MARKET RESEARCH: THE CHANGING NEEDS FOR REAL ESTATE INVESTMENT DECISION-MAKING IN THE 1990'S

by

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Submitted to
The Department of Urban Studies and Planning
in Partial Fulfillment of the Requirements for the Degree
of
Master of Science in
Real Estate Development

at the

Massachusetts Institute of Technology

July, 1991

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ABSTRACT

With competition greater than ever, institutions gaining an increasingly larger share of assets, and profit margins declining, the real estate industry is going through a comprehensive and painful restructuring. Firms of every nature are exploring ways to manage assets smarter, exploit market imperfections more precisely and establish new methods for achieving competitive advantages. One way to do this is by having superior information to influence decision-making.

This thesis will address how firms can adapt to these changing conditions by more efficiently managing information and performing insightful market research. A description of the key economic, demographic and real estate specific variables influencing real estate will be presented along with a system to collect and monitor this information. An examination of how firms might organize themselves to collect, analyze and digest this information will be undertaken, including an analysis of whether firms should generate this information in-house or purchase it from outside vendors. Finally, mini-case studies of three real estate firms will illustrate how this nascent function is being handled in today's marketplace.

Thesis Supervisor: Lawrence S. Bacow

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CHAPTER I.

INTRODUCTION

During the first half of the 1980's real estate enjoyed an escalating demand that enabled prices to soar, returns to rise, and both existing and new real estate firms to proliferate. General business conditions were favorable for real estate for several reasons. Inflation at the start of the decade was over 12% resulting in rising rents which drove up property values. Demand was positively influenced by certain demographic shifts that were unique to this period of time. These included the entering of the baby boomers into the labor market which swelled the labor force; the shift from a manufacturing economy to a service economy; and the dramatic increase in the number of women entering the workforce from under 50% to 70% participation. (1)

Supply side changes, spurred by a plethora of capital, were occurring at the same time to respond to these factors. Developers exploited their relationships with financial sources to build national organizations. An abundance of non-recourse financing allowed developers to build whenever they could get the capital in order to generate fees without incurring any downside risk. Moreover, Congress deregulated the financial industry by eliminating Regulation Q, which had limited the interest rates that banks and thrifts could pay on deposits. Without such constraints, lending institutions had to compete for funds, thus driving up their cost of funds. The higher cost of funds drove lots of lenders to seek higher returns on their assets through making real estate loans. As a result, within two years thrifts had invested up to 10% of their assets in real estate ($150 billion in loans) without the benefit of qualified and experienced real estate lending personnel. (2) Banks, faced with reduced fees, sought alternate business opportunities by turning first to third world countries, then to oil and gas and finally to real estate. In 1981 banks generally had 20% of their assets invested in real estate but by 1990 that figure had ballooned to 38%. (3)

Capital poured in from other avenues too. Life insurance companies participated extensively during these years and pension funds became significant sources of capital as well. Pension fund advisory firms were started to manage these funds and experienced phenomenal growth during this time. For example, Aldrich, Eastman and Waltch was started in 1981 and by 1990 managed $5 billion in client capital. (4) Another firm, TCW Realty Advisors, had just 5 employees in 1982 but by 1991 had 180 employees. (5) Due to the 1981 tax bill, syndicated real estate tax incentive investments became attractive and enormous dollars were raised. However, this source evaporated overnight when Congress eliminated these tax advantages in 1986.

As a result of the confluence of these factors, real estate development occurred at a staggering pace and projects were financed and built irrespective of their underlying economics. Developers and lenders disregarded any signals that might have alerted them to a potential crisis on the horizon. In fact, the amount of space added in the 80's is incredible. John McMahan, President of McMahan-Mellon of San Francisco, believes the amount of office, housing and retail built as a percentage of the country's total prior inventory was respectively 45%, 45% and 41%. (6) Retail development expanded with the number of shopping malls growing 57% to 42,000 from 1980 to 1989 and sales swelled 77% to $693 billion. (7) This enormous construction boom produced a concomitant rise in vacancy rates, lowered effective rents and created markets that soon became way out of balance.

There were people predicting that the underlying fundamentals of supply and demand were moving towards disequilibrium and serious problems were forthcoming. David Birch, President of Cognetics and MIT real estate researcher, announced in a study in 1986 that demand will support building, at most, only 50% as much office space in the next 10 years as was built in the preceding 10 years. He also accurately stated that the effect on development will be worse because so many firms had entered the business and with a declining number of viable projects it was inevitable that there would be a consolidation and fallout in the industry. (8) Ken Rosen of U.C. Berkeley, reflects that "after 1984 there should not have been a single additional loan made for office space in this country." (9) Many internal projections were egregious, however, due to the rapid growth of some markets and the escalating prices paid by investors, miscalculations were irrelevant and firms remained prosperous. The old adage "a rising tide lifts all boats" was clearly in effect as firms continued to generate fees as long as they were in modestly good markets. Eventually much money was squandered and many ill-conceived projects were built. Today nearly every major market and every product type is overbuilt with the national office vacancy up from 4% in 1980 to 19%. (10) The consequences are obvious as there are numerous vacant buildings, bankrupt developers, troubled financial institutions and plummeting property values generating less revenues for cities. Consequently, the industry is going through a comprehensive and painful restructuring.

Thesis Objective

This restructuring period is evidenced by the reduced profit margins on projects, the need for firms to manage assets smarter due to competitive pressures and a greater emphasis on research and analysis because of the institutional flavor that will permeate the industry. This thesis will address how firms can adapt to these changing conditions by more efficiently managing information and performing market research. A system to collect and monitor information will be presented along with descriptions of relevant variables influencing real estate to provide firms with a basis for decision-making in the challenging times ahead. Market research should produce thought-provoking questions that will assist in foreseeing future shortcomings and capitalize on economic, demographic and real estate trends to guide future business decisions.

Institutional Dominance

As this restructuring occurs, many firms with troubled properties or undercapitalized operations will succumb to the financial pressures of this downturn and either go out of business or realign themselves with financial partners resulting in more assets under the control of institutions. Institutions generally desire more information and research because of their fiduciary obligations. Therefore, there is a need to expect extensive due diligence to support investment decisions. The less formal seat of the pants approach will be less tolerable as institutions may opt not to work with firms operating in this antiquated manner.

Increased Competition and Shrinking Margins

Real estate continues to display the imperfect market conditions for which it has a sustained track record. With competition greater than ever, opportunities more difficult to uncover, and real estate moving to a generally low margin business, the role of research as a means of exploiting market imperfections will expand in scope and sophistication. (11) In this environment, an important way to establish a competitive advantage is by having superior information or by being the lowest cost provider, which may result from having better and more useful information. Therefore, addressing the specific research needs of a company should be one of the most vital considerations in setting both short and long-term strategic and operating business plans.

Refocusing of Information Needs

Certainly there must have been indicators that provided a harbinger of disaster. What can we learn from this experience and what will be different about the real estate business in the future? How can firms prepare themselves to be more attuned to the real supply and demand conditions in their respective markets. Research may prove helpful in laying the groundwork to address such questions.

Oversupply has led to extremely competitive markets for existing space as new development is essentially dormant. Competitive market pressures are forcing firms to fight vigorously for every tenant, management contract and consulting job. To perform more efficiently, and in some cases to stay in business, firms must operate in a different manner than they did in the early and mid 1980's. Today companies must strive to be more exact, precisely target their projects and operate smarter. With the 78-million strong "baby boom" generation absorbed in the economy and new space demands growing at a much slower pace in the 90's, firms must focus on becoming more efficient and effective information managers in order to maintain a viable business operation.

A potential key to success in the 90's will be how firms recognize and deal with relevant economic, demographic, market and property data. This data can lead to knowledge that offers an opportunity to create competitive distinctions between firms. In the future, successful companies will have explicit and systematic strategies to generate and analyze various types of information. Market research should be considered as an area that can add value to a firm's operations. (12)

This research must be organized in a manner so that it can be effectively utilized to enhance real estate decision-making. Determining what kinds of decisions are being made, what information would be helpful in analyzing these decisions and what form this information and data should take is crucial to developing a research program that is tailored to the needs of each particular firm.

Organization of Thesis

Chapter II

Chapter II will outline the key variables that describe the behavior of real estate markets, and that can be used in an integrated manner for decision-making. Consideration will be given to the typical decisions made in real estate firms to determine what information, if available, would inform these decisions. Various market research studies and academic work in this field will be examined to arrive at a comprehensive model of these variables. Schedules, with appropriate graphs, will be proposed to track these variables in a consistent manner allowing for comparisons across regions and between buildings.

Chapter III

Chapter III explores how a real estate company might organize itself to gather, analyze and utilize the data described in Chapter II. This involves an analysis of the buy-make decision to determine whether firms should use outside vendors to collect and interpret the information or perform the function in-house.

Chapter IV

Chapter IV will describe how three leading real estate firms are addressing their research needs. With in-house research staffs being uncommon except in the largest institutions and advisory firms, TCW and AEW are presented to examine how two firms at the cutting edge of this area address the function. The third case study explores a multi-regional developer, Perini Land and Development, to get a sense of how research is addressed within a development company. Lastly, conclusions from this thesis will be summarized.

NOTES TO CHAPTER I:

1. Bacow, Lawrence S. Professor and Director of the Massachusetts Institute of Technology Center for Real Estate Development. Cambridge, MA.

2. Ibid.

3. Rosen, Ken. Professor, University of California at Berkeley. Berkeley, CA.

4. Waltch, Mark. Principal, Aldrich, Eastman and Waltch, Inc. Boston, MA.

5. Miller, Jeffrey. Vice-President, TCW Realty Advisors. Boston, MA.

6. McMahan, John. President, McMahan-Mellon Advisors. San Francisco, CA.

7. Ernst and Young Real Estate Advisory Services Publication. "Retail Building for a New World of Consumers," Fall 1990. pp.5.

8. Birch, David L. "America's Office Needs: 1985-1995," Massachusetts Institute of Technology and Arthur Andersen and Co. Publication. Cambridge, MA. 1986. pp. 1,3.

9. Wheaton, William C. and Torto, Raymond G. "Seeking That Silver Lining-Early Market Recovery Is Possible," Northern California Real Estate Journal. February 28, 1991. pp. 4.

10. Ibid.

11. Gordon, Jacques N. "Real Estate Research for Institutional Investors," Real Estate Finance, Winter 1990. pp.37-38.

12. Ibid.

CHAPTER II.

INFORMATION DESIRED AND DESCRIPTION OF KEY VARIABLES

Overview

As the real estate industry moves towards greater sophistication and complexity successful firms will look to information technology to gain competitive advantage. Firms will rely on data more extensively to understand what is happening in the current environment as well as guide their assumptions about future anticipated behavior. The future real estate organization may be set up so that access to variables known to influence real estate as well as information from property operations will be at the fingertips of individuals throughout the firm. Depending on the role of each employee, they will be able to pull up on their own computer screen data that can help them perform their job more efficiently by making more fully informed, and, hopefully, better decisions. With the industry awash with information, effective market research must be discriminating. The key is to make sure information is presented that is useful and relevant in order to be practical and applicable. (1) This chapter will present a picture of how a firm in the 21st century may operate followed by a description of the variables that make up a comprehensive market research program. Finally, forms to capture relevant data and invoke insightful analysis will be presented.

Real Estate Decision-Making and Informational Needs

When the director of development begins evaluating a potential site for acquisition and subsequent development he will want a complete understanding of the market conditions for his proposed project. So, he looks to his computer for information to help him decide whether to pursue the project. He analyzes the demographics affecting the market; in-migration prospects; past and future job growth statistics; unemployment trends; and household and income characteristics. This information will be incorporated with broader national and regional economic and demographic information and then compared to other regions and alternative sites. Real estate specific information such as the level of current and anticipated construction; vacancy in the overall market and in directly competing buildings; nature and size of tenants in the market; lease expirations; industry mix in the market; historical and anticipated absorption levels; historical and forecasted rental rates; historical operating expenses and tenant improvements should be reviewed. Additionally, information that is not statistical in nature such as the stage of the real estate cycle in that particular area; political, governmental and social considerations germane to an area; proposed public infrastructure and overall quality of life factors should be analyzed to get a complete picture of the real estate climate in the targeted market. All of this information will be aggregated to provide for more prudent decision-making.

The acquisition/disposition department becomes interested in making a transaction for a specific property and/or is considering the relative attractiveness of investing in a certain geographic region of the country, thereby requiring much of the same information as the development function. There also will be a desire to review any transactions data for comparable properties in that market as well as on a broader scale to assess the relative attractiveness of an opportunity. Current construction and replacement costs for various product types will allow for comparisons to acquisition/disposition prices. An inventory of competitively zoned sites will provide a gauge of potential supply in an area.

Competition for tenants continues to be extremely intense, so the leasing department is assisted by having comprehensive information on prospective tenants. They will want historical data to understand the characteristics of past leasing efforts to effectively and profitably tailor a leasing program to maximize revenues. A printout of the prospects in a certain submarket will include the following: existing square footage; expiration dates; prospects categorized by industry type, square feet and current rental rates; listing of existing tenants in each building in a firm's portfolio by industry type, square feet, expiration dates; historical data on asking and effective rates for each existing tenant noting the type of concessions given; leases categorized by lease terms; historical data on the number of proposals made per month and percentage executed to recognize trends/drop offs in activity to adjust standards; actual vs. budgeted tenant improvements over time by building; and a listing of leases signed with and without assistance from outside brokers.

Due to shrinking profit margins the property manager will continually search for ways to reduce costs while also aspiring to be more responsive to tenants' needs and foresee potential problems. Information, when properly utilized, will give the operations department a source for more in-depth review and reflection. On an on-going basis the manager will desire a complete listing of all operating expenses by building both for past years and the current year illustrating nominal dollar and percentage changes over time. Information on tenant complaints and how they were resolved would be available, thus providing insight as to implicit satisfaction levels for various tenants. Comparisons between buildings within a portfolio as well as to competitive buildings will be a source of verification and goal setting. At certain times, property managers will desire specific leasing information and would have access without having to request it from the leasing department. An integrated leasing and property management effort will require an awareness by both parties as to upcoming lease expirations and potential future space needs.

Asset managers likely will require information that entails all of the various departmental functions since their job is to maximize the value of the overall real estate investment. They will want to be up to speed on the information generated by these functions to reach sound decisions. Additionally, information on project financing will be needed to compare to current available terms to initiate timely refinance decisions.

Market Research and Description of Variables

The old capitalist adage of "supply and demand" that is fundamental to the stability of our overall economy is likewise applicable to real estate markets. There are five basic levels of research that provide information on this relationship; national, regional, metropolitan, submarket and building-to-building. In addition, there are three types of research that are relevant; economic, demographic and real estate. Each offers its own insights and should be considered as part of an overall research program. Brief descriptions of these variables are discussed below:

Economic Considerations

The demand for space is linked to the growth of the economy. (2) An economic recession, depression or expansion influences the behavior of firms and individuals as reflected by increases or decreases in space demands and spending patterns that fluctuate with the consumer confidence in the economy.

National, regional and metropolitan trends should be considered individually and collectively with the most explanatory research presenting data that reflects behavior over an extended time frame. An understanding of the economic forces at play in a market offers insight into potential real estate performance.

Job Growth

The primary indicator of real estate demand is job growth within certain sectors of the economy. (3) The non-agricultural employment base can be categorized into different Standard Industrial Classifications (SIC) components to assess relative growth within each group. Almost without exception, economists see the aggregate U.S. employment growth rate slowing in the 90's due to demographic reasons. (4) This implies less need for space and hence less justifiable development. The national employment growth trends are a significant factor in all markets. However, not all markets will grow and/or contract at the same rate and therein lies the real opportunity to exploit certain markets. Studying aggregate employment patterns, compositional shifts and annual changes provide useful insight into markets. Demand is principally driven by employment and can be predicted reasonably accurately based on job growth forecasts. (5) Tenants are the buildings' assets and employment opportunities are necessary for space demands. Job growth should be measured at the regional and metropolitan levels in order to provide useful information for a particular project. "People talk about regional recessions as if they're unusual. But you can go back to 1946 and you won't find one that doesn't vary from region to region," says Stanley Duobins, senior vice-president with The WEFA Group. For example, Beth Burnham Mace, an economist with DRI/McGraw-Hill predicts, "New England alone will account for one out of every five job losses nationally ... Yet the region has only 6% of the nation's jobs." (6) This illustrates the need to uncover changes expected in a certain area since this most directly effects a project. Determining the basis for such swings in past and future employment patterns helps discern overall trends and their affect on real estate space needs.

Unemployment

Unemployment figures relay the strength of the economy and its current labor status. National data provides a broad picture of the domestic economy, while regional and local figures offer an opportunity to recognize fundamental characteristics of local labor markets. Unemployment patterns can reflect a market's cyclical behavior as compared to national averages and often can be indicators for other economic factors in an area. For example, the Boston economy expanded in the mid-eighties to a point where unemployment declined to less than 3%, or roughly half the national average. This acute labor shortage produced severe upward pressure on wages and personal income, resulting in wages of $28,000 or 16% higher than the national average. By 1991, the unemployment rate was up to 9.7%, or 3% higher than the national average, but average income and wage levels remain above other regions creating affordability issues for both individuals and corporations. This income growth without significant in-migration is one factor in the difficulties present in this region today. (7) On a broader scale, a shortage of skilled workers is predicted for the second half of this decade. Labor force growth is forecast to drop from 2.4% per year in the 70's to 1.1% per year in the 90's. Over the next ten years there will be a sharp decline in the number of new entrants to the workforce (defined as those people between the ages of 15 and 29). As a consequence, finding qualified workers will be difficult for employers. (8) Thus employment data in specific markets needs to be analyzed.

Real Per Capital Income

Identifying prospective tenants and understanding their profile can be aided by analyzing income levels in a market. This is useful in targeting a market segment and determining the appropriate product type. Retail is especially sensitive to income levels in the targeted market area to determine the appropriate shopping center mix in order to maximize potential sales for all tenants.

Commercial and Housing Permits

Permits can be used to chart trends over time as well as alert companies to movements by competitors. This supply-side information is supplemental to carefully explaining past behavior and monitoring current development levels. This can help to identify future pressure on rents, especially downward pressures. Inventory for markets can be compared with permits to determine supply of stock. Permit information also allows for tracking of construction costs over time.

Consumer Price Index/Inflation

The aforementioned analysis of the 80's showed that volatile and high inflation was a factor in generating rising property values. However, with inflation under control it will not provide the same stimulus to real estate as in the past. Inflation figures and future expectations are important in that they may influence decisions on leasing, financing and transactions. Do you lease long or short since a lease can be a positive or negative asset depending on inflation. Leases run for fixed time periods and during that time inflation may change, thus leases create a lag effect on a property's ability to incorporate inflation into its current value. Inflation expectations (high or volatile expectations may create a premium for this risk) are also played out in the bond market, which influences long term financing costs. Generally speaking, real estate can provide a hedge against inflation and due to lagging effects can generate returns above or below other investments without such fixed payment horizons. It is fair to say that real estate performance has some degree of correlation to inflation and on-going monitoring of inflationary tendencies is essential. (9) But, inflation expectations should not be used for rental escalation projections without fully evaluating the future supply and demand relationship in a given market as the correlation between inflation and escalations can seriously erode in markets that are in a state of disequilibrium.

Industry Mix

Categorizing employment growth by industry type allows for a more specific analysis to determine the product type best suited to meet that need. Percentage change for each job sector is most informative. Research should identify the sectors that constitute the largest portion of each market's overall employment to determine any future vulnerability posed by a single industry. For example, 75% of the occupied office space in urban areas is occupied by firms in the F.I.R.E. (Financial, Insurance and Real Estate) SIC categories. (10) Thus changes in F.I.R.E. employment will disproportionately influence demand for urban office space. Further detail is achievable by breaking down industries by size of organization, and time of existence. The key to forecasting the future is dividing firms into the right category to more precisely track changes from one period to the next. (11) Studies should look to explore any heavy dependence on one industry, or several big firms, because such reliance places tremendous risk on a region's economy should there be a decline in that industry. Houston is an excellent example as it rode the wave of the oil business with tremendous growth only to see the precipitous drop in oil prices wreck havoc on the city. Unfortunately, development firms continued building creating a horrendous market for quite a few years. With recovery on the way, a concerted effort has been made to more broadly diversify the economy into non-oil businesses and in the long run this strategy will provide more stability. (12) Three keys to look for in a successful economy are: an area that is not growing mainly from real estate activities since when expansion slows, construction workers are unemployed, property values plummet and credit becomes scarce; an area having at least one unique industry which is "exported" to other regions; and a diversified economy to weather a downturn. (13) A structural analysis of industry mix is crucial to market research.

Political Considerations

How is government addressing the real estate industry: now and in the future? As we saw in the 80's, tax changes can significantly spur development or can literally cut it off simply by the passing of certain legislation. There may be opportunities to receive subsidies of some sort should the governing body feel the project warrants public support. When considering a market it is paramount to research the underlying political philosophy towards real estate development (since this influences existing projects too). Are there any supply constraints in effect, thus controlling the overall stock of space over a specified time period? Constraints of this sort can be difficult for developers trying to get projects underway, but also provides markets with more stability and predictability than an unconstrained market. A general understanding of the nature of the local politics - pro-business growth or quite cumbersome in terms of approvals, etc. - may indicate whether a firm wishes to invest in a given metropolitan area.

<u>Government Projects</u>

Reviewing any planned public projects to identify new infrastructure, parks, public facilities, etc. is very beneficial. These projects have tremendous impact on surrounding land uses and values which could focus investment actions to take advantage of these additions. Moreover, government projects, such as the third harbor tunnel from Logan Airport, the depression of the central artery and the clean-up of the Boston harbor, may be of such magnitude that they play a major role in the economy of a region and in Boston's case should be a factor in climbing out of its current declining economy. To illustrate the potential impact, some estimates place the number of construction jobs resulting from these projects at 15,000. (14)

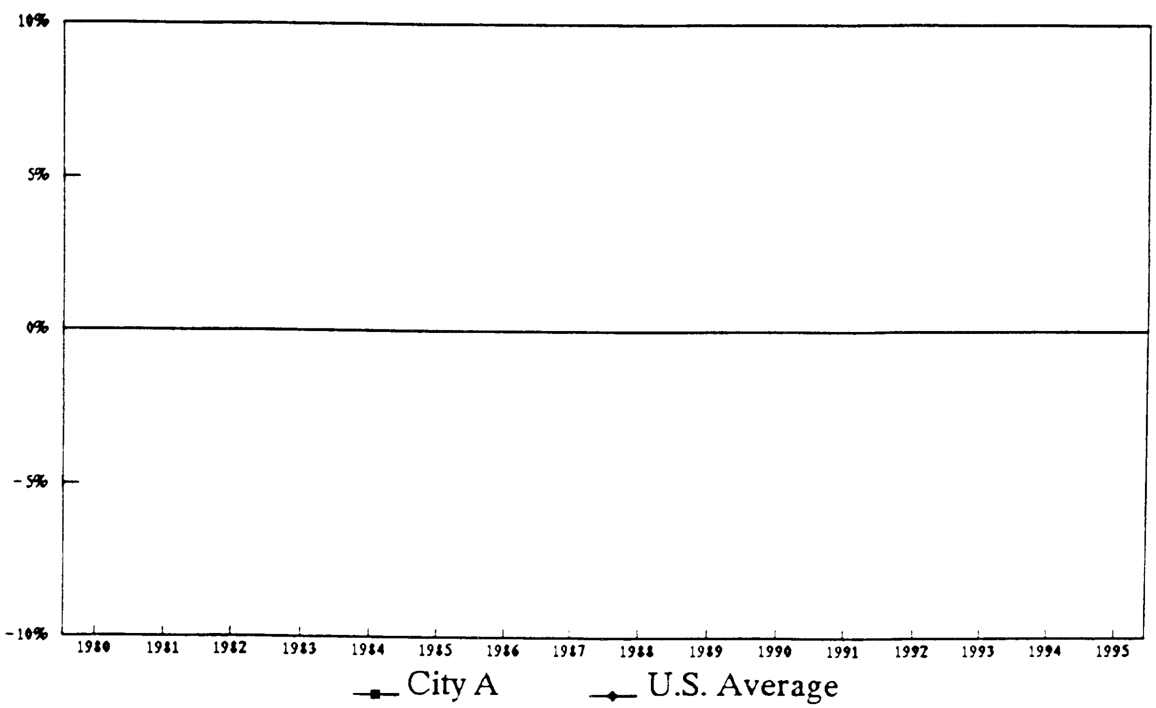
Metropolitan/Regional Growth

While focusing on the national level provides an overview of specific product markets, significant variations exist across regions that provide opportunities for strategic investing. Thus a more micro view of the economic and demographic factors effecting a market is where research can identify potential opportunities and unfulfilled niches.

ECONOMIC DATA

Change in Employment Growth - Metropolitan Area

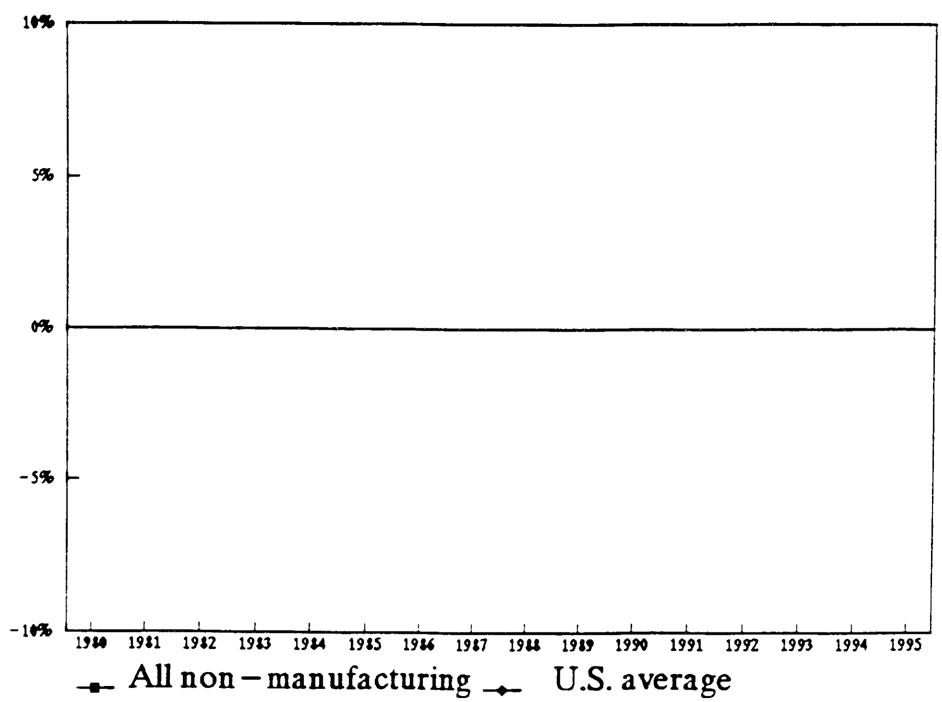
	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Change in Employment Growth by SIC - Metropolitan Area

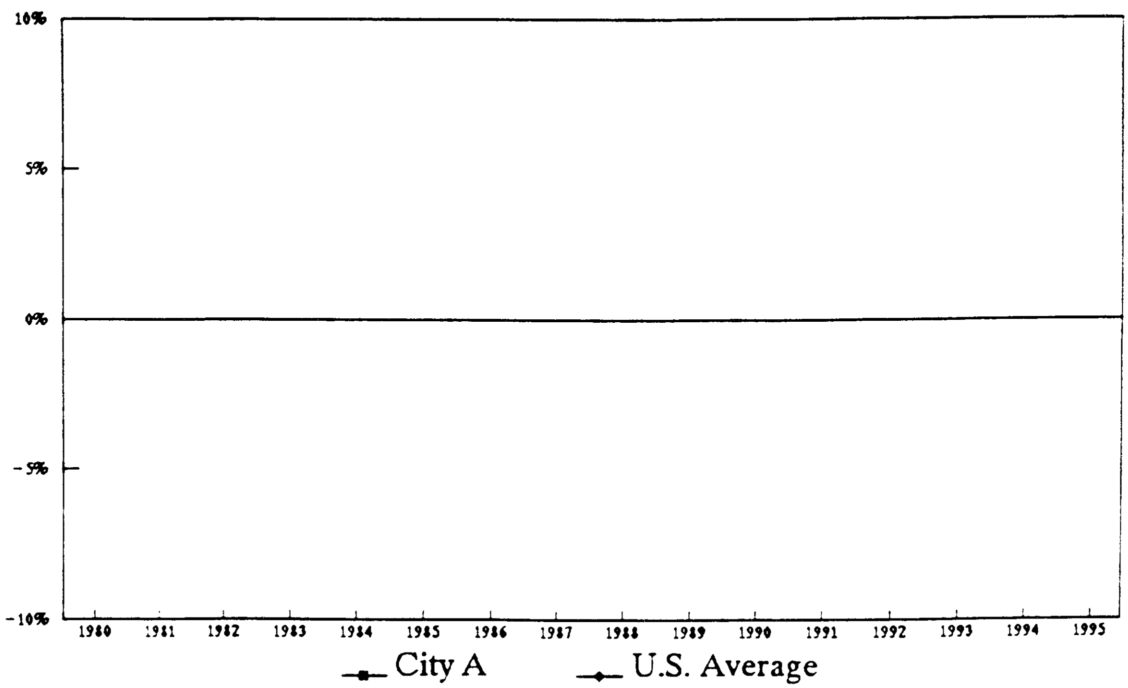
	Year	Manufacturing	Oil and Gas	FIRE	Transportation/ Communication/ Utilities	Construction	Trade	Services	Government
	1980								
	1981								
	1982								
	1983								
	1984								
	1985								
	1986								
	1987								
	1988								
	1989								
	1990								
Forecast	1991								
	1992								
	1993								
	1994								
	1995								



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Change in Unemployment - Metropolitan Area

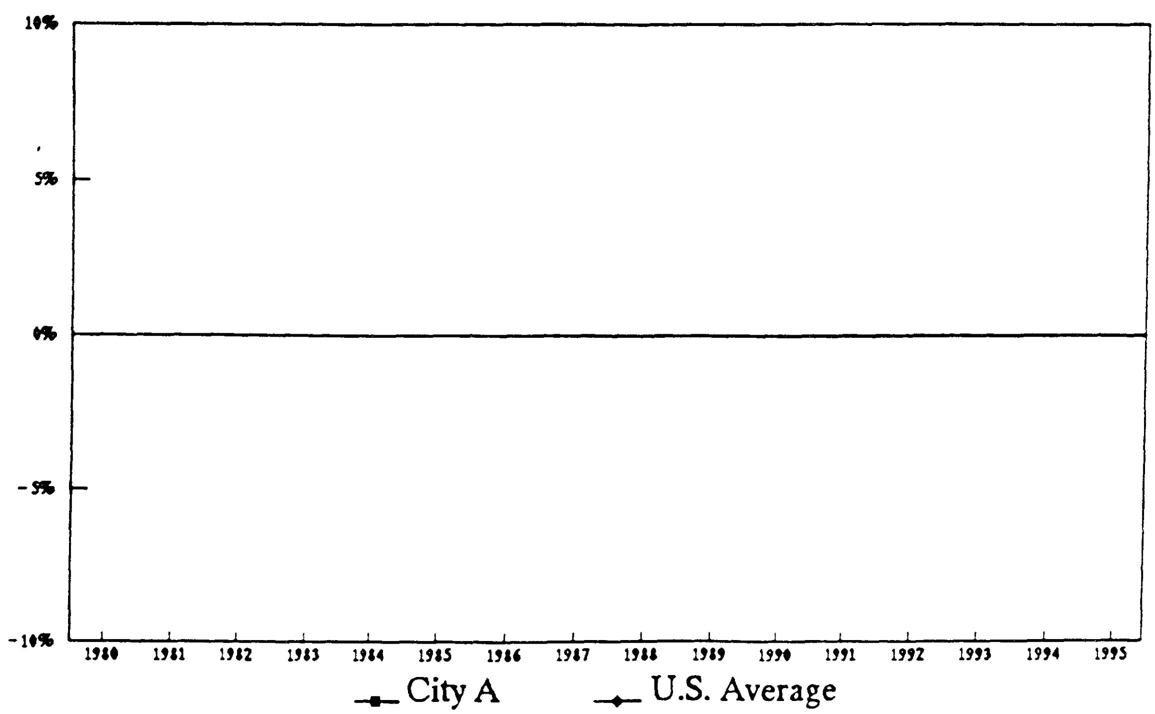
	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Change in Per Capita Income - Metropolitan Area

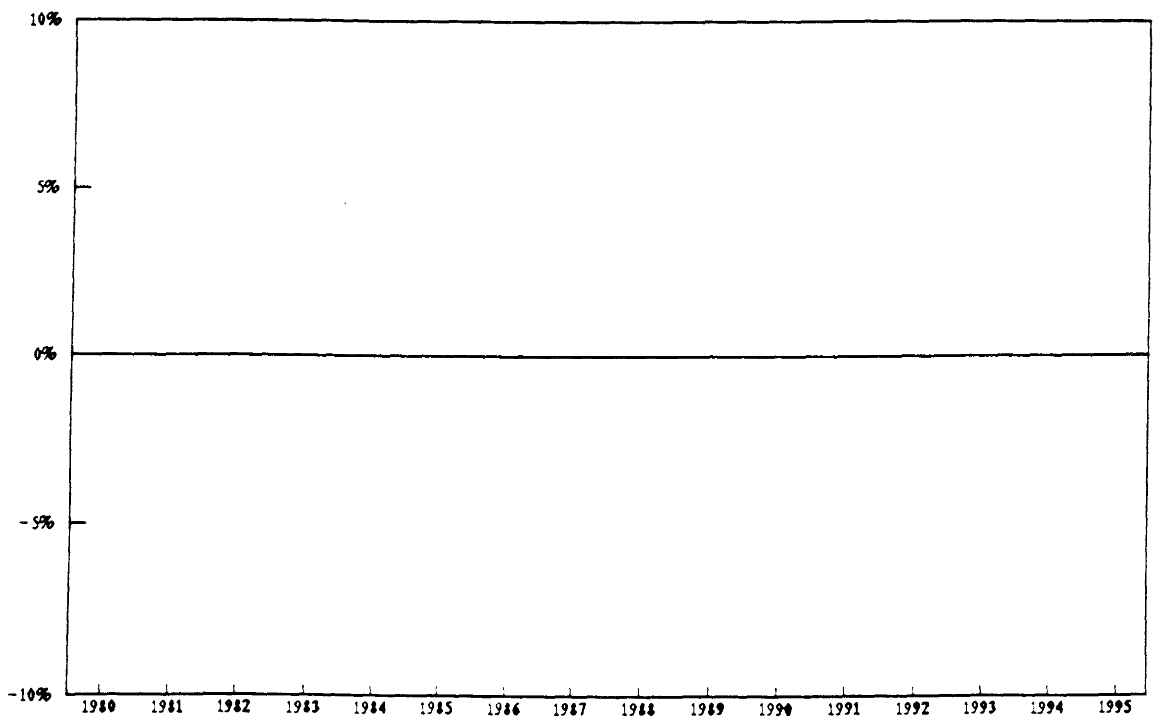
	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

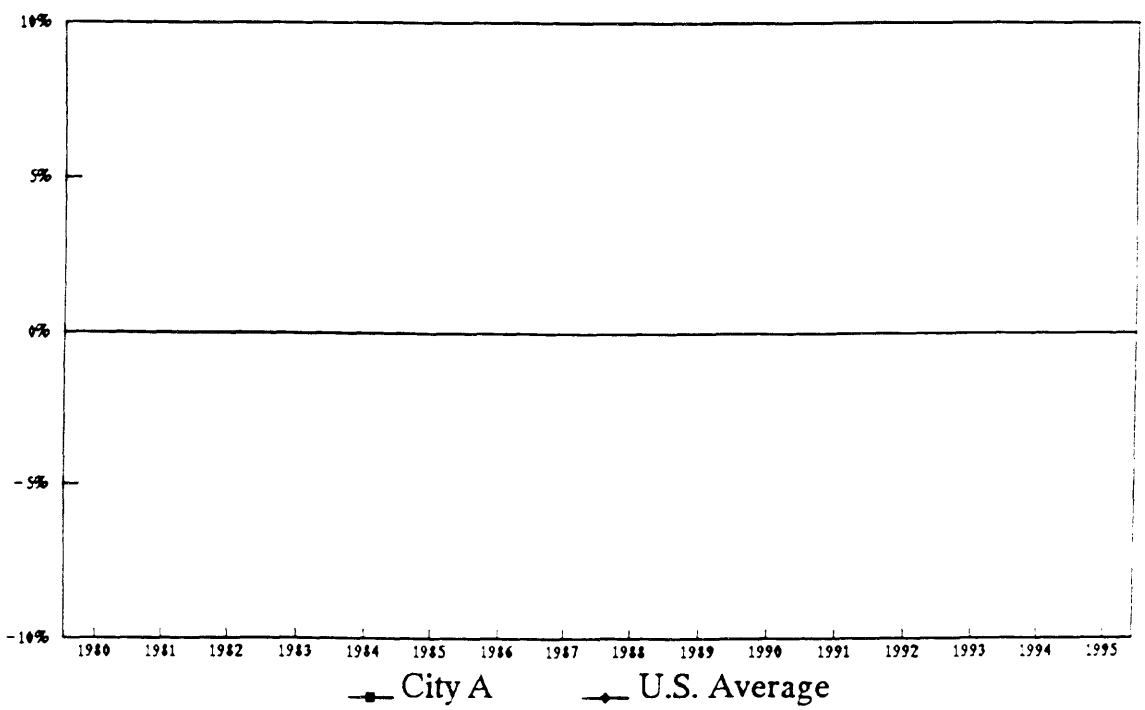
Change in Consumer Price Index / Inflation Trends - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Percent Change
	1980			
	1981			
	1982			
	1983			
	1984			
	1985			
	1986			
	1987			
	1988			
	1989			
	1990			
Forecast	1991			
	1992			
	1993			
	1994			
	1995			



Change in Median Home Price - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Change in Commercial Permits - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
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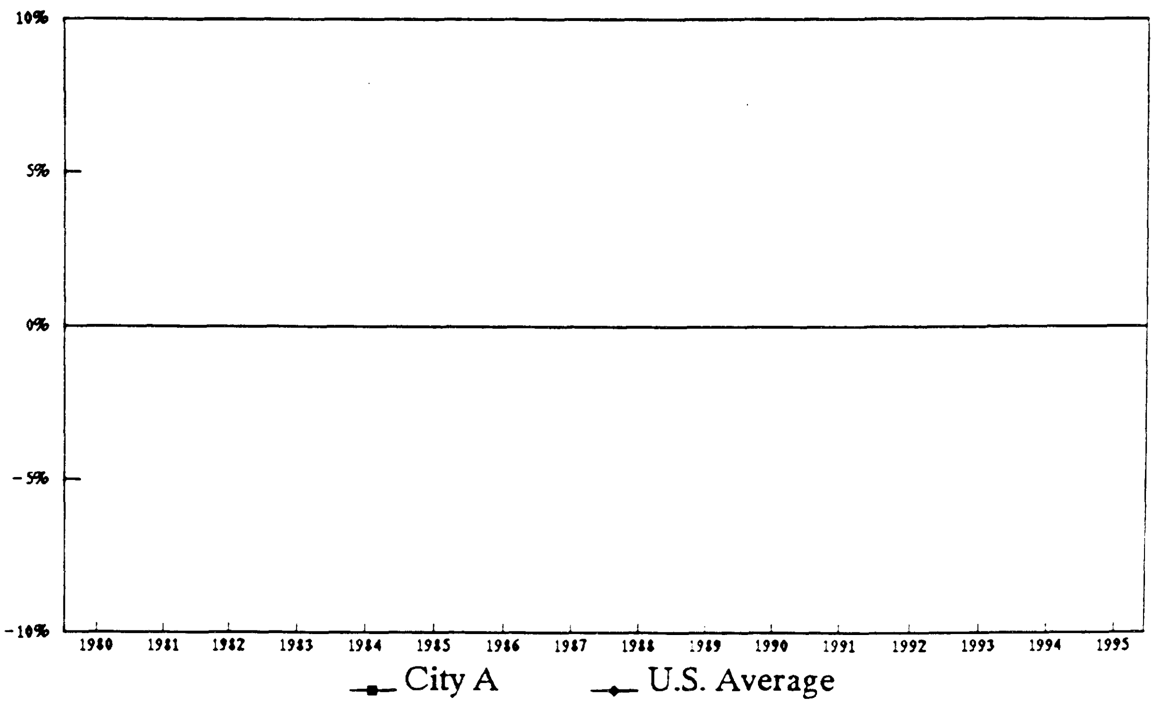
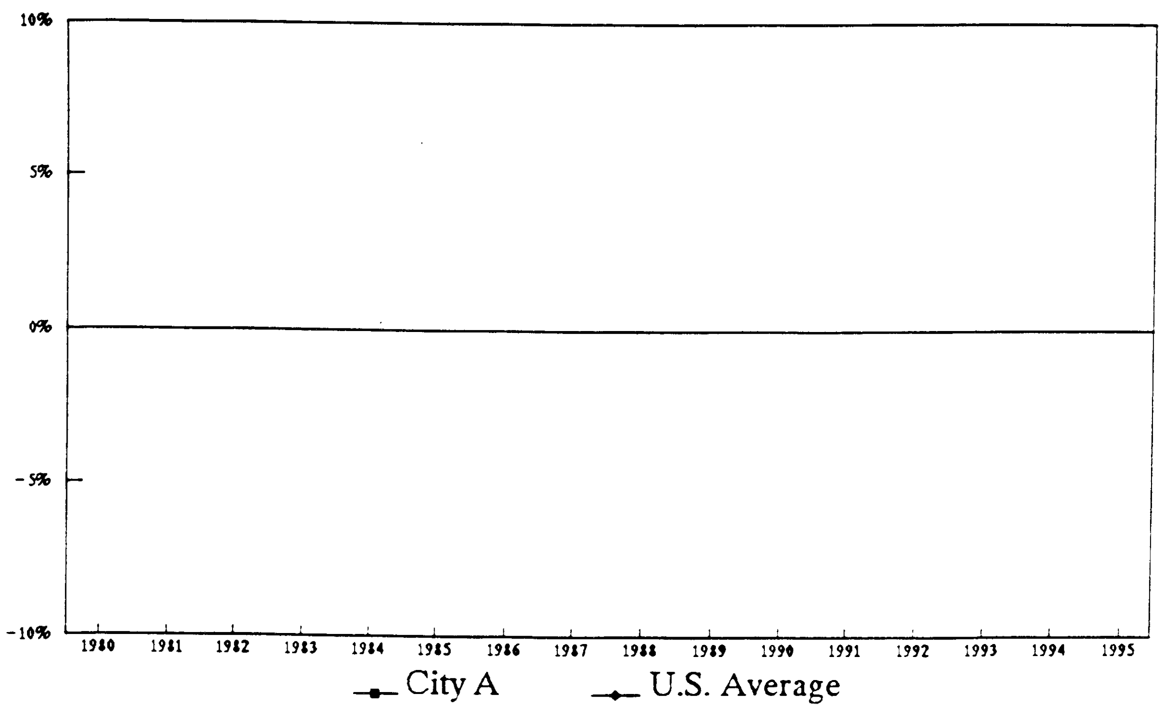
	1993				
	1994				
	1995				



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Change in Housing Permits - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Non-statistical Variables

Comments:

Industry
Mix

Political
Considerations

Government
Projects

Supply
Constraints

Quality
Of Life

Demographic Considerations

Population is fundamental to employment, which, as previously explained, drives demand for space. Therefore, broad and market specific demographic patterns dictate much of what occurs in an economy. As with most data, research should look not only for major changes in trends, but also for the subtle yet influential shifts that influence each variable and ultimately, the real estate market. Demographics in the 90's are noticeably different than what was experienced in the last decade. David Birch, MIT researcher, believes that in today's labor-short economy, jobs will have to follow workers. He says, "The demographics cut in sharply in the mid-1980's. That's when the baby boom was finally absorbed into the labor force and we began seeing unemployment at 3% to 4%. Today the work force can dictate the location of employment." With economic growth now appearing to follow population movements, understanding what is happening can be a good proxy to use for market analysis. (15)

Population Distribution

People drive the utilization of real estate, so a compositional analysis of the targeted population is of tremendous value in determining the appropriate type, design and purpose of a project. The aging of the baby boomers creates pronounced compositional changes in the U.S. population structure. Investigating the average size of households, age breakdown by category, trends regarding average age of first marriage and educational attainment can be useful in researching market characteristics. This analysis may uncover structural reasons for a region's demographic features. Demography is important in conceptualizing a project. The best marketing in the world cannot save a project that is poorly matched to a region's demographics.

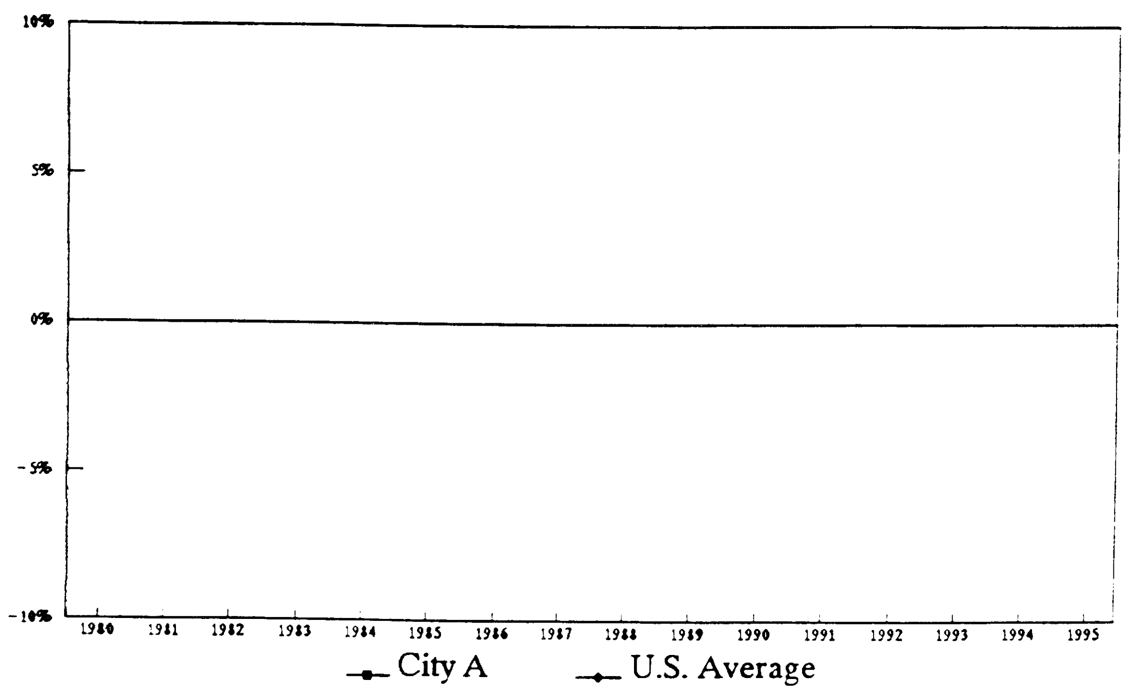
Migration

Net in-migration of population has a substantial impact on local real estate markets. Cost of living variables, quality of life issues, employment opportunities, tax rates, and overall growth expectations can lead people to migrate to particular regions. Past data can point out important trends that can be used for future market expectations.

DEMOGRAPHIC DATA

Change in Population Trends - Metropolitan Area

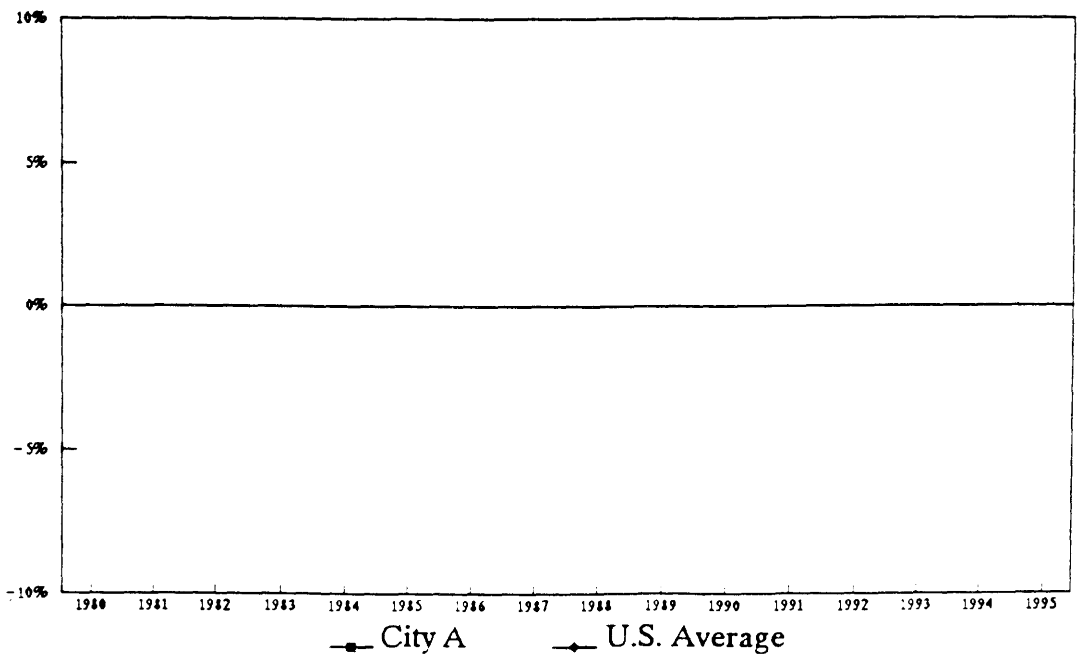
	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Change in Net In-Migration - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Metro Percent Change	U.S. Percent Change
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



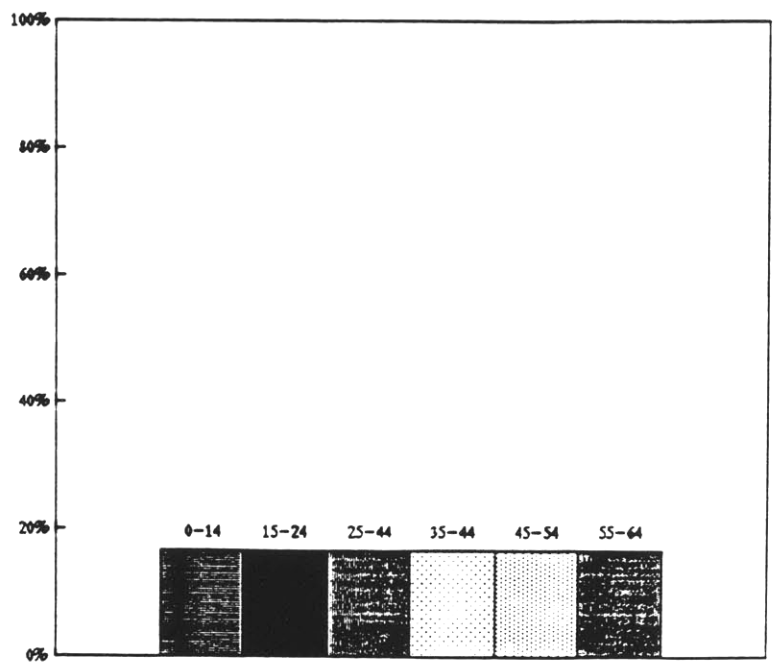
- Compare metro growth to U.S. average.
- Compare metro growth to U.S. average and to other metro areas.

Metropolitan Area

Population: Age Composition - Year 1991

	Age						
	0-14	15-24	25-44	35-44	45-54	55-64	Over 65
% of Total Population							

Show percentages over time if significant compositional changes have occured.



Real Estate Considerations

Real estate data and information can be an important decision-making tool if properly gathered and utilized. Often firms do not systematically collect and use the information they already possess. Information must be integrally linked throughout the organization in order to be comprehensive and most useful. Enormous data exists from either a firm's own business activities or from outside marketing reports, which if effectively utilized can be a powerful supplement to business judgements. The key is to track this information over time and to analyze and interpret changes to better understand what might occur in the future under certain circumstances. Each transaction, building operation, market condition, etc., can be documented in an orderly fashion so that future decisions can have the benefit of explicitly reflecting on past behaviors. The various real estate related information that would be useful to track and evaluate is discussed below:

<u>Cycles</u>

Real estate has a long history of cyclical behavior, thereby creating optimal times to buy and sell real estate. The trick is figuring when a market is moving upward or downward and to make decisions accordingly. For example, the Southwest suffered in the mid to late 80's but is now beginning to recover, while markets such as Los Angeles, Boston and New York that were strong during that time are now facing a decline. Unfortunately it is difficult to predict when a market is at its bottom or top in terms of value and to buy or sell at just the right time. Numerous factors can impact real estate values and staying abreast of financial, economic, political, demographic and market specific factors will help firms explicitly consider the effects of these factors on real estate values and capitalize on market inefficiencies. Therefore, firms must consider the movement of each market in order to make prudent decisions. Each market has its own cycle that varies in length and severity and does not necessarily correspond with national trends. Even though development may be predicted by indicators such as population growth and job formation, every property type has its own cycle due to varying lead times necessary to complete different types of development, dissimilar land use constraints, etc. (16) Buying or selling at the wrong time can often more than offset any benefit from negotiating and operating shrewdness. Many economists and academics attempt to state their position relative to the stages of asset and capital markets and their influence on real estate cycles. Proper consideration of their comments may help decision-makers adjust their investment objectives to better coincide with overall market movements.

Several fundamental conclusions have been reached regarding cycles in the commercial markets. Torto/Wheaton Research has found that markets do not "clear" within the shortrun (e.g. a year), resulting in markets remaining soft or tight for several years before rents change and supply or demand reacts. Rents must remain soft for several years before landlords make major concessions and absorption increases, while markets must be tight (low vacancy) for a similar time before rents increase enough to hinder absorption. Factors causing this extended cycle include time-consuming landlord-tenant matching, and customary long-term rental contracts. Supply seems more elastic than demand once rents adjust which fuels market instability. However, both supply and demand are closely linked to short-term cyclical changes as well as long-term secular trends produced by the macro-economy. (17)

Building-By-Building Attributes

Historical information on building operations both from within a portfolio and from other competitive buildings can be useful to decision-makers. Since all buildings are not directly competitive for a variety of reasons, breaking down building data into categories helps to identify those buildings that are most relevant to the subject property. Categories for segregation include the following: size, age, floor size, location, rental rate, parking, amenities, accessibility, design features, occupancy rate, tenant mix, and lease expirations. These attributes are crucial to evaluating a property's competitive position.

Construction/Completions

Monitoring current and anticipated construction levels is an essential element of a market research report. Surveys should follow actual space completions on a regular basis, say quarterly, to assess the market conditions. By tracking these completions over time one can discover if there were any correlations between completions and other real estate and/or economic conditions prevalent in a market. Econometric models can forecast future construction levels and should be a part of future assumptions. In the past, supply considerations were not always a part of investment decisions, but going forward savvy real estate investors will take this into consideration.

Rental Rates

Rental rates for properties should be tracked over time and forecast for future years. The difficult task is to uncover the true effective rents, which is asking rates less concessions over the lease term. Since effective rates are the real indicators of market conditions, research should explore as many ways as possible to arrive at effective rents. Additionally, rents over time are eroded by inflation and a calculation that includes inflation effects will result in rent figures (real rents) that show how well real estate actually performed. During the 1980's asking prices for office space nationwide grew 3.2% annually on a compounded bases, but after adjusting for inflation there was a 1.2%

decrease in rents. Furthermore, once concessions are included, the effective rents reflected a drop of 3.4% per year. (18) As expected, there are numerous variations of this broad figure at the regional and local level and analysis of these areas will provide the project specific information that is most useful to decision-makers. One should interpret what factors may play a part in determining how a market will perform relative to the U.S., regional and metropolitan markets. Looking at rates over time is crucial to being able to identify trends and uncover potential declining markets. Asking and effective rates do not always move in the same direction and thus it is paramount to understand the nature of both these numbers in order to understand the real economic situation in a market. Following trends at the sub-market level offers the most potential benefit since this is where a property is directly influenced. Forecasting rents can be a tremendous help to firms in being more specific in their future revenue assumptions rather than just tying escalations to CPI increases. The use of graphs is the most effective way to communicate this historical data.

Vacancy and Years-Of-Supply

A market report should obviously contain current and past vacancy figures for the metropolitan and sub-market areas. Historical data allows for better understanding of market conditions and how they reacted over time. However, one must be sure not to solely rely on a static view of vacancy changes as a comprehensive indicator of the healthiness of a market. Utilizing other variables and preparing an econometric forecast, uncommon to most reports, certainly provides a more complete picture of the prospects for that market. "On their own, vacancy rates can really mislead the investor-developer," says Lloyd Lynford, president of REIS Reports of New York. He believes that years of supply (a product of vacancy rates) provides a more dynamic view because it takes into consideration expectations of absorption, and therefore is a more accurate indicator. However, he does recognize that these are only estimates and are often times flawed because of sloppy methodology and, of course, the addition of unanticipated new construction. (19) The fundamental concern with years-of-supply data is that is requires an accurate estimate of future absorption.

These figures and estimates are not without their doubters who feel the characteristics of certain buildings are more important than gross market statistics. According to Richard Kately, of Real Estate Research Corporation of Chicago, "Vacancy rates alert you to the general condition of a market, but they don't give you any sense of how a particular project will perform. The same is true of years-of-supply estimates. But if calculated well, at least those estimates can be useful to compare different markets and look at individual markets over time." Helen Arnold, director of market research, at Jones Lang Wootton, sees it this way. "Years-of-supply estimates provide a quick way of seeing how relatively overbuilt markets are, and vacancy rates tell you certain things about office markets, but both indicators give you a rather limited view of market conditions." Her market surveys attempt to quantify characteristics of individual buildings that help make them successful, but admittedly that is not always easy. "We're still working on ways to correctly identify the factors related to why some buildings do well and others do poorly. (20) Regardless of the degree to which vacancy and years-of-supply statistics are weighted in investment decision, they clearly are an integral part of any report in terms of getting a "feel" for that particular market's attractiveness. An additional point is to understand the methodology for each vacancy survey and be careful to recognize differences between various reports for multiple markets.

Absorption

The most commonly used definition of absorption is the net change in total occupied space between specified periods. With absorption it is paramount to have historical data since this information provides the best indicator of past space demand. Torto/Wheaton Research has identified 5 major factors that have been important determinants of past movements in absorption as indicated below:

1. Absorption is strongly affected by office employment in relation to the amount of total occupied space (both competitive and single tenant).

2. Absorption, per office employee, is higher in slack markets as the price of space declines, and consumption is stimulated.

3. Absorption is sometimes constrained in tight markets by inadequate supplies of space, therefore underestimates true office space demand.

4. The demand for space, per employee, is affected by expectations about the general economic outlook - in particular the rate of economic growth.

5. Absorption (of competitive space) is directly reduced by single tenant completions (which by definition is absorption).

A market research report should take these factors into consideration as they likely will continue to explain future movements in absorption as well. (21) Absorption numbers on a nominal basis are not useful without knowing the overall square feet existing in a market. Percent of change on an annual basis is a useful figure.

Tenant Improvements

Costs to build out tenant spaces should be monitored over time to give an actual picture of how these costs varied in different market environments. A schedule showing both budgeted and actual figures will provide the most meaningful information. Although this information is taken for granted, having it in an easy to read and accessible format will allow companies to incorporate these figures into future decisions.

Operating Expenses

Costs to operate specific buildings should be monitored in much the same way as tenant improvements. Budgeted expenses should be compared to actual expenses and analyzed to explain discrepancies. Information on each building in a portfolio should be available to track its operating history and judge its performance under certain market conditions. Also, comparing buildings to different buildings within a portfolio as well as competitive buildings will provide useful comparisons and enhance an operator's efficiency and effectiveness by their learning from other operating results. Again, this information needs to be readily available in an easy to read format.

Transaction Data

A system should be developed to follow sales prices, cap rates, and prices per square foot over time. This will prove interesting in determining correlations between property values in the marketplace and economic conditions. This data may show informative trends that help future investment decisions to be timed to take advantage of exogenous conditions that have been shown to positively influence prices. In some cases, properties are sold for discounted prices when the owner is under duress and these cases should be noted to explain any outlier data points.

Financing

A listing of the financing terms for each property in a portfolio will allow constant monitoring in order to initiate refinance discussions when existing terms are more onerous than those available under the current capital market conditions.

Concessions

It is customary in most markets today to offer rental concessions to lure tenants to a particular building. These generally are in the form of free rent, moving allowances and overstandard tenant improvements. Explicitly tracking these concessions for several years will be useful in preparing future projections and budgets. Also, comparing actual figures to budgeted figures may be insightful for all departments involved in evaluating future investment opportunities. Tracking this information on an accessible report is the only way the information can be useful in improving a firm's accuracy with investment pro formas.

Lease-Up Time

Comparing the leasing performance of a property to what was originally projected can highlight the realities of a marketplace and indicate the type of projections that should be made in similar environments. Appropriate explanations regarding deviations should be a part of the report, since time will eventually make it more difficult to recreate the circumstances that caused any discrepancy.

Release Time and Costs

Identifying the length of time it has taken to release second generation space as opposed to virgin space should be done. Moreover, the costs associated (tenant improvements, commissions, concessions, and lease-up time) with this space should be calculated and tracked because the total costs of releasing space in the market at that time may influence the landlord's decision on how aggressive a renewal package to offer an existing tenant. Data on a firm's historical tenant retention ratio and figures pointing out the percentage of 3, 5, and 10 year lease terms will enhance the level of detail available for analysis. With adequate past data, firms can easily compare the cost implications of releasing space and tailor their leasing strategy accordingly.

Commissions

The level of detail and accuracy in budgeting will be improved when historical data is available on the ratio of leases executed with outside broker participation to more closely calculate commissions.

Tenant Profiles

Identifying the major tenants in a region and submarket is essential in understanding a market. Research should describe the number of large firms, nature of these firms, average firm size, typical length of lease executed, and identify tenants in directly competitive properties as well as their square footages and lease expirations.

Square Feet of Space Per Employee

Although the generally accepted range of space per employee is 200 to 250 square feet, this figure may vary across markets and industries due to variables such as the size of the market, concentration of corporate headquarters and percentage of each SIC category typically found in a particular market. This figure is likely to be utilized mainly as a variable in forecasting demand for space and differences across markets should be recognized. (22) Studies show that the amount of office space per employee depends most importantly on price and therefore increases in soft markets due to the lower rental costs available. As markets tighten and space becomes more expensive, tenants often make more efficient use of their existing space and/or reduce the space allocated per employee. This phenomena can sometimes lead to misunderstanding of past true absorption and to overestimating future demand since some of the future demand is already absorbed in the excess space leased by companies when rates were attractive. (23)

Tenant Complaints

Keeping an accurate and comprehensive data base of all tenant complaints and inquiries can increase property management effectiveness. As all landlords know, the tenants are the real assets of a property and nothing is more important than keeping them satisfied over the course of their lease. This can be critical when lease renewal time approaches, because a tenant's attitude toward his existing landlord will play a major part in the success or failure of maintaining the tenant in your building. Having an actual listing of whether or not a tenant has called and the action taken can be utilized as an effective source of information when renegotiating a tenant's lease. Having ongoing and historical explicit records can provide opportunities for firms to give special attention to firms when they have experienced frustrations with their space. Therefore, a constant monitoring of tenant phone calls to the property management office can be a good indicator of the tenant's feeling towards their current space situation. A good record system would likely include the following: how many calls per month, the nature of the calls, and how the follow-up was handled (i.e. what action was taken and the number of days to respond). These records would enable operation managers to identify the exact number and nature of past complaints to compare them between buildings and adjust operations to proactively diffuse any repetitive complaints.

Individually and collectively these variables give firms a basis for decision-making that enables them to address situations from an informed viewpoint. The schedules and graphs provide an easy-to-follow format for evaluation of markets and properties and can help alert firms to both past and future trends. As David Birch noted, whatever the situation, the principle remains the same: the future can be observed in the present if we look carefully and in enough detail. (24)

REAL ESTATE

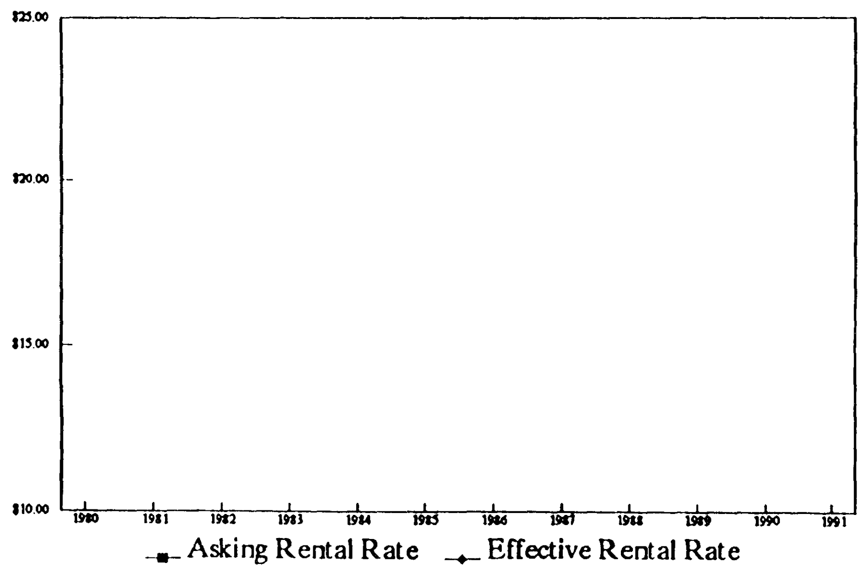
BUILDING SPECIFIC

and

MARKET DATA

Building Specific Data
Trends (Annual Averages) 1980-1991

Year	Asking Rental Rate	Months Free Rent	Moving Allow.	Over Standard T.I.'s	Effective Rental Rate	Actual T.I.'s	Lease Term	Square Feet	Operating Expense Base	Broker Participation
Subject Property										
1980										
1981										
1982										
1983										
1984										
1985										
1986										
1987										
1988										
1989										
1990										
1991										



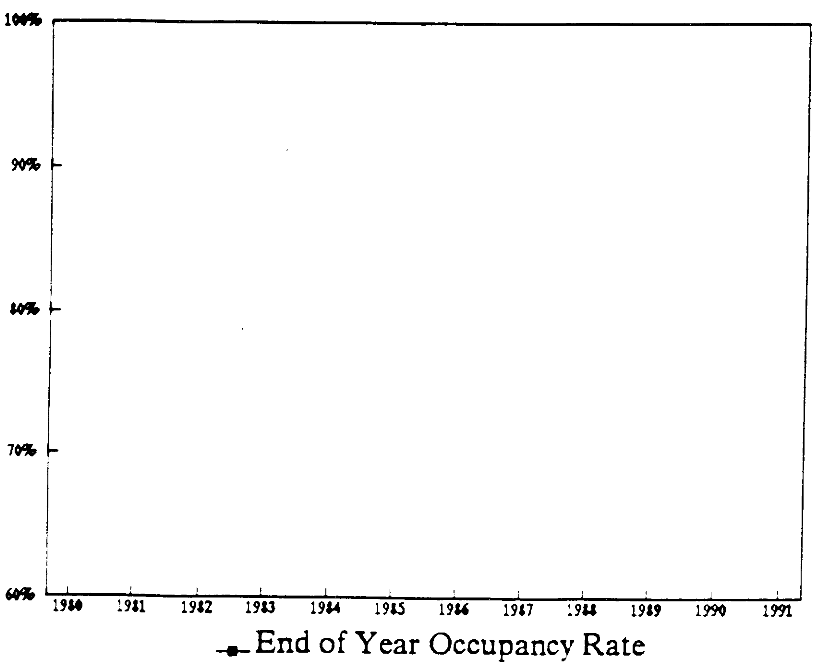
Building Specific Data
Year 1991

Tenant Name	Asking Rental Rate	Months Free Rent	Moving Allow.	Over Standard T.I.'s	Effective Rental Rate	Actual T.I.'s	Lease Term	Square Feet	Operating Expense Base	Broker Participation
Tenant A										
Tenant B										
Tenant C										
Tenant D										
Tenant E										
Average										

Building Specific Data

Trends (Annual Average) 1980 - 1991

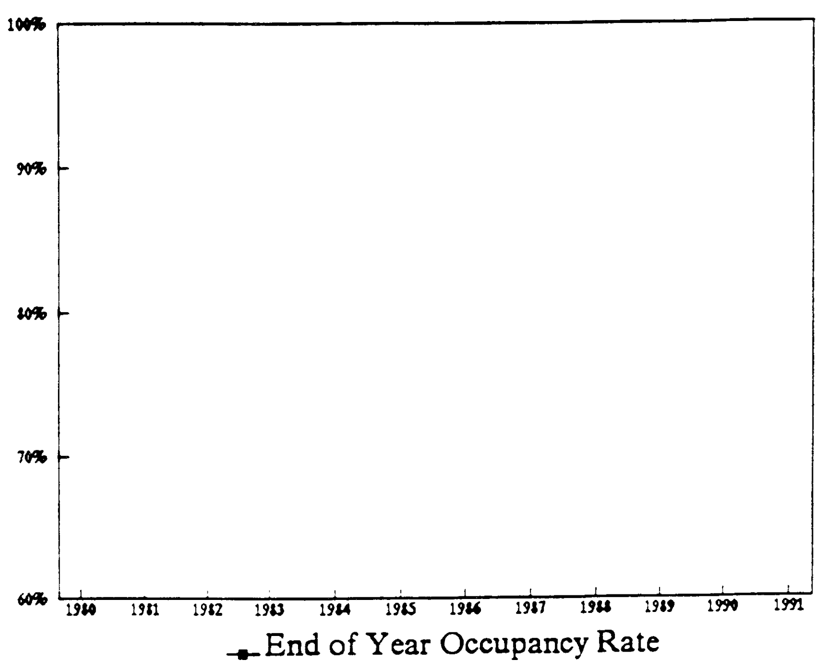
Year	B.O.Y. Vacant Space	B.O.Y. Occupancy Rate	E.O.Y. Vacant Space	E.O.Y. Occupancy Rate	% Renewals Executed	Release Time/Costs	% Signed With Co-Broker
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							



Metropolitan Area

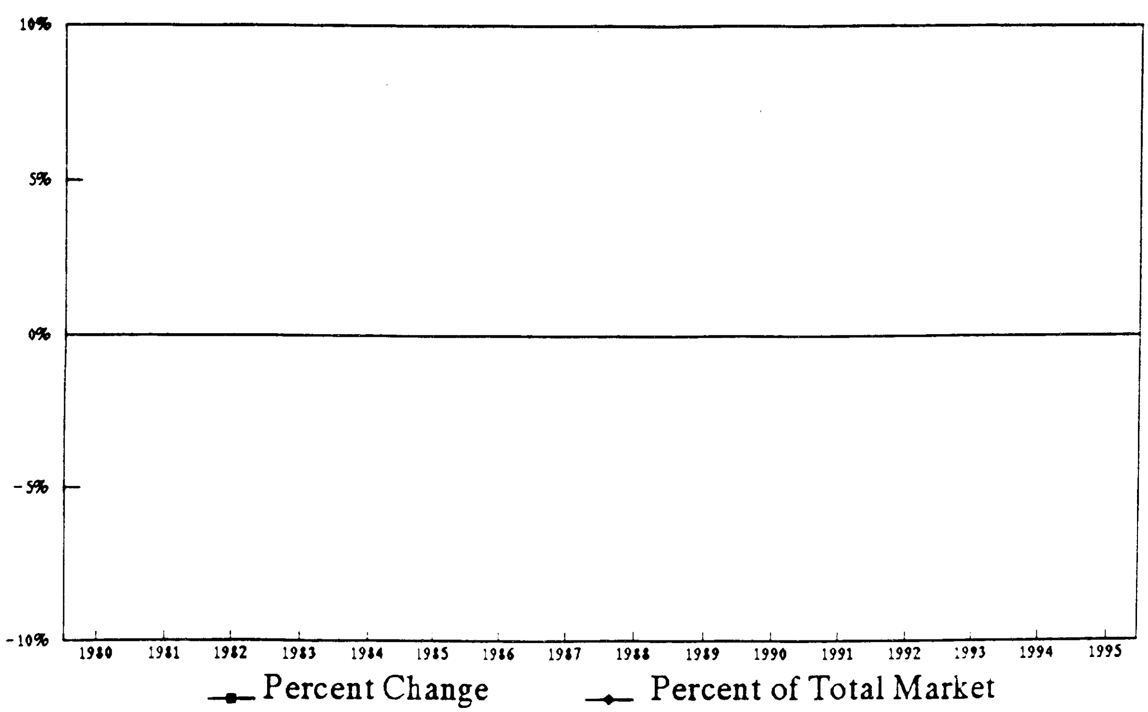
Trends (Annual Average) 1980 - 1991

Year	B.O.Y. Vacant Space	B.O.Y. Occupancy Rate	E.O.Y. Vacant Space	E.O.Y. Occupancy Rate	% Renewals Executed	Release Time/Costs	% Signed With Co-Broker
1980							
1981							
1982							
1983							
1984							
1985							
1986							
1987							
1988							
1989							
1990							
1991							



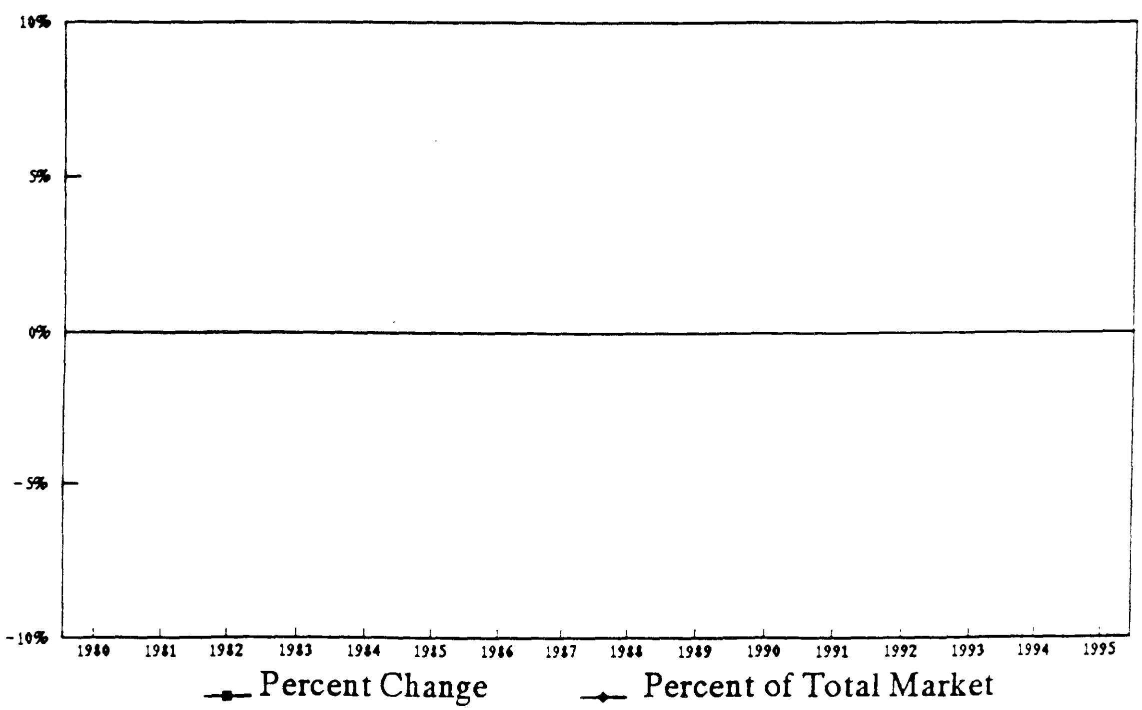
Change in Absorption - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Percent Change	Percent of Total Market
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



Change in Vacancy - Metropolitan Area

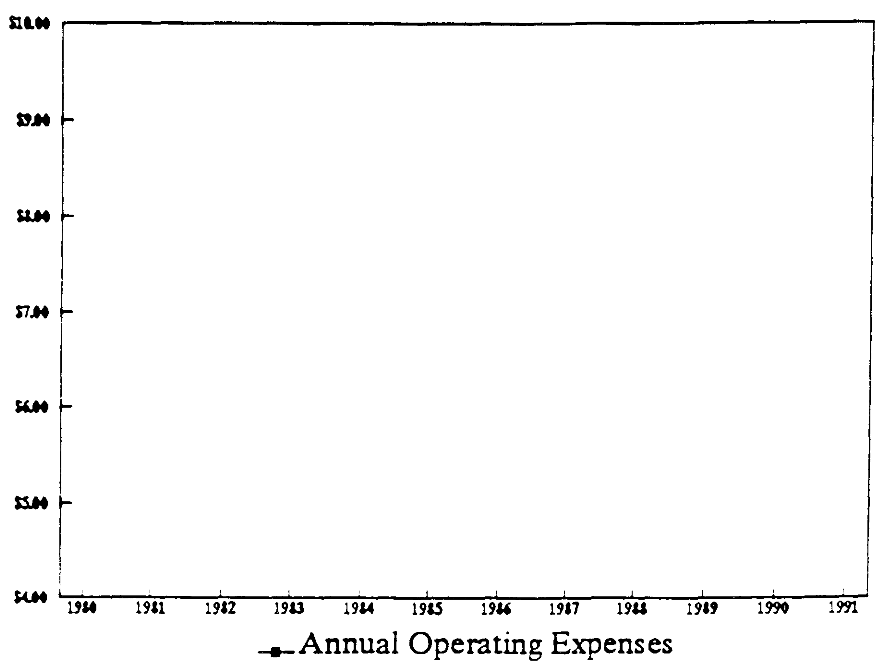
	Year	Gross Level	Annual Increase (Decrease)	Percent Change	Percent of Total Market
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



Building Specific Data

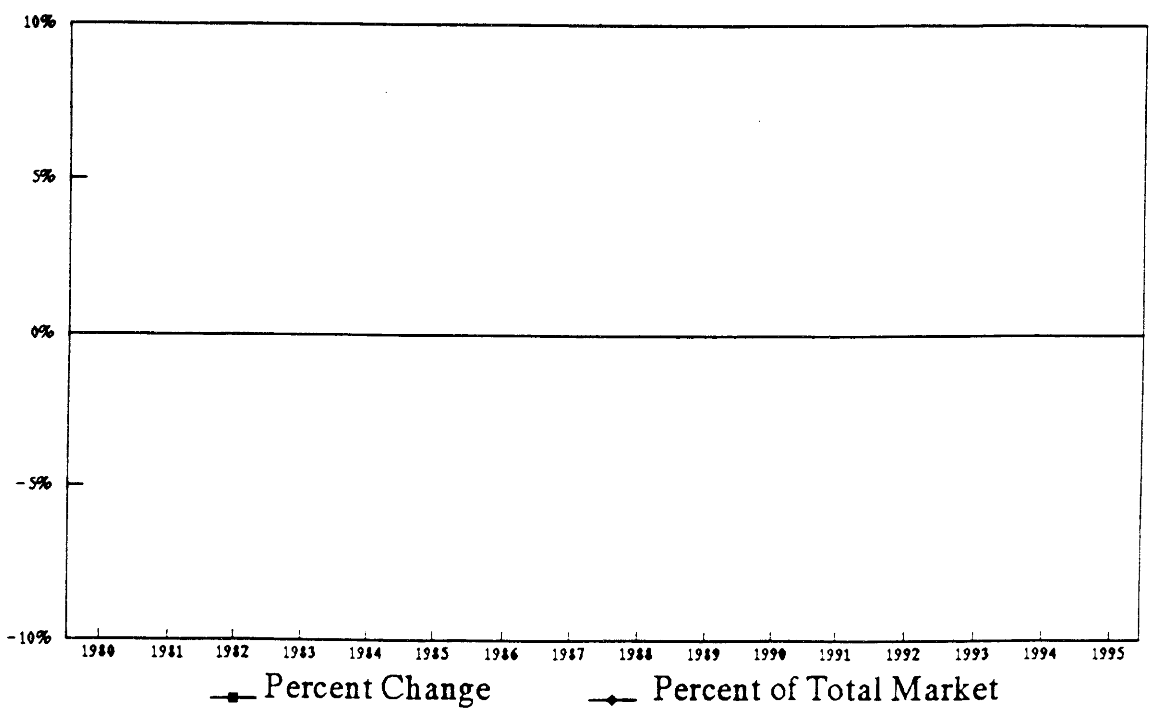
Annual Operating Expenses 1980 - 1991

Year	Gross Costs	Annual Increase (Decrease)	Percentage Change
1980			
1981			
1982			
1983			
1984			
1985			
1986			
1987			
1988			
1989			
1990			
1991			



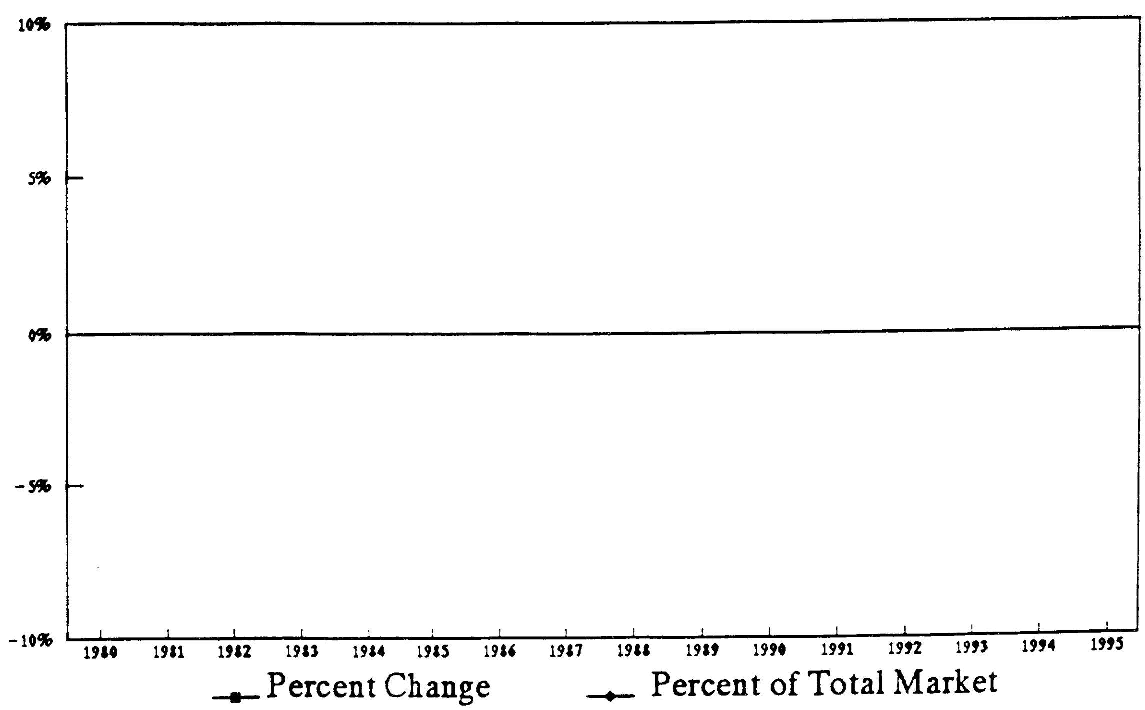
Change in Total Inventory - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Percent Change	Percent of Total Market
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



Change in Construction / Completions - Metropolitan Area

	Year	Gross Level	Annual Increase (Decrease)	Percent Change	Percent of Total Market
	1980				
	1981				
	1982				
	1983				
	1984				
	1985				
	1986				
	1987				
	1988				
	1989				
	1990				
Forecast	1991				
	1992				
	1993				
	1994				
	1995				



Transactions Data By Product Type
Metropolitan Area

Year	Sales Price Per Square Foot	Capitalization Rate	Replacement Cost
1980			
1981			
1982			
1983			
1984			
1985			
1986			
1987			
1988			
1989			
1990			
1991			

Building Specific Data

Tenant Complaints - 1991

Tenant	Date of Call	Nature of Call	Date of Response	Action Taken	Follow-up Procedure
Tenant A					
Tenant B					
Tenant C					
Tenant D					
Tenant E					

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CHAPTER III.

ORGANIZING THE RESEARCH EFFORT

Having presented the preceding argument that real estate firms in the future must make better use of a wide range of information and research if they are to remain competitive, we must now address how firms can efficiently organize themselves to collect, analyze and digest this information. Similar to the decision made by a manufacturing firm to either produce an integral part or material or buy it from an outside supplier, real estate firms must evaluate which information to gather internally and which information to purchase from outside providers. The fundamental principles dictating the buy-make analysis for information services important to the real estate business will be shown to track that of the manufacturing industry. Subsequent to the buy-make decision, firms must determine how to integrate this information into the organization's day-to-day decision-making process. The first part of this chapter analyzes the buy-make decision as it applies to the economic, demographic and real estate information discussed in Chapter II, while the rest of the chapter will describe organizational strategies for ensuring that companies utilize and truly benefit from the information that is collected.

The Buy-Make Decision As Applied To Information

Should a radio manufacturing company that assembles transistorized radios produce the transistors? How about the integrated circuits? Or even the plastic cases? It's possible that the company will make them all, however, it's more likely that it will buy some of the parts because companies specializing in these items can produce them at lower costs than companies that must gear up technologically, purchase, install and debug equipment and produce these items at lower volumes of output. (1) Thus, a buy-make decision (resembling vertical integration) is confronted. Essential to this evaluation is to accurately determine the real costs involved, including all direct and indirect costs associated with both alternatives. Frequent methods of cost analysis include payback, average rate of return, net present value and internal rate of return along with a determination of the volume level that justifies switching from one strategy to the other. In some cases, the incremental or marginal cost may be controlling, but a careful evaluation of the long-term implications must weigh heavily on any decision. (2)

In addition to the obvious need to look at cost comparisons, there are other factors that come into play. Quality and delivery schedules are a paramount concern for some companies. Can outside vendors be trusted to provide the same level of commitment to quality and reliability to meet time obligations as in-house employees? Some firms are so customer sensitive and/or vulnerable to an interruption of service that they simply choose to provide certain services in-house regardless of cheaper options available externally. Proprietary trade secrets may direct companies to produce internally for confidentiality reasons. In cases where there are limited suppliers, firms may elect to handle a production or service in-house to guard against becoming dependent on a supplier or two to keep the manufacturing process moving. Concerns for being held hostage by a few select firms with respect to sudden price changes may drive the decision in-house also. Legal considerations or potential conflicts of interest may preclude firms from having the flexibility to produce the part or work with a certain supply source. The volume of business generated influences these decisions as the bigger the volume the more cost effective it generally is to produce. The cyclicality and/or stability of a company's output along with the frequency of the need for a specific service will lead firms in a certain direction. On the other hand, firm's having inadequate expertise, technological capabilities or capital may be forced to use outside sources. Expectations about the future pace of changes in technology and the educational maintenance needed to keep employees at the forefront may lead firms to disregard any short-term benefits of in-house production. Managerial and human resource issues have varying degrees of influence, but nevertheless will always need appraising before reaching a conclusion. (3)

The buy-make decision by a real estate firm is analogous to that of a manufacturing firm. These decisions cannot be made in isolation but must be evaluated against a company's overall business objectives. Factors such as cost, expertise, technology, quality, volume and frequency of needs, predictable financial strength (i.e. is the business subject to pronounced cycles causing revenues to fluctuate significantly), and internal personnel and organizational matters are inputs into the analysis of whether real estate companies are best served by producing or buying information.

Regardless of a company's approach, some information will necessarily be gathered in-house because that is where the information resides. Proprietary individual building data can only be retrieved from company files. Similarly, information that can be used to judge portfolio performance and set portfolio diversification strategies comes from internal records.

By contrast, there are plenty of ways to amass market and macroeconomic information. Firms can look to a plethora of sources to buy data, analyses and consulting expertise. These firms package their information and services in a number of ways with prices ranging from several hundred dollars for standard reports to tens of thousands of dollars for customized reports. Two of the best sources for economic and demographic information are Data Resources, Inc. (DRI) and The

WEFA Group because they specialize in economic consulting and they provide a cost effective way to get this information. Their staffs include some of the leading economists and they can address a virtually endless amount of economic issues with sophisticated methodologies and interpretation skills. For these reasons, real estate firms will be better served to purchase macroeconomic data and analyses.

Other firms such as Cognetics and F.W. Dodge offer information that is primarily focused on one aspect of real estate research. Cognetics produces the most comprehensive research and forecasts on real estate demand. They track nearly 10 million tenants across the country, and have received notoriety from their publications that forecasted the demand slowdown several years before people paid any attention. (4) F.W. Dodge, a subsidiary of DRI, has a national network that primarily tracks construction related activities. (5) This specialized information is most cost effectively purchased from these types of firms.

When it comes to gathering information on real estate market conditions, buy-make decisions may vary between different types of firms because of collection obstacles. Market research requires an adequate sample of overall market data rather than just specific properties owned by a firm. Developers will face reluctance to release building specific information from other developers due to the obvious competitive situation between the two firms. Conversely, market research firms do not pose a competitive threat and will have access to information from all landlords. Therefore, developers likely will need to purchase market studies from third parties to get a comprehensive and unbiased picture.

In addition to the data gathering challenges, some firms may find the cost and sophistication level of some reports to be sufficient reason to buy forecasting expertise and database information. Two of the best in this area are The REIS Reports and Torto/Wheaton Research. Each firm possesses their own information gathering systems that enable them to maintain very large databases, which meliorates their analyses and econometric forecasting capabilities. Their principals are highly educated in market analysis with many years of practical experience, thereby making their numbers relatively reliable. Individual market reports cost just a couple of hundred dollars while customized studies cost several thousand dollars or more depending on the assignment. (6)

Although pension fund advisors and institutions might be in competitive situations with developers in certain instances, they may receive cooperation from various firms in the market since they are also perceived as friendly due to being a potential capital source. In some cases, these firms will collect enough information to do their own analyses, while at other times they may be forced to look to outside vendors for ample market data. Even with firms that do their own analyses regularly, it may behoove them to seek confirmation of their figures and conclusions from outside firms on occasion.

Other factors also influence the buy-make decision to produce research in-house or to purchase it elsewhere. The size and purview of a firm's operation bears significantly on the affordability of research staffs. This large capital requirement will prohibit most firms from developing a full department. Without sufficient financial resources to create an internal peer group, researchers may feel isolated or ancillary to the company's other employees. Moreover, these types of arrangements will prove detrimental to recruiting efforts, since seasoned researchers will unlikely come on board when there are no colleagues with whom to swap ideas. Along these same lines, performance evaluation criteria may be nebulous, career paths may be undefined and perceived compensation inequities may arise in the employing of a minimal staff.

Another concern with in-house research is the role it plays in the deal evaluation process. Even with clear lines of authority and reporting channels, the strong personalities of most real estate deal makers create a situation where research's views may potentially lead to internal friction between the two. Ultimately, except in cases where a stellar researcher is involved, this conflict may lead some people to disavow research's opinion, thus setting a precedent that pervades the company and over time leads to a discredited and ineffective research function.

Finally, in-house staffs, unless large enough to have specialists, may restrict firms from receiving the most detailed and sophisticated analyses for a particular need. The on-going flexibility to select the most qualified consultant on a case-by-case basis might steer firms away from the implementation of an internal research operation. Furthermore, in-house research may have a tendency to guide decisions to coincide with a key executive's expressed intuitive sense, while outside firms should present their view of reality since they do not possess any biases or face severe consequences, such as jeopardizing career advancement, from their recommendations.

Lance Lynford, Senior Vice President of REIS, has seen developers attempt to handle research in-house and explains his observations. "I've seen the pendulum effect. Companies bring the function in-house by hiring one or two people to collect market, economic and demographic data. They begin tracking buildings and setting up files, but then it happens. The senior people decide they don't want someone else giving them data when they know what a good real estate deal is, so files begin to fall apart and research is not useful.

Unfortunately, some of these "gut" feelings have gotten us into trouble. Research is only as good as the people involved and credibility is everything. Even the biggest firms that have some type of in-house function usually hire from outside to verify and provide an independent cross-checking to placate senior executives." (7)

Another consultant, Bill Wheaton of MIT and Torto/Wheaton Research, has observed several firms that have a single person that buys the reports, writes summaries, goes to conferences and basically gains an understanding about what they are receiving. He feels the key is to figure out how to really use the information internally, but to do this means that someone must thoroughly understand what they are buying, be comfortable with it and know how to interpret it. Wheaton thinks this is a cost effective approach for many firms rather than investing in a full research department that may run into several hundred thousand dollars annually. (8)

Although there is no single solution for all firms, the above analysis illustrates why it is practical for only the largest real estate organizations to do extensive macroeconomic and market research internally. The rest of the companies will inevitably utilize outside consultants and vendors for information on an as-needed basis.

Using The Information

The risks associated with being information consumers and relying on the expertise of third parties to generate, analyze and digest information is that firms will be uncertain how to interpret or use the information. Information sitting idle adds no value and information without interpretation provides little valuable knowledge. Information, a stimulus to creative thinking, must be applied just like capital and labor to be useful. (9) To implement this, firms have to take an explicit and systematic approach to organizing themselves to take advantage of the information they possess. A strategy that coordinates the flow of information in a formal manner will provide the most benefit to attaining corporate goals and objectives.

Deciding when a study is needed, who to hire and what it should address cannot be performed effectively on a haphazard basis. Likewise, responsibility for ensuring that internal databases are maintained, determining how to put information in a useable form, and figuring out a way to make sure that the right information gets to the right person at the right time all require thoughtful planning, budgeting and managing. What happens after a study costing thousands of dollars is complete? Is it just copied and left for whomever wants to read it? Does anybody carefully interpret its findings and relate the implications to the company's business? Does anyone evaluate the consultants' performance? Did he do what was asked of him? Did this provide any new insight or did the study lack focus on the real issues needed to be addressed? The power of information is used to inform, influence, innovate and evaluate, however, the questions raised above illustrate the importance of organizing and using the information in order to produce beneficial research. (10)

Large firms with research departments likely have a process in place, but firms that have little or no staff need to focus on an organizational strategy that formalizes the process of utilizing information. There must be a centralized mechanism to direct the company's research efforts, otherwise the purchasing of information will likely be less productive because of unorganized decentralization. Similarly, to effectively utilize consultants, an understanding of how to clarify the company's needs, ask the right questions, evaluate the results and perform comparative analyses of various consultants must be formalized. Information needs to be formatted in a manner that is useful to any user, which most times is senior management. So, how does a firm position itself to meet these objectives?

One way is to appoint a single person to be in charge of assimilating all of the information that is purchased. This person would then distribute the information in a format that would make it easier for company decision-making. Dealing with consultants would be part of the job, but without experience or knowledge in the field nor explicit authority in the company, consultants may try to work around this person to get to the real user of the information. The problem with this is that this person may have no research credibility, but rather will just be viewed as a collector of information. Credibility is essential if actions are going to be taken and it will be difficult to create research credibility with this approach. Steps to remedy this lack of respect include education by going to seminars, conferences, etc. with the hope being that eventually this person would have the knowledge necessary to provide summaries, evaluate consultants, and offer opinions that are insightful. Furthermore, issues of authority and accountability make this a difficult position. On the positive side, the company does have a centralized location to look for information and standardization of formats will facilitate getting the information that the user wants or needs.

A more promising strategy may be to form a committee of three or four key executives to direct and manage the overall research efforts of the company. The selection of these key executives legitimizes the function and lends itself to a more likely implementation of the committee's findings without prejudice or exception. This committee, consisting of executives from different areas of the firm, has the responsibility to decide what information the firm needs and to digest the information once they receive it. Since it is unrealistic to expect a consultant to understand a firm's real business, a major advantage to this approach is the ability of the committee to provide the crucial link between the consultant's report and the practical consequences to the firm's business. A key point is that the consultant now has an identifiable body to report to. The committee should hire the consultants, meet with them, give them explicit instructions and evaluate them as the assignment progresses. Due to the various areas of expertise of each committee member, the synergistic effect should result in more useful and understandable interpretation of how this information applies to the day-to-day operations. The committee should be responsible for recommending how to adjust the firm's activities to take advantage of this information. The committee should initiate the internal management systems to collect proprietary data and ensure that it is updated regularly. All studies should be collected by the committee, and through joint efforts of the committee members, a company position on the attractiveness of current or potential markets should be disseminated to the rest of the company. This approach eliminates many personnel and organizational issues and prevents direct confrontations between researchers and deal makers. However, committee members must make the commitment to becoming more educated in this field and to provide the time to produce quality results.

As we know, no two organizational structures are exactly alike and their businesses are not static, but continually evolving enterprises based on their capabilities and personalities of key individuals. (11) Firms must develop an organizational system that encourages the use of research. Appointing a person to be in charge of all information centralizes the information and provides a foundation. However, the real value of information lies in its interpretation and this approach has apparent shortcomings here. Also, the critical dealings with consultants does not seem to be maximized. The committee approach removes some or all of the interpretation limitations and more effectively provides integration of research into the organization.

NOTES TO CHAPTER III:

1. Moore, Franklin G. Production Management. pp. 538.

2. Criteria For Make-Or-Buy Decisions. Statements on Management Accounting Practices by the National Association of Accountants. pp. 1-12.

3. Ibid. pp. 15-18.

4. Cognetics Real Estate, Inc. Marketing Publications, Cambridge, MA.

5. F.W. Dodge. Marketing Publications. Atlanta, GA.

6. Torto/Wheaton Research and The REIS Reports. Marketing Publications. Boston, MA and New York, NY.

7. Lynford, Lance. Senior Vice President, The REIS Reports. New York, NY.

8. Wheaton, William C. Professor, MIT and Principal, Torto/Wheaton Research. Boston, MA.

9. Meltzer, Morton F. Information: The Ultimate Management Resource. pp. 104.

10. Ibid. pp. 12.

11. Criteria For Make-Or-Buy Decisions. Statements on Management Accounting Practices by the National Association of Accountants. pp. 3.

CHAPTER IV.

CASE STUDIES

So far this paper has described the variables that should be researched and presented a framework for organizing the research effort. This chapter will describe how three firms are currently addressing this function. As previously pointed out, in-house research departments exist only in the largest advisory firms and institutions. Therefore, two of the case studies describe how in-house research departments operate at these large pension fund advisors, while the third case study presents the approach of a multi-regional developer.

TCW Realty Advisors

TCW is a national real estate investment manager whose business objective is to acquire existing, income-producing industrial, retail and office properties with a typical investment ranging from $7 to $50 million. The company takes an integrated function approach towards organizational structure. Recognized as a leader in the research field, the company's philosophy is a top down, market research driven approach with incentive compensation based on actual performance. They exercise a proactive, aggressive portfolio management practice and pride themselves on being investment managers as opposed to being deal makers. The firm seeks geographic, product and economic diversification to achieve capital appreciation and increased operating income with minimal volatility.

The company believes it differentiates itself by its research driven nature. Sol Rabin, one of the founding partners and considered a "dean" of market research, integrated research into the business plan from inception. TCW thinks they have an upperhand on most firms today because they made the investment in research years ago and are not faced with the task of starting this function at a time when revenues are falling. According to Jeff Miller, Vice-President, Market Research, "TCW made the investment up front. It's expensive. At one time research accounted for 25% of overhead and on the face of it these are people that don't directly generate fee revenue. It is overhead, but really creates value by keeping you out of the pits and creating a logical, rational program to communicate to investors, so it becomes clear to them what the prospects are for success. This helps raise money, which maybe TCW could not have raised otherwise."

Currently 15 professionals are involved in market research nationwide - 11 located in Los Angeles and 4 in Boston. Their function is not merely collecting data and preparing macroeconomic forecasts and analyses, but being involved in every deal. Miller points out that, "The fundamental reason for our research focus is that certain metropolitan areas in the long run are better than others. If you are buying, then you must also consider how you are going to sell based on your investment horizon. Research tries to paint a picture of a market in years to come. This helps to figure out where rents and, thus values, might be since you will be eventually selling into that market environment. Determining future values is the basic goal. We look for markets with the most depth and diversification to their economies. These happen to be international cities, which we prefer because it widens the range of potential buyers. Over time we believe these will be the best markets. However, cycles change and different allocation strategies must be constantly updated." Miller also notes that research helps to efficiently allocate staff to areas that are in demand.

Trusting only in-house data, TCW researchers track markets every six months on a building by building basis tracking variables such as new construction, vacancies, asking/effective rents, tenants, and tenant changes. Substantial money and much time is spent to maintain these databases. One of TCW's specializations is their continually evolving proprietary forecast model that tracks rents. This long-term forecasting model is based on the fundamental principle that rents have an inverse relationship to vacancy and/or years of supply. Miller says, "By analyzing years of supply it is more dynamic because it takes into account absorption expectations as well as static vacancy figures." In addition to rent forecasting, TCW looks at changes in land use patterns, transportation networks, housing costs and labor force constraints to understand growth both at the metropolitan and the submarket level. The most important thing is to understand the function a submarket plays in the metropolitan economy, which provides a basis for projecting growth, supply, demand and construction. Understanding the horizontal and vertical links within the regional economy is vital, therefore, regional economics is a big part of the forecasting of a real estate market. For regional economic data TCW uses the two major econometric services, DRI/McGraw-Hill and WEFA. In addition, Miller says TCW will occasionally buy real estate information from a firm such as Torto/Wheaton.

The acquisition strategy is a direct reflection of research's recommendations, and, like everything else at TCW, is research driven, disciplined and systematic. Research pro-actively targets particular cities, identifies product type opportunities, pinpoints submarkets and provides focused guidance for their acquisition team. In fact, it plays such an important role that no acquisition can be consummated unless research has approved the market and product type. Miller says, "Research is very specific about buildings, tenant mixes, etc. A strategy is set and then the acquisition people are turned loose to implement. For instance, if you think of ballparks as regional economies then TCW research decides which ballpark to play in, positions the players in the field, then identifies whether to acquire a left fielder, short stop, etc. We're in fewer than 10 ballparks so we understand the playing conditions. This gets back to our initial goal of being both focused on the best long term investment markets (national and international cities with the deepest and most diversified economies) and to efficiently allocate resources."

The acquisition process at TCW generally follows a similar sequence of activities. Initially, a property is located that meets the basic research criteria. Subsequently, research determines its competitiveness in the market; evaluates the substitutability of that submarket; prepares a feasibility report; presents a research strategy to the investment committee; and then finally alerts the acquisition people to implement the decision. In addition to the efforts of the research and acquisition staffs, during the process the asset management staff performs due diligence as well, so that all areas are moving towards reaching a final recommendation simultaneously. Miller is not aware of many firms that operate in this manner as other firms combine research into the acquisition function. Although Miller feels these firms use a general intuitive sense and can be successful, in the long run TCW is counting on their research to produce superior results. Miller notes, "It's a minefield out there and you must walk carefully. This is why there has been a recent interest in developing the research departments in advisory firms and institutions themselves."

What about developers, aren't they going to establish research departments also? Miller does not think so. In general, developers lack the capital base to support in-house research or the credibility because of their fee driven nature throughout the 1980's. Furthermore he says that so far developers have been basically unsuccessful in their attempt to get into the advisory services business. (1)

Aldrich, Eastman and Waltch (AEW), Inc.

AEW is a Boston-based pension fund advisor that currently manages approximately $5 billion in direct client capital invested in real estate assets of $11 billion. They invest both debt and equity in the four major product types and have taken equity positions in development companies. The firm began a formal research function in January, 1990 with the hiring of Susan Hudson-Wilson. The impetus for this move was the need to provide research support to monitor their own investment activities and address the increased demands of their clients for specific economic reasons for investing in one region versus another. Prior to this internal focus, they used outside consultants to support real estate decisions.

According to Mark Coleman, an economist with AEW, "The first year and a half has been spent establishing credibility within the greater investment community and with our clients. We've done that fairly successfully. Now we are looking at how to integrate this broad universe of economic and urban data into the day-to-day activities of AEW. That's actually a much tougher problem." The research staff has a broad range of activities such as preparing market summaries for metropolitan areas, forecasting returns, monitoring construction activity, devising portfolio strategies, as well as pure esoteric research to maintain credibility. Integrating these activities into the trenches of AEW's daily decision-making process is a big challenge. Coleman finds this a difficult problem for a number of reasons, "The people who really need our services are not necessarily the ones with the backgrounds to understand that the way we look at the world as economists is a very useful way for them to also think about the world. Educating internal professionals on how to interpret and use data for real estate analysis is a tough job. It is also difficult, given the overall poor quality of real estate information, to draw any conclusions in which you can put a lot of confidence in. There are also the usual organization issues which require research to walk a fine line in the corporate system. Some firms give research veto power over investment decisions, so deals must be cleared with research first. That's not the way we operate here." Coleman thinks 50% of firms having serious research departments have a similar approach. He guesses that probably the top 10 insurance companies and pension fund advisors have made commitments to an in-house research function.

A typical department is 5 or 6 employees, with a few larger firms having staffs of a dozen or more. AEW has 2 full-time economists, a research assistant, 2 secretaries, and Susan

Hudson-Wilson (an economist who now has some other corporate duties as well). The firm currently is also in the process of recruiting a director of research to manage the group. Coleman estimates that total costs for AEW's research department currently are about $350,000 and will likely increase. However, due to AEW's size, this is not a big percentage of total company activity. One internal issue is the need to develop clearly defined criteria to properly evaluate the research staff, in order to effectively measure their value. Currently, the economists are paid a market salary with a bonus tied to company performance. Coleman believes credibility and reputation is a big part of research's ability to add value, so a research director preferably should have an established name in the field. Hudson-Wilson made the decision to hire staff economists with no real estate backgrounds which eliminated prior biases but the lack of experience delayed initial productivity. Since, education is a major part of research, a Ph.D. in economics or the practical equivalent in economics expertise is a prerequisite.

AEW begins their top-down research by viewing the economies of metropolitan areas and then moving downward to the submarket level. Conversely, in real estate people have often looked only at their submarket. Coleman believes that properties can only swim against the tide for so long. Therefore, they forecast by metro area with fixed concepts for all property types and with as few variables as possible. They collect macro data before they start their real estate research. AEW probably spent $100,000 last year just buying raw macro data and forecasts from firms like DRI, WEFA, and F.W. Dodge. Coleman thinks this capital expense is about average, while he knows of at least one large insurance company that spent between $300,000 and $400,000. AEW takes this raw data and prepares its own real estate analyses and forecasts. They study supply and demand fundamentals, with particular concern for employment and population growth. Most major research shops have elaborate databases and AEW is collecting and organizing proprietary bases themselves. AEW uses its proprietary forecasting methodology to determine the future paths of rent and appreciation. Coleman is suspicious of specific forecasted rent figures, and therefore, AEW tries to reconcile rent growth with employment growth to get a general pattern.

To supplement its forecast, AEW has purchased real estate forecasts from firms such as Torto/Wheaton and The REIS Reports. These firms have extensive historical property level data, which is one of the most critical factors in research. AEW also buys specific information, such as demand forecasts from Cognetics, because this specialized information and analyses is helpful and impractical for them to gather themselves. Coleman predicts, "Tracking of building data will eventually be solved, but the problem of educating and interpreting will remain."

AEW is also active in portfolio diversification and believes that diversification is more than simply being in different locations, but is based on correlations between regions. It searches to uncover any economic and/or demographic information that may provide insight into the correlations between regions.

It is interesting to note that AEW's philosophy allows the production people to bring in deals from virtually any market. Coleman elaborates by saying some markets have poor numbers which might lead you to stay out of that market. However, he states, "Any pitfalls in the economy simply manifests themselves as investment risks. In theory, pricing those risks to produce a high enough return gives us the option to still invest in those markets. If you're in a market where the tide is going against you, the parameters of the transactions must reflect that. So our opinion of a market is never a litmus test for what happens, but rather a reflection of reality."

Does Coleman believe this research will infiltrate development companies? It would surprise him if developers hired an internal economic staff. He theorizes about the agency aspects of real estate. A case can be made that without real "research," developers in the past justified projects because they had non-recourse financing and lower internal research costs resulted in profit maximization, which was a perfectly rational approach for a developer. Lenders accepted this because of their possible naivety, but perhaps were further encouraged by the incentive built into their lending fees. There will most likely be an increased awareness among all parties to give more thought to market research and attracting capital will become more difficult without thorough research. On the other hand, pension funds have a unique set of economic incentives requiring their advisors to act in a fiduciary capacity. AEW primarily invests in non-discretionary accounts for their clients, which forces them to do research as a fiduciary. In fact, a research opinion is now required as a part of AEW's due diligence process.

What trends does Coleman see on the horizon? Portfolio allocation approach has definite real estate limitations but will continue to evolve. Firms will look harder at regional economics in decision-making. Securitization will become a bigger issue. Lending practices will continue to remove some of the agency problems (i.e. non-recourse debt) and a not so subtle shift to capital from pension funds and foreign investors instead of banks. Consequently, a more sophisticated economic perspective is going to be needed because these sources will be smarter, more demanding on the type of analyses required, and have a longer investment horizon. (2)

Perini Land and Development/Perini Investment Properties (PIP)

PIP is a multi-regional development firm involved in office, residential and mixed-use projects in Northern California, Phoenix/Tucson, South Florida, Atlanta and Eastern Massachusetts. Each geographic region has its own reasonably autonomous organization and is expected to be intimately familiar with their respective marketplace. Thus, the market research function starts with an internal working knowledge of a market and is expanded from there as needed. Market research is considered a key part of the due diligence process to mitigate or, at the least, understand the risks involved in adding a project to a portfolio, disposing of property, etc. PIP's acquisition/development strategy begins with a resource base of market knowledge and attempts to identify certain product types that seem financially feasible given the demands of that market. These product types are targeted by area teams within a market and monitored for dynamic changes that occur over time to determine how they fit in the context of an overall portfolio or corporate strategy. So every project must have a market research section (which often doubles as a feasibility and/or financial document) as a part of the due diligence coverage. This research covers the potential demand for the particular product type, competition, demographic-population-job growth in the micro-market of a general geographic area, trends in rents, costs and other relevant inputs to the financial modelling process.

Tom Steele, former Chairman of PIP, states, "There is no single answer to the market research question since every situation is different. We handled it in a variety of ways. If it was a modest project and we felt familiar with the product from past experiences then typically it was done in-house. However, with new product types or in cases with not enough knowledge base within the organization then we would hire a marketing firm to assist." Steele feels these outside firms must be given very specific directions as to their assignment. After researching the market through brokers, local business schools, etc., a research firm would be hired to perform a specific task. Narrowly defining the task reduces costs by eliminating unnecessary information and enhances the value by presenting only the vital and required information. The primary focus for outside studies is to develop information on the specific market for the proposed product, thus filling in areas where in-house information and competence is not sufficient.

PIP used a variety of research firms from Big 6 accounting firms to Kenneth Leventhal to smaller local firms. Big name firms have generally been used for the larger and more complex projects and where the need for the market data transcends the local micro market. However, Steele reports, "More often what we found much more satisfactory, meaningful, insightful and cheaper was information from local market research firms with the reputation of performing not only good research but also were considered credible and useable by the financing sources in that community." This served a dual purpose since the report could be used as a financing document as well. The selection of a firm usually involves a screening process, a request for proposal, samples and references. This was done every time a need arose, thus assuring that the best research firm for that particular assignment was hired. PIP also considered it critical to identify the individual within the firm who would work on PIP's account in order to evaluate that person's abilities and to assess that the person understood the limitations of the assignment. The range of costs depended on the scope of the assignment, size of project, breadth of market to research and amount of information to be gathered. Steele recalled that if they narrowly defined and targeted the research, then a good, local firm would charge between $5,000 and $7,500 to provide specific information on competitive trends, rates, supply and performance of similar products. Similar data for a larger mixed-use project with a national firm may run between $25,000 and $50,000. Therefore, project feasibility discussions always involved determining whether or not an outside research study would be necessary to fully understand the market or to appease potential lenders.

In addition to project feasibility, PIP utilized research to evaluate cities for potential regional office locations. The first three regional offices were essentially inherited from Perini Construction when the real estate operation was put in place. Conversely, the two most recent entries into new markets, Arizona and Atlanta, were the result of extensive market research on the demographics of the regions, their growth potential, identification of the major players, opportunities for certain product types, and a comprehensive overview of the prospects of a region. PIP did extensive research on the Philadelphia and Washington, DC markets before selecting Atlanta. Entry into Atlanta was a research driven decision, as it was targeted for its potential as a market and resources were committed prior to having a deal in place to support the region.

One trend that Steele feels will intensify in the future is the requirement by lenders to have an independent market research firm give approval to the feasibility of a project. Since most lenders have experienced defaults from past real estate loans, they will be more cautious and will insist on outside "verification" for most loan commitments. Although the incremental value to a developer may not be significant, such outside verification may become a necessity in order to conduct business considering the present apprehensive nature of financing sources. The implication is that it will be more costly for real estate firms to conduct business because of the costs to do market research in order to satisfy lenders.

Despite the recent interest in market research throughout the real estate industry, Steele does not foresee developers forming in-house departments to perform research. He believes that major advisors and institutions have enough financial resource base to justify a highly sophisticated economic research staff, but that developers will be better served by buying it on an as needed basis. When looking for specialized expertise (i.e. legal, architectural, marketing, etc.), developers generally have hired outside firms and supervised their work. This gives them the opportunity to take advantage of the latest methodologies and the flexibility to hire the best firm for the specific task at hand. He feels that the key to utilizing market research effectively is to understand on a detailed level the type of information that is important for decision-making and to focus the research on providing such information. (3)

The above case studies illustrate that there is no single right way to approach research and that firms need to address the research function in the context of their specific organizational structure and strategy. TCW and AEW are two similar pension fund advisory firms, yet each approaches research in a different manner. By contrast, PIP is a developer that addresses its research needs in a completely dissimilar way.

Conclusion

This thesis has provided a framework to use when addressing the research needs of a real estate organization. Firms must be discriminating in evaluating their specific needs and formulate a customized strategy to capture the relevant information in a standardized format that can be easily understood and is useful to the people involved in the firm's decision-making process. The culture of each organization will undoubtedly influence the manner in which it approaches its research function, however, a firm's culture should not be used as an excuse to ignore research.

The industry is awash with information, which due to its imperfect nature creates situations of information arbitrage and generates investment opportunities. Therefore, the firms that can collect, analyze and interpret the appropriate information will achieve competitive advantages in the years ahead. Companies that devise a systematic approach to market research and to managing internal information will be better positioned to allow for comparisons and evaluations of opportunities and markets in a consistent manner to reach conclusions based on comparable measures (i.e. IRR, etc.). Information used to produce better knowledge will assist firms resolve some of the uncertainties faced in making real estate decisions. The collection of this data will be useful to many areas throughout the organization as similar information is utilized by various departments.

With the disequilibrium in market conditions prevalent in many markets and across various product types, firms can no longer afford to analyze opportunities in isolation, but rather must look at the underlying fundamental conditions in the world around them. Information can be a powerful resource, but like capital and labor must be applied effectively to be an asset to a company. As Gil Castle of The Roulac Group points out, "Wealth in the 1990's will be achieved by firms most adept at controlling knowledge. This will be the era of the knowledge engineers." (4)

NOTES TO CHAPTER IV.

1. Miller, Jeff. Vice President, TCW Realty Advisors. Boston, MA.

2. Coleman, Marc. Economist, Aldrich Eastman and Waltch, Inc. Boston, MA.

3. Steele, Tom. Former Chairman, Perini Land and Development/Perini Investment Properties. Framingham, MA.

4. Castle, Gilbert H. III. Senior Manager, The Roulac Group. San Francisco, CA.

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