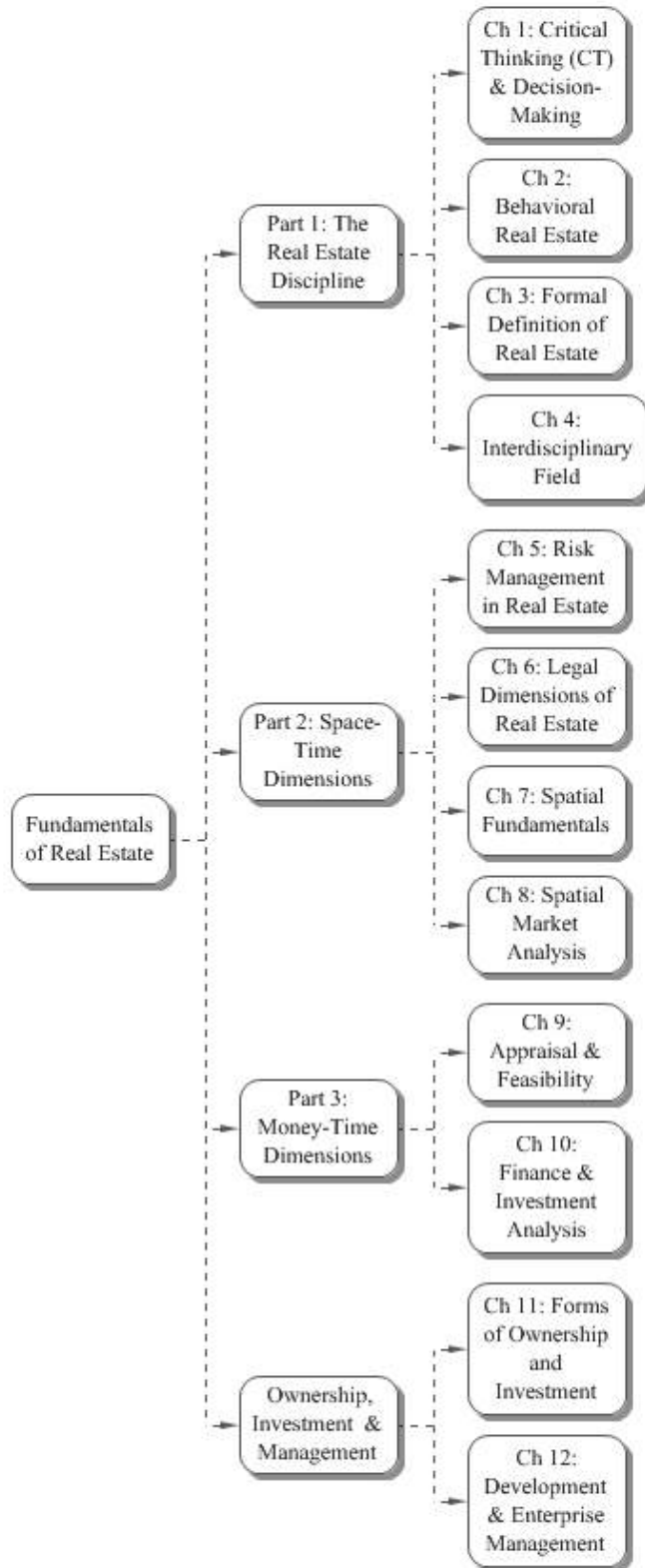


Overview: Fundamentals of Real Estate



This is the reorganized Fundamentals of Real Estate. The book is organized into four major categories: the discipline, space-time, money-time, and ownership, investment & management.

Chapter 1: Critical Thinking 1-29

Chapter 2: Behavioral Real Estate 30-66

Table of Contents

Contents

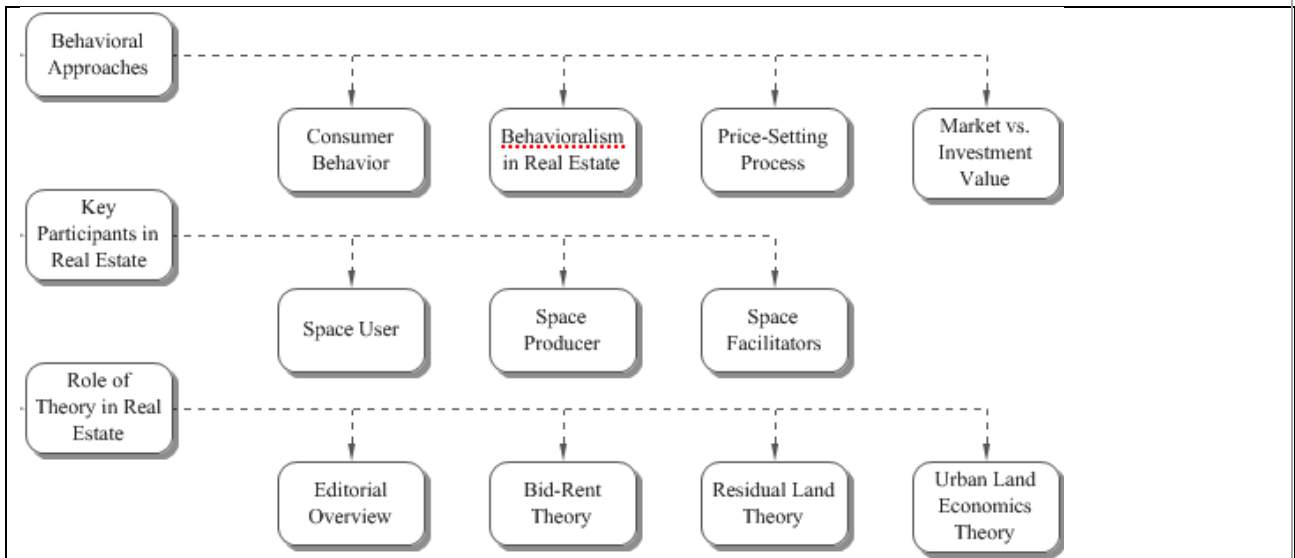
Behavioral Nature of Real Estate.....	32
The Real Estate Discipline.....	32
Key Participants in Real Estate.....	33
Key Participants in Real Estate.....	33
Behavioral Real Estate.....	34
Confidence Levels and Most Probable Price.....	34
Behavioral Concepts in Real Estate.....	35
Market Segmentation.....	35
Market Segmentation and Market Targeting.....	35
Requirements for Market Segmentation.....	36
Bases for Market Segmentation.....	37
Space User Perspective.....	38
Employment Segmentation.....	39
Pension Fund: Behavioral Segmentation.....	40
Rationale Behavior.....	41
The Notion of Involvement.....	41
Low vs. High Involvement Decisions.....	41
Perception.....	42
Theories of Behavior.....	45
Behavioral Models of Man.....	45
Needs and Wants.....	46
Maslow's Needs.....	46
Behavioralism in the Price-Setting Process.....	47
Behavioral Price-Setting Process.....	47
Importance of Behavioralism.....	47
Importance of Price-Setting Process.....	48
Dyadic Relationships and Negotiations.....	49
Value Concepts in Dyadic Relationships.....	49
Positioning Value Concepts.....	49
Subjective Value to Seller.....	50
Subjective Value to Buyer.....	50

<i>Exhibit 2- 20</i>	50
Bidding and Zone of Negotiation.....	50
A Cyclical Look at Market Value vs. Investment Value	51
Market Value vs. Investment Value.....	51
The Nature of Value.....	51
Bid-Ask Spread.....	52
Confidence Levels and Transaction Values	52
Investment Value and Owner Confidence	52
Confident Owner/Buyer IVs	53
Confident Owner/Buyer IVs	53
Confident Owner/Uncertain Buyer	54
Confident Owner/New Buyer	54
Real Estate Cycles and Confidence Levels	55
Cycles in Real Estate.....	55
NCREIF Market Cycles: 1978-2010.....	55
Market Expectations and Real Estate Cycles.....	55
The Role of Theory in Real Estate.....	56
Bid-Rent Theory	57
Change in Transportation Costs.....	57
Urban CBD-Oriented Market.....	58
Multi-Nucleated Market.....	58
Residual Land Theory & Economic Mobility.....	59
Vulnerable, Vulnerable, Vulnerable vs. L, L, L.....	59
Residual Land Value Calculation	60
Urban Land Economics Theory	61
Linkages Among Urban Land Economics Theories	61
Structure Theory, Succession Theory, and Situs Theory	61
Structure Theory	62
Seattle's Market Structure and Landform	63
Succession Theory	63
Succession Theory	63
Situs Theory	64
Situs Theory Overview	64
Situs Theory at a Global Level	65

Integration of ULE Theories	65
Summary Chapter 2	66
Section 3: Chapter Next	67

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Overview

This chapter introduces students to the real estate as a behavioral science. This classification comes from the unique nature of the market in which all transactions are negotiated. This unique market mechanism distinguishes real estate from other asset classes. At the same time, it argues for more efforts to understand how space consumers make real estate decisions. To add more precision, the notion of market segmentation is introduced as a way of identifying the “usual suspects” and focusing on the most probable buyers.

The chapter provides an overview of consumer behavior theory and then extends that theory to the real estate market. It introduces the notions of perception and perceptual biases. It explores high- involvement decisions and explains how spatial consumers approach high involvement decisions. The discussion also explores wants and needs using Maslow’s pyramid of needs as a point of discussion. To provide an example of behavioral theory, the impact of confidence levels on the price setting process is explored. The discussion also introduces land residual theory and urban land economics theory.

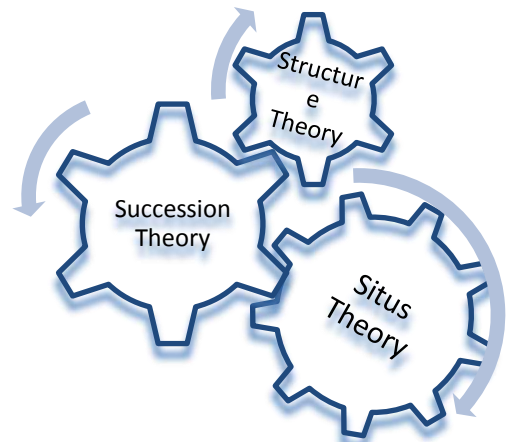
What you will learn in Chapter 2.

- How real estate differs from other asset classes.
- How real estate is a behavioral science.
- How market segmentation can be extended to real estate.
- How consumers approach high-involvement decisions.
- Behavioral models of man.
- The difference between needs and wants.
- The price-setting process.
- The importance of subjective values and changes over time.
- Bid-rent theory and gravity models.
- Land Residual Value Theory.
- Urban Land Economics Theory

Example. See example of traditional Land Residual Theory

- Step 1. Income Estimation.
- Step 2. Rate of Return Extraction.
- Step 3. Value Conversion: Income/Rate.
- Step 4. Allocation to Factors of Production.
- Step 5. Residual Land Valuation

Key Constructs: Urban Land Economics Theory



Behavioral Nature of Real Estate

The Real Estate Discipline

Real estate is a real or tangible asset in the sense that it has physical components. Real estate is also bestowed with a bundle of rights (i.e., right to enjoy, occupy, use and transfer), the scope of which is determined by legal/political processes that have jurisdiction over it. From a professional perspective, the real estate discipline is an umbrella field, spanning a number of disciplines that focus on various elements of the real estate process. From an academic perspective, real estate is an area of practice that is taught at the university level and is the subject of research and publication activities by faculty members. In an applied sense, the field draws on a broad array of ancillary disciplines including appraisal, brokerage, construction, development, finance, investment, management and transactions. Thus, when looked at from an aggregate perspective, real estate is an interdisciplinary field of inquiry.

...the real estate discipline is fundamentally different from other business disciplines in the sense that the market is inefficient and as such, must be approached as a behavioral science.

Most other disciplines that are built around physical assets can refer to the natural or physical sciences for a theoretical foundation. This is not the case in real estate which is a hybrid area comprised of both tangible and intangible elements. That said, real estate is often approached as a financial asset that can be bought, developed and sold, making it comparable to other transaction-oriented businesses. In reality, real estate is both a financial asset and a physical resource, a resource that is comprised of the site itself and the externalities that surround it and connect it to other parcels or activities. The value of this resource is determined by the submarket that is drawn to the unique space that it represents, with the prices set as a

...real estate is both a financial asset and a physical resource, a resource that is comprised of the site itself and the externalities that surround it and connect it to other parcels or activities.

result of individual negotiations rather than some listing price that is offered to the broader market. Furthermore, although portions of it operate in the public domain, real estate remains a largely private market. As such, information flows and market knowledge are inconsistent, with transaction prices based on individual negotiations among the direct participants rather than a broader market of participants. Thus, the real estate discipline is fundamentally different from other business disciplines in the sense that the market is inefficient and as such, must be approached as a behavioral science.

Given its behavioral nature, understanding the real estate discipline is predicated on the ability to understand the information processing and decision-making processes applied by segments of space producers, space users, and space facilitators. It is the interaction of these players which ultimately determine what is built, where it is built, and what it is worth. In

the United States the real estate industry operates in a free-market system with some interventions to protect the public safety, health and welfare. Thus, the outcomes of real estate decisions should be both market-based, and socially responsible. The importance of market-based solutions is to ensure that real estate development satisfies demand today, and demand well into the future. The importance of social responsibility recognizes the externalities (i.e., environmental effects, congestion) that can be caused by real estate usage decisions.

Key Participants in Real Estate

There are three major constituencies or participants in the real estate process: space producers, space users, and space facilitators or infrastructure providers. As noted in Exhibit 2-1 the roles of these groups of participants overlap creating the real estate market. They are linked by the transfer of ownership or usage in return for some economic payments. Within each category, there are a number of segments of players. Some of these players are directly engaged in the market, and some of them are indirectly involved. The category of space producers includes those who operate on the spatial side of the market (e.g., contractors, developers, designers) and those who operate on the capital side of the market (e.g., investors, lenders, brokers). The category of space consumers includes those who directly consume the space (e.g., tenants, owners), as well as those who indirectly consume space (e.g., the shoppers, clients) and pay for goods and services rendered by, or made available at, a particular facility. In addition, the indirect consumers include the neighbors, community and society at large who collectively consume the larger urban form of which a project is a component. These groups all consume the externalities a project may generate. The space facilitators and infrastructure providers operate outside of the realm of real estate, but have a significant impact on the built environment in general, and in particular, on the utilization of individual parcels. They include governmental entities that provide amenities and services, as well as those the create the regulatory environment within which real estate operates.

Key Participants in Real Estate

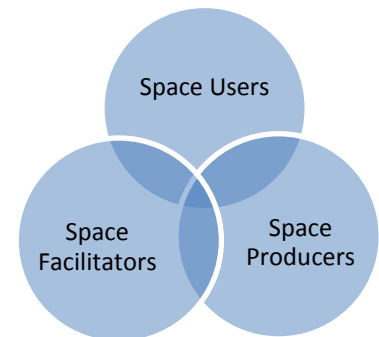


Exhibit 2- 1

When the market is in balance, the relationships among the parties are fairly harmonious. However, there are times where one of the parties takes on added importance and thus can throw the market out of balance.

Over time, the real estate market tends toward a balanced state, although it goes through cyclical phases in which the advantage shifts from the space producers to space consumers. With some noteworthy exceptions, the transitions from one phase to another are fairly smooth with the market adjusting to changes in supply and demand. However, there are times where one of constituent groups either exerts undue influence or is subjected to external forces that create turmoil in the market. This occurred in the 1980s when excess capital flows led space producers to overbuild commercial space. It also occurred in the early 2000s when easy and cheap credit flooded the market and created over-pricing and some over-building. Thus, while going through cycles, in a balanced market each group acts in a manner consistent with their relative strength in the market. That is the essence of a market-based economy. At times, however,

interventions or external forces may create dramatic changes in the interaction between space users and space producers. This is particularly true with respect to space facilitators and infrastructure providers. For example, changes in amenities (i.e., roads, mass transit, parks) and services (e.g., police, fire, schools) can change the essence of real estate consumed by the market, creating windfalls and wipeouts. Similarly, changes in land use regulations, growth management and other “interventions” can be imposed on the market by planners, urban designers or regulators seeking to create a better “urban form” While not unacceptable per se, the impact of these interventions on the markets ability to function should be should be scrutinized to identify unintended consequences that might render them unacceptable.

Behavioral Real Estate

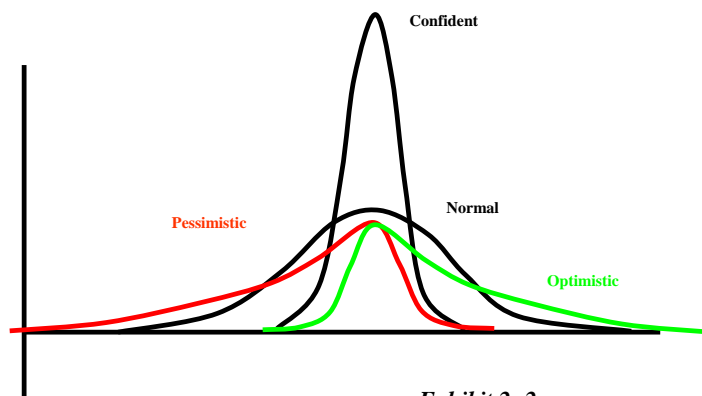
Given the important role the three participants play in the real estate market argues for a behavioral approach to the discipline. This approach may seem a departure from more traditional economic and financial approaches that have dominated the discipline. However, it is really a return to the roots of the discipline and provides a more accurate reflection of how the unique market really functions. A behavioral approach to real estate is not new, but was championed by Richard U. Ratcliff and James A. Graaskamp, one of his protégés, some 50 years ago. The movement was ahead of its time and failed to gain traction among more traditional approaches. However, Ratcliff did make some headway when the Appraisal Institute incorporated some of his thoughts in a restatement of the objective of appraisal as: “The most probable price for specified rights in specified real estate at a specified point in time.” It took years to get the “most probable price” into the lexicon, but was a milestone in the sense that it certified that the price-setting process, and hence the appraisal process were stochastic (i.e., some probability distribution around a mean) rather than deterministic (i.e., a point estimate).

Commentary 2- 1

Most Probable Price and Confidence Levels

The distribution around the expected price can vary dramatically depending on the confidence level of market participants. The Normal or bell-shaped curve is assumed in most asset classes, with the actual value evenly distributed around the expected value. The Confident shape is highly concentrated around the expected value and is typical of most products that are priced for sale with little room for negotiations. The Pessimistic curve is skewed to the left and indicates there is more downside than upside potential. The opposite is true for the Opportunistic curve where there is more upside than downside potential.

Confidence Levels and Most Probable Price



The shape of the distribution of confidence levels can vary dramatically by market segment and by market cycle. They are also influenced by risk tolerances and can be influenced by marketing and promotion. This is one of the reasons many industry association publications have a positive spin on the market; they realize attitudes and perceptions can become self-fulfilling prophecies.

Exhibit 2- 2

Unfortunately, the behavioral approach failed to gain traction and gave way to more of an applied approach based on economics and finance. The end result was an intellectual vacuum, with the behavioral and marketing sides of the industry woefully under-represented in both the professional and academic communities. Indeed, although “behavioral economics” and “behavior finance” have gained some recognition, few academics championing the behavioral side in real estate. Rather, they have embraced the financial side and have focused the bulk of their efforts at fitting more mainstream efficient market models to real estate as an asset rather than as a scarce resource. This dominance is somewhat ironic since real estate transactions are negotiated; an inherently behavioral feature that helps distinguish the asset class. This book is designed to champion behavioral real estate is an emerging school of thought. This chapter

introduces the notion of consumer behavior which includes decisions made by residential and commercial consumers of space.

Behavioral Concepts in Real Estate

Several key marketing concepts are useful in explaining real estate behavior including: market segmentation, rationale behavior, the notion of involvement, and perception. These concepts can be used to analyze decisions made by the full spectrum of real estate players: space users, space producers, and space facilitators. By drawing on these concepts, analysts can develop more valid and reliable predictions of market behavior that drives the supply and demand proposition for real estate and hence its market value.

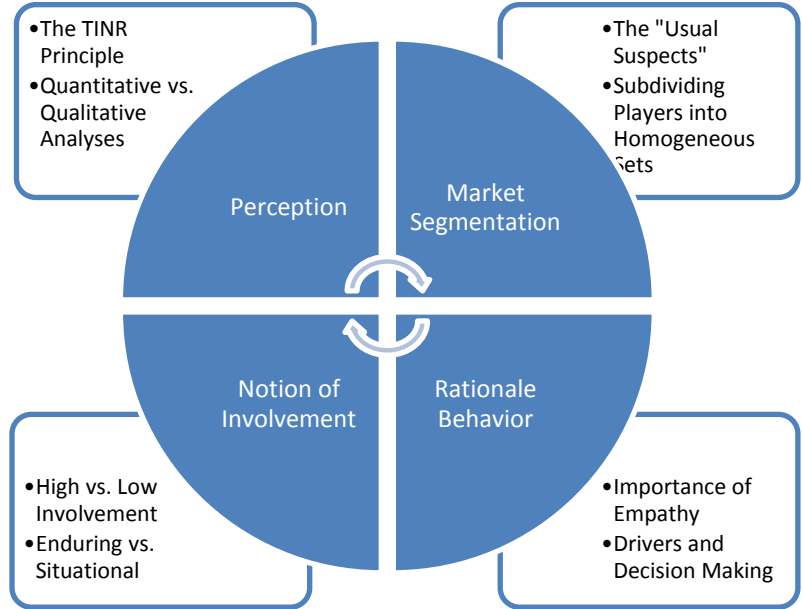


Exhibit 2- 3

Market Segmentation

Market Segmentation and Market Targeting

Which Market Segments?



Exhibit 2- 4

Market segmentation is the subdividing of consumers, customers, investors or other constituencies into homogeneous subsets or groups. These groups have some commonalities that translate to similarities in consumption functions or demand for products or services. Once these groups have been created, they can be targeted for a particular product or services by product differentiation and marketing. The same market segmentation strategies can be applied to space producers and investors and facilitators.

Requirements for Market Segmentation

Requirements for Market Segmentation

In order to justify the segmentation of markets, three key criteria should be satisfied. First, the must be *measurable*. That is, the elements that distinguish members of a particular segment must be capable of being quantified or measured. This is necessary to ensure

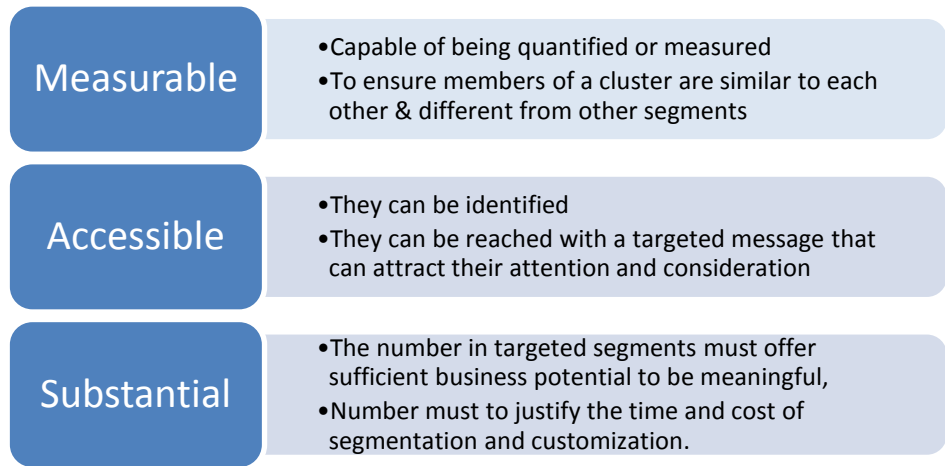


Exhibit 2- 5

members of a group or cluster are similar to each other, and are different from members of other segments. Second, the members of the segments must be *accessible*. That is, the producer can both identify them and, reach them with a targeted message that can attract their attention and consideration. Finally, the segment must be *substantial*. That is, the number of members in the targeted segments must offer sufficient business potential to be meaningful, to justify the time and cost of segmentation and customization.

...by segmenting a market, a real estate professional can develop a better understanding of what drives various components and can identify new opportunities to increase penetration of existing customers, to capture complementary customers, or to predict market behavior...

A company can capture a number of benefits by developing an appropriate market segmentation strategy. For example, by segmenting a market, a real estate professional can develop a better understanding of what drives various components and can identify new opportunities to increase penetration of existing customers, to capture complementary customers, or to predict market behavior for differentiated products. They can also use segmentation to customize the marketing mix to increase market capture ratios and customer satisfaction. This latter point is particularly important in real estate where referrals and word-of-mouth are sometimes the most effective marketing tools. There are three major types of market segmentation strategies: No Segmentation, Complete Segmentation and Concentrated Segmentation.

- **No Segmentation.** In the case of “none,” the market is offered a single product on a take it or leave it basis. The product is standard and designed to appeal to a generic class of consumer. In

real estate this could take the form of tract housing or limited service hotels where emphasis is on production economies rather than customer satisfaction.

- **Complete Segmentation.** In the “complete” case, each customer is treated as an individual, with a customized solution to address their unique needs. In real estate, this would occur in the case of build-to-suit spaces, custom houses, or specialized R&D facilities. Since the emphasis is on product

differentiation, there are no economies of scale which in turn, drives up unit cost per unit. The producer can select individual clients or customers, focusing on the most attractive or profitable.

- **Selective Segmentation.** In this case, customers are grouped into clusters, with a “customized” solution developed for the targeted segments. The producer does not have to target each of the segments or groups, but can concentrate on one or more. The focus can be on capturing some economies of scale or diversification benefits that associated with mixes of targeted segments.

Bases for Market Segmentation

There are number of bases for segmenting real estate markets to provide a better understanding of the players for a particular site or asset (see: Exhibit 2-6).

Bases for Market Segmentation

Geographic	<ul style="list-style-type: none"> •Clustering users on the basis of location •Where they reside, work or patronize certain establishments
Demographic	<ul style="list-style-type: none"> •Uses customer characteristics to create profiles •Age, income, education, ethnicity, occupation, marital status, and household size.
Psychographic	<ul style="list-style-type: none"> •Focuses on the self-perception or self-actualization •Includes the branding or image of a company
Behavioral	<ul style="list-style-type: none"> •Focuses on what customer does vs. says •Looks at values activities, problem-solving & decision-making processes
Sectoral	<ul style="list-style-type: none"> •The line of business or employment activity •May be at a general level (e.g., professionals, services, medical) or at more detailed levels.

Exhibit 2- 6

- **Geographic.** This involves clustering users on the basis of location of where they reside, work or patronize certain establishments. It is particularly useful in real estate which is fixed in location and thus inherently geographic.
- **Demographic.** This approaches uses customer characteristics to create profiles of members of various subsets. When focused on individuals, standard demographic criteria include age, income, educational attainment, ethnicity, occupation, marital status, and household size. In looking at companies, variables include size, product lines, business models, price points, and types of goods and services.
- **Psychographics.** This approach focuses on the self-perception, aspirational hopes, or self-actualization of potential members. In a business sense, it can also refer to the branding or image of a company.
- **Behavioral.** This approach focuses on what the customer or client does rather than who they are or what they say. It also looks at their value systems and the kinds of activity, problem-solving or decision-making processes used in making decisions regarding the selection of products or services.
- **Sectoral.** This refers to the particular line of business or employment in which potential members are involved or operate. This may be at a general level (e.g., professionals, services, medical) or at more detailed levels.

Space User Perspective

In applying market segmentation, it should be noted that there are two categories of space consumers: direct users who pay the rent or mortgage, and indirect users who provide the revenue stream to support the rent or mortgage. Market segmentation should be applied to both categories to allow for more precise predictions of behavior that affect the demand for space. Direct users are the parties who control and occupy and pay (or have paid) for the space. They include owner-users and tenants who lease a property or control interests in it for a period of time. Indirect users of space are the customers who buy the goods and services produced or offered for sale on site, providing the revenues that the owner or tenant uses to pay for the space. In the case of retail, these indirect users are the shoppers who patronize a store, while in office, they are the clients of the companies who pay for the services rendered on a site or supported by that site. Since real estate is fixed in location, it appeals to certain groups of users based on its relative drawing power rather than the market as a whole. It is this subset of space consumers that determines the value that can be supported by a particular site where value is directly correlated with the revenues that can be generated on the site.

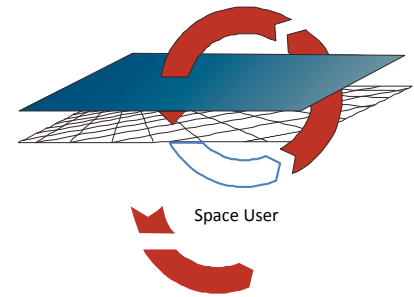


Exhibit 2- 7

Commentary 2- 2

Direct and Indirect Space Consumer Segments

Recognition of the two types of space users –direct and indirect—is critical to an understanding of the demand side of the equation, as well as to the ability to understand the quality and quantity of demand. For example, a developer or owner of retail property may try to ensure success by “thinking like a tenant,” trying to design a shopping center that satisfies the design standards (e.g., size, layout, parking, ingress/egress) of certain targeted tenants. While this makes sense and is important, it is only part of the equation. That is, to ensure long-term success, the developer or owner must also be able to “think like a shopper.” This insight is critical to allow the developer/owner to select the right site in terms of trade areas and accessibility. It will also allow them to assemble tenants who offer a mix of goods and services that will attract shoppers to the center. At the same time, the developer/owner must understand the demographics of the trade area, making sure the tenants provide an attractive mix and offer the right kind of goods and services at the right price points to draw customers. Finally by understanding the sales potential in the trade area, the developer/owner can make sure the retailer’s rent and “total occupancy cost” is not too high as to render them the “high cost merchant” and thus condemn them to an unprofitable store.

The same “dual nature” of space users extends across other property types. In the case of office tenants, the developer/owner must understand the type of activity that will be conducted on site, whether it will be a front office or back office application. This will help determine the tenant improvement allowances as well as determine the quality of building that will attract and retain tenants. It will also be important to understand whether the



tenant will have face-to-face contacts with clients and if so, what kinds of clients they will support. This will translate to parking requirements, systems requirements, security needs and other factors to support that tenant. By combining these needs with those of other tenants, the facility can be evaluated in term of the overall enterprise. In the case of warehouse properties, understanding tenants will be critical to making sure a building has the design features necessary to accommodate their physical requirements. However, the developer/owner should also understand the types of customers the tenants will serve, as well as the sources of goods that will be stored, transferred or fabricated on site. This insight will help determine the duration of leases as well as the probability of renewal or early termination.

Institutional Segmentation: Sectoral

Market segmentation can be applied to companies and enterprises as well as to the general population and households. The Office of Management and Budget’s North American Industry Classification System (NAICS) has developed a standardized system for classifying establishments by type of economic activity by location. The system is hierarchical, denoted by a 6 digit code, with each layer piercing into more depth. For example, the codes starting with 49 include the following breakouts of warehouses. <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007>

The workforce can also be segmented, starting at the broad level and then broken down into more detail. Due to competitive forces, this demand function has some behavioral consistency across establishments.

Corresponding Index Entries

- Bonded warehousing, general merchandise
- General warehousing and storage
- Private warehousing and storage, general merchandise
- Public warehousing and storage (except self storage), general merchandise
- Warehousing (including foreign trade zones), general merchandise
- Warehousing and storage, general merchandise

Employment Segmentation

Source: http://www.bls.gov/emp/ep_table_101.htm

(Numbers in thousands)

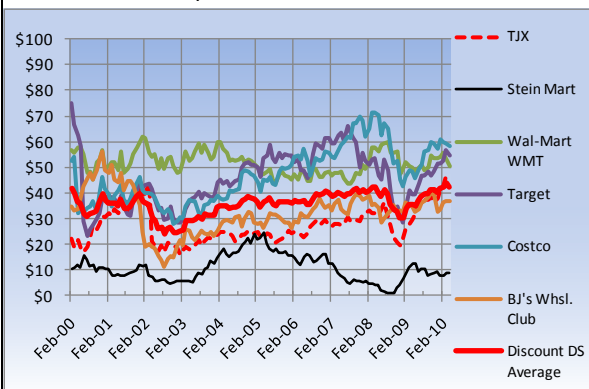
2008 National Employment Matrix title and code	Employment		Percent distribution		Change, 2008-18	
	2008	2018	2008	2018	Number	Percent
Total, all occupations	150,931.7	166,205.6	100.00	100.00	15,273.9	10.12
Management, business, and financial occupations	15,746.7	17,410.9	10.43	10.47	1,664.2	10.57
Professional and related occupations	31,053.5	36,280.0	20.57	21.82	5,226.5	16.83
Service occupations	29,575.9	33,645.1	19.59	20.24	4,069.2	13.76
Sales and related occupations	15,902.7	16,883.1	10.53	10.15	980.4	6.16
Office and administrative support occupations	24,100.6	25,942.7	15.96	15.60	1,842.1	7.64
Farming, fishing, and forestry occupations	1,035.4	1,026.3	0.68	0.61	-9.1	-0.88
Construction and extraction occupations	7,810.3	8,828.8	5.17	5.31	1,018.6	13.04
Installation, maintenance, and repair occupations	5,798.0	6,238.2	3.84	3.75	440.2	7.59
Production occupations	10,083.0	9,733.9	6.68	5.85	-349.2	-3.46
Transportation and material moving occupations	9,825.5	10,216.6	6.50	6.14	391.1	3.98

Source

Exhibit 2- 8

The retail industry is extremely diverse, with a potpourri of companies ranging for independent local operators to large multi-national firms. Within store categories, there is also tremendous diversity in terms of store positioning and target consumers. They can be assigned to an appropriate segment based on factors including size, brand image, product lines, price points and market share. Exhibit 2-9 plots the stock prices of discount department stores and department stores over a 10 year span. During that period they competed with others in their category and more recently, with non-store (i.e., internet) retailers.

Discount Department Stores



vs.

Department Store

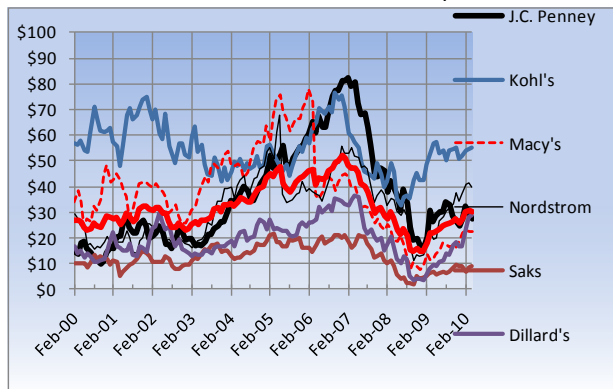
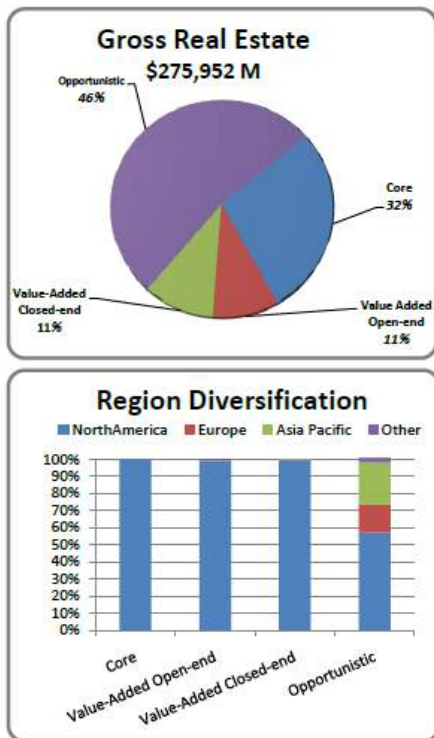


Exhibit 2- 9

Investor Segmentation

In addition to space consumers, market segmentation can be applied to investors to identify the Most Probable Investors or “usual suspects” for a particular class of investment. These classes of investors will have similar investment preferences, methods of sourcing product, and pricing algorithms. These commonalities that can help improve predicting their behavior and the impact of their aggregate behavior on investor demand and capital flows to real estate. For example, taxable entities enjoy some of the tax shelter benefits (e.g., deductibility of interest, depreciation) that can supplement cash on cash returns, allowing them to bid more aggressively than tax-exempt investors. Investment styles and other attributes can also be used to segment investors into meaningful segments that exhibit some common investment traits.

Pension Fund: Behavioral Segmentation



Domestic pension funds have been major institutional investors in real estate since the early 80s as tracked by the NCREIF Index. As of year-end 2009, the gross market value of funds in the index was around \$276 billion, which included \$119 billion in equity and slightly under 60% leverage. The recent allocation of pension fund assets indicates strong segmentation behavior, especially given the changes that have occurred since the collapse of the commercial market in the early 90s. Up to that time, pension funds almost exclusively allocated assets to core funds (i.e., fully leased, high quality, low risk). Over the past 20 years, that behavior changed dramatically, with value-add and opportunistic investments dominating pension fund real estate allocations. This reflects a dramatic shift in investment strategies and risk/return tolerances. However, it is not clear investors focused on the risk side of the proposition and may well have been lulled into a false sense of security during the prolonged bull run that came to a screeching halt in mid-2008. Indeed, when looking at the vintage or period in which the funds were launched, the ones offered in the 1996-2002 period have delivered low double digit returns, while the funds launched between 2003-2009 averaged negative returns. Clearly, critical thinking and an understanding of real estate fundamentals and market timing were not part of the equation. Indeed, in early 2010 CALPERs, one of the largest pension funds announced it was reversing its strategy and returning to core investments as a result of disappointing performance. Since they are something of a bellwether, other funds are expected to follow creating a significant shift in investor behavior and affecting demand and pricing for core assets.

Sovereign Wealth Funds (SWFs)

Exhibit 2- 10

SWFs represent another segment of institutional

investors that are likely to

have a dramatic impact on institutional market behavior. Briefly, SWFs emerged over the past decade as a repository for country wealth. Rather than passive investments, these funds have become more aggressive, seeking to create globally diversified pools of investments, including commercial real estate. The International Working Group of Sovereign Wealth Funds (IWG) was established at a meeting of countries with SWFs in mid-2008. One of the objectives of this organization was to establish policies and best practices which would guide this new segment of international investors. <http://www.iwg-swf.org/pubs/eng/santiagoprinciples.pdf> In a publication entitled the Santiago Principles, SWFs are defined

“as special purpose investment funds or arrangements, owned by the general government. Created by the general government for macroeconomic purposes, SWFs hold, manage, or administer assets to achieve financial objectives, and employ a set of investment strategies which include investing in foreign financial assets. The SWFs are commonly established out of balance of payments surpluses, official foreign currency operations, the proceeds of privatizations, fiscal surpluses, and/or receipts resulting from commodity exports.”

The IWG established a set of generally accepted principles and practices (GAPP) with a set of guiding principles for SWFs including: 1) helping maintain a stable global financial system with free flow of capital and investment; 2) compliance with regulatory and disclosure requirements, 3) investing on economic and financial risk/return bases, and 4) establishing transparency and operating under governance that ensures adequate operational controls, risk management, and accountability. Given these principles, SWFs are expected to exhibit some common investor behaviors, including real estate allocations which may affect capital flows and pricing in a systematic way. The SWFs can also be further segmented on the basis of government tax treaties which may affect their investment preferences and search behavior.

Rationale Behavior

Once a market segmentation strategy has been developed, attention turns to several questions. *First*, how do the various segments process information and make real estate decisions? *Second*, what drives them in terms of spatial demand? *Third*, which segment or segments behave in a similar manner in terms of demand for a certain type of space and/or location? The answer to this latter question will vary due in part to differences in the business strategy and/or target market for an establishment. However, due to competitive pressures these locational decisions and the will and ability to pay will have some commonalities. Thus, at a segmented level, peer establishments will tend to behave in a similar manner since making a competitive decision can be critical to the long-term success of a firm or of an individual location.

... at a segmented level, peer establishments will tend to behave in a similar manner since making a competitive decision can be critical to the long-term success of a firm or of an individual location.

Once these potential parties are identified, attention can be focused on developing insights into their motivations and decision-making processes. Assuming rationale behavior, these insights can be used to develop more valid and reliable predictions of the likely outcomes of real estate decisions made by various market participants. In some cases, real estate decisions might not appear rational; spatial consumers don't always do what is expected. This can be especially true in a strict economic sense. Despite appearances to the contrary, such decisions can still be rational from the perspective of the respective decision-maker. The inability to predict behavior may be due to several issues. *First*, we often do not understand the rationale or driving forces behind the consumers' spatial decisions. *Second*, we do not understand how consumers search for alternatives and how they process information. *Third*, we do not understand how consumers make complex real estate decisions which are by their very nature, high involvement.

The Notion of Involvement

The notion of involvement is a key construct in consumer behavior literature. It suggests that consumers' approaches to decision-making and problem solving are a function of their "involvement" or engagement in the process. The level of "involvement" ranges from high (e.g., costly, complex, risky, critically important, infrequent) to low involvement (e.g., cheap, simple, common, low risk). In general, the greater the involvement, the more formal the decision-making

Low vs. High Involvement Decisions

Low Involvement	High Involvement
<input type="checkbox"/> Unimportant	<input type="checkbox"/> Important
<input type="checkbox"/> Simple	<input type="checkbox"/> Complex
<input type="checkbox"/> Inexpensive	<input type="checkbox"/> Expensive
<input type="checkbox"/> Frequent	<input type="checkbox"/> Infrequent
<input type="checkbox"/> Low Risk	<input type="checkbox"/> High Risk
<input type="checkbox"/> Inconspicuous	<input type="checkbox"/> Conspicuous

Exhibit 2- 11

style and the more consumers will seek to avoid or manage the risk, choosing more conservative solutions. The level of involvement can differ depending on the importance and complexity of the decision. Given its complex and durable nature, decisions regarding real estate would appear to be high-involvement and evoke formal decision making. While this is true in general, the behavior of certain segments of space consumers or investors may belie that trait. That is, some decision-makers make quick, decisive real estate decisions without giving much thought to the process. While such actions might seem imprudent, they may actually reflect a coping mechanism for the decision-maker who is daunted by the complexity and enormity of the task.

In addition to its inherent complexity, spatial decision making is often complicated by the fact that, for many players, these decisions are often infrequent. As such, the decision maker does not benefit from repetition and “lessons learned” as the case in making other types of consumer decisions. At the same time, the capital-intensive nature of real estate creates added risks that must be managed by decision-makers. In order to predict the outcome of decision making processes, it is important to understand how various segments make decisions to account for differences between real estate and other products or asset classes. As such, real estate professionals should turn to behavioral sciences and research methods to try to understand the driving forces of key decision makers, the models they apply, and context within which they make decisions.

...real estate professionals should turn to behavioral sciences and research methods to try to understand the driving forces of key decision makers, the models they apply, and context within which they make decisions.

Perception

Real estate is a physical, tangible asset. However, the dimensionality of the product extends beyond the site or structure itself to include the environs and linkages it enjoys, as well as the rights that it bestows on the owner or user. Some of these attributes can be easily quantified (e.g., site size, frontage, building size, age), while others are intangible and more qualitative. Thus, when a space consumer is selecting a property, they are buying a set of assumptions about that property rather than a set of facts. This is particularly true since some of the elements that make up the product are dynamic and subject to change over time. Indeed, the precision with which decision makers evaluate various elements of real estate can vary dramatically, focusing on generalizations or categorizations rather than physical metrics.

The process of quantifying these market actions is complicated by the fact that it involves perceptions of real estate that the various players hold rather than facts regarding the real estate. For example, few tenants can state precisely how big their apartment is since they tend to focus on rent/month for the overall apartment rather than rent/square foot. Similarly, when evaluating the distance from one place to another, Euclidian distance may be interesting but meaningless to consumers. Rather than the physical distance, the “perceived” distance is important. Differences between the two can be explained by congestion, travel times, views, topography, and safety. On the other hand, consumers may not be able to sense a difference in size or location due to the notion of “just noticeable differences” (J.N.D) provides added insights into consumer perceptions regarding real estate. The J.N.D. principle holds that consumers must be able to sense differences among attributes of a product before they can be factored into the equation. This means they must be sufficiently different to be recognized, as well as the fact they must have a significantly different impact if selected. So, automatically adding \$20,000 to the price of a condominium that is 100 sf

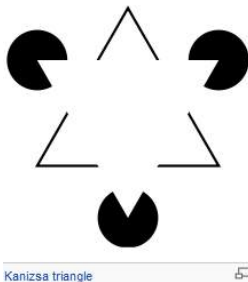
larger than another when the cost is \$200/sf may not be accepted by buyers if they cannot sense the difference. Thus, it is important to understand how various segments of consumers develop their beliefs or expectations of reality before being able to predict how they will act on those expectations.

Commentary 2- 5

Perception and Real Estate: The TINR Principle

Since real estate is a complex product that consists of a variety of spatial and capital elements, the notion of perception takes on added meaning. Indeed, a culminating principle behind real estate consumer behavior and decision-making is the TINR Principle (i.e., "There is no Reality"). While offered in a somewhat tongue-in-cheek manner, the principle is based on recognition that perceptions rule. This principle is particularly true in real estate where consumers and decision-makers incorporate their beliefs and assumptions in making decisions rather than purely objective measures. For space users, measures of size, quality, environment and linkages are based on a combination of physical elements, as well as how those elements are processed and interpreted by the decision-maker. Each of these elements can be by real estate participants, depending on how they are approached.

- **Size and Quality.** The perceived size of an apartment or house can be manipulated by providing an open design, by high ceilings, or by making generous use of windows. The "quality" of construction can be masked by cosmetics, fixtures or finishes.
- **Environmental Attributes.** With respect to the environment, users are often unable to grasp the true states of nature since they can only see the visible elements at a particular point in time. For example, a neighborhood may offer a wide array of goods and services. However, due to weak demand, these enterprises have high turnover and are thus unsustainable. Similarly, neighboring buildings may appear to be fully leased, but are either unoccupied or filled by temporary tenants at below market rents.
- **Linkage Attributes.** Linkages or connectivity of a site can be extremely difficult to quantify. This is especially true in markets suffering from gridlock at certain peak times, or seemingly off-peak times when one has to travel (e.g., reverse commutes). It also applies when mass transit is involved, especially bus transit for which service levels depend on budgets and ridership and can be changed with the stroke of a pen on a new policy. In the case of light rail, high train capacity levels may be misleading; the real choke-point may be the lack of parking at terminals or extreme congestion to get to and from stations. Finally, it should be noted that "perceived distance" or linkages can be dramatically different depending on the anxiety or stress that is associated with traversing a certain path. So, while Euclidian distance is a factor, the experience associated with the linkage is also critical and much more difficult to quantify, especially since different parties will be more or less sensitive to various factors.

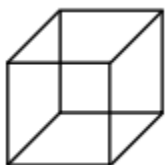


Given the importance of perceptions to the real estate market, it is useful to explore some of the perceptual and behavioral biases that can affect spatial consumers' and other players' perceptions.

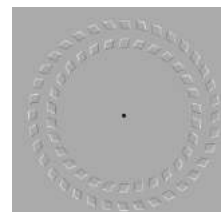
http://en.wikipedia.org/wiki/Optical_illusion



Grey bar same shade



Moving circles



Perceptual & Behavioral Biases

- **Anchoring.** A tendency of a decision-maker to place extra weight on certain key indicators or factors in making a decision at the expense of other factors.
- **Attention Bias.** Looking at something too narrowly, ignoring other elements or attributes that may make a material difference.
- **Authority Bias.** This is a risk management technique in which a consumer places more importance on the opinions of experts or others than warranted. If the decision is wrong, the consumer can blame the expert rather than accept personal responsibility for the error.
- **Banding Effect.** Placing excessive limits on a decision that make one myopic and too narrow in terms of inquiry.
- **Bandwagon/Herd Bias.** A tendency to get caught up in the momentum of the market, to defer to others in arriving at a belief; the lemming phenomenon.
- **Believability Bias.** This bias relates to whether something is credible, whether it is plausible or within the range of possible outcomes.
- **Consistency Bias.** This relates some activity or event to some prior experience or belief to determine whether the perception is consistent with what one believes or expects to be true.
- **Egocentric Bias.** Taking more credit for some outcome or activity than warranted or justified by the facts; getting lucky due to market cycles and believing it was smart.
- **Endowment Effect.** Placing more value or worth on something that is owned rather than something that is being acquired; this feeds into the notion of investment value.
- **Familiarity Bias.** This is the tendency to focus on items or attributes with which one has some past experience and/or was helpful in making prior decisions.
- **Hindsight Bias.** This is the classical “Monday Morning Quarterback” syndrome in which a decision maker backs into the correct perception based on facts that are discovered after a decision is made or an event actually occurs.
- **Illusory Bias.** Falsely attributing some event or outcome to another phenomenon when the two are unrelated or the relationship is spurious.
- **Normalcy Bias.** Failure or inability to plan for the unknown events that have not occurred in the past or in one’s experience even though they are plausible and might occur.
- **Optimism Bias.** This is also known as a “developer’s syndrome;” the eternal optimist who believes it will all work out and then acts in a decisive, committed manner to assure that it does occur.
- **Ostrich Bias.** Ignoring the facts by putting one’s head in the sand to make them go away or change the reality surrounding some event or circumstance.
- **Outcome Bias.** Judging the quality of a decision by the outcome rather than the decision support; this feeds into “track records” which are widely used in selecting vendors/advisors but are difficult to analyze in terms of attribution (i.e., luck vs. skill).
- **Pessimism Bias.** This is the loser’s syndrome and refers to the self-fulfilling prophecy that whatever one does or tries to do, the fates will prevent it from occurring or being realized.
- **Primacy Bias.** Placing more weight on recent events than in long-term patterns or trends as in the case of the record low cap rates leading up to the real estate crash in 2008.
- **Projection Bias.** Extending one’s own beliefs, opinions or attitudes to others believing they will also embrace them.
- **Reference Group Bias.** Deferring to the actions or beliefs of others with whom a decision maker has an affinity or holds in high regard.
- **Selective Perception.** This is a filtering technique in which a decision-maker focuses on positives (or negatives) that are consistent with an a priori belief or perception to reinforce that belief, ignoring other facts.
- **Self-serving Bias.**
- **Stereotypical Bias.** Assigning behaviors or beliefs to an individual or group based on classifying or assigning them to some reference or affinity group.
- **Survivorship Bias.** Focusing on the winners rather than recognizing the losers that fell along the way; failing to recognize the risks associated with various activities or actions.

Theories of Behavior

A number of theories of man that help explain consumer behavior are relevant to real estate market behavior. Exhibit 2-11 presents some of the behavioral models of man that have been developed in marketing. The models are presented as though they are discrete, although consumers likely draw elements from more than one depending on the level of involvement, personality and situation surrounding the consumption decision. However, they do provide some insights into consumer choice. In the Marshallian Man, the emphasis is on the financial or economic elements of a deal, with buyers creating utility preferences and making explicit trade-offs when selecting products. This framework underlies many of the economic and financial models that are applied to real estate and can help explain some behavior. The Pavlovian Man does not apply to the bulk of real estate players who make spatial and investment decisions relatively infrequently. However, there are some exceptions that are noteworthy. For example, large-scale corporate or institutional investors who have developed investment strategy statements and accompanying policies may defer to them when making new acquisition decisions. Similarly, retailers may rely on the same store location models that have worked in the past, eschewing new approaches and locations.

Behavioral Models of Man

Under the Freudian Man, real estate consumers would be drawn to options that help make a positive statement and reinforce their self-actualization. In addition to satisfying their inner psyche, this approach might have some positive market impacts as in the case of lawyers who tend to opt for elegant space

Marshallian Man	<ul style="list-style-type: none"> •Assumes man focuses on economic cues •Develops utility preferences before purchasing
Pavlovian Man	<ul style="list-style-type: none"> •Habitual vs. thoughtful decision-making •Based on previous experience and cues
Freudian Man	<ul style="list-style-type: none"> •Driven by inner psyche and need for gratification •Considers symbolic, self-actualization vs. physical
Vebblian Man	<ul style="list-style-type: none"> •Man is essentially a social animal •Influenced by present and desired group status
Hobbesian Man	<ul style="list-style-type: none"> •Focus on organizational buyers •Guided by both personal needs and group goals

Exhibit 2- 12

to make a statement about their success. It may also explain some of the recent interest in branding and the attraction of life-style centers and other emerging shopping center formats that appeal to some tenants. The Vebblian Man is very much a social animal and makes real estate decisions based on a need to conform to current peer standards or to help move into a higher order peer group. This can help explain why some retailers migrate to centers that are more upscale than their own brand. It also explains some of the herd or lemming behavior of real estate advisors and institutional investors seeking acceptance among their peers or desiring to reposition themselves to be able to compete in the market. This occurred in the 90s when traditional advisory firms launched a series of value-add and opportunistic closed-end funds to compete with Wall Street firms who were not saddled by the weak trailing performance of core funds. Finally, the model of the Hobbesian Man is useful in explaining corporate real estate behavior and other group decision-making. In essence, the corporate real estate decision maker seeks to deliver solutions that help achieve individual success and satisfy corporate needs without introducing too much risk.

Needs and Wants

One of the challenges in predicting consumer behavior is the ability to differentiate between needs and wants. In general, “needs” are defined as something that a consumer has to have in order to satisfy some goal or appetite. On the other hand, wants are things would be nice to have, but are not essential or mission critical. The difference between the two terms is sometimes blurred and can change over time. Maslow developed a hierarchy of needs (see; Exhibit 2-12) that can help distinguish the two. At the lower end of the pyramid is the basic physiological need for survival. Moving up from that point, the line between needs and wants is not as clear. For example, it might appear intuitive that the need for safety (e.g., personal and family security, personal health and welfare and financial and economic security) is indeed a “need” rather than a want. However, the desired level of such needs can vary by individual and can be affected by personal efforts and resource commitments suggesting they are wants, at least with respect to the level they are secured. Similarly, various market segments will have different higher order needs, with some eschewing love and belonging for a more individualized life style, while others crave (i.e., need) esteem and self-actualization to avoid depression and other negatives associated with the failure to satisfy these higher order needs.

In general, individuals and enterprises that achieve satisfaction on the full spectrum of needs and would tend to be happier and more successful than those who could not –or chose not to—satisfy certain higher-order needs. Indeed, in an unconstrained world, most consumers would opt to satisfy the full array of needs. Once constraints start entering the picture, consumers would tend to be more selective, opting to address the basic needs before opting for higher order needs and then when doing so, being very selective to avoid excesses that might create more severe resource constraints in the future. Since real estate is such a conspicuous product, with sufficient resource commitments it can help satisfy all levels of needs.

Maslow’s Needs

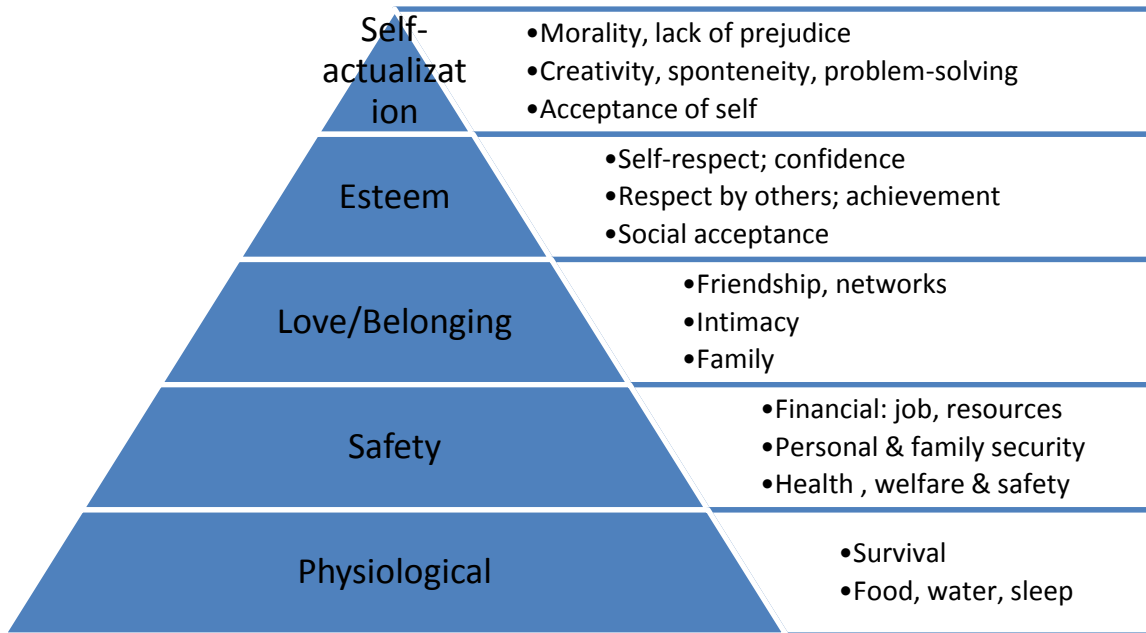


Exhibit 2- 13

Behavioralism in the Price-Setting Process

Importance of Behavioralism

Unlike other assets, real estate prices are set in the market on transaction-by-transaction basis. As such, the ability to predict prices at which properties will most likely trade is dependent on an understanding of market behavior. This caveat can be illustrated by exploring the importance of understanding the price-

setting process for real estate to an appraiser charged with estimating the value of a property. The objective for real estate appraisal is to predict the most probable price a subject property would trade for if it was offered for sale in the market. To arrive at a valid and reliable prediction, an appraiser must understand how the price-setting process actually works in the market in general and the sub-market for a specific property in particular.

Briefly, real estate prices are based on a combination of three key factors: the subjective values of the buyer and seller, their motivations, and their ability to negotiate. The “subjective values” or beliefs as to what a property is worth to the buyer and to the seller. Thus, predicting prices for a property depends on the ability to: 1) identify the “usual suspects” or most likely segment of buyers who will be drawn to a property, 2) determine how these potential buyers establish their subjective values or beliefs as to what a property is worth to them, and 3) predict how well they will be able to negotiate with a seller to get them to agree to transfer the property at their subjective values. On the other hand, the seller will be going through the same process, but coming at the price based on their subjective beliefs. At the end of the day, the ultimate price will be dependent on the strength of their beliefs, the motivation behind their decision to act, and their ability to negotiate.

Behavioral Price-Setting Process

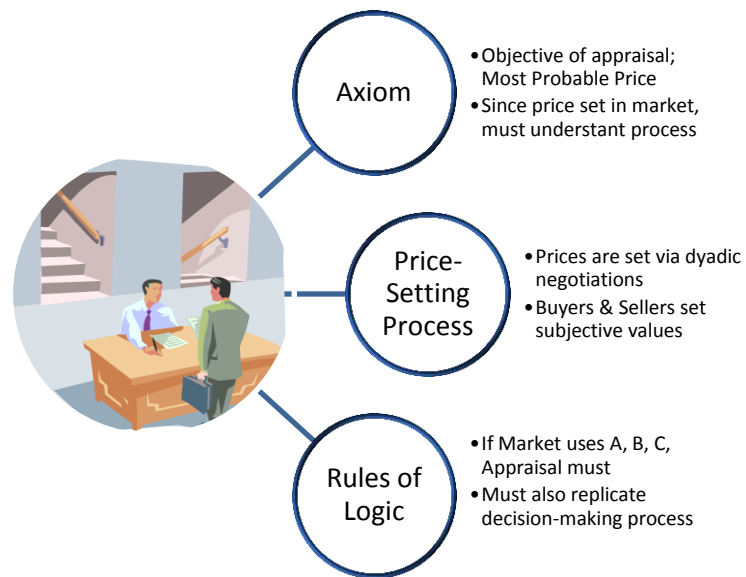


Exhibit 2- 14

...predicting prices for a property depends on the ability to: 1) identify the “usual suspects” or most likely segment of buyers who will be drawn to a property, 2) determine how these potential buyers establish their subjective values or beliefs as to what a property is worth to them, and 3) predict how well they will be able to negotiate with a seller...

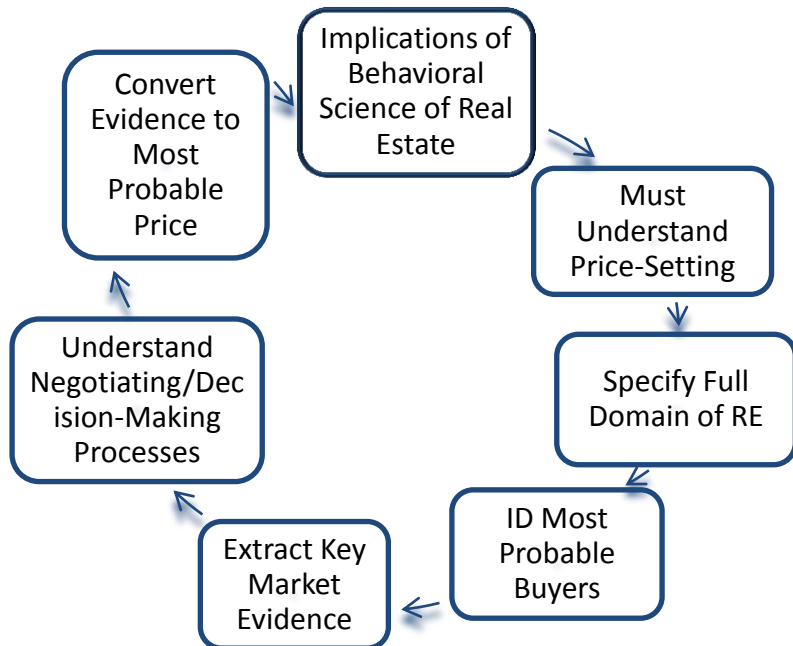
Implications of Behavioral Nature of Price-Setting Process

Understanding the behavioral nature of real estate is critical to converting normative beliefs of sellers and buyers translate to market prices. Assume an owner decides to sell a property and wants to put in on the market. Before listing the property, the owner starts must determine an offering price as well as a final price at which they would be willing to sell the asset. The opposite process occurs from the buyer’s side. Depending on how the property is marked, a number of potential buyers may observe the offering and make a decision whether or not to submit a bid and if so, at what price. Until an offer is made, there is no connection between the owner and a potential buyer, with buyers evaluating multiple options and sellers waiting to hook a potential buyer. Once the seller and a buyer are connected, they form a dyadic relationship; a short-term connection that will terminate when the transaction is closed or the offer is withdrawn. Regardless of how it is established, the ultimate price emanates from this dyadic process and is inherently behavioral. This has a number of implications for appraisers who are trying to predict the outcome for a particular property.

To render a valid and reliable market value estimate, an appraiser must be able to:

- **Understand Price-Setting Process.** Appraisers must understand how the market sets prices and identify the major factors that are likely to affect the ultimate transaction price. Due to market inefficiencies and reliance on negotiated transactions, they cannot blindly rely on statistical models or quantitative analysis. While such tools can provide insights, the final value conclusion must incorporate a behavioral dimension that can have a material impact on prices.

Importance of Price-Setting Process



- **Specify the Full Domain of Real Estate.** To avoid a myopic approach, the appraiser must identify the full dimensionality of the product and the context in *Exhibit 2- 15* which it is being appraised. On the spatial side this including its relevant static, environmental and linkages. On the capital side it includes capital flows, investor appetites and availability and access to capital.
- **Identify Most Probable Buyers.** The appraiser must be able to segment buyers and identify the segments that are most likely to bid on a property. In street parlance these are the “usual suspects.”
- **Extract Relevant Market Evidence.** The appraiser must be able to determine the relevant evidence of value that the relevant market segment uses to set normative values for a given subject property.
- **Understand Negotiating and Decision-Making.** The appraiser must understand the negotiating and decision-making process surrounding a potential sale, including the motivations behind the parties to a transaction that form the negotiating dyad.
- **Convert Market Evidence into Most Probable Prices.** The appraiser must be able to isolate the coefficients or weights that the market assigns to the key components of value.

Dyadic Relationships and Negotiations

When a property is first offered for sale, the seller waits for a buyer to submit a bid. Once a potential buyer makes a bid and the seller counters or accepts, the two form a dyadic relationship. This relationship continues until the transaction is culminated or one of the parties withdraws from the negotiations. During negotiations, a number of value concepts come into play. Some of these concepts emanate from the owner and reflect their subjective beliefs, while others reflect those of the potential buyer.

Value Concepts in Dyadic Relationships

Value Concepts in Dyadic Relationships

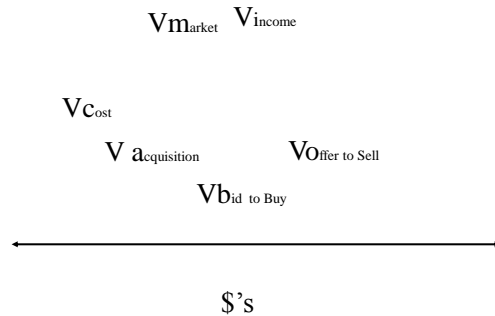
Codes	Value Concepts
V _{ss}	Value subjective to Seller
V _c	Value (cost) of constructing substitute
V _m	Value in Market of adjusted comparables
V _i	Value of Income
V _a	Cost of acquisition when acquired
V _o	Value of offer for sale
V _{sb}	Value Subjective to Buyer
V _b	Value of Bid by prospective buyer
V _p	Value Probable: estimate at which it will sell
V _t	Value of ultimate Transaction; an historical event

Exhibit 2- 16

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Positioning Value Concepts

Positioning of Value Concepts



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The typical positioning of the respective value concepts or indicators can be mapped out to show their relative values. Based on this insight, attention can be focused on how these somewhat disparate value concepts are actually processed and how they can affect the ultimate outcome. As suggested, the two parties draw on these concepts and other factors to determine their subjective values which are denoted as V_{ss} for the seller and V_{sb} for the buyer.

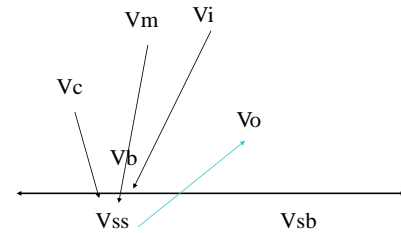
Exhibit 2- 17

Once an owner has decided to sell a property or test the market, he has to decide the offer price (V_o). This is the starting point in the negotiations and depending on the urgency of the sale and the style of the seller, this may have a premium above the subjective value that the seller really believes the property is worth. This V_{ss} is influenced by a number of factors including the cost of replacement (V_c), the value of comparable sales in the market (V_m), the value of income (V_i) discounted at an appropriate discount or cap rate, and the cost of acquisition (V_a) when it was acquired.

Subjective Value to Seller

As with the seller, the buyer must decide how much a property is worth, both to the market and to themselves. Drawing on evidence of value, this becomes their subjective value (V_{sb}) which is what they believe the asset is really worth in the market. Once they have their normative value, they must pick a bid price (V_b) at which they are willing to start the negotiations. As with the seller, the spread between the normative value to the buyer and the offer price will vary with the market cycle and with the importance of the asset to the buyer.

Value Subjective to Seller



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Exhibit 2- 19

Subjective Value to Buyer

Value Subjective to Buyer

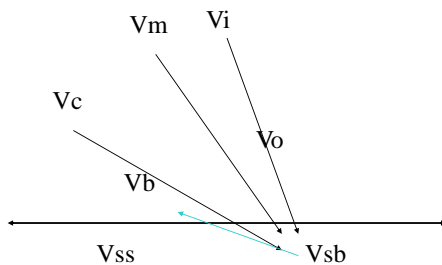


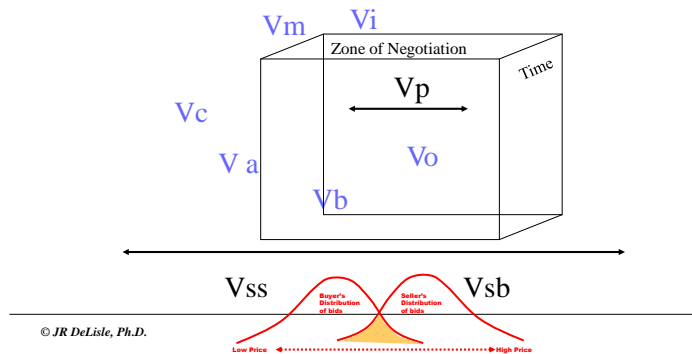
Exhibit 2- 20

Once the seller and buyer have established their normative values, the dyad engages in negotiations. Assuming there is an overlap in subjective values, the outcomes of these negotiations will depend on the motivations of the parties, market conditions, and negotiating style. However, with the exception of foreclosures or coercion, neither party must accept the other's offer. In order for a transaction to occur, the subjective values of the Seller and Buyer must converge. That is, at the instant the transaction price is agreed to by the two parties, V_{ss} must be equal to or greater than V_{sb} .

Bidding and Zone of Negotiation

Value Convergence and Concurrence

- V_{ss} must be equal to or greater than V_{sb} and ultimately,
- V_b must converge on V_o



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Exhibit 2- 21

A Cyclical Look at Market Value vs. Investment Value

Market Value vs. Investment Value

The Nature of Value

The “market value” of a property is the most probable price a project will command if offered in the market. It is opposed to the “investment value” or normative value conclusion regarding what a property is worth to a particular investor or in the market in the long-run. The notion was developed in the early 90s as real estate managers tried to convince institutional investors to hold on to assets in mark-to-market accounts that had been dramatically written down. The argument was that it was a bad time to sell and would convert a paper loss or unrealized loss to an actual loss. After a lot of debate and several class-action lawsuits, the industry somewhat reluctantly embraced marking assets to market (i.e., writing the values down to reflect losses) to avoid further litigation and improve investor relations from further deterioration. It was also done to get past the inevitable pain and help investors and other capital providers shift attention forward in anticipation of increasing values.

From a purist perspective, “market value” is the only relevant value for real estate. Indeed, in order for the market to function, buyers and sellers must have some standard against which they can evaluate potential transactions. As noted in Exhibit 2-21, market value focuses on exchange and reflects the most likely price that a targeted group of potential buyers would pay. On the other hand, “investment value” is more normative, and reflects the utility to an owner or the long-term hold value if an asset is retained until a temporary downturn is reversed.

...market value focuses on exchange and reflects the most likely price that a targeted group of potential buyers would pay. On the other hand, “investment value” is more normative, and reflects the utility or long-term hold value if an asset is retained...

Market Value vs. Investment Value

Attribute	Market Value	Investment Value
Perspective	Exchange Value	Intrinsic Value
Investor	Most Probable	Usual Suspects
Strategy	Wealth Maximization	Use/Hold
Hurdle Rate	Cap Rate	Wcc
Criterion	NPV	Utility
Time Frame	Short-Intermediate	Long
Liquidity	Moderate	Limited
Value Distribution	Narrow	Wide

Exhibit 2- 22

Despite controversy around the terms, the notion of “investment value” provides some useful insights into market behavior underlying the process by which prices are set in the market. In theory, market value is the price that occurs when properties are offered for sale in a situation that is devoid of unusual duress or non-market forces that could distort actual prices from underlying value. While intuitively appealing, the reality is that “market value” is set in the market and is inextricably linked to market conditions which, periodically are characterized by distress. This situation can be explained by juxtaposing the notion of market value against the notion of “investment value.” Briefly, investment value is the normative belief of what the asset is worth to the respective parties. As noted, “market value” and “investment value” differ on a number of attributes. However, the key difference is in the underlying question each of the concepts seeks to answer. In the case of Market Value, the question is what the asset would trade for if offered in the current market and

external forces were neutralized. On the other hand Investment Value refers to the value that an owner believes the asset is worth; their normative value belief. These are the anchors that are brought to the bargaining table when the seller and buyer dyad begins negotiating a transaction. These value estimates change over time, depending on the market cycle and cues the seller and buyer pick up in the market. The differences between the two normative values are known as the “Bid-Ask Spread.”

As noted in Exhibit 2-22, the Bid-Ask Spread is the difference between the asking price and the actual price achieved by the seller. The size of the spread depends on subjective values of sellers and potential buyers, as well as on market conditions and asset demand. In a strong market, the spread may be in the 3-5% range with the seller and buyer adjusting their subjective values upward and leaving some room for negotiations. When the market nears a turning point, the spread can widen until both sides of the market recognize that conditions have changed. Since buyers are shopping multiple deals, they will tend to notice a shift in market conditions before the sellers catch on. This is especially true when conditions are deteriorating as they did in the 2008-2010 period. At the beginning of this phase, sellers were in denial holding onto perceived values leading to an increase in the bid-ask spreads. The end result was a decline in transaction volume as buyers became more selective and opted to wait for asking prices to adjust to the new reality. Depending on their need for liquidity, sellers may withdraw product from the market, or accept lower bid prices. In the absence of a total collapse, sellers will begin lowering asking prices to clear the queue and transaction volume and bid-ask spreads will return to more normal levels.

Bid-Ask Spread

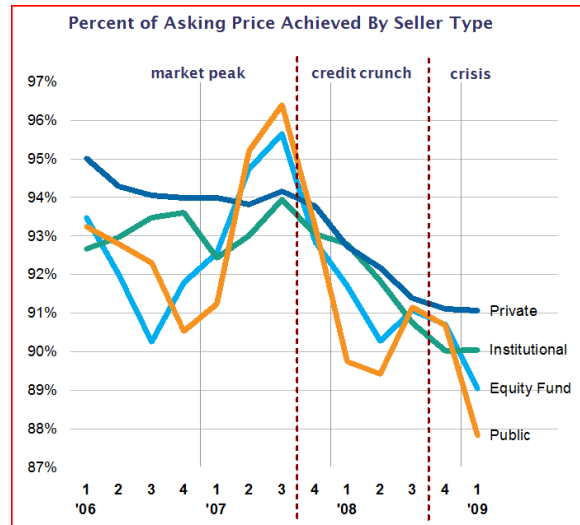


Exhibit 2- 23

Confidence Levels and Transaction Values

Predictions of real estate prices can be improved by monitoring sellers and buyers perceptions of investment value and their confidence in those perceptions. In general, the more confident the market is in the value, the higher the spike or concentration around the mean. Without getting too far into confidence levels, they provide an indication of the spread of potential values around the expected value. The tighter the spread, the more confident the market is in the true value. With a normal distribution, 95% of prices will fall within two standard deviations of the average or expected value. If we look at the seller’s perspective, we can see how their subjective values and

Investment Value and Owner Confidence

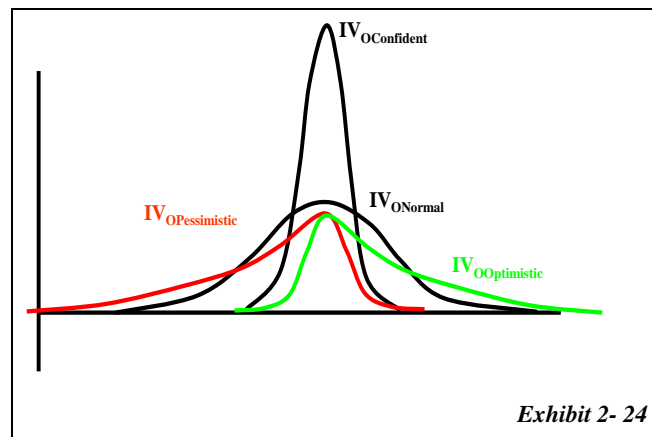


Exhibit 2- 24

negotiations might be affected by the confidence levels. The spiked distribution reflects “high confidence” where an owner has a firm belief in the value of the asset and will tend to hold out until an acceptable bid is received (see: Exhibit 2-23). On the other hand, the flat distribution reflects low confidence where the owner doesn’t know what to expect due to uncertainty or turmoil in the market putting them in a more defensive mode and likely to accept bids that are significantly below their initial subjective value estimate. In a statistical sense, the narrow band is known as a leptokurtic curve, while the wider band is a platikurtic curve. To help remember the distinction, think of a kangaroo for the leptokurtic (i.e., they leap) and a platypus for the platikurtic) curves.

The red curve is skewed to the left (i.e., wide tail) indicating there is little likelihood the bids will come in higher than the average, but a high probability they will come in lower. The opposite is true with the right-skewed distribution; little downside and high upside. In the former case the seller would jump at an offer close to their expected value, while they would hold off in the latter case and wait for a better bid to come along. On the other side of the transaction, potential buyers will have similar patterns of expectations, depending on market conditions. The ultimate shape of the distribution of expectations of the seller and buyer will affect how firmly they hold the line, and how hard they negotiate.

Confident Owner/Buyer IVs

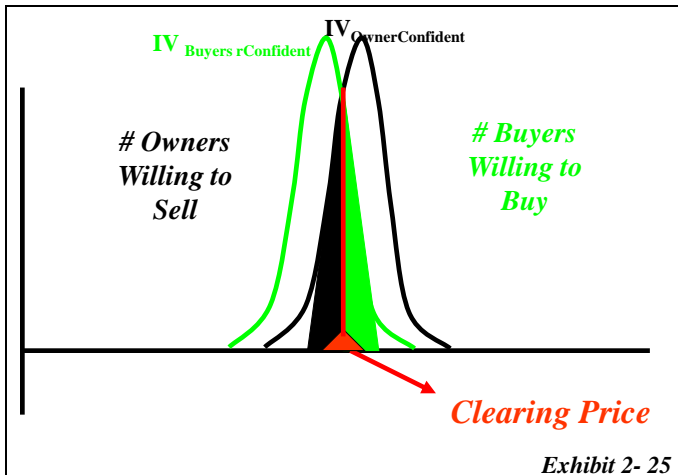
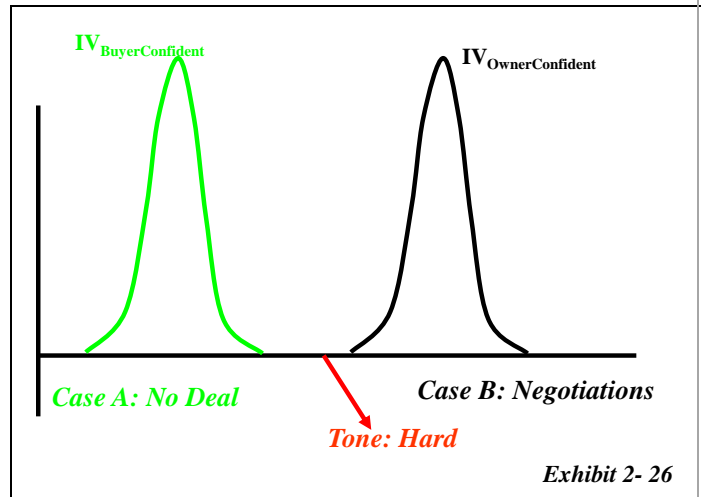


Exhibit 2-24 illustrates a situation in which buyers and sellers are both confident in their perception of the value of the asset. In order to affect a transaction and agree to a price, the normative value ranges of buyers and sellers must overlap, regardless of how firm they hold their beliefs. In this situation, the zone of negotiation will be fairly narrow.

Confident Owner/Buyer IVs

As noted in Exhibit 2-25, when buyers and sellers are both confident in their subjective values, they will hold firm in negotiations. In this case, buyers and sellers are likely to be mad at each other which translates to a wide “bid-ask” spread. This bid-ask void is common when the market cycle moves from one phase to the other and some of the parties are unaware of such changes or when they are in a state of denial. If the gap cannot be closed the seller will have to wait for another buyer or pull the property off the market.



Confident Owner/Uncertain Buyer

In uncertain times for buyers, the spread in potential bids will be wide. In this case, the owner can hold out for their subjective value, with the most likely price coming in above the buyers' average belief. The actual price at which the property will trade can vary dramatically depending on which segment of buyers the seller can attract and their ability to wait for a sale. Once the dyad is formed, the seller will tend to hold a tighter line and factor their stronger belief into their negotiations while the buyer may be willing to raise their bid. This is illustrated in Exhibit 2-26, where the most likely transaction price will likely occur somewhere at the upper end of the perceived price range of potential buyers.

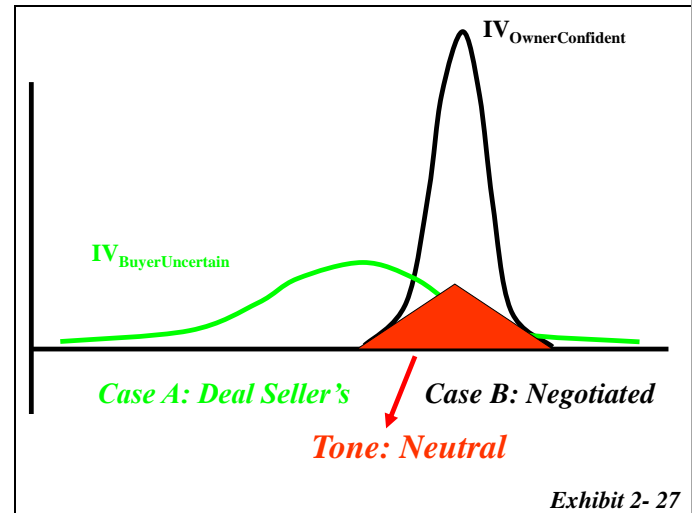


Exhibit 2- 27

In the case presented in Exhibit 2-27, a confident owner has been able to rebuff confident buyers and has waited for a new buyer to emerge. In essence, the owner has stubbornly held onto the asset, maintaining their subjective value beliefs. As noted, Buyer 1, Buyer 2 and Buyer 3 are not candidates for the property since the upper end of their value beliefs are below that of the owner and all four parties are confident in their beliefs. Thus, if not under pressure to sell, the owner will merely wait until Buyer 4 comes along and then will enter into negotiations. As might be expected, these negotiates will depend on a number of factors, including the owner's awareness that the bulk of buyers believe the value is lower than the owner's perception which might lead to a quick agreement. If Buyer 4 doesn't come around, the owner merely takes the property off the market, or may be forced to hear a wake-up call from the market and reduce their IV to reflect the true market value of the asset.

Confident Owner/New Buyer

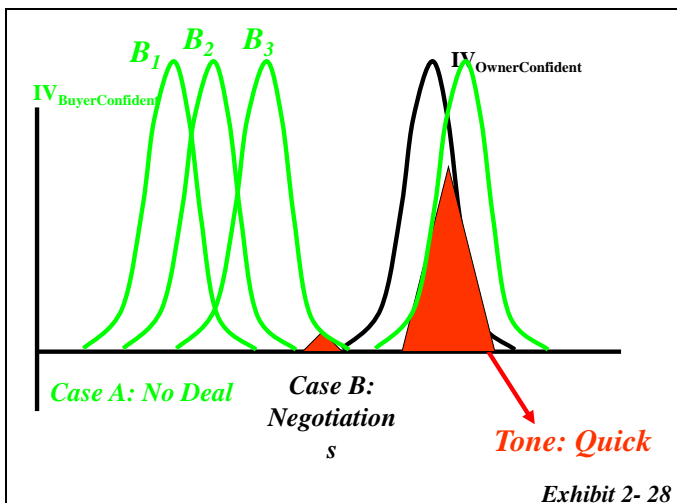


Exhibit 2- 28

While this may seem irrational, the strategy can pay off if a new class of buyer with a different pricing algorithm or difference return requirements comes along. An example of this would be in the emergence of off-shore investors who benefit from a weak dollar and can bid more than domestic investors. Similarly, a class of buyers may benefit from some incentive or tax program that gives them an advantage. This was the case in the recent bailout of the residential market in which low interest rates were further supplemented by tax credits for new and repeat buyers. These interventions allowed the owners to hold their

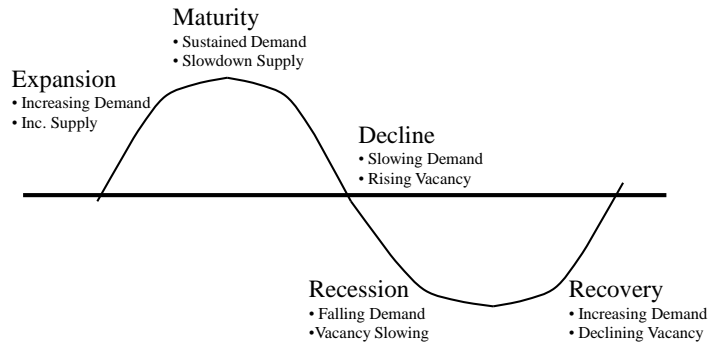
prices. Once they connect, the negotiations are likely to be quick, with both parties trying to close the deal.

Real Estate Cycles and Confidence Levels

To help put the notions of Investment Value and Market Value in perspective, it is important to recognize that real estate is a cyclical industry. That is, market conditions of supply and demand shift from oversupply to undersupply, depending on the relative balance between demand and supply. This balance can be disrupted by recessions which put downward pressure on demand, to periods of overbuilding as developers saturate the market with excess supply.

Cycles in Real Estate

Cycles in Real Estate



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Exhibit 2- 29

NCREIF Market Cycles: 1978-2010

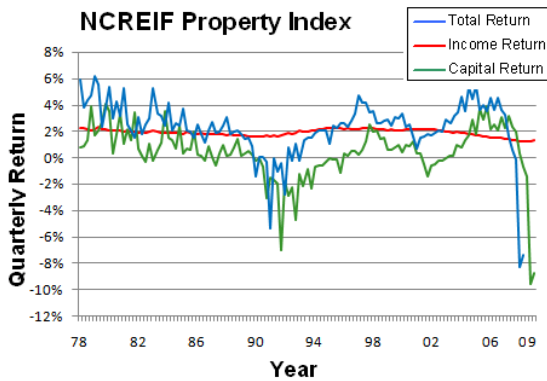


Exhibit 2-29 presents the cyclical nature of institutional real estate returns as reflected in the NCREIF Index. As noted, there have been two major crashes in real estate performance with some 20 years between occurrences. There has also been a number of smaller cycles running in about 7-10 year waves.

Exhibit 2- 30

Market Expectations and Real Estate Cycles

As might be expected, perceptions of IV vary dramatically over the real estate cycle. For example, during a strong period which is characterized by improved values and an active market, buyers and sellers tend to be confident in values. This confidence is based on the evidence of what the true “market value” is for an asset. In this phase, buyers are willing to raise their bids with the assumption another buyer will come along to bail them out if they sell. When the market starts slipping, confidence levels

Market Expectations and Real Estate Cycles

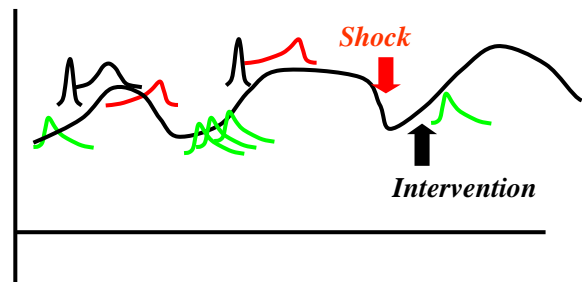


Exhibit 2- 31

wane but at different rates depending on the type of buyer or owner. When the market starts recovering, buyers remain somewhat tentative, but then jump on board as confidence grows that the recovery will be enduring. However, the market may struggle, especially if fundamentals decline and appraised values do not reflect the exuberance of the market. Given the fact real estate continues to experience cycles, confidence levels and thus transaction prices are likely to be in a dynamic state of flux and bear close monitoring.

The Role of Theory in Real Estate

Toward a Theoretical Foundation for Real Estate

To this point in the evolution of real estate, many academicians and professionals have ignored the importance of developing a theoretical foundation for real estate. While understandable on the professional side, the oversight reflects a major failure on the academic side and explains why real estate has failed to achieve the status of a discipline in the academic community. Unfortunately, rather than develop, empirically test and promulgate real estate theory, many have been content to borrow theory from other fields and simply plug real estate into an equation. Although beyond the scope of this inquiry, it should be noted that one of the implications of elevating real estate to the level of an asset class is that it mandates the search for a solid theoretical foundation and a unified body of thought.

In a panel in which I participated, the absence of a distinct, unified approach to real estate caught the eye of Harry Markowitz, the Nobel Prize-winning father of modern portfolio theory. The panel consisted of some of the leading real estate industry researchers, present company included. (Reinbach, 1993). In that forum, I probed Markowitz on the nature of real estate and he stated:

I don't know why finance gets to be a department in a university but real estate doesn't. That is just historical accident. Real estate is a big sector of the economy, and it's a very interesting operations research problem. It is not exactly like the portfolio selection problem. You really have to start from scratch, use whatever methodology the problem calls for... What I am saying is you folks ought to develop your own real estate theory which addresses itself very much to the illiquities of the problem, and you want a theory that is practical. (1993, pp. 31-32)

You really have to start from scratch, use whatever methodology the problem calls for... What I am saying is you folks ought to develop your own real estate theory which addresses itself very much to the illiquities of the problem, and you want a theory that is practical.

Given his prominent role in the finance academy, Markowitz's comments should have been a call to arms. In effect, he stated that real estate is more than a subset of any discipline, including finance. Rather, it is a distinct, multi-dimensional discipline that draws on economics, law, finance, planning, architecture, engineering, and marketing. Unfortunately, I was not an academic at the time and due to the pressures of my day job, where we were struggling to recover from the consequences of a lack of real estate theory, I was unable to pick up the flag and run with it. However, I have the "real estate is a discipline" flag firmly in my hand and am waving it which, in part, is a driver behind this opus. That is, I firmly believe we need to advance real estate as a unique, interdisciplinary field. It is only when we have established such a foundation that we will be able to take the destiny of the built environment in our own hands and be able to deliver on our responsibility to be worthy steward of the land.

Bid-Rent Theory

Since real estate is fixed in location, a number of theories emanating from geography provide some insights into how the spatial side of real estate affects the value proposition and in turn, urban form. In general, these theories are based on some form of Gravity Theory which combines gravitational pull with a desire to minimize travel costs to obtain needed goods and services. Gravity Theory is based on the assumption that the greater the concentration of goods and services in a space, the greater the pull or draw it will have for consumers and other space users. Gravity theory is one of the cornerstones of retail location models which are based on the assumption that consumers will be drawn to a retail center in proportion to the sheer scale or size of operations and resultant choices assembled at a particular location. Over the years it was modified to link the type of goods and services to the demographics of the market, as well as to the competition for consumer dollars. With respect to distance, theorists have hypothesized that space users seek to minimize the cost of friction or travel, measured in costs or time. Assuming a Central Business District (CBD) in a city has a sufficient level of concentration to attract uses, land values will be a function of proximity. This point is noted in Exhibit 2-31. The following four cases illustrate Bid-Rent Theory at incremental levels of complexity.

Bid-Rent Theory

Case 1: Basic Bid-Rent Curve. In the simplest version, land values will be inversely related to distance; the greater the distance from the core, the cheaper the land. This is due to the higher cost of transportation, as well as the greater supply of land.

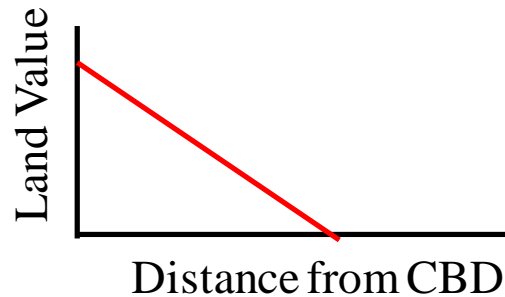


Exhibit 2- 32

Change in Transportation Costs

Case 2: Change in Transportation Costs. This variation illustrates the impact of a reduction in transportation costs (e.g., lower gasoline prices, less congestion) would have on land values. In essence, values would increase since the cost of commuting would decline. On the other hand, if commuting costs rose either in economic terms or time and frustration due to congestion and gridlock, land values closer in would rise and outlying values would decline.

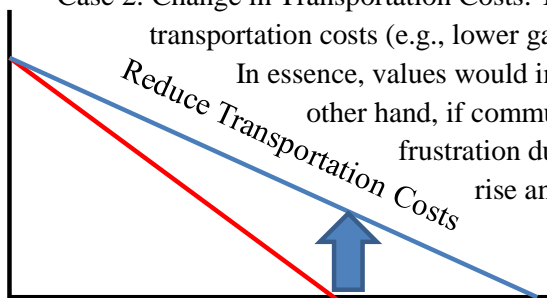


Exhibit 2- 33

Urban CBD-Oriented Market

Case 3: Urban CBD-Centric Market. This case provides an example of how land prices might emanate out from a traditional CBD-oriented market. As distance increases from the core, transportation costs would rise, eroding the market's ability and willingness to pay for land. For example, in infill locations or more "walkable" areas, bidders would have low transportation costs and be able to bid

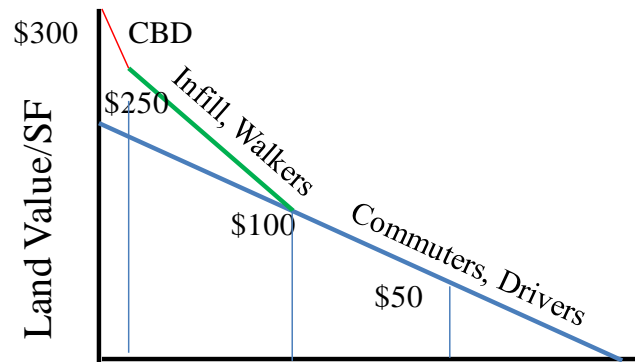
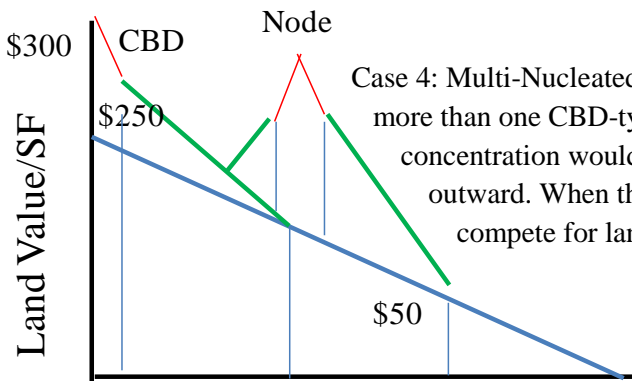


Exhibit 2- 34

more for land. On the other hand, commuters would have less disposable cash to allocate to land after deducting transportation costs. The illustration also notes that there would be different trade-offs or pricing preferences along the continuum, with some break points where the marginal costs would shift.

Multi-Nucleated Market



Case 4: Multi-Nucleated Market. Case 4 presents an urban market with more than one CBD-type core. In effect, each node or area of concentration would become a core, with land prices emanating outward. When the two curves overlapped, market forces would compete for land and affect the ultimate price.

Exhibit 2- 35

Residual Land Value Theory

The production or development of real estate requires a commitment of four factors of production: labor, materials, capital and land. Of the four factors, three are "mobile" in the sense they must be attracted to a particular site through direct compensation or they will be drawn to other sites. On the other hand, land is "captive" or spatially stuck. As such, the value of land is the residual or remaining value after the other factors of production are paid off. So, as labor and material prices rise, land values decline unless productivity increases. Similarly, if capital requires a greater return, the value left over to compensate for land declines proportionately.

In an important variation on this theme, Ratcliff cautioned that while fixed in location, land is economically mobile. That is, space users have the option to move from one location to another. At the same time, a given area can only support so much of a certain type of space before the market becomes oversaturated. Thus, in some cases a "first to market strategy" can provide something of a monopoly value. That is, once a facility is up and running, it may satisfy the existing demand and thus pre-empt competitors

from entering the market. However, this insulation can break down if a potential tenant adopts a “market share” vs. “unit profitability” model of competition. This explains why some retailers will locate as close to competitors as possible, accepting the fact that store sales will be lower due to an oversupply of space. The underlying strategy is to maintain brand awareness by having a presence in the market and hopefully, be able to hang on and drive out the competition and return the market to balance. While this helps explain why some markets get overbuilt, it should be noted that over the long term, pressure on the bottom line will force most retailers to “rationalize” their holdings, selling off or closing unprofitable stores. These non-economic or seemingly irrational choices in which non-economic goals and objectives can drive decisions explain why it is important to try to understand the behavioral side of the market.

Residual Land Theory & Economic Mobility

In most cases –especially in urban areas– raw land itself has relatively little inherent value other than for agricultural, forestry or mineral extraction. Rather, the value of land is a function of the nature and intensity of use to which it can be put. These rights are determined by government regulations regarding land use controls (e.g., zoning, building codes) and growth management. In addition, a significant proportion of land value is related to its environmental context (i.e., neighborhood and surrounding uses) and linkages (i.e., connections to ancillary facilities and uses). Since these dimensions are in a continuous state of change, the land value for a given site is subject to constant change but will continue to remain a residual after these external forces have played out.

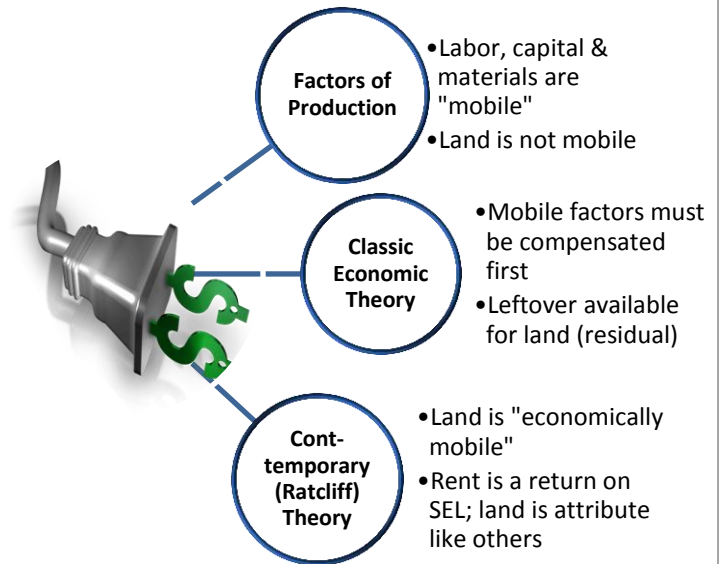


Exhibit 2- 36

Vulnerable, Vulnerable, Vulnerable vs. L, L, L

<p>Three major attributes of real estate . . .</p> <ul style="list-style-type: none"> - L, - L, - L. 	<ul style="list-style-type: none"> ∨ ulnerable, ∨ ulnerable, ∨ ulnerable. 	<p>Rather than relying on the adage “Location, Location, Location” it is important to realize that land value is “Vulnerable, Vulnerable, Vulnerable” to a number of externalities which are beyond the control of the land owner.</p>
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Exhibit 2- 37

Exhibit 2-37 provides a conceptual illustration of residual land theory; the numbers will be explained later. This is a version of a Backdoor Model that starts with the Income the market pay for a property and then converts that to a Value that can be supported. This conversion is simply dividing the Income by a Rate of return which is the $V = I/R$ formula. This Value is the maximum cost that can be justified by the Income if the market requires that Rate of return. This Cost is allocated to Labor, Materials and Capital which must be mobilized or attracted to the site. The remainder is the Land Value which is the VOLIR principle (i.e., Value of Land is a Residual). The following steps are taken to back into the land value:

- **Step 1. Income Estimation.** Estimate the income that a project will be able to capture in the market. This income is the net income after payment of expenses, property taxes and other operating costs.
- **Step 2. Rate Specification.** Estimate the required rate of return that the project will have to generate to attract capital. This rate is risk-adjusted and will depend on the confidence the market has in the ability to generate income over time.
- **Step 3. Income to Value Conversion.** This is a straightforward calculation in which the Income is divided by the Rate of return. In the real world this calculation may be more complicated since the owner will also receive some tax benefits and the real estate itself will have some value upon sale.
- **Step 4. Cost Allocation.** In this step, the costs of production are netted out of the converted value. These costs include hard costs (e.g., labor, materials) as well as soft costs (e.g., fees, financing costs, carrying costs).
- **Step 5. Land Residual Allocation.** This is simply the residual that is obtained by netting the costs of production out of the Value supported by the Income at the required Rate.

If the owner can buy the land at a lower cost than the residual, the total cost will be lower than the maximum that can be supported by the Income and Rate, thus implicitly generating a higher yield than specified in the Rate. Alternatively, if the land cost is higher than the residual, either the investor will have to take a lower Return, or the Income will have to be increased.

Residual Land Value Calculation

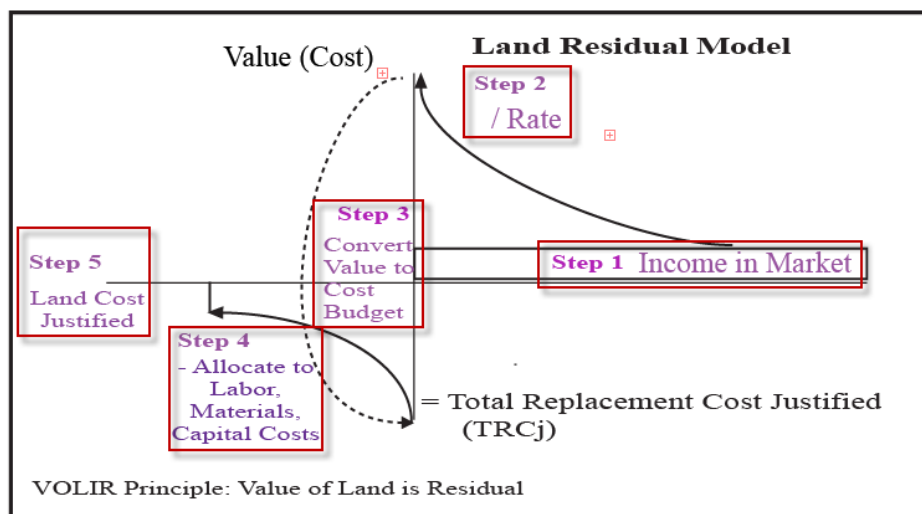


Exhibit 2- 38

Urban Land Economics Theory

Snapshot of Urban Land Economics Theories

The academic real estate discipline has its roots anchored in Urban Land Economics (ULE) which evolved on the heels of Agricultural Economics some 60 years ago. The early waves of academics were long on theory and short on empirics, largely because of the lack of data and lack of computers with which to crunch that data. Ironically, the current genre of academics and professionals are long on data and short on the theoretical framework that could turn that data into information. That said, it's important to look at three major theories developed in Urban Land Economics. The three major ULE theories provide additional context to the behavioral theories and can help predict spatial decision-making.

Linkages Among Urban Land Economics Theories

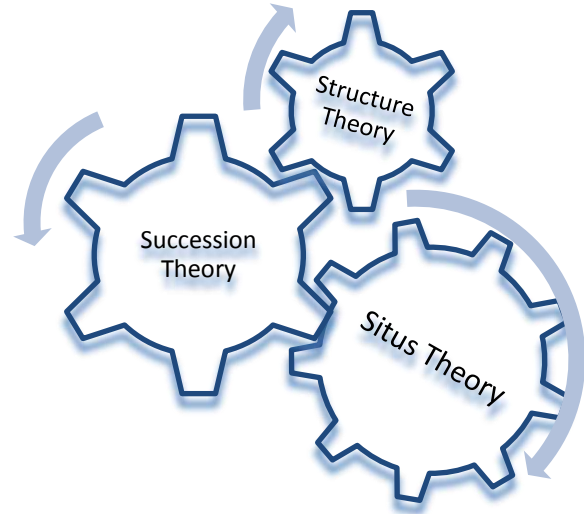


Exhibit 2- 39

Briefly, Structure Theory addresses the patterns of land uses (i.e., urban form) in a market as viewed through a number of perspectives. Succession Theory explores the changes in land utilization over time. Finally, Situs Theory explores how real estate decision makers choose real estate locations.

Structure Theory, Succession Theory, and Situs Theory

Structure Theory	<ul style="list-style-type: none"> •Analysis of pattern of uses and locations of users •Land use patterns viewed from various perspectives.
Succession Theory	<ul style="list-style-type: none"> •Analysis of the evolution of urban land use over time •Analysis broken down to various levels of disaggregation.
Situs Theory	<ul style="list-style-type: none"> •The analysis of decision-making processes by which entities make real estate location decisions •Based on empathy, segmentation and critical thinking.

Exhibit 2- 40

Structure Theory

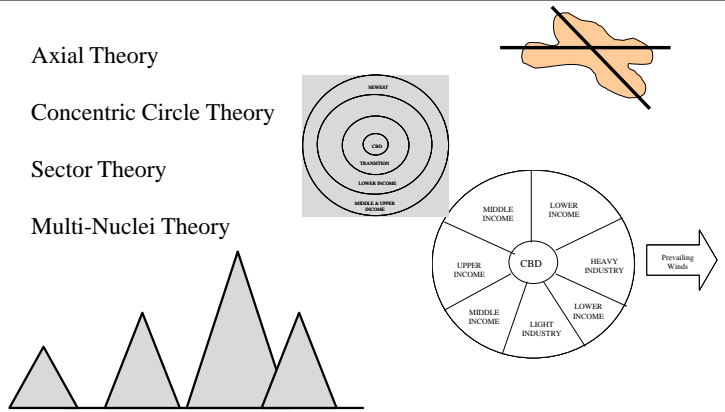
Structure theory is the analysis of the distribution of land uses and users. It is cross-sectional, looking at current usage patterns. It focuses on the investigation of the composition of the urban form as viewed from various perspectives.

There are four major structure theories that provide insights into the urban form and patterns of growth: axial theory, concentric circle theory, sector theory and multi-nuclei theory.

Structure Theory

Major Structure Theories

- Axial Theory
- Concentric Circle Theory
- Sector Theory
- Multi-Nuclei Theory



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Exhibit 2- 41

- **Axial Theory.** The key concept is that cities grow along transportation lines, as in the case of early settlements where growth was scattered along the path of railroads and highways to maximize connectivity. At the intersection of these systems, cities began to achieve more concentrated development which in some cases reached sufficient scale to be denoted Central Business District (CBDs). From there, transition zone that buffered commercial and residential uses. Growth was spread along the corridor, with lower income more concentrated in the core and higher income who could afford to travel, preferring to move outward.
- **Concentric Circle Theory.** The key concept is that cities are drawn to a central core or Central Business District (CBD) which has maximum value. Growth is based on competition for central space and involves displacement, encroachment by interior land use with ripple effects through urban core.
- **Sector Theory.** The key concept is that cities begin with a central core but then develop in patterns within which similar emanate out from the core. Wedges generally emanating out from core, along transportation routes or natural barriers. Growth patterns draw on a series of centripetal (i.e., attractive) and centrifugal (i.e., repulsive) forces resulting in attraction for harmonious uses, and deflection for others.
- **Multi-Nuclei Theory.** The key concept is that land use patterns emanate around several significant cores or nodes with each node affected by a series of centripetal and centrifugal forces. Over time, each nucleus takes on features of a CBD but rather than acting independently, the nodes are linked into a regional hub and spoke system by transportation corridors.

Seattle’s Market Structure and Landform

In landform-challenged markets (e.g., Seattle, San Francisco, market structure is consistent with Structure Theory, but must be adjusted to account for the constraints that can skew the urban form. Similarly, markets that border public spaces or reservations will exhibit distorted structural patterns. Government regulation of land use as in the case of “Urban Growth Boundaries” can also distort land patterns as can major infrastructure investment and operations.

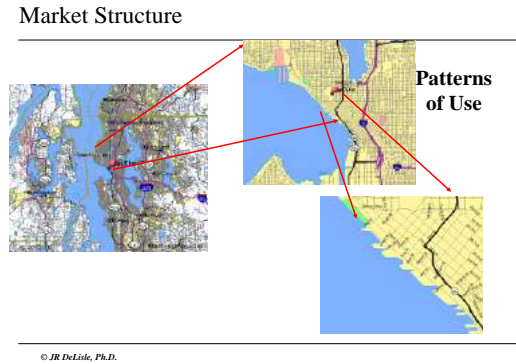


Exhibit 2- 42

Succession Theory

Succession Theory focuses on natural evolution or transitions of properties, neighborhoods and other real assets over time. It is based on the systematic analysis of the life cycle pattern of changes. While all properties and areas are subject to the forces that cause succession, the phases can take on different amplitude and temporal frames. In some cases, a phase can be locked in for a long time, forestalling transitions from one to the other. However, this delay requires some form of intervention to forestall the decline associated with the natural deterioration of properties and neighborhoods. Once a property or neighborhood slips into decline, it may take significant resource commitment to reverse the downward slide. However, if successful a new cycle can be created, starting the process over again.

Succession Theory

Succession Theory

- Succession Process
 - Growth
 - Maturity
 - Decline
 - Zone of Uncertainty
 - Late decline/renewal
- Types of Succession
 - Use succession
 - User succession
 - Use intensity

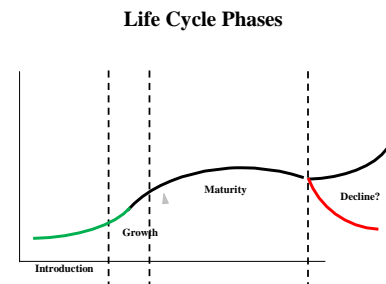


Exhibit 2- 43

Succession Theory recognizes three types of succession

- **Use Succession.** This occurs when land utilization changes as a result of redevelopment or conversion as in the case of residential properties that give way to commercial projects as land values rise in the core putting outward pressure on surrounding neighborhoods. It could also occur as a result of rezoning where land use restrictions change to accommodate infill development and/or recycle brownfields.
- **User Succession.** This form of succession refers to the gradual change in occupants while the property or neighborhood continues with the same basic land use patterns. In general, the natural tendency is toward lower income occupants, as a property ages or becomes functionally obsolescent in terms of modern features. The process can occur in the opposite direction, as in the case of gentrification of older neighborhoods where older residents are supplanted by younger, more affluent residents.
- **Intensity of Use Succession.** This is a change in the density of an area or neighborhood which is enabled by up-zoning in which a local jurisdiction changes entitlements to encourage more intense land uses. It often occurs in conjunction with some redevelopment or revitalization program, or in concert with new transit corridors or systems.

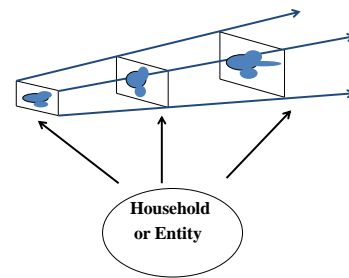
Situs Theory

Situs theory explores the decision-making processes by which individuals, households or other entities make real estate location decisions. It is a behavioral theory that translates spatial needs to spatial solutions. It draws on behavioral theory, information processing and decision making. It is related to the “Use in Search of a Site” type of feasibility problem. The theory approaches the space user as a “packet of functions” and then translates these activities into real estate needs and wants.

In the space-time, money-time context, Situs Theory recognizes locational decisions have a temporal dimension and the entity will be passing through its own life cycle, with each phase translating to different spatial requirements. At the same time, it recognizes entities make forward looking decisions, with some expectations and perceptions of the future urban form, based on a combination of experience and trend analysis, either formal or informal.

Situs Theory Overview

Situs Theory



- Where do things belong?
- How do things locate?
- How do things relate?

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Exhibit 2- 44

Situs Theory at a Global Level

Situs: A Global Concept

In terms of scale, Situs Theory can be applied at the local market level (i.e., intra-urban), national level (i.e., inter-urban) or global level.

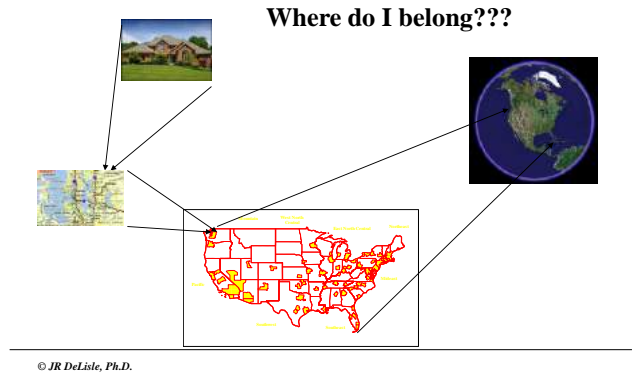


Exhibit 2- 45

When Structure, Succession and Situs theory are integrated, they provide a foundation that can be used to anticipate the future form of cities, logistical preferences and land use patterns. This “vision” is critical to real estate decision-making and allows one to make better development and investment decisions to create and capture value. By layering institutional regulations on top of the natural tendencies for growth, one can better understand how a market will grow and which properties, neighborhoods, regions or markets will have the greatest and most enduring potential within which values can be created, captured and sustained.

Integration of ULE Theories

Structure, Succession and Situs

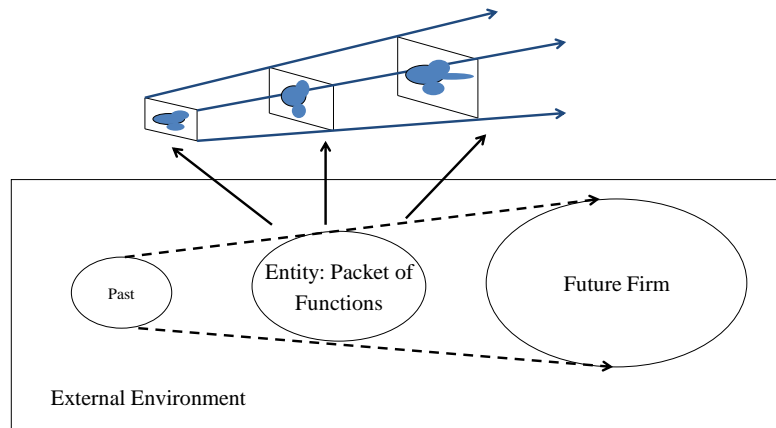


Exhibit 2- 46

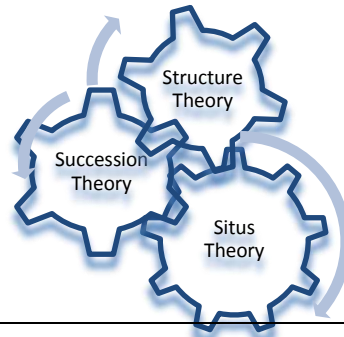
Summary Chapter 2

- **Nature of Real Estate.** Real estate is both a financial asset and a physical resource, a resource that is comprised of the site itself and the externalities that surround it and connect it to other parcels or activities.
- **Behavioral Real Estate.** The real estate discipline is fundamentally different from other business disciplines in the sense that prices are negotiated in a largely private, inefficient market and as such, must be approached as a behavioral science.
- **Market Segmentation.** Market segmentation is the subdividing of consumers, customers, investors or other constituencies into homogeneous subsets or groups that share commonalities that translate to similarities in consumption functions.
- **Perception.** The process of predicting market outcomes is complicated by the fact that they involve perceptions of real estate that the various players hold versus facts and quantitative measures.
- **Market Value vs. Investment Value.** The “market value” of a property is the most probable price a project will command if offered in the market. It is opposed to the “investment value” or normative value conclusion regarding what a property is worth to a particular investor or the market in the long-run.
- **Bid-Rent, Land Residual and ULE Theories.** Some economic theories can be extended to real estate to explain land values. Urban land economic theories of structure, succession and situs can be combined with market segmentation to improve predictions of market behavior.

Concepts

- Behavioral Sciences
- Market Segmentation
- Perception & Perceptual Biases
- Dyadic Seller-Buyer Relationships
- Price-Setting Process
- Bid-Ask Spreads
- Zone of Negotiation
- Models of Man
- Investment Value
- Subjective Values and Confidence Levels
- Real Estate Cycles
- Bid-Rent Theory
- Gravity Models
- Vulnerable Nature of Real Estate
- Land Residual Theory
- Urban Land Economics Theory

ULE Theories



Questions to Ponder

- **Art or Science?** If real estate is inherently behavioral, can it be a science? Is real estate an art or is it a science? What are the implications for real estate decision-makers?
- **Investment Value (IV).** What does the term “investment value” really mean? Does it drive the market or is it an artifact? How does it differ from market value? How can it help predict prices?
- **Distressed Assets.** There has been a surge in distressed assets; assets that do not generate sufficient income to justify their current values. There has also been an increase in distressed sellers who cannot, or do not want to, hang onto assets. What process did distressed owners go through to come to a realization of their plight? How should opportunistic investors or other potential buyers approach distressed assets?
- **Usual Suspects.** Is the term important to real estate? How can you identify the “usual suspects” and what impact do they have on real estate decisions? Are there “unusual suspects” and how can you monitor them and their impacts?
- **Subjective Value Indicators.** What are some of the key indicators that buyers use to establish their subjective value beliefs? How do potential buyers quantify these indicators? How important are they to the price-setting process?
- **Space Producers.** Who are the major players on the production or development side of the real estate market? What drives them and how do they affect real estate decisions? How do they make decisions regarding new projects?
- **Space Consumers.** Who are the real consumers of space; the tenants who pay rent or the customers of those tenants? How do different space users approach real estate decisions? How are decision-making models of various space consumers changing over time? What will they be looking for going forward?

Section 3: Chapter Next