and sporting goods equipment) is significantly greater for increasing employment than is the resulting amount of stores provided for such good. As employment goes up, demand for Books and hobby equipment increases greatly, but retailers do not open stores proportionate to the supply (St/P) and demand (S/P). Again this may reflect proliferation of sales in Books and Music in online retailing. Firms decrease their stores in anticipation of this and the remaining stores have a higher S/St.

The Growth results had very inconsistent betas between ExpBetas and actual betas. Again, this is explained in the low variance of Emp/P in the 0207Delta time period versus that of the dependent variables.

4.5 Role of Scale

Results for [X7] Control Variable: POP Sales/Capita [Y1]						
POP-Y1	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat		Beta	Tstat	
TOT	-0.022	-2.127		0.193	1.164	
FURN	0.026	0.799		0.638	1.254	
ELEC	0.068	2.141		0.551	1.269	
BLDG	-0.067	-2.779		0.288	0.468	
FOOD	-0.034	-1.233		-0.038	-0.102	
HLTH	-0.098	-2.497		0.555	1.536	
CLTH	0.067	2.034		-0.018	-0.061	
BOOK	-0.034	-1.627		0.124	0.310	
GENR	-0.004	-0.179		-0.082	-0.283	
HOTL	0.236	2.380		-1.565	-1.159	
RESTR	0.040	1.902		-0.070	-0.347	
Store/Capita [Y2]						
POP-Y2	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat		Beta	Tstat	
TOT	-0.017	-1.110		-0.408	-4.100	
FURN	0.029	0.885		-0.830	-3.842	
ELEC	0.034	1.477		-0.020	-0.056	
BLDG	-0.100	-4.069		-0.846	-4.410	
FOOD	-0.013	-0.428		-0.614	-2.367	
HLTH	0.021	0.841		-0.491	-2.376	
CLTH	0.020	0.593		-0.067	-0.308	
BOOK	-0.074	-3.524		-0.442	-2.214	
GENR	0.001	0.014		-0.912	-2.613	
HOTL	0.006	0.106		-0.597	-1.993	
RESTR	-0.044	-2.618		-0.362	-2.475	
Sales/Store [Y3]						
POP-Y3	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
TOT	-0.005	-0.365	-0.005	0.719	3.437	0.600
FURN	0.010	0.472	-0.002	1.892	3.659	1.467
ELEC	0.034	1.193	0.034	0.660	1.127	0.571
BLDG	0.033	1.271	0.033	1.465	2.803	1.134
FOOD	-0.021	-0.543	-0.021	0.685	1.491	0.576
HLTH	-0.119	-3.695	-0.119	1.086	2.369	1.046
CLTH	0.046	2.421	0.046	0.084	0.282	0.049
BOOK	-0.011	-0.613	0.041	0.739	1.435	0.566
GENR	-0.005	-0.145	-0.005	0.844	2.185	0.830
HOTL	0.230	2.664	0.230	-0.754	-0.610	-0.968
RESTR	0.084	4.490	0.084	0.344	2.524	0.292

Figure 24: Summary Results for Population Variable

4.5.1 Sales per Capita (S/P)

Most of the t-statistics for the Static results show that Population has a significant relationship to S/P. The Total, Building and Health categories have negative betas. Larger cities

are more expensive (higher fixed cost of living) and leave less personal income for Total retail consumption. In larger cities people tend to live in apartments and condominiums, so there is less need for Building Materials. The Health category has a significant beta that indicates a 9.8% decrease in sales related with cities that are relatively twice as large, all else being equal. This is difficult to attribute to any one reason, but it is possible that larger populations have higher health consciousness and better diet and exercise regimens.

The Electronics, Clothing, Hotel and Restaurant categories have significant positive betas for S/P. It is reasonable that all of these categories experience higher amounts of sales in relatively larger MSAs. In particular, larger cites tend to have social environments centered around Restaurants. They are also more often tourist destinations or centers of business activity and have more Hotels.

The Growth results have no significant betas for any category. This suggests that as a city growth or shrinks in size, there is no significant corresponding increase or decrease in wages per person for retail expenditures.

4.5.2 Expected Sales per Store (S/St)

The ExpBetas are very consistent with the actual betas across retail categories in the Static results and fairly consistent for the Growth results. For Total retail S/P, the Static results show that relative size of an MSA has little cumulative relationship to store performance. This is somewhat in contradiction to monopolistic and oligopolistic competition models which suggest that in relatively larger markets, higher fixed cost of entry and operation will cause higher required S/St and less St/P. One explanation in that some of the larger cities, higher population densities and cheaper public transit costs are counterbalancing higher retail firm fixed costs. It should be noted that this analysis is based on MSA with populations 750,000 and greater. When the same analysis was performed on MSA of 100,000 and greater, the beta for Pop in relationship to S/St was a significant positive 3.3%, while St/P was a negative 7.7%. This suggests that, above a certain population threshold, the differential narrows between retailer costs, population density and transit costs. This is, of course, only on average and may have a more stark effect depending on locations within an MSA.

On the other hand, the relative population *growth* has a strong positive correlation to *growth* in store performance. If a given city experiences twice as much population growth than another city (all else being equal), S/P can be expected to be 19.3% greater, and St/P will be 40.8% less. This results in an expected S/St increase of 60%. Actual measured relationship was 71.9%. Typically a city will be growing because of greater economic opportunity and therefore greater demand for consumption. Also, the high negative beta for St/P suggests there may not be new store expansion opportunities available in areas of growing population. If an established, developed metropolis is growing in population, the housing for that additional population will be within more restricted boundaries that do not allow similar growth in retail development. This is supported by negative, significant betas in all categories of St/P in the Growth results.

It is also notable that in Static results, population had an insignificant relationship with Building Materials and Furniture. However in the Growth results there is a significant beta greater than one for these two categories. As populations are growing there is a need for Building Materials and Furniture to construct and furnish new homes.

4.6 Role of Central City Density

Results for [X3] Control Variable: DENSITY Sales/Capita [Y1]					
DENSITY-Y1	02-07 STATIC		02-07 GROWTH		
	AvgBeta	AvgTstat	Beta	Tstat	
TOT	-0.012	-0.879	0.065	0.387	
FURN	-0.092	-2.117	-0.221	-0.443	
ELEC	-0.028	-0.676	0.071	0.167	
BLDG	-0.094	-3.057	-0.308	-0.508	
FOOD	0.099	2.732	0.137	0.370	
HLTH	0.164	3.182	0.063	0.177	
CLTH	-0.014	-0.306	0.317	1.126	
BOOK	-0.007	-0.386	0.260	0.662	
GENR	-0.148	-4.586	0.547	1.925	
HOTL	-0.285	-2.213	0.781	0.589	
RESTR	-0.055	-2.047	0.131	0.656	
Store/Capita [Y2]					
DENSITY-Y2	02-07 STATIC		02-07 GROWTH		
	AvgBeta	AvgTstat	Beta	Tstat	
TOT	0.016	0.797	0.126	1.241	
FURN	-0.109	-2.589	0.247	1.163	
ELEC	-0.044	-1.452	0.072	0.208	
BLDG	-0.035	-1.098	0.855	4.533	
FOOD	0.151	3.892	0.330	1.292	
HLTH	0.048	1.453	0.182	0.895	
CLTH	-0.006	-0.147	-0.128	-0.598	
BOOK	0.033	1.194	0.289	1.473	
GENR	-0.049	-1.262	0.385	1.122	
HOTL	-0.241	-4.167	0.077	0.260	
RESTR	0.070	3.169	0.267	1.856	
Sales/Store [Y3]					
DENSITY-Y3	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
TOT	-0.029	-1.641	-0.029	-0.083	-0.391	-0.060
FURN	0.000	-0.144	0.017	-0.641	-1.261	-0.468
ELEC	0.016	0.415	0.016	-0.091	-0.157	-0.001
BLDG	-0.059	-1.754	-0.059	-1.393	-2.711	-1.162
FOOD	-0.052	-1.008	-0.052	-0.219	-0.486	-0.192
HLTH	0.116	2.730	0.116	-0.131	-0.290	-0.119
CLTH	-0.008	-0.330	-0.008	0.457	1.563	0.444
BOOK	-0.021	-0.767	-0.039	-0.086	-0.171	-0.029
GENR	-0.099	-2.101	-0.099	0.208	0.547	0.162
HOTL	-0.044	-0.387	-0.044	0.673	0.553	0.705
RESTR	-0.125	-5.174	-0.125	-0.177	-1.322	-0.136

Figure 25: Summary Results for Central City Density Variable

4.6.1 Sales per Capita (S/P)

The overall Total retail S/P has an insignificant relationship with Central City Density. While there are some significant t-stats for betas in various categories, we generally feel that as

is results for this independent variable offer no meaningful conclusions. It is difficult to interpolate conclusions from Density results without knowing the correlation between central city density and overall MSA density and how consistent that correlation is across all MSAs.

The independent control variable of "central city density", or more simply Density, is an attempt to simulate the scale of density of a metropolitan area given the density of its central city. The issue with data for MSA density is based on a Census "land area" measure that only excludes major bodies of water within the MSA, not parks, municipal land or geographically undevelopable land. We assumed that while central city populations only account for 26% of their respective MSA population, the density of a central city of would effectively represent the scale of development and population metro-wide. However, this is of course not necessarily the case and the relationship may vary widely across MSAs. This is evident in the results that are completely disparate from those for the Population independent variable.

The goal for this part of the model was to examine the role of population density on retail performance since retailers are increasingly implementing more urban strategies. For extrapolating conclusions regarding how those strategies relate to this economic analysis, we will have to look to the Population results.

4.7 Role of Housing Prices

Results for [X8] Control Variable: HOME Sales/Capita [Y1]					
HOME-Y1	02-07 STATIC		02-07 GROWTH		
	AvgBeta	AvgTstat	Beta	Tstat	
TOT	0.098	3.388	0.029	0.884	
FURN	-0.045	-0.527	-0.019	-0.201	
ELEC	0.187	1.909	-0.012	-0.144	
BLDG	0.006	0.431	-0.026	-0.226	
FOOD	0.046	0.678	0.093	1.304	
HLTH	0.051	0.415	-0.124	-1.812	
CLTH	0.355	3.798	0.052	0.968	
BOOK	0.077	1.607	-0.003	-0.044	
GENR	0.051	0.780	0.005	0.094	
HOTL	0.663	2.243	0.005	0.020	
RESTR	0.196	3.136	0.124	3.226	
Store/Capita [Y2]					
HOME-Y2	02-07 STATIC		02-07 GROWTH		
	AvgBeta	AvgTstat	Beta	Tstat	
TOT	0.073	1.712	0.053	2.723	
FURN	0.028	0.525	0.166	4.066	
ELEC	0.122	1.754	-0.057	-0.852	
BLDG	-0.190	-2.571	-0.003	-0.086	
FOOD	0.198	2.338	0.092	1.876	
HLTH	-0.070	-0.865	0.011	0.278	
CLTH	0.187	1.972	0.060	1.455	
BOOK	0.066	1.197	0.075	2.000	
GENR	-0.420	-4.921	-0.031	-0.465	
HOTL	0.336	2.506	-0.009	-0.151	
RESTR	0.082	1.621	0.080	2.894	
Sales/Store [Y3]					
HOME-Y3	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
TOT	0.025	0.688	0.025	-0.039	-0.958	-0.024
FURN	-0.002	-0.025	-0.073	-0.240	-2.453	-0.185
ELEC	0.066	0.721	0.066	0.053	0.478	0.045
BLDG	0.196	2.663	0.196	-0.011	-0.112	-0.023
FOOD	-0.152	-1.284	-0.152	-0.013	-0.155	0.001
HLTH	0.121	1.157	0.121	-0.135	-1.561	-0.135
CLTH	0.168	3.050	0.168	-0.018	-0.328	-0.007
BOOK	0.038	0.789	0.011	-0.118	-1.215	-0.079
GENR	0.471	4.469	0.471	0.022	0.306	0.036
HOTL	0.327	1.278	0.327	0.068	0.291	0.014
RESTR	0.114	2.064	0.114	0.027	1.037	0.044

Figure 26: Summary Results for Median Home Price Variable

4.7.1 Sales per Capita (S/P)

Roughly half of the Static results show significant, positive relationship between Home Prices and S/P. This is likely due in some part to the "wealth effect". This is where consumers

with more valuable assets (homes) perceive a greater amount of wealth or collateral for retail consumption. In other words, an increase in Home Price equates to an increase in perceived wealth.

For Total retail, all other control variables being equal, a city with 1% higher median Home Prices can be expected to have 0.1% greater total S/P. There are also significant positive correlation between Home Prices and sales in the Books, Clothing, Electronics, Hotel and Restaurant retail categories. This generally indicates that the greater wealth perceived the more spending will be on discretionary items. People with greater Home Prices have more desire social activity of eating out. Homeowners may also have families with children involved in sporting events. They may also buy more cameras and electronic equipment for their homes. Areas where housing is more expensive may be more desirable places to visit so there are more Hotel sales.

However it should be noted that there is some contention to using home values as a proxy for perceived wealth. In one paper, it is argued that home values are not a causal driver of consumption and that there is no significantly different increase in spending for homeowners versus renters in response to home price increases (Lee 2007). Also, in areas of greater development there is correspondingly higher to housing prices (Saiz 2010) and a lower percentage of home ownership (Hobbs and Stoops 2002). Therefore, Home Prices may not necessarily be a driver for S/P, although the two are highly correlated.

It is also interesting to note the combined relationship Home Prices and Population have with Total S/P. While Home Price has a positive relationship with S/P in both the Static and Growth results, Population has a negative Static beta and a positive Growth beta. This indicates that Population growth may serve as a proxy for perceived wealth. In larger, more expensive cities, overall there is less money for consumption and S/P goes down. However, in growing cities, housing prices are increasing and there is a perception of more wealth for consumption and S/P goes up.

Growth results are largely insignificant. This is likely due to the period during which the Growth was measured as it was a tumultuous time for housing. Exogenous variables may have driven this making some of the changes in Home Prices unrelated to consumption decisions.

4.7.2 Expected Sales per Store (S/St)

The ExpBetas are very consistent with the actual betas across retail categories in the Static results and fairly consistent for the Growth results. The Static results show that a 1% increase in Home Price will result in a 9.8% increase in S/P, but only a 7.3% increase in St/P. This results in an expected and actual 2.5% increase in S/St. In other words, stores perform better in markets with relatively higher Home Prices.

4.8 Role of Broadband Usage

Results for [X4] Control Variable: BROADBAND Sales/Capita [Y1]				
BROADBAND-Y1	02-07 STATIC		02-07 GROWTH	
	AvgBeta	AvgTstat	Beta	Tstat
TOT	0.202	2.928	0.022	0.261
FURN	0.516	2.454	0.257	1.069
ELEC	0.260	1.317	-0.288	-1.406
BLDG	0.400	3.082	0.160	0.551
FOOD	0.568	3.215	0.065	0.367
HLTH	-0.107	-0.447	0.026	0.154
CLTH	0.343	1.544	0.137	1.015
BOOK	0.367	2.648	-0.207	-1.096
GENR	-0.008	-0.052	0.048	0.350
HOTL	1.130	1.823	-0.163	-0.256
RESTR	0.310	2.443	0.073	0.762
Store/Capita [Y2]				
BROADBAND-Y2	02-07 STATIC		02-07 GROWTH	
	AvgBeta	AvgTstat	Beta	Tstat
TOT	0.104	1.070	-0.061	-1.188
FURN	0.211	1.078	0.124	1.213
ELEC	0.093	0.650	0.040	0.238
BLDG	0.212	1.342	0.013	0.148
FOOD	-0.248	-1.287	-0.088	-0.717
HLTH	-0.097	-0.589	-0.102	-1.043
CLTH	0.239	1.138	-0.027	-0.262
BOOK	0.467	3.589	-0.177	-1.876
GENR	-0.342	-1.996	0.084	0.510
HOTL	0.306	1.111	-0.138	-0.976
RESTR	0.362	3.704	0.036	0.525
Sales/Store [Y3]				
BROADBAND-Y3	02-07 STATIC			02-07 GROWTH		
	AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
TOT	0.098	1.162	0.098	0.091	0.852	0.083
FURN	0.202	1.448	0.305	0.105	0.431	0.133
ELEC	0.167	0.873	0.167	-0.376	-1.360	-0.328
BLDG	0.188	1.180	0.188	0.124	0.501	0.147
FOOD	0.816	3.190	0.816	0.166	0.766	0.153
HLTH	-0.010	-0.051	-0.010	0.150	0.691	0.128
CLTH	0.104	0.810	0.104	0.171	1.222	0.164
BOOK	-0.247	-1.659	-0.100	-0.020	-0.084	-0.030
GENR	0.334	1.467	0.334	0.007	0.041	-0.036
HOTL	0.824	1.505	0.824	-0.009	-0.016	-0.025
RESTR	-0.052	-0.451	-0.052	0.029	0.453	0.037

Figure 27: Summary Results for Percent Broadband Use in Homes Variable

4.8.1 Sales per Capita (S/P)

For retail S/P, the majority of results have a significant, positive t-statistic., with substantial beta coefficients, ranging from 0.2to 1.13. This indicates that Broadband is highly

correlated to greater retail sales in brick-and-mortar stores, all other city attributes being equal. This is a compelling relationship, given the concern over online retailing cannibalizing sales of traditional retailers. Indeed, as discussed in Chapter 3, e-commerce has been quickly expanding its share of overall retail sales. What is even more compelling is that although many of the betas are not quite statistically significant, they are generally all positive for the St/P and S/St dependent variables. This suggests that across the board, all three categories of retail performance increase for MSAs with higher Broadband Usage.

This indicates that the increased availability of product information and decreased search costs have increased market capture of brick-and-mortar retailers, which is supported by a number of previous studies. One study examined the effects of e-commerce on travel agencies and bookstores and found that large brick-and-mortar retailers either were not impacted or increased their market share in their respective industry (Emre, et al. 2005). These increased market shares were generally associated with capitalization on decreased search costs.

Generally, the Internet has proven to be a compliment to bricks-and-mortar retail sales by reducing real and time-related costs of "evaluation difficulty" and "perceived risk" in product searching (Laroche, et al. 2010). The empirically measured benefits of this greater for some retail categories than others, particularly if the retail good is more "sensory", i.e. products which have values that are relevant to how they feel, look, smell or sound (Pauwels, et al. 2010)

This fits conceptually with the context of the inventory cost model of shopping frequency (DiPasquale and Wheaton 1996). All else being equal, a consumer that tries to minimize her costs will increase her frequency of shopping trips given decreased cost to shop. If she can decrease search costs with online research, less time is spent at the store and more trips to the store are justifiable. The results also fit in the classical retail competition theory. Given that the cost to shop in a particular market decreases (again, in this case it is time-cost), then the market's store network will be denser. These results also fit within information search theory, where benefits (in the form of revenue) are gained from the greater information availability where prior search costs were relatively high. This effect is supported by recent empirical studies that show that physical store revenue impact of website introduction is higher for customers living farther away from the store and for customers with high web use frequency (Pauwels, et al. 2010).

The results also make sense in the following broad, empirical context. Larger retail firms are dominating the marketplace (Ch. 3.1), and most ,if not all, large firms now conduct business through multiple channels (Kabadayi et al. 2007; Kilcourse and Rowen 2008). Multi-channel firms generally benefit from greater relative profitability over "pure-play" online retailers (Petina, et al. 2009), an expanding market due to decreased search costs (Emre, et al. 2005) and improved customer loyalty and satisfaction (Kumar and Venkatesan 2005) while streamlining supply chains and distribution networks (Ganesan, et al. 2009).

These results may still seem counterintuitive when looked at by retail category. For example, it is clear on an anecdotal basis that music and bookstores have dwindled from many malls and centers. Firms like Borders, Barnes and Noble and Sam Goody have suffered due to proliferation of online retail, and recently Amazon.com announced that their sales of e-books have outpaced physical books (Fowler and Trachtenberg, 2010). However, the Broadband results indicate that *across markets*, Broadband has a positive relationship to S/P of Books (and music). So, if even if physical store sales of Books have decreased uniformly across all MSAs, the remaining stores will still experience greater S/P and S/St, *relative to other MSAs,* given greater Broadband Usage.

Another interesting aspect of the results is the extent of the positive, significant relationship across all categories. This most basically has to do with the increased availability of information. Restaurants experience greater S/P because it is easy to search for them and read reviews online. Hotels (similar to Emre, et al. 2005) have greater S/P in markets with higher Broadband because of multiple websites like Hotels.com that provide thorough descriptions of local accommodations. Bookstores benefit from sites like Goodreads.com where site members share book recommendations with their friends. Similarly there are countless recipe sites and discussion forums about cooking, and some grocers have online delivery sites.

It should be noted that the Growth results are essentially meaningless for this independent variable. As can be seen in Figure 18 and Figure 21, the 2002 levels of Broadband Usage in homes was very low across the nation. The growth of Broadband from 2002 to 2007 was uniformly positive and colossal across all MSAs, so it is not surprising that the variance in 0207Delta has no significant relationship to the variance in retail performance.

4.9 Chapter Summary

Stores perform better in markets with higher average incomes, and they perform much better in areas with relatively higher incomes that are also growing.

Areas of higher employment rates equate to higher sales, particularly for retail categories related to extracurricular activities such as books, sporting goods, travel and dining out. Areas of higher employment have greater store performance in the general merchandise, lodging and restaurants retail categories.

Stores in larger cities will experience relatively greater performance over smaller cities, but store performance does not vary much across very large cities. However, MSAs may vary immensely in cross-section, and higher density areas will likely exhibit greater store performance. Cities with relatively large population growth will have much larger store performance growth.

Although housing prices may not be a causal driver of consumption, there is significantly greater sales per capita and sales per store in markets with higher home prices. Markets with higher home prices will tend to have more renters per capita. Retailers trying to capture the wealth effect may look for heterogeneity in MSA and target areas with higher home ownership. Areas with growing population may be a proxy for the same perceived wealth effect.

The amount of high speed Internet usage in a market is much more of a benefit to brick-and-mortar retailers than a hindrance.

CHAPTER 5: CONSEQUENCES TO REAL ESATE

As presented in the previous chapters, there is a wide confluence of long-term changes occurring in the retail industry. In the last half of the 20th century, real estate owners and developers were primarily concerned with issues such as visibility and access from major roadways, space for parking and a simple radius analysis of demographic income in a market area. In the last 30-40 years, suburban areas grew rapidly, and that residential expansion combined with ample space to build supported a boom of center growth, particularly power centers with large format category killer anchors.

However, now the playing field has changed due to economic and competitive forces, demographic shifts and a corresponding sea change in retailers' storing strategies. The changes in the retail industry have many affects on evaluation of potential real estate investments and operations of existing assets. The following sections describe the effects of the changes discussed in Chapters 3 and 4 and what attributes make the most attractive real estate in the contemporary retail world.

5.1 What Types of Markets and Properties

Because retailers are increasingly targeting urban markets (Ch. 3.3, 3.5) and store performance is better in those markets which are larger and denser (Ch. 4.5), real estate properties in or directly adjacent to populous cities will be well positioned to succeed. These markets have high barriers to entry that prevent the severe competition that has saturated suburban markets (Ch. 4.5, 3.5.I-11). Opportunities exist in urban markets for properties that have small, irregular, or multi-level floorplates that may be leased to expanding retailers utilizing flexible store formats. There is a clear, pervasive trend of retail floorplates getting smaller and more efficient (Ch. 3.3, 3.5), substantially different from typical prototype adjustment. This is partially due to urban market penetration and partially due to retailers' incorporation of multi-channel retailing, which can help streamline supply chains and inventory management (Ch. 3.4). Opportunities also exist in developed markets where the current real estate use does not meet the highest and best use of the area and is now primed for economic redevelopment (Ch. 3.3, 3.5.I-7).

Markets with relatively faster growing populations have substantially greater sales per store (Ch.4.5). This is due to population growth being a proxy for the "wealth effect" and retail

stock lagging increasing consumer demand in this type of market. However, caution should be used when estimating this benefit. Forecasted national population growth is a tepid sub-1% per year on average for the next decade[12]. Retail real estate underwriting should not be contingent on growth, particularly at fringes of MSAs. Rather, this should be counted as potential significant upside to an investment. This upside is more likely in large markets. Whether or not urbanization is occurring on a widespread basis, most core market central cities are certainly not in decline.

Potential income within a market is will always be important to sales performance. However, it is notable that markets with *growing* incomes have a much greater magnitude of both sales per capita and sales per store (Ch. 4.3), and a market with increasing affluence is highly desirable. At minimum however, due to a near-term trend of decreasing discretionary incomes (Ch. 3.1), investors should be careful to consider markets where there are substantially high average incomes or a much denser population of people with lower incomes. It should be noted that the higher-income cohort will have disproportionately higher discretionary incomes (Ch. 3.3.1). Also, due to increasing income stratification (Ch. 3.1.1), both mean and median incomes in trade areas should be considered. In urban markets, this may especially need to be considered as there is more ethnic and income homogeneity in those markets (Ch. 3.3).

Markets with high home prices are associated with better sales per capita and sales per store performance (Ch. 4.7). Care should be taken to assuming that this is a causal "wealth effect" (Ch. 4.7.1). For instance, in urban markets, space limitation may cause both increased housing prices and store performance. However, there are a relatively high number of renters in urban markets, indicating there should be less of a wealth, or "collateral channel" effect. Regardless, there is a clear and strong positive correlation between housing cost and retail performance in a given market, and real estate investors can use housing prices as one indicator of potential retail performance.

Markets that have relatively greater high-speed Internet usage have correspondingly better physical store retail performance in terms of both sales per capita and sales per store (Ch. 4.8). Generally, the greater availability of product and marketing information expands the retail

[12] U.S. Bureau of Census: Population Estimates as of November 2010.

market for brick-and-mortar retailers as a mechanism for decreased search costs and better customer-seller pairing (Ch. 3.3, 4.8.1). This suggests that more technologically advanced and better educated cities will yield superior retail performance than other metros.

Finally, existing assets in markets with many of the above positive characteristics, may pose opportunities for renovation, redevelopment or expansion (Ch. 3.5). Due to all the changes in retailing highlighted in this paper, there are ample opportunities to modernize existing centers that have a dominant existing position in a market with high consumer demand and restricted competitive development.

5.2 What Types of Retailers and Tenant Mix

First of all, a number of the changes listed in this paper strongly suggest that retail real estate will be more volatile and idiosyncratic in the future (Ch.3). Such changes are: the increased amounts of turnover in the retail industry during a period of industry consolidation (Ch. 3.1.2), the oversupply of stores in suburban markets (Ch. 3.2) and the introduction of a mammoth new shopping channel in the Internet (Ch. 3.4). Retailers will likely appear and fade more rapidly in the future. Also, in urban markets, costs to make design changes are higher, and demographics are more heterogeneous and complicated. For all of these reasons, tighter control of assets and tenant mixes will be required. This control serves to manage the risks of a more volatile industry and higher costs in urban markets and to ensure tenant mixes that optimize retail center performance. Also, since new development will be limited in the future, more focus will need to be on the management of existing assets in retail real estate portfolios.

Due to a slow recession recovery and a seemingly long term shift in savings rates and consumer deleveraging (Ch. 3.1.1), it will remain important to have a healthy allocation of tenants that sell necessary, income inelastic goods like food, health care products and some types of clothing (Ch. 4.3). This suggests allocating a conservative percentage tenant mixes to groceries, drugstores or discount retailers, which are more resistant to economic fluctuations.

Given the widespread industry consolidation (Ch. 3.1.2), a handful of national retailers have come to dominate their retail categories. The trend of consolidation makes it important to have large tenants that have clear competitive advantage in their categories. On the other hand, the amount of industry consolidation has also created opportunities for niche or new concept

retailers. These stores may leverage differentiating qualities such as a unique product offerings or shopping experiences, like well-organized customer service departments (Ch. 3.5.I-2, 3.5.I-3).

Retailers with highly integrated multi-channel selling platforms will continue to be the most successful type retailers (Ch. 3.4), and real estate owners should make this a real aspect of vetting potential tenants. Combining the positive aspects of both brick-and-mortar and online retailing has resulted in the best sales performance, and retailers integrate these selling channels effectively tend to increase their market share (Ch. 3.4, 4.8.1).

Because of increased shopping center competition (Ch.3.2) and the addition of the Internet as a shopping channel (Ch.3.4), entertainment and interactivity are key components of successful retail centers in the future. The social aspect of the shopping experience is the primary advantage brick-and-mortar retail has over online retailing. It is also a means by which retail centers can drive foot traffic and differentiate themselves from their competitors. Examples of these types of establishments in tenant mixes include: restaurants, cinemas, coffee shops, bars, night clubs, bowling alleys, pool halls and music venues. Another type of viable tenant could be Internet cafes, which simultaneously captures revenue and demand for Internet usage in a brick-and-mortar shopping environment.

Other tenant types, particularly in down cycles for retail, may be non-retail uses such as doctors or dentist offices or government services. These uses maintain foot traffic and are complimentary to retail and occupy similar size floorplates.

5.3What Types of Amenities

Increased time and money costs of transportation are making walkability and access to public transit increasingly important to retail properties (Ch. 3.3.1, 3.5, App.E). There is also a growing preference toward living in walkable communities, which helped make transit amenities important. Public transit and walkability will likely be very important to retiring Baby Boomers that will need to have other means of transit than driving (Ch. 3.1.1, 3.3.1).

A large share of new development projects in the future will be mixed-use (Ch. 3.3, 3.5), which is a positive amenity to retail real estate because the inherent density provides a baseline demand for retail consumption. It provides a mixed-use project or community with convenient

and walkable access to retail. Retail real estate owners and operators in mixed-use project should consider that retail is often included in these developments as the "activator" of the public space. In other words, rather than a standalone entity, the retail becomes a vital, integrated part of the fabric of an overall project and should be considered in that context.

Because the social aspect of shopping should be positively leveraged, real estate owners should use common areas for interactivity with tenants and customers (Ch. 3.4, 3.5). This includes programmed events and entertainment. These could be things such as free live music, holiday parties, wine tastings or any array of social draws. These types of events could be coordinated with grand openings or large promotions of tenants. This has the added benefit of strengthening tenant relations.

This social aspect of shopping also adds to the case for there being inherent value in urban retail environments. Proximity to entertainment, offices, schools, community services and a general vibrant atmosphere can be considered valuable "urban amenities" (Ch.3.3). These are beneficial externalities to a real estate asset, and they could be considered as shadow anchors.

Internet usage is positively correlated with brick-and-mortar store sales due to the increased availability of product information and decreased search costs for consumers (Ch. 3.4, 3.5, 4.8). Essentially, shoppers like to do their "browsing" online due to the expediency and anytime accessibility. However, they enjoy the comfort, experience and instant gratification of making purchases in a physical store. Retailers such as Walmart and Kohl's have harnessed this phenomenon by including Internet kiosks in their stores (Ch. 3.3.2, 3.5). This suggests that retail center owners should also consider include Internet workstations of some sort in their centers. It could provide a way to navigate the center, learn about promotions, events and coupons, purchase mall gift cards, gain specific product information or simply increase their time in the center. However this is done, it offers opportunities to real estate owners for creativity to embrace the positive qualities of online retailing in a brick-and-mortar environment.

CHAPTER 6: CONCLUSION

The hypothesis posed at the onset of this research study was that the conventionally accepted characteristics of "good" retail real estate have changed substantially over the last decade. Based on the evidence provided in Chapters 3 and 4 of this paper, we have shown that there are considerably different aspects of the types of markets, sites and tenants that define "good" retail property.

The Recession in combination with perennial shifts in demographics and discretionary incomes has caused a flight to value, and centers will have higher allocations of retailers selling income inelastic goods than they may have previously. The attractiveness of small, expensive urban properties with irregular or multi-level formats has increased, while the viability of many traditional type suburban locations has declined. Generally retail floorplates will shrink, and centers must have more flexibility to accommodate smaller stores. In higher density markets, access and traffic pattern considerations have changed and public transportation and walkability is becoming increasingly important. Dense markets also pose greater heterogeneity of incomes and ethnicities that require more thoughtful consideration than simple median income radii analysis of trade areas. Finally, more so than ever, retail industry consolidation causes real estate owners to seek category dominant tenants, but also consider how to differentiate their retail offerings.

Broadband changed many things. Overall, it has been a net positive to brick-and-mortar retailers, and owners should seek tenants with strong multi-channel platforms. To counter the growing popularity of online retailing, owners should implement entertainment-oriented tenant mixes or interactive, programmed uses of common to accent brick-and-mortar shopping as an experience. This can also serve as a supplemental revenue generator. Savvy real estate owners may also find creative ways to embrace the Internet or at least support those tenants with online platforms.

Due to these numerous changes, we accept the hypothesis of this paper. It is true that core principles such as access, residential density and potential income capture are still critical aspects of brick-and-mortar retail. However, pervasive economic, competitive and technological changes in retailing have caused significant corresponding changes in the types of properties and

tenants that constitute "good" retail real estate. These changes have altered how potential investors in retail real estate must evaluate the markets, sites, building attributes, trade areas, modes of transit and tenant mixes of retail properties.

CHAPTER 7: TOPICS FOR FURTHER STUDY

The affects of density on retail could be studied in a more refined manner. Relating the density of central cities or CBDs, where urban infill and economic redevelopment zones are most prevalent, to the corresponding retail performance of those areas would be a more straightforward way to observe the effects of urbanization on consumption and retail industry performance. If the retail data used in this study can be conglomerated into municipalities or micropolitan areas that correspond across all of the relevant data points, this would better capture the characteristics of dense urban areas and a clearer picture may emerge of the effects of urbanity on consumption. Generally Census data poorly defines "density" in a way that is meaningful from a real estate perspective. GIS software, such as ArcGIS, could be used to refine "density" to population per *developed* area of land. As an example, Albert Saiz has performed such a study and has data on "land availability" within 50km radii of major U.S. metropolitan areas (Saiz 2010).

Data on Internet usage is surprisingly sparse. Refining of "broadband usage" statistics to hard data on hourly usage or number of unique IP connections may provide a more direct and interesting analysis of the effects of high-speed Internet access on retail. Statistics may be obtained in partnership with large ISPs such as Akamai, Google or the Federal Trade Commission. As more data is made available for public or academic use, there will be many implications for real estate and economics in general as the accessibility of Internet increases and increased information flow decreases the time to communicate, coordinate and consume.

While it is interesting to study the demand side of retail as it relates to consumption and store performance, there is a large amount of potential research in the space market side of retailing. Consumer behavior drives retail store performance, but there are significantly more factors that drive the performance of a retail real estate asset. For many reasons, the current space market data available for retail sector real estate is relatively sparse and often unreliable. This in and of itself presents many opportunities to refine research on retail sector real estate.

For example, two of the largest providers of retail space market data are CoStar and REIS. While REIS has attempted to do so, neither of these data providers have substantial raw data on base rents, net of TI allowances plus sales percentage rents. Also, neither of these providers have data on regional malls.

One metric that is used often in the retail real estate industry is "occupancy ratios" or "health ratios". This is the ratio of the cost to occupy store space to the revenue of the establishment, usually measured monthly. Real estate owners may internally use this as a gauge of a tenant's performance. This can warn a landlord if a tenant is in danger of "going dark" or conversely if they are performing strongly, they may agree to a rent increase upon resigning at the end of a lease term. If this metric can be captured, it will yield a clearer picture on the cost of entry into a market, a major decision that partially determines the density of stores in a market. This metric would give a better picture on additional retail potential given the market specific cost of entry. An individually retailer will know the occupancy ratio that is acceptable for their business when choosing store location and will do site specific, but a model for understanding drivers of this ratio would be extremely valuable for a real estate practitioner.

The effects of access to public transportation on retail centers offers a broad range of opportunities for academic study. A study correlating retail performance to proximity to residential density within a 15 minute walk or public transportation within a five minute walk could be very interesting.

BIBLIOGRAPHY

1. Anonymous, (2008, November). Small formats have big future at Walmart. Retailing Today, 47(14), 9. Retrieved August 2010, from ABI/INFORM Global. (Document ID: 1609212361).
2. Anonymous. (2010). A Return to Neighborhood Roots. *njbiz*, 14-15. Retrieved from Business Source Corporate database.
3. Bucks, Brian K., Kennickell, A., Mach, Traci L. and Moore, Kevin B. Changes in U.S. Family Finances from 2004 to 2007: Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin,* 2009.
4. Cromartie, J. and Nelson, P. (August 2009). Baby Boom Migration and Its Impact on Rural America. *United States Department of Agriculture Economic Research Service,* No.79. Retrieved from www.usda.gov.
5. DeVaney, S. and Chiremba, S. (2005). Comparing the Retirement Savings of the Baby Boomers and Other Cohorts. *U.S. Bureau of Labor and Statistics.* Retrieved from www.bls.gov. Accessed August 2010.
6. DiPasquale, D. and Wheaton, W.(1996). Urban Economics and Real Estate Markets (Ch.6, pp. 132-3). Upper Saddle River, NJ: Prentice-Hall Inc.
7. Dorfman, B. (June 21, 2010). Walmart offers plan for dozens of Chicago stores. Retrieved from http://www.rueters.com. Accessed July 2010.
8. Duff, M. (April 6, 2010). Wal-Mart Drives Efficiency with Project Impact. Retrieved from http://www.bnet.com. Accessed July 2010.
9. Duff, M. (August 12, 2010). Walmart Revitalizes Smaller Stores to Boost Growth on Main Street. Retrieved from http://www.bnet.com. Accessed July 2010.
10. Duff, M. (June 11, 2009). Second Supermercado de Walmart Signals More Vigorous Hispanic Effort. Retrieved from http://www.bnet.com. Accessed July 2010.
11. Edelson, S. (April 17, 2006). Wal-Mart's N.Y. Plan: Retail Pushing Effort To Build in 5 Boroughs. *Women's Wear Daily*, *191*(81), 1-15. Retrieved from Business Source Corporate database.
12. Emre, O., Hortacsu, A. and Syverson, C. (October 2005). E-commerce and the Market Structure of Retail Industries, *The Networks, Electronic Commerce, and Telecommunications ("NET") Institute.* Retrieved from http://www.netinst.org/NET_Working_Papers.html. Accessed November 2010.

13. Fleck, C. (July 1, 2010). Running Out of Money Worse Than Death. Retrieved from http://www.aarp.org/work/retirement-planning/info-06-2010/running_out_of_money_worse_than_death.html. Accessed July 2010.
14. Fowler, G. and Trachtenberg, J. (July 20, 2010). Amazon Says E-Book Sales Outpace Hardcovers, Wall Street Journal Online. Retrieved from http://online.wsj.com/article/SB10001424052748703720504575377472723652734.html?mod=WSJ_hpp_MIDDLETopStories#ixzz0xk6YH2bD. Accessed August 2010.
15. Fronstin, P. (April 2010). Why Health Savings Accounts Cannot Cover All Retiree Medical Costs. *Employee Benefit Research Institute Notes,31*(4).
16. Ganesan S., George M., Jap S., Palmatier R.W., Weitz B. (2009) Supply Chain Management and Retailer Performance: Emerging Trends, Issues, and Implications for Research and Practice, *Journal of Retailing*, 85 (1), pp. 84-94.
17. Ganesh, J. Reynolds, K.E. Luckett, M. Pomirleanu, N. (March 2010). Online Shopper Motivations, and e-Store Attributes: An Examination of Online Patronage Behavior and Shopper Typologies, *Journal of Retailing*, 86 (1), p.106-115.
18. Hobbs, F. and Stoops, N. (November 2002). Demographic Trends in the 20th Century. U.S. Census Bureau, Census 2000 Special Reports, Series CENSR-4, Washington, D.C. 2002.
19. Holmes, E. (March 19, 2010), Sizing Up Property, Mall Stores Try to Shrink. *The Wall Street Journal.* Retrieved from http://online.wsj.com/article/SB10001424052748704059004575127711780438090.html. Accessed August 2010.
20. Johnson, C. (October 26, 2004). Web Buyers Prefer To Shop Offline, *Forrester Research*. Retrieved from http://www.forrester.com/Research/Document/Excerpt/0,7211,35603,00.html. Accessed November 2010.
21. Kabadayi, S., Eyuboglu, N., and Thomas, G.P. (2007), The Performance Implications of Designing Multiple Channels to Fit with Strategy and Environment, *Journal of Marketing*, 71(4), 195–211.Retrieved from EBSCO*host*.
22. Kilcourse, B. and Rowen, S. (2008), "Finding the Integrated Multi-Channel Retailer," *Retail Systems Research,* Benchmark Study 2008.
23. Konus, U. Verhoef, P.C. Neslin, S.A. (December 2008). Multichannel Shopper Segments and Their Covariates, *Journal of Retailing*, 84 (4), p.398-413.

24. Kramer, M. (2010). We need to get in regional game. *Crain's Detroit Business*, *26*(17), 6. Retrieved from Business Source Corporate database.
25. Kukar-Kinney, M. Ridgway, N.M. Monroe, K.B. (September 2009). The Relationship Between Consumers' Tendencies to Buy Compulsively and Their Motivations to Shop and Buy on the Internet, *Journal of Retailing*, 85 (3), p.298-307.
26. Kumar, V., and Rajkumar V. (2005), "Who are the Multichannel Shoppers and How do they Perform?: Correlates of Multichannel Shopping Behavior," *Journal of Interactive Marketing*, 19(2), 44-62.
27. Laroche, M., Yang, Z., McDougall, G. and Bergeron, J. Internet versus bricks-and-mortar retailers: An investigation into intangibility and its consequences, *Journal of Retailing*, Volume 81, Issue 4, 2005, Pages 251-267, ISSN 0022-4359. Retrieved from http://www.sciencedirect.com/science/article/B6W5D-4H9YCJ7-2/2/873f222670a09f635cd00dd812bf3cae. Accessed December 2010.
28. Lee, M. (October 2007). House Prices, Consumption, and Their Common Causes. Retrieved from SSRN: http://ssrn.com/abstract=1023966. Accessed December 2010.
29. Lewis, V.B. (2008). Benchmark: Luxury Sector eBusiness Adoption, *Forrester Research.* Retrieved from www.forrester.com. Accessed July 2010.
30. Love, J. (May 2008). The Economic Slowdown's Impact on Middle-Aged and Older Americans. Retrieved from http://assets.aarp.org/rgcenter/econ/economy_survey.pdf. Accessed July 2010.
31. Lueg, J.E. Ponder, N. Beatty, S.E. Capella, M.L. (January 2006). Teenagers' use of alternative shopping channels: A consumer socialization perspective, *Journal of Retailing*, 82 (2), p.137-153.
32. Martin, T. (July 1, 2010). "Chicago Council Approves Wal-Mart Expansion," *The Wall Street Journal*. Retrieved from http://online.wsj.com. Accessed July 2010.
33. Nelson, P. (2008). Life-course influences on nonearnings income migration in the United States. Environment & Planning A, 40(9), 2149-2168. doi:10.1068/a39243.
34. Pauwels, K., Leeflang, P., Teerling, M. and Huizingh, K. (December 4, 2010). Does Online Information Drive Offline Revenues?: Only for Specific Products and Consumer Segments!, *Journal of Retailing*, In Press, Corrected Proof, ISSN 0022-4359. Retrieved from

http://www.sciencedirect.com/science/article/B6W5D-51MCPMB-1/2/6029f9f75c1ac619e61e7613e6b8bae7. Accessed December 2010.

35. Pentina, I. Pelton, L.E. Hasty, R.W. (June 2009). Performance Implications of Online Entry Timing by Store-Based Retailers: A Longitudinal Investigation, *Journal of Retailing*, 85 (2), p.177-193.
36. Ruffenach, G. and Greene, K. (2008), *The Wall Street Journal.'s Retirement-Planning Guide*, retrieved from http://online.wsj.com/article/NA_WSJ_PUB:SB120162321816225549.html, Accessed August 2010.
37. Saiz, A. (August 2010). The Geographic Determinants of Housing Supply, *Quarterly Journal of Economics*, 125(3), Pages 1253-1296. (doi: 10.1162/qjec.2010.125.3.1253)
38. Spralls III, S., Hunt, S. and Wilcox, J. (October 23, 2010). Extranet Use and Building Relationship Capital in Interfirm Distribution Networks: The Role of Extranet Capability, *Journal of Retailing*, ISSN 0022-4359, Retrieved from http://www.sciencedirect.com/science/article/B6W5D-519D4YM-1/2/f4ffcc747da66784b1661b5d176bd229. Access December 2010.
39. Tedeschi, B. (September 24, 2007). Retailer's Shortcut From Desktop to Store, *New York Times*. Retrieved from http://www.nytimes.com/2007/09/24/technology/24ecom.html. Accessed November 2010.
40. The Economist. (July 22, 2010). The chic learn to click: Luxury firms are digital laggards, but some are catching up. Retrieved from www.economist.com. Accessed July 2010.
41. VanDerhei, J. and Copeland, C. (July 2010). The EBRI Retirement Readiness Rating: Retirement Income Proparation and Future Prospects. www.ebri.org. Accessed August 2010.
42. Venkatesan, R., Kumar, V., Ravishanker, N. (2007), "The Impact of Customer-Firm Interactions on Customer Channel Adoption Duration," *Journal of Marketing*, 71(2), 114-132.
43. Wieckowski, A. (2010). Back to the City. *Harvard Business Review, 88*(5), 23-25. Retrieved from Business Source Corporate database.
44. Wood, D. (2010). Mixed-Use Projects a Mixed Bag. *Texas Construction*, *18*(3), 54-56. Retrieved from Business Source Corporate database.
45. Wood, S.L. (May 2009). Future fantasies: a social change perspective of retailing in the 21st century, *Journal of Retailing*, 78 (1), p.77-83.

APPENDIX A: DESCRIPTION AND SOURCE OF REGRESSION DATASETS

Description and Data Sources of Variables and Datasets for Regressions

Dependent Variables	Abbreviations	Description	Units	Data Source
Y1	S/P	Sales per capita	($/P)	U.S. Census (BOC) - Economic Census
Y2	St/P	Stores per capita	($/P)	U.S. Census (BOC) - Economic Census
Y3	S/St	Sales per store	($/St)	U.S. Census (BOC) - Economic Census
Independent Control Variables	**Abbreviations**	**Description**	**Units**	**Data Source**
X1	Temp	Long-term Average Annual Temperature	°F	U.S. National Oceanic and Atmospheric Administration (NOAA) and the National Climatic Data Center (NCDC)
X2	Precip	Long-term Average Annual Precipitation	(in)	U.S. National Oceanic and Atmospheric Administration (NOAA) and the National Climatic Data Center (NCDC)
X3	Density	MSA Central City Density	(P/SqMi)	U.S. Census Bureau (BOC): City Data Book, Table C-1. Cities -- Area and Population
X4	Broadband	Percent MSA households that actively use high speed Internet at home	(%)	Current Populations Surveys (CPS): Computer and Internet Use Supplements, Jointly conducted by the BOC and BLS.
X5	Emp/pop	Percent Employment of the MSA Population	(%)	Bureau of Labor and Statistics (BLS)
X6	Inc/pop	Average Income of the MSA Population	($/P)	U.S. Bureau of Economic Analysis: Table CA06 - Line 0010
X7	Population	MSA Population	(1000s P)	U.S. Census Bureau (BOC)
X8	Home	Median Existing Single-Family Home Price	($1000)	National Association of Realtors (NAR)
Datasets	**Abbreviations**	**Description**		
	AllPop Dataset	100k+ Populations		
	750k+ Dataset	750k+ Populations (less Las Vegas)		
	2007 Dataset	2007 Data for all variables for MSAs 750k+ Populations		
	2002 Dataset	2002 Data for all variables for MSAs 750k+ Populations		
	0207Delta	Percent change from 2002 to 2007 in all variables		
Results	**Abbreviations**	**Description**		
Avg 2002 and 2007 Datasets	Static	Results indicate the effect of the static characteristics of an independent variable relative to other MSAs' dependent variable static characteristics.		
0207Delta	Growth	Results indicate the effect of the growth of an independent variable relative to other MSAs' dependent variable growth.		

Figure 28: Description and Sources of Variables and Datasets for Regressions

APPENDIX B: INTERVIEW TEMPLATES

Interview Template for Retailers

1- **Growth:** Where do you perceive retail store & center growth in the next decade?

2- **Urbanization:** Do you perceive a growing demand for retail in urban vs. suburban environments, and if so, what is driving this?

3- Asset Level Effects: Given your answer to the above, what are the effects on your storing strategy (for example: trade area analysis, sales forecasting, parking vs. public transit, leasing contracts, prototype designs, et al)? Both high-level planning perspectives and examples would be helpful.

4- **Multi-Channel Retailing / E-Commerce:** What has been the effect of media technology on your bricks & mortar stores, if any (for example: sales, store growth, product delivery, marketing strategy, supply chain management, et al)? In other words, has multi-channel retailing been a hindrance or help to new store growth?

Interview Template for Real Estate Professionals

1- **Growth:** Where do you perceive retail store & center growth in the next decade?

2- **Urbanization:** Do you perceive a growing demand for retail in urban vs. suburban environments? What is your opinion of the drivers of this?

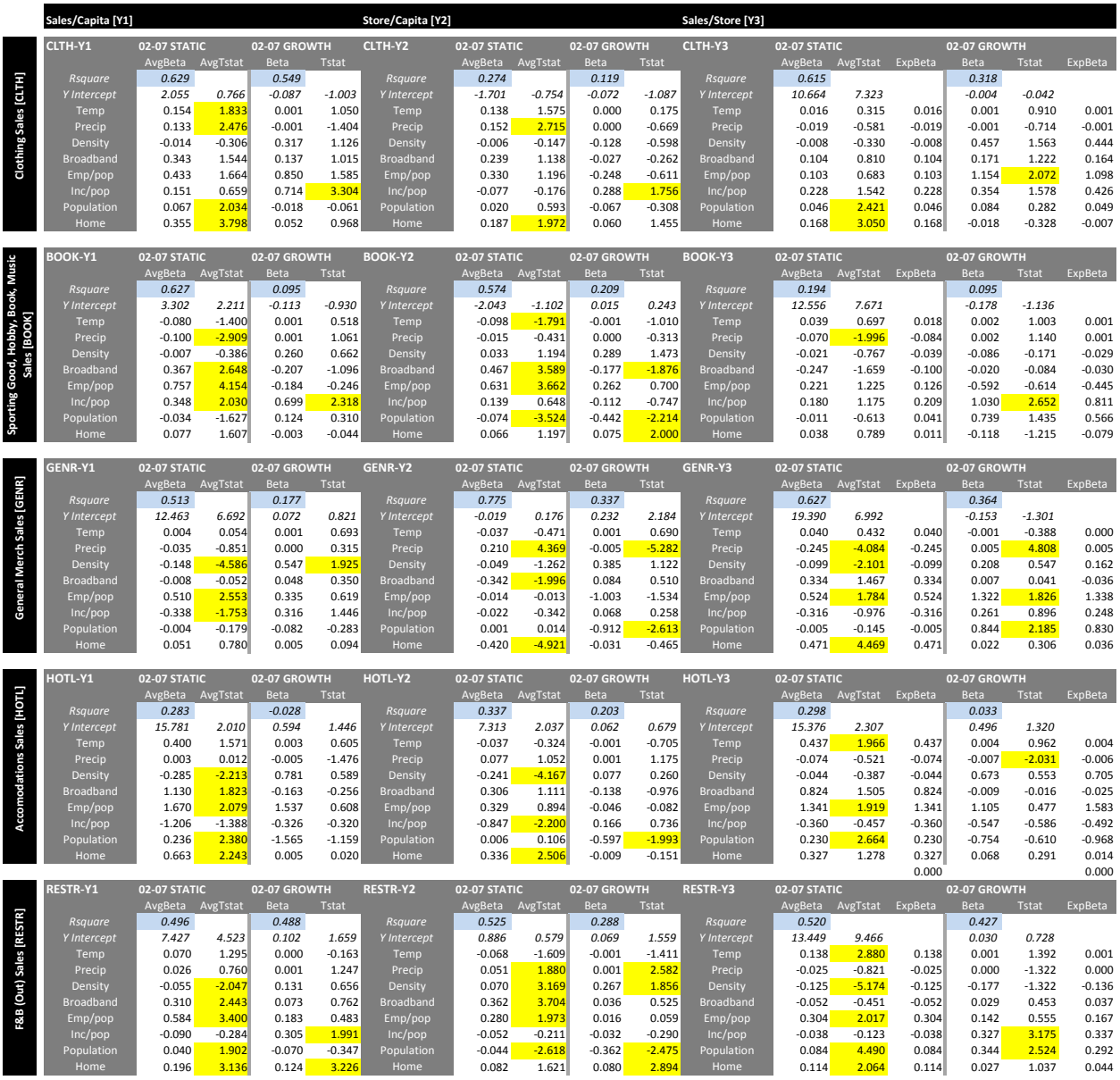
3- **Asset Level Effects:** Given your answer to the above, what are the effects on your acquisition/development strategy, market analysis, traffic studies and lease/purchase contracts? Can you provide high-level planning perspectives and specific examples?

4- **Multi-Channel Retailing / E-Commerce:** What has been the effect of media technology on tenant performance (occupancy health ratios) and marketing strategy and how has this affected your acquisition/development/management strategy, if at all? Has multi-channel retailing been a hindrance or help to new shopping center growth, and how?

APPENDIX C: RESULTS OF REGRESSION ANALYSIS BY RETAIL CATEGORY

	Sales/Capita [Y1]				Store/Capita [Y2]				Sales/Store [Y3]							
Total Sales [TOT]	TOT-Y1	02-07 STATIC		02-07 GROWTH		TOT-Y2	02-07 STATIC		02-07 GROWTH		TOT-Y3	02-07 STATIC			02-07 GROWTH		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.651*		*0.588*		*Rsquare*	*0.509*		*0.427*		*Rsquare*	*0.402*			*0.382*		
	Y Intercept	*6.993*	*8.931*	*-0.072*	*-1.329*	*Y Intercept*	*-0.105*	*-0.114*	*-0.004*	*-0.123*	*Y Intercept*	*14.006*	*14.113*		*-0.068*	*-1.002*	
	Temp	-0.008	-0.288	0.000	0.551	Temp	-0.010	-0.245	0.000	0.563	Temp	0.002	0.062	0.002	0.000	0.088	0.000
	Precip	0.038	2.182	0.001	1.574	Precip	0.138	5.385	0.000	-1.352	Precip	-0.100	-4.564	-0.100	0.001	1.965	0.001
	Density	-0.012	-0.879	0.065	0.387	Density	0.016	0.797	0.126	1.241	Density	-0.029	-1.641	-0.029	-0.083	-0.391	-0.060
	Broadband	0.202	2.928	0.022	0.261	Broadband	0.104	1.070	-0.061	-1.188	Broadband	0.098	1.162	0.098	0.091	0.852	0.083
	Emp/pop	0.159	1.913	0.500	1.477	Emp/pop	0.150	1.189	-0.101	-0.497	Emp/pop	0.009	0.084	0.009	0.668	1.559	0.602
	Inc/pop	0.164	1.897	0.683	5.268	Inc/pop	0.036	0.314	0.023	0.295	Inc/pop	0.128	1.117	0.128	0.680	4.148	0.660
	Population	-0.022	-2.127	0.193	1.164	Population	-0.017	-1.110	-0.408	-4.100	Population	-0.005	-0.365	-0.005	0.719	3.437	0.600
	Home	0.098	3.388	0.029	0.884	Home	0.073	1.712	0.053	2.723	Home	0.025	0.688	0.025	-0.039	-0.958	-0.024
Furniture Sales [FURN]	FURN-Y1	02-07 STATIC		02-07 GROWTH		FURN-Y2	02-07 STATIC		02-07 GROWTH		FURN-Y3	02-07 STATIC			02-07 GROWTH		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.376*		*0.322*		*Rsquare*	*0.263*		*0.397*		*Rsquare*	*0.208*			*0.288*		
	Y Intercept	*-1.465*	*-0.560*	*-0.437*	*-2.828*	*Y Intercept*	*-7.902*	*-3.077*	*-0.173*	*-2.635*	*Y Intercept*	*14.078*	*7.929*		*-0.239*	*-1.521*	
	Temp	0.014	0.166	0.001	0.480	Temp	0.007	0.077	0.000	0.428	Temp	-0.017	-0.277	0.007	0.000	0.205	0.001
	Precip	-0.037	-0.685	0.000	0.362	Precip	0.097	1.864	0.001	1.680	Precip	-0.102	-2.664	-0.134	-0.001	-0.682	0.000
	Density	-0.092	-2.117	-0.221	-0.443	Density	-0.109	-2.589	0.247	1.163	Density	0.000	-0.144	0.017	-0.641	-1.261	-0.468
	Broadband	0.516	2.454	0.257	1.069	Broadband	0.211	1.078	0.124	1.213	Broadband	0.202	1.448	0.305	0.105	0.431	0.133
	Emp/pop	0.133	0.497	0.806	0.846	Emp/pop	-0.133	-0.500	-0.658	-1.628	Emp/pop	0.282	1.308	0.267	1.857	1.918	1.464
	Inc/pop	0.813	3.209	1.438	3.748	Inc/pop	0.614	2.165	-0.087	-0.533	Inc/pop	0.095	0.744	0.199	1.640	4.204	1.525
	Population	0.026	0.799	0.638	1.254	Population	0.029	0.885	-0.830	-3.842	Population	0.010	0.472	-0.002	1.892	3.659	1.467
	Home	-0.045	-0.527	-0.019	-0.201	Home	0.028	0.525	0.166	4.066	Home	-0.002	-0.025	-0.073	-0.240	-2.453	-0.185
Electronic Sales [ELEC]	ELEC-Y1	02-07 STATIC		02-07 GROWTH		ELEC-Y2	02-07 STATIC		02-07 GROWTH		ELEC-Y3	02-07 STATIC			02-07 GROWTH		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.487*		*0.548*		*Rsquare*	*0.132*		*-0.048*		*Rsquare*	*0.426*			*0.264*		
	Y Intercept	*2.450*	*0.983*	*-0.243*	*-1.839*	*Y Intercept*	*-1.377*	*-0.836*	*-0.086*	*-0.803*	*Y Intercept*	*10.735*	*4.936*		*-0.101*	*-0.568*	
	Temp	0.030	0.372	0.000	-0.088	Temp	-0.006	-0.100	0.001	1.162	Temp	0.036	0.475	0.036	-0.002	-0.904	-0.002
	Precip	-0.115	-2.203	0.004	3.466	Precip	0.062	1.613	0.000	0.436	Precip	-0.177	-3.792	-0.177	0.003	2.195	0.004
	Density	-0.028	-0.676	0.071	0.167	Density	-0.044	-1.452	0.072	0.208	Density	0.016	0.415	0.016	-0.091	-0.157	-0.001
	Broadband	0.260	1.317	-0.288	-1.406	Broadband	0.093	0.650	0.040	0.238	Broadband	0.167	0.873	0.167	-0.376	-1.360	-0.328
	Emp/pop	0.551	2.157	0.796	0.979	Emp/pop	0.284	1.514	0.687	1.038	Emp/pop	0.267	1.184	0.267	0.177	0.161	0.109
	Inc/pop	0.271	1.153	1.768	5.399	Inc/pop	-0.090	-0.414	0.138	0.518	Inc/pop	0.361	1.589	0.361	1.556	3.517	1.630
	Population	0.068	2.141	0.551	1.269	Population	0.034	1.477	-0.020	-0.056	Population	0.034	1.193	0.034	0.660	1.127	0.571
	Home	0.187	1.909	-0.012	-0.144	Home	0.122	1.754	-0.057	-0.852	Home	0.066	0.721	0.066	0.053	0.478	0.045
Building Mat'l Sales [BLDG]	BLDG-Y1	02-07 STATIC		02-07 GROWTH		BLDG-Y2	02-07 STATIC		02-07 GROWTH		BLDG-Y3	02-07 STATIC			02-07 GROWTH		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.462*		*0.422*		*Rsquare*	*0.604*		*0.625*		*Rsquare*	*0.336*			*0.300*		
	Y Intercept	*2.109*	*1.708*	*-0.533*	*-2.845*	*Y Intercept*	*-5.267*	*-2.706*	*-0.090*	*-1.549*	*Y Intercept*	*14.283*	*7.366*		*-0.360*	*-2.267*	
	Temp	-0.117	-1.839	0.002	0.970	Temp	-0.136	-2.155	0.000	-0.316	Temp	0.019	0.302	0.019	0.002	1.020	0.002
	Precip	0.096	2.657	0.003	1.947	Precip	0.139	3.432	0.000	-0.938	Precip	-0.043	-0.953	-0.043	0.003	2.506	0.004
	Density	-0.094	-3.057	-0.308	-0.508	Density	-0.035	-1.098	0.855	4.533	Density	-0.059	-1.754	-0.059	-1.393	-2.711	-1.162
	Broadband	0.400	3.082	0.160	0.551	Broadband	0.212	1.342	0.013	0.148	Broadband	0.188	1.180	0.188	0.124	0.501	0.147
	Emp/pop	-0.209	-1.064	1.054	0.913	Emp/pop	-0.200	-1.002	0.084	0.233	Emp/pop	-0.010	-0.028	-0.010	1.167	1.192	0.970
	Inc/pop	0.577	2.505	1.774	3.813	Inc/pop	0.560	2.678	0.618	4.267	Inc/pop	0.017	-0.027	0.017	0.906	2.297	1.157
	Population	-0.067	-2.779	0.288	0.468	Population	-0.100	-4.069	-0.846	-4.410	Population	0.033	1.271	0.033	1.465	2.803	1.134
	Home	0.006	0.431	-0.026	-0.226	Home	-0.190	-2.571	-0.003	-0.086	Home	0.196	2.663	0.196	-0.011	-0.112	-0.023
F&B (in) Sales [FOOD]	FOOD-Y1	02-07 STATIC		02-07 GROWTH		FOOD-Y2	02-07 STATIC		02-07 GROWTH		FOOD-Y3	02-07 STATIC			02-07 GROWTH		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.453*		*0.103*		*Rsquare*	*0.617*		*0.292*		*Rsquare*	*0.246*			*0.024*		
	Y Intercept	*3.868*	*1.984*	*0.205*	*1.790*	*Y Intercept*	*-3.342*	*-1.527*	*0.231*	*2.922*	*Y Intercept*	*14.118*	*4.822*		*-0.050*	*-0.355*	
	Temp	-0.057	-0.784	-0.002	-1.145	Temp	-0.138	-1.786	-0.003	-2.893	Temp	0.081	0.798	0.081	0.001	0.862	0.001
	Precip	0.031	0.668	-0.001	-0.799	Precip	0.293	5.981	-0.002	-2.293	Precip	-0.262	-4.016	-0.262	0.001	0.919	0.001
	Density	0.099	2.732	0.137	0.370	Density	0.151	3.892	0.330	1.292	Density	-0.052	-1.008	-0.052	-0.219	-0.486	-0.192
	Broadband	0.568	3.215	0.065	0.367	Broadband	-0.248	-1.287	-0.088	-0.717	Broadband	0.816	3.190	0.816	0.166	0.766	0.153
	Emp/pop	-0.270	-1.203	1.042	1.478	Emp/pop	-0.322	-1.342	0.051	0.104	Emp/pop	0.053	0.168	0.053	1.034	1.201	0.992
	Inc/pop	0.279	1.092	-0.156	-0.547	Inc/pop	-0.038	-0.097	-0.105	-0.537	Inc/pop	0.317	0.845	0.317	-0.048	-0.140	-0.050
	Population	-0.034	-1.233	-0.038	-0.102	Population	-0.013	-0.428	-0.614	-2.367	Population	-0.021	-0.543	-0.021	0.685	1.491	0.576
	Home	0.046	0.678	0.093	1.304	Home	0.198	2.338	0.092	1.876	Home	-0.152	-1.284	-0.152	-0.013	-0.155	0.001
Heath Care Sales [HLTH]	HLTH-Y1	02-07 STATIC		02-07 GROWTH		HLTH-Y2	02-07 STATIC		02-07 GROWTH		HLTH-Y3	02-07 STATIC			02-07 GROWTH		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.370*		*0.115*		*Rsquare*	*0.383*		*0.208*		*Rsquare*	*0.291*			*0.082*		
	Y Intercept	*2.170*	*0.677*	*0.046*	*0.422*	*Y Intercept*	*-3.337*	*-1.720*	*0.040*	*0.636*	*Y Intercept*	*12.414*	*5.015*		*0.013*	*0.092*	
	Temp	0.077	0.771	0.000	-0.127	Temp	0.023	0.337	0.002	2.712	Temp	0.054	0.653	0.054	-0.002	-1.538	-0.002
	Precip	0.229	3.490	0.000	-0.146	Precip	0.168	3.989	-0.001	-2.441	Precip	0.061	1.125	0.061	0.001	1.060	0.001
	Density	0.164	3.182	0.063	0.177	Density	0.048	1.453	0.182	0.895	Density	0.116	2.730	0.116	-0.131	-0.290	-0.119
	Broadband	-0.107	-0.447	0.026	0.154	Broadband	-0.097	-0.589	-0.102	-1.043	Broadband	-0.010	-0.051	-0.010	0.150	0.691	0.128
	Emp/pop	-0.244	-0.758	0.428	0.633	Emp/pop	0.009	0.039	-0.276	-0.712	Emp/pop	-0.253	-0.971	-0.253	0.724	0.843	0.704
	Inc/pop	0.202	0.719	0.943	3.461	Inc/pop	0.108	0.500	-0.003	-0.019	Inc/pop	0.094	0.490	0.094	0.924	2.670	0.946
	Population	-0.098	-2.497	0.555	1.536	Population	0.021	0.841	-0.491	-2.376	Population	-0.119	-3.695	-0.119	1.086	2.369	1.046
	Home	0.051	0.415	-0.124	-1.812	Home	-0.070	-0.865	0.011	0.278	Home	0.121	1.157	0.121	-0.135	-1.561	-0.135

Figure 29: Summary Regression Results by Retail Category (TOT, FURN, ELEC, BLDG, FOOD, HLTH)



Sales/Capita [Y1]					Store/Capita [Y2]					Sales/Store [Y3]						
Clothing Sales [CLTH]	**CLTH-Y1**	**02-07 STATIC**		**02-07 GROWTH**		**CLTH-Y2**	**02-07 STATIC**		**02-07 GROWTH**		**CLTH-Y3**	**02-07 STATIC**			**02-07 GROWTH**		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.629*		*0.549*		*Rsquare*	*0.274*		*0.119*		*Rsquare*	*0.615*			*0.318*		
	Y Intercept	*2.055*	*0.766*	*-0.087*	*-1.003*	*Y Intercept*	*-1.701*	*-0.754*	*-0.072*	*-1.087*	*Y Intercept*	*10.664*	*7.323*		*-0.004*	*-0.042*	
	Temp	0.154	1.833	0.001	1.050	Temp	0.138	1.575	0.000	0.175	Temp	0.016	0.315	0.016	0.001	0.910	0.001
	Precip	0.133	2.476	-0.001	-1.404	Precip	0.152	2.715	0.000	-0.669	Precip	-0.019	-0.581	-0.019	-0.001	-0.714	-0.001
	Density	-0.014	-0.306	0.317	1.126	Density	-0.006	-0.147	-0.128	-0.598	Density	-0.008	-0.330	-0.008	0.457	1.563	0.444
	Broadband	0.343	1.544	0.137	1.015	Broadband	0.239	1.138	-0.027	-0.262	Broadband	0.104	0.810	0.104	0.171	1.222	0.164
	Emp/pop	0.433	1.664	0.850	1.585	Emp/pop	0.330	1.196	-0.248	-0.611	Emp/pop	0.103	0.683	0.103	1.154	2.072	1.098
	Inc/pop	0.151	0.659	0.714	3.304	Inc/pop	-0.077	-0.176	0.288	1.756	Inc/pop	0.228	1.542	0.228	0.354	1.578	0.426
	Population	0.067	2.034	-0.018	-0.061	Population	0.020	0.593	-0.067	-0.308	Population	0.046	2.421	0.046	0.084	0.282	0.049
	Home	0.355	3.798	0.052	0.968	Home	0.187	1.972	0.060	1.455	Home	0.168	3.050	0.168	-0.018	-0.328	-0.007
Sporting Good, Hobby, Book, Music Sales [BOOK]	**BOOK-Y1**	**02-07 STATIC**		**02-07 GROWTH**		**BOOK-Y2**	**02-07 STATIC**		**02-07 GROWTH**		**BOOK-Y3**	**02-07 STATIC**			**02-07 GROWTH**		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.627*		*0.095*		*Rsquare*	*0.574*		*0.209*		*Rsquare*	*0.194*			*0.095*		
	Y Intercept	*3.302*	*2.211*	*-0.113*	*-0.930*	*Y Intercept*	*-2.043*	*-1.102*	*0.015*	*0.243*	*Y Intercept*	*12.556*	*7.671*		*-0.178*	*-1.136*	
	Temp	-0.080	-1.400	0.001	0.518	Temp	-0.098	-1.791	-0.001	-1.010	Temp	0.039	0.697	0.018	0.002	1.003	0.001
	Precip	-0.100	-2.909	0.001	1.061	Precip	-0.015	-0.431	0.000	-0.313	Precip	-0.070	-1.996	-0.084	0.002	1.140	0.001
	Density	-0.007	-0.386	0.260	0.662	Density	0.033	1.194	0.289	1.473	Density	-0.021	-0.767	-0.039	-0.086	-0.171	-0.029
	Broadband	0.367	2.648	-0.207	-1.096	Broadband	0.467	3.589	-0.177	-1.876	Broadband	-0.247	-1.659	-0.100	-0.020	-0.084	-0.030
	Emp/pop	0.757	4.154	-0.184	-0.246	Emp/pop	0.631	3.662	0.262	0.700	Emp/pop	0.221	1.225	0.126	-0.592	-0.614	-0.445
	Inc/pop	0.348	2.030	0.699	2.318	Inc/pop	0.139	0.648	-0.112	-0.747	Inc/pop	0.180	1.175	0.209	1.030	2.652	0.811
	Population	-0.034	-1.627	0.124	0.310	Population	-0.074	-3.524	-0.442	-2.214	Population	-0.011	-0.613	0.041	0.739	1.435	0.566
	Home	0.077	1.607	-0.003	-0.044	Home	0.066	1.197	0.075	2.000	Home	0.038	0.789	0.011	-0.118	-1.215	-0.079
General Merch Sales [GENR]	**GENR-Y1**	**02-07 STATIC**		**02-07 GROWTH**		**GENR-Y2**	**02-07 STATIC**		**02-07 GROWTH**		**GENR-Y3**	**02-07 STATIC**			**02-07 GROWTH**		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.513*		*0.177*		*Rsquare*	*0.775*		*0.337*		*Rsquare*	*0.627*			*0.364*		
	Y Intercept	*12.463*	*6.692*	*0.072*	*0.821*	*Y Intercept*	*-0.019*	*0.176*	*0.232*	*2.184*	*Y Intercept*	*19.390*	*6.992*		*-0.153*	*-1.301*	
	Temp	0.004	0.054	0.001	0.693	Temp	-0.037	-0.471	0.001	0.690	Temp	0.040	0.432	0.040	-0.001	-0.388	0.000
	Precip	-0.035	-0.851	0.000	0.315	Precip	0.210	4.369	-0.005	-5.282	Precip	-0.245	-4.084	-0.245	0.005	4.808	0.005
	Density	-0.148	-4.586	0.547	1.925	Density	-0.049	-1.262	0.385	1.122	Density	-0.099	-2.101	-0.099	0.208	0.547	0.162
	Broadband	-0.008	-0.052	0.048	0.350	Broadband	-0.342	-1.996	0.084	0.510	Broadband	0.334	1.467	0.334	0.007	0.041	-0.036
	Emp/pop	0.510	2.553	0.335	0.619	Emp/pop	-0.014	-0.013	-1.003	-1.534	Emp/pop	0.524	1.784	0.524	1.322	1.826	1.338
	Inc/pop	-0.338	-1.753	0.316	1.446	Inc/pop	-0.022	-0.342	0.068	0.258	Inc/pop	-0.316	-0.976	-0.316	0.261	0.896	0.248
	Population	-0.004	-0.179	-0.082	-0.283	Population	0.001	0.014	-0.912	-2.613	Population	-0.005	-0.145	-0.005	0.844	2.185	0.830
	Home	0.051	0.780	0.005	0.094	Home	-0.420	-4.921	-0.031	-0.465	Home	0.471	4.469	0.471	0.022	0.306	0.036
Accomodations Sales [HOTL]	**HOTL-Y1**	**02-07 STATIC**		**02-07 GROWTH**		**HOTL-Y2**	**02-07 STATIC**		**02-07 GROWTH**		**HOTL-Y3**	**02-07 STATIC**			**02-07 GROWTH**		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.283*		*-0.028*		*Rsquare*	*0.337*		*0.203*		*Rsquare*	*0.298*			*0.033*		
	Y Intercept	*15.781*	*2.010*	*0.594*	*1.446*	*Y Intercept*	*7.313*	*2.037*	*0.062*	*0.679*	*Y Intercept*	*15.376*	*2.307*		*0.496*	*1.320*	
	Temp	0.400	1.571	0.003	0.605	Temp	-0.037	-0.324	-0.001	-0.705	Temp	0.437	1.966	0.437	0.004	0.962	0.004
	Precip	0.003	0.012	-0.005	-1.476	Precip	0.077	1.052	0.001	1.175	Precip	-0.074	-0.521	-0.074	-0.007	-2.031	-0.006
	Density	-0.285	-2.213	0.781	0.589	Density	-0.241	-4.167	0.077	0.260	Density	-0.044	-0.387	-0.044	0.673	0.553	0.705
	Broadband	1.130	1.823	-0.163	-0.256	Broadband	0.306	1.111	-0.138	-0.976	Broadband	0.824	1.505	0.824	-0.009	-0.016	-0.025
	Emp/pop	1.670	2.079	1.537	0.608	Emp/pop	0.329	0.894	-0.046	-0.082	Emp/pop	1.341	1.919	1.341	1.105	0.477	1.583
	Inc/pop	-1.206	-1.388	-0.326	-0.320	Inc/pop	-0.847	-2.200	0.166	0.736	Inc/pop	-0.360	-0.457	-0.360	-0.547	-0.586	-0.492
	Population	0.236	2.380	-1.565	-1.159	Population	0.006	0.106	-0.597	-1.993	Population	0.230	2.664	0.230	-0.754	-0.610	-0.968
	Home	0.663	2.243	0.005	0.020	Home	0.336	2.506	-0.009	-0.151	Home	0.327	1.278	0.327	0.068	0.291	0.014
														0.000			0.000
F&B (Out) Sales [RESTR]	**RESTR-Y1**	**02-07 STATIC**		**02-07 GROWTH**		**RESTR-Y2**	**02-07 STATIC**		**02-07 GROWTH**		**RESTR-Y3**	**02-07 STATIC**			**02-07 GROWTH**		
		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	Beta	Tstat		AvgBeta	AvgTstat	ExpBeta	Beta	Tstat	ExpBeta
	Rsquare	*0.496*		*0.488*		*Rsquare*	*0.525*		*0.288*		*Rsquare*	*0.520*			*0.427*		
	Y Intercept	*7.427*	*4.523*	*0.102*	*1.659*	*Y Intercept*	*0.886*	*0.579*	*0.069*	*1.559*	*Y Intercept*	*13.449*	*9.466*		*0.030*	*0.728*	
	Temp	0.070	1.295	0.000	-0.163	Temp	-0.068	-1.609	-0.001	-1.411	Temp	0.138	2.880	0.138	0.001	1.392	0.001
	Precip	0.026	0.760	0.001	1.247	Precip	0.051	1.880	0.001	2.582	Precip	-0.025	-0.821	-0.025	0.000	-1.322	0.000
	Density	-0.055	-2.047	0.131	0.656	Density	0.070	3.169	0.267	1.856	Density	-0.125	-5.174	-0.125	-0.177	-1.322	-0.136
	Broadband	0.310	2.443	0.073	0.762	Broadband	0.362	3.704	0.036	0.525	Broadband	-0.052	-0.451	-0.052	0.029	0.453	0.037
	Emp/pop	0.584	3.400	0.183	0.483	Emp/pop	0.280	1.973	0.016	0.059	Emp/pop	0.304	2.017	0.304	0.142	0.555	0.167
	Inc/pop	-0.090	-0.284	0.305	1.991	Inc/pop	-0.052	-0.211	-0.032	-0.290	Inc/pop	-0.038	-0.123	-0.038	0.327	3.175	0.337
	Population	0.040	1.902	-0.070	-0.347	Population	-0.044	-2.618	-0.362	-2.475	Population	0.084	4.490	0.084	0.344	2.524	0.292
	Home	0.196	3.136	0.124	3.226	Home	0.082	1.621	0.080	2.894	Home	0.114	2.064	0.114	0.027	1.037	0.044

Figure 30: Summary Regression Results by Retail Category (CLTH, BOOK, GENR, HOTL, RESTR)

APPENDIX D: ICSC 2009 SHOPPING CENTER CLASSIFICATIONS

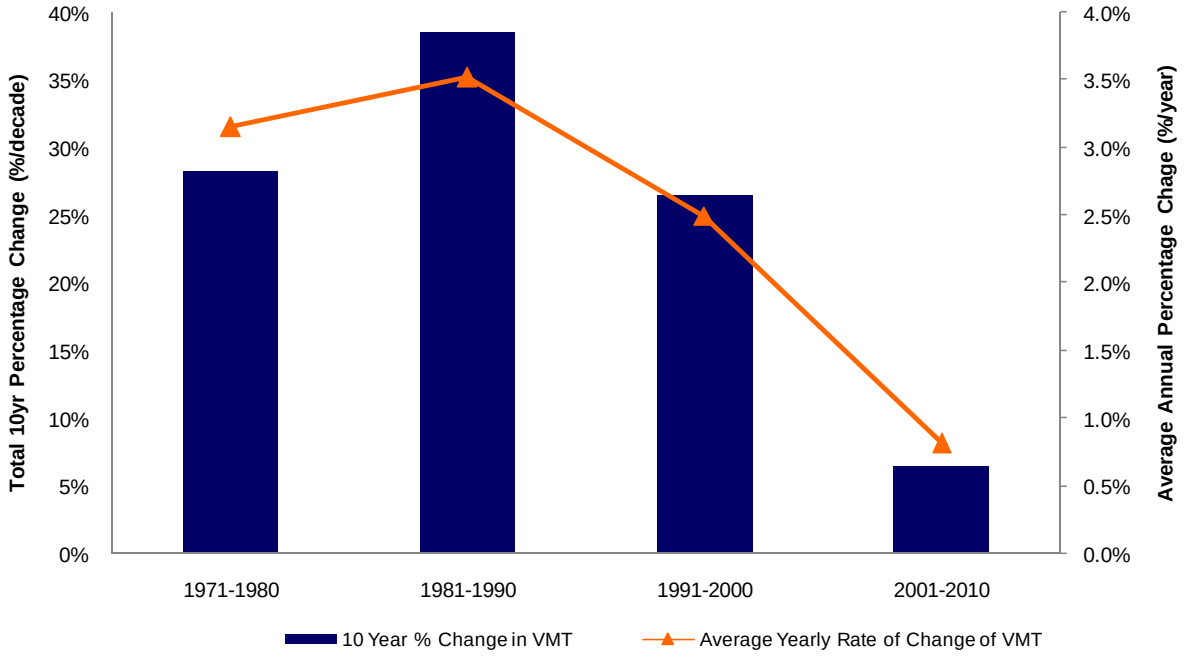
U.S. Shopping Center Definitions — April 2009

Type of Shopping Center	Concept	Center Count	Aggregate GLA (Sq. Ft.)	% Share of Industry GLA	Average Size (Sq. Ft.)	Typical GLA Range (Sq. Ft.)	Acres	# of Anchors	% Anchor GLA	Typical Number of Tenants	Typical Type of Anchors	Trade Area Size
Malls												
Regional	General merchandise or fashion-oriented offerings. Typically, enclosed with inward-facing stores connected by a common walkway. Parking surrounds the outside perimeter.	765	417,114,733	5.9%	545,248	400,000-800,000	40-100	2+	50-70%	40-80 stores	Full-line or junior department store, mass merchant, discount department store and/or fashion apparel store	5-15 miles
Super Regional	Similar in concept to regional malls, but offering more variety and assortment.	614	723,109,949	10.3%	1,177,704	800,000+	60-120	3+	50-70%	NA	Full-line or junior department store, mass merchant, discount department store and/or fashion apparel store	5-25 miles
Open-Air Centers												
Strip/Convenience	Attached row of stores or service outlets managed as a coherent retail entity, with on-site parking usually located in front of the stores. Open canopies may connect the store fronts, but a strip center does not have enclosed walkways linking the stores. A strip center may be configured in a straight line, or have an "L" or "U" shape. A convenience center is among the smallest of the centers, whose tenants provide a narrow mix of goods and personal services to a very limited trade area.	61,934	1,161,868,013	16.6%	18,760	< 30,000	<3	Either anchor-less or with one small convenience store anchor.	NA	NA	Convenience store, such as a mini-mart.	<1 mile
Neighborhood	Convenience oriented	26,445	2,004,933,702	28.6%	75,815	30,000-150,000	3-5	1+	30-50%	5-20 stores	Supermarket	3 miles
Community	General merchandise or convenience-oriented offerings. Wider range of apparel and other soft goods offerings than neighborhood centers. The center is usually configured in a straight line as a strip, or may be laid out in an L or U shape, depending on the site and design.	9,004	1,648,897,595	23.5%	183,129	100,000-350,000	10-40	2+	40-60%	15-40 stores	Discount store, supermarket, drug, large-specialty discount (toys, books, electronics, home improvement/furnishings or sporting goods, etc.)	3-6 miles
Lifestyle	Upscale national-chain specialty stores with dining and entertainment in an outdoor setting	406	132,050,878	1.9%	325,248	150,000-500,000	10-40	0-2	0-50%	NA	Large format upscale specialty	8-12 miles
Power Center	Category-dominant anchors, including discount department stores, off-price stores, wholesale clubs, with only a few small tenants	2,033	794,412,941	11.3%	390,759	250,000-600,000	25-80	3+	70-90%	NA	"Category killers," such as home improvement, discount department, warehouse club and off-price stores	5-10 miles
Theme/Festival	Leisure, tourist, retail and service-oriented offerings with entertainment as a unifying theme. Often located in urban areas, they may be adapted from older--sometimes historic--buildings and can be part of a mixed-use project.	463	43,291,249	0.6%	93,502	80,000-250,000	5-20	Unspecified	NA	NA	Restaurants, entertainment	25-75 miles
Outlet	Manufacturers' and retailers' outlet stores selling brand-name goods at a discount	380	83,384,297	1.2%	219,432	50,000-400,000	10-50	NA	NA	NA	Manufacturers' and retailers' outlets	25-75 miles
Special Purpose												
Airport Retail	Consolidation of retail stores located within a commercial airport	37	4,405,070	0.1%	121,210	50,000-200,000	NA	NA	NA	NA	No anchors; retail includes specialty retail and restaurants	NA
Total Industry												
Total Industry	Mall + Open-Air + Special Purpose	102,081	7,013,538,435		68,706							

Sources: Appraisal Institute, CoStar and the International Council of Shopping Centers.

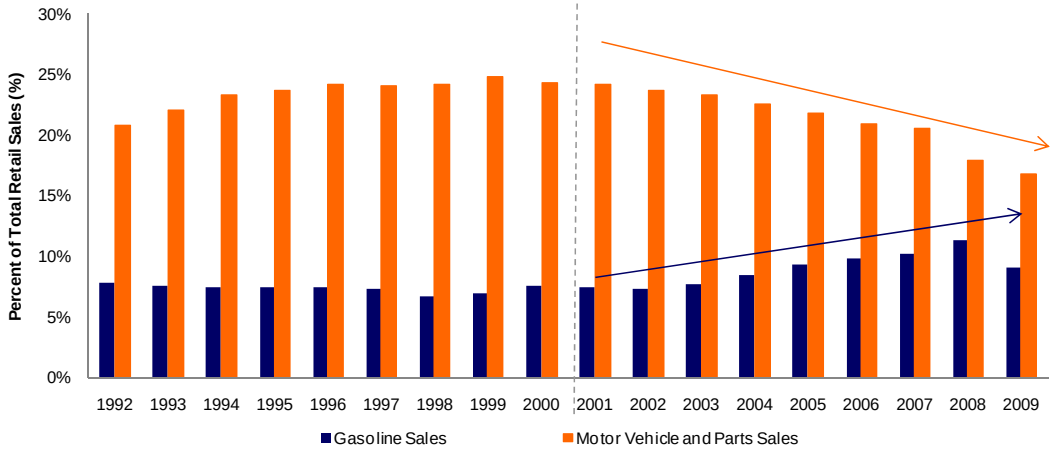
Figure 31: ICSC Shopping Center Definitions

APPENDIX E: TRANSPORTATION TREND GRAPHS



Source: U.S. Dept of Transportation and Federal Highway Administration (June 2010)

Figure 32: Vehicular Miles Traveled, 1970-2010



Source: US Census Bureau (June 2010)

Figure 33: Automotive and Gasoline Sales, 1992-2009