REAL ESTATE ISSUES

Volume 10 Number 1 Spring/Summer 1985

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Editor's Statement

The common thread running through this number of Real Estate Issues is analysis: sorting, screening, breaking things down and looking at the pieces. Real estate counselors do a lot of it; so do the decision-makers to whom they report. Our opening article by Lisa Purdy and Peter D. Bowes, CRE, on the current state of Denver's TDR ordinances reminds us that real estate is a complex bundle of rights and obligations, some of which can sometimes be rearranged to good effect. The Denver experience, while not conclusive, offers encouraging evidence that TDR can work as a preservation and planning tool. Let Chicago, where the precursor of the Denver program was originally floated, take notice.

James Graaskamp synthesizes years of clearheaded analytical thought in a challenging article on real estate market research. This is followed by John Robert White's examination of hybrid investments and Gene Dilmore's analysis of the income stream and its capitalization. Dominique Achour then examines the use of large-scale models in real estate analysis in a "requiem" addressed to software purveyors-including my colleague Michael S. Young-who don't believe that do-ityourself spreadsheet design is necessarily "gratifying and profitable."

Segments of the real estate market are then explored by Mary Alice Hines (office buildings), and Messrs. Colwell, Gujral and Coley (shopping centers and their impact on surrounding values). Finally, this issue closes with Karl Tuschka's analysis of the taxation of timeshare interests, themselves a rather special collecton of rights from the bundle, and an examination by Drs. Epley and Banks of the pricing of real estate brokerage services.

Hegel taught that where analysis occurs, synthesis must someday follow. Jim Graaskamp's contribution amounts to a good beginning. Are there other global thinkers waiting to be heard from? REI would like to know.

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Editor-in-Chief

P.S. Our next number (Fall/Winter 1985) will be the tenth anniversary edition of Real Estate Issues. As part of our own decennial stocktaking, we would very much like to hear from you too-your thoughts, criticisms and ideas for the future. Please share them with us.



Spring/Summer 1985

An Update on Denver's TDR Ordinances

Lisa Purdy and Peter D. Bowes, CRE, Page 1

This article evaluates the effectiveness of Denver's TDR Ordinance since its passage two years ago, and also describes a new TDR Ordinance passed a year ago. Denver's glut of office space and demand for high-end retail has created situations negating the need for many transfers in B-5. In contrast to B-5, the newer TDR Ordinance in Denver's historic warehouse district (B-7) may cause some different and interesting problems.

Identification and Delineation of Real Estate Market Research James A. Graaskamp, CRE, Page 6

The author has recognized the increasing scope and growing sophistication of real estate marketing by classification of research into the real estate consumer perceptions of demand and supply. He identifies the following four categories: market, merchandising, political and promotional.

Hybrid Investments: Alternatives

John R. White, CRE, and Donald K. Wiest, Jr., Page 14

Current economic conditions have nurtured an investment interest in real estate equities. This article details the benefits and hazards of convertible mortgages, participating mortgages, joint ventures and mortgages with purchase options.

Component Capitalization

Gene Dilmore, Page 18

The author proposes that each of the seven components of an income stream reflects a separate category of risk and therefore should be capitalized separately if the components have varying importance to the investor. The example of an office building appraisal is used to illustrate both deterministic and probabilistic versions of this procedure.

Requiem for Large-Scale Models in Real Estate Analysis Dominique Achour, Page 28

Large scale computer models for real estate analysis are defined here as models written in traditional programming languages (FORTRAN, APL, BASIC, etc.), and initially used on mainframe computers. They are opposed here to spreadsheet types of models designed and operated on mainframe or micro-computers.

Office Building Development and Investment—Selected International Regions and Countries

Mary Alice Hines, Page 31

Since most of the prime U.S. office markets are saturated for the next few years, international real estate investors are looking abroad at the demand for office space, office leasing opportunities, office rent trends in regional and city markets, presence or absence of rent controls by country and city, ease or difficulty of land acquisition with a clear title and prospective office building investment yields.

The Impact of a Shopping Center on the Value of Surrounding Properties

Peter F. Colwell, Surinder S. Gujral and Christopher Coley, Page 35 The question is whether neighborhood shopping centers increase, decrease or increase/decrease the value of proximate residential property. This paper analyzes the impact of a small neighborhood shopping center in Urbana, Illinois on the value of surrounding properties. A regression model is developed to explain the variations in property values before and after the announcement of the proposed shopping center.

California Real Property Taxation of Timeshare Interests Karl O. Tuschka, Page 40

In order to levy taxes fairly clear, guidelines need to be established for measuring the value of timeshare property. Current law does not provide tax assessors with a standardized way to measure this, but the development of a timeshare taxation system now is unfolding and could change the situation. This article examines the need to establish clearer guidelines for timeshare valuation and discusses the need to develop an equitable system for tax collection.

The Pricing of Real Estate Brokerage for Services Actually Offered **Donald R. Epley and Warren E. Banks**, Page 45

This article contends that price competition in real estate brokerage rates will not exist until each individual firm starts negotiating for a fee that reflects the services performed. Each firm would still maintain an incentive to acquire an inventory of listings and to cooperate since a known fee negotiated with the client had been determined in advance.



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Library of Congress card number LC 76-55075

Printed in U.S.A

AN UPDATE ON DENVER'S TDR ORDINANCES

by Lisa Purdy and Peter D. Bowes, CRE

In the Spring/Summer 1982 edition of REAL ESTATE ISSUES we presented the story and background of Denver's B-5 TDR Ordinance (Transferable Development Rights). Over three years have passed since this ordinance was adopted, and it is worthwhile now to evaluate the consequences of this creation. Also, a new TDR ordinance was passed for a different part of downtown, and it will be described and evaluated as well. Lastly, this article will explore some interesting reactions to the ordinances by various preservation communities.

Update

The 1982 ordinance allows for the transfer of unused development rights from locally designated buildings to noncontiguous sites within the same zone district. Certain requirements must be met by both the sending and receiving sites and there are limits on the amount of density sold.

Since the passage of the more recent B-5 TDR Ordinance, two events have taken place that have some bearing on the effectiveness of this new mechanism—the completion of the Sixteenth Street Mall and an oversupply of office space.



It is clear there was good reason for the preservation community to be concerned about the mall's effects on Denver's historic buildings in the area. Recently, retailers have demonstrated an increased interest to locate in the mall, while at the same time large retailing centers are now seen by the new city administration as an impetus for Denver's much touted 24-hour city. The recently opened Tabor Center, with 120,000 square feet of retail space, has exceeded all projections for sales, and has produced spin-off benefits to neighboring retailers by bringing many new people into the city to shop. All of this creates tremendous pressure on the smaller historic buildings in the mall. It seems all of the economic

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The Navarre Building



Oddfellows Hall

incentives—TDRs, investment tax credits, easements, etc.—cannot offset the tremendous pressure to build new, glamorous, and large retail complexes that are capable of bringing in national retail anchors. Furthermore, the newer retail complexes can be built within existing FAR (floor area ratio) limitations, negating the need to buy TDRs.



Masonic Temple Building

The second event affecting the TDR Ordinance was the tremendous increase in office space supply in the B-5 zone district (creating vacancies as high as 28%). When supply exceeded demand in the bigger office buildings, the market for TDRs disappeared. As a result, there have been fewer transfers than anticipated—much to the relief of the city council concerned about the potential numbers of requests for designation, and to the dismay of those with TDRs to sell and those wishing to evaluate the effectiveness of this new mechanism.

Much can be said on the positive side of TDRs, since they have been responsible for the decision to preserve the following valuable historic structures:

1. The Navarre Building is the structure for which the original ordinance was created and it has now become a first-rate western art museum. In 1982, even though the owners were unable to find buyers for the Navarre TDRs (due to the oversupply of office space), they were able to use the TDRs as a key piece of collateral for their rehabilitation construction loan. Following the building's sale, the owners severed the TDRs from the Navarre, and are holding them for future sale when the market picks up.

2. Odd Fellows Hall used 58,700 square feet of TDRs as part of the collateral for a \$4 million construction loan. This is now the site of a high-quality restaurant, retail and office space.

3. The Masonic Building, which is in the mall, has TDRs the owners anticipate selling when the office market improves. This building, now under renovation, will include restaurant, retail and office space.

4. The Denver Athletic Club is the only building with a recorded TDR sale. It occurred in January 1984 and 60,000 square feet were transferred to a site five blocks away.

Referring to the TDR ordinance, Chuck Lohmiller, president of the Denver Athletic Club, told the Rocky Mountain News, "It is unfortunate we didn't have this 10 years ago. We lost a lot of historical buildings to the wrecker's ball in downtown that would have been saved." (Rocky Mountain News, September 16, 1984, p. 90). It appears our original assessment of the ordinance was correct—it does not solve all the problems of saving historic structures in the CBD, but it provides one additional tool for the developer to consider when trying to cope with the economic problems of preserving a historic property.

In the cases of the first three historic buildings previously cited, the developers were already planning to preserve the structures. The TDR ordinance, coupled with ITCs and other preservation incentives, merely tipped the scale in making it more economically feasible to renovate. When the Denver office market improves, many developers believe TDRs will become an increasingly valuable tool.

A delicate balance in the market must exist before TDRs are fully realized. When development pressures are too strong for a particular type of building (such as the demand for large-scale retail centers in the mall), economic incentives alone are not enough to protect historic buildings. On the other hand, there must be enough demand for new buildings to buy up the available TDRs. Ironically, a stagnant office market may lead to more speculative destruction of historic buildings for use as holding patterns (i.e., parking lots), than an active market where extra density purchases can be justified. However, when an owner decides (for whatever reason) there is a feasible use for the historic building, and when there is a strong market for TDRs, the decision to renovate is reached more easily.

In the original effort, there was some consideration given to allowing TDR sales from local historic districts (only individually designated buildings were and are eligible to sell them). However, because the city administration only was willing to allow contributing district buildings to sell TDRs, and because there was no mechanism in place to make the distinction, the owner has to submit individual applications to determine the contributing status of each building. By the time owners went through all this, they might just as well have had the eligible building individually designated. In the end this was seen as an unnecessary and redundant process.

The B-7 Historic TDR Ordinance

Soon after the B-5 TDR Ordinance was passed, another group began working to revise the zoning in Denver's historic warehouse B-7 district. This effort came in response to construction of a high-rise building that was out of scale with the character of the area. The B-7 area was where Denver began and had formerly been unaffected by Denver's boom periods. Consequently, it includes the largest concentration of historic warehouse buildings and a cohesiveness that is unmatched in other parts of downtown.

Once again the Denver Partnership (a downtown business non-profit advocacy organization) provided leadership for this effort. The venture had two major goals: 1) to protect the historic quality of B-7 (preservation priority), and 2) to provide mechanisms that would encourage the development of additional housing in the area



Group of buildings in Lower Downtown Denver.

(city priority). Funding for the study of the area came from the National Trust for Historic Preservation (\$25,000), Petro Lewis (\$20,000, private) and the Denver Housing Authority (\$5,000) with staff support provided by the Denver Partnership. The public/private policy committee formed to guide this effort included the preservation community, private developers, property owners, city representatives and other technical disciplines (i.e., attorney, real estate counselor, appraiser, architect, banker).

Several months into the process of studying the 23-block area, it became clear some of the stated goals were at odds with one another. In order to provide incentives for housing, increased building densities were being considered. However, increased densities could contribute to the destruction of the scale of a B-7 area, and preservationists were becoming more adamant about the need for height restrictions and design guidelines to protect the historic flavor—all of which made property owners fearful of their ability to build economically feasible projects. Tempers began to flare as the committee became bogged down in the legal intricacies and mechanics of design guidelines. Discussions centered on whether design controls could ever be, or had ever been, effective in producing well-designed projects. It also was explained that plans for this area needed to be in the context of a plan for all of Denver in order to establish the appropriate priorities.

As an interim step, it was decided to narrow the focus of the proposed zoning ordinance to deal with issues of housing, scale, setbacks and use, and let the matter of design guidelines be dealt with later (design guidelines and height restrictions have not yet materialized, but are being looked at now as part of an overall plan for Denver). What resulted from this effort was a new zoning ordinance requiring the following:

- An increase in FAR limits for buildings that included housing
- The extension of the TDR concept into the B-7 area (to be detailed later)
- A reduction in the parking requirement that was

leading to the destruction of many historic buildings

- · New incentives to encourage ground floor retail
- Incentives to encourage new buildings be built out to the lot line (matching the historic buildings) and to step the newer buildings back between the second and sixth floors (to provide adequate sky exposure and better compatibility with the smaller scale historic buildings)

Even though height controls were not put in place, an ultimate cap of 7.4:1 FAR was enacted.

The TDR portion of this ordinance is very similar to the B-5. Essentially it works like this:

- Only locally designated historic buildings are eligible to transfer TDRs
- The historic building must be renovated to the satisfaction of the Denver Landmark Commission before a transfer can take place
- The amount of square footage that can be transferred is calculated by deducting the density of the historic building from a 4:1 FAR (basic allowable density for the B-7 area)
- The transfer may take place within the B-7 area
- The site receiving the TDRs may be enlarged an extra 2:1 FAR above the former (without TDR) limits
- Once the unused density is sold, the density of any redevelopment of the transferring site will be reduced by the amount of TDRs sold

An extra mechanism was put into place to encourage both renovation and residential uses in the historic structures. This measure allows owners to sell one square foot of density for each square foot of residential floor area in historic buildings. This is in *addition* to the unused density that may be sold from that site. It is now possible for property owners to sell the entire square footage of residential buildings while retaining the building itself (see Illustration A). This measure was a key shift politically,

ILLUSTRATION A



Source: The Preservation Handbook published by the Denver Partnership and Historic Denver, Inc.

ILLUSTRATION C



because, unlike the B-5 TDR mechanism, it allows for an overall *increase* in density of the B-7 zone district—as opposed to a mere shifting of densities. However, this concept sold because it was put in place to encourage housing downtown—an important goal for the city.

For each square foot of residential development in a new project, an additional square foot of commercial space could be added up to 1:1 FAR. This provided an economic incentive to the housing option not feasible on its own.

An evaluation of the new ordinance's effectiveness is even more difficult than B-5 because the office market in B-7 also was severely affected by the oversupply of office space. There have been no recorded transfers since the passage of this ordinance (late 1982), and there has been an absence of new development in the area. When supply and demand for office space become balanced again, it will be interesting to see how effective the ordinance will be in protecting and promoting the historic character of the area—especially without height controls and design guidelines.

Upon reflection it appears the sale of TDRs from individual buildings in B-7 will not necessarily be the best vehicle for preserving the area's scale. In B-7 the value of the historic fabric does not come from the individual historic buildings, but from the grouping of historic buildings that creates a smaller scale, pedestrianoriented environment. Even though it is beneficial to sell

ILLUSTRATION B

LOWER DOWNTOWN /PROPOSED ZONING

7.4:1 DEVELOPMENT WITH RESIDENTIAL COMPONENT AND TDR



TDRs from this area, there is a danger that density purchased through this mechanism could break up the continuity of scale.

In B-5 this is not as much a problem because the scale of the district as a whole is not the issue as is the preservation of significant *individual* buildings.

To counter some of the potential negative side effects of the B-7 TDR Ordinance, a small group of citizens and the city are working to further refine the zoning. Receiving and sending TDR zones are being considered to preserve the most significant historic portions of the large B-7 district. Another option might allow for the donation of TDRs to a neutral non-profit bank whereby the donors could take a charitable donation deduction on income taxes.

Receptivity Of The TDR Concept

The media are probably the biggest convert to the concept of TDRs. They were originally critical of this mechanism that created windfall profits for a number of historic building owners. However, now both local papers have done follow-up stories endorsing the concept as well as the affect of this ordinance.

Developers and property owners have taken a wait and see attitude. As mentioned earlier, the development

market in Denver is slow causing a slump in real estate activity. As a result, most owners are holding on to their TDRs in hopes that someday they will be worth some real money. For now, the value of TDRs leaves owners wondering what all the fuss was about.

Denver's City Council has become used to the idea that transfers may take place, and their fears of numerous requests for historic designations have been allayed. Unlike two years ago, the council seems to have a realistic picture of the TDRs practical uses and limits.

Most of the attention to this ordinance has been from other communities across the nation. Several cities have enacted similar ordinances hoping to accomplish preservation goals and have been in touch with Denver's preservationists regarding the structuring of such a mechanism. The largest negative reaction has come from the established communities on the East Coast who have a basic difference in political philosophy. In the East there is a much stronger ethic for both preservation and regulation of property rights. As a result, most of their legislation includes strict controls on the demolition of designated properties. In some cases an owner's consent is not necessary for a designation of their buildings.

However in Denver, property rights are valued and protected. It is very rare for the city council to take an action deemed as taking away rights or property value from a building owner. Since historic preservation is not a high priority for most of those in positions of authority, the Preservation Ordinance (for local landmark designation) that passed in Denver does not prevent demolition of locally designated structures. Owner consent almost is always required (politically) for designation approval. The game becomes one of economic incentives because it is difficult to impose regulations on historic building owners.

While preservationists in Denver are proud there is now an additional incentive for renovation, preservationists in the East are dismayed since their attitude is that owners should be regulated into preserving their historic structures, not paid to do something for the public's benefit.

Conclusion

Once again, we reach the same conclusion. TDRs cannot solve all the problems faced by preservationists in larger cities, but they are an important option that in some cases will convince an owner to renovate rather than demolish. They seem to work best when there is a balance between too little and too much development pressure in order to assure a market for the sale of TDRs. In some cases, as in Denver's B-7 district, TDRs could be considered destructive to the continuity of an area's small buildings unless additional measures are put in place to restrict the receiving site.

While some think Denver's preservationists are too soft and generous with incentives, most of us in Denver are happy to find a means of equitably compensating those who wish to restore our community's treasures.

IDENTIFICATION AND DELINEATION OF REAL ESTATE MARKET RESEARCH

by James A. Graaskamp, CRE

Every real estate project is a cash cycle enterprise which depends on customers willing to spend dollars in their own self-interest. Not only is each real estate project an individual enterprise, it is also a subsystem within a network of collective interdependent enterprises, each of which must be persuaded that their own needs and goals are furthered by interfacing with certain real estate.

In the broadest sense, market research investigates any factor influencing communication, persuasion or recognition of needs and motivations in the transactional interface of enterprises in the real estate network. This includes local political controls on entitlement to new entrants, the bargaining power of customers and suppliers and changing land use patterns and technologies affecting land use.¹

In the narrower sense, market research is concerned with securing a customer's commitment to the enterprise with a high degree of predictability to control the variance in cash flows, growth in values and other indices of financial performance derivative of a customer. To paraphrase Peter Drucker, once business has created a customer, everything else it does may be redundant. Certainly the critical element of a business strategy is coping with competition.

Market Enterprise And Monopoly

In a market system, free enterprise is the art of creating one's own monopoly, at least for a moment, in the mind of the customer for partial protection against price competition and the necessity of sharing a limited market. Free enterprise, as the art of creating one's own monopoly, leads to the following premises for this essay:



- For products, monopoly requires at least one element of control in terms of raw material, location and political entitlement, relevant design, unique service, control of distribution channels or good timing.
- For services, monopoly requires control of the customer through behavioral conditioning, or consumer inertia toward an opportunity to change habits.
- Real estate is a combination of product and service, and therefore real estate monopoly has the greatest number of options to exploit when shaping marketing efforts of the firm.
- 4. The long lead time required to change supply to meet demand creates unique opportunity for developing a monopoly by decision-making finesse relative to politics of location, timing of financing and delivery and forecasting of demographic shifts and changing consumer preference.

Marketing research involves any investigation that permits focusing of a real estate project on selected segments

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of consumers with a unique unfilled product and location requirement (market gap) and a point in time when supply alternatives are limited (market window). Because discount rates contain a lower load for market risk, the ultimate objective is to stabilize cash flows and maximize values.

The Real Estate Enterprise

The goal of imperfect competition is consistent with an enterprise management and systems view of the real estate process, and the appeal of real estate to the entrepreneurial mind—particularly if one believes the firm should prevail to some degree over socializing and collectivist forces in the environment. In general, abstract characteristics of an enterprise are that it is an organized undertaking with rational goals and standards which continually screen opportunities consistent with goals, focus limited resources on selected opportunities, and formulate, implement and operate programs to capture the perceived opportunities. In the dynamic process one writer² has postulated that:

- The form of an enterprise, in terms of both its physical configuration and social behavior, eventually represents a negotiated consensus between two general sources of power—the power of the environment to dictate form and behavior of the organization and power of the organization to decide for itself what will be its characteristics and behavior.
- 2. Real estate is a space-time unit with physical form and a service enterprise with intangible formats intended to enclose a social activity so as to minimize the adverse influence of external forces and maximize the internal goals of the activity to be accommodated. Parameters of space and time are set by political entitlement.
- 3. External forces determining the configuration and behavior of the real estate are goals of the collective political forces, anticipations of future users, motivations of producer groups and preferences of those controlling infrastructure enterprises. These forces define the context within which requirements of potential real estate occupancies can be met. These forces limit both the choices of the ultimate consumer and the ultimate solutions put forward by the real estate enterprise responding knowledgeably and sensibly to a group decision process.

Market Research—The Intelligence Gathering Unit

Real estate market research is called to provide information for real estate enterprise decision-making in the general areas of:

- Defining the framework of external factors having ascertainable influence on the generation of customers and revenues for the enterprise, i.e., power to shape product/service/price.
- 2. Inventory of strengths and weaknesses of the decision-making enterprise which must influence

the enterprise deciding its product characteristics and marketing behavior.

- Classification of factors having influence on customers and revenues as controllable or uncontrollable because of the presence or absence of skills available to the enterprise to manipulate external factors and control internal talents.
- Providing cost effective data for decisions relative to controllable variables influencing customers and revenues.

The patterns of these decisions generally emerge as a set of initial marketing premises, hypotheses, assumptions and design controls on the project that are referred to as strategic and tactical positioning. Strategic positioning generally relates to how the enterprise will utilize or neutralize uncontrollable, external market forces. Tactical positioning has to do with implementation of the strategy through manipulation of the controllable variables in a specific market situation. Strategic planning might try to provide housing for the elderly as a growing cohort in the market pushed by circumstance to relocate, while tactical planning might market supporting services and lifestyle in congregate housing while avoiding nursing care responsibilities.

Market Research And Modeling Market Behavior

Real estate market research is ultimately behavioral research, but still a science not an art. Other sciences have less data than real estate. Indeed, real estate and urban planning seem to be inundated with plausible data points, and the problem is to discover the pattern and the causal factors leading to the powers of forecasting. Therefore, market research is not aimless, but rather is focused on defining hypotheses, confirming assumptions and contributing facts which in turn provide the enterprise with a strategic and tactical position in the marketplace with strong, monopolistic overtones.

Models of Market Behavior

To simplify the structure and analysis of behavioral research on economic matters, it is typical to provide a model of relationships that is, in essence, a hypothesis about market segmentation, motivation and the elements that combine to create effective demand. Models for behavioral research and enterprise decision have been characterized by Dilmore as based on truth, beauty or change.³

- Models based on truth reflect normative premises about economic motivation and simple decision criteria such as optimizing. Truth tends to make clear distinctions between market factors and merchandising tricks of promotion. Models based on truth tend to rely on proof by assertion, are deductive and basically rely on secondary data such as Reilly's gravitational models of retail draw.
- 2. Models that stem from beauty are intuitive, reflective of sensitivity from a person's experiences and gain credibility from elegance. As Dilmore pointed out, $E = MC^2$ was initially based on the speed of

light because the concept was elegant, and it was only years later that empirical data supported the model. Models based on beauty are not always persuasive since beauty is in the eye of the beholder or communicated by means of the aura and trustworthiness of the communicator. For example, George Writer segmented the upper end of the Denver single-family housing market as the Gucci shirts, the Pendletons and the Brooks Brothers' button-down. The Ray Ellison folks depend on Professor Lazlo and lifestyle groups.

3. Behavioral models of chance exploit the increasing credibility of statistics in scaling, forecasting and ranking consumer preferences. Statistics can be inductive, generated from focused primary research instruments, honest in measuring the degree of fuzziness in the resolution of focus and abused in terms of power to communicate disinformation between enterprises.

Six Critical Elements of a Model

Whichever model genre or format is selected, there are six elements to the model, the research and the decision that may follow. These are recognized as: 1) the question that needs to be addressed; 2) data availability with plausible relevance; 3) the hypothesis with which to edit, structure and focus the data on the question; 4) skills of the analyst that can be applied with reliability and understanding of the opportunities and pitfalls; 5) the decisionmakers' ability to convert the inferences of the research model to appropriate action; 6) cost effectiveness of the modeling process relative to the economic significance and risk of loss in the action taken.

As a general observation, models concerned with external aggregate forces tend to be fragmented, deductive and oversimplified because the complexities are so great, research budgets so small, time is in such short supply and the larger systems are not vet well understood. The science of meteorology has more data points than it can manage, and its models still tend to rely on assertions and logic to bridge the gaps in understanding. Nevertheless, the weather cycle is reasonably predictable and so is the demand and supply for carefully defined real estate units. Even basic models provide an adequate basis for timing picnics and office buildings, spring planting and ground breaking. Disappointment with aggregate data most often occurs because the user misfits the data to the problem and not because the basic model never anticipated some unique phenomenon.

On the other hand, with internal, controllable variables, the real estate market analyst has the means to develop inductive, statistical models with a great deal of reliability in the control of internal decisions relative to the enterprise response to external forces. An explosion of software systems simulates parking demand by hour, day and season correlated to building tenancy. Energy consumption can be correlated to building shape, materials and site orientation. Linear programming models optimize elevators, installations, land use mix and all the other controllable design variables and financing options. Of course, there are significant dangers in too much precision on data-rich small problems and data-poor forecasts subject to wide ranges of variables. In some ways, today's market research techniques suffer the same problems as the excitement over the Ellwood technique two decades ago, when capitalization rates could be computed to six decimal places, but only two significant numbers were in the normalized net income forecast.

Still, the scope and format of real estate market research is limited only by the inventiveness of the researcher in modeling new connections of easily available data points and then capitalizing on these market insights throughout the hierarchy of roles for market research.

The Functional Concerns Of Market Research

The real estate enterprise must market concepts, credibility and cooperation, as well as product, to three major sets of enterprises. In order of importance these groups are consumer enterprises, public infrastructure enterprises that provide entitlement and offsite networks of supporting services and finally reactive enterprises supplying capital, expertise and material. Consumer enterprises are further subdivided among those who actually rent or buy, those enterprises which coalesce temporarily to influence political decisions and future users who must be anticipated in the flexibility of product adaptation to changing times or who will be represented by selfappointed proxies for environmental conservation.

Market Research Objectives

Although random interactions of these groups and the interplay of their negotiations may be of interest to the market researcher, critical questions to be answered by market research models must focus on the following basic topics which represent the building blocks of market strategy and positioning: potential market gap opportunities consistent with enterprise abilities to capture that particular segment; profile of prospect psychographics; proportion of population meeting prospect profile; profile of competitive supply meeting prospect needs; proportion of supply historically provided in each period (absorption rate); product and service standards (defining competitive standards); product and service differentiation (providing competitive edge); product and service pricing matrix; potential elasticity of revenue; pace and phasing of production, including economics of scale required for pricing; penetration required into prospect profile group as a percentage of period supply (capture rate); profile of political power segment within entitlement process; psychographics of the voting constituencies determining entitlement; preconditioned mindset of the capital sources financing the real estate decision; psychographics of the enterprise's personnel in terms of suitability to the task at hand.

Other Peripheral Objectives of Research

Real estate marketing research is systematic information gathering from investigation of any factor influencing communication, persuasion or specification of needs and dissatisfactions among the various interacting decisionmakers. Wherever there is a potential protagonist/ antagonist relationship, the protagonist researcher must carry out some degree of research for data that will contribute toward a reduction in resistance, avoidance of resentment, dissolution of misinformation and motivation of constructive response. The responsibility of market research for the real estate enterprise only recently has been correctly expanded to include every aspect of anticipation and control of the behavioral interfaces which represent in total the external forces shaping the enterprise and the internal communications within the enterprise which shape its response.

Market Research for Public Planning

Although market research always has been identified by consumerism, market research also has become a major data input for planning in the public sector. Planning, like management of a real estate enterprise, is an effort to deal with sets of interacting problems as a whole. The new emphasis in planning, as Ackoff⁴ has suggested, is not just dealing holistically with a number of interacting problems, but doing so with a perspective orientation. Market research is now the planners' (rather than their own) way to discover the perspective that is appropriate, and the market momentum which can be harnessed to advance public plans. Planners have learned to give public segments what they want rather than what the planners want. Planners compete for capital by tapping demand generated cash flows rather than pillaging tax revenues. Thus, market research has been expanded to serve the external forces imposing on the real estate enterprise by researching the collective social ethics, values and peer group perceptions that influence the political process of providing entitlements by means of land use control and capital allotments from both public funds and regulated capital markets as a precondition of any private real estate enterprise.

Formal and informal survey research is required of large and small constituencies, including: contiguous property owners; organized neighborhood-tenant associations; constituencies sharing common interests such as age, school children, religion, professions, etc.; community power structure and media bias; formal political district boards and councils; public boards regulating community infrastructure; public boards regulating financial institutions.

While the search for market opportunity may be in researching the degree of effective demand for a specific set of benefits, access to that opportunity depends on first marketing the idea to those who fear they may pay so that others may benefit. The cost/benefit impact study is a whole new class of market research for products and services with high public profiles—such as real estate, medicine, transportation and energy.

Classification Of Market Research Forms

Convenient classifications for marketing research are somewhat arbitrary categories of competitive strategy formulation, market, merchandising and political research and promotional studies. These categories parallel the enterprise decision process for which the data is required.

- 1. Setting enterprise goals, talents and opportunity search standards (competitive strategy studies)
- 2. Reviewing trends to identify suitable opportunity areas (market study)
- 3. Selecting a consumer target group within an opportunity area (merchandise study)
- 4. Formulating a technical program to capture the opportunity
 - a. Securing entitlement in the public sector (political research)
 - b. Defining competitive standards and conditions required for entry (competitive project analysis)
 - c. Finding competitive differentials in the private sector (consumer research)
- 5. Implementing the program designed to capture the opportunity (promotion studies)
- 6. Operating the program over time to realize the goals of the program
- 7. Generating feedback of data with which to modify and improve implementations of numbers 1–6.

Note that marketing research in some format is involved in all seven steps except the implementation and operating phases called Property Development and Management. These phases are omitted only because the feedback process is separated from operations.

Market Research

Market research is defined as research of secondary data sources to define trends, patterns of geographic fragmentation and clusters of market segmentation which scale the size of any enterprise opportunity and provide a link between site and marketplace. Shifts in the demand/ supply equilibrium of space/time units will be derivative of changes in: demographic trends; psycho/social value trends; available investment capital allocations and interest cost trends; technological trends; environmental trends; energy cost impact trends; locational preferences; income redistribution through federal fiscal budget and tax policy.

Secondary data are seldom in appropriate scale for a proposed project and must therefore be disaggregated into a series of smaller subsets by a variety of devices initially generated by primary research. The circumference of a trade area, subdivision of demographic data by age, income or marital status, or subsets of aggregate data by psychographic lifestyle preferences are all examples of refining the focus of market data to search out a specific target subset, consistent with enterprise goals and monopolistic marketing.

Merchandising Research

Merchandising research is defined as primary research of specified subsets of customers and competitive supplies in order to confirm appropriate ratios for the disaggregation of aggregate data to identify location, space and

amenity needs, and to specify levels of effective demand. (According to a Chicago builder, the market for twobedroom townhouses may be subdivided among 13 different family status groups.) The objective is always to define a subset with the highest level of interest in the subject matter to maximize survey response rate and intensity of execution of survey formats. Various devices may be used deductively to make the scope of empirical research manageable, cost effective and directly involved with market prospects. Prospect lists may include comparable building tenant rosters, crisscross telephone directories and yellow sections, professional lists, street directories, subscription lists, license numbers, etc. Merchandising research is also concerned with an inventory of supply that is determined to be competitive and therefore defines the competitive standard of attributes taken for granted by the consumer. At the same time, empirical research of the prospects will strive to identify the competitive edge and motivational appeals to overcome inertia and to permit monopolistic pricing for a specific time, place and group.

Political Research

Political research is defined as primary research of specified subsets of political decision makers and their constituents in order to anticipate and influence legislative decisions, commission rulings and attitudes of specific political persons and blocs. Projects must be marketed to collective consumers to minimize the generation of political resistance to the project by inadvertently providing features or marketing themes that stimulate negative political action. The only project with building permits on the Kenai River spent its research budget on identifying the environmental concerns and design preferences of

		Predevelopment	Subdivision	Project-Feasibility	Initial Project	Property-Management
		Phase	Phase	Phase	Marketing	Phase
	Objective	Spatial patterns and movements	Absorption rates for land	Absorption rates for space	Timing, trade area data, identification of competitive sup- ply	Rollover rates
Market		Statistical studies of economic, demo- graphic, political, technical and en- vironmental trends	Rate of creation and sale and improve- ment of urban lands	Focus groups, rates of construction by type and class and aggregate occupan- cy of comparable projects		Monitor competitive supplies and terms
	Objective	Influential person analysis	Capture rate for sites	Capture rate for occupants by prod- uct price and tenant profile	Tradeoff analysis of features	Tenant canvass for renovations and ser- vice innovations and expansion demand
Merchandise		_	Research of required amenities	Research of compet- itive standard and competitive edge focus groups	Feedback from model space	-
	Objective	Impact analysis, re- gional fiscal, en- vironmental and transportation im- pacts	Land use control approval process and power structure	Building permit approval process and power structure	Monopoly of entitle- ments	Feedback from neigh- borhood and political groups
Political		_	-	Focus groups	Testing for political image	
	Objective	Identification of long-term visual and location perception codes	Imagery for neigh- borhood groups and contiguous property owners	Conversion rate of prospects	Define channels of communication and sales	Resigning of tenant lease maturities
Promotion		_	_	_	Testing of advertis- ing effectiveness	Public relations re- search for building management
	Objective	Substitute forecast- ing skills for risk capital	Substitute presales and public capital to finance public in- frastructure	Position for unique project and timing to reduce capital risks	Price for elasticity matched to scale of production	Estate transfer or corporate liquidation formats
Strategic					To control variable costs	Next user or investor market analysis

EXHIBIT 1

area residents so the ultimate land use plan from the outset avoided river bank development and the other clichés of recreational land. The attractions of the Kenai were apparent, and consumers would come under any rules and conditions imposed by local constituents. Land use of any type is first dependent on collective political approval, and therefore real estate concepts must first be marketed to those who control the political process.

Promotional Research

Promotional research is defined as investigation of media channels, messages and subliminal codes that communicate and motivate the customer. In the case of real estate, the product is so big it envelops the customer as a primary media using forms, colors, textures as well as spatial layouts to communicate sensitivity to the needs of the prospect. While merchandising and political research identify the potential irritations and misfits of prospect to existing real estate accommodations, promotion is concerned with communicating how the proposed real estate enterprise combination of space, time, service and cosmetic attributes will reduce irritation for the activity to be enclosed. Irritation is both technical and perceptual and stems from the following four fundamental motivations: 1) desire to avoid physical discomfort in accommodating the person to the environment; 2) incentive to profit by reducing economic inefficiency in the use of people and resources in order to improve net spendable cash flow or transferable wealth; 3) need to reduce anxiety and stress for physical well being; 4) need for enhancement of status and social well being.

Biological evolution indicates surviving organisms are those which specially adapt so the necessities of survival are accomplished by using less energy, incurring less stress and enjoying more relaxation and comfort. Similarly, real estate that survives contributes to the enclosed establishment in much the same way.

Technical irritation, which has historically stimulated improved planning, is the objective of merchandising research, while perceptual dissatisfactions existing in the mind of the beholder can be diffused and exploited by means of promotional research. Better merchandising may improve the speed of elevator service in an office building, while promotional research may place mirrors at the elevator floor stop to distract those who might otherwise perceive the elevators to be slow.

Integration of Market Methods and Available Talents

The four convenient dichotomies of real estate market research in the previous section interact with the formation of strategic hypotheses and finally strategic programs for the real estate asset manager. Appropriate techniques, budgets and objectives of each category of market research shift over the timeline of the real estate asset management problem. A preliminary effort to indicate the sequencing and changing content of real estate market research studies over time is provided in Exhibit 1, a matrix of development staging and research objectives. Exhibit 2 provides a matrix of research techniques now utilized in market analysis classified as models of truth, beauty and chance. No mention is made of obsolete terminology such as highest and best use studies, feasibility analysis or other similar nonspecific types of consulting products.

Naturally, the utilization of the more sophisticated market research techniques is somewhat cyclical as methods and formats become identified with innovators and successful real estate entrepreneurs. Entrepreneurial egos, cash budgets and time pressures have tended to prefer research models based on truth by assertion or intuitive beauty, rather than carefully crafted statistics of behavioral research. The emergence of more elaborate techniques is highly correlated to the appearance of high rates of compound interest and saturation of generic space markets so profit margins and survival depend on monopolistic market and pricing. Low cost data processing was a timely and coincidental aid to this shift of entrepreneurial attitudes towards research. Real estate needs to break the stereotype of report titles and normative formats as well as the presumption that appraisers do market research. Nothing in appraisal training relates to decision theory for enterprises in the real world or modern methods of gathering and interpreting data to facilitate these decisions. Real estate analysis is no longer an exercise in modeling of real estate futures with normative and intuitive models with a generic format and a narrow

EXHIBIT 2

Generalized Allocation Of Market Research Methods For Real Estate Asset Management

19 <u></u>	Truth- Normative	Beauty (Intuitive)	Chance- Statistical
Market	Gravitational models Input-output Shift-share Census data and planning counts Social prototypes (hierarchy of needs)	Subjective fore- casts Delphi studies	Dynamic time series model for forecasting Regression analy- sis Cluster analysis
Merchandise	Non-systematic survey/research Competitive prop- erty inventories Standard plan selection	Focus groups Personal interview Experience logs Marketing diaries	Factor analysis Conjoint analysis Random tele- phone survey AID analysis Multi-dimensional scaling
Political	Flow chart of po- litical process	Focus groups Personal interview Expert opinion	Random tele- phone survey Precinct voting profiles Legislative voting records
Promotion	Standard advertis- ing, channels for distribution and established building forms and textures	Focus groups Architectural models, testing of visual and tactile codes	Factor analysis Conjoint analysis Random tele- phone survey

scope of issues to be addressed. Nor can one individual span the array of issues within the broad sequence of asset management steps suggested in Exhibit 1. As a result, real estate market analysis as a cottage industry of generalists is nearly over.

Conclusions

Recognition that market research for real estate requires investigation of a broad front of behavioral interfaces within economic, engineering and architectural constraints is the first step toward recognition that real estate analysis will become a clinical service of related specialists rather than the province of cottage industry generalists. The shift of investment capital by fiduciaries toward real estate presages large increases in market research budgets for both proposed and existing income property investment to protect the fiduciary against the consequences of negligence in establishing a marketing strategy for yield and protection of capital.

Bigger fees to protect decision makers against the consequences of bigger mistakes will attract and generate larger firm activities in providing real estate market analysis. For the same reason that accounting firms are taking over appraisal firms, advertising and public relation firms will take over real estate market research. Political science firms and research divisions of large advertising agencies are already playing a role in the application of sophisticated research techniques to large real estate project marketing problems.

Nevertheless, something is lost when those using the new techniques are not well grounded in real estate vernacular, building technique and the theology of land planning. Therefore, a young generation of statistical analysts will join forces with normative and intuitive problem solvers to provide a clinical array of services as a coordinated team of market analysts. Within that team

will be a land planner, mechanical engineer, architect, financial analyst, political liaison specialist and one or more market researchers. This team will support the developer as employees or as a subcontracting professional firm. The subcontracting firm is socially preferred to facilitate dissemination for an understanding of the market on a cumulative basis to multiple developers. However, currently the creation of value depends primarily on market research that will provide a proprietary, competitive differential leading to a confidential, in-house data base development. The learning curve from research and the experience curve that provides a timing edge will be key to monopolistic operations of institutionalized real estate. The result will be a greatly reduced dissemination of research methods, findings and demonstrable successes. Almost inevitably, market research firms providing services to the general public will evolve into development firms for their own account because the value created through thorough and comprehensive research is so much greater than professional fees currently acceptable for the service.

NOTES

1. Michael E. Porter, "How Competitive Forces Shape Strategy," Harvard Business Review, 57:2 (March/April 1979).

2. For a thorough introduction to enterprise systems and management concepts that have contributed to the author's own thought development, see John A. Beckett, *Management Dynamics: The New Synthesis*, (New York: McGraw-Hill, 1971).

3. Gene Dilmore, "Technology of Information Processing and Data Basing—Implications for Real Estate Value Reporting," Proceedings of 1984 Real Estate Valuation Colloquium on a Redefinition of Real Estate Appraisal Precepts and Process, The Lincoln Institute of Land Policy, Cambridge, MA, June 1984.

4. Russell L. Ackoff, The Art of Problem-Solving, (New York: John Wiley & Sons, 1978).

COMING NEXT ISSUE

Join the Celebration!

REAL ESTATE ISSUES is enjoying its 10th year of publication, and to commemorate this event the Fall/Winter 1985 number has been designated as the anniversary issue.

To highlight the occasion, the editors and staff of REAL ESTATE ISSUES proudly will announce the first winner of the Ballard Award for an article submitted for publication in 1985 that best exemplifies the high standards of content maintained in the journal. The annual \$500 prize has been donated by the William S. Ballard Scholarship Fund in memory of Mr. Ballard, a former CRE.

The real celebrants of this anniversary are our readers whose loyalty and support have made REAL ESTATE ISSUES well known and respected among the leading real estate publications.

Thank you, Editors and Staff REAL ESTATE ISSUES

William S. Ballard

Known affectionately as "Bill," William S. Ballard died in 1971 leaving behind a legacy of accomplishments that have affected and enhanced our everyday lives.

Bill Ballard was part of a family business in Boston founded by his father William H. Ballard. The company was a leading management, appraisal and consulting firm in its area, managing and leasing over 80 commercial industrial properties. The concept of an industrial park was one of his creations. Working along with Jerry Blakley of Cabot, Cabot and Forbes, Mr. Ballard concurred and built the first industrial park in the country on Route 128 in Boston.

The William S. Ballard Scholarship Fund was established by the Real Estate Industry of New England in 1972 following Bill's death the previous year. It is an honor for the American Society of Real Estate Counselors to have been selected as a recipient of funds from this distinguished resource.

HYBRID INVESTMENTS: ALTERNATIVES

by John R. White, CRE and Donald K. Wiest, Jr.

The current real estate investment market is characterized by both historically high interest rates and low free and clear initial equity yields. While interest rates in the past have generally risen and fallen in response to the underlying rate of inflation, we are now experiencing a period of high interest rates relative to current inflation rates. Interest rates have remained high due to heavy capital demands from both the public and private sectors. The budget deficit and uncertainty over our fiscal policies have also contributed significantly.

Despite the high current cost of debt and a moderation in inflation expectations, initial equity yields on unleveraged real estate have remained low. There is considerable demand for quality real estate equities from both domestic and foreign buyers. The recent period of overbuilding, particularly office buildings, led to some sales in many markets at distress prices in the last couple of years. However, the market for property sales in overbuilt cities remained surprisingly strong because syndicators were able to bid aggressively for partially leased properties due to the tax shelter benefits associated with this type of property.

The continuing growth of investment interest in real estate by domestic pension funds has provided a very competitive market for prime quality investments. The pension funds became more active in 1984 than they

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had been in 1982-83 in response to improved economic conditions, a perception of increasing real estate values as overbuilt space was absorbed, and continuing pressure on pension funds to diversify their investments. Behind their strategy also was a belief that syndicators would not be as competitive as in the past because of the restrictive nature of the 1984 tax act.

IRR

Institutional equity investors in today's market generally seek internal rates of return (IRR) on real estate investments in the 13-15 percent range. To achieve these returns, the inflation assumption for market rental rates must usually average about 5-6 percent per annum over the projected holding period. Real estate equities are an inflation-hedge investment, and the internal rate of return would increase in response to higher growth rates for market rents. The equity investor runs the risk that if inflation rates average less than 5 percent over the holding period, the overall return may be less than could

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have been attained on a more secure mortgage investment in the same property.

There are various forms of investment that seek to combine the benefits of both debt and equity investments, including convertible mortgages, participating mortgages, joint ventures and mortgages with purchase options. The objectives of all these hybrid sophisticated forms of investment are to provide higher initial yields, more predictable income streams and greater security than conventional all-equity purchases. The equity features seek to provide greater inflation-hedge appreciation than is possible with all-debt investments.

There is a very wide range of variations that can be structured among the different investment formats. The basic trade-off in any hybrid investment is current yield versus future appreciation, but each property is unique, and every hybrid investment must be tailored to the economic expectation of the property as well as to the investment goals of the investor.

Income tax considerations play a very important role in the choice of an investment vehicle. While a tax-exempt investor may realize higher overall returns from a mortgage investment, a taxable investor may find the depreciation and interest deductions associated with leveraged real estate equity investments provide higher aftertax returns than could be achieved with any other alternative form of investment.

It is important to consult with tax counsel to determine the extent to which income tax considerations will influence the choice of an investment structure, particularly because the recently passed tax legislation has had a significant impact on real estate investments.

Convertible Mortgages

The convertible mortgage is a debt instrument that has an equity conversion option. During the term of the mortgage, interest is paid as it would be on a conventional mortgage; however, at some specified date in the future, the mortgagee has the option of converting the outstanding balance of the mortgage into a predetermined percentage of ownership in the property.

A convertible mortgage is attractive to a borrower for several reasons: the interest rate is usually somewhat below the rate for conventional mortgages, and the loanto-value ratio is usually higher so the borrower can obtain a greater amount of financing and consequently requires less equity capital. The borrower retains all the tax benefits associated with ownership until the lender exercises the conversion option. The conversion option cannot be exercised until the borrower has exhausted most of the available tax benefits, typically a period of seven to 10 years. The borrower also usually, but not always, retains full management control over the property and is relieved of the cumbersome process of obtaining approvals for management decisions characteristic of a joint venture format. However, once the option is exercised, control usually passes to the lender.

Lenders find convertible mortgages attractive because the lender has the creditor priority of secured debt and an assured immediate income stream from the fixed-rate return on the debt. When the option is exercised, the appreciation in property value can be realized. This position may not only assure a higher IRR over the term, but also provides a good, up-front return as evidence of the quality of the investment. When the option is exercised, the lender usually acquires a controlling interest in a mature property, with the benefit of several years' prior knowledge of the property's operations.

However, if the property does not perform as expected, the lender may have received a below-market, fixed return and have little or no capital appreciation upon exercise of the option. The risk of foreclosure is greater than with a conventional mortgage, because the loan-tovalue ratio is usually higher.

There are two principal legal problems associated with convertible mortgages. The first is referred to as "clogging the equity of redemption" and arises out of certain legal cases that held the option of the mortgagee was not enforceable. In these cases, the borrower was able to simply pay off the outstanding balance of the mortgage, thereby effecting the "equity of redemption" and was relieved of the obligation to sell the property under the option provision.

A second legal problem concerns the enforceability of the option in the event of the borrower's bankruptcy. In general, the trustee in bankruptcy can void the conversion option. Not all states have had cases in which convertible mortgage options were declared void, but many major U.S. lending institutions will not issue convertible mortgage options as a matter of policy. On the other hand, there are numerous lenders who do make convertible mortgages and are willing to accept the legal risks.

Convertible mortgages run the risk of being deemed joint ventures by the Internal Revenue Service, which can cause tax and legal problems for both the lender and the borrower. If deemed a joint venture, the borrower loses some portion of the depreciation and possibly all the interest deductions. While this does not necessarily reduce the economic benefits to the lender, it can create cumbersome accounting problems and increases the legal risks for the enforceability of the conversion option.

Mortgage Plus Option

A mortgage plus an option to acquire an equity interest in a property is similar economically to a convertible mortgage. The lender makes a conventional mortgage loan with a rate that is usually considerably below current market rates. As an inducement to make the mortgage loan, he also receives an option to purchase an equity interest for an additional sum of money.

Unlike the convertible mortgage, the option to acquire an equity interest is usually completely independent of the mortgage instrument, and the mortgage may or may not survive the exercise of the option. Oftentimes the mortgagee effects the exercise of the option by means of an offsetting partial reduction or complete cancellation of the outstanding amount of the mortgage balance at the time the option is exercised. Any circumstance can be readily calculated.

Due to the independence of the option and the mortgage, this form of financing reduces the legal and income tax risks associated with a convertible mortgage.

Two examples of actual transactions are described below, demonstrating the use of debt instruments with additional equity features.

Property A

Property A is a mixed-use complex in a major East Coast city containing more than a million square feet of office, luxury hotel and retail space. The property was planned by a well-known developer as an urban renewal project and was completed in phases during the late 1960s and early 1970s. It was determined that at least \$4 million in new capital was required to support lease-up of the property and the existing investors were unwilling to invest more equity.

The property initially suffered from lack of demand due partially to depressed market conditions and partially to its relative isolation from the existing concentration of prime office space. The real estate fundamentals of the property were attractive, however. The quality of design and construction of the project were excellent; the location was favorable for certain tenants and offered access to bus, subway and airport transportation.

Landauer Associates, Inc. was first retained by the owning corporation to appraise the property and thus became aware of its potential. Subsequently, Landauer structured a transaction to obtain the new infusion of capital from a foreign pension fund. The pension fund's investment was made in the form of a second mortgage loan plus an option to purchase 50 percent of the stock of the owning corporation.

The loan was funded in the mid-1970s, and 20 percent of the proceeds were reserved as security against any deficiency in payment of debt service. The interest rate was 12 percent, and the loan had an intermediate term. Fifty percent of the stock of the owning corporation could be purchased at any time during the term of the loan at a nominal cost, and the loan would be cancelled upon exercise of the option.

Three years later, the loan was partially prepaid, and the loan was restated in a reduced amount. The due date of the loan was extended to a 10-year term as was the period during which the option could be exercised. Whereas the loan originally was cancelled on exercise of the option, under the restatement the loan survived the option exercise. The option was exercised well within the loan term. The remaining 50 percent interest in the stock of the owning corporation was purchased by a foreign pension fund for approximately \$10 million.

The total cost to the pension fund of 100 percent ownership of the property was approximately \$34 million, of which \$14 million was cash and the balance in the form of mortgages on the property. The property was appraised about the time the remaining interest was acquired at a total value of \$56 million of which nearly \$36 million was the equity value and approximately \$20 million was the outstanding balance of the mortgage debt.

It should be noted that the pension fund's investment was of an exceptional nature and resulted from a combination of favorable timing, aggressive investment policies and tough negotiation. While the format of a mortgage plus an option to acquire an equity interest is applicable to other situations, the spectacular returns generated by this specific investment were far in excess of normally expected performance.

Property B

Landauer Associates was retained by a major corporation to sell an office building located in a large metropolitan city. The corporation's objective was to raise the maximum amount of cash, net of taxes and transactional costs.

While major office buildings had sold at very low initial cash-on-cash returns in recent years, prior to the offering of this property, the market at the time reflected lower inflation rate expectations. At the estimated all-cash value for the property, an investor would have realized an initial cash-on-cash yield of about 5 percent, and potential investors expressed some reluctance to invest in real estate equities at such low returns at a time when yields on Treasury bills were in excess of 15 percent and inflation rates were trending downward.

The transaction structured by Landauer, with the assistance of a prominent law firm, successfully met the objectives of both the corporation and the investor market. The transaction raised more cash than would have been obtained from an outright sale and eliminated the necessity for current payment of Federal capital gains taxes.

The investor group purchased a series of unsecured notes from the corporation all of which matured in 10 years and bore interest at 11 percent per annum, payable quarterly in arrears.

Coinciding with the purchase of the notes, the corporation granted an option to purchase the leasehold interest in the building. The option may be exercised by the investor group eight years in the future. The exercise price of the option is the same as the outstanding balance of the notes, thereby facilitating an exercise of the option in exchange for extinguishing the notes. The exercise price of the option (i.e., \$100 plus the cancelled original amount of the loan) is expected to be considerably below the fair market value of the building at the time the option can be exercised, thus seeming to assure the exercise of the option.

The transaction offered a number of advantages to the corporation, the primary advantage being that it provided cheap financing on an after-tax basis. No federal

capital gains tax will be paid until the option is exercised at which time the debt will be cancelled. No mortgage recording tax was paid because the notes were unsecured.

During the life of the notes, the corporation is able to use the cash flow from the property to offset the interest payments made on the notes. The after-tax cost of the transaction to the corporation was estimated at 8 percent, which represented a below-market cost of funds at the time.

The lender group gained the benefit of a substantially higher initial return than would have been the case if the property were purchased outright. However, at the time the option is exercised, the cash flow from the property is expected to exceed the interest payments on the notes by a comfortable margin, and the value of the property is projected to be substantially in excess of the outstanding balance of the notes.

The lender group also has strong management and leasing control through a management contract that provides for a subsidiary of the investor group to be the managing agent for the building. This management arrangement assures the investor group that all management and leasing decisions will be made with the longterm value of the property as the paramount concern, thus maximizing potential appreciation upon exercise of the option.

This transaction can serve as a model for any property sale involving a high-credit, taxable seller and a taxexempt purchaser. It is particularly applicable at those times during the economic cycle when medium-term interest rates are high and near-term property appreciation expectations are moderate. Obviously, unless the unsecured notes are issued by a high-credit entity, the potential of default on the notes would make such a transaction very risky. If the lender has reservations about the borrower's credit status, the loan should then be secured by the property itself. The real estate fundamentals of the property also must be thoroughly analyzed to assure the value will be sufficient to justify eventual exercise of the option. Otherwise, the investor could be left with a below-market return if the option is not exercised and the notes are paid off when due.



COMPONENT CAPITALIZATION

by Gene Dilmore

All right; that does it. I opened a real estate publication, see, and there it was: one more final, ultimate, definitive article on how to get the perfect cap rate. Since fighting fire with fire is reportedly an efficacious response to this sort of thing, I thought, why not avenge these algebraic slings and arrows by inflicting on their authors my own postultimate, metadefinite version of a cap rate? Perhaps "A Final word on . . ."? No, the topic of the last "A Final word on . . ." article in one of our journals has been addressed to date by 149 articles, 14 books, 9 doctoral dissertations, and one presidential prayer breakfast. "A Cap Rate to End All . . ."? No, a slight note of uncharacteristic chutzpah there. So, to cap it all, as it were, let's talk about component capitalization.

Obligatory Acknowledgement Of Roots And Precedents Section

Analysts of real estate have always attempted to live up to their name—breakers-down of things. The efforts to break down an income stream began with breaking it into two components: land and improvements, leading to the building and land residual techniques. Some segments of the market actually did reason in this way; for example, some fast food investors for a while bought on the basis of 10 percent on land and 12 percent on improvements. Generally though, we had too many conceptual reservations about this method, since it did not reflect the market overall. Too, in extracting these



residual rates from comparable sales, the elements were too subject to arbitrary manipulation toward a preconceived conclusion.

Built-up rates, with safe rates, plus rates for non-liquidity and risk also led to a dead end since the safe rate appeared to be the only component amenable to separate measurement, and the components could not be precisely extracted from the market.

The financial structure offered a more logical avenue to breaking down the income stream. Thurston Ross took the first step in this direction¹ by proposing a band of investment method with the capitalization rate comprising an interest rate times the mortgage component plus an equity rate times the equity component.

Edwin Kazdin² improved upon this concept by substituting the mortgage constant for the interest rate, thus recognizing the finite life of the mortgage. L. W. Ellwood³ added consideration of finite life for the equity interest also by accounting for resale along with value appreciation or decline.

Later, Ellwood and others carried this analysis to the point of after-tax equity yield. Further breakdowns of the resulting after-tax internal rate of return were proposed.

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This article is based in part on a section of a paper presented at the Colloquium on a Redefinition of Appraisal Precepts and Practices, Lincoln Institute of Land Policy, 1984, and in part on material in A Contemporary Approach to Real Estate Appraisal and Analysis, Dryden Press, work in progress by James A. Graaskamp and Gene Dilmore.

Donald Valachi⁴ partitioned the internal rate of return into three components: annual cash flows, tax shelter and cash proceeds from the resale. Robert Zerbst⁵ separated the annual cash flow component into the beginning before-tax cash flow and growth (or decline) in the cash flow. He then separated the cash proceeds of sale into the recapture of the original equity investment, equity buildup through loan amortization and expected appreciation in property value, along with the tax shelter component, thus analyzing a total of six components. Valachi meanwhile⁶ recognized the two subcomponents in tax shelter: cash flow shelter and tax loss shelter.

Thus, at various points in the literature we have all of the building blocks for our heptamerous approach to value, and only need to combine and refine them a little in order to capitalize separately each of the seven income components.

An Office Building Example

For a practical example, let's step through a portion of the valuation of a (real) small suburban office building. In this particular case, we have already arrived at a prediction of most probable price using the quality point rating method for the market comparison approach with the value unit being dollars/per guality point/per square foot. This approach has yielded an indication between \$819,000 and \$1,005,000, with most probable price of \$912,000. The use of regression analysis applied to the point rating method gave a range of \$823,500 to \$1,034,500 with prediction of most probable price at \$929,000. Approaching the problem with use of fuzzy set theory, we obtained a prediction of probable price in the range of \$643,500 to \$1,007,500, with most probable price of \$825,000. (The ranges reflect one standard deviation.)

Since the mechanics of the market comparison section of the appraisal are not within the scope of our inquiry, let us pick up at the section in which we begin testing the indication of most probable price by analyzing the income projection for an indication of the justified investment value. The comments that follow will be keyed to the exhibits.

Exhibit 1-Graaskamp's Backdoor Approach

In Exhibit 1, we begin testing the probable price prediction with application of Jim Graaskamp's backdoor approach to justified investment⁷. This is a variant of the income approach in that we establish the amount of income available for debt service resulting in an estimated mortgage amount; then we back into the amount of the equity giving an estimate of the justified investment in the property at \$1,083,000.

Exhibit 2—Revolving Backdoor Approach

Next we use a revolving backdoor giving it a hundred spins. Refining our testing procedure a little, we select the four most crucial variables—potential gross, vacancy rate, operating expense and annual constant,

EXI	HIBIT 1		
Backdoor Approact	h to Justified II	nvestme	ent
Gross Potential Rental			
20,780 sq. ft. @\$10.00			\$207,800
Less Vacancy Allowance 8%	o _		16,624
Effective Gross Rental			\$191,176
Less Operating Expenses:			
R. E. Taxes (.65)	\$13,555		
Insurance (.10)	2,100		
Repairs & Maint. (.10)	2,100		
Utilities (1.50)	31,200		
Cleaning (.50)	10,400		
Management (5%)	9,558		
Garb, Pest	600		
Acctg. misc.	2,400	71,9	13 (3.46)
Net Operating Incom	e		\$119,263
NOI \$119,263/1.20 (Debt Set	ervice Coverage	e Ratio)	=
Available for debt service:	U	\$	99,386
\$99,386/.139877 (annual co	onstant @		
13.5% - 25 yrs) = Mortg	age:	\$	710,500
Plus Equity:			
.25 (equity ratio) × \$119,26	53 (NOI)/.08		
(equity dividend) = Equity:	124 X2	\$	372,500
Justified Investment:	-	\$1	,083,000

EXHIBIT 2

Operating Statement—Monte Carlo Version

Component	Most Likely	High	Low
Pot Gr Rent	\$10	\$11	\$9
Vacancy Rate	.05	.10	.03
Operating Exp	\$3.46	\$4.00	\$3.00
Ann Constant	.139877 ¹	$.149222^{2}$.1353403
¹ 13.5%/25 yrs	² 14%/20 y	rs ³ 13	%/25 yrs
SAMPLE MEAN = $1,1$	40,870		
STD DEVIATION = 4	8,986		
SMALLEST VALUE =	1,006,720		

LARGEST VALUE = 1,242,060

Frequency Distribution

From	То	Freq	Pct	Cum. Pct
0	227,994	0	0	0
227,994	455,988	0	0	0
455,988	683,982	0	0	0
683,982	911,976	0	0	0
911,976	1,139,970	52	52	52
1,139,970	1,367,960	48	48	100
1,367,960	1,595,960	0	0	100
1,595,960	1,823,950	0	0	100
1,823,950	2,051,950	0	0	100
2,051,950	2,279,940	0	0	100
0 DATA 10	22 05 0117	2 46 17 1	20077 (000

10 DATA 10,.33,.05,.0117,3.46,.17,.139877,.0023 50 DATA 1,3,.8

1600 LET V1 = 20780 * X(1)*(1–X(2)) – 20780 * X(3): REM = NOI

1601 LET V2 = V1/1.2: REM = AVAIL FOR DEBT SERVICE

1602 LET V3 = V2/X(4): REM = MTGE

1603 LET V4 = V3 + (.25*V1/.08): REM = JUSTIFIED

INVESTMENT

1604 LET Y = V4

INPUT DATA SUMMARY

MORTGAGE INFORMATION FOR LOAN 1

Initial Mortgage		\$805,600
Mortgage Interest Rate		13.5%
Mortgage Term		25 Years
Mortgage Constant		13.9877%
Periodic Payment		9390.4
Annual Payment		\$112,685
Total Depreciable Assets		\$905,600
Land		\$168,500
Total Investment		\$1,074,100
Total Debt		\$805,600
Initial Equity		\$268,500
Ordinary Income Tax Rate	50%	
Capital Gains Tax Rate	20%	
Safe Rate for Mod IRR	0%	
Reinvest Rate for Mod IRR	0%	
Minimum Reinv Amt for FMRR		\$0
Discount Rate for NPV	0%	

and apply a Monte Carlo program to simulate 100 versions of the possible combinations of these factors.

We have estimated likely values for the four major factors with estimates of the most likely value, the highest and lowest value for each. To demonstrate the straightforward mechanics involved, I have reproduced the pertinent lines in the program. In Line 10 we enter the mean and standard deviation for each of the four variables. In Line 50 we specify an 80% correlation between Variable No. 1 (rent) and Variable No. 3 (operating expenses). In Lines 1600—1604 we state a function, which, after running 100 simulations with random combinations of the stated possible values, will calculate the justified investment in the same manner as the backdoor approach.

This function could have been stated more elegantly in one line, but going through the intermediate steps, with remarks inserted, leaves the process clear for later reference. This technique results in an estimated justified investment of \$1,140,000.

Exhibit 3—Component Discounting-Preliminary Cash Flow

Exhibit 3 is the preliminary step in applying component discounting in the investment analysis of the property, the separate capitalization for each of the seven components of the income stream.

First we tentatively price the property using a safe, or prime, or base or ideal (choose one of the above) aftertax equity yield or IRR. In this case, we select a discount rate of 12 percent, projecting a 20 percent total increase in price over a 10-year projection period and net income increase of one percent per year. This gives a preliminary price indication of \$1,074,000, with initial equity of \$268,500.

DEPRE	CIATION IN	FORMATIC	IN FOR A	SSELL	
Amo	unt Depreci	able			\$905,600
Depr	reciable Life				18 Years
Depreciation Method				St	traight Line
Non-recurring 1st Year Exp 0				0	
Commi	ission Pate (n Recale		6%	
Crowth	Batos (%)	Compoundor		0.10	
Growtr	i Kates (% C	.ompounded	a Annually	1.04	
Prop	erty value			1.84	
Net	Operating Ir	ncome		1	
	Net				
	Operating	Interest	Princ	ipal	Before Tax
Year	Income	Expense	Amortia	zation	Cash Flow
1	119.263	108.503	4.1	82	6.578
2	120,456	107 902	4 7	83	7 771
2	121,660	107 215	5.4	70	8 975
1	122,000	106 429	6.7	55	10,192
4	122,077	105,429	0,2	55	11,192
5	124,106	105,531	7,1	00	11,421
6	125,347	104,503	8,1	82	12,662
7	126,600	103,327	9,3	58	13,915
8	127,866	101,983	10,7	02	15,181
9	129,145	100,445	12,2	40	16,460
10	130,436	98,687	13,9	98	17,751
	Dopraci				
	ation	Tavable	Tax Sa	vings	After Tax
Vear	Evnense	Income	(-Payn	pent)	Cash Flow
1	50.211	20 551	10.7	76	26.254
1	50,511	-39,331	19,7	70	20,334
2	50,311	-37,758	18,8	/9	26,650
3	50,311	-35,866	17,9	33	26,909
4	50,311	-33,864	16,9	32	27,124
5	50,311	-31,736	15,8	68	27,289
6	50,311	-29,467	14,7	34	27,395
7	50,311	-27,038	13,5	19	27,434
8	50,311	-24,428	12,2	14	27,395
9	50.311	-21.611	10.8	06	27.266
10	50.311	-18.562	9.2	81	27.032
	c. U			P 4 1	ci . 1.1
	Selling Pri	ce Mor	tgage A	djusted	Straight
Year	After Com	nisn Bala	ance Ta	IX Basis	Line Basis
1	1,028,23	80 801	,415 1,0	023,790	855,289
2	1,047,15	i0 796	,633 9	973,478	804,978
3	1,066,42	20 791	,163 9	923,167	754,667
4	1,086,04	0 784	,908 8	372,856	704,356
5	1,106,02	20 777	,754 8	322,544	654,044
6	1,126,37	0 769	,572 7	72,233	603,733
7	1.147.10	0 760	.214 7	21,922	553,422
8	1 168 21	0 749	512 6	71,611	503,111
9	1 189 70	0 737	273 6	21 300	452 800
10	1 211 50	0 733	274 5	70 989	402 489
10	1,211,35	10 123	,2/4 5	10,505	402,405
		Recapture			Int ROR
	Total	Depreci-	Tax On	After Tax	On Init
Year	Gain	ation	Sale	Proceeds	Equity
1	4,443	0	889	225,928	-6.04%
2	73,673	0	14,735	235,783	3.89%
3	143.252	0	28,650	246,605	7.39%
4	213.185	0	42.637	258,495	9.14%
5	283 479	0	56,696	271.574	10.17%
6	354 141	ő	70 828	285 974	10.85%
7	425 178	0	85 036	301.850	11 30%
Q	496 595	0	99 310	319 375	11 61%
9	568 401	0	113 680	338 748	11.83%
			11.0000	JJU/ TU	11.0.0 /0

128,121

0

360,197

12.01%

10

640,603

Exhibit 4—Partitioning The Return-Assigning Rates

Now we partition the return into its seven components: (1) return of original equity investment; (2) growth of equity from amortization; (3) growth of equity from value appreciation; (4) value of cash flows at first year level; (5) growth or decline of cash flow stream; (6) tax shelter of subject's cash flow; and (7) tax shelter of external income. With each component, we gingerly differentiate between before-tax and after-tax returns.

Now that we know the contribution of each of these components to the return, we can assign separate appropriate discount rates to each component. For example, we feel (or the client feels) that return of the original equity is a pretty sure thing, so we assign the base rate of 12 percent to this component. On the other hand, tax shelter of other income may appear not only more chancy but not as important; we assign 16 percent to this component of this program is an adjusted after-tax discount rate which combines and properly weights each of these seven separate discount rates, giving a weighted IRR of 13.6 percent.

If the objective of the valuation is to estimate value to the market in general, we would still have posited a *most* probable purchaser, and it would behoove us to consider

EXHIBIT 4

This program partitions the Internal Rate of Return and the Equity Investment into their 7 components:

- 1. Return of original equity investment.
- 2. Growth of equity from amortization.
- 3. Growth of equity from value appreciation.
- 4. Value of cash flows at 1st year level.
- 5. Growth (decline) of cash flow stream.
- 6. Tax shelter of subject's cash flow.
- 7. Tax shelter of external income.

For subject, the return is partitioned as follows:

Component	Equity—\$	Equity — %	IRR	
1. Return Orig eq	\$ 86,450	0.3220	0.0386	
2. Eqty grwth frm amort	\$ 26,516	0.0988	0.0119	
3. Eq grwth (decl) frm appr	\$ 3,008	0.0112	0.0013	
4. Csh Flw @ 1st yr lvl	\$ 18,584	0.0692	0.0083	
5. Grwth (decl) of csh flw	\$ 12,369	0.0461	0.0055	
6. Tax shltr of sub csh flw	\$ 30,953	0.1153	0.0138	
7. Tax shltr of other inc	\$ 90,633	0.3376	0.0405	
	\$268,513	1.0000	0.1200	

The individual IRR's assigned to the components reflect rates adjusted upward for risk.

The final weighted IRR is a risk-adjusted internal rate of return.

Component	% of IRR/ Equity	IRR	Weighted IRR
1. Return orig eq	0.3220	0.1200	0.0386
2. Eqty grwth from amort	0.0988	0.1250	0.0123
3. Eq grwth (decl) frm appr/dep	0.0112	0.1300	0.0015
4. Csh flw @ 1st yr lvl	0.0692	0.1200	0.0083
5. Grwth (decl) of csh flw	0.0461	0.1400	0.0064
6. Tax shltr of sub csh flw	0.1153	0.1300	0.0150
7. Tax shltr of other inc	0.3376	0.1600	0.0540
			0.1362

how this most probable purchaser would look at each of these components of that value.

Exhibit 5—Partitioning-Assigning Weights

The program gives two options. The first, shown in Exhibit 4, lets us assign rates to each component. The other option, shown in Exhibit 5, lets us assign weights, or probabilities, to each component. We can look at this as the probability of receiving this component or as a measure of its desirability. In this instance, we are saying we are 100 percent sure of receiving the cash flow at its first year level—or that it *matters* 100 percent to us. On the other hand, we assign only an 80 percent probability to the chance of receiving return generated by growth of the cash flow—or we can say we are weighting its value at only 80 percent. I believe thinking of these as weights rather than probabilities may be a more accurate concept since this would obviate possible confusion in consideration of the occasional negative components.

Exhibit 6-Partitioning-Eliminating A Component

Exhibit 6 shows another function of the partitioning

EXHIBIT 5

This program partitions the Internal Rate of Return and the Equity Investment into their 7 components:

- 1. Return of original equity investment.
- 2. Growth of equity from amortization.
- 3. Growth of equity from value appreciation.
- 4. Value of cash flows at 1st year level.
- 5. Growth (decline) of cash flow stream.
- 6. Tax shelter of subject's cash flow.
- 7. Tax shelter of external income.

For subject, the return is partitioned as follows:

Component	Equity—\$	Equity — %	IRR
1. Return Orig eq	\$ 86,450	0.3220	0.0386
2. Eqty grwth frm amort	\$ 26,516	0.0988	0.0119
3. Eq grwth (decl) frm appr	\$ 3,008	0.0112	0.0013
4. Csh Flw @ 1st yr lvl	\$ 18,584	0.0692	0.0083
5. Grwth (decl) of csh flw	\$ 12,369	0.0461	0.0055
6. Tax shltr of sub csh flw	\$ 30,953	0.1153	0.0138
7. Tax shltr of other inc	\$ 90,633	0.3376	0.0405
	\$268,513	1.0000	0.1200

The weights assigned to the return components may be considered either as the probability of receiving each component of the return, or as a rating of the component as to its attraction for the most probable investor. Ratings are on a scale of 0 to 1.

The final weighted IRR is a risk-adjusted internal rate of return.

Component	% of IRR/ Equity	Weight	Weighted IRR
1. Return orig eq	0.3220	1.0000	0.0386
2. Eqty grwth from amort	0.0988	0.9500	0.0113
3. Eq grwth (decl) frm appr/dep	0.0112	0.9000	0.0012
4. Csh flw @ 1st yr lvl	0.0692	1.0000	0.0083
5. Grwth (decl) of csh flw	0.0461	0.8500	0.0047
6. Tax shltr of sub csh flw	0.1153	0.9000	0.0125
7. Tax shltr of other inc	0.3376	0.7500	0.0304
			0.1069
Risk-adjusted IRR:			0.1347

EXHIBIT 6

This program partitions the Internal Rate of Return and the Equity Investment into their 7 components:

- 1. Return of original equity investment.
- 2. Growth of equity from amortization.
- 3. Growth of equity from value appreciation.
- 4. Value of cash flows at 1st year level.
- 5. Growth (decline) of cash flow stream.
- 6. Tax shelter of subject's cash flow.
- 7. Tax shelter of external income.

For subject, the return is partitioned as follows:

Component	Equity—\$	Equity — %	IRR
1. Return Orig eq	\$ 86,450	0.3220	0.0386
2. Eqty grwth frm amort	\$ 26,516	0.0988	0.0119
3. Eq grwth (decl) frm appr	\$ 3,008	0.0112	0.0013
4. Csh Flw @ 1st yr lvl	\$ 18,584	0.0692	0.0083
5. Grwth (decl) of csh flw	\$ 12,369	0.0461	0.0055
6. Tax shltr of sub csh flw	\$ 30,953	0.1153	0.0138
7. Tax shltr of other inc	\$ 90,633	0.3376	0.0405
	\$268,513	1.0000	0.1200

The weights assigned to the return components may be considered either as the probability of receiving each component of the return, or as a rating of the component as to its attraction for the most probable investor. Ratings are on a scale of 0 to 1.

The final weighted IRR is a risk-adjusted internal rate of return.

Component	% of IRR/ Equity	Weight	Weighted IRR
1. Return orig eq	0.3220	1.0000	0.0386
2. Eqty grwth from amort	0.0988	1.0000	0.0119
3. Eq grwth (decl) frm appr/dep	0.0112	1.0000	0.0013
4. Csh flw @ 1st yr lvl	0.0692	1.0000	0.0083
5. Grwth (decl) of csh flw	0.0461	1.0000	0.0055
6. Tax shltr of sub csh flw	0.1153	1.0000	0.0138
7. Tax shltr of other inc	0.3376	0.0000	0.0000
			0.0795
Risk-adjusted IRR:			0.1811

program. Suppose the investor wants to know what investment is justified if he entirely eliminates one of the return components from consideration. Let's assume he can meet the down payment but would expect the investment to supply virtually his only income, and tax shelter of other income is simply of no value to him.

By assigning this component a weight of zero, we find that he would have to price the property on the basis of an 18 percent after-tax return. The net effect in this specific case, of course, would be to remove him from serious competition to purchase this building since this would be unacceptable to the seller. A point is illuminated however: the various return components do place properties into entirely different markets for different investors, and although the property is marketable, the investor we have described has no business buying this particular property. A crude overall rate or an unpartitioned IRR would not tell us this.

Exhibit 7-Stochastic Component Discounting

Exhibit 7 shows a combination for partitioning the return with a stochastic selection of the weighted internal rate

of return to be applied to the components. (Perhaps you feel we have now advanced from a backdoor approach to a second-story window approach.) We may assign, as shown here, most likely, high and low estimates of the internal rate or, alternatively we may assign a standard deviation to the return for each component.

A rough rule of thumb suggests 20 iterations per variable. With 140 simulations, then, we obtain a distribution with a mean of 13.6 percent. The extreme range, given the parameters assigned by the analyst, is from a low of 12.6 percent to a high of 14.8 percent with a standard deviation of 0.37 percent.

Exhibit 8—Stochastic Component Discounting-"As Much As"

In Exhibit 8 we see the output of an alternative approach to applying Monte Carlo simulation to the selection of a weighted partitioned rate of return.

In this version, we assign probabilities for the possible rates of return in the categories of 1, .9, .5, .1, and 0. In other words, we say (Line 62050) it is absolutely certain (probability 1.0) that, for Component 1, Return of Original Equity, we will accept a return *as much as* 14 percent and price the component on that basis; we say there is a 90 percent probability we will accept a 13 percent return and price the component accordingly, and so on, until we say there is no likelihood (probability 0.0) we would accept 10 percent.

If we feel more confident with this type of probability

EXHIBIT 7 Stochastic Component Discounting Assigned IRR for Component Most Component % of IRR/Eqty Likely High Low 1. Return orig eq 0.3220 .12 .13 .11 2. Eq grth amort 0.0988 .125 .135 115 0.0112 3. Eq frm app/dep .13 .15 12 4. Csh flw 1st yr 0.0692 .12 .13 .115 5. Grwth csh flw 0.0461 .14 .17 .12 6. Tx shltr sub 0.1153 .13 .14 .12 7. Tx shltr oth .16 0.3376 20 14 Monte Carlo simulation, 140 iterations:

Monte Carlo simulation, 140 iterat

SAMPLE MEAN = 13.5873STD DEVIATION = .366154

SMALLEST VALUE = 12.5535

LARGEST VALUE = 14.8471

Frequency Distribution

From	То	Freq.	Pct.	Cum. Pct.
0	2.72418	0	0	0
2.72418	5.44836	0	0	0
5.44836	8.17254	0	0	0
8.17254	10.8967	0	0	0
10.8967	13.6209	79	56.4286	56.4286
13.6209	16.3451	61	43.5714	100
16.3451	19.0693	0	0	100
19.0693	21.7934	0	0	100
21.7934	24.5176	0	0	100
24,5176	27.2418	0	0	100

	EXHIBI	Г 8
	Statistics for 7 Runs of	30 Samples Each
	Seed =	78
Run	Avg. Outcome	Std. Devn
1	13.7424	.779893
2	13.9983	.616565
3	13.6373	.545886
4	13.552	.668133
5	13,5515	539049
7	13.6655	.579242
Av	yg = 13.6952	Std Devn = $.156822$
O	UTCOMES FOR 210 SAMPLES	5. SEED = 78
% Ch	ance Outcome Will Exe	ceed
10	0 12.4641	
90	12.806	
80	13.097	
70	13.3285	
60	13.4654	
50	13.7091	
40	13.8715	
30	14.0073	
20	14.1789	
10	14.391	
0	14.9463	
Avg =	13.6952	Std Devn = $.613288$
31020	SO	
= A	$A^*.322 + B^*.0988 + C^*.0112$	2 + D*.0692 + E*.0461
+ F*	1153+G*.3376	
62040	DATA 1 , .90, .50, .10	0, 0
62050	DATA 14,13,12,11,10	
620/0	DATA 1,.90,.50,.10,0	
62080	DATA 14.5,13.5,12.5,11.3	5,10.5
62100	DATA 1, 90, 50, 10,0	
62110	DATA 1 90 50 10 0	
62130	DATA 1, 13 12 11 10	
62140	DATA 1 9 5 10	
62160	DATA 16 15 14 13 12	
62165	DATA 1 9 5 10	
62167	DATA 15 14 13 12 11	
62170	DATA 1.9.5 10	
62180	DATA 20,18,16,14,12	

ranking—and many people do (probably)—this may be a preferable Monte Carlo procedure. This method also makes a number of smaller runs and combines them in order to reduce the standard deviation. With this approach, we get a weighted IRR of 13.7 percent with a very tight range of 13.53 percent to 14 percent, and a standard deviation of 0.157 percent.

Exhibit 9—Pricing The Property With Weighted Component Rate

Let's suppose we are comfortable with the adjusted IRR from individual component discounting of 13.6 percent. Our next step is to price the property on this basis, as shown in Exhibit 9, giving an indicated price of \$993,500 under the terms we have previously assigned.

Whether the appraiser considers this as an independent value indication from the income approach, or as a testing of the probable price indicated by analysis of the market data, is a matter of individual choice. In either case, a report section on externalities should follow these calculations giving consideration to the external factors (money markets, investor moods, political contingencies, local phenomena altering market expectations, etc.) which can push the indicated price in either direction.

Exhibit 10—A Final Projection

Suppose the client now wants to make an offer on the property of \$1,000,000, under some specific conditions, and would like to know the probable outcome of its income productivity.

Using the procedures described in the shopping center analysis in *Quantitative Techniques in Real Estate Counseling*, pages 204-220⁸, we now use a few optional features in our cash-flow program for a more detailed analysis of the investment. An after-tax safe rate is added along with a specified reinvestment rate for computation of a modified internal rate of return. A discount rate for *net present value* is included, and a minimum reinvestment amount is set for calculation of a *modified financial management rate of return*. (The modification omits borrowing from the immediate preceding year's positive cash flow to compensate for a negative cash flow. Instead, any negative cash flows are discounted to the single beginning point and added to the equity investment.)

This time, instead of assuming a growth rate for the property resale value, the resale value is determined by a *terminal cap rate*. Separate growth rates for gross income and operating expenses are specified.

Since the outputs are routine, down through the internal rate of return calculation, look only at the columns following the internal rate: the first nine additional ratios, aside from their descriptive value in regard to a particular year's operation, also serve a more important function as tests for the reasonability and consistency of the assumptions and premises of the projections. Any sudden jumps or unusual appearing results in these ratios (expense ratio declining to 7 percent, breakeven point of 110 percent, 12th year OAR of 3 percent, net income increasing 12 percent per year, three-year payback, etc.) are strong indicators of possible inconsistency in the assumptions made in outlining the projection, such as the rate of change in resale value, the terminal cap rate, changes in gross income or expenses, etc.

The measures include overall rate, equity dividend, debt service coverage, breakeven point, expense ratio, gross income multiplier, payback on a total value basis, payback of equity on a before-tax basis and payback of equity on an after-tax basis. The OAR column relates current NOI to the original price, since the yearly resale price is that year's income capitalized at a stated cap rate.

EXHIBIT 9

Montclair Road Office

INPUT DATA SUMMARY

MORTGAGE INFORMATION FOR LOAN 1

Initial Mortgage	\$745,000
Mortgage Interest Rate	13.5%
Mortgage Term	25 Years
Mortgage Constant	13.9877%
Periodic Payment	8684.05
Annual Payment	\$104,209
Total Depreciable Assets Land	\$825,000 \$168,500
Total Investment	\$993.500
Total Debt	\$745,000
Initial Equity	\$248,500
Ordinary Income Tax Rate	50%
Capital Gains Tax Rate	20%
Safe Rate for Mod IRR	0%
Reinvest Rate for Mod IRR	0%
Minimum Reinv Amt for FMRR	\$0
Discount Rate for NPV	0%

Next we have a *modified IRR* which discounts any negative cash flows at the safe rate, to increase the beginning equity; a *modified IRR with reinvestment* has the additional feature of reinvestment at a specified rate; the *modified FMRR* accounts for the minimum investment accumulation which can be reinvested.

The next column calculates net present value; we derive the annualized net present value, a measure suggested by Larry E. Wofford and Lawrence J. Gitman⁹, dividing the NPV by the annuity factor for that year. This risk measure reflects the maximum amount by which the cash flow in each year could be reduced without reducing net present value below zero, or reducing the rate of return below the specified rate of return used in calculating net present value. This is followed by the Risk Absorption Ratio column which converts the annualized NPV to a relative measure by dividing the annualized NPV by the beginning equity. This gives us a comparison on the basis of risk, as well as return, either with alternative properties or with alternative assumptions for the subject property. The final column is the familiar Profitability Index.

Now we can report to the client some specific probable outcomes based on the stated assumptions: NPV becomes positive in five years; there is no taxable income until the eighth year; about the eighth or ninth year the IRR stabilizes at around 16 percent; the equity is paid back in the eighth year, and so on.

The Seven-fold Way: Conclusions

Using seven cap rates rather than one generates a good many numbers, but numbers are the appraiser/ counselor's basic raw material and, once processed, the essential final product. The microcomputer makes the

Amo	ount Deprec	lable				\$825,00	0
Dep	preciable Life	5				18 Years	
Dep	preciation M	ethod				Straight Lin	e
Non-re	ecurring 1st	Year Ex	KD.			0	
Comm	ission Rate	on Resa	ale			69	6
Growt	h Rates (% (Compoi	inded A	nnually	()	07	Ĭ
Pror	nerty Value	compor	anaca / t	maany	/	1.8	1
Not	Operating l	ncomo				1.0	1
rici	Operating in	ncome					
	Net						
	Operating	Inter	est	Princ	ipal	Before Tax	
Year	Income	Exper	nse	Amortiz	ation	Cash Flow	
1	119,263	100,3	342	3.8	67	15.054	
2	120,456	99.7	786	44	23	16 247	
3	121,660	99 1	51	5.0	58	17 452	
4	122 877	98.4	124	5 7	85	18 668	
5	124 106	97 5	303	6.6	16	10,000	
6	125 347	06 6	.40	7.5	67	13,037	
7	125,547	90,0 05 5	042 	1,5	0/ E 4	21,150	
0	120,000	95,5	12	0,0	54	22,391	
8	127,866	94,3	512	9,8	97	23,657	
9	129,145	92,8	390	11,3	19	24,936	
10	130,436	91,2	263	12,9	45	26,228	
	Depreci-						
	ation	Taxal	ble	Tax Say	vings	After Tax	
Year	Expense	Incor	ne	(-Paym	ent)	Cash Flow	
1	45 833	-26.9	12	13.4	56	28 510	
2	45 833	-25.1	64	12 5	82	28,879	
3	45 833	_23 3	24	11.6	62	20,023	
4	45,833	213	80	10.6	02	29,113	
5	45,000	10.2	20	0,0	60	29,330	
5	45,055	-19,5	20	9,0	60	29,557	
0 7	45,055	-1/,1	29	0,5	04	29,702	
0	45,035	-14,7	00	1,3	94	29,786	
8	45,833	-12,2	.79	6,1	39	29,797	
9	45,833	-9,5	/8	4,/	89	29,725	
10	45,833	-6,6	61	3,3.	30	29,558	
	Selling Pri	ce	Mortgage	e Ad	liusted	Straight	
Year	After Com	nisn	Balance	Та	x Basis	Line Basis	
1	951.07	4	741 133	94	7 667	779 167	
2	968.57	73	736.710	90	1.833	733 333	
3	986.39	95	731.652	2 85	6.000	687,500	
4	1,004,54	10	725,867	81	0,167	641.667	
5	1,023,03	0	719,251	76	4,333	595,833	
6	1,041,85	0	711,685	5 71	8,500	550,000	
7	1,061,02	20	703,031	67	2,667	504,167	
8	1,080,54	0	693,134	62	6,833	458,333	
9	1,100,43	0	681,815	58	1,000	412,500	
10	1,120,67	0	668,870) 53	5,167	366,667	
		Recaptu	re			Int ROR	
	Total	Deprec	i- Tax	on	After Tax	ON Init	
Year	Gain	ation	Sa	le	Proceeds	Equity	
1	3,407	0		681	209 259	-4 32%	
2	66,740	-0	13.	348	218.515	5.67%	
3	130,395	-0	26.	079	228.664	9.16%	
4	194,378	-0	38,	876	239,802	10.89%	

DEPRECIATION INFORMATION FOR ASSET 1

51,739

64,670

77,671

90,742

103,885

117,101

252.038

265,497

280.320

296,669

314,726 334,703 11.90%

12.54%

12.97%

13.26%

13.46%

13.60%

5

6

7

8

9

10

258.695

323,352

388,355

453,711

519,426

585,508

-0

-0

-0

-0

-0

-0

				EXHI	BIT 10				
				Montclair I	Road Off	ice			
INPUT	DATA SUMMAR	Y				Net			
MORTC	AGE INFORMAT	tion for L	OAN 1			Operating	Interest	Principal	Before Tax
Initial	Mortgage			\$750,000	Year	Income	Expense	Amortization	Cash Flow
Mortg	age Interest Rate			13.5%	1	119,263	101,015	3,893	14,355
Mortg	age Term			25 Years	2	125,069	99.816	4,452	21 985
Mortg	age Constant			13.9877%	4	130,720	99,010	5 824	25,813
Period	lic Payment			8742.3	5	134,539	98.247	6,660	29,631
Annu	al Payment			\$104,908	6	138,330	97,290	7,617	33,423
TILD				¢031.500	7	142,077	96,196	8,712	37,169
Total De	epreciable Assets			\$831,500	8	145,757	94,944	9,963	40,850
Land				\$168,500	9	149,348	93,513	11,395	44,440
Total In	vestment			\$1,000,000	10	152,822	91,876	13,032	47,914
Total De	ebt			\$750,000	11	156,150	90,003	14,904	51,243
Initial Ed	quity			\$250,000	12	159,300	87,862	17,046	54,392
Ordinar	v Income Tax Ra	te	509	10	13	162,235	85,413	19,495	57,327
Canital	Gains Tax Rate	ite.	200	lo	14	164,914	82,612	22,296	60,006
Safe Rat	a for Mod IRR		20.	6	15	167,292	79,408	25,499	62,384
Dainwood	Pata for Mod IE	D	120	~0 /		Depreci-			
Minimu	m Rainu Amt for		13.	¢ 250 000		ation	Taxable	Tax Savings	After Tax
Minimu	In Keiny Amt Ior	FINKK	1.20	\$250,000	Year	Expense	Income	(-Payment)	Cash Flow
Discour	it kate for INPV		13	/0	1	46,194	-27,946	13,973	28,328
DEPREC	IATION INFORM	MATION FO	R ASSET 1		2	46,194	-23,581	11,790	29,952
Amoi	int Depreciable			\$831 500	3	46,194	-19,118	9,559	31,543
Denre	ciable Life			18 Years	4	46,194	-14,558	7,279	33,092
Depre	ciation Method			Straight Line	5	46,194	-9,903	4,952	34,583
Depre				Strangint Enric	6	46,194	-5,154	2,577	36,000
Non-rec	urring 1st Year E	.xp.		0	7	46,194	-313	157	37,326
Commis	sion Rate on Res	sale		6%	8	46,194	4,619	-2,309	38,540
Vacance	y Rate	a 14 100	9-41 IO	8%	9	46,194	9,640	-4,820	39,620
Growth	Rates (% Compo	ounded Ann	ually)		10	46,194	14,/52	-/,3/6	40,538
Prope	rty Value: Curre	nt NOI @		12%	10	46,194	19,955	-9,976	41,200
Poten	tial Gross Incom	e		5	12	46,194	20,244	-12,022	42 013
Opera	ating Expenses			8	14	46,194	36 107	-18.054	41 952
					15	46,194	41,689	-20,845	41,540
						Colling Dr	ing Man	asaa Adiustad	Causiaha
					Voor	Selling Pr	nice Mor	gage Adjusted	Straight
	Potential	Vacancy	Misc.	Operating	Tear	Alter Collin	111511 Date	104 052 000	705 200
Year	Gross Income	Allowance	Income	Expenses	1	934,2	27 740	,104 955,000	705,300
1	207,800	16,624	0	71,913	2	964,0	56 741 20 7 26	,652 907,611	/39,111
2	218,190	17,455	0	77,666	3	993,98	38 /36	,560 861,417	692,917
3	229,099	18,328	0	83,879	4	1,023,98	30 /30	,736 815,222	646,/22
4	240,554	19,244	0	90,590	5	1,053,89	90 724	,076 769,028	600,528
5	252,582	20,207	0	97,837	6	1,083,59	90 716	,458 722,833	554,333
6	265,211	21,217	0	105,664	7	1,112,94	40 707	,747 676,639	508,139
7	278,472	22,278	0	114,117	8	1,141,7	70 697	,783 630,445	461,944
8	292,395	23,392	0	123,246	9	1,169,89	90 686	,388 584,250	415,750
9	307,015	24,561	0	133,106	10	1,197,10	00 673	,356 538,056	369,556
10	322,365	25,789	0	143,754	11	1,223.18	658	,452 491,861	323,361
11	338,484	27,079	0	155,255	12	1,247.8	50 641	406 445.667	277.167
12	355,408	20,433	0	107,075	13	1.270.8	40 621	911 399 472	230 972
1.4	3/3,1/8	29,004	0	101,009	14	1 291 8	20 599	615 353 278	184 778
14	411 420	31,34/	0	011000	15	1 310 4	50 574	116 207 082	138 583
15	411,427	52,914	0	211,222	15	1,510,4.	5/4	,110 307,003	200,001
								continue	u on page 26

separate analysis of the seven income components a practicable approach to the capitalization of income.

Moreover, this approach spotlights points about the income stream which are not apparent without totally partitioning the return. For example, one analysis of an apartment project in which the client thought residual value and amortization were substantial factors, showed 105 percent of the projected return was from the tax shelter components with some of the other elements making negative contributions to the return. Like a doctor's proper diagnosis, this did not necessarily cast a ray of sunshine on the client's day, but knowing it now was better than knowing it four or five years later. Seven cap

EXHIBIT 10—continued from page 25

	R	Recapture			Int ROR	Year	Pybk Eqbt	Pybk Eqat	Mod Irr	Mod W/Rein	FMRR
	Total	Depreci-	Tax on	After Tax	On Init	1	5.74%	11.33%	-11.86%	-11.85%	-11.85%
Year	Gain	ation	Sale	Proceeds	Equity	2	13.01%	23.31%	4.02%	4.51%	4.29%
1	-19,579	0	-3,916	192,038	-11.86%	3	21.80%	35.93%	9.63%	9.97%	9.56%
2	56,427	0	11,285	211.101	4.02%	4	32.13%	49.17%	12.32%	12.42%	11.85%
3	132,572	0	26,514	230,914	9.63%	5	43.98%	63.00%	13.82%	13.67%	12.96%
4	208,754	-0	41,751	251,489	12.32%	6	57.35%	77.40%	14.73%	14.35%	13.51%
5	284,858	-0	56,972	272,838	13.82%	7	72.21%	92.33%	15.29%	14.71%	13.76%
6	360,755	-0	72,151	294,979	14.73%	8	88.55%	107.75%	15.64%	14.90%	14.90%
7	436,297	-0	87,259	317,930	15.29%	9	106.33%	123.59%	15.86%	14 98%	14 98%
8	511,321	-0	102,264	341,718	15.64%	10	125 50%	139.81%	15 99%	14 99%	14 99%
9	585,640	-0	117,128	366,373	15.86%	11	145 99%	156.32%	16.06%	14.96%	14.96%
10	659,049	-0	131,810	391,938	15.99%	12	167 75%	173.02%	16.08%	14.90%	14.90%
11	731,315	-0	146,263	418,462	16.06%	13	190.68%	189.83%	16.07%	14.90%	14.90%
12	802,183	-0	160,437	446,007	16.08%	14	214 68%	206.61%	16.03%	14.05%	14.05%
13	871,365	-0	174,273	474.654	16.07%	15	239.64%	200.01%	15.00%	14.66%	14.75%
14	938,546	-0	187,709	504,499	16.03%	15	233.0470	223.2370	13.3370	14.00 %	14.00 /0
15	1.003.370	-0	200.674	535,664	15.99%	Year	N	ipv Anr	n Npv	Ra	Pi
1.5	,,000,0,0		200,07	-	13.3370		1 -54	1,985 –62	2,133 –	24,853%	78.01%
	0 5 0	6		Exp			2 -36	6,151 –21	,672 -	-8.669%	85.54%
Year	Oar Eq Div	Cov	Brkevn	Ratio Gim	n Pybktot		3 -19	9,578 -8	3,292 -	-3.317%	92.17%
2	12210/ 7260/	117.00%	85.09% 3	9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4 9 4	2 10.21%		4 -5	5,074 –1	,706 -	-0.682%	97.97%
2	12.31/0 7.20/0	120.96%	82 40% 2	0.09% 5.30	20.74%		5 7	7,539	2,143	0.857%	103.02%
4	13.07% 10.33%	120.50%	81 27% 4	0.93% 4.86	J J1.00%		5 18	3,428 4	4,610	1.844%	107.37%
5	13 45% 11 85%	128.24%	80 27% 4	2 10% 4.63	54 30%		/ 2/	(,750 E	5,274	2.510%	111.10%
6	13.83% 13.37%	131.86%	79.40% 4	3.31% 4.41	66.14%		D 30 D 41	0,040	,429	2.9/1%	114.26%
7	14.21% 14.87%	135.43%	78.65% 4	4.54% 4.20	78.30%	1	9 42 D 47	7,200 0 7,600 9	2,234 2,790	3.294 %	110.90%
8	14.58% 16.34%	138.94%	78.03% 4	5.82% 4.00	90.77%	1	1 50	,033 (0,0	9,750	3.664%	120.84%
9	14.93% 17.78%	142.36%	77.53% 4	7.12% 3.81	103.55%	1	2 50	530	384	3 753%	122.21%
10	15.28% 19.17%	145.67%	77.14% 4	8.47% 3.62	2 116.63%	1	3 58	3.118	9.494	3.797%	123.25%
11	15.62% 20.50%	148.85%	76.86% 4	9.86% 3.45	5 129.99%	1.	4 59	9.942	9.511	3.804%	123.98%
12	15.93% 21.76%	151.85%	76.70% 5	1.28% 3.29	9 143.63%	1	5 61	,080	9,452	3.781%	124.43%
13	16.22% 22.93%	154.65%	76.64% 5	2.75% 3.13	8 157.51%			15	12		
14	16.49% 24.00%	157.20%	76.69% 5	4.25% 2.98	3 171.62						
15	16.73% 24.95%	159.47%	/6.84% 5	5.80% 2.84	185.94%						

rates are better than one when they are applied to the portion of return attributable to each component, for those components clearly reflect varying levels of risk for the majority of investors.

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REQUIEM FOR LARGE-SCALE MODELS IN REAL ESTATE ANALYSIS

by Dominique Achour

Requiems now have established a decennial quasitradition in urban economic literature. In 1964 John Reps¹ attacked traditional modes of land use controls and heralded the use of mathematical and computer models. In 1974, Douglas B. Lee² voiced general dissatisfaction with such constructs and announced his own requiem for large-scale models. In this article we are simply following up and suggesting a requiem for large-scale computer models in real estate analysis. But the analogy should not be carried too far. We do not suggest formal models in real estate valuation and analysis will disappear, neither do we question the validity of the existing paradigm — the discounted cash-flow equity models. What we simply want to report is a significant change in the form of the design, writing and use of computer models. First we will define, describe and criticize the available large-scale computer models, and then stress the advantages of small-scale general spreadsheet types of computing procedures.

Large Scale Models For Real Estate Investment Analysis

In the last 10 years, a number of computer models have been developed in U.S. and Canadian university departments where real estate is being taught. An even greater number of similar products have been commercialized by private software firms.³ All these models are variations around the standard discounted cash-flow analysis; thus the term large-scale model, as used here, does not allude to their scope but only to form and programming medium. Large-scale models mostly are used on mainframe computers and are written in traditional languages (Fortran, APL or Basic); thus they require



large machines and large programs (up to 10,000 statements). Their power and efficiency comes with their size, but also causes their weaknesses.

The Albatross Syndrom

Complexity

Conceptually simple, discounted cash-flow analysis does require extensive programming modeling of various complex subroutines to deal with the aspects of taxation and financing. The very nature of income tax legislation, particularly the necessary relationships between tax regulations, depreciation schedules and financing options, imposes the use of interlocking routines and creates interesting programming problems. In their final forms, adorned by sundry bells and whistles, discounted cashflow models are arcane enough to discourage scrutiny from users moderately trained in programming.

Immutability

Because of their complexity, large-scale models are not amenable to tinkering. Authors and programmers tend to exhibit a fairly conservative attitude when major, or even

Dominique Achour, Ph.D., is a full professor of real estate and urban management at Laval University in Quebec, Canada, and is the author of numerous articles and textbooks in the area of urban economics, real estate finance and appraisal theory. He pioneered the use of large-scale real estate computer models in the late 60s, and now is adapting his instruments to a more congenial programming environment.

minor, changes are suggested. Because of the tightly knit nature of such models, they tend to be error-prone since minor changes may generate frustrating domino effects. Since, for tax-related reasons, real estate models have a high rate of obsolescence, the relative immutability of large-scale models is a serious handicap.

Inscrutability

Listings of programs usually are not provided to the users because of their size and the author's copyright protection. Even when listings are provided, they still remain rather opaque to most users. This black-box aspect of large-scale models reinforces their immutability; the user is frustrated in his attempts to modify the instrument for his own needs.

Grossness

Despite their relative complexity, large-scale models do rely on simplifying assumptions and somewhat uncomplicated treatments. Typically they deal with yearly cash flows, simplify the timing of tax payments and reimbursements, rely on some taxation clarifications and have a limited range of financing options. Only a few models deal directly with partnership ownership or with complex leasing arrangements. The birth of real estate projects is not usually analyzed. Such simplifications are usually harmless, but since they mostly are implicit, they can mislead the analyst and give him a false sense of accuracy.

Deterministic

Almost no model allows for the definition of probabilistic distribution of the input variables. One-point estimates must be assumed for rental revenues, vacancy rates, mortgage rates, etc., consequently the results are also one-point results. Most users do not feel comfortable with such deterministic results and the forced accuracy reguired for the input variables. Serious analysts are painfully aware of the uncertainty of their hypothesis and thus the contingent nature of the results. Careless analysts, on the other hand, may be carried away by the apparent accuracy of the forecasts. This carelessness, unfortunately, is reinforced by the guasi-mythical power of persuasion attributed to computer print-outs (50 million bits cannot be wrong!). Again the inscrutability (the black-boxness) of large-scale models does not allow for the required demystification.

Single Asset Analysis

Most existing models are not designed to deal with a portfolio of real estate assets. This is unfortunate not only due to the importance of portfolio composition on the risk-return trade-off but also because tax rules may have different effects depending on the number of assets and their relative performance. One would even like to combine real estate and nonreal assets in a single model. Here again tax rules (for example, on capital and terminal losses) are affected by the composition of the portfolio. The investment separation principle recommended in corporate finance does break down when tax-portfolio effects are considered and single asset models can lead to inappropriate decisions.

Costliness

Good software in traditional languages does not come cheap. A large-scale interactive model conservatively requires a few hundred hours of programming time. Since many models have been developed by university professors and their graduate students, no cost accounting has been performed but we may conjecture that an operational, fool-proof and bug-free documented real estate package would cost at least \$20,000 to produce. The retail price of commercialized microcomputer adapted versions of such models range between \$400 and \$800. Even at these prices, such packages are still quite attractive when one considers the time and alertness required for similar manual computation, but we think cheaper and better alternatives now are available.

Small-Scale Models

Small-scale models⁴ are typically homemade ad hoc models written in an advanced spreadsheet (template) format and specifically designed for microcomputers. A spreadsheet program can be described as an accounting matrix entirely defined and manipulated by the user. Columns and rows are created to solve any tabular problem (computation of cash-flows, mortgage payments, depreciation schedules, etc.) and most financial computations (internal rate of returns, net present value, etc.) are performed directly through a very simple command language.

Conceptually the manipulation of such tables is perfectly analogous to the traditional pencil and paper tabular treatment, thus the intuitive understanding of such programs is almost immediate. The remarkable friendliness of such a medium comes from the fact that general complex programming is, so to speak, predigested, and the user needs only to master a very intuitive and visual command language.

The main advantages of such small-scale programs are —

Accessibility

A great (and growing) number of commercial spreadsheet programs are now available and the marketing accent is on their friendliness. This learning process is very short and any user can, within a week or so, create his own complete discounted cash flow real estate model. The requirements are not anymore on programming capability, but mostly on a clear understanding of the financial and fiscal concepts of real estate analysis.

Transparency

Since they are homemade, such programs are perfectly transparent and the user is in total control of the program. He can simplify, complexify, add all the bells and whistles he wishes and create specific routines as required.

Viability

The black-boxeness of such programs being eliminated, so is the false sense of accuracy. The analyst, now the

modeler, has a much better understanding of his hypothesis and results. The model is clearly not more (or less) accurate but at least the soft spots are identified clearly and can be taken into account.

Capability

Advanced spreadsheet programs (such as EPS or IFPS) deal easily with portfolio effects through consolidation routines and are equipped with powerful financial capabilities: direct multi-variable what-if analysis, probabilistic simulation of the input variables, impact analysis and goal seeking procedures. No existing large-scale model offers such options.

Generality

Spreadsheet programs can be used for any type of tabular analysis whether it is real estate analysis, an arcane tax or accounting problem, a cash management problem or an inventory management problem. Because of the very general nature of the master spreadsheet program, any specific adaptation can be produced at a fairly low marginal cost. Master programs retail for \$400 to \$1,200, but each specific program can be stored on a diskette or hard-disk with no other cost than the time required for writing. A general purpose discounted cash-flow real estate program can be written, debugged, tested and prettied up in a normal work day.

Integrability

Recent packages (example, Symphony) integrate spreadsheet capabilities with graphic production, word processing, data base management and communications. Thus the financial analysis of a project may use previously stored market information, can be directly integrated in a formal report illustrated with graphs and even transmitted directly through a terminal to a client; no existing largescale model can match such a performance.

Of course, the user who is still reluctant to design his own programs may be tempted to buy existing commercial spreadsheet real estate programs. Such programs are now widely advertised in computer magazines, but since they are packaged such programs also can turn out to be immutable and expensive black-boxes. We believe the major advantage of spreadsheet programs is they can be user designed and tailor-made. This advantage is lost when canned programs (spreadsheet or large-scale models) are purchased.

Conclusion

Large-scale real estate computer programs have been precious and powerful instruments for analysis and pedagogy. Their recent availability has transformed the teaching and practice of real estate valuation and analysis, but their reign has been quite short. They should and are rapidly being replaced by smarter, cheaper and friendlier instruments. Instructors, analysts and professionals now should redirect their attention to the growing panoply of spreadsheet and integrated programs. They also should resist the temptation to purchase canned real estate spreadsheet programs since they will realize that the required amount of homework needed to design their own packages is both gratifying and profitable.

NOTES

1. Reps, J., "Requiem for Zoning", Planning, 1964, ASPO.

2. Lee, D. Jr, "Requiem for Large-Scale Models", American Institute of Planning Journal, May 1973.

3. For a recent exhaustive compilation: I. Beckhoeffer, ed., *Guide to Real Estate and Mortgage Banking Software*, (2 vol.) Real Estate Solutions Inc. Publishers, Washington, D.C., 1984.

4. We define as spreadsheet type of programs a wide family of programs where computational tables are created and manipulated directly. In fact, we should distinguish the standard simple spreadsheet programs (among the better known: Lotus 1, 2, 3; Multiplan; Visicalc; etc.) and the more powerful and complex template programs also called DSS (Decision Support Systems: such as EPS, NCP CALC, IFPS, 20/20, MICROPLAN, FINAR, etc.). The comparison between simple spreadsheet and DSS calls for a separate article and is not crucial to our discussion. Here we treat DSS programs as small-scale models since, though not really small, they have the advantages of simple spreadsheets since most of them now have been repackaged to run on personal computers.

OFFICE BUILDING DEVELOPMENT AND INVESTMENT: SELECTED INTERNATIONAL REGIONS AND COUNTRIES

by Mary Alice Hines

Office building development and investment is a strategic area for scrutiny by international real estate investors as a prime form of income property investment no matter what region of the world, country involved or city analyzed. Many international investors have observed some extraordinary office building yields in recent years, and as the world's economy recovers from the recession, yields from office buildings will remain attractive as the businesses and governments of the various countries expand.

In this article, the focus will be on the demand for office building space, leasing, the complexities of land acquisition, construction costs and investment yields throughout the world.

Office Building Space Demand

On a national scale, the developing countries probably exhibit the highest demand for office space. For example, the economy of the People's Republic of China is rapidly expanding under the current national economic policies which encourage a free market system and an element of capitalism within the socialist economic structure of the communist country. As foreign joint ventures are promoted and domestic business thrives, office space is needed for both the domestic and foreign companies who do business on PRC soil or offshore. The economic expansion of Japan and Southeast Asia in the industrial, shipping and financial sectors is very promising, and consequently, there is also a strong demand for office space.



If Hong Kong loses some of its vitality as an offshore banking center when the British Colonial land leases expire in 1997, Singapore and Japan hope to attract the business that leaves. Similarly, if industry and shipping declines in Hong Kong, Taiwan, along with the other countries of the Far East and Southeast Asia, hopes to benefit. For these reasons, as 1997 approaches office space demand may increase in Singapore, Japan and Taiwan.

Even with the uncertainty about Hong Kong's future, high quality office space is being built and occupied by foreign companies who continue to establish branch and regional offices in Hong Kong so they can benefit from the potentially profitable Hong Kong and China trade. Hong Kong is becoming an entrance way to the vast markets of China, and China will allow Hong Kong to retain its financial, legal and industrial systems that currently provide prosperity. Two years ago the Hong Kong and Shanghai Bank announced plans to build its new headquarters which when completed would be the highest building in Hong Kong. Just the expansion of its banking

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EXHIBIT

Design of the Bank of China Building in Hong Kong



Source: Hong Kong Trader, August/September, 1984, No. 14, p. 1 (A publication of the Hong Kong Trade Development Council)

and affiliated businesses prompted an expectation of full occupancy in the new building by just the bank. Consequently, the Bank of China now has announced plans for an even higher Hong Kong structure to be located in the central district of Hong Kong Island close to the new bank building. The 70-story Bank of China building, designed by I. M. Pei the renown architect, is scheduled for completion by 1988. (see Exhibit).

As the industrialization of India continues, more office space in South Asia will be needed for the foreign joint venture companies and domestic firms needing headquarters and regional administrative space. Since India has not exhausted its credit potential and has rapidly increased its industrial base, more quality office space will be needed as new and higher industrial plateaus are reached and domestic and foreign trade develops. Its natural resources, including oil and a trained workforce, promise continued economic growth.

In Central and South America the economic, political and financial troubles have discouraged company expansion and subsequently there has been limited need for office space. The high levels of inflation and unemployment must be overcome and positive foreign trade balances established in order to increase the financial reserves of the various Latin American countries. For the present, financial institutions and the International Monetary Fund forecast a long road back to economic stability and adequate financial reserves with low levels of inflation.

Western Europe has long represented a stagnant economy and the African countries' economies, with the exception of South Africa, are very depressed. In general the independent African nations are trying to raise their economies by their boot straps though some of the vestiges of colonial rule have aided in their development. The African countries are a long way from economic prosperity. Recent droughts and floods have been devastating to Zimbabwe and South Africa, and the drop in oil prices has been felt in Nigeria, Libya and the other oil producing areas of Africa.

In the Middle East office building demand is generally depressed compared with the previous demand in the 70s. This is due to the reduction in oil prices and the military confrontation between Iraq and Iran. The economic expansions of Kuwait, Bahrain and Saudi Arabia slowed in the early 80s even though some office building development and construction continues.

Canada is still recovering from the recession of the 80s. Its foreign exchange rates have suffered, and office space demand also has declined.

Eastern Europe and the U.S.S.R. continue to suffer from engineered economies where private business ownership is generally not permitted and business interests are subservient to government interests and the Five-Year Plans. As long as the barter system is necessary because the Soviet satellite countries of Eastern Europe do not have the necessary foreign exchange for the traditional financial transactions, the economies of these bartering nations will not encourage major business expansion with high levels of office space demand. As growth does occur, however, the space will be provided by the government and not from development activity and construction expertise of private, domestic or foreign organizations. The U.S.S.R. and its satellites do not permit office building development and investment by foreign investors, public or private, within their national boundaries.

Office Building Leasing

Office building leases are written for fewer years than

before with less renewal provisions incorporated into the original lease, if included at all. Covered in the agreements are indexing of base rents with periodic rent renewals to assure market rents regardless of indexing patterns. Most office leases have service charges and may be characterized by partially net terms. The landlord still pays a minimal amount of building insurance, property tax and maintenance costs. Included in their rent the tenant usually pays a proportionate share of the building's operating costs. Many landlords ask for key money deposits. Such deposits are generally not interest bearing and may cover the first three months or more rent in advance (Table).

Rent Levels

The highest office rents per square foot in U.S. dollars are in London, New York, Tokyo and Paris. The high rents reflect the high land values and the ratio of the high land-to-total property value. London's Richard Ellis and Weatherall Green and Smith have maintained research studies of international office rent levels which confirm the cities that offer the highest, lowest and middle-range rents

Trends In Office Rents

While office rents have taken a nose dive in Hong Kong since their peak in 1981, office rents in the United States and lapan have tended to continue their upward trend. Higher annual increases occurred in many U.S. cities during 1979-1982. This changed from 1982-84 due to an oversupply of office space. According to an article in the October 3, 1984 Wall Street Journal, office rents in midtown and downtown Manhattan rose at a compound annual rate of 11% over the past 13 years. In just the last six years, the annual compound rate of office rental rate increase was even more impressive at 22%.¹ This staggering office rent increase occurred while an average of six million square feet of office space has been added annually to the Manhattan market.

The rent decline in Hong Kong has been blamed on the approaching land lease termination date and the resulting business uncertainty due to the impending Chinese government control. The Japanese office rental increases have been due to the scarcity of office space. As the economy continues to flourish, land owners retain their ownership and reject purchase offers just as land use controls discourage land development.

Rent Controls

Most parts of the world do not utilize commercial rent controls. They do exist though in the Middle East, Africa, the U.S.S.R. and Central and South America. The following regions/countries maintain commercial rent controls: Middle East, Iran; Africa, Zimbabwe; Central America, Mexico; South America, Brazil and Venezuela; and the

1. Guenther, Robert, "Investors Seek Sizable Return on Manhattan Office Rentals," The Wall Street Journal, Wednesday, October 3, 1984, p. 35.

TABLE

Selected International Office **Building Lease Examples**

Hong Kong

Length of Lease: 2 to 5 years

Renewal Provisions: Renewal clause if the original lease term exceeds three years

Rent Review Frequency: Every three years

Extent of Net Lease Terms: Partial, not full payment of landlord costs by the tenant

Singapore

Length of Lease: 3 or 5 years

Renewal Provisions: 3 years plus 3 years or 5 years plus 5 years

Service Charge: Yes

Extent of Net Lease Terms: Full payment by tenant of traditional landlord costs

Spain

Length of Lease: 3 or 6 years Renewal Provisions: None Rent Review Frequency: Every 3 years Indexing Base: Annual Consumer Price Index Service Charge: 10 to 15 percent of prime rents United Kingdom

Length of Lease: 20 to 25 years Renewal Provisions: None Rent Review Frequency: 3 or 5 years Indexing Base: None Service Charge: 15 to 20 percent of prime rents Extent of Net Lease Terms: Full payment by tenant of traditional landlord costs Sources: Annual and special reports of English chartered surveying firms, personal interviewing and other secondary data sources

U.S.S.R. Other countries including the United Kingdom, Hong Kong and Spain have utilized office building rent controls in emergency situations when the government saw a fast rise in rents occurring that could be detrimental to the business community. In contrast, many countries maintain residential rent controls.

Land Acquisition Complexities

There are problems in acquiring the right location for office building development. A number of complexities or barriers exist to frustrate the international office building developer or investor. For example, in many countries land owners refuse to sell such sites. Some of these owners are private parties; some are municipal and central governments and their agencies; and some are native tribal groups. Private land owners in Switzerland and Japan are slow to sell urban land. Where governments

own all or a major portion of the land, they have no reason to sell their holdings for private office building development. These governments and their agencies, namely the U.S.S.R., the People's Republic of China, Sudan, Tanzania and Burma, wish to retain ownership and only extend leases for the land use. The Eastern European countries that are Soviet satellites tend to own the land within their boundaries. Some governments such as the United Kingdom, Nigeria, South Africa (and other African sub-Sahara countries), own large portions of the country's land.

New office building land has been developed due to recent land reclamation in some countries. The Hong Kong government continues to engage in large land reclamation projects as do the governments of Bahrain, Singapore and the United States. In the U.S., new office and residential large-scale projects are being built and have recently been completed on reclaimed land in Manhattan and Chicago. The World Financial Center is being constructed on reclaimed land in Manhattan and many apartment, hotel and office buildings are being built on reclaimed waterfront land in Chicago's Loop area.

Land vacated for office building development via urban redevelopment projects is being constructed on the waterfronts of Yokohama, Japan; Liverpool, England; and the older major cities on the east coast of Australia.

Title problems may inhibit land acquisition in various locations and countries. For example, in Africa, among the sub-Saharan countries, title uncertainties arise from inadequate title registration systems and the conflicting land ownership claims of tribal groups, municipal and central governments and private individuals and organizations. Developing countries often regard title registration problems as an area needing further development for economic progress.

Strict and comprehensive urban planning controls may depress the level of office building development and construction. The particularly rigid controls of the United Kingdom, France, West Germany and Japan tend to prompt such results in the office building sector.

Relatively high construction costs have occurred in Hong Kong, Singapore, West Germany, the United Kingdom and Switzerland while low construction costs have been associated with Italy, Belgium and France.

Hong Kong imports the vast majority of its building materials. The island and Kowloon Peninsula do not offer an abundance of natural resources for quality building products and this same situation is true to a lesser extent in Singapore. Some building materials are procured from the Southeast Asian area rather than imported from Europe, Japan and other such distant sources. In Singapore, construction labor and management expertise is imported, and by using the competitive bidding process, the cost for imported construction labor, materials and management are kept down.

In the United Kingdom most of the high quality office buildings are built in London. Other metropolitan areas also have substantial office centers but the office building construction costs for the U.K. generally reflect the high level of office building construction in London. Here and in West Germany the building regulatory authorities promulgate stringent building codes and enforce detailed zoning ordinances to promote high quality, durable construction. The highest building costs are associated with newer office buildings which have central heating and air conditioning.

Investment Yields

Some of the highest investment yields from office buildings come from the United States, Indonesia and Spain. However, the numerical yields are not reliable because the published and unpublished sources do not reveal how the office building investment yields are calculated. Since a number of calculation methods are used with differing responses from even a single property, the numerical quotas are not particularly significant. For example, annual office building yields from the U.S., quoted on an internal rate of return basis, have approximated 12-15% in the last two years. The internal rate of return calculations in the U.S. usually reflect relatively short investment holding periods with estimates of net cash proceeds from eventual property sale. Quotes from Indonesia reveal annual returns of 12-15%. These yields may or may not be calculated by the same methods used in the U.S. Most Western European yields are based on net operating cash flows, very long institutional investment holding periods and no allowances for capital appreciation at the time of property sale. The 10% annual yield quoted for Spain may be calculated the same way as the five percent annual yield for the U.K. and the 6 to 71/4% annual yields for central Paris. Generally these three yield quotes come from English chartered surveyors who reflect the Western European calculation methods.

Conclusion

Many international real estate investors diversify their real estate portfolios to increase their yields commensurate with risk reduction. The United States' office building market has been the prime target for most of the available overseas money for such investment. Since many U.S. office markets are saturated for some years to come, many international investors continue to review yield prospects in other countries. As a worldwide economic recovery occurs, the international real estate investor can expect many profitable, prospective office building locations and existing buildings to surface in many countries.

The Impact Of A Shopping Center On The Value Of Surrounding Properties

by Peter F. Colwell, Surinder S. Gujral and Christopher Coley

In the last two decades, a great deal of research has been conducted on residential property values. Apart from the physical characteristics of property and the financial conditions of the sale, location factors have been found to be among the primary determinants of property values.¹⁹ These locational determinants include proximity to highways, mass transit, parks, nuclear power plants and utility lines. This study examines the influence of another locational factor, a neighborhood shopping center, on property values in the surrounding area. Neighborhood shopping centers are becoming increasingly popular throughout the United States. The impact of these centers is not only a matter of concern to the owners of residential properties, but also to the real estate community, financial institutions and local public officials.

The emergence of the centers suggests developers find them to be profitable. While the centers do offer many conveniences, the neighborhood residents generally have been opposed to such commercial activity, fearing a loss in their property's value resulting from the disamenities of noise, traffic and crime. The growing popularity of the centers seems to be at odds with the traditional posture of neighborhood residents. One of the many possible explanations is that increases in the cost of transportation and the value of leisure time may have muted the opposition from local residents.

The establishment of these centers, however, does not result only from the market forces of supply and demand. The land use in urban areas is governed by zoning ordinances, and approval from the zoning boards is



a necessary prerequisite for the construction and operation of shopping centers in residential neighborhoods. Although the widespread growth of these centers would tend to suggest a more favorable disposition on the part of zoning authorities, zoning regulations historically have been aimed at preserving and promoting more homogenous land uses in order to stabilize the market

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values of properties. These regulations restrict commercial and industrial land uses within residential neighborhoods on the ground that the disamenities generated by commerce and industry supposedly decrease the value of residential properties.

The effects of zoning and externalities on land prices have been examined empirically in a number of important studies. Most of these studies do not provide support for zoning regulations. Reuter's²¹ findings reinforce Crecine. Davis and Jackson's⁹ earlier results for Pittsburgh that there are no systematic adverse effects on the value of single family homes in the neighborhood of nonresidential land uses. Maser, Riker and Rosett,18 using a rather large sample of Monroe County, also conclude that zoning does not produce systematic effects on property values. Grether and Mieszkowski's study, which considers physical aspects of zoning in New Haven, again finds "nonresidential land use per se has no systematic effect on housing values".^{13, p. 14} The absence of measurable externalities may be explained by clientele effects that those who care least about the externality will live closest. Alternatively, the design of the studies which finds no externality effects may be faulty.

We are inclined to believe in the possibility raised by Grether and Mieszkowski that "land use externalities may be very localized so that they are next door phenomena".^{13, p. 3} In other words, the proximity effect is not likely to extend very far in space. Furthermore, the effects of proximity to a specific land use may vary across locations. Proximity to churches, schools or shopping centers may have different effects in different parts of a metropolitan area or even in different parts of a large municipality. Generally, the studies which have found no externalities have either used aggregate data (e.g., census tract averages) and missed the proximity effects, or used microdata (i.e., individual property data) but extended the study across large regions thereby encountering the nonstationarity of the relationships across space.

There is some support in the literature for the notion that proximity matters. Colwell and Folev¹⁰ have found an effect for proximity to electric transmission lines. Kain and Quigley¹⁷ have shown that proximity effects can have a negative impact on apartment rents and on the value of single-family homes. Tideman's analysis of zoning hearings in Chicago²⁴ offers indirect support to the proposition that the effects of externalities are localized. He shows that indifference on the part of property owners to zoning hearings increases as proximity decreases to the property. This suggests that property owners beyond some critical distance do not regard the presence of disamenity as having any negative effect on the value of their property. To measure the amenity or disamenity effects of zoning, therefore, it would be necessary that the localized effect be bounded by some critical distance so as not to be swamped by other major determinants of residential property values.

The question is whether neighborhood shopping centers increase, decrease or both increase and decrease the value of proximate residential property. This paper analyzes the impact of a small neighborhood shopping center in Urbana, Illinois on the value of surrounding properties. A hedonic regression model is developed to explain the variations in property values before and after the announcement of the proposed shopping center. Six functional forms (linear, semilog, exponential, log linear, inverse and inverse-inverse) of the model are considered. The best model is selected using functional form analysis. Finally, the implications of the model are explored.

The Neighborhood Shopping Center

The neighborhood shopping center, the subject of this study, is typical of the many small neighborhood shopping centers throughout the country. This newly constructed center, opened for business in 1982, is called Southgate; it is located at 2110 Philo Road, Urbana, Illinois. The center has a lot area of 252,000 square feet and consists of five small retail stores and one independent grocery store. On its west, Southgate borders a fully developed section of Urbana, the Ennis Ridge Subdivision.

The center was initially proposed to the Urbana Planning Commission on June 7, 1979. The local newspaper carried a story the next day on the proposed shopping center's construction. Although the commission approved the center a short time later, construction did not begin until 1981 and the premises were not cleared for occupancy until the beginning of September, 1982. The date, June 7, 1979, when the project was publicly announced, is of special significance for the empirical analysis presented in this study.

The Data

The data on the selling prices and characteristics of 43 single-family homes and condominiums sold from 1976 to 1982 in Ennis Ridge Subdivision, were gathered from the Champaign County Multiple Listing Service. Although the public records on measurements of lot area or living space might be preferred over data supplied by multiple listing services, the marginal differences are not likely to have any discernible impact on this study's findings. All of the 43 properties lie within three-quarters of a mile from the Southgate to each property sold were recorded with the aid of plat maps. Summary statistics are in Table 1.

The Model Specifications

To analyze the impact of a shopping center on neighborhood property values, one might compare property values in two homogeneous neighborhoods, one with a neighborhood shopping center and the other without. But ideal situations are hard to find and the two neighborhoods are bound to be dissimilar with respect to physical characteristics or socio-economic conditions. This study uses only the affected neighborhood, but controls for proximity and for before and after effects as well as conventional hedonic variables. If the effect of proximity is different before and after the announcement then we may conclude that property owners are justified in opposing shopping centers because of the associated disamenities.

	Summary Statistics for Data						
Variable			Mean		Standard Deviation		
$X_1 = Bathroom$			2.0814		0.51636		
$X_2 = Living Area$			1884.5		510.91		
$X_3 = Fireplace$			0.69767		0.63006		
$X_4 = Lot Area$			9027.7		3950.9		
$X_5 = Month of Sale$			51.396		22.297		
$X_6 = (1 - AADUM)(E$	DIST)		7.8895		14.118		
$X_7 = (AADUM)(DIST)$	-)		16.942		11.617		
$X_8 = (AADUM)$			0.74419		0.43632		
CORRELATION COE	FFICIENTS						
X ₂ 0.6738	3						
X ₃ 0.5045	5 0.5380						
X ₄ 0.0562	0.0742	0.2443					
X ₅ - 0.1084	4 - 0.1041	-0.2567	-0.8145				
X ₆ 0.3132	0.2047	0.2645	0.6816	-0.8150			
X ₇ 0.0024	4 0.1035	0.2262	0.8191	-0.9532	0.8550		
X ₈ 0.6252	0.7651	0.5069	-0.0432	-0.0016	0.1119	0.0287	
X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	

TABLE 1

In this respect, external costs capitalized into value decreases for the most proximate properties, may outweigh the benefits offered by the neighborhood shopping centers.

The model for determining the relationship between property value and the specific characteristics of the location utilizes the following function:

$$SP_i = f(X_{1i}, X_{2i}, ..., X_{8i})$$

where SP_i is the selling price of the ith property and the X_is are defined as follows:

- X_{11} = the number of bathrooms in the ith property
- X_{2i} = the living area (sq. ft.) of the ith property
- X_{3i} = the number of fireplaces in the ith property
- X_{4i} = the lot area (sq. ft.) of the ith property
- X_{5i} = the sale month of the ith property from 0 to 46
- X_{6i} = distance of the ith property to Southgate times (1 - X₈)
- X_{71} = distance to Southgate times X_8
- X_{8i} = after announcement dummy: O = before and 1 = after

The first four variables relate to the characteristics of the sampled properties and the fifth variable provides a record of the sale month in order to capture overall trends in the selling prices. The last three variables are included in the model to capture the effects on the property values in the neighborhood following the announcement of the shopping center. The first of these variables, X_{6i}, can be viewed as a control in the sense that its coefficient will measure the effect of proximity prior to the announcement data.

Before running the regressions, hypotheses were developed with regard to the signs of the explanatory variables. The coefficients of variables X_{1i} to X_{4i} were hypothesized to be positive meaning that an increase in any one of these variables would tend to increase the selling price of the ith property, other things being equal. The coefficient of variable X_{5i}, the month of sale of the ith property, was also hypothesized to be positive. The before announcement distance variable X_{6i}, on the other hand, was hypothesized to be zero on the assumption that distance from Southgate before the announcement would not be expected to affect the property values. The variable X_{7i}, distance to Southgate if the sale was after the announcement, was assumed to have a positive coefficient since property values might be expected to increase as distance from Southgate increased. That is, the shopping center was expected to depress values of the nearest properties relative to those at some distance. Finally, the coefficient of X_{8i} was hypothesized to be negative on the assumption that diseconomies associated with the presence of a shopping center would cause an absolute decline in the values of the nearest properties.

Functional Form Analysis

Six functional forms were tested. The results are summarized in Table 2. The magnitude of the maximum log likelihood is determined to be -428.661. This magnitude is not significantly less at 95 percent level of

			TABLE 2			
-		Regr	ession Results			
Model Number Functional Form	1 Linear $\lambda_{L} = 1$ $\lambda_{L} = 1$	2 Semi-Log $\lambda_{L} = 1$ $\lambda_{L} = 0$	3 Exponential $\lambda_{L} = 0$ $\lambda_{L} = 1$	4 Log Linear $\lambda_{L} = 0$ $\lambda_{L} = 0$	5 Inverse $\lambda_{L} = -1$	6 Inverse- Inverse $\lambda_L = -1$
$\overline{X_1} = Bathroom^*$	11,798 (3.279)	24,357 (2.9972)	0.16978 (4.1913)	0.37364 (4.4)	$A_{R} = 1$ - 0.2776 × 10 ⁻⁵ (- 4.0586)	$\Lambda_{R} = -1$ 0.1198 (5.2725)
$X_2 = Living Area^*$	5.3181	4,785.1	0.8347×10 ⁻⁴	0.12471	-0.1458×10^{-8}	.3215×10 ⁻²
	(1.25)	(0.5458)	(1.7428)	(1.3612)	(-1.8031)	(1.4743)
$X_3 = Fireplace$	4,177	5274.2	0.03789	0.04697	-0.2559×10^{-6}	4815×10 ⁻⁶
	(1.666)	(2.0453)	(1.3427)	(1.7435)	(-0.53697)	(-1.3560)
$X_4 = \text{Lot Area}^*$	1.9033	1.7528	0.3363×10 ⁻⁴	0.277×10 ⁻⁴	-0.6036×10^{-4}	3994×10 ⁻⁹
	(3.685)	(2.9135)	(5.7834)	(4.418)	(-6.1465)	(-4.3687)
$X_5 = Month of sale^*$	143.47	6,150.8	0.00185	0.07427	-0.2649×10^{-7}	.6885×10 ⁻⁶
	(1.4444)	(1.5517)	(1.6502)	(1.7925)	(-1.4025)	(1.1704)
$X_6 = (1 - AADUM)(DIST)$	- 321.63	- 246.71	- 0.00625	-0.005349	0.1093×10 ⁻⁶	.1302×10 ⁻⁶
	(-1.0787)	(0.7434)	(-1.8617)	(-1.5426)	(1.9275)	(2.9151)
$X_7 = (AADUM)(DIST)$	489.91	514.12	0.00411	0.00462	-0.2491×10^{-7}	4117×10^{-7}
	(2.1989)	(2.2252)	(1.6405)	(1.9138)	(0.58797)	(-1.3141)
$X_8 = AADUM$	- 11,832 (-1.0787)	- 11,623 (-1.0489)	- 0.1565 (-1.2675)	- 0.15478 (-1.3368)	$\begin{array}{c} 0.21754 \times 10^{-5} \\ (1.0433) \end{array}$.2432×10 ⁻⁵ (1.6085)
Constant	15,194	- 19,579	10.336	9.9491	0.2811×10 ⁻⁴	.8118×10 ⁻⁵
	(1.2978)	(-0.3122)	(78.417)	(14.485)	(12.628)	(3.7632)
Adjusted R ²	0.8450	0.8299	0.9056	0.91	0.8976	.9408
Log Likelihood	-442.287	-444.28	-432.859	-431.649	-440.936	-429.2123

t-ratios in parentheses

*variables subject to transformation

confidence from that of the inverse-inverse function, the function with the highest log likelihood (-429.213). Neither is the log likelihood of the log linear function significantly different from the maximum log likelihood at the 95 percent level of confidence. From these two functional forms, we selected the log linear model (Model 4) because of the ease for interpreting the regression coefficients. The log likelihoods of all other well-known functional forms are significantly less than the maximum. A similar application of the test for choosing the model that best fits the data is explained more fully in Brennan, Cannaday and Colwell.⁵

Regression Results

The regression results confirm most of the hypotheses developed above. The hypothesized signs of coefficients for all variables in all models are consistent with the regression results. The results for Model 4 suggest a fairly strong relationship between the dependent and independent variables. The R² shows that 91 percent of the variation in the dependent variable is explained by the regression.

The values of regression coefficients (except on X_3 , X_6 , X_7 , & X_8) represent partial elasticities. That is, these coefficients measure a percent change in selling price for one percent change in each of the independent variables when the influence of other variables is held constant. A

percentage increase in variable X_1 (bathroom), for instance, increases the selling price of the dwelling unit by about four-tenths of one percent when the influence of other independent variables is held constant. The coefficient on the month of sale variable, X_5 , has a similar interpretation. It indicates property values appreciated at an overall monthly rate of about one-tenth of one percent for every one percent increase in time measured in months from 1976 to 1982. The coefficient on X_3 , however, has a different interpretation. It indicates that a fireplace adds about 5 percent (exp .04697 = 1.048) to the value of a residential property.

The interpretation of the coefficients on X_6 , X_7 and X_8 is of primary interest. The coefficient on X_6 , the before announcement distance effect, shows a possible small decrease in selling price as distance (in feet) increases away from Southgate (although this effect appears to be quite significant in Model 6). While the variable X_6 has a coefficient which is significantly negative at the 90% level of confidence, the coefficient is not significantly different from zero at the 90 percent level of confidence. It may be the Southgate location, or something near it, had some amenity value prior to the announcement. Alternatively, residents could have had different expectations for the development of the Southgate site than those realized. However, it is reasonable to assume there is no significant distance effect prior to the announcement of the forthcoming shopping center as hypothesized. The variable X_7 , the distance to Southgate after announcement, however, proved to be a significant determinant of the selling price. As expected, the regression coefficient revealed that after the announcement property values increased as distance from the site of impending construction increased. That is, the coefficient on X_7 is significantly positive at the 90 percent level of confidence.

The after announcement price effect, variable X₈, tends to confirm the general apprehension on the part of residential property owners that the location of commercial activity in the immediate neighborhood tends to adversely affect property values. The regression coefficient, which is significantly negative at the 90 percent level of confidence, indicates properties located adjacent to the center decreased in value after the announcement in 1979. The results from Model 4 are depicted in Figure 1.

FIGURE 1 100exp(-0.15478 + 0.00462 map distance units)



The downward sloping curve in Figure 1 illustrates the impact on selling price before announcement and the upward sloping curve illustrates the impact after the announcement. The intersection of the two curves shows that properties located beyond 15.53 map distance units, or approximately 1,500 feet, from the shopping center were valued more after the announcement than before. The results depicted in Figure 1 illustrate the impact of the announcement on the price-distance relationship indicated by Model 4.

Conclusion

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The announcement of the proposed shopping center had both negative and positive effects on the value of residential properties. At distances closer than 1,500 feet, diseconomies appear to dominate. Beyond 1,500 feet, economies appear to dominate. The trade-off between values proximate to the shopping center and properties served by the center, but removed from its negative effects, would seem to suggest there may be an optimal spatial frequency of these small shopping centers.

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CALIFORNIA REAL PROPERTY TAXATION OF TIMESHARE INTERESTS

by Karl O. Tuschka

From a national perspective, California is often viewed as developing distinct approaches to new problems in addition to being the harbinger of things yet to come in the rest of the country. Though it may be early to suggest a national trend, this article presents an interesting and worthwhile review of California's taxation for timeshare interests.

California's Real Property Tax System

The California approach to real property taxation differs from the national norm in several ways. Its system is a creature of the state's constitution rather than being a mere statutory enactment. This limits the legislature's power to substantially modify the basis of real property taxation. However, the constitution does not exclusively control this taxation; it is supplemented by the Revenue and Taxation Code enacted by the legislature. Among its many other functions, the state's Board of Equalization insures the property tax is levied on an equalized basis; it drafts regulations which become codified and issues letters of instruction to the county assessors.

California voters through referendums have had a significant and revolutionary effect on the state's real property tax system. In 1978, California voters amended their state constitution with the passage of Proposition 13. Put very simply, prior to the enactment of Proposition 13, valuation of real property in California was the duty of the county assessor in each of the 58 counties. All property was assessed on an annual basis at a specified percentage of value. The Board of Supervisors, in each of



the counties, determined what percentage of the total real property valuation within the county was sufficient to generate funds for the county's annual budget, and that percentage was the tax rate for the ensuing fiscal year.

The revolution wrought by the passage of Proposition 13 can best be seen with a quick overview of the changes it created. Rather than undertaking an automatic valuation of all real property on an annual basis, the county assessors are now permitted to reassess only in the following instances: a change of ownership; new construction; or substantial rehabilitation resulting in a new use or

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constituting the equivalent of new construction. Thus property held by one owner, absent of any new construction or substantial repairs, would never be subject to reassessment. This situation could continue indefinitely until the occurrence of an event to trigger a change. Year after year the assessment would remain static with only a slight addition of up to two percent annually as an inflation factor.

As a result of Proposition 13, the tax rate was fixed statewide at one percent of assessed value. This fixed rate no longer bears any relationship to the fiscal year budget of the counties. The rate no longer merely tracks the budget, but rather the budget must now reflect available revenue in a controlled system.

Taxation Of Timeshare Interests

The absence of legislation and court cases, coupled with the hunger of local governmental entities for additional revenue sources, has resulted in undue confusion and inequity with respect to the initial real property taxation of timeshare interests. At first the tax system did not contemplate the new timeshare product. The timeshare interest was not defined by statute and there were no rules on valuation of timeshare.

The unfortunate by-product of this confusion is that California's timeshare projects have initially borne the brunt of the local governmental entities hunger for additional revenues. Because timeshares at first had no tax status, statutory definition or precise rules for valuation, local county assessors proclaimed open season with a view to maximizing local governmental revenues from this new target. The attack has resulted in multiple increases in valuation over prior assessments without any substantial change in the existing physical plant or the value of the underlying real estate. This has been the case not only with recently constructed projects, but also with conversions of older hotels, condominiums or apartment houses.

Such an approach only could have a very significant adverse impact on the timeshare industry. The problem not only was the impact of the tax levy, but also the chaos resulting from trying to implement future projects without any set of clear rules.

In response to the resulting furor and under strong pressure from the timeshare industry, the state legislature enacted new statutes specifying the manner in which assessments are made; and the state's Board of Equalization followed with an assessment regulation directed to the county assessors. The timeshare concept now has been defined by statute. However, given the impact of Proposition 13's passage and the confusion and complexity of the resulting statutory law and regulations, certain fundamental problems and anomalies remain. Indeed, it may be said the recent legislation and regulations only gloss over the existing confusion.

Powell Place And Casitas Del Monte

In order to evaluate the initial situation in California, here are two specific timeshare projects. Both examples

are somewhat dated because the contested assessments occurred before the enactment of Section 998 and the Board of Equalizations issuance of Rule 472. However, the examples illustrate the magnitude of the assessment increases and certain unsolved problems.

Powell Place for many years had been a residential hotel and apartment house located on San Francisco's Nob Hill, a center for tourists and business travelers to the Stanford Court, Fairmont and Mark Hopkins Hotels. Also it is near the financial district, the center of the city's business activity and immediately adjacent to the intersection of the two historic cable car lines. In its urban center location, the Powell Place timeshare project was envisioned for use both by visiting tourists and by business travelers.

The other example is Casitas Del Monte, a low-rise resort complex situated in the Palm Springs area of Riverside County in Southern California. Unlike Powell Place, Casitas Del Monte is a destination resort with swimming pools, tennis courts and other sports and recreational amenities.

Both case examples provide hotel-like services including maintenance, reception, reservations, kitchens and linen service. Purchasers at both projects are provided exchange privileges with other projects.

Initial Reassessment Method And Results

The county assessors of San Francisco and Riverside Counties determined that valuation for real property tax purposes would be made based upon the full price paid for each timeshare interval. For each project, this amount was determined by adding up interval purchase prices as indicated by the value of the transfer tax stamps placed on each of the conveyancing deeds. As a result of this assessment technique, the assessed value of Powell Place changed from fiscal year 1981-82 at \$1,120,723 to the fiscal year 1983-84 at \$9,802,668. In the case of Casitas Del Monte, the developer's purchase price and rehabilitation costs totaled \$2,725,000 in 1981. For the 1982-83 fiscal year the new timeshare project was assessed at \$6.038,422. Indeed, the reassessment for Casitas Del Monte actually exceeded the total of all timeshare purchase prices paid. In that case, the assessor took the position that because all timeshares are fundable, he was not restricted to the actual price paid, but rather was free to assess across the board on the basis of the highest price paid for any one unit.

Both case examples involved existing structures, and although certain rehabilitation efforts had been undertaken, no significant physical plant improvements had occurred in the interim between assessments. The change to timeshare use alone was the basis for these drastic increases in assessment. The county assessors saw an opportunity to target a new and as yet undefined product, and they took advantage of that opportunity with gusto.

By simply cumulating the various purchase prices, the county assessors included not only the underlying land

and physical improvements, but also all the tangible personal property items such as furnishings, sports equipment and office equipment since under California's real property tax system, personal items are not part of a real property tax assessment; all the intangible personal property items such as the value of management, maintenance, maid services, accounting, recreational services and reservations together with all of the other incidental services provided by a hotel-like timeshare project; and rights to participate in exchanges with other projects at different locations at different times. Additionally, no offset was allowed for marketing costs or special financing.

By using the purchase price as a criterion of value, a whole range of tangible and intangible personal property, together with the developer's entrepreneurial efforts, were incorrectly included in the assessments of value. The result was an increase in valuation and a corresponding increase in the tax levy from more than 200 percent for Casitas Del Monte to almost 900 percent for Powell Place.

Unsegregated Tax Billing

In addition to utilizing this questionable purchase price approach to valuation, tax collectors for San Francisco and Riverside Counties sent tax bills not to the individual unit owners, but rather to the timeshare owner's association for payment. By this process, the counties sought to shift the burden of tax collection costs from the government to the privately organized owners' associations. A segregation of the tax bill and collection procedures needed to be devised in a fashion similar to the system employed with multi-owner condominium projects. Now this has been partly accomplished by recent statutory additions.

Use And Valuation

The manner in which these initial assessments were made and the process by which the tax bills were transmitted raised a wide range of questions with respect to real property taxation of timeshare interests in California. California law requires that real property be assessed at its full value and at its highest and best use. Is the mere multiplication of the number of timeshare interests sold by the various purchase prices a reflection of full value? If highest and best use is the ultimate criteria, are condominiums, hotels and apartment houses not susceptible to timeshare usage; and shouldn't these properties be valued on an identical basis? Is the tax lien, as security for payment of the tax bill, to be imposed on the single defaulting timeshare interval or upon the timeshare project as a whole? The last question is further complicated by the fact that tax bills were not being transmitted to individual owners but rather to the association which, in turn, has no direct liability for payment of the tax. What approach can be taken to remove both tangible and intangible personal property items not otherwise susceptible to real property tax from the overall assessment? Is there a rational formula to determine the value of the exchange rights or must such rights be valued and subtracted from the real property tax assessment only on a case-by-case basis?

Theories Of Valuation

There are three generally accepted theories to measure the value of real property for tax purposes: the current replacement cost of improvements together with the cost of the land; sales data for comparable properties and the capitalization of income approach. These methods of valuation are the basic and universally accepted approaches to real property evaluation. The mere multiplication of purchase prices by the number of intervals sold does not fit any of the accepted criteria for appraisal. Timeshare conveyances all contain stringent restrictions for the use of the property by each timeshare owner: owner's rights are always restricted to time and usually limited to a particular unit or available model type. Ordinarily the timeshare owner does not have the ability to make changes in physical improvements such as altering the room configurations or redecorating. These limitations have a negative impact on the value of the timeshare owner's real property interest in the project. Furthermore, the purchase price of an interval in a timeshare project includes the right to use specified personal property items such as furniture, decor, sports equipment, etc., together with the use of certain intangible personal property rights, including the right to receive hotel-like services and to exchange for other intervals or locations at the same or different times.

The purchase price multiplication approach is not the equivalent of full value, but is a highly inaccurate and irrational overstatement of valuation. The whole value of the timeshare project does not equal the sum of its gross parts as reflected in the purchase price for each timeshare interval. Such an approach to valuation gives no offsetting credit for the higher than usual marketing costs required to merchandise the timeshare product and provides no discount for special financing.

The general criteria of value for real property tax assessment purposes is market value. To determine market value, one must contemplate a hypothetical purchase and sale transaction between an informed seller having no compulsion to sell and an informed buyer having no compulsion to buy. The actual selling price of the specific unit being assessed is not controlling in a determination of market value. The best indication would come from comparable units conveyed in a resale market. In that situation, the necessity of the developer to sell would be absent as would the pressure of the marketing campaign. Unfortunately, there is no substantial resale market from which to obtain the necessary comparability data.

By oversimplification, the equating of purchase prices with market value has caused assessors' offices to leap to the conclusion that an aggregation of all purchase prices is equivalent to the overall value of the property as a whole. However, that approach is an erroneous leap in logic which disregards both the inherent restrictions that go along with timeshare ownerships and the simultaneous conveyance of both tangible and intangible personal property rights. The mere multiplication of the purchase prices bears no rational relationship to actual full market value of the real property interest to be taxed and very greatly overstates the actual taxable values.

The New Legislation And Regulations

The addition of Section 998 to California's Revenue and Taxation Code is a mammoth step in the right direction. No longer will the assessors be permitted (as in the cases of Powell Place and Casitas Del Monte) to include not only the kitchen sink, but also the cutlery, maid services, reception staffing and timeshare exchange rights.

However, the section falls woefully short of a panacea, and many of the problems faced by the timeshare industry remain unsolved in California. By a quick reading of the new section, one would infer the legislature had adopted a comparable sales approach to valuation. The section states the assessment is to be made "by reference to resort properties, condominiums, cooperatives or other properties which are similar in size, type and location to the property."

However clear that direction may appear on its face, the statute is rendered vague because it requires that any determination of such comparability be added to "an amount necessary to reflect an increase or decrease to the market value attributable to the fact that the property is marketed in increments of time." Even if we are to accept arguendo that the fact of timesharing alone has an effect on the value of the underlying real property improvements, the statute provides no direction whatsoever on how such an effect on value is to be determined or quantified. What this means is that once the assessor makes a comparability value determination using like properties not in timeshare use, he may then do whatever he wants to add in or subtract out value for the timeshare quality of the project.

The statute goes on to provide that any alternate method may be utilized. Given the drafting, one must suppose these alternates would include a cost analysis or capitalization of income. These are the other principally accepted theories. The result is an emasculated statute which does not do what its timeshare industry proponents anticipated. Rather than linking timeshare projects directly to physically similar condominiums or resort properties, the statute leaves wide open the methodology for valuing the timeshare quality of the project. This will undoubtedly lead to yet further inequity.

To analyze the problem in yet another way, look again at one of the two case examples. In the case of Powell Place, an existing 60-year old apartment hotel had an assessed valuation on the 1981-82 secured role of \$1,120,723. To derive that value figure, the San Francisco County Assessor's Office used comparable sales data or had capitalized the existing income stream. To that assessment roll value the new statute would now have the assessor add something to reflect the fact that the property has been converted to a timeshare project. What is the increment of value (whether up or down) that this conversion to timeshare has spawned? How does the statute assist the assessors and the timeshare project developer in determining full value? Is there any assurance this additional increment of value will be equalized throughout the state as to like projects?

The answer is simply no. The assessors are left to speculate as to what methodology should be employed; and in the absence of any firm rule or applicable formula, the timeshare project developer, the owner's association and the interval owners have no tools to use in planning for the future.

As an outgrowth of the statutory changes discussed, the Board of Equalization has drafted a new regulation. This regulation is provisionally designated Rule 472, and is entitled, "Valuation of Real Property Interests and Timeshare Estates and Timeshare Uses." Rule 472 correctly addresses some of the basic problems. It insures that certain of the tangible and intangible personal property items ought to be excluded. These are the items which had caused the greatest difficulty with the reassessments in our two case examples. In addition, the regulation allows for a seasonal adjustment of value, where appropriate, for seasonal resort projects.

The troublesome parts of this regulation are found in certain sections. The new regulation contains the same vice as referenced in the basic text of its authorizing statute, Section 998. Again it fails to provide sufficient guidance on the specific methodology to be employed in determining the influence of the timeshare use on value. It is simply not sufficient to state that the assessors are to "add an amount necessary to reflect any increase or decrease in such value attributable to the fact that the subject property is marketed in increments of time." All this says is that the assessors may take into consideration the property being marketed on a timeshare basis rather than otherwise.

Subsection (i) of the rule appears to empower the assessors to utilize any of the generally recognized alternative methods of evaluation whether it be cost of replacement, comparable sales or capitalization of income. Yet it gives no guidance for utilizing these tools in the timeshare context. The result is enough to be constitutionally suspect.

Unfortunately, while Section 998 and Rule 472 may help to avoid some of the dire problems faced in the initial reassessments of the two case examples, neither the statute nor the rule provide any specific guidance on how the timeshare quality of the property is to be valued separately. Presumably different timeshares and locales will have different bases of value. It does not appear there is any universal formula applicable to timeshare as a whole. But perhaps a generalized methodology can be developed which can be applied to take into account particular variations.

A discussion of Revenue and Taxation Code Sections 2188.8 and 2188.9 could well be the subject of an entirely separate discussion since the sections raise a number of very interesting public policy issues. The following is a brief review of the leaseholds the statute provides: upon written request, the assessor will prepare separate assessments for the timeshare interests in a timeshare project; once a request is made, all subsequent timeshare owners are bound; the separate assessments are cumulated for purposes of preparing the secured tax role: the cumulated assessment shall be a lien on the entire timeshare project; a single tax bill containing an itemized breakdown applicable to each separate assessment will be prepared and transmitted to the timeshare project organization or owner's association; the county in which the timeshare project is located may charge an initiation fee for the first time cost of separately assessing and for the ongoing implementation not to exceed the actual cost: and this amount is to be included in the tax bill transmitted to the timeshare project organization. The section dealing with fee interests differs in that the lien too is segregated. This is consistent with lien rules in the real property tax system.

In the case of leasehold, while separate assessments are prepared if requested, the bill is sent to the timeshare owner's organization and a lien is imposed on the project as a whole. Yet the obligation to pay ostensibly lies with the timeshare interval owner. The section also imposes a significant burden on the timeshare organization to provide detailed information with its segregation request and annual updated information. With other types of property, the assessor's office would garner such information through a review of the county recorder's office of public records. The general public, not the property owner, ordinarily bears the administrative cost of the tax system. It is not so with timeshares.

One effect of imposing the costs of administration on the timeshare owner's association is that the burden may fall very unevenly among the various California counties. Counties where destination resort locations are concentrated may be able to computerize collection efforts; and by streamlining the methodology, the per unit costs will be substantially reduced. In other counties where only a few timeshare projects exist, the costs of collection using less streamline methodology will be substantially greater on a per unit basis. Once again the possibility of significant inequities exist.

The California Leasehold Anomaly

One of the stranger progeny of the post Proposition 13 flurry of statutory enactments has been the definition of change in ownership. Section 61 (c) (1) of the Revenue and Taxation Code provides a change in ownership will occur and thus trigger a reassessment upon the creation of a leasehold interest in taxable real property if the term is 35 years or more including written renewal options. The creation of a leasehold for less than 35 years, including written renewal options, does not constitute a change in ownership. Thus, where a timeshare use is created by a leasehold of less than 35 years, no change in ownership has occurred and there will be no reassessment for real property tax purposes even though the entire property is devoted to such timeshare usage.

As a result of this definitional anomaly, a strange situation has developed in California. Some of the less than 35-year timeshare uses, based on a leasehold interest, are not subject to reevaluation for real property tax purposes while the identical interval (in terms of time, space and amenities) will be subject to reassessment if it is a fee or a leasehold exceeding 35 years. This concept is based on the rationale that a lease of 35 years or more is the substantial equivalent of a fee interest, and thus triggers reappraisal for real property tax purposes as a change in ownership. The same rules apply in the nontimeshare context. The problem is only magnified with timeshares because of the very significant increases in assessed value found by the county assessors with respect to properties converted to timeshare usage. This strange circumstance provides a window of relief to potential future timeshare project developers. By selling timeshare intervals with terms of less than 35 years, neither the timeshare interest nor the project as a whole will be subject to reassessment for real property tax purposes. The taxable unit remains the underlying undivided fee interest. Only on a conveyance of the fee does a change of ownership occur triggering a reassessment. The disadvantage is it is more difficult to market a short-term leasehold than a fee interest or a long-term lease.

THE PRICING OF REAL ESTATE BROKERAGE FOR SERVICES ACTUALLY OFFERED

by Donald R. Epley and Warren Banks

It is important to investigate the operation of a market where houses are bought and sold since a home is usually the largest family investment. Assuming these purchases are aided by a real estate broker, this article addresses the manner in which real estate services are provided. A frequently asked question is, "Why has price competition in the real estate commission been replaced by non-price competition, and does this cause an inefficient allocation of resources?" This paper presents a model for real estate brokerage charges that fosters a return to price competition.

Inefficient Real Estate Markets

Monopolistic Competition

The real estate brokerage industry has long been characterized by monopolistic competition, as shown in Exhibit I. The industry has been easy to enter, many buyers and sellers exist and each firm attempts to differentiate its product by providing unique and better service. As a result, the Chamberlain tangency of P_1Q_1 exists which causes the public to pay a high price and receive a lower quantity than it would pay-receive at the purely competitive price of PQ and the quantity Q.

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Emphasis on Seller Service

The license law in all states considers the agency relationship to exist almost exclusively between the seller/owner and the licensee. Although an agreement can be contracted between a buyer/licensee, the agent almost always represents the seller's interest in a residential transaction. "Let the buyer beware" still is dominant in a real estate transaction.

Given the emphasis upon the seller/licensee relationship, the agent is taught that the bread-and-butter income lies in listing. Placing a seller's property under contract gives the agent the right to locate an eligible buyer, builds an inventory to show potential buyers and provides a shared commission if an agent from another firm sells the property. Since commissions are higher when the agent sells a property from his/her own inventory, the emphasis remains upon first, listing and second, showing and selling one's own listings.

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Payment for Successful Services Only

The agent is paid only when a property is sold; unsuccessful services are unrewarded. For this reason, prospective agents are taught in their prelicensing and postlicensing courses to qualify the purchaser early in the buying process by assessing their motivation and ability to purchase. A buyer who is simply shopping can have high motivation but insufficient income/assets to qualify for a loan, or they may possess a casual attitude but have the ability to buy.

Free Rider

Since many real estate firms charge a commission for their wide range of services, the industry suffers from the free rider¹ problem. For example, ABC Realty free rides on the market development of DEF Realty when the latter provides uncompensated benefits. This occurs when DEF gives the customer more knowledge and information through individual counsel and/or advertising, but the buyer still purchases a home from ABC because of a lower rate. The usual method used to address this issue is the legal concept of abandonment.

Abandonment

All prospective agents are taught to determine if the buyer is qualified to buy and not release them by failing to provide service. If an agent can prove the buyer was not released when a sale is concluded, a claim can be made for a share of the commission from the listing broker.

An agent typically abandons a buyer when they conclude the buyer is just shopping, has insufficient assets or cannot make a decision. Abandonment occurs when the agent's expected marginal revenue from the sale becomes less than the expected marginal cost. Having made this decision, the agent releases any claim to a commission should the buyer begin again with a second agent and makes an offer on a property shown by the first agent.² This point of law has been used by agents to claim a commission or part of one in order to recover their expenses. Agents are taught by their brokers not to abandon a prospective buyer, physically or emotionally, during waking hours until all the possible avenues of purchase are exhausted. Given this, an ignorant but serious buyer has little opportunity to gain education and lower the variance of commission rates by shopping around among real estate offices.

Inexperienced and Uninformed Agents

Prospective agents may satisfy the prelicensing education requirement by taking various courses ranging from college credit hours in real estate to private business school cram courses taken before the examination. Once licensed, an agent in most states has the option of continuing his/her learning through optional continuing education courses offered through the Realtors[®] trade association.³

In addition to inadequate prelicensing educational requirements and predominately voluntary continuing education requirements, the course work taken typically



DD = demand curve facing retailer under restricted entry

D'D'= demand curve facing retailer under free entry

P = lowest point on the long run average total cost curve

PE = demand curve facing retailer under free entry with a homogeneous product

does not concentrate on salesmanship and brokerage. Real estate only recently has become a topic worthy of academic study as evidenced by the scarcity of schools offering the subject⁴ and the absence of real estate course work in the curriculum of the more prestigious schools.5 The need for academic programs has contributed to a lack of real estate research which usually accompanies instruction. Real estate journals also are few in number and typically do not emphasize the higher level of abstract reasoning required by the more prestigious publications. Until recent, the texts used in these courses were basically institutional, historical and topically oriented. A student would learn a great deal about the history of the FHA and the details of a deed, but would not acquire the needed background from an analytical decision maker.

Most of these academic courses and many of the trade courses cover technical topics such as finance, law, appraisal, investment and management, but do not teach salesmanship and brokerage. The prevailing attitude is that these subjects are not academic but topics for continuing education courses and appropriately left to the individual firms and brokers. Also many private trade schools provide instruction for the licensing exam, however, the two main testing services, ETS and ACT, do not cover this topic.⁶ Thus the beginning agent has very little instruction on how to work with a client.⁷

Once a student passes the licensing exam and becomes an agent, he/she is immediately placed in direct contact with the public and instructed to obtain a listing, counsel the seller on market trends and the correct listing price, present an offer to the seller, write a counteroffer and generally satisfy the needs of the buyer and the seller. The usual reaction of a novice is to assume that a large quantity of unknown duties and skills must be performed on a typical sale because these things are done by colleagues in order to earn a living from commissions. When the broker tells the beginning agent to charge a certain percentage for the commission (determined not by what other firms are doing but derived from the firm's own cost analysis)⁸, it is done with a lack of understanding that there are still more services to be performed for the client.

As the novice becomes experienced, a learning curve begins to operate. But the young agent is not going to decrease the price of the service unless mandatory since they are providing a professional service. This is much like purchasing a new car and offering the list price. The sales agent is not going to lower the price until the buyer offers a lower price.

From an educational point of view, a new agent is often ignorant of the service mechanics involved in brokerage while older agents do not want to lower commissions unless forced; add to this the concept of client ignorance. The majority of buyers are ignorant of the steps involved in a real estate transaction to make a rational decision on the substance of the service provided. An analogy would be the spectator who enters a basketball game at the half. He regards himself an expert on the subject and uses that information to make decisions concerning the whole game. Unless the client has sufficient experience to cover all the steps, invest the time in reading a decision-making textbook, or take a principle course, their information is going to be minimal.

Promotion Of Price Competition

Unbundling the Commission

Price competition in real estate brokerage fees would be enhanced if the industry moved to identify and charge for the services that are actually performed by the agent.⁹ Currently an agent views the whole spectrum of salesmanship and brokerage as an available market and may not attempt to specialize. The specialized agent in the U.S. is in the minority among real estate firms. An agent should identify the exact services he/she renders for a client and then assess a charge.

It is necessary to identify the exact services performed by an agent for a seller/owner. The primary task is to locate a buyer who is ready, willing and able to purchase the property. The seller interprets this performance as a marketing function. The agent locates a buyer, qualifys him/her, shows the property, locates financing and remains in a fiduciary relationship by following the seller's instructions with respect to price, occupancy, possible rental, personal property not included, etc. This function is legally interpreted to mean that a payment is owed the agent when a bona fide offer is presented to the seller for the asking price that covers the exact terms in the listing contract.¹⁰ seller might require. If the seller were completely uninformed about any real estate transaction details, he/ she would probably want to utilize all of these services and pay a set of fees equivalent to a full commission. If the seller knew an attorney who could perform part of the required work, the services could be appropriately reduced.

Assume a situation where the house listed for \$80,000, sold for \$75,000 and the seller had used all the agent's services including the management of the property after it was vacant. The agent agreed to a fee of \$3,100 for all the services. The fee is not based upon what any other firm is charging, but comes from the firm's cost figures for what is needed to provide the seller with all the required services. This type of price structure would promote price competition since the firms could determine their comparative advantage and specialization. The agent would charge according to comparative advantage, and the client would only pay for what was needed. If the agent wants to pay another broker for selling the property or for placing it in multi-list, that decision is made in consultation with the client. Furthermore, the seller identifies this service and pays a fee for it, and if the client doesn't want a cooperating agent, he doesn't pay for it. Under the present commission structure, the seller pays the total commission regardless of who sells the property or performs any service.

Unbundling the commission forces a firm to determine its comparative advantage, to specialize and charge a competitive fee relative to cost. Current non-price competition is replaced with price competition. Since there are many firms in the market, an equilibrium similar to the one achieved with pure competition may be approximated.

The six characteristics of the current real estate brokerage industry are addressed in the following manner:

- a. *Monopolistic Competition:* Unbundling will cause a lower price and higher quantity similar to the equilibrium under pure competition providing the firms don't raise their fees to maintain the same level of revenues. This should change when, for example, one or more advertise that a qualified buyer will be found for a fee of \$1,500 regardless of the property's market price.
- b. Payment for Unsuccessful Services: The industry has long wanted to equate its professionalism with other service professions such as attorneys and accountants by charging upfront for their service regardless of the outcome. This follows the concept of charging for legitimate problemsolving that may not involve a sale. In all likelihood, some fees could be charged for contract preparation and seller/client negotiation while others would remain on a contingency basis paid only when a sale occurs. Both types of fees should foster competition.
- c. Free Rider: The chance for uncompensated benefits lessens.

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For example, Exhibit 2 illustrates the range of services a

	Samples Services Available and Charges		
Servi I.	ces Available Counsel the Client	I.	Charges \$1000 total
	a. Explanation of the Business and Sale of Firm's Goodwill and Reputation		a. \$200
	b. Market Analysis of Trends to Determine List Price		b. \$100
	c. Determine the Condition of the Property for Marketability		c. \$ 50
	Arrange for Professional Home Inspection/Warranty		or \$ 50
	d. Identify Critical Property-Neighborhood Factors Influencing Value		d. \$300
	Such as Easement, Water, Sewer, Zoning, Schools, Traffic Law e. Suggest and Arrange the Best Financing for Marketing the Property		e. \$300
	f. Write the Listing Contract		f. \$ 50
II.	Locate a Buyer (Seller) Who is Ready, Willing, and Able	П.	\$1500 total
	a. Use All Forms of Advertising to Contact Potential Buyers (Sellers)		a. \$750
	Cash Expenditures (newspapers, letters, radio, magazines, etc.)		included
	Noncash Expenditures (phone calls, personal visits, etc.)		included
	b. Write Contract of Sales and Supervise the Escrow Account		b. \$ 50
	c. Show Property		c. \$350
	d. Present Offers		d. \$200
	e. Rewrite Counteroffer/Offer Contracts		e. \$ 50
	f. Arrange Financing for Buyer (Seller)		f. \$100
III.	Manage Property	Ш.	\$150 total if needed
	a. Supervision While Vacant		included
	b. Supervision While Renting		included
IV.	Settlement	IV.	\$200 total
	a. Prepare Relevant Settlement Statements and Issue Checks		a. \$200
V.	Payment to a Cooperating Agent for Locating a Buyer (Seller) and	V.	\$250 total
	Use of Multi-List	Sum	\$2950 w/o management
			\$3100 with management

EXHIBIT 2

- d. Abandonment: The use of abandonment would be reduced or completely eliminated.
- e. Uninformed and Inexperienced Agents: Agents would become more proficient since they would be specialists similar to other professions.
- f. Uninformed Buyers: With the reduced use of abandonment, the buyer would be able to shop around and select the optimum service. Referrals would be based upon the depth of the service provided as opposed to the breadth of the service which may vary in quality.

Use Of Fees By Other Professions

Litigation has surrounded both the fees and commissions charged in other professions. Though similar to a commission, the architect's practice of charging a percent of

cost has been judicially upheld.¹¹ It also is true that in noncriminal litigation an attorney may agree to charge only if the outcome of the case is successful and at a percent of the amount recovered. This arrangement is more like a commission than a fee. Nevertheless, most legal work is performed for a stated dollar amount related to the quantity of work done and the costs to be covered while still allowing for a margin of profit. For example, the reasonableness of an attorney's fees has been held to depend in part upon the attorney's overhead expenses.¹² Other items to consider include the time and labor required in performing the work, opportunity costs occasioned by accepting employment, accepted customary fees for similar work, the results obtained and the attorney's experience and reputation.¹³ Attorneys seem to have abandoned fixed minimum fee schedules that might or might not fully

cover the costs of a particular attorney due to the likelihood of price-fixing allegations under the antitrust laws.¹⁴

Similarly when physicians charge for their work they consider custom, nature and seriousness of the case, the amount of attention given to the patient, the professional skill required and the end result of the medical services.¹⁵ Accountants' fees also are generally related to the amount of time spent, however accountants have been required to forfeit their fee if they overstep the bounds of their profession by practicing law without a license.¹⁶ Commodity and stock brokers charge a commission, and this practice has resulted in litigation. A broker was found to have violated the Robinson Patman Act¹⁷ by lowering his agreed commission in order to permit the sale of a particularly large order at less than the established price charged other customers for the same goods.¹⁸ In a similar case, a reduction in commission was held not to be an antitrust violation if it was justified by cost differences.¹⁹ Another situation that has been held not to violate the antitrust laws was the seller granting a quantity discount to purchasers of shares in a mutual fund.²⁰ Further, a court originally held that the fixing of uniform minimum commission by members of the New York Stock Exchange was beyond the scope of the prohibitions of the antitrust laws, ²¹ though this practice was later abandoned in favor of the present use of negotiated commissions which, like the fee structure proposed in this paper, presumably covers costs and a negotiated profit. The alleged excessiveness of portfolio management fees has been litigated often under an allegation that a high fee wastes the assets of the shareholders, and usually without success on the part of the plaintiff.²² An annual charge of 1/2 of 1 percent of net assets has been judicially upheld, though fees of three and even four times this amount are not presently unknown.23

Thus, some professions (such as stockbrokers) charge commissions based on selling price while others (such as accountants, attorneys and physicians) charge a fee calculated to cover the cost of the work actually performed. It is true the latter's services are nonbrokerage in nature, but that is no reason to assume legal problems would occur if a broker's compensation was directly related to the services performed. Purveyors of services are entitled to charge a reasonable amount and courts seldom have been unwilling to pare what they perceive as unreasonable whether stated in dollars or a percentage of dollars. Much of the litigation, especially in the antitrust area, surrounds agreements to fix uniform rates and attempts to charge different amounts that are not related to cost differentials. A negotiable brokerage fee for services performed that is designed to cover costs and provide a competitively determined excess, is not likely to involve legal pitfalls.

Other Research

Bartlett²⁴ gave two recommendations for increasing price competition in real estate brokerage commissions.

The first eliminated a fixed split commission among cooperating brokers and simultaneously allowed only the dissemination of information for compensation offered by the listing broker to any selling broker. The second removed any restrictions for broker access to a multi-list service. If these two recommendations are implemented together, Bartlett argues, the industry should experience an increased incentive to compete with price while still maintaining the advantages of the shared rights information pooling system. The protection of rights in transactions would remain and withdrawal from the shared system would still mean isolation from the fragmented market.

Fred Case²⁵ argues that the single price within any market reflects a competitive pressure which pushes all firms to a minimum cost of production. Bartlett uses Stigler's classic article²⁶ to argue against Case's observation by stating (from Stigler) the possibility of a dispersion *above* a dominant competitive price exists when there is imperfect information on price options. In such a case, the minimum costs of production establishes a *floor*. In the real estate brokerage business, according to Bartlett, there is a ceiling with occasional deviations downward that are not consistent with a competitive price that has deviations caused by uncertainty.

Crockett and Yinger²⁷ substantiate Bartlett's argument that availability to the information in multi-list is germane to enhancing price competition. Yinger goes further and suggests the creation of a multi-list represents an unambiguous gain to society provided it does not establish market power for specific firms.

Evaluation

Two points must be examined with respect to the following three recommendations involving increased dissemination of information from multi-list. First, almost all MLS boards operate within urban areas, give membership to all brokers who pay their fees and agree to abide by the bylaws, are aware of antitrust implications and recent court cases and still charge commissions that are *not* competitive. A major study²⁸ of principal brokers within one state revealed the commission was set by an abstract notion of cost, and the brokers who responded to the survey reported they did not know the specific amount of costs per transaction.

Second, a large number of real estate transactions do *not* pass through MLS. For example, a newly listed property such as a house, farm or business in first class marketing condition, will probably never enter MLS since it will sell without advertising. Also, in a state that is basically rural, multi-list organizations may be few in number.

A third point is not as easily documented. The brokers initiating the creation of a MLS never do so to disseminate information to a potential competitor. Aside from the statements about servicing the public, the typical reasons privately given are to eliminate open and net listings and to mitigate unethical practices over which little local control exists. An unethical broker is expected to abide by MLS bylaws if they are a member. Given

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these points, our premise is that switching from a commission structure to a fee structure would work for areas with and without a MLS. Bartlett's two recommendations would not achieve the desired result of increased competition because of the reasons already mentioned. This paper recommends that real estate firms charge for services provided using internal costs of operation as a basis for fees. This would establish a *floor* on compensation since a firm could not assess a charge that was less than its marginal cost. A deviation in fees would appear in an upward direction since some firms are ignorant of their costs and would charge more than they should to an unknowing client who pays them while the well established firms might want to charge more for their reputation and community position.

We argue Bartlett is incorrect in his statement that it is difficult to believe the costs of selling a \$90,000 house are more than selling a \$30,000 house. To counter Yinger's statement that charging a commission is price discrimination, the following observations are offered to show substantial cost differences do exist in the sale of homes in different price ranges. Other things equal, the number of buyers who can afford the down payment and payments on the \$90,000 property are fewer in number than those who can afford the \$30,000 property. The agent will have a larger investment of time and advertising budget when locating a qualified buyer for a higher priced home. It is not difficult to gather data which illustrates the more expensive homes in most communities are on the market for longer periods than the inexpensive homes, assuming other market conditions are equal. If the recommendation in this paper is adopted, the agent would be forced to establish a direct relationship between the firm's costs and the price of the property.

Bartlett finds no relationship between local wage levels as a measure of the broker's time and the local brokerage rate level. A relationship would not be expected since he used the average weekly earnings of production workers to indicate the value of the agent's time. For many years the real estate industry has maintained they are a profession which provides a service for a commission. The correct study would be to establish a relationship between the dependent variable of an agent's total commission and a number of independent variables such as price of the property, selling costs incurred by the agent and the number of hours spent on each service provided in Exhibit 2. This statistical relationship between commission and time spent on each service could then be compared to similar figures for other professions. Given this argument, the services and charges would be expected to vary with the price of the property, and the derived demand for real estate brokerage would be sensitive to major adjustments in the dominant market.

Implementing Fees

A question still unanswered is how can the firm implement a fee given the longevity of the commission charge and its popularity among competing firms? Our argument is that it will not be imposed by a regulatory agency. The profit motive will encourage brokers to move in the direction of fees for several reasons. One of the arguments already discussed is that educated brokers have expressed a desire to charge fees as a supplement to the commission. Many brokers, especially those in commercial sales, consider themselves to be problem solvers who earn a significant percent of their earnings from assisting clients with the financial arrangements for their property that may not involve a sale. This is especially true during the current era of creative financing and balloon notes where the seller has extended financing to a willing buyer who cannot satisfy the contractual debt service. Neither wants a sale, but they do need counseling from a highly skilled specialist. Some evidence of this movement to a supplementary fee has been seen within the Century 21 commercial and investment society. Brokers are encouraged to place a clause in the standard listing contract which requires the client to pay either a fee if the client's problem is solved without a sale or a commission with no fee if a sale occurs.

High interest rates curtail sales, but the number of problems increase since the client still has a desire to sell or buy housing. This situation creates a tremendous need for counseling which may or may not involve a sale. During these times, a highly educated and experienced real estate agent can provide advice which typically has not been available from an attorney or accountant.

Two recent studies²⁹ have tested the deterrent effect of Sherman Act litigation upon the subsequent pricing behavior and profitability structure of firms. Although these studies covered manufacturing firms and firms characterized by oligopoly, we conclude that the perennial possibility of antitrust litigation and its horrendous expense must have created an incentive for the experienced broker to seek sources of revenue other than the vulnerable commission. Since the real estate field has a long history of antitrust cases, the knowledgeable broker is aware of avoiding innocent conversations about commission structures. The broker must have an incentive to assess the client a fee based upon costs and to diversify the firm's revenue structure by finding other sources of income as opposed to solely relying on the sales commission.

Conclusions

The paper has argued that price competition in real estate brokerage commission rates will not exist until each individual firm starts negotiating a fee with clients to be charged for the performance of the services rendered. Each firm would still maintain the incentive to acquire an inventory of listings and to cooperate since a known fee negotiated with the client was determined in advance. Firms would not charge less than their marginal costs and this would establish a floor on rates and still leave room for deviation above the minimum for firms who wanted to charge for reputation, quality and community standing.

NOTES

1. White (11)

2. The largest number of ethics complaints heard before any local Board of Realtors Ethics Committees throughout the U.S. concerns disputes and commission splits among agents.

3. The National Association of Real Estate Licensing Law Officials includes a summary of educational requirements by state in its annual report.

4. See Garrigan and Wardrop (8, p.14).

5. For a listing of schools teaching real estate, see Garrigan and Wardrop (8, pp. 75-94).

6. For example, see the 1981-82 Bulletin of Information for Applicants: Real Estate Licensing Examinations, Educational Testing Service, Princeton, N.J.

7. A recent trend among real estate principles texts has been to include information on the subjects of brokerage and salesmanship. See texts with copyright dates of 1980 or after such as Epley and Rabianski (5) and Floyd (7).

8. Real estate brokers have learned that antitrust litigation might be avoided by (a) eliminating all conversations with other agents concerning commissions and (b) setting their commissions totally on the basis of their own firm's cost analysis.

9. The idea of charging fees in the real estate business was suggested by Yinger (12, p.603).

10. Common pedagogy holds that the agent earns the commission when a buyer is found who is ready, willing and able to purchase the property according to the terms in the listing contract. The agent receives the commission at closing.

11. Spitz v. Brickhouse, 3 Ill. App. 2d 536, 123 N.E. 2d 117 (1954).

12. Hamer v. Tuffy, 145 F. 2d 447 (2d Cir.1944) (\$6,750 fee held not unreasonable for 1,200 hours of work in that approximately 30% would be needed to cover overhead).

13. ABA Model Code of Professional Responsibility DR 2-106 (B). 14. Goldfarb v. Virginia State Bar, 421 U.S. 773, reh.den. 423 U.S. 886 (1975) (held minimum fee schedule prescribed for title examinations that violated Sherman Act).

15. Spencer v. West, 126 S.2d 423 (La.App.1960) (physician's fee deemed excessive and reduced by court from \$1,939 to \$650). Apparently physicians have been excluded from applicability of state antitrust statute condemning the fixing of prices for "commodities," Rolf v. Kasemier, 140 Iowa 182, 118 N.W. 276 (1908); one who would pursue this antitrust issue should read "Application of the Antitrust Laws to Anticompetitive Activities of Physicians," 30 Rutgers L. Rev. 991 (1977).

16. Agran v. Shapiro, 127 Cal. App. 2d 807, 273 P. 2d 619 (1954). Of interest, however, is Ryan v. Kanne, 170 N.W. 2d 395 (lowa 1969) in which accountants collected a fee for their services, even though they performed the work in a negligent manner for which the client received damages in an amount larger than the fee.

17. 15 U.S.C. 13 (c) (1976).

18. Federal Trade Commission v. Henry Broch & Co., 363 U.S. 166, reh.den 364 U.S. 854 (1959) (commission reduced from agreed 5% to 3% which was reflected in price reduction for apple concentrate from \$1.30 to \$1.25 per gallon).

19. Thomasville Chair Co. v. Federal Trade Commission, 306 F.2d 541 (5th Cir. 1962).

20. Baum v. Investors Diversified Services, Inc., 286 F. Supp. 914 (D.C. III 1968) (court seemed to feel that investors in a mutual fund are not competitors one with the other, within the meaning of the antitrust laws).

21. Kaplan v. Lehman Bros., 371 F.2d 409 (7th Cir. 1967), cert.den. 389 U.S. 954 (1967), reh.den. 390 U.S. 912 (1968).

22. Federal statutes require annual approval of investment company advisors' contracts by board or majority of outstanding voting securities of the company. 15 U.S.C. 80a - 15 (a) (2) (1976).

23. Saxe v. Brady, 40 Del. Ch. 474, 184 A. 2d 602 (1962). In dicta, one court disliked a 1/2 of 1% fee because it failed to allow for the success or failure of the investment advice. Acampora v. Birkland, 220 F. Supp 527 (D.C. Colo. 1963).

24. Bartlett (1)

25. Case (2)

26. Stigler (10)

27. Crockett (3) and Yinger (12)

28. Epley and Swan (4)

29. See Feinberg (6) and Dosoung and Philippatos (9).

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Book Review

Real Estate Syndication: Tax, Security and Business Aspects. By Stephen T. Jarchow. Published by John Wiley and Sons, New York, New York, 1985, 944 pages, \$75.00 hardbound.

Reviewed by Cary Ulman

Stephen Jarchow's new book, *Real Estate Syndication: Tax, Security and Business Aspects,* is intended to be a comprehensive reference to the real estate syndication business. By focusing on the tax and securities sides of syndications to the neglect of the business side, though, Mr. Jarchow achieves less than two-thirds of his purpose. This is to be expected of the author, given his training as a lawyer and a CPA, yet more is expected from this book given its title and stated purpose.

From a dealmaker and an investor's point of view, Chapter 9, Structuring Deductions, and Chapter 15, Investment Analysis, offer some interesting insights. The sections on fees and investor protections are especially helpful in structuring and evaluating deals. Chapter 12 provides a good overview of the steps required in organizing a public real estate offering. Most of the remainder of the book is oriented to the legal requirements of a syndication and this is where the book falls short. The author has his legal blinders on and neglects the two driving forces of the syndication industry: the business of finding good product and the business of marketing limited partnership units to the public.

The book adds nothing new to the literature on these crucial subjects. We do not learn what makes a good product, how syndicators acquire product, on what basis deals are sold (IRR, cash-on-cash, tax write-offs), how syndication firms position themselves, how unit sizes and pay-in periods are determined, or how deals are sold to the public. This book is really no different from the handful of other reference books on real estate syndications which purport to be comprehensive treatises, but instead are only legal guides to putting a prospectus together.

Unfortunately, the book may become dated before its first printing is sold, because of the negative impact the proposed tax law changes would have on real estate. When Congress passes these changes, the updates and revisions which the author has promised to publish to keep this publication current should become the best parts of the book.

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REAL ESTATE ISSUES

VOLUMES 8-10 SPRING/SUMMER 1983—SPRING/SUMMER 1985

Editor's Note:

The following index is arranged alphabetically, first by author and then according to topic. This updated listing, plus the index that appeared in REAL ESTATE ISSUES, Spring/Summer 1983, Volume 8, Number 1, comprises the complete library of authors and articles that have

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