REAL ESTATE ISSUES

Volume 9
Number 1
Spring/Summer 1984

Editor's Statement

While the national economy continues to boom in anticipation of November's elections, demographic as well as underlying economic currents are driving the movement of the housing markets along lines not predictable on the basis of earlier boom-and-bust cycles. In two well-thought-out articles, David A. Smith and Edward C. Carman, Jr. (apartments) and Carl F. Horowitz (homes) examine the impact of those trends on housing production and design. The implications, while frightening to some, will be reassuring to many, especially those to whom change unaccompanied by catastrophe is part of life and not the end of it.

Change is in fact the theme that permeates this number of *Real Estate Issues:* change in our population, our prospects, our laws, our technology, our institutions, and the theories we use to interpret them. L. M. Farrell of the University of Quebec examines the social utility of speculation and finds it beneficial, challenging frequently encountered theories of market imperfection and urban sprawl in an unusually penetrating analysis that draws upon Canadian and U.S. experience. Paul K. Asabere and Peter F. Colwell examine the relationship between zoning and urban land values from their base at the University of Illinois, finding to their apparent surprise (if not that of most real estate practitioners) that zoning is not a particularly efficient allocator of economic resources. Byrl Boyce and J. Warren Higgins explore the tax implications of disposing of personal residences, a topic of interest to homeowners as well as their advisors, in a practical manner that both categories will appreciate.

Computer-based decision support systems and their use in strategizing property dispositions are discussed by Jack T. Hogue, and the problems inherent in the institutionalization of our real estate economy are investigated by Stephen Roulac, who points out their implications for managers, companies and schools.

Finally, Maury Seldin abandons his traditional "Seldin on Change" format to address the broad field of real estate and market analysis in an attempt to redefine the field and reclassify its elements.

An industry in ferment can be difficult to understand, but can hardly be a dull one to those who must cope with the changes. We may be more fortunate than we know to be experiencing these confusing and challenging times. At any rate they're interesting for editors.

Editor-in-chief

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Published semiannually by the American Society of Real Estate Counselors of the NATIONAL ASSOCIATION OF REALTORS®, 430 North Michigan Avenue, Chicago, Illinois 60611. Third class postage paid at Chicago. Subscription rates: $18 per year ($32 for two years), $14 per year to students and faculty; add $2 for mailing for foreign subscriptions (submit in U.S. currency); single copy $11. Remittances may be made by personal checks, drafts or post office or express money orders payable to the American Society of Real Estate Counselors. Remittances, change of address notices, undeliverable copies, orders for subscriptions and editorial material should be sent to Real Estate Issues, the American Society of Real Estate Counselors, 430 North Michigan Avenue, Chicago, Illinois 60611. 312/329-8257.

Library of Congress card number LC 76-55075

Printed in U.S.A.

RENTAL HOUSING IN THE EIGHTIES: A DEMOGRAPHIC ANALYSIS AND PROGNOSIS FOR THE FUTURE

by Edward C. Carman, Jr. and David A. Smith

The 1970s represented a turbulent time for the real estate industry: first there was too much money chasing too little real estate; then there was too much real estate chasing too few tenants; then there were too many condos; finally there was no mortgage money.

So much occurred in the '70s that it was easy to lose sight of more fundamental long-term changes in the nature of the real estate business and in the demographics of the United States.

In the 1980s, Americans are feeling the brunt of these changes. The average household is getting smaller. Homes are becoming increasingly difficult to purchase, yet people are paying larger shares of their income for housing. Americans are adjusting their aspirations to owning an attached unit in a multi-family complex rather than a single-family home.

Understanding the demographic changes now occurring is the key to anticipating the responses that they will trigger in the nation's housing markets.

Demographic Analysis

If the 1960s was the decade of the young, then the '80s are the decade of the two-income family and the elderly—two groups which have substantial needs for rental or condominium housing.

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Young Adults

The 1950s were the baby boom years. From 1950 through 1965 an unprecedented number of American children were born. Ever since then, this population bulge has been moving like a wave through American society, rewriting mores and economics as it goes.

The first of the baby boom children became adults in 1970; by 1985 the entire generation will be between the ages of 20 and 35. By the end of the decade of the '80s forty-two million Americans will have turned 30—a 31 percent jump from the previous decade.

With these new adults will come new household formation. Most of these households will have two incomes; most will have fewer children. These people have more money to spend, and they will be searching for acceptable housing. But house prices are out of reach for most young couples, and will stay there as long as interest rates remain high. And as long as budget deficits force the Federal government to borrow hundreds of billions of dollars a year, interest rates will probably remain at record levels.

Amenity Requirements

Even though single-family homes may be unaffordable, Americans will seek housing which provides the amenities and sense of livability of a single-family home. Studies have shown that when it comes to choosing housing, young Americans are particularly sensitive to:

Sense of privacy. To achieve this, apartments should have enclosed or delineated yard space or balconies. Soundproofing will be required to reduce or eliminate noise from neighboring apartments. Rather than long anonymous corridors, apartments should be designed to minimize the number of apartments off each entrance; it is ideal for each apartment to have its own front and back door.

Security. Contrasting with the need for privacy comes a concern for personal security. The apartment should have strong doors, windows, and locks. Buzzer, video or magnetic card identification systems should restrict or monitor access, both to the apartment itself and to the surrounding residential complex.

Landscaping. Though the apartments must be well protected, they must also seek to disguise the size of the complex. Through planned use of extensive greenery, shrubs, trees and flowers, the complex can be given an established, residential feel. Making a rental complex look like a single-family subdivision will add residual value.

Recreational amenities. Multi-family living can provide fringe benefits such as swimming pools, tennis courts, convenient reserved parking, and other recreational facilities. It can also provide a sense of community. These features play a particularly important role in establishing value for future occupant ownership as condominiums or co-operatives.

Energy efficiency. Insulation, storm windows, weatherstripping and efficient heating and cooling systems are virtually mandatory in any new property. Installation of separate utility metering will usually reduce overall fuel consumption by 20 to 30 percent as well as protecting the owners from sudden fluctuations in energy costs. Complexes which have individual metering will command higher resale prices. If energy costs continue to outstrip inflation, conversion will make sense for more and more properties.

Location. Proximity to public places such as schools, employment centers, and churches, and especially to public transportation, reduces the effective living cost of a complex and hence increases expected sale value.

Overall image. A project which carries an air of exclusivity and prestige, largely derived from combination of factors cited, should be a rental market leader.

Anticipated Housing

By the end of the '80s, the population of the United States is expected to increase by twenty million people. Because of the baby boom, the largest age group increase will be reflected in the 25 to 44 year-old bracket. New household formation will be large: approximately 1,500,000 per year, or 15 million for the entire decade.

Of these, roughly three quarters or nearly 10 million households will have no children. Of the remaining quarter, nearly two-thirds will have only one child. In other words, of the new households being formed during the '80s, only one in twelve is expected to have two or more children. *Eleven out of twelve new households will require apartments of two bedrooms or smaller.*

To keep up with the demand, supply must also expand. Yet every year perhaps half a million rental housing units are removed from the supply, usually by deterioration and eventual demolition. During the period from 1950 through 1970, new housing construction averaged one and a half times the rate of household formation, a ratio that has in the past maintained a stable rate of occupancy. Given these relationships, unless 20 to 25 million or so new housing units are built during the decade (or 2,000,000 per year), rental markets will get tighter.

From 1970 through 1978 approximately 1,800,000 new construction units were built each year, roughly 70 percent of which represented construction for owner occupancy (chiefly new houses or new construction condominiums). From 1979 through 1983 that production was cut to 1,400,000 per year, less than 70 percent of the production anticipated to be needed to prevent rental tightening.

Furthermore, during the '70s privately syndicated subsidized housing emerged as a major source of new development. By the end of the decade, it is estimated that 60 percent of the new construction multi-family rental housing had some government involvement. The unprecedented infusion of inexpensive housing, fueled by reduced interest rates (as low as the equivalent of 1 percent) and direct government income subsidies, held back rents in many areas.

Since 1981 the Reagan Administration has eliminated funding for new Section 8 properties (although existing Section 8 properties have continued with their full Section 8 allocation). It is predicted that this decade will produce more new rental households than ever were produced in the country's history. This is a prescription for nationwide rental tightness.

With conventional new construction choked off by high interest rates, and the government bowing out of subsidized housing production, no significant vehicle for the production of new rental housing in the '80s exists.

Elderly

For the last 30 years, the South and West have been the growth areas of the United States, while the Northeast and especially the industrial North Central have suffered population loss. Nearly 75 percent of the increase in population is occurring in the South and West.

Many of these individuals are elderly. Americans are living longer and having fewer children; by 1990 roughly a third of the population will be 50 or older. The gradual increase in the elderly population should continue right through until roughly 2010, when the baby boom generation will turn 55.

The housing needs of elderly people differ radically from those of the nuclear family, yet generally resemble those of young adults. The elderly need less space and fewer bedrooms; most elderly complexes average 80 percent one-bedroom or smaller. The elderly often live on fixed or limited incomes; moderate housing is a must. Insulation plays a key role because the elderly generally prefer higher living temperatures.

Many of the prime residential attractions suitable for young adults are also sought by the elderly. While the need for recreational amenities is less, the desire for a sense of community is even greater; well-managed existing elderly properties provide a full schedule for resident group activities.

Conversions of existing multi-family rental elderly complexes to individual ownership is a logical step. By the end of the decade, all-elderly condominiums or cooperatives probably will start to appear on a much larger scale.

Response

So far, a bleak picture has been painted of more and more Americans competing for a static or possibly dwindling supply of attractive housing. What responses are these changes triggering?

Rent Increases in Real Terms

In the '70s, renters were fortunate. In the first few years of the decade, developers took advantage of cheap debt financing—and even cheaper equity financing available through REITs and similar vehicles—to build more rental housing than the country could then absorb. Vacancy rates reached record highs. These vacancies and the infusion of government subsidized housing held down rents in prime new construction complexes during the latter '70s.

Just as the Treasury department is the bellwether for interest rates, vacancy among attractive new construction complexes sets a ceiling on the rental market. Existing complexes had to mark time as best they could until the desirable complexes filled up.

Once they were full, the desirable complexes faced a second problem: skyrocketing utility costs triggered by the Arab oil embargo of 1974. Most of the housing built in the early '70s featured little insulation and central metering for heat. But when costs rose uncontrollably, while rents were held back by vacancy problems, many properties were squashed in the middle. Subsidized housing suffered along with the rest of the industry.

In the middle '70s rental construction slowed dramatically, and by 1977 the tide was beginning to turn. Owners were finally able to chase the utility increases. Since then rents have increased faster than inflation, yet because of the enormous pit into which real estate fell, the period of catch-up is not complete. And new construction, the traditional market leader, was curtailed by the explosive rise in interest rates starting in 1978.

In order to build a new conventional rental property today, a builder has to charge rents 30 to 40 percent higher than are supported by most marketplaces. It is not surprising that little conventional new construction is taking place, except in those Sunbelt cities experiencing dramatic immigration. But the gap between existing rents and replacement rents has another implication.

Before it will become economical for a potential owner to build a new property, rents must rise 30 to 40 percent in real terms. It is logical to expect that this trend will take place in the decade of the '80s.

Even if inflation remains at 4 to 5 percent per year, the future rents needed to spur new construction would appear to be staggering. The same tenant who paid $400 for a conventional two-bedroom apartment in 1982 might anticipate paying $800 to $1,100 for the same apartment in 1992.

Lowered Expectations

Even though rents are under the replacement cost level, they already represent a disproportionate share of many people's incomes. In the '70s lenders figured their home buyers would pay roughly 25 percent of their income for housing cost; today most banks use 30-40 percent. Housing, like energy, is becoming more expensive.

Two-income families are more easily able to ride with these trends, but single-income families have a difficult time. As a result, during the first years of the decade many people lowered their living standards by doubling up or otherwise sharing living accommodations. In effect, this reduced the rate of household formation, a statistic confirmed in the recent census analyses. In the '70s young people just starting out could aspire to a single apartment. Now they must either share for a prolonged period or live at home. Some families are even doubling up to buy two-family residences where once they would have disdained even to rent.

Reducing expectations may result in some local rental market shrinkage with increases in vacancy: during the recession of 1982-83, this happened in several markets. The phenomenon also occurs with oil: when the price rises, usage drops. But in a very short time people's expectations of what constitutes a fair price is radically adjusted; the same people who complained of shortages when gas was 70¢ a gallon bemoan the "glut" at $1.25 or more.

The new apartments of the future will be smaller. Therefore existing complexes with their generally larger apartments will be relatively more attractive. Of course, these older complexes will face significantly higher heating costs and will have to implement energy-conserving measures. But it seems possible that the moderate-income apartment of today may become the upper-middle-class home of tomorrow.

Potential Rent Control

Every rental owner casts one vote. So does every tenant. But tenants outnumber owners by fifty or a hundred to one, and politicians often listen to votes more than they listen to the issues. Many local political battles over rent control are expected.

Rent control hurts rental properties. Cities like London and New York, which have had prolonged rent control, have a long history of stifled new rental production. Owners have little or no incentive to maintain the property. Tenants become house-locked, unable to move to a non-rent-controlled apartment and clinging to an existing tenancy which is their only way of making ends meet.

It is felt that in the long run rent control does not work: tenants end up paying equivalent rents for inferior property. But the effects of rent control take time to emerge, and a horizon stretching over several years is often beyond the imagination of a local politician. What is worse is that, once implemented, rent control can be political suicide to remove. The effects of sudden decontrol on renters are catastrophic; the natural emigration which might take place over several years can be compressed into six months.

Rent control battles are likely to be fierce and unprincipled. In the long run, however, rent control probably will be discarded because it does nothing to produce housing or even to encourage its preservation and upkeep.

As for national rent control, even if constitutional, it is doubtful that any Republican administration—especially the current administration—would even contemplate such a drastic step. Democratics or liberal Republicans are forced to solve the problem a second way—by increasing supply.

Financing

How will the apartments of the near future be built? In the '70s, cheap fixed-interest-rate mortgages were common. Better still, these mortgages were assumable. Upon sale of the property, the new owner could continue paying the same low interest rate. It seemed like a good idea at the time; after all, the mortgage is nonrecourse, so why have a due-on-sale clause?

When interest rates doubled and tripled from their early '70s levels, the bankers found out why. Suddenly the S & Ls had to pay out 12 to 14 percent for money which was earning them six to eight percent. In fact, the preponderance of fixed-interest-rate mortgages is thought to be the key reason why many S & Ls floundered in the early '80s.

Now, of course, no bank in its right mind would write a long-term low-interest assumable mortgage. But new construction rental housing is generally unfeasible at today's combination of rents and interest rates. Where is the money going to come from? Two sources loom on the horizon:

Pension funds. The many billions of dollars locked up in pension funds have two crucial advantages: they are generally tax-exempt, and they have very long time horizons. They also face a serious investment problem: how to preserve and enhance capital in an unpredictably inflationary market.

Real estate offers an excellent solution. Yet, until recent liberalizations of the law, pension funds were generally excluded from equity or secondary debt positions in real estate. With the removal of these restrictions, a growing trickle of pension fund interest is being observed. It may become a flood.

Foreign investment. Wealthy foreigners have many of the same investment characteristics as pension funds: long time horizons, enormous sums to invest, concern about protection and enhancement of capital during worldwide inflation. Foreign investors can often also structure lower tax costs than domestic investors.

But to these significant reasons a further concern is added: global unrest. In the eyes of foreign investors, the United States remains a haven of capitalism and stability. So they seek tangible United States assets such as oil and gas and real estate. U.S. energy and real estate are inexpensive by global standards. Already the foreigners are buying the glamor properties such as huge office buildings and shopping centers. During the next few years, it is expected they may become more interested in bread-and-butter rental housing.

Joint Venture Financing. High debt service costs have encouraged the development of new financing techniques. Much of the new construction in the Sunbelt has been financed by joint ventures between lenders (often more aggressive savings and loans) and builders. Another technique which gained popularity is the accruing mortgage, where the interest rate, often floating, is several points higher than the payment rate, usually fixed. The two techniques are often combined. Their effect is usually to permit some development in obviously strong rental markets. As rents rise in real terms, vehicles like this will proliferate.

Renewed Government Involvement

A government which cannot house its people will soon be voted out of office. Sooner or later the current policy of almost no involvement in housing production must change in a number of ways:

Income subsidy. The government could revive the Section 8 program and similar vehicles which insulate tenants from rents.

Financing subsidy. The old Section 236 program suffered from some weaknesses which are easily identifiable in retrospect: construction inadequate to deal

with long-term expectations; no defense against increases in utility costs; relative lack of concern over management as opposed to construction. A fixed subsidy also protects the government against uncontrollable inflationary income increases and can with proper structuring provide the owner with incentives to minimize costs.

In fact, both the Federal government and several innovative state housing finance agencies have recently enacted differing versions of fixed, relatively shallow subsidy programs precisely as predicted by this article.

Ownership incentives. The Economic Recovery Tax Act of 1981 provided substantial tax incentives to owners of existing housing. During the last few years, phenomenal interest in resyndicating second-user subsidized housing properties with new limited partners developed. Buyers were quick to realize the advantages of purchasing existing housing for a fraction of its replacement cost, and the business developed into one of the dominant forms of real estate tax shelter.

The well-structured resyndication usually: paid the old investors enough to cover their contingent tax liability and hence bring in substantial capital gains revenue to the government; left unaffected the underlying rental character of the property; provided funds for deferred maintenance or capital improvements mandated by higher utility costs; and rewarded good managers who preserved the value of their property.

Moreover, resyndication is "financing-independent." It doesn't require a new infusion of hard-to-find mortgage money since the mortgage is already in place. It serves the government's ends, and the government has a vested interest in improving the quality of housing. Finally, most existing subsidized housing properties carry low acquisition costs. Replacing them might easily cost twice as much. It is far better to upgrade and preserve the existing housing than to embark on an expensive program of demolition and reconstruction.

Unfortunately for the housing industry, the recently enacted Tax Reform Act of 1984 contains provisions which will greatly reduce the volume of resyndications in 1985 and beyond. These provisions, which generally require accrued but unpaid interest to be deducted only in accordance with a market interest rate, and mandate the noteholder to report a matching amount of income, become effective January 1, 1985. Between now and then, there will be a stampede to complete as many transactions as possible.

Conclusion

The decade of the '80s is seeing a vast infusion of young, childless, two-income Americans seeking attractive housing. Housing the elderly will become more important as the proportion of elderly people rises. As time goes on, people will pay more in real terms to get less.

So far in the '80s and for at least the next several years, new construction will not keep up with this inexorable demand. Rents should not only keep pace with inflation but increase in real terms by 30 to 40 percent from 1981 levels. Periodic local rental softness will occur as Americans lower their expectations, but investment yields from existing property should steadily rise.

Properties with relatively smaller units, with energy efficiency and amenities and characteristics of single family homes, will probably do best overall.

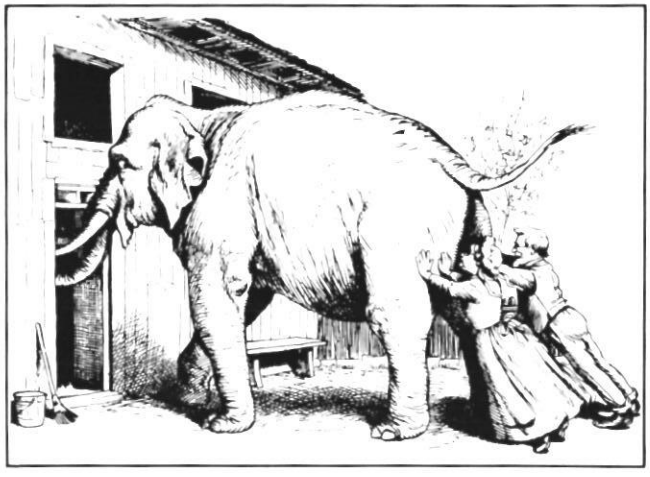
DOWNSIZING THE SINGLE-FAMILY HOME: PROSPECTS FOR THE CURRENT CYCLE

by Carl F. Horowitz

Since the mid-1970s, few policy issues in this country have evoked more concern than the rising cost of a new home. Rarely does a month pass without having some prominent spokesperson in government or the real estate industry make reference to the withering away of the "American Dream." The assessment is at least partly understandable. During 1970-81, the median sale price of a new single-family home nearly tripled from $23,400 to $68,900, while median household income rose from $8,734 to $19,074 during this period.[1] Thus, the price-income ratio—generally considered to be a better indicator of homeownership affordability than price alone—rose from 2.68 to 3.61. According to estimates of the National Association of Home Builders (NAHB), only about one-fourth of all households can now afford new single-family homes according to traditional standards, whereas in the early-70s, the figure was roughly one-half.[2]

Despite its rising cost, homeownership remains as strong an ideal as ever, and with good reason. Whether as an appreciable investment, a set of physical attributes, or a sanctuary for privacy and identity, for-sale housing generally offers more to the consumer than rentals. That renters as well as owners perceive this to be the reality should hardly come as a revelation—how else does one explain the near-panic among many potential first-time homeseekers over consigning themselves to possible long-term renting?

Creative financing aside, there are three alternatives for making homeownership better within the consumer's reach. The first is apartment conversion. Since the early-70s, several hundred thousand apartments have been converted to condominiums and cooperatives.[3] Given that these dwellings tend to sell for less than others, the practice significantly aids the first-time buyer.[4] The second alternative is to build for sale in almost any configuration except single-family, mobile, duplex, and low- and mid-rise multifamily, the most preferred choices. Their compact sizes and high floor-to-area ratios enable developers to offer them at lower prices. The final alternative is to work within the tradition of the single-family unit (SFU), and strip down the product: Maximize the allowable densities per acre and reduce the interior square footage, the number of rooms (especially bedrooms), and the variety and lavishness of amenities.



The third approach seems to have received somewhat less attention than the first two, even though the single-family unit continues to account for the bulk of new residential construction for sale. However important the mobile home and multifamily unit have become as a means of reaching more homebuyers in an era where cheap, abundant land has seen its day, the private home still represents a fundamental housing aspiration for the majority of Americans, and thus much attention should focus upon how to reduce its cost without reducing its structural quality or its availability to a wide range of consumers. This is the central concern of this paper; the

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extent of the current trend toward reducing the square footage and amenities of new homes to the public, the rationales for and limitations upon its further continuation, and the reasons why the most recent downsized or "no frills" cycle, despite its slight reversal in 1983, may last longer than similar tendencies of the past.[5]

The "No Frills" Home: Past And Present

In the late 1940s, the homebuilding industry, moribund during the Depression and World War II, was engaging in a burst of single-family construction that would dwarf that of any previous era. Opportunity was at hand for aggressive developers willing to buy large tracts of relatively cheap land near the fringes of urban development and build modestly-priced homes. With marriage and birth rates at their highest levels in decades, there was a strong latent demand for detached homes with yardspace. Real incomes were rising substantially, and with the help of FHA and VA mortgage insurance programs, millions of renters entered the ranks of homeowners.

For nearly a decade, homebuilding was epitomized by the various Levittown developments in the New York City and Philadelphia areas, with their Cape Cod, Rancher, and Colonial models. "I build for the mass, not the class," builder Samuel Lefrak once remarked of his New York City elevator apartment empire, and no doubt William and Alfred Levitt, David Fox, Jim Walter, and other large-scale builders of single-family homes could have made the same claim.[6]

As the 1950s wore on, however, a new home came increasingly stocked with more than the shell and basic finishings. It was larger, and so was the lot upon which it stood. Wall-to-wall carpeting, central air conditioning, landscaping, fireplaces, dishwashers, and finished basements and/or attics, while not yet standard, were headed in that direction. The 1960s and 70s witnessed the further continuation of these trends, and by the end of the latter decade, two observers reflected on what had transpired:[7]

> People moved upwards from the house that Levitt and a great many other people made famous shortly after World War II—an 800 square foot house, with one-and-a-half baths, and a second floor that was only roughed out (and in some cases, it was pretty rough). By the mid-1950s, the newly built houses in America had a median size of 1,100 square feet. Currently, it exceeds 1,600 square feet. The middle-class moved from a house that was "stripped down" to a house that was a finished machine for living.

Part of the explanation for this shift in standards lay in suppliers creating demand; similar to automobile manufacturers, builders believed that to stay competitive, each successive new model had to outdo the previous one. More important was the fact that consumers could increasingly afford more. They would have eventually sought these extras anyway, and with higher incomes and often with equity from prior homeownership, they were willling to pay for them at the time of purchase rather than wait (and pay even more as a result). Also more important were the dictates of suburban county and local governments whose zoning ordinances created strong disincentives to build compact detached homes. In seeking to maximize property values and minimize public school costs, localities established formidable minimum lot sizes and floor-to-area ratios. In the late 1960s, for example, the National Commission on Urban Problems found that one-fourth of all SMSA municipalities with at least 5,000 population did not permit single-family dwelling construction on lots of less than one-half acre.[8]

The dominant trend of single-family construction was thus one of steady expansion of the home. While hardly depleted, the reservoir of consumers willing to accept what the Levitt Brothers and their ilk had offered a generation before had diminished. In the aftermath of the 1974-75 recession, some builders experimented with "no frills" homes (as they were known), but had very limited success. Indeed, as Anthony Downs noted a few years later:[9]

> Smaller, lower-quality, lower-priced units have not sold well, while large, high-quality units have sold exceptionally well. The "hottest" assets in the new-growth suburbs of Orange County, Washington, Chicago, New York City, or San Francisco include enormous five-bedroom, four-bath houses containing over 2,500 square feet, air conditioning, fully finished basements, and multiple fireplaces.

What, then, is the justification for reducing the average size and the range of amenities of a home in order to reach a market that presumably barely exists, especially when buyers of new homes tend to be those who have accumulated equity from a prior home? There are two arguments that can support the strategy.

First, a home's features do not always have to be "front-ended"; owners can make various improvements commensurate with increases in their financial resources. A home need not come brand new with a panelled den, a fireplace, or a landscaped lawn in order to eventually contain these things. This is particularly true with detached homes, where it is relatively simple to construct new rooms or finish a basement in order to accommodate a family's increasing space needs. Even if a particular family prefers moving to expanding or remodeling, their home will have served them well, and will no doubt do so for the family taking its place. Its lower initial sale price enabled both families to enjoy the benefits of home ownership.

The logic behind this argument is observable in market behavior. Home price inflation, while partly attributable to the rising costs of unimproved land and a certain constant "bundle" of structural characteristics, is also partly due to the fact that the lot size and the bundle have become larger. That is, a home costs more today than thirty years ago because it is more likely to contain central air conditioning, a dishwasher, a finished basement, four or more bedrooms, and other features that necessarily increase the price. One pays more for housing because the size of the package has increased. Ferri concluded that almost one-third of the average increase in home prices over a ten year period in Fayette County, Kentucky

could be explained by differences in structural and lot characteristics.[10] Berry and Bednarz found that housing characteristics, apart from any neighborhood considerations, accounted for almost 60 percent of the price of a single-family home in Chicago.[11] Less dramatically, the most recent of the Census Bureau's annual C-25 Series *(Characteristics of New Housing)* indicated that during 1977-82, housing quality differences explained roughly 11 percent of the mean sales price of a new single-family home.[12] The implication is clear: If homebuilders scaled down their offerings, they could sell them at lower prices. First and subsequent buyers would be concerned about how to add to their appeal. As Louis Thompson, Senior Staff Vice-President of NAHB summarized, "There are four basic ingredients in a home—land and its development costs, labor costs, material costs, and financing costs. The only one likely to decrease is financing. So the only way to produce an affordable house is to build it smaller."[13]

Second, several demographic trends suggest that downsized homes have a sizeable potential demand. Most of these dwellings are ostensibly oriented toward first-time buyers, and such buyers tend more to be in the 25-34 age bracket than repeat buyers.[14] The Census Bureau projects that during 1985-90, the number of households headed by an adult in this age cohort will increase by 8.1 percent.[15] This is only a modest gain compared to that expected for households aged 35-44 during the same period, but it does indicate that not all the focus should be on the needs of postwar baby boom adults. Moreover, while the number of households under 25 will decline slightly, the more affluent among them will often buy homes if the opportunity is available to do so. As one Virginia homebuilder currently active and successful in building compact detached homes remarked:[16]

> Our buyers are probably younger than you might suspect. Quite a few of them are in their early-to-mid twenties. I'd say that at least thirty percent of our market for homes in the range of 750-1,150 square feet consists of singles who either live alone or with a member of the same or opposite sex.

Also, the decision of what size house to buy is very much a function of the presence, number, and age of children—and families with few children rarely need large homes. During 1970-81, for example, the percentage of families with three or more children declined from 20.4 to 11.5 percent.[17] Meanwhile, during this same period, the percentage of families with no children increased from 44.1 to 48.2 percent.[18] Some of this trend can be explained in terms of delayed childbearing rather than of a decision not to raise children; in fact, the proportion of childless ever-married women in all age cohorts over 35 has steadily decreased, even as that of similar women under 35 has increased.[19] Yet among the vast majority of fertile women (aged 15-44) who have or will have children, barring some radical shift in social attitudes toward childbearing, few will have more than two.

Evidence Of A Trend

After a lengthy period of expansion, the bundle of features in single-family homes reached a point of saturation in the late 1970s, and has since experienced a decline. Developers have begun to respond to the necessity of reaching a broader market. As one Connecticut builder recently remarked, "We've all been so spoiled, but you've got to cut down if people are going to be able to buy a home."[20] Partly as a result of this strategy, the median price of a new single-family home increased from $68,900 to only $69,300 during 1981-82, the smallest rise in over a decade, even though interest rates on construction loans were reaching record high levels.[21]

Each year since 1963, the U.S. Census Bureau has published a report entitled *Characteristics of New Housing* (Series C-25). Based on monthly interviews with builders and owners of newly completed single- and multi-family developments nationwide, the report provides detailed information on structural characteristics, amenities, interior square footage, and sale prices. While its data base does not distinguish between detached and attached single-family dwellings or between differences in the quality of each amenity, and while it does not examine lot characteristics, it is nevertheless useful in understanding the extent to which the general characteristics of new homes have changed over time.

Exhibit 1 indicates the median interior square footage and the proportion of inclusion of selected amenities in new homes for each year during 1966-83. The evidence suggests that until the late 1970s, with two brief interruptions, the size of the housing package has expanded; from 1978 through 1982, it declined; and in 1983, it had once again increased. Using 1978 as the point of demarcation, most categories showed either a decline during 1978-82 or a gain that was small relative to that of the preceding twelve years. In the case of two or more bathrooms, one or more fireplaces, and median floor square footage, sudden decline came on the heels of steady growth. While the percentage of units with central air conditioning, stoves, dishwashers, and refrigerators continued to rise, these items (except dishwashers) are necessities, and households would have ordered them upon purchase of the home anyway.

It is also worth noting that the overall reduction of size and amenities since 1978 is distinctly different from one that took place at the beginning of the 70s. In the earlier instance, the figures were sharply pulled down by the large number of units authorized under the Federal government's Section 235 homeownership subsidy program, which had to meet certain HUD cost guidelines in order to reach lower-income buyers. The more recent stripping-down process represents the attempt of builders to reach young middle-income buyers without any subsidy. With the exception of the category of four or more bedrooms, however, standards in 1983 partially reverted to their earlier levels, an almost inevitable result of the remarkable growth in the GNP that year by over five percent. Not surprisingly, the median sale price of a new home rose from $69,300 to $75,300.

EXHIBIT 1

Inclusion of Features in New Single-Family Housing: 1966-82
(all figures in percentages, except where indicated)

Year*	Central Air Conditioning	Two or More Bathrooms	Four or More Bedrooms	One or More Fireplaces	Full or Partial Basement	Garage or Carport	Stove**	Dish-washer**	Refrig-erator**	Median Floor Square Footage***
1966	25.4%	49.3%	24.3%	NA	44.5%	80.3%	85.1%	38.8%	5.2%	1,460
1967	27.8	52.5	25.2	NA	43.6	81.1	85.8	45.4	6.2	1,505
1968	30.7	54.4	25.9	NA	43.2	81.1	88.4	50.5	6.4	1,500
1969	36.4	56.1	26.5	44.3%	41.8	80.5	88.4	51.5	9.0	1,530
1970	33.5	48.2	24.6	35.3	36.8	74.5	85.3	41.9	10.4	1,385
1971	38.0	50.4	25.3	37.2	36.1	76.6	88.5	47.8	11.2	1,400
1972	42.8	52.8	23.1	37.3	36.7	78.0	89.1	53.1	11.8	1,405
1973	48.6	59.7	23.4	43.9	41.0	78.4	89.0	64.8	15.8	1,525
1974	48.1	60.9	23.2	48.7	45.1	78.4	88.0	72.9	13.0	1,560
1975	46.1	59.2	21.2	52.2	44.6	76.3	89.7	73.0	10.7	1,535
1976	49.4	66.9	23.0	58.4	45.4	80.2	90.5	78.2	9.9	1,590
1977	54.0	69.5	22.6	60.9	44.0	80.5	91.6	81.7	11.4	1,610
1978	58.2	73.5	23.9	64.0	42.4	81.9	91.9	83.7	11.4	1,655
1979	60.2	73.6	22.7	62.0	41.7	80.4	92.0	84.9	13.3	1,645
1980	62.5	72.5	20.1	56.4	35.5	75.9	92.5	82.2	13.9	1,595
1981	64.7	70.0	19.5	54.7	33.3	75.0	91.3	82.3	15.4	1,550
1982	65.8	67.1	17.9	53.6	31.2	72.8	92.7	84.0	16.0	1,520
1983	69.6	72.2	17.6	56.8	31.7	75.2	NA	NA	NA	1,565
% Change 1966-78	+129.1	+49.1	−1.6	NA	−4.7	+2.0	+8.0	+115.7	+119.2	+13.4
% Change 1978-82	+13.1	−8.7	−25.1	−16.2	−26.4	−11.1	+0.9	+0.4	+40.4	−8.2
% Change 1982-83	+5.8	+7.6	−1.7	+6.0	+1.6	+3.3	—	—	—	+3.0

*Figures for 1963-65 are available only for the inclusion of stove, dishwasher, and refrigerator, and are thus not included.

**Figures refer to homes sold rather than completed. Figures for 1983 were not available.

***Figures represent numbers rather than percentages.

Source: U.S. Bureau of the Census, *Construction Reports*, Series C-25, No. 82-13, "Characteristics of New Housing: 1982," Washington, D.C.: U.S. Government Printing Office, June 1983, various tables; "Characteristics of Housing Completed in 1983," preliminary report, March 5, 1984.

The Census trends of the 1978-82 period corresponded to recent experiences of several major homebuilders. For example, Ryan Homes' six top-selling models in 1982 were 20 percent smaller than its six top sellers in 1978, a major factor in its ability to hold its average price increase substantially below the national average over that time.[22] Jim Walter Homes, whose semi-finished detached homes with "instant 10 percent financing" have become near-symbols of upward mobility in the rural areas of the South and Southwest, experienced continued growth even in the homebuilding industry's trough year of 1982; the firm built 10,000 homes that year, or roughly one percent of the total U.S. production. The Ryland Group is currently developing modular single-family units similar in style to its conventional dwellings. The company opened a second factory less than a year after opening its first, and expects to increase production to 5,000 homes annually within five years.[23]

Recent monographs by the Urban Land Institute and the HUD-sponsored Council on Development Choices suggest several design prototypes for the remainder of this century.[24] Based on field visits to new residential complexes throughout the country, the reports indicate that in addition to placing an increasingly heavy emphasis upon energy efficiency, zero lot line zoning, and clustering, builders are designing floor areas roughly in the 1,000-1,300 square-foot range. Largely for these reasons, these new homes sell for substantially below the average sale price of others in the same market areas. Exhibit 2 summarizes the major features of the single-family detached projects in the ULI survey.

Limitations Of The Concept

However pronounced the current trend toward stripping down, it must be considered in the context of certain limiting factors above and beyond the rate of growth in the economy. The most crucial are the renewed vigor of the mobile home industry, the rapidly increasing price of vacant land in various metropolitan areas, the realities of market demographics, and the fact that most of the decline occurred during a period of recession in the homebuilding industry.

EXHIBIT 2

Summary Examples of Affordable Single-Family Detached Housing

Project Name*	Location	Developer	Typical Square Footage	Price Range	Average Sales Price In Market Area for 1981	Summary of Intended/Actual Buyers
Ranch Country	Houston	Fox & Jacobs	1,000	$35,900-43,500	$78,952	First time buyers; 85% young couples. Most are blue-collar with incomes of $20,000.
Courtyard Glen	Houston	Marix Housing Corporation	1,019	$45,850-64,500	$78,952	Middle-income buyers; 90% former apartment dwellers. Most are married, some singles.
Peacock Park	San Marcos (San Diego)	Ramos/Jensen	853	$61,500-68,000	$105,100	Empty nesters and retirees 48 and over; incomes of $15,000-20,000.
Jackson Village	Hillsboro (Portland, OR)	Edwards Industries	1,372	$59,950-64,950	$86,825	First time buyers; middle-income marrieds, with some singles.
Crestwood Village	Frederick, MD	Crestwood Village, Inc.	1,095	$38,490-99,490	$107,537	Empty nesters and retirees 48 and over; incomes of $15,000-20,000.
Strathmore Gate West	Royal Palm Beach, FL	Levitt Homes	1,298	$59,000-66,000	$73,185	Empty nesters and retirees, especially from the Northeast.

*Each of these projects opened for occupancy in 1981 or 1982.

Source: Douglas R. Porter and Susan Cole, *Affordable Housing: Twenty Examples from the Private Sector*, Washington, D.C.: Urban Land Institute, 1982.

The mobile home (or manufactured housing) industry has undergone a resounding resurgence in the 1980s. After accounting for 18.8 percent of the total U.S. housing production during 1971-76, mobile home shipments declined to 12.4 percent of the total during 1977-79. However, from 1980 through June, 1983, the figure rose back to 16.6 percent.[25] In the absence of this recent upswing, conventional single-family dwellings might have well undergone an even further downsizing process.

Mobile homes compare more favorably with conventional homes now than at any time in the past. Part of the explanation lies in the passage of the National Mobile Home Construction and Safety Standards Act of 1974 and HUD's promulgation of regulations pursuant to the Act. Part of it also lies in the mobile home industry's realization that as minimum acceptable housing standards have risen over time, mobile homes must become more spacious, pleasant, and safe to attract potential customers. Their overall improvement has produced a chain of mutually reinforcing trends that will stimulate their market's further growth. For in becoming more attractive, new mobile homes no longer depreciate in the manner of automobiles; quite the contrary, they appreciate. Nationally, property values of double-wide mobile homes increased by 33 percent over 1976-81, a figure substantially less than that for conventional single-family homes (74 percent), but one nonetheless representing a reversal of a long-standing situation.[26] In turn (and after considerable lobbying by the manufactured housing industry), virtually all states have granted real property status to mobile units.[27] The resulting fiscal advantages have lessened some of local government's traditional aversion to this housing. Finally, all of this has been decisive in a number of court decisions overturning zoning ordinances that prohibit or unduly restrict the siting of mobile homes.[28]

One cannot overemphasize that mobile units are not downsized single-family units under another name, despite objections to the contrary by manufactured housing proponents. In comparison to detached dwellings, mobile homes are far less heterogenous in design, size, and cost, and are available in a far smaller range of communities. For this reason, their residents are primarily the elderly and a largely nonmetropolitan working-class; many among the urban and suburban middle-class shudder at even the thought of purchasing such a dwelling. Thus, the continued and accelerating growth of the mobile home market will dampen the downsizing trend of the single-family market rather than become a part of it.

A second limitation is the rising price of vacant land. During 1975-79, for example, the average annual increase nationwide in the price of vacant land for residential purposes was 13.1 percent.[29] Higher prices for vacant

lots produce a clear incentive for developers to design homes for a more affluent market. That townhouses and other alternatives to detached dwellings now account for such a large portion of single-family construction is partly a response by developers to the challenge of creating affordable housing in the face of rising land costs.

Downsizing may be difficult to achieve in suburbs of such areas as San Diego and San Francisco/Oakland, where since the mid-70s land prices have risen faster than those of other metropolitan areas.[30] The pressures for residential construction are great enough here for existing residents to grow fearful of the sudden loss of their community's bucolic character. Their preferences are amply mirrored in zoning ordinances that stipulate minimum lot frontages, lot square footages and floor-to-area ratios. While the evidence suggests that some of these restrictions, minimum lot sizes in particular, have become less restrictive since the early-70s,[31] these measures slow the impetus toward further downsizing. Moreover, in reducing the densities of potential developments these ordinances fuel further land price inflation in surrounding communities.

Third, that a pair of demographic realities will ensure that a substantial portion of new dwellings will be built for the more affluent segments of the homebuying population. For one thing, the number of households of second-time (and subsequent) homebuying ages is set for a huge boost. The Census Bureau projects that between 1985 and 1995, the number of households headed by a person between 35 and 54 will rise by almost three times the amount of those headed by persons in all other age cohorts. In fact, husband-wife family households in the 35-54 group will increase by 28.0 percent, while families in other brackets will *decline* by 4.1 percent.[32] As nuclear families tend to purchase more spacious and luxurious housing due to their greater space needs and higher incomes, the limited market for stripped-down homes becomes that much more apparent. Beyond these demographic factors in one even more powerful. New homes traditionally accommodate the financially well-off who quite often already own a home. As long as new construction represents at most two percent of the total housing stock in any given year, one should expect existing homes to offer a better set of alternatives to first-time buyer than new homes. As Kaplan astutely observes:[33]

> . . . first-time homebuyers were more active in the existing-home market, while new homes were purchased primarily by previous homeowners. A continuation of the situation depends, of course, on the willingness of owners of existing homes to use the large increases in equity that they have gained in recent years to purchase new homes more frequently than they otherwise might have done as a means of upgrading their housing and, in turn, sell their existing homes to first-time home buyers. The Nation does have a large stock of existing homes that are smaller and cheaper on the average than new housing. From a public policy standpoint, is it bad if more first-time homebuyers purchase existing homes?

One thus might ask alternately: Is it bad if developers of single-family homes primarily accommodate persons who want 1,600 square feet of living space and a host of accessories?

Finally, and superseding even these considerations is the fact that each downsizing cycle has been coterminous with recession. As Exhibit 1 indicates, there had been brief episodes of the phenomenon during the general slumps of 1970 and 1974-75, followed by a clear reversal as the economy improved. The most recent data followed this pattern. While the recent "upsizing" was not nearly enough to offset what had occurred during the previous four years, it has become evident that the incidence of economic growth does influence the builder's offerings to the consumer.

The Prospect

If the most recent downsizing cycle largely coincided with a recession that began in late 1979 and ended in early 1983, why refer to it as the "current" cycle? Had it not clearly been reversed with the restoration of good fortune to the homebuilding industry? For various reasons, the answer is "no." While recent industry predictions that the median square footage of single-family homes will dip below 1,200 by 1985 appear extremely presumptuous, there is considerable reason to believe that this cycle is not merely a creature of recession. First, younger households have responded favorably to certain cost-cutting measures in order to become homeowners. This is observable not only in the emergence of the townhouse and more unorthodox configurations such as patio housing, quadruplexes, and octoplexes, but also in the recent exceptionally good sales of compact detached units. Second, persistently high construction loan rates have worked to the benefit of precisely the major builders who are most active in constructing downsized housing. It is they who can most easily tap the growing discount equity capital market that bypasses traditional mortgage lenders. One recent study projects that by 1990, the 400 largest homebuilders' share of all housing starts will rise from one-third to more than one-half.[34] Third, long-term home mortgage rates have yet to come down from the 12-to-14 percent range, even though the overall Consumer Price Index has averaged roughly half that figure since early 1982, and appreciation in home values has noticeably stagnated during this decade.[35] At no time in recent history has the disparity between the interest rates and general inflation been so great, and certainly at no time during the 70s had property values appreciated as slowly as they have now. As a result, young households have less incentive than before to purchase "too much house for the money."

The present downsizing trend does face an inevitable valley, and not one as deep as some might hope for or believe. Yet unless the economic upswing reaches auspicious heights—and the major indicators of 1984 make this unlikely—the trend should continue close to the end of this decade. That this is less a product of government mandate than an adaptation of consumer tastes to economic realities can be welcomed as salutary.

NOTES

1. U.S. Bureau of the Census, *Current Population Reports*, Series P-60, No. 137, "Money Income of Households, Families, and Persons in the United States: 1981," Washington, D.C.: U.S. Government Printing Office, March 1983; *Construction Reports*, Series C-25, No. 82-13, "Characteristics of New Housing: 1982," Washington, D.C.: U.S. Government Printing Office, June 1983. The median price rose only to $69,300 in 1982; this figure is not included because income data are not presently available for beyond 1981.

2. Cited in Del Marth, "A Housing Era Ends," *Nation's Business*, September 1982, pp. 26-28.

3. U.S. Department of Housing and Urban Development, *The Conversion of Rental Housing to Condominiums and Cooperatives: A National Study of Scope, Causes, and Impacts*, Washington, D.C.: U.S. Government Printing Office, June 1980.

4. HUD found (see above study) that the median purchase price of converted rental units in 1979 was $43,000, 22.8 percent less than the median of $55,700 in that year for all transactions indicated in the National Association of Realtors' *Existing Home Sales*.

5. In this paper, "downsizing" refers to characteristics of the house, and excludes those of the infrastructure (sidewalks, utility hook-ups, etc.) because the latter is less related to the housing market than to subdivision ordinance requirements.

6. Quoted in Fred W. McDarrah, "Sam Lefrak: A Tale of Three Cities," *Village Voice*, December 21, 1982.

7. George Sternlieb and James W. Hughes, "The Post-Shelter Society," *The Public Interest*, No. 57, Fall 1979, p. 41.

8. National Commission on Urban Problems, *Building the American City*, Washington, D.C.: U.S. Government Printing Office 1968, p. 214.

9. Anthony Downs, "Public Policy and the Rising Cost of Housing," *Real Estate Review*, Vol. 9, No. 1, Spring 1978, p.32.

10. Michael G. Ferri, "An Application of Hedonic Indexing Methods to Monthly Changes in Housing Prices: 1965-1975," *Journal of the American Real Estate and Urban Economics Association*, Vol. 5, No. 4, Winter 1977, pp. 455-62.

11. Brian J. L. Berry and Robert S. Bednarz, "An Hedonic Model of Prices and Assessments for Single-Family Houses: Does the Assessor Follow the Market or the Market Follow the Assessor?," *Land Economics*, Vol. 51, No. 1, February 1975, pp. 21-40.

12. U.S. Bureau of the Census, *Construction Reports*, "Characteristics of New Housing." The baseline year for measuring price change was 1977.

13. Quoted in Marth, "A Housing Era Ends," p. 27.

14. See Thomas J. Parliment, James S. Kaden, Carroll R. Melton, and Kenneth J. Thygerson, *Homeownership: Coping with Inflation*, Washington, D.C.: U.S. League of Savings Associations, 1980, p. 22. According to the League's 1979 homebuyer survey, 56.3 percent of the first-time buyers were in this age bracket, as opposed to 42.2 percent of the repeat buyers.

15. U.S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 805, "Projection of the Number of Households and Families: 1979 to 1995," Washington, D.C.: U.S. Government Printing Office, May 1979. All projections noted here are Series B.

16. Interview with R. Patrick Bowe, General Partner, S&B Development Company, Richmond, Virginia, September 1, 1983.

17. U.S. Bureau of the Census, *U.S. Census of Population, 1970*, and *Current Population Reports*, Series P-20, No. 371, "Percent Distribution of Families, by Number of Own Children Under 18 Year Old," Washington, D.C.: U.S. Government Printing Office, 1982.

18. U.S. Bureau of the Census, *U.S. Census of Population, 1970*, and *Current Population Reports*, Series P-20, No. 371.

19. U.S. Bureau of the Census, *Statistical Abstracts of the United States, 1982-83*, Table 94, "Childless Women and Children Ever Born, by Age of Woman: 1950 to 1980," Washington, D.C.: U.S. Government Printing Office, 1982.

20. Robert Lindsey, "Home of the Future: Size Will Shrink But Not the Price," *New York Times*, January 25, 1981.

21. Actually, the median price *fell* somewhat during 1969-1970. However, part of the explanation for this lay in the Federal government's heavy use of the Section 235 homeownership subsidy program. Homes built under this program sold for substantially less than the national average. See Donald M. Kaplan, "Homeownership Affordability: A Summary of the Issues and a Point of View," *The Cost of Housing*, Federal Home Loan Bank of San Francisco, Proceedings of the Third Annual Conference, San Francisco: Federal Home Loan Bank of San Francisco, 1978, pp. 351-52.

22. "Homebuilding's New Look," *Business Week*, November 7, 1983, p.95.

23. "Homebuilding's New Look," pp. 95-96.

24. Douglas R. Porter and Susan Cole, *Affordable Housing: Twenty Examples from the Private Sector*, Washington, D.C.: Urban Land Institute, 1982; U.S. Department of Housing and Urban Development, *The Affordable Community: Growth, Change, and Choice in the 80s*, Washington, D.C.: U.S. Government Printing Office, July 1981.

25. U.S. Bureau of the Census, *Construction Reports*, Series C-20, "Housing Starts," Washington, D.C.: U.S. Government Printing Office, monthly. An even greater proportion is projected through the mid-1980s in Michael Sumichrast, "A Five-Year Housing Forecast," *Annals of the American Academy of Political and Social Sciences*, No. 465, January 1983, pp. 45-57.

26. U.S. Housing Markets, *Mobile Homes: Thriving This Year*, Subscribers' Special Report, July 23, 1982, p. 2.

27. In most states, the stipulation exists that the dwelling must be attached to a foundation. However in some, the real property status is unconditional.

28. See, for example, *Robinson Township v. Donald Knoll and Merle Knoll*, 406 Mich 1009 (1979); *Heath v. Parker*, 604 P2d 818 (1980).

29. U.S. Department of Housing and Urban Development, *Series Data Handbook: A Supplement to FHA Trends*, Washington, D.C.: U.S. Department of Housing and Urban Development, annually.

30. See Jay Miller, "Assessing Residential Land Price Inflation," *Urban Land*, March 1981, pp. 16-20.

31. See Stephen R. Seidel, *Housing Costs and Government Regulations: Confronting the Regulatory Maze*, New Brunswick, N.J.: Center for Urban Policy Research, 1978, pp.173-77.

32. U.S. Census Bureau, *Current Population Reports*, Series P-25, No. 805.

33. Kaplan, "Homeownership Affordability," pp. 360-61.

34. "Homebuilding's New Look," p. 93.

35. Long-term interest rates have usually averaged about three percent above the rate of inflation. Thus, the recent disparity has more than doubled the "normal" one. Additionally, during 1979-82, house prices declined by eight percent, when taking inflation into account. Housing therefore did not function as the inflationary hedge that the public had expected of it. See John C. Weicher, "Inflationary Ravages," *Society*, Vol. 21, No. 3, March/April 1984, pp. 66-70.

SPECULATION IN REAL ESTATE MARKETS: IS IT SOCIALLY UNDESIRABLE?

by L. M. Farrell

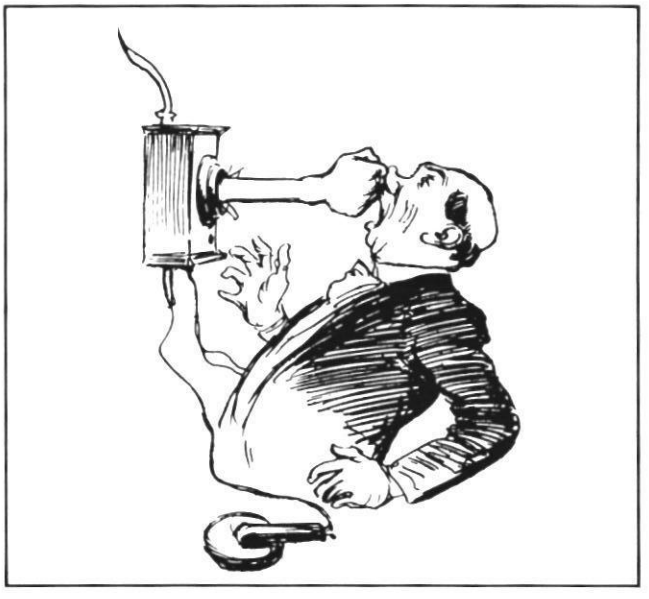
Real estate speculation has been attacked frequently as a fundamental underlying cause of rapidly increasing rates in the price of both land and housing, particularly in areas undergoing increased levels of urbanization. It is often argued that real estate markets are in disequilibrium over the long term, due to the existence of imperfections and the extended lag adjustment periods which characterize these markets. It is also argued that the socially desirable efficiency effects usually associated with speculation in the commodities or foreign exchange markets are inoperative in real estate markets. Some form of government intervention is often suggested as a means of controlling speculation and improving the efficiency of real estate markets.

Notwithstanding the obvious differences between real estate and other asset markets the argument could be made that in the long run real estate markets are relatively efficient and that the effect of government intervention is to increase uncertainty, reduce the efficient allocation of risk bearing and impose additional costs on the owning, developing and transacting of real estate.

Real estate speculation may be considered to be socially desirable if it increases the efficiency of the intertemporal allocation of risk. This determination for a particular real estate market is an empirical question which cannot be known *a priori*.

Speculation: A Direct Consequence Of Uncertainty

Speculation exists because of the uncertainty of future events. The risk of fluctuations in the future value of an



asset is a fact of life which must be borne either by the asset holder or by someone else. For investors who have different degrees of risk aversion, the existence of a mechanism for shifting risk is socially desirable because it allows each investor to select his/her optimal degree of risk thereby increasing investor utility or well being. The existence of a speculative market for risk bearing contributes to economic productivity when it increases the efficiency of the intertemporal allocation of risk.

Risk and uncertainty are often distinguished on the basis of the availability of information concerning future investment returns. Risk is associated with projects for which a probability distribution of future returns can be estimated, either subjectively or objectively. Uncertainty involves situations in which these probabilities are not known. Investors reduce the degree of uncertainty by insuring against risk and by data collection and analysis. Nevertheless, an area of uncertainty which is not able to be quantified often remains.

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At any point in time a set of opinions or economic expectations concerning the outcome of future events will exist. The term "economic expectations" refers to the set of imagined and temporary projected economic consequences of a given action.

Speculative profits and losses occur only if expectations or opinions about the future change. A price change by itself does not necessarily imply the existence of speculative profits, if the price change has been anticipated and discounted by the market. If the future were certain, all expectations would remain fixed and risk would not occur. However, the existence of uncertainty about the future generates the possibility of changing expectations over time as unanticipated events occur. This situation creates the possibility of speculative profits and losses.

Speculative profits and losses are spontaneously generated as result of changes in economic expectations in an economy where the future cannot be completely anticipated and discounted.

The uncertainty about future events that is found in all asset markets is increased in real estate markets due to the nature of real estate. Government intervention in the real estate market tends to increase uncertainty. The development of a new supply of real estate stock is dependent upon the approval of various government agencies. Lengthy approval periods and numerous regulations regarding upfront development requirements and construction permits increase uncertainty on the supply side as well as development costs.

The government has enacted housing programs to stabilize demand and make housing more affordable to various income groups. In some markets with an inelastic supply, the subsidies provided by government housing programs may have been capitalized into the purchase price thereby distorting the real demand. One unanticipated indirect effect of various subsidy programs may be increased uncertainty concerning the real long-term demand in housing markets.

Increased uncertainty resulting from an enlarged government presence in real estate markets can alter investor expectations about future prices. Risk is increased as is the potential for speculative profits and losses.

High rates of price appreciation do not in themselves prove that speculative profits have been created. Such price increases may occur under conditions of fixed expectations. In such cases the price increase has been anticipated and discounted by the market, and a speculative profit has not been created. In discussing the discounting process, Milgram notes that "to the extent that growth has been foreseen, it will be built into property values at the beginning of the time period considered and will not influence the movement of price over time."[1]

Property taxes on vacant land may also create the illusion of rapid price increases and the suspicion of large speculative profits. Property taxes on land reduce its base value because the tax is capitalized into the value of the land. Thus, as the land approaches development, the rate of price appreciation is more rapid, creating the impression of speculative profits. However in conditions of unchanged expectations speculative profits are not earned by the real estate investor.

Risk Bearing In Real Estate Markets: Speculation, Hedging And Arbitrage

Speculation and hedging are two techniques that have evolved in response to uncertainty about the future. Both involve the risk that expectations regarding the outcome of some future event will change due to some unforeseen occurrence. While arbitrage is often associated with risk bearing, it is not a risk-bearing device because it does not involve earning a return based on changes in expectations. Returns from arbitrage are earned primarily for performing search and information services under conditions of fixed expectations.

Smith (1976) defines speculation as ". . . the purchase or sale of an asset in the expectation of a gain from changes in the price of that asset."[2] Defined in this manner, it can be seen that speculation is pervasive in a market economy from the housewife who purchases additional supplies of coffee or sugar in anticipation of a price increase to industrial users of various inputs who increase raw material inventories at relatively low prices and the commodity speculator trading in wheat, soya bean or coffee futures.

All three types of speculation involve the risk that expectations about the future will change. The housewife who speculates on future coffee prices and the industrial speculator who buys raw materials in anticipation of increased input costs are speculating in an item that will be used eventually by the individual speculator in production or consumption.

The third example of speculation, in which the speculator may not see the commodity involved, separates the risk bearing element involved in holding the item from the actual use of the item. This third type of speculation is, as Alchian and Allen (1969) state, ". . . characterized in folklore as a (situation in which) antisocial, money-mad speculators gamble on the price of wheat, corn, etc. causing prices to fluctuate to satisfy hungry speculators bent on profiting from changes in supplies or demand."[3]

Speculation in real estate often falls into the third category, although there is some reason to believe that during the period 1968 to 1977 many Americans combined risk bearing and actual use by speculating on their own homes.[4] Speculation in real property markets involves the risk that expectations concerning the future value of a price of property will change. Given that real property markets are not without risk, the relevant questions become: What is the best method of bearing risk? Who is most efficient at bearing risk?

Cootner defines hedging as "the simultaneous purchase and sale of two assets in the expectation of a gain from different subsequent movement in the price of those assets. Usually, the two assets are equivalent in all respects except maturity."[5] For example, if a wheat merchant purchases 1,000 bushels of wheat at $1.45 a bushel

in July, for sale in December, he/she risks the changes in value due to fluctuations in the price of wheat. If he/she simultaneously sells a futures contract promising to deliver 1,000 bushels of wheat at a given date in December at a price of $1.52 per bushel, he/she is "hedging" because his/her wealth is affected only by relative movements in the price of wheat and of futures contracts. If the wheat merchant waits until December to deliver the wheat, he/she will make a gain of seven cents per bushel out of which he will deduct his carrying costs.

If the price of wheat rises between July and December to $1.55, in October without a rise in December futures prices, the wheat merchant could make a profit by selling the wheat in October and then buying back a December futures contract to cover the one he/she sold. Cootner (1968) states that the effect of the hedge is to provide "an option to benefit from certain minimum relative price movements (but) with the freedom to take a larger gain if the opportunity arises."[6] Hedging allows the wheat merchant to reduce his/her personal risk by shifting it to the speculator, who accepts the risk in the expectation of making a return from future price changes. Hedging does not reduce the total risk that must be borne in the market.

Hedging can occur in the wheat market because a futures market exists which makes it possible to sell short. Hedging does not exist in the urban property market because owners of urban property cannot usually make short sales. The option of shifting the risk is not open to the property owner who must bear the risk of changes in real estate values due to changes in expectations.

A property owner could potentially achieve the same effect as a short sale by changing his/her type of tenure. If the property owner expected property prices to decline at some future point, he/she could sell the property and rent a substitute property until prices did decline. At that point, he/she could buy back into the market. A sale leaseback may accomplish similar results. However, in practice, transaction costs, nonhomogeneity of real property, and illiquidity in the real property market would make such a strategy difficult to implement on a large scale.

Under certain conditions, hedging implies a shift between markets for assets which can give rise to speculative gains or losses. A shift from holding money to holding real goods such as land during periods of rapid inflation is a case in point. The realization of speculative gains would depend on whether inflation is anticipated or unanticipated and on the rate of change of inflation.

This latter type of hedging characterized various real property markets over the period 1968 to 1977. Given the poor performance of the various financial markets in the early 1970s, combined with rising rates of inflation, Gilder[7] suggests that a shift from financial assets to real assets, including gold, objets d'art and real estate has taken place in the United States.

Arbitrage may be defined as ". . . the simultaneous purchase and sale of equivalent assets at prices which guarantee a fixed profit at the time of the transaction although the life of the assets and hence the consummation of the profit may be delayed until some future date."[8] For example, if the price of eggs in New York exceeds the price of eggs in Chicago by more than transportation and transactions costs, an opportunity for profits from arbitrage exists. Eggs can be purchased in Chicago for sale after delivery in New York at a later date. Arbitrage reduces the price spread between the buying price in Chicago and the selling price in New York; the transfer of eggs from Chicago to New York increases the price in Chicago and reduces the price in New York.

Specialized arbitrageurs will increase social welfare if they are more efficient in detecting market imperfections than other market participants. Arbitrageurs, in their pursuit of profits, force the price of the commodity in all markets toward equilibrium; "shopping-around" costs are reduced as a result.

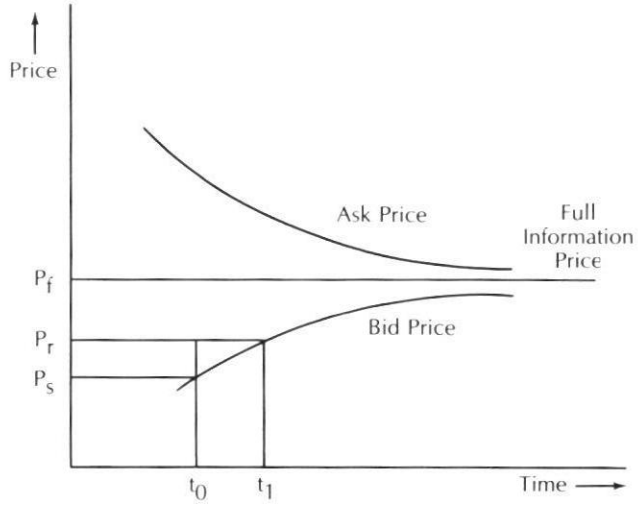
Because expectations are assumed to have remained unchanged over the period in question, arbitrage profits are earned not as a result of risk bearing but for providing search and information services. In practice, arbitrage profits may often occur simultaneously with speculative profits due to changed expectations making it difficult to distinguish arbitrage profits from speculative profits. In real estate markets, an opportunity for arbitrage exists if, given fixed expectations, the full information price of a particular piece of property is not known.

The figure illustrates the situation in which the full information price P_F is unknown at time $t = t_0$. A price spread exists between the bid and ask price as indicated. Over time, as more information regarding the full information price of the property becomes available, the spread would narrow as both the bid and ask price converge on P_F, the full information price.

Given the assumption of fixed expectations, P_F will remain unchanged. The arbitrageur can earn a profit by placing ". . . (his) bid in between but below the full

FIGURE

Arbitrage in Urban Property Markets



information price and sell at a higher price as the bid price approaches the full information price."[9] Due to unchanged expectations, no speculative profit has been earned. If the property is purchased at time $t = t_0$ for a price of P_S and sold at some later time $t = t_1$ at a price P_R the profit $P_R - P_S$ is earned for providing search and information services.

It may be difficult to visualize a situation in which expectations remain constant as the spread between the bid and ask prices converges on the full information price. A combination of arbitrage and speculative profits, the latter generated as a result of changes in expectations, is more likely to occur.

In some cases, arbitrageurs may have a monopoly on information unrelated to any special skills which they possess as a result of access to private sector or public sector files on prospective land investment decisions or as a result of collusion with public officials. In such cases arbitrageurs would have different expectations from those generally held by the market and would be in a position to earn speculative profits as the expectations of the market change in response to the release of previously information on which arbitrageurs based their expectations. In this care, arbitrageurs would be acting as speculators. Profits earned would be due to changed expectations and not for providing information and search services.

The Efficient Allocation Of Risk

Speculation which separates the risk bearing element involved in holding an economic good from the actual use of the item arises due to uncertainty and the necessity to bear the risk of changes in future value. Speculative risk bearing activity which increases the intertemporal allocation of risk is socially desirable. It allows individuals to achieve their optimal level of risk and maximize their total satisfaction.

Speculation is socially desirable in situations in which it increases total utility over a given period of time. Speculation which allocates resources among time periods by transferring consumption from one time period in which it has a relatively low marginal value as measured by price, to a time period in which it has a higher marginal value, again measured by price, is assumed to increase the efficiency of the intertemporal allocation of resources.

Based on the effect of speculative activity on price fluctuations, two types of speculation can be distinguished: stabilizing efficient speculation and destabilizing inefficient speculation. The main factor in determining whether speculative activity will be efficient or inefficient is the degree of market power exercised by the speculator.

Speculators are knowledgeable in their expectations about the future, and if they are price takers, then, given the assumption of the market's tendency toward a long run equilibrium, speculation will reduce price fluctuations and decrease the time required for the market to achieve equilibrium.

A speculator who is a price taker and who correctly anticipates future market price movements can increase the intertemporal allocation of resources by providing information in the form of future prices to the market. Speculative purchases made in the expectation of an increase in price will raise prices in the current period and reduce present consumption. If the speculator has been correct in his/her estimate of future price increases, and if he/she sells in the subsequent period of higher prices, supply in this later higher price period will be increased, bringing about a reduction in price. In this manner price fluctuations are stabilized as a direct result of the speculator's activity in the market. The efficiency of intertemporal allocation has been increased because consumption has been postponed from a period of low marginal utility, as measured by the price, to a period of high marginal utility.

If a competitive speculator is wrong in his/her forecast of higher prices he/she will destabilize prices by postponing consumption from a period of relatively higher marginal utility to a period of relatively lower marginal utility. The intertemporal efficiency of allocation will be reduced. Such a speculator will purchase at a higher price and sell at a lower price and if he/she is consistently wrong in his/her forecasts he/she will lose money and will eventually leave the market. As Carr and Smith[10] note, only competitive speculators who have skill in forecasting future prices will earn a profit and remain in the market, performing a function which improves the market's efficiency.

Speculators who are price takers may destabilize prices by incorrectly anticipating future price changes. The equilibrium hypothesis of speculation implies that such behavior will be eliminated as these speculators lose their money and leave the market. However, speculators may destabilize prices and yet earn a positive return and not be forced to leave the market. Baumol[11] suggests that because speculators cannot foretell the future with accuracy they identify peaks and troughs after the price trend has been well established, then buy on the upswing and sell on the downswing. Such activity is destabilizing, Baumol[12] argues, because it accelerates both upward and downward price movements because speculative sales occur when prices are falling and speculative purchases are made when prices have begun to rise. On this basis, he concludes that speculative activity may be profitable and yet, on balance, destabilizing.

Baumol's argument appears to rest on the assumption of the existence of price trends in speculative markets. Since the efficient market hypothesis implies that past prices do not provide information about future prices, it would seem that the validity of Baumol's criticism would be dependent on the degree of inefficiency of the market in question. Such a question would be amenable to resolution on an empirical basis and should not be resolved *a priori* as Baumol would seem to suggest.

Thus far, it has been assumed that speculators are competitive, because they are price takers who cannot affect the price of the commodity in which they trade. Spurr[13] suggests that, particularly in urban land markets, the speculator may not be a price taker. To the extent that a speculator possesses market power, he ceases to be a competitive speculator and becomes a monopolistic speculator capable of affecting the market price of the commodity in question.

Competitive speculation may be distinguished from monopolistic speculation based on the degree of market power possessed by the speculator and the degree to which various alternatives may be substituted for the commodity in which speculation is engaged. Carr and Smith state that speculation is competitive when "speculator does not consider himself to have any influence on the market price but (who) believes that the price is going to rise or fall quite independent of his own actions."[14] Monopolistic speculation will occur in a situation in which ". . . a speculator attempts to buy or control a significant proportion of the existing stock of a commodity with a view of influencing the market price of the commodity."[15]

Monopolistic speculation can result in an inefficient allocation of resources because a monopolistic speculator is not a price taker and, as a result, need not forecast future prices accurately in order to remain in the market. A monopolistic speculator can realize a profit by restricting supply and selling at higher prices. A profit has been earned not as a result of increased efficiency but as a result of the monopolistic speculators' ability to earn monopoly profits. Further, monopolistic speculators may act ". . . in concern (with other land owners) withholding some of the land they have acquired (such that) the selling price of developed land will rise and developers as a group, will make monopoly profits."[16]

Studies of commodities markets before and after the prohibition of futures trading suggests that prices are more stable with futures trading than without. For example, Alchian and Allen[17] state that after the organized futures market in onions was abolished in 1959 by federal law in the United States, forecasts of future onion prices were less accurate than those provided by the futures market. Consumer prices for onions were found to vary less during the interval between crops when the speculative market existed than they did after it closed. The fact that prices did not fall as low nor rise as high when futures trading was permitted suggests that futures traders tend to buy at low prices and sell at high prices and, in so doing, earn a profit.

In spite of evidence suggesting the positive effects of speculative activity, speculation has been prohibited by law in various jurisdictions. In discussing evidence which suggests the beneficial effects of speculation, Cootner cites a willingness on the part of various government agencies to ignore the advantages of speculative activity:

> "Despite this evidence (of the beneficial effects of speculation) periods of very low prices or very high prices still are often blamed on speculators and futures trading has been regulated or prohibited on many occasions—because it works so well futures trading has been banned when, for political or social motives, interference in the economic mechanism is desired."[18]

In a study of the skill of speculators in forecasting future prices in commodity markets, Houthakker[19] found *prima facie* evidence of forecasting skill which can be separated into two categories:

1) A general skill which consists of simply being long in the commodity. In this case, no special skill or information was found to be a necessary condition in forecasting future commodity prices.
2) A special skill was found which indicated that speculators earned profits as a result of making continuous adjustments to changes in current information.

Although nonprofessional small traders did earn significant speculative profits if they maintained a long position in a particular commodity, no evidence was found to indicate that they had forecasting ability in both the long and the short run.

Speculation In Real Estate Markets

Speculation in real estate markets has been the subject of much discussion over the years. Comparison with other asset markets suggests that real estate speculation is not of just local importance but has attracted increasing public attention both nationally and internationally prompting government action in some jurisdictions.

Concern with rising house prices and their impact on the ability of potential small homeowners, particularly first-time home buyers, to afford to buy a home has prompted anti-speculation legislation in Vermont and Ontario, Canada. The issue of anti-speculation has also been under close study in such areas as California, Washington, D.C. and Montana.

From an economic viewpoint, speculation in real estate markets can be analyzed on the basis of its effects on distribution or allocation. However, very little empirical analysis of speculation or the impact of anti-speculation laws in various markets has to this point been undertaken.

Speculation in urban property markets is criticized as inefficient because real estate markets are subject to significant market imperfections and speculation causes costly and socially undesirable urban sprawl.

It has often been argued that real estate markets are very imperfect and should not be left to the unregulated forces of the marketplace. When compared to stock or bond markets, in which liquidity and relatively cheap information are readily available, real estate markets appear to be poorly organized. Real property markets can be further complicated by the various legal entanglements and time lags that often occur. In some cases, the legal

mechanisms and institutions under which real property is transacted can lead to changes in the nature of the property itself. Encumbrances and "clouds on the title" may alter the property rights transacted and may limit the uses to which a particular property can be put. As Samuelson[20] notes, this effect may be particularly true in a market in which inexperienced speculators are active. In such a case, a speculator who is not knowledgeable about the potential of a given property may form unreasonable expectations about future uses and thus the present value of discounted future net rentals. In the long run, unreasonable expectations would be eliminated but given the durable nature of real estate the short run implications of unreasonable expectations could be quite inefficient imposing additional costs.

If it is assumed that real estate markets tend toward a long run equilibrium the impact of the various aspects of real property which distinguish it from other economic goods—durability, nonhomogeneity, its composite nature whereby it possesses significant externalities—need not necessarily imply inefficiency in the market. In fact, as Milgram[21] suggests, in a real estate market characterized by a number of professional participants, expectations might be expected to be homogeneous to some extent.

Speculation would be socially desirable if it functions to help the market reach equilibrium sooner and more efficiently in the long run. The desirability of speculation from an efficiency point of view would depend on the extent to which the conditions is a particular market satisfied the criteria for efficient speculation: 1) speculators who are price takers and 2) speculators who are knowledgeable. If these criteria are fulfilled, then speculation might be desirable. This result implies that the desirability or undesirability of speculation is an empirical question which cannot be answered from an *a priori* set of views but must be studied empirically in each market individually. The blanket province-wide or statewide application of anti-speculation legislation may not be the optimal method of controlling the undesirable effects of speculation.

A case in point is the Ontario Land Speculation Tax Act (OLSTA) which was passed in June 1974 in an attempt to reduce the rapid price increase that occurred primarily in the Toronto single family housing market in the early 1970's. The OLSTA was applied province wide without regard to either market structure or type of speculation. Such a tax seems to be too unrefined and haphazard to effectively eliminate inefficient speculation. It would be more reasonable to apply such legislation on a more selective basis if it has been determined that speculators are not price taking efficient speculators. The across the board implementation of the OLSTA would hamper the activities of efficient speculators and reduce the efficiency of that particular real estate market.

In the case of the Toronto market, Smith[22], Markusen and Scheffman[23] suggests that speculators were price stabilizing competitive speculators before the tax was passed. If this is the case the OLSTA, which was intended to lower prices and increase efficiency, may have reduced efficiency and imposed additional costs in the Toronto real estate market.

Previous empirical analysis of the type of speculation in the Toronto market has produced differing results. Spurr[24] cites a heavy concentration of ownership of peripheral developable land as an indication of monopolistic elements in the property development market in Toronto. However, as Markusen and Scheffman[25] point out, Spurr fails to include the ownership of presently developed property in the Toronto market which could be redeveloped given sufficient price increase. Spurr's estimate understates the dispersion of ownership of potential supplies of developable land by failing to include developed land in his estimate of the concentration of ownership. Although it could be argued that submarkets could be segmented spatially in the Toronto market, Markusen and Scheffman[26] suggest that submarkets in the Toronto area can be substituted for one another implying that the Toronto market is to some extent homogeneous with respect to location, other things equal.

The empirical analysis of urban property markets is complicated by the interrelationship between market power and degree of concentration which is particular to real property markets. In most speculative markets, the degree of concentration depends on the market power of individual speculators plus the suitability of alternatives as substitutes. Concentration in a particular industry or market would not necessarily imply the existence of market power in the absence of significant barriers to entry.

However, in the urban property market concentration can constitute an effective barrier to entry. If one property owner owns all of the land within a distance, say X, of the only central business district, this ownership constitutes an effective barrier to entry. Further, a high concentration of property ownership decreases potential competition. Therefore, in an urban property market a significant concentration of ownership is a sufficient condition for the existence of potential market power.

However, even if a particular property owner does possess market power, he may not use it. The effects of market power in the urban property market are less clear than in other markets due to location of urban property. In some markets monopolists produce at that output at which they maximize profits. In the urban property market, the monopolist cannot do this as easily because, once he/she sells a piece of property, he/she may be hard-pressed to find new inventory to replace it. The monopolist in the real estate market must balance sales against price appreciation. Even in a case of monopoly ownership of land it is not clear that land will be held off the market to push up prices. In a study of the land market in Toronto, Markusen and Scheffman found that the role of monopolist was ". . . to weigh the trade-off between a low rate of development and a high rate of price appreciation."[27] In itself, they conclude, the existence of monopoly power in real estate markets is not a sufficient condition for the exercise of monopoly power and, therefore, not a sufficient condition for resource misallocation.

The results of the analysis suggest that there is no evidence to support the claim that monopolistic speculation occurred in the Toronto market prior to the introduction of the OLSTA. It could be argued that the type of speculation which occurred prior to the introduction of the OLSTA was efficient speculation which produced a beneficial effect in the long run. If this is the case, then to the extent that the tax removed efficient speculators from the market, it may have exerted upward pressure on costs over the long term.

Critics blame speculation for wasteful and unsightly "urban sprawl," the tendency of post-World War II suburbanization to expand discontinuously across previously rural landscape. As Clawson notes, lack of continuity in this expansion typified by "large closely settled areas intermingled haphazardly with unused areas . . . has been given the designation of 'sprawl' which well connotes its hit or miss character."[28]

Critics are quick to point out, as does Clawson, that urban sprawl is inefficient ". . . because it fails to make use of the most accessible land and also because certain public services such as roads and sewage systems may be relatively expensive in the context of such development."[29] Such development is considered unnecessarily expensive in terms of initial capital investment in public services, public and private maintenance costs and transportation costs.

Implicit in this position is the assumption of a short range rather than a long range perspective. Discontinuous urban development does impose more costs in the short run than does compact development, but critics often overlook its ability to adjust to changes in technology and social standards at relatively low costs compared to that of continuous compact development. As Lessinger states: "Scatter suits an economy where growth and technological social and economic changes predominate. Compaction may suit a stabilized economy without inequalities in the distribution of income, seeking optimization of its resources."[30] However, such conditions do not exist in many real estate markets in North America.

In practice, a trade-off between sprawl and compaction might be a practical compromise, especially in view of the recent rapidly-increasing cost of servicing new land for development. The argument against urban sprawl typifies the problems in an economy in which the costs of a policy decision are immediate in the form of higher servicing costs, and the benefits, such as increased flexibility and choice, are more remote and more difficult to estimate in dollar terms.

The argument against urban sprawl may be somewhat shortsighted in trading off short term cost savings for long term protection against obsolescence which is inevitable in a growing economy. In considering this trade-off, Lessinger notes:

> "From time immemorial urban areas have staved off eventual obsolescence by practicing 'scatteration' in growth patterns. An area which builds compactly all at one time is exposed to terrible risks. The whole compact unit is made to adapt to the special tastes, cultures, technologies, labor supplies and materials supplies of one particular time. But this constellation is soon past. By contrast, scatteration introduces flexibility."[31]

In a study of the efficiency effects of discontinuous urban development, Ohls and Pines found that, rather than producing inefficiency, there are ". . . some reasons for believing that discontinuous urban development may often be consistent with efficient allocation or resources."[32] In some cases, counterproductive forces such as possible monopoly elements or inefficient tax incentives could exist and may be expected to reduce market efficiency. But it cannot be concluded that discontinuous development is *a priori* inefficient. The Ohls and Pine results indicate that sprawl did not cause inefficiency in all of the cases studied. They state this quite definitely in saying ". . . nothing shows that all cases of discontinuous development reflect inefficient market processes."[33]

Thus, urban sprawl may improve the allocation of real estate resources over the long run in some markets. To the extent that speculation encourages sprawl, it cannot be categorically stated that real estate speculation is socially undesirable.

Critics of speculation in urban real property markets also state that it results in the redistribution of wealth from homebuyers to speculators who do not contribute any value to the property. This criticism assumes that speculators control the market. According to this scenario speculators dirve up housing prices and by so doing prevent the "little guy" from buying a home.

This argument is contested from a number of different perspectives. There is some question as to the extent to which the rate of price increase and the price rise in absolute dollar amounts has exceeded the rise in the general price level as measured by the Consumer Price Index (CPI). It is not clear whether housing prices have increased more rapidly than the prices of other goods and services, or whether the recently observed increase in house prices is due to a readjustment of the relative price of housing due to lags in the price adjustment mechanism. A study of the relative price of housing in Los Angeles by the Community Analysis Bureau, City of Los Angeles[34] found that housing prices in selected areas of the city lagged behind the CPI over the period 1965-1970; over the period 1970-1975 prices increased faster than the CPI. A comparison of the rate of price appreciation in housing as compared to the CPI for just the 1970-1975 period would suggest that the rate of price increase in housing was greater than the CPI. However, this conclusion is not justified because it is based on a time period which is too short and does not detect the long term lag between house price changes and the change in other prices.

These results indicate that housing prices may periodically lag behind the CPI, and then catch up and possibly lead the CPI for a substantial period. If this is the case,

observed rapid increases in the price of houses may represent a long term readjustment and cannot be interpreted to indicate that house prices are increasing faster than the general level of prices for other goods and services.

Increased house prices do not always indicate that producers are earning above normal profits. Schmid[35] points out that in recent years developers' cost have increased rapidly in some markets, bringing about a reduction in the spread between production cost and sales price. To a significant extent, increased development costs have been caused by changes in the required level of public services at the time of construction and changes in the method in which public services have been financed.

In the past, public services were often paid for by the new homebuyer over an extended period. Faced with rising public service costs, some municipalities have increased up front development fees and levies in an attempt to recover some of their costs immediately and, in some cases, discouraged the development of single-family housing.

Empirical work by Maisel[36] studied the impact of increased development costs on the cost of lots for single-family housing construction. According to Maisel, increased development costs accounted for approximately 28 percent of the increase in the cost of single family lots over the period 1950-1963 for selected submarkets in California. Approximately 22 percent was due to decreased densities, and the remaining 50 percent was due to increases in the cost of land which accrued as a residual in the pricing of new homes.

Initially, price increases may seem to indicate a redistribution of wealth from home owners to "unscrupulous" speculators. However, closer analysis indicates that price increases are often caused by factors other than speculation, including increased development costs imposed by various levels of government and increases in the cost of land, labor and building materials. Short-term price increases which exceed the rate of inflation do not necessarily indicate long term disequilibrium but suggest that the analysis should be based on a longer time period to allow lagged factors to be fully reflected in prices. The length of time may be inversely related to the efficiency of the market in question. Stabilizing efficient speculation reduces the costs of risk bearing and should reduce the total cost borne by homebuyers.

Many equity based criticisms of speculation fail to consider the risk-return aspect of investment in real property. In general, if it is assumed that investors are averse to risk then the higher the risk of an investment the higher the return investors would require to be willing to make the investment. This general principle requiring that risk be compensated by a risk premium has been difficult to apply to the analysis of real estate investments. Wendt and Cerf[37] state that conceptually real estate investment analysis has recognized the principle of the risk-return trade-off. In practice, however, lack of adequate and reliable information and the essential differences of real estate types which makes them difficult to compare has in many cases prevented the application of the risk-return concept to the analysis of real estate investments.

Pellatt summarized the current state of real estate investment analysis by noting ". . . the calibre of by far the majority of real estate investment analysis must be categorized as poor in comparison with the quality of analysis available in the stock market, the bond market and the mortgage market."[38]

Although the absence of reliable statistical information in real estate markets makes quantification of the exact degree of risk in a given investment situation difficult, this in no way refutes the existence of risk, the risk bearing service and the fact that risk that cannot be shifted to another investor must be borne by the property owner himself. If the property owner is more averse to risk than another investor, the risk premium required by the property owner is higher. Additional costs to pay this higher risk premium should be reflected in increases in market price which will have to be paid by the final purchaser of real estate.

Analysis which fails to consider the element of risk in real estate markets misses a critical point essential to the efficient functioning of the real estate market. Government legislation, such as the Ontario Land Speculation Tax Act, may, in an attempt to reduce the price of housing, overlook an essential component of the market as a result of failure to consider the risk bearing function performed by speculators. One effect of such legislation may be to increase the costs of risk bearing and over the long run increase the cost of housing. This unintended and the unanticipated result runs counter to the expressed objective of the legislation which is to reduce rather than increase housing costs and make housing more affordable for the average homebuyer.

Conclusion

- Speculation in real estate markets is socially desirable if it increases the efficiency of the intertemporal allocation of risk. Speculative markets exist as a result of the uncertainty regarding the outcome of future events and investor desires to select an optimal degree of risk which maximizes total well being or utility.
- Knowledgeable, efficient price-taking speculators operating in relatively efficient real estate markets can increase the overall well-being of society.
- Government intervention in real estate markets is not always justified. Real estate markets which are relatively efficient could become destabilized due to increased uncertainty resulting from government policy decisions that are often politically motivated rather than based on considerations of economic efficiency.
- Both the knowledgeability of the real estate speculator and the degree of market power the speculator exercises in a given market are empirical questions

which can be investigated in the context of a particular market.

- The degree of efficiency of a particular real estate market is also a question which can be studied empirically.
- The social desirability of real estate speculation is a complex empirical question which is a function of both the efficiency of the market in question and the type of speculator operating in that market.
- The desirability of real estate speculation in a particular market is a question which should be resolved empirically on a case by case basis and cannot be determined *a priori*.

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ZONING AND THE VALUE OF URBAN LAND

by Paul K. Asabere and Peter F. Colwell

Government zoning is considered to be either an important tool used by local governments to control the pattern of land use or an irrelevant exercise that merely conforms to market outcomes rather than modifying them. Government zoning might have radically different allocative effects in various communities.

This paper is an empirical study of the allocative effects of government zoning in the community of Champaign-Urbana, Illinois. The central premise that underlies the empirical work is that certain relative prices between land uses indicate indirectly that the allocative results of government zoning are inefficient.

The empirical model here is specified in order to provide for direct estimates of relative land prices across land use zones, as well as to capture the structure of several other hypotheses related to the determinants of urban land prices. Other variables such as location, amenities, and the date of sale are included in conventional ways in the empirical model.

The data are superior in two ways to those used in most other hedonic studies on the impact of zoning. First of all, the sample consists of micro data instead of the usual aggregate data. Secondly, the sample includes only sales of vacant land instead of the usual sales of improved land. Every recorded sale of vacant land (125) in Champaign-Urbana over a two-year period is included.

In order to provide a proper background for the empirical analysis, a brief review of the literature on zoning is presented here.

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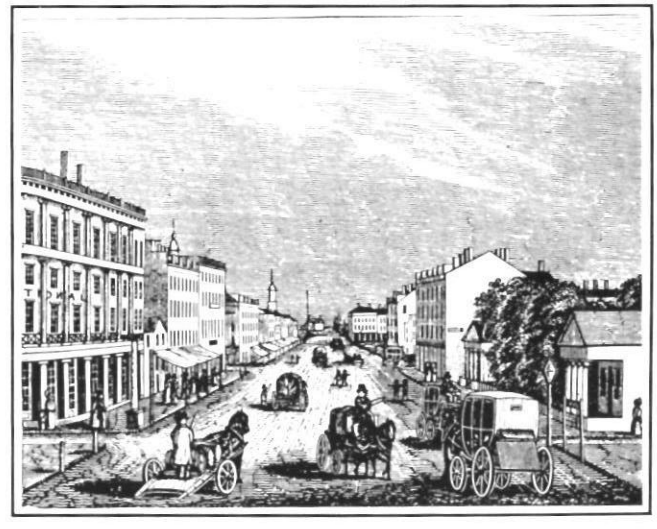

The Zoning Debate

The zoning debate began in North America in the early years of the twentieth century. Land use control laws were accepted rapidly in most urban areas and were defended by the judiciary. This proved sufficient to defeat early opponents, which helped proliferate the laws. The pressures of urban development in the second half of this century have uncovered flaws in a number of areas, promoting renewed rigor on the subject of government zoning (Goldberg and Horwood, 1980).

Empirical evidence on the effects of zoning did not surface until the late 1960s, despite the long history of debate. The volume and quality of the empirical research to date are hardly overpowering, due in part to problems related to the availability of data. Among the notable examples of studies on the effects of government zoning are: Courant (1976); Crecine (1967); Davis and Whinston (1964); Maser, Ricker and Rosett (1977); White (1975); Rueter (1973); Siegan (1972); Stull (1975); and Crone (1983).

There is still no consensus on the effect of zoning on property values. One view holds that it cannot be determined *a priori* whether zoning regulation will modify market outcomes or conform to them. For example, Ohls, Weisberg and White (1974) conclude that it is generally not possible to use *a priori* theory to predict the impact of zoning on aggregate land values in a community, regardless of whether the intent of the zoners is to control externalities or to achieve fiscal goals. Under plausible assumptions, however, they argue that zoning as practiced in the United States probably lowers aggregate land values in the community which is doing the zoning. Some theoretical investigations, however, "sit on the fence" by concluding that zoning may modify market outcomes (see Stull, 1975).

On the other hand, some existing empirical investigations conclude that zoning is effective in modifying market outcomes. Examples of these investigations are: Sagalyn and Sternlieb (1973); Siegan (1972); Crecine et. al. (1967); and Rueter (1973). Rueter, however, finds little likelihood that all the externalities anticipated by zoning ordinances actually arise in urban property markets. As mentioned previously, it is possible that zoning might have allocative effects which are radically different on different communities. The necessary step toward an understanding of the potential effects of zoning on land values is to provide more case studies, especially of areas that are substantially different from the markets already studied.

The Zoning Hypothesis

The type of government zoning considered here is called by various names such as hierarchical zoning, cumulative zoning, and progressively inclusive zoning. As compared to exclusive zoning, floating zoning, etc., this kind of zoning is the most prevalent in the United States.

The rationale behind hierarchical zoning suggests that it restricts the flow of negative externalities from lower to higher land uses in the hierarchy. If this were the only effect of governmental zoning, the value of the highest uses in the hierarchy would be raised as a result of the protection provided by the zoning ordinance *ceteris paribus*. In other words, those who desire to use land for residential purposes, which are usually the highest uses in the hierarchy, are able to choose from land in any zone, but they would be willing to pay more for land in the protected residential zone, holding location and other factors constant. Thus, the externality argument, which provides the rationale for the legal application of police powers to governmental zoning, implies that there should be a premium paid for land zoned for residential purposes.

Governmental zoning, on the other hand, may fulfill other purposes. Special interests both in and out of the government may be able to shape governmental zoning to serve their own ends (see Davis et. al., 1964). A local government may engage in fiscal zoning in order to protect directly its purse and indirectly impoverish neighboring governments.

Planners have their biases, too. Influenced by the almost universal preference for single-family dwellings, they may overallocate land for single-family use. If planners are ideologically at odds with the expansion of business activity on the local level, they will have little trouble finding political allies.

The owners of land currently zoned for commercial and industrial use prefer to limit its supply. These owners may be joined in their efforts to restrict supply by owners of residential land who fear the effects of negative externalities.

Thus, zoning may not only increase efficiency by separating incompatible land uses and reducing the flow of negative externalities, but it may also create inefficiency by distorting the supply of land to the various uses. The nature of hierarchical zoning causes such distortions to be asymmetric. It can only overallocate land to the highest uses and underallocate land to the lowest ones. The reverse situation of underallocating land to the highest uses and overallocating land to the lowest ones is impossible. Thus, where supply effects from governmental zoning exist, there would be a tendency for residential land values to be depressed and commercial land values to be increased by the zoning. It is necessary to recall that the externality argument suggests that a premium would be paid for residential land. Therefore, any net effect of residential zoning on land value indicates whether zoning operates primarily to improve the allocation of land or to misallocate it. If the partial effect of commercial zoning increases land value, then this would indicate misallocation at the low end of the zoning hierarchy.

University, Others Affect Planning Processes

The presence of the University of Illinois and other major public employers seems to imbue the planning processes in Champaign-Urbana with a greater sense of the need to protect the single-family use from competition with lower uses, and with a greater distaste for the lower uses than would exist in communities which are more entrepreneurial in nature.

It is hypothesized that land in Champaign-Urbana is overallocated to single-family and underallocated to commercial uses. An empirical test of this hypothesis would be to see whether the partial effect of single-family zoning is to lower the price below that for intermediate uses and the partial effect of commercial zoning is to raise the price of commercial land above that for intermediate uses.

The structure of equation (1) directly reveals these relative prices.

$$SP_i = m\, e\, \beta_2 COMM_i + \beta_3 SRES_i \qquad (1)$$

where:

SP_i = the selling price of vacant lot i,

$COMM_i$ = a dummy variable assigning 1 if lot i is zoned commercial and 0 otherwise,

$SRES_i$ = a dummy variable assigning 1 if lot i is zoned single-family residential and 0 otherwise,

e = a natural constant, 2.718281. . ., and the base of natural logarithms, and

m = everything else that affects selling price.

The antilog of the parameter β_2 is the ratio of the price of commercially zoned land to the price of land with neither commercial nor single-family zoning (i.e., almost entirely multi-family zoning). In a similar way the antilog of the parameter β_3 is the ratio of the price of land zoned as single-family to the price of land with neither commercial nor single-family zoning. The relative price of commercial to single-family zoned land is the antilog of $\beta_2 - \beta_3$. The hypothesis is that β_2 is positive and β_3 is negative.

In order that the partial effects of zoning may be detected, the explanatory variables described in the following section are included.

Lot area: It is also hypothesized that, holding relative lot area constant, selling price increases at a decreasing rate as absolute lot area increases. Of course, this means that the unit price of land decreases as lot area increases. At first glance one might think that this kind of price pattern cannot persist because arbitrage consisting of further subdivision of lots would eliminate the unit price differentials. However, this pattern must persist because it reflects unit cost differentials.

The total costs of providing a lot with street access and utilities, as well as surveying and platting costs, increase at a decreasing rate as lot area increases. So while there is an increment to value as a result of subdividing land over a wide range of lot areas, this increment, which is called plattage, is equal to the increment in subdivision costs in equilibrium (see Colwell et. al., 1976).

Location: In addition to the zoning and lot area variables, it is important to include location variables. The theory of urban economics tells us that different land use zones would have different values in the absence of government zoning so the effect of government zoning can only be measured while holding location constant. Five location variables are utilized here: distance to a center of economic activity and dummy variables for cul-de-sac, growth path, corner lot, and busy street. Three of these variables (cul-de-sac, corner lot, and busy street) could be classified as amenity-nonamenity variables rather than location variables.

The first of these variables is distance to the center of activity. For Champaign-Urbana, which is a typical campus town, the north end of the University of Illinois "quad" is the center of activity. The university serves as the principal regional employer and the main nightlife area; the campus town at the north end of the quad serves some commercial functions. The downtowns (CBDs) for Champaign and Urbana are not used explicitly as proxies for the centers of activity, due to their relative decline in importance in recent years as well as the development of peripheral shopping centers. However, it should be noted that the north end of the quad is on a line approximately halfway between the two CBDs, and therefore may act as the centroid of the existing activity.

The second location variable measures the impact that cul-de-sac location has on land value. The inclusion of this variable is based on a belief that the cul-de-sac plays three main roles. First of all, it allows for flexibility in the arrangement and orientation of the homes, and, thus, provides for more variety in spatial arrangements. Secondly, the cul-de-sac reduces pedestrian, bicycle, and automobile traffic, which reduces noise and dirt and increases security. Finally, neighbors around a cul-de-sac may be more socially integrated than those located on traditional gridiron patterns, since the cul-de-sac neighborhood is well-defined and small.

These factors promote club formation and cohesion as well as the resulting public goods production (e.g., manicured lawns, freshly painted facades, and help when needed). Based on such attributes, location on a cul-de-sac should have a positive impact on the selling price, although it is not expected to affect nonresidential properties. This differential effect is captured by using an interaction term which is found by multiplying the cul-de-sac dummy by a dummy for all residential properties.

The third location variable is intended to pick up the impact of being in the path of rapid growth. Most developments south of Kirby/Florida Avenue appear to be post-1960, and most of the post-1960 developments appear to be south of Kirby/Florida Avenue. Thus, the growth path variable is a dummy that indicates whether the lot is north or south of this street.

The fourth location variable captures the effect of corner location on land value. Corner location should have a positive effect on selling price for a wide variety of land uses. Corner lots provide greater separation between dwelling units for single-family residential property. For commercial and multi-family residential uses the exposure and access provided by corner lots are desirable features. Corner location is probably preferred by both residential and commercial land users. The corner location variable used in this study is a dummy that indicates whether or not the lot is located on a corner.

The fifth and final location variable is a dummy for high traffic volume streets. It is hypothesized that location on a busy street has a positive impact on most properties except for single-family residential properties where high-traffic locations are not desirable. Commercial activity favors location on busy streets because of the visibility and high potential for attracting customers who pass by the property. An interaction variable is used to capture the effect of higher traffic on properties other than single-family residential properties. This is formed by multiplying the high-traffic dummy by a dummy for properties which are not single-family residential.

Time of sale: It is hypothesized that during the sample period, 1977 and 1978, land appreciated in value at a rate which was relatively constant and that the selling

price of lot i depends on its time of sale in an exponential fashion.

The Model

All the hypotheses developed above were brought together into the following equation:

$$SP_i = \beta_0 LOT_i^{\beta_1} \exp[\beta_2 COMM_i + \beta_3 SRES_i + \beta_4 QUAD_i + \beta_5 (CdeS_i * ARES) + \beta_6 GRTH_i + \beta_7 CORN_i + \beta_8 (HTRF_i * NSRES_i) + \beta_9 MOS] \quad (2)$$

where:

SP_i = selling price of vacant lot i,

LOT_{ij} = area of vacant lot i in thousands of square feet,

$SRES_i$ = a dummy variable assigning 1 if lot i is in a single-family residential zone and 0 for all other zones (e.g., multi-family and commercial),

$COMM_i$ = a dummy variable assigning 1 if lot i is located in a commercial zone and 0 for all other zones (e.g., multi-family and single-family),

$QUAD_i$ = distance in miles of lot i from the north end of the "quad" of the University of Illinois,

$CdeS_i$ = a dummy variable assigning 1 if lot i is on a cul-de-sac and 0 if it is not located on a cul-de-sac,

ARES = a dummy variable assigning 1 if lot i is located in any of the residential zones and 0 for location in a nonresidential zone,

$GRTH_i$ = a dummy variable assigning 1 if lot i is located in the growth path south of Kirby/Florida Avenue and 0 if it is located north of it,

$CORN_i$ = a dummy variable assigning 1 if lot i is a corner lot and 0 if it is not,

$HTRF_i$ = a dummy variable assigning 1 if lot i is located on a street with an average daily traffic volume of 5,000 or more and 0 for less than 5,000,

$NSRES_i$ = a dummy variable assigning 1 if lot i is in an other than single-family residential zone and 0 for all other zones,

MOS_i = the month of sale of lot i.

The sample data consist of all recorded sales of vacant lots in the cities of Champaign and Urbana during the years 1977 and 1978. The selling price data were obtained from transfer tax and deed records, whereas the lot size data were obtained from platbooks. Zoning information for the city of Urbana came from the Champaign County Regional Planning Commission, whereas zoning information for Champaign came from the Champaign City Planning Office.

The model was estimated by taking natural logarithms of both sides of equation (2) and utilizing Ordinary Least Squares. The results of the estimation are as follows:

$$\begin{aligned} \ln SP_i = {} & \underset{(5.938)}{2.040} + \underset{(4.095)}{0.389}\ \ln LOT_i + \underset{(2.304)}{0.602}\ COM \\ & \underset{(-4.634)}{-0.793}\ SRES_i - \underset{(-1.717)}{0.151}\ QUAD_i + \underset{(2.163)}{0.362}(CdeS_i * ARES) \\ & + \underset{(2.036)}{0.223}\ GRTH_i - \underset{(1.577)}{0.224}\ CORN_i + \\ & \underset{(1.535)}{0.494}(NSRES_i * HTRF_i) + \underset{(0.942)}{0.011}\ MOS_i \end{aligned} \quad (3)$$

(t ratios in parentheses; d.f. = 114)

The adjusted coefficient of determination is 0.38. (A correlation matrix for the explanatory variables is shown in Table 1.) The coefficients on the $\ln LOT_i$, $COMM_i$, $SRES_i$, $QUAD_i$, $CdeS_i$*ARES, $GRTH_i$ are significantly different from zero at the 90 percent level of confidence. The coefficients on the $CORN_i$ and $NSRES_i$*$HTRF_i$ dummy variables are significantly positive (one-tail) at the 90 percent level of confidence.

The estimated coefficients on the zoning variables strongly suggest that governmental zoning is allocatively inefficient in Champaign-Urbana. The dummy variable $COMM_i$ (commercial zoning) proved to have a substantial positive impact on land values. By subtracting one from the antilog of the coefficient on $COMM_i$, commercial zoning appears to add 83 percent to value. On the other hand, the dummy variable $SRES_i$ (single-family residential zoning) proved to have a substantial negative impact on land value. Subtracting the antilog of the coefficient on $SRES_i$ from unity indicates that single-family residential zoning causes a 55 percent decline in value. The coefficient on the commercial zoning dummy variable is significantly positive at the 95 percent level of confidence, while the coefficient on the single-family zoning dummy variable is significantly negative at 99 percent level of confidence. According to the theory presented earlier, these results indicate that land in Champaign-Urbana is overallocated to single-family residential and underallocated to commercial.

The plattage hypothesis was borne out by the estimation. The coefficient on LOT_i is significantly greater than 0 and less than 1 at the 99 percent level of confidence.

The five variables having to do with location worked as hypothesized. In equation (3), land value is shown to be a negative exponential function of distance from the University of Illinois quad. The land value gradient was estimated to be .151. Location in the path of most urban growth and location on a corner lot proved to increase land price by 25 percent each. Location on a high traffic street was estimated to increase the value of land zoned (except for single-family property) by 64 percent.

The monthly rate of appreciation was estimated to be 1.1 percent which is equivalent to an annual rate of 13.2

percent. This annual rate is close to the 15.6 percent rate estimated by Colwell and Sirmans (1978) for the period 1969 to 1975. However the coefficient here does not differ significantly from zero, whereas it does in the Colwell and Sirmans paper. The main reason for this difference is that as the urban bid-rent function shifts upward over time, the price of peripheral land in transition from agricultural to urban uses is determined by the agricultural land price and not by the height of the bid-rent function. Most vacant lot sales tend to be more or less peripheral. Thus the coefficient on the month of sale variable is more indicative of the experience of agricultural land prices than urban land prices. There is independent evidence that suggests that agricultural land prices were relatively stable over the study period, whereas they increased dramatically over the earlier period.

constituents in a community like Champaign-Urbana may be attempting to foster single-family residential activity by protecting it from the competition of lower uses. Or, planners may be trying to maximize land value. Still another possible explanation is that the planning processes are too chaotic to be goal-oriented. Regardless of the motives of the planners, it is quite likely that government zoning is misallocating land in Champaign-Urbana.

The empirical study also reveals the effects of a number of control variables on land value. Lot size is among the more important of these variables. The selling price of land increases at a decreasing rate as absolute lot area increases. Without this feature built into the model, one land use type might appear to have a higher (or lower) price than another just because typical lot size is lower (or higher). A cul-de-sac variable had positive effects on the price of land zoned for residential use.

The primary intent of the location variables included in the model were to determine the desirability of sites for commercial purposes. Land values were shown to decline as distance to the University of Illinois quad increases. Location in the path of most urban growth and corner location had positive impacts on value. Finally, location on a busy street proved to have a positive impact on the price of land zoned for uses other than single-family.

TABLE

Variable Correlation Matrix

	$CORN_i$	$CdeS_i$*ARES	$SKIRBY_i$	MOS_i	$QUAD_i$	1n LOT_i	$SRES_i$	$COMM_i$
$CdeS*ARES_i$	0.09793							
$SKIRBY_i$	−0.07945	0.13504						
MOS_i	0.00973	−0.09917	0.15706					
$QUAD_i$	−0.29716	0.00242	0.32423	0.06040				
1n LOT_i	0.04246	−0.04050	−0.15561	−0.02365	0.12471			
$SRES_i$	0.02910	0.28529	−0.01922	−0.15380	0.15061	0.00516		
$COMM_i$	0.08342	−0.17508	−0.02177	0.08494	−0.17934	−0.02250	−0.53313	
$NSRES_i$*$HTRF_i$	0.13474	−0.03088	−0.05668	−0.12089	−0.19376	−0.07249	−0.13725	0.07317

Conclusions

Relative land prices can signal certain resource allocation problems caused by government zoning. This empirical study of land values in Champaign-Urbana suggests that local government zoning is overallocating land to the highest uses and underallocating land to the lowest ones. This conclusion is based on the finding that the price of land zoned for single-family use is less than the price for multi-family which is, in turn, less than the price for commercial.

One explanation for this may be that planners and their

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TAX IMPLICATIONS OF DISPOSITION ALTERNATIVES: PERSONAL RESIDENCE

by Byrl N. Boyce and J. Warren Higgins

The timing of the disposition of a personal residence can produce either favorable or unfavorable tax consequences. For the taxpayer who sells a personal residence just prior to reaching his or her fifty-fifth birthday, there is the loss of a $125,000 exclusion. For the taxpayer who fails to acquire a replacement residence within the two-year period of the sale of the old residence, the rollover provision and, thus, the potential for tax deferral are lost. Further, without careful planning in a divorce, one spouse may have to pay tax on the transfer of the family home in a property settlement to the other spouse.

While disposition of a personal residence is most often thought of as an outright sale of the property, it is to be emphasized that disposition can take other forms such as conversion (personal residence to income-producing property) or alimony settlement. As noted, even in the case of an outright sale, tax liability may be deferred or avoided altogether.

Thus, when a taxpayer considers personal residence disposition alternatives, the tax consequences of potential decisions need to be identified clearly, examined carefully, and assessed properly to ensure that the impact of tax liability be minimized as much as legally possible.

Tax laws affecting real estate ownership and disposition are quite complex, particularly to those whose involvement in market transactions is limited. Owners of personal residences represent the largest single group of investors in real estate and perhaps the largest single group making decisions about acquisition or disposition from year to year. However, these owners are often naive about the tax implications of their decision(s) because, individually, they are infrequent participants in transactions to acquire or dispose of real estate. It is the purpose of this article to identify and evaluate the tax consequences involved in those disposition decisions.

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Personal Residence Defined

The conventional single-family detached home is typically looked upon as the personal residence of a taxpayer. Other forms of personal residence exist, however, including house trailer, houseboat, condominium, cooperative, mobile home or manufactured housing, duplex or row house, or a yacht with facilities for cooking, sleeping, and sanitation.[1] To take advantage of the tax opportunities available to owners of a personal residence, the taxpayer must have a legal interest in the property and the property must be his or her principal residence.

If a taxpayer purchased a residence and had the title placed in a parent's name, the taxpayer is not entitled to the tax advantages associated with home ownership.[2] If a taxpayer uses more than one property as places of residence, the principal residence is determined by examining all the facts and circumstances in each case, including the good faith of the taxpayer.[3] Generally speaking, the principal residence is that place occupied by the taxpayer most of the time.[4]

Basis Of Personal Residence

Basis is an all-encompassing term that, in essence, describes a taxpayer's investment in property. That investment may change over the term of ownership, as a result of additional improvements, depreciation (if allowable), partial disposition, or any other potential adjustment to the original investment position. Upon disposition, the adjusted basis in the property is essential to the determination of taxable gain or loss.

To determine the adjusted basis of the personal residence, the taxpayer must start with his or her original base or cost which is most typically viewed as acquisition price. For example, if a personal residence is acquired by gift, the donor's basis plus a portion of the gift tax constitutes the original base or cost. On the other hand, if a personal residence were acquired through inheritance, original base or cost would be either the fair market value at the time of death or the amount recorded for estate tax purposes.

Basis may be increased by capital improvements such as a new roof, a new heating system, additions, patio, fill, sidewalks, and major remodeling. Repairs, including such items as papering, painting, and other normal maintenance due to ordinary wear and tear, are not added to the base for tax purposes.

As noted, the adjusted basis in the property is essential to the determination of taxable gain or loss. In the case of taxable gain, the higher the basis at sale, the lower the taxable gain. A special comment needs to be made here about loss on the sale of a residence.

It is usual for the loss on the sale of a residence to be nondeductible, except when the taxpayer sells inherited residential property or property jointly owned by husband and wife and used previously by them as their residence, which the surviving spouse stops using as a residence shortly after the other spouse's death.[5] When a taxpayer sells more than one residence in a year, each transaction must be treated separately; thus, losses are nondeductible and gains are taxable,[6] i.e., gains and losses on separate transactions are not netted.

Personal Residence Converted To Income Property

When a personal residence is converted to income-producing property, the basis for the business property will be the fair market value at the date of conversion or the adjusted basis of the property to the taxpayer, whichever is lower.

FIGURE
Gain or Loss at Conversion

Gain = Selling price – (basis at conversion – depreciation)

Loss = Selling price – (lower of basis at conversion or conversion value – depreciation)

Cost of property	$65,000
Conversion value	50,000
Depreciation	10,000

$40,000		$55,000
Loss ←	No gain or loss Selling price	→ Gain

For example, in the Figure, any selling price in excess of $55,000 will produce a taxable gain, while a selling price less than $40,000 will produce a loss. The basis for gain is the basis at conversion reduced by the allowable depreciation; the loss is the lower of the basis at conversion or the conversion fair market value reduced by depreciation. The depreciation in this illustration would be based on the fair market value at conversion. If the selling price fell between $40,000 and $55,000, there would be neither gain nor loss to report. If, however, the selling price were $81,000, the gain would be $26,000 ($81,000 – $55,000). If, on the other hand, the selling price were $38,000, the loss would be $2,000 ($40,000 – $38,000).

Finally, if the selling price were $46,000, there would be neither gain nor loss to report for tax purposes. This is a particularly important point since taxpayers may convert their property to business or rental property prior to a sale if the value of the house has declined in the present market. However, taxpayers erroneously feel that they can then sell the house and deduct their loss without realizing that when they converted the property the basis becomes the lower of the fair market value or the adjusted basis.

To illustrate, assume a property owner acquires a personal residence at a price of $65,000. Because of a sudden downturn in the local economy (e.g., the shutdown of a major local industry with which the property owner is affiliated) and the resultant decline in price/value of homes on the market, the property's current or appraised market value drops to $50,000. The property owner has an opportunity to move but is reluctant to sell in the current market because the $15,000 difference between acquisition price and appraised value is a nondeductible tax loss. Thus, a decision is made to defer the sale of the personal residence for at least a year in order to await a better market.

In the interim, consideration is given to converting the principal residence to a rental property. The tax consequences of such a decision would be that the basis for the personal residence is $50,000, when converted, and that depreciation will be allocated on that base. When the property is sold (assume that the sale is made one year later and depreciation is taken in the amount of $3,000),

the property owner's basis for determining loss will be $47,000 ($50,000 – $3,000) and for gain $62,000 ($65,000 – $3,000). Therefore, if the property sells at a price below $47,000 a reportable loss will be incurred. If it sells for more than $62,000 a gain will be reported. If, however, at the time of property conversion (to business) it had a fair market value of $75,000, then the basis for determining both gain and loss would be $62,000 ($65,000 – $3,000).

Property Divided Between Business And Personal Use

When property is divided into business use and personal use, it is treated as separate units for tax purposes. For the business portion of the property, the rules pertaining to business use apply; for the personal use portion, the rules pertaining to a personal residence apply. This division would apply whether the taxpayer has split the house into a personal residence and a den used for business purposes, or the division is within an apartment complex in which the taxpayer uses one of the units as a personal residence and rents the others.

For illustration purposes, assume that the taxpayer owns a four-family apartment house and occupies one of the units as a personal residence. The acquisition price was $88,000 and allocated equally among the four units, i.e., $22,000 each. Depreciation taken to date amounts to $21,000. Assume also that the property recently sold for $76,000 and that selling expenses were $5,000. The next gain or loss calculation is shown in Table 1.

TABLE 1

Net Gain (Loss): Property Divided Between Business and Personal Use

Item		Business	Personal
Sales price		$57,000	$19,000
Original basis	$66,000		
Less: Depreciation	21,000	45,000	22,000
Gain (loss)		$12,000	($ 3,000)
Selling expense		(3,750)	(1,250)
Net gain (loss)		$ 8,250	($ 4,250)

In Table 1, all apartments were treated as equal in size; thus, all items considered were allocated 75 percent for business and 25 percent for personal use. The loss for personal use would not be deductible, but the gain on the business part would be subject to immediate tax under the rules covering Section 1231, unless depreciation recapture rules apply. During the life of the property, expenses directly related to the business portion would be charged to it, while expenses associated with the residence would be capitalized or ignored depending on the nature of the expenditure. If improvements were made which benefitted the whole building, such as roofing or a heating system, then the cost would be apportioned between them.

Taxpayers who use a portion of their home as a business office can avoid the treatment of part of their sale as business property by reconverting the business office to residential use prior to the sale. The IRS has taken the position that it will look to the use of the property at the time of sale.[8] The taxpayer should maintain records to show when the property was converted and why. A proper period should exist between the conversion date and the date of sale, i.e., conversion should take place in the year prior to the year of sale.

Rental Of A Personal Residence Before Sale

Even when a taxpayer rents property used as a principal residence, it does not mean loss of benefits associated with a principal residence. It is again important to consider the facts which surround the case. If the taxpayer has a profit motive, then it may be assumed that the property was converted to business or investment property. However, when the property is rented because the taxpayer was unable to sell the property, and renting is the only option, then the property would continue to be considered a principal residence.[9] It would be important to show that every attempt was made to sell the property, and only after this effort was made did the taxpayer decide to place the house on the rental market. After placing it on the rental market, it would be wise to have a rental agreement that called for an option to purchase or one which allowed the house to be shown by appointment with suitable notice. In other words, every attempt should be made to show that the house is really for sale and the rental arrangement is only temporary and used to protect the house when the taxpayer moves to the new location.

Disposition Of Real Estate In Divorce Settlement

When property is owned by one spouse and transferred to the other in a property settlement at the time of divorce, the transfer will be treated as a sale and taxed accordingly.[10] The IRS has ruled that where a wife receives the property in exchange for her marital rights, she realizes neither gain nor loss.[11] If a residence was held in tenancy by the entirety and transferred as part of a property settlement, then the event was taxable.[12] In the situation where the one spouse owned the home and paid all the bills, the entire gain (difference between adjusted basis and fair market value) would be taxable as capital gain.

If the property was held jointly with both contributing to the cost of upkeep, the transfer of one spouse's half to the other would result in only that portion of the property transferred being treated as sold.[13] The position of the IRS has been that, even if the property is jointly owned and there is an unequal division of the property, it will create a taxable event.[14]

A property settlement in a divorce or separation settlement should be carefully scrutinized for the tax consequences. For example, transfer of one spouse's interest in

the property to the other as a gift prior to the divorce might eliminate tax liability.

Replacement Of Residence Rule

The replacement of residence rule is not optional, but required if the taxpayer qualifies.[15] This rule applies to the surrounding acreage as well as the residence itself as long as all the property was used for personal use.[16] The taxpayer could have separate sales of surrounding land and dwelling if circumstances force it.[17]

In Bogley, a taxpayer owned and resided in a house situated on an undivided parcel of land containing 13 acres. The taxpayer used the entire 13 acres as a principal residence. The house and three acres were sold in one transaction and later the remaining acreage was sold in two additional sales transactions. The entire transaction was treated as the sale of a principal residence regardless of the fact that there were three separate and distinct sales.[18]

The replacement period extends from two years before the sale of the old residence until two years after the sale.[19] There is no extension except for servicemen and taxpayers with homes outside the U.S. This special extension is for four years from the sale of the old residence.[20] The sale date is normally deemed to occur when the deed is delivered (typically the closing date).[21] However, when a contract unconditionally and irrevocably binds the parties (which would normally occur when the bank agrees to the loan) a sale date could be construed to occur then.[22] The sale date could also be fixed by delivery of control and possession of the property to the buyer before the formal transfer of the deed.[23] The closing date for the sale, however, will normally determine the starting date for the two-year replacement period.

Taxpayer Costs and the Replacement Property. When considering the replacement property, the taxpayer costs must include cash paid, liabilities to which acquired property is subject, and commissions and other acquisition expenses.[24] When property is acquired other than by purchase (e.g., new construction), the costs of construction will count but not the cost of the (mere) improvements.[25] In new construction the costs of constructing one's own residence would be included but not the value of one's labor.

For illustration purposes, assume that a residence was purchased for $25,000 cash over a mortgage of $55,000. A commission of $2,500 was also incurred to acquire the residence and improvements costing $6,000 were made to the residence. Further, assume other miscellaneous acquisition costs of $1,000. The cost of the residence would then be $89,500 ($25,000 + $55,000 + $2,500 + $6,000 + $1,000). If the residence were acquired by gift and $2,500 were put into improvements, then the basis for tax purposes would be the donor's basis plus a share of the gift tax and the $2,500 worth of improvements put into the property. However, for purposes of the replacement costs (when dealing with a replacement residence) there would be a zero basis because property was acquired other than by purchase. Mere improvements are not counted when determining replacement costs. If a property acquired by gift undergoes reconstruction for $15,000, then the $15,000 would count as replacement costs.

Married Taxpayers and the Replacement Property. When married taxpayers replace a residence, they must be careful to avoid changing the way it is titled or file a consent election using Form 2119.[26] Assume that a married couple sells for $95,000 a home which the husband owned individually. Assume further a basis to the husband of $30,000. Within the time period allowed, the couple acquired a new residence for $100,000, each contributing half the down payment and taking title as tenants in common, each owning an undivided one-half interest. If a consent form is not filed, then the husband would have a gain to report for tax purposes; however, if a consent form is filed, no gain would be reported and the basis of the property to each would be $17,500, made up of $15,000 (division of the original basis) and $2,500 (one-half of the additional cost of the new residence over the old). The same set of rules would apply in a situation in which property was owned jointly and the replacement property was titled to one spouse or the other.

The amount that *must be reinvested* is the amount realized from the sale, reduced by fix-up expenses:

	Sales price
Less:	Selling expenses
Equals:	Amount realized from sale
Less:	Fix-up expenses
Equals:	Adjusted sales price (to be reinvested)

If the taxpayer did not reinvest, the taxable amount would be:

	Sales price
Less:	Selling expenses
Less:	Adjusted basis
Equals:	Gain realized

It is important to note that the fix-up expenses only apply in determining how much of the gain must be reinvested in order to defer the tax payment. Fix-up expenses are those expenses incurred to assist in selling the old residence and those expenses which are properly not capitalized. These costs must be incurred during the 90-day period ending on the day on which the contract to sell the old residence is entered into, and paid on or before the thirtieth day after the date of the sale.[27] The cost of the new residence includes cash paid, indebtedness, acquisition expenses, and capital expenditures made during the period involved.[28]

For illustration purposes, consider the same transaction with the acquisition of three different replacement residences:

TABLE 2

Replacement Residences: Calculation of Adjusted Basis

	Item	Property A	B	C
	Sales price	$80,000	$80,000	$80,000
Less:	Selling expenses	(4,000)	(4,000)	(4,000)
Equals:	Amount realized from sale	$76,000	$76,000	$76,000
Less:	Adjusted basis	(24,000)	(24,000)	(24,000)
Equals:	Gain realized	$52,000	$52,000	$52,000
	Amount realized from sale	$76,000	$76,000	$76,000
Less:	Fix-up expenses	(3,000)	(3,000)	(3,000)
Equals:	Adjusted sales price	$73,000	$73,000	$73,000
Less:	Cost of new residence	(70,000)	(80,000)	(73,000)
Equals:	Gain recognized	$ 3,000	–0–	–0–
	Gain realized but not recognized	$49,000	$52,000	$52,000
	Additional investment	–0–	7,000	–0–
	Adjusted basis of new residence*	$21,000	$28,000	$21,000

*(Cost of new residence – Gain realized but not recognized

In all three situations in Table 2, there is a realized gain of $52,000, but the amount recognized is only $3,000 in A and zero in both B and C. The amount of gain recognized is the difference between the adjusted sales price (amount realized less fix-up expenses, if applicable) and the cost of the new residence. When the new residence is either equal to or greater than the adjusted sales price, there will be no recognized gain.

If there is additional investment as in B in Table 2, the additional investment will increase the adjusted basis of the new residence. To determine the adjusted basis of the new residence, the cost of the new residence is reduced by the gain realized but not recognized. For instance, in both A and C the adjusted basis of the new residence was $21,000. This is less than the adjusted basis of the old residence because that has been reduced by the cost of the fix-up expenses. It is important to note that fix-up expenses only defer and do not eliminate tax liability, because the basis of the new property is reduced by the amount of the fix-up expenses. Thus, when a residence is sold without a replacement residence being obtained, the deferral of the fix-up expenses will end. Since fix-up expenses have reduced the basis of the property and the difference between the basis and the selling price is the reportable gain, then fix-up expenses would now be included as gain.

The benefit of the replacement rule can only be used once in a two-year period.[29] However, if an individual is eligible for the moving expense deduction, he or she will be entitled to an exception to the preceding rule.[30]

Exclusion Of Gain On Sale

For those taxpayers 55 years of age or older prior to the date of sale of their residence, there is a $125,000 exclusion for gain. If a married couple files separate returns, they would be limited to $62,500 each.[31] On a joint return only one partner must meet the age test. Also, the residence must have been owned for five years and used as a principal residence by the taxpayer for at least three of the five years prior to the sale.[32] The three-year period must be a full 36 months, but the months are not required to be consecutive.[33] Short temporary absences, such as vacations or hospital stays, do not count against the taxpayer.

It is important to note that the five-year period applies to the particular residences involved, except where the residence is a replacement residence for one involuntarily converted. In this case, the taxpayer can add the time held and used for the involuntarily converted property.

This is a once in a lifetime exclusion except for those who took advantage of the $35,000 exclusion which applied to sales made before July 26, 1978.[34] For illustration purposes, assume that Mr. & Mrs. Able take advantage of the exclusion and retire to Florida where Mr. Able dies several years later. Two years later, Mrs. Able marries Mr. Baker and they move into Mr. Baker's home. If the Bakers should decide to sell their home, they would not be eligible for the exclusion because Mrs. (Able) Baker has already taken advantage of it.

Thus, for tax planning purposes where one or both individuals would qualify for the exclusion who intend to get married and move to another location, it would be wise for them to sell their property prior to marriage so that one or both of them could take advantage of the exclusion.

TABLE 3

Exclusion of Gain on Sale

	Item	Calculation of Gain
	Sales price	$175,000
Less:	Selling expenses	5,000
Equals:	Amount realized from sale	$170,000
Less:	Adjusted basis	35,000
Equals:	Gain realized	$135,000*
Less:	Exclusion	$125,000
Equals:	Gain realized	$ 10,000

*If there were no replacement residence, the realized gain would become the recognized gain.

In Table 3, the full amount of the exclusion could be used. Regardless of the amount of the exclusion used, it is a once in a lifetime exclusion. Thus, if the taxpayer used

only $15,000 of the exclusion because that was the only gain realized, the balance of the exclusion would be eliminated.

Assume that the taxpayer acquired a replacement mobile home for $45,000 as a retirement home in Florida. Of the amount realized, the taxpayer excluded $125,000 leaving $45,000 ($170,000 – $125,000). Since $45,000 was reinvested, the taxpayer would have zero recognized gain and a base for the mobile home of $35,000 ($45,000 – $10,000).

It is important to note that the taxpayer must reinvest the difference between the amount realized and the exclusion. This election may be revoked at any time before the expiration of the period for making a claim for credit or refund (three years after filing return in which exclusion involved). If a taxpayer is married, the spouse must join in the revocation.[35]

Conclusions

Owners of personal residences represent the largest single group of real estate investors making decisions about acquisition or disposition (of those personal residences) from year to year. Individually, owners of personal residences are infrequent participants in transactions to acquire or dispose of real estate. In addition, they are often naive about the tax implications of their decisions. This article has reviewed the tax implications of disposition alternatives under a variety of circumstances involving the personal residence.

The adverse results of hasty, uninformed or irresponsible decisions about disposition are generally unrecoverable. Therefore, minimization, deferral or even avoidance of the impact of tax liability must be planned for as a prelude to consideration of personal residence disposition alternatives.

Most opportunities for minimization, deferral, or avoidance are limited to a specified timeframe (before and/or beyond the decision point) or to a specified point in time when the disposition decision is implemented. Inability, for whatever reason, to seize upon the opportunity when and if it presents itself can result in substantial and unwarranted cost to the taxpayer.

Worksheet—Sale of a Personal Residence

1. Sales price (if part used for business purposes see Schedule A below) _____
2. Less: Selling expenses (see Schedule A) _____
3. Equals: Amount realized _____
4. Less: Adjusted basis (cost plus improvements) (see Schedule A) _____
5. Equals: Gain realized _____
6. Less: Exclusion for over 55 rule (if applicable) _____
7. Equals: Gain recognized _____

or

8. Reinvestment of balance in replacement residence _____
9. Add: Adjusted basis (line 4 above) _____
10. Less: Fix-up expenses (if applicable) _____
11. Net _____
12. Less: Cost of new residence (for basis of new residence, see Schedule B) _____
13. Gain recognized _____

Schedule A (Use same allocation used to determine basis for depreciation):

	Total	Business	Personal
Sales price	_____	_____	_____
Less: Adjusted basis	_____	_____	_____
Less: Selling expenses	_____	_____	_____

Schedule B

Cost of new residence		_____
Add: Gain realized (line 5 above)	_____	
Less: Gain recognized (line 13 above)	_____	_____
Basis of new residence		_____

NOTES

1. LTR 8915017
2. Marcillo TCM 1964-299
3. Reg. 1.1034-1(c) (3) (i)
4. *Ibid.*
5. Watkins TCM 1973-167
6. Rev. Rul. 54-95, 1954-1 CB 98
7. Reg. 1.165-9
8. Rev. Rul. 82-26, 1982-6 IRB 5
9. Reg. 1.1034-1(c) (3) (i) Clapman 63 TC 505 Sweet 68-2 USTC 9656
10. Davis 62-2 USTC 9509
11. Rev. Rul. 67-221, 1967-2 CB 63
12. Forbes 79-2 USTC 9489
13. Stephens 38 TC 345
14. Rev. Rul. 74-347, 1974-2 CB 26
15. Reg. 1.1034-1(a)
16. Rev. Rul. 56-420, 1956-2 CB 519
17. Rev. Rul. 76-541, 1976-2 CB 246
18. Bogley 59-1 USTC 9270
19. IRC 1034(a)
20. IRC 1034(h) & (k)
21. Rev. Rul. 69-93, 1969-1 CB 139
22. Fletcher 69-2 USTC 9528
23. White TCM 1974-69
24. Reg. 1.1034-1(c) (4)
25. *Ibid.*
26. Reg. 1.1034-1(f) (1)
27. Reg. 1.1034-1(b) (6)
28. Reg. 1.1034-1(b) (7)
29. IRC 1034(c)
30. IRC 1034(d) (2) (B)
31. IRC 121(a) (1)
32. IRC 121(a) (2)
33. Reg. 1.121-1(c) & (d)
34. IRC 121(b) (2)
35. IRC 121(c)

DECISION SUPPORT SYSTEMS AND THE EVALUATION OF REAL ESTATE SALES

by Jack T. Hogue

In recent years real estate value, particularly in downtown metropolitan areas, has increased dramatically. As the U.S. workforce continues to engage in information handling at an accelerating rate, the concentration of such workers in metropolitan office towers and complexes will continue. These trends serve to focus attention on an increasingly important and complex decision for companies which buy and sell corporate office properties—the terms of sale or acquisition.

The case study of this research is a large multi-industry corporation with headquarters in Dallas, Texas. Annual revenue exceeds eight billion dollars and company employment exceeds 68,000. In 1982 corporate management was in a position to sell one of its properties, a large downtown Dallas office tower. As management began to investigate terms of sale for the property, it became apparent that there were too many factors which work in concert or opposition to one another for the human mind to be able to consider them all jointly.

In such situations it is common to simplify the problem by reducing the number of variables to be considered, thus providing a more easily identifiable set of solutions. However, management wished to be able to consider all of the variables relevant to the future financial value of the property, and in terms of the hundreds of perceived variations of the future, all believed to be possible. Of added importance was a time limit for the decision which would have made a strictly human evaluation of the property's financial value limited in scope. Management did not believe the property could be adequately evaluated without a computerized financial model enabling any "what-if" scenario to be considered.

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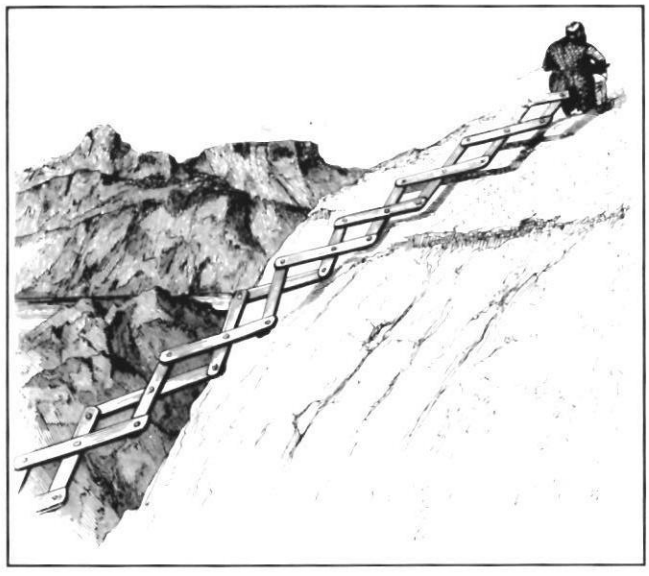

Decision Support Systems

A decision support system (DSS) is defined as "interactive computer based aids designed to assist managers in complex tasks requiring human judgment."[1]

Such decision support systems (DSSs) differ from traditional computer systems in several ways.[2] First, they are often developed by the user (management or staff) for a specific decision utilizing computer software which is very user-friendly, thus requiring little to no prior computer expertise. The decision supported by the DSS may be a recurring decision of continued importance (financial planning) or a one-time decision of major importance (sale of a multimillion dollar office building). DSSs may be developed separately from the data processing (DP) department, thus bypassing the typically long turnaround time for DP applications development. As the DSS is developed it can be changed quite easily and quickly as the user determines needed modifications. A DSS is

heavily dependent on its using decision maker, since its accuracy will be dependent on the accuracy of the computer model specified, and this model often exists only in the decision maker's mind.

In addition to a DSS being quickly and easily developed by users, it must be easy to operate during the process of examining potential decision outcomes. This means that users should be able to interact on a one-to-one basis with the DSS, using unimposing technology. Commands should be simple and logical extensions of the decision maker's vocabulary. Response by the DSS to the user's commands should be rapid. Equally important to these other characteristics of a DSS is its ability to provide informational responses to the decision maker in any form desired. Examples include graphical and tabular output, and a variety of levels of detail in the output. Figure 1 provides a fairly complete summary of typical DSS characteristics.

FIGURE 1

Decision Support System Characteristics

1. Supports but does not replace decision making.
2. Directed toward semistructured and/or unstructured decisions.
3. Directed toward upper and/or middle management.
4. Data and models organized around the decision(s).
5. Easy to use software interface.
6. Interactive processing.
7. Use and control is determined by the user.
8. Flexible and adaptable to changes in the environment and decision maker style.

A Decision Support System for Real Estate Evaluation

Management chose the DSS approach to acquiring computer assistance as opposed to using normal channels through the DP department due to factors previously mentioned. In particular, management wanted a system which could be developed fast (less than one month) and under the complete control of the decision maker who was trying to determine the details of the building's terms of sale. The Management Information Systems department already had a "package" of financial modeling software, Interactive Financial Planning System (IFPS), which was available for independent users/decision makers, and was chosen as the mechanism for developing the needed DSS. IFPS is an example of what is referred to as a DSS Generator.[3] This software provides a simple means of assembling the DSS. With IFPS, and other DSS Generators, instructions are English-like with an emphasis on business-oriented terminology. Physical interaction is very unimposing (via terminal screen prompting). Tabular as well as graphical outputs may be requested. Other facilities are available, depending upon the particular DSS Generator.

The DSS was approved, developed, and utilized exclusively by only two individuals, the upper manager (in finance) responsible for the decision and a senior financial analyst. The logical content was thus under the direct control of the users, as were all data in support of the model. Other resources required in support of the DSS were available (controlled) through the Management Information System department. These included all hardware, supporting system software, and communications facilities.

There was no formal evaluation performed to assess the financial desirability of developing the DSS. No projections of cost or benefit were performed either before development or after the model's use. Management "knew" that the return over the cost of model development, whatever it would be, would be very beneficial. The reason was the huge amount of revenue to be generated over the life of the building. Any improvement in the decision was seen as out-weighing the cost. This is fairly typical for DSS projects and often referred to as "value analysis."[4] Given a relatively low cost threshhold for development, the project will be accepted if there is a potential for very high returns.

DSS Development

During development the manager and analyst worked together closely in the initial stage to define the relevant components for evaluating this building's worth. Such a decision had not been required before and there was, therefore, no predefined procedure or technique. The components were identified by the manager by thinking through and verbalizing what he believed to be the relevant issues and relationships. After such a session the analyst would develop algorithms representative of the manager's specifications. Three weeks were required to develop the final model.

As the DDS was evolving into its final format, the manager was using the model to evaluate the building. Thus, the model was in use as it was being developed. It was this use which enabled the manager to specify additions and refinements. The final model was then a reflection of the decision making process utilized by the manager. Later, as the model was used, the manager was further able to maintain an individual approach in that questions could be presented to the model in any sequence, and information could be presented in summary or detailed form.

Only the financial analyst dealt directly with the IFPS DSS Generator during model building. Neither manager nor analyst was required to interact with any other more basic tools such as FORTRAN or systems software. This was because IFPS maintained its own interaction with the computer system and IFPS offered all components needed by the DSS. Other capabilities available in support of the DSS were printing and CRT terminals, and the various capabilities of the computer's operating system.

DSS Operation And Use

Once the DSS was available to assist in evaluating the terms of sale for the building, both the analyst and the manager operated the model anywhere from 5-20 times per week (for three weeks). The analyst had taken one computer course in school and the manager none. Neither had used the computer directly as a tool before. Company training was and is available for use of IFPS. The analyst had received this training (two days) but, of course, there is no training available for the DSS since it was relevant for use only the one time.

Maintaining the decision making approach of the manager was easy in this case because of several factors. Frequently, the manager did his own operation and could thus direct the DSS as he pleased. Also, if the analyst were operating, the manager would occasionally be there to direct the analyst's actions. If not physically present during the analyst's operation, the manager was usually next door and thus readily available to the analyst. Further, turnaround time for output was usually instantaneous, thus allowing for rapid feedback.

The impact of the DSS on both the analyst and manager was similar. Both are now using the computer and computer output as a part of their job. For the upper manager, an increased self-assurance has been possible since much faith is placed in the model. More think time was available for considering the decision and the decision could be made more quickly. Management believes that use of the DSS significantly improved the terms of sale of the Dallas office tower. Many more factors were considered than could have been without the DSS, and in a time frame which was considered prohibitive before the DSS.

Conclusions

Decision support systems are computer-based information systems designed to assist decision makers in the task of making upper level, ill-structured decisions. The terms of sale of corporate office properties is a decision which requires considerable analysis due to the large number of relevant variables and the unpredictability of the future. For this reason, such decision making can be aided through the use of a DSS.

The true case presented in this study is one example of the application of such technology to the determination of terms of sale of a major property. In a four week period of time, two non-computer oriented individuals (one management and one staff) developed a DSS of perceived high quality which had a major impact on the sale terms decision. The DSS consists of hundreds of financially interrelated equations, each representative of some facet of the building's potential value. Interaction with the DSS is quite simple since commands are very English-oriented. The user must simply respond to menu prompts in using the model, and then supply required data. Its greatest impact on management's decision making comes in its ability to react with a scenario to questions posed by management. Once the model was defined, management was able to pose "what-if" types of questions to get a financial picture representative of the "what-if" proposition.

The development of decision support systems in the real estate field should not be restricted to such high price properties. Similar systems would be of major value in any situation where a similar single high priced property were involved, or whenever the terms of sale (or acquisition) decision is made on a regular basis. If such a DSS were developed for a recurring buy-sell decision, the DSS would need to be more general in its ability to evaluate any property rather than designed for a single application, as in this case.

NOTES

1. Richard Hackathorn and Peter Keen, "Organizational Strategies for Personal Computing in Decision Support Systems," *MIS Quarterly*, Vol. 5 no. 3 (September 1981), 21-27.

2. For a more complete examination of DSS characteristics and deviations from traditional information systems refer to: Peter Keen and M. S. Scott Morton, *Decision Support Systems: An Organizational Perspective*, Addison-Wesley, Reading, Mass., 1978; and Ralph Sprague, "A Framework for the Development of Decision Support Systems," *MIS Quarterly*, Vol. 4 no. 4 (December 1980), 1-26.

3. Ralph Sprague, "A Framework for the Development of Decision Support Systems," *MIS Quarterly*, Vol. 4 no. 4 (December 1980), 1-26.

4. Peter Keen, "Value Analysis: Justifying Decision Support Systems," *MIS Quarterly*, Vol. 5 no. 1 (March 1981), 1-16.

MANAGEMENT CHALLENGES IN AN ERA OF INSTITUTIONAL TRANSFORMATION

by Stephen E. Roulac

Real estate is undergoing a managerial crisis. In a time when new technologies and management practices are prime subjects of popular interest,[1] management consideration and press commentary, the gap between the need for and supply of management capability for the real estate sector is growing at an alarming rate. That this crisis is too little recognized is somewhat ironic and creates pitfalls for the rapidly expanding and newly involved organizations active in real estate.

While the changing structure of the real estate sector over the last decade has created a clear demand for new management capability,[2] recent developments have accelerated the need. Neither the business schools, which could be a source of such new management talent, nor real estate managers themselves, who should take the initiative to ensure that such management capability is available, are doing much to solve the problem. Indeed, current consideration of the managerial situation in real estate reflects a casual indifference to the dimensions of the problem and the significance of its consequences, which could be serious if it is not addressed and solved.

A significant move currently exists to consolidate within the financial services sector, which is having and will continue to have a substantial influence on real estate activities. Concurrently, major investors are directing more and more portions of their assets to real estate investment. The organizations that provide financial services to the real estate sector are also experiencing substantial consolidation. Although these trends represent

significant management challenges, evidence is lacking to indicate that these challenges will be successfully met.

Property Lags Economic Trilogy Advances

Although two of the labor, property and capital components of the economic trilogy are the subject of considerable study and concern to those charged with policy responsibilities, the managerial issues inherent in land are by comparison given short shrift. In the decade of the 1970s public awareness and regulatory policies directed toward issues concerned with land use matters advanced substantially. Even so, the managerial processes of administering decisions in regard to the selection, evaluation, acquisition, creation, financing, management and disposition of space, and the technology by which such decisions are made, leave much to be desired.

In an age of information, where communication and processing is accelerated by technological advance, it is proper that the land, labor, and capital components of the economic trilogy be supplemented with "information" as a fourth vital component. Management is concerned with planning, organizing, administering and controlling these four essential components in order to achieve its objectives. Yet a brief consideration of developments

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This article is adapted from Mr. Roulac's upcoming book, Strategic Real Estate, *due out in 1985.*

within these economic elements leads one to conclude that real gains as contrasted to attention without action have been unbalanced:

1) *Labor.* Enhancement of the productivity of labor through training and education, and supplemental support in the form of systems and capital equipment, has steadily reduced the resources needed to produce fundamental goods and services. This has allowed people to pursue tasks directed at higher levels of Maslow's hierarchy of needs as well as to take advantage of more leisure time.
2) *Capital.* Innovation within the capital markets, by which suppliers and users of funds are "connected" and various forms of securities are packaged, has been fundamental to the development and advancement of contemporary society.
3) *Information.* Progress in the transmittal of information, starting with the advent of printing and extending to the development of the computer and electronic communications technologies, has played a pivotal role in shaping society and the organizational processes which administer various functions of society.
4) *Property.* By comparison, managerial processes concerning significant real estate decisions are still in many ways where a *Fortune* magazine editorial placed them nearly four decades ago: in the era of Louis XIV.[3]

To understand the real estate management challenge, it is helpful to consider the past environment of business. Simply stated, project planning, financing acumen, financial controls, and marketing expertise were historically not priorities as strong demand more than offset managerial deficiencies. A number of participants realized significant profits in spite of what they did, although they often may have concluded that their intuition was the source of their fortunes rather than favorable market conditions. In such a setting, the market for new management was not generally recognized by those perceived to be its beneficiaries.

Management Challenge

The challenges to management which is charged with responsibilities for real estate decisions are accentuated by the changing "rules of the game." These rules, in turn, have contributed to more volatile markets and new risk postures for the key participants. It is as if the board game of *Monopoly*—long played according to known and specified rules—were reconstructed with new rules. In the old version, when a developer wanted to play, he could go to the bank for some money; the banker was less discriminating to whom and for what purpose he/she provided funds. As the real estate entrepreneur saw properties he liked, he bought them with the money from the bank. Over time, by using borrowed money at rates below what properties yielded, the real estate entrepreneur assembled an impressive portfolio.

The developer was able to do just about anything with his properties. He could build some houses on them, or he could construct some hotels where people would pay even higher rents. The developer enjoyed playing this game where there always seemed to be much more money in the bank than he needed. Also, the game was so big that the competitors of the developer did not have that much adverse impact.

When competitors occasionally became particularly aggressive, or if one player took excessive risks and used his/her money unwisely, a real estate entrepreneur might suffer great losses. But even if a player did get wiped out, money could always be borrowed from another bank. And the competition from other developers was not really that restraining since most of them were not particularly accomplished game players. The game of urban real estate monopoly reflected a good life. It was large enough and flexible enough to accommodate nearly everyone.

But then one day the rules changed. Banks would no longer loan money indiscriminately; they were limited to funding only those players who already seemed to have a great deal of money. Instead of asking for a "reasonable" return on their money, banks now insisted that the developer not only give them a very competitive return but part ownership of the properties as well.

Developers discovered that many more people were playing the game, and these new players were more sophisticated, better trained, and harder working. When the developer sought to put houses or hotels on vacant properties, he was faced with many complex and often conflicting rules and regulations. The developer also found out that customers were more selective and demanding than in the past. They insisted on a higher quality of services and refused to pay unless they were satisfied.

Many developers left real estate monopoly in search of another game. The banks didn't care since they were not planning to give their money to the game players. Instead they planned to finance their own projects. The rules had changed dramatically: a game that used to be easy, was a lot of fun, and had high payoffs had been transformed into one that was complex, tedious, and financially risky.[4]

Institutionalization Pressures

While the real estate business has become institutionalized and achieved legitimacy as an accepted investment, the supply of managers and the managerial capabilities are far short of the demand. The emergence of real estate as an accepted and even favored investment vehicle has raced far ahead of the support services needed for smoothly functioning markets and effective participation. The kind of basic information found in the libraries of security firms and industrial enterprises has been unavailable in the real estate field.

Increasing demands are being placed on managerial resources to cope with real estate decisions. The greater competition in the business will mean that the decision

frame will be more exacting than in times past. Deregulation of financial institutions will cause many banks to engage directly in real estate activities. Few banks, however, now possess individuals in management who are knowledgeable and experienced in such activities. At the same time, the emerging financial institutions which are entrepreneurial in nature and sponsored by real estate organizations also need additional management capability.

The institutionalization of the real estate business has caused a new genre of firms to emerge, which provide real estate asset management services. About a dozen years ago, few organizations had any meaningful responsibilities for overseeing real estate assets on a substantial scale. Yet today at least several hundred organizations provide real estate asset management services. The growth challenge is especially evident in the expected increase in pension real estate commitments, from a figure of approximately $100 billion to a range of $500 billion or almost one trillion within the next 12 years. This spurt in growth imposes extraordinary demands on organizations, managers, and their advisors.

The fundamental changes in the economy, particularly the transition from a smoke-stack to a service-information-technology driven economy, are altering space using patterns within geographic regions and between traditional property type classifications. Coping with the emergence of the computer as a decision-making tool and as a technological phenomenon is difficult enough for executives with managerial training, let alone for those in the real estate sector who have not had significant background or training in management.

The voices of change that are realigning the environment in which the real estate executive operates are similar to the dynamic changes occurring within the country's overall economic system and the financial services markets in particular. Real estate has gained substantial acceptance and recognition in the institutional community. This means that there will be more pressures for professionalism on the part of those delivering services and also the particular need to "bridge" the traditional world of real estate and the cultures of the new participants.

Thus, those who would be effective must blend the traditional with the innovative, the entrepreneurial with the fiduciary, private sector initiative with public sector policy concerns, and the immediacy of specific project focus with the continuity of going concern enterprise in institutional time horizons.

In addition to these skills, executives operating in the real estate sector will increasingly need to emphasize analytical and marketing skills. The issues of performance assessment—the project, portfolio, individual and company levels—will be emphasized more and more. In common with many other businesses, strategic planning is becoming more important in the real estate sector, yet few managers have the information sources and decision-making tools necessary to address the critical issues that determine the direction and profitability of an enterprise.[5]

Will Management Respond?

Given the gap between the need and the resources available for managing real estate enterprises, it is appropriate to consider what forces could stimulate a response to fill this need. Possible responses include: 1) initiative by educational institutions to motivate students to select and prepare for real estate careers; 2) training programs within organizations to develop the managerial capabilities of executives; and 3) personal commitments by individuals to enhance their own managerial skills and knowledge. These three forces—schools, organizations, and individuals—all turn on *initiative*.

It is not surprising that this initiative has been lacking. The nature of real estate activities causes many to gravitate to the "deal maker" side of the business, where hustle and negotiation are at a premium over systems and strategies. There are few, if any, role models of managers with the disciplinary training and personal talents necessary for managing organizations operating in the real estate setting.

Organizations. It is traditional in the real estate sector for the primary organizing theme to be oriented toward a project rather than a going concern enterprise concept. The organizations that did exist were highly specialized and had leadership skills situated more in the work foreman than in the managerial mold.

When one considers the composition of those firms that comprise the real estate business, it is readily seen that the majority of organizations are very small. Given that the organization is relatively small, the chief executive of the real estate firm typically finds it necessary to concentrate efforts more on doing than on managing. Accordingly, the senior management role is perceived as more the domain of the superworker than of the supervisor.

While certain components of the business are highly concentrated, the real estate sector in aggregate is dispersed widely, especially in relation to most other sectors of the overall economy. Thus, management in the real estate sector requires mastery of not only the issues concerned with the real estate business but those characteristic of smaller entrepreneurial businesses in general.

The primary educational emphasis in professional business schools has been on managing large enterprises, although the recent resurgence of the entrepreneur and the substantial growth of small organizations are causing this emphasis to be realigned. Still, a major source of the thrust of most business school curriculums is directed to the larger organization.

Critical social commentary on the editorial pages and in novels has stimulated change in the business practices of various industries. The real estate sector has certainly attracted its share of commentary, with ethical issues being more scrutinized than managerial practices.[6] Although the critical commentary in John MacDonald's *Condominium*, a best-selling popular novel describing

wrongful practices in the "real estate industry," was both hard-hitting and on target, its impact on those concerned with the management needs of the real estate sector was limited.[7]

Since the majority of real estate managers have little or no formal training, it is not surprising that many are ill-equipped to deal adequately with the challenges they face:

> ". . . there is no question that a major problem is the extraordinary chasm between the professional theme that so many preach but do not practice. Too many participants have insufficient educational backgrounds and, indeed, real estate is not exactly a primary career choice. The incidence of college graduates selecting real estate as a primary career choice is only a relatively recent phenomenon and as one participant observed, 'Real estate is the kind of career you fail into.' After many become disenchanted or do not achieve what they aspire to in other business areas, they go into real estate."[8]

Furthermore, few organizations devote meaningful resources to training due to a lack of recognition of the need and scale diseconomies. While various continuing education programs are offered, their overall quality is more often marginal than meaningful.

Companies and their executives who are active in the real estate sector should lobby business schools to promote serious real estate programs. While the real estate sector has been active in funding professorships and research, such funding too often translates into broker-oriented or status quo reinforcing efforts. Business schools respond ultimately to the demands for their graduates and are influenced to emphasize those topics for which research and course development financing are available. Organizations concerned with real estate managerial practices must take the initiative to increase the priority of real estate within business schools.

Real Estate Education. Just as any society must have a continuing investment in general knowledge and particularly in educating those who would assume tomorrow's managerial responsibilities, so must any major component of economic activity have a similar commitment to developing management talent. This commitment is reflected in research and applied literature, fundamental education, and continuing professional training. It is unfortunate that the resources devoted to the serious research of real estate topics lag well behind those devoted to other business fields. Since there have been few major employers of graduates in real estate, there have not been strong supporters to fund the research that can in turn be the foundation for advancing the scope and content of real estate curriculums.

Some of the newly emerging professional associations, such as the American Institute of Corporate Asset Management and the Real Estate Securities and Syndication Institute, are consciously seeking to upgrade the professional training available to the real estate sector. The Urban Land Institute publishes a comprehensive list of studies on various topics of interest. Certain firms have also made serious commitments to the professional development of their own staff.

Although there is a proliferation of real estate literature, much of it is of the inspirational "how to" variety. The serious general business and economic journals generally lack a knowledgeable readership, while the real estate journals tend to lack an influential readership. It is notable that during the last 15 years of the *Harvard Business Review,* when more than 2,000 articles on business topics were published, less than 10 addressed real estate decisions in a managerial context. Yet during this period, real estate triggered the creation of more wealth and economic activity in all but a few economic sectors.

Strong demands have meant that real estate products and services were more often bought than sold, an orientation that has discouraged the development of the management capability required to sustain successful operations in a more competitive environment. As one observer recently noted:

> "The real estate industry is unlike most other industries in this country. Essentially it lacks experience, sophistication, systems, management talents, and most important, a realistic attitude toward competition that is typical of most of the other industrial and commercial sectors. The real estate industry is in its present predicament because it has never had to do anything to sell its products."[9]

This lack of marketing orientation has translated to a similar lack of emphasis on commitments to a competitive education program. Due to a basic lack in the need to compete, the industry downplayed the development of competitive skills. The consequence has been that business schools have assigned a low priority to matters regarding real estate curriculum.

Real estate as a curriculum and the real estate professions in general tend to rate a lower priority in the business schools, few of which have meaningful commitments to real estate academic programs. Those courses which are offered too often are tainted with a "trade school" reputation, a once accurate but now largely inaccurate assessment. This adverse image has stimulated a self-fulfilling prophecy, as academic leaders restrict resources to real estate, thereby discouraging serious academics from doing meaningful research, and then point to the fact that since little significant academic work is being done, it would be inappropriate to fund substantive research and course development efforts.

Indicative of this historic status of real estate within business education in general are two reports from 1959 that recommended real estate be dropped from the academic curriculum on the grounds that it was excessively oriented to salesmanship and license examination preparation.[10] Although considerable progress has been made in recent years, real estate education continues to lag well behind advances in general business education. A paper by Jerome Dasso and Lynn Woodward which was delivered to the American Real Estate and Urban Economics

Association meetings in 1978 concluded that real estate education faced the same basic issues that had been addressed at a similar meeting more than a half century earlier.[11]

If one looks at the real estate curriculum more specifically, one finds that of 208 business schools accredited by the American Assembly of Collegiate Schools, some 53 have a real estate department or division and 167 offer real estate courses, with 96 offering real estate as a field of specialization. Of those faculty members teaching real estate courses, 384 were full-time (an average of 2.3 per school) and 277 were part-time faculty members (an average of 1.7 per school). Twenty-two business schools have a chair or named professorship.[12]

A provocative commentary on the usefulness of real estate education is found in a survey done in 1977 by the National Association of Realtors® of broker licensees. The study determined that those with an undergraduate real estate specialization earned a median income of $25,000, as contrasted to $30,000 for social science, engineering, liberal arts and business administration, and $35,000 for economics.[13] The popular perception of real estate as offering high potential rewards and being characterized by low prestige and career stability was substantiated by a survey of 65 business students at the University of Oklahoma. Compared to seven other career classifications, real estate ranked at the extremes of the dimensions most critical to career perception: "lowest in prestige, second lowest in entry difficulty and career predictability, and second highest in economic opportunities."[14]

The real estate sector clearly has failed to achieve the recognition that is given to parallel professional fields, such as accounting (CPA), law (member of the Bar), architecture (AIA), etc. While those involved in real estate continue to advocate a more professional approach, the prospects for such uniformity of orientation and higher recognition are bleak. There is a proliferation of so-called "professional designations" in the real estate sector. Some 41 designations for various types of real estate specializations are offered by some 24 organizations in the United States and Canada, with at least 16 separate designations in the appraisal area alone.[15]

Whereas real estate education evolved out of the land economics discipline, in 1956 Arthur Weimer proposed a managerial perspective as the dominant theme, with courses being taught from the point of view of the business manager or administrator.[16] It is ironical that a recent survey of 155 real estate professors and practitioners looked at various real estate topics and ranked investments the highest. Practitioners, however, rated brokerage nearly as high as investments, even though in the eyes of professors it was rated as the lowest of real estate topics.[17]

In regard to the appropriate perspective taken to examine real estate topics, James A. Graaskamp, professor of real estate at the University of Wisconsin at Madison, has argued articulately for a multi-disciplinary approach and suggested that real estate education may shift more to the schools of physical design, where the emphasis on problem solution and faculty drawn from successful practitioners lend themselves to real estate education.[18] Graaskamp suggested such an orientation may minimize the present adversary approach to the real estate process, where "developers are viewed by planners as Philistines" and planners are viewed by business students as "naive, fascist, without techniques to plan."[19]

A financial management approach to real estate has been advocated by Jerome Dasso on the grounds that it is both contemporary and integrative of issues relevant to real estate decisions.[20] The advantages of this approach are that it extends the financial theory to the 1960s, is a more quantitative and applied version of land economics, and stresses value and a decision emphasis.[21]

Inasmuch as real estate education has been relegated to a second-class citizen status, those business schools that would embark aggressively on a development effort have the potential to make a positive impact on the education of their students and also to gain a comparative advantage over other business schools. The ingredients of a neglected market, ineffectual competition with no established market leader or barriers to entry, and rapidly expanding demand are the building blocks of strategies that can lead to enterprise distinction. Additional ingredients that are needed are top management commitment and leading edge talent to design and implement the curriculum. The latter is in short supply especially as a consequence of the extraordinary cost of opportunity for the most talented to persist as second-class citizens in the academic environment. Nonetheless, creative deans can construct customized curriculums that combine full-time academics with dynamic part-time adjuncts. Such a strategy offers extraordinary rewards to the enlightened business school and promises a beginning at resolving the managerial crisis facing the real estate sector.

Individuals. To be effective in the real estate sector, it is important to have an understanding of the environment of the business, its institutional relationships, the technical tools necessary to perform the fundamental tasks, and the personal style and attributes necessary for effective performance. This can be acquired in business schools, by personal inquiry, and/or through experience.

New entrants into the real estate business must be sensitive to the issue of the judicious use of the power of the superior newly-acquired "B-school" skills, including an awareness and knowledge of crucial environmental issues. This is contrasted with those who know the "what" but not the "how" of the decision. More than one long-time real estate operative can determine the indicated course of action but, if pressed, would be hard put to document explicitly the reasons for his decision. In a sense, this tension was captured well in a memorable scene from *The Music Man,* a highly popular musical comedy by Meredith Wilson. In the scene several traveling salesmen on the train are debating the merits of cash vs. credit terms. The traditionalist argues the advantage of

cash, whereas the new proposal is to sell on credit; it is a debate that has existed for some time and has yet to be solved, yet the underlying refrain which is repeated over and over is, "You gotta know the territory."

The lesson to be learned by the new manager is that knowledge of the basic business environment—who the players are, how transactions work, the major forces that influence decisions, the fundamentals of the business—is a necessary condition for effective participation. At the same time, proper application of managerial skills and techniques should go hand-in-hand with such environmental knowledge.

The manager who would be successful in the real estate sector will balance and integrate the following attributes:

- *Environmental knowledge*. As discussed previously, an understanding of the "territory" is fundamental to successful participation in any business and is particularly the case in the real estate sector.
- *Strategic outlook*. Given the rapidly accelerating pace of change within the structure of the real estate business, which is causing traditional relationships to crumble and new power alliances to emerge, positioning one's self and one's organization strategically assumes great importance.
- *MBA technical skills*. The skills that are honed through the MBA learning experience, particularly the analytical methods for problem solving, systems and procedures to achieve economy of operation and control of performance, and forecasting techniques to plan future operations and facilitate capital budgeting decisions, have an important role in the "tool kit" of the real estate manager.
- *Entrepreneurial initiative*. The real estate business is inherently entrepreneurial in that it marshals resources and influences behavior patterns in settings that are largely unstructured and where precedents may be few if any. Those who need order, structure, and predictability, and who are uncomfortable with uncertainty, ambiguity, pressure and volatility, would do well to apply elsewhere.
- *Institutional style*. The integrated trends in the maturation of the business and the increasing dominance of the role of capital control by institutions mean that an important prerequisite for effective operation in the real estate sector will be appropriate "presence" in the institutional settings. This requirement is a departure from past practices and is alien to many who are involved in various facets of the real estate business.
- *Managerial orientation*. More competitive conditions, larger organizations and higher expectations of more sophisticated participants place a premium on a managerial orientation to the business. A structured approach, emphasizing planning, systems and controls, is becoming increasingly important.
- *Marketing flair*. The real estate business is ultimately concerned with the merchandising of space, which reflects a practical application of the process of supply and demand. Answers to such critical questions as:

  What do people want?
  What factors influence decisions?
  What else is available?
  How does our space compare to that of the competition?
  How can we differentiate our product and merchandise it to achieve a premium return?

  define a manager's ability to perceive the unrecognized opportunity, to structure creative purchase terms, and to perform effectively the many functions involved in the real estate process. Marketing flair can be instrumental in promoting space and achieving superior returns.
- *Personal skills and people orientation*. While the "people factor" is important in a number of businesses, it is especially important in real estate, given the influence that real estate decisions have on one's personal and organizational life, as well as the role that emotional factors play in many real estate decisions. Thus, creating the appropriate personal rapport can often be fundamental to achieving good real estate results. At the same time, such basic personality traits as creativity, integrity, persistence, persuasiveness, diligence and attention to detail, are all factors that increase one's likelihood of success in the real estate business.

Talented managers need to find supportive organizational environments that tolerate or better yet encourage the full expression of their skills. Those organizations which will be successful will seek and support such individuals.

Most organizations do not actively recruit new hires off campus, although this condition is changing. Those seeking real estate careers must take the initiative to identify prospective employers and to promote the merits of their being hired. If this challenge is overly burdensome, the applicant probably can conclude that he or she would not have enjoyed or likely been successful at the real estate business. Students should also recognize that their lobbying efforts can influence course offerings, which in turn influences their appeal to and performance in organizations active in the real estate sector.

New Directions

The number of qualified individuals in the real estate business is grossly inadequate. The result of this managerial crisis has been excessive personnel turnover, organizational disruption, and strategic malaise if not misdirection. Integrating a business which is entrepreneurial in nature with the large organizational context of the financial services firm, and doing this during a period of dramatic economic and technological change,

requires an effort which should not be underestimated. Those managers and professional advisors who have the ability to address these issues in a responsible manner are at a premium.

True progress requires that the business schools recognize the importance of a solid real estate curriculum and that the forward-looking management of a business school be reflected in an innovative curriculum. Recognizing that managerial talent is at a premium, organizations should provide an attractive package of benefits to insure superior performance and continuity. Individuals with this much-needed talent should be discriminating in their selection and expectations of organizations.

The primary need in the real estate sector is for broadly-competent managerial capability with a particular awareness and sensitivity to the dynamics of the real estate business. A specific need is to formulate strategies that capitalize on competitive advantage to address structural issues; to design incentive-based compensation systems to attract, motivate and retain superior personnel; and to develop and implement responsive and efficient managerial information systems.

While the management crisis poses substantial threats for many in the business, it also represents great opportunities for those executives and organizations that can cope effectively with it. Thus, strategic planning should be a great priority for real estate enterprises and for the entrepreneurially-driven financial institutions that will be increasing their real estate involvements.

Individuals who seek a new career should look at real estate, but they should make sure that they receive the appropriate training. Investments in human capital in regard to real estate managerial capabilities can offer great payoffs, and according to Peter Drucker this is especially so in turbulent times such as these.[22] Of course, for those individuals who possess managerial capabilities and are already involved in real estate, the conditions described here represent great career opportunities.

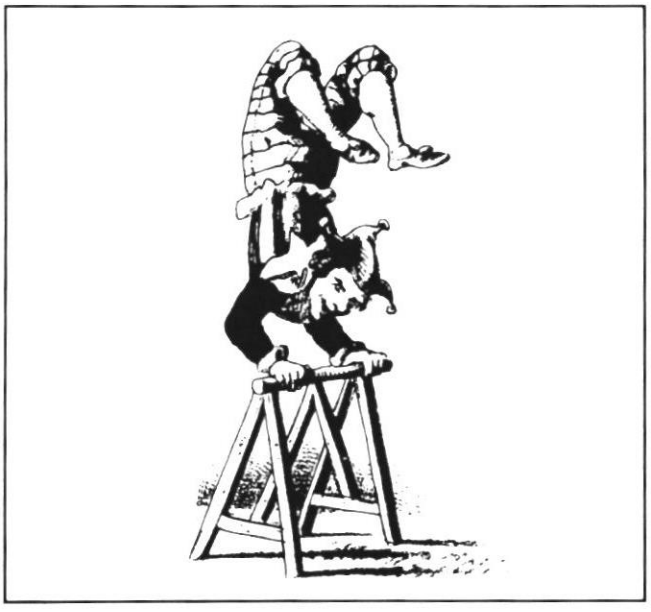
NOTES

1. In early 1984, three business books—*In Pursuit Of Excellence* by Thomas Peters and Robert Waterman, *The One Minute Manager* by Kenneth Blanchard and Spencer Johnson, and *Megatrends* by John Naisbit—were at the top of the nonfiction best seller lists.
2. See, for example, Stephen E. Roulac, "New Management for Real Estate," *The Real Estate Appraiser* (January-February, 1973), 4.
3. "The Industry Capitalism Forgot," *Fortune* (September 1947).
4. This discussion of "Monopoly Reconstructed" is adapted from Stephen E. Roulac, "Changing Economics Imply New Real Property Investment Relationships," *California Management Review* (Spring 1976), 57.
5. These concepts of the requisite talents of the new manager draw heavily on the work of Dr. Kenneth R. Abel, who specializes in organization issues within the real estate sector and is a National Management Advisory Services Partner at Kenneth Leventhal & Company.
6. See, for example, the book review by Stephen E. Roulac of *Mortgage in America* by Leonard Downie, *Real Estate Law Journal* (Winter 1976), 343.
7. Stephen E. Roulac, "The Conundrum of *Condominium*, or a Critical Look at the Best-Selling Real Estate Expose," *Real Estate Issues* (Summer 1978), 62.
8. *Ibid*, 66-67.
9. Elliot Lewis, "Living With a Buyer's Market—Part I," *Touche Ross Real Estate Review* (January 1982).
10. Robert A. Gordon and James E. Howell, *Higher Education for Business* (New York: Columbia University Press, 1959) and Frank C. Pierson, et al. *The Educations of American Businessmen* (New York: McGraw Hill, 1959).
11. Jerome Dasso and Lynn Woodward, "Real Estate Education: Past, Present, and Future—The Search For a Discipline," paper presented at American Real Estate and Urban Economics Association proceedings, Chicago, Illinois, August 30, 1978.
12. Richard T. Garrigan and Robert L. Wardrop, *Real Estate Programs at Business Schools Accredited by the American Assembly of Collegiate Schools of Business.*
13. Harry D. Hartnett, "Findings of the National Association of Realtors® Real Estate Curriculum Survey," presented to the Forum on Real Estate Education of the American Real Estate Urban and Economics Association meeting, Chicago, August 30, 1978.
14. Larry E. Wofford and R. Keith Preddy, "Assessing Student Perceptions of Real Estate Careers," *Journal of American Real Estate and Urban Economics Association* (Winter 1980), 417-426.
15. Lynn N. Woodward and Marcella Roberts, "Opinion: Professional Designation or Merit Badge—A Modest Proposal," *Real Estate Issues* (Fall/Winter 1980), 43.
16. Arthur Weimer, "The Teaching of Real Estate and Business Administration," *Land Economics* (February 1956).
17. James R. Brown, Jr., "Real Estate Education: A Curriculum Guideline," *The Appraisal Journal* (October 1979), 574.
18. James A. Graaskamp, "Redefining the Role of University Education and Real Estate and Urban Land Economics," *The Real Estate Appraiser* (March-April, 1976), 23.
19. *Ibid.*
20. Jerome Dasso, "Real Estate Education at the University Level," *Recent Perspectives on Urban Land Economics* (Vancouver: University of British Columbia, September 1976), 177.
21. *Ibid.*
22. Peter Drucker in a conversation with the author observed that commitments of resources to enhance human capital represent the ultimate investment in periods of great uncertainty.

A RECLASSIFICATION OF REAL ESTATE AND MARKET ANALYSES: TOWARD IMPROVING THE LINE OF REASONING

by Maury Seldin, CRE

Feasibility, like value, is a word of many meanings. The essence of feasibility is doability, but the meaning varies according to the constraints imposed.



Feasibility

Financial feasibility refers to the attainability of financial resources and results that will make the project worthwhile. It can hinge on the availability of a mortgage loan or of equity money. Development feasibility generally refers to the obtainability of building permits or other required consents, or to the project's ability to meet regulatory requirements. It can also refer to the physical practicability of a project, perhaps in terms of the regulatory environment, as in the case of a site that must be engineered to yield a specified number of lots or intensity of use at a reasonable cost.

Obviously, financial feasibility and development feasibility are related. A simple statement of "feasibility" refers to doability in the broad sense. The difference in types of feasibility refers to the constraints.

Feasibility can be viewed from the vantage point of a developer, an investor or a lender. Each would have his own criteria. If a developer, for example, sees that enough potential profits can reasonably be expected within the constraints he is prepared to accept on the resources available, he will consider the project feasible. It may be actually doable at a profit below the developer's target profit, but from the developer's viewpoint the constraint of a minimum profit is essential to the determination of feasibility.

As a start toward building a framework for structured analyses, let us consider a development decision. The developer would reasonably proceed if the expected profit were sufficient. The expected profit in turn depends upon the expected value of the completed project and its expected costs:

expected profit = expected value − expected costs

or, on an after the fact basis:

profit = value − costs.

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Dr. Seldin's article was prepared for his forthcoming presentation at a symposium on real estate market analysis to be presented by the Society of Real Estate Appraisers, SREA Foundation and the Homer Hoyt Institute of Maryland. *For more information on the symposium on October 10-12, 1984 in Atlanta, Georgia, which promises to address the state of the art in market and real estate analysis, contact Ruth Tretbar or Jerry Sanders at the SREA Foundation, 645 North Michigan Avenue, Chicago, Illinois 60611.*

Profit

Profit can be expected or realized. It can be before tax or after tax. It can be earned but not realized in the sense that it remains in the project and removal may be deferred in order to defer the time when the profit will be taxed. The model can handle all of these.

The basic idea is that profit is what is left over after all obligations have been taken care of. It is a residual. It is not owed to anyone or by anyone. One may pursue it and if the values created exceed the costs, it will be obtained.

Value

Value is what one will give up in exchange for something else. In economic terms we often deal with "market value" which expresses a ratio of exchange of one good compared to all other goods. In appraising, the market comparison approach specifically addresses the question of market value. Its logic is that a property is worth what equally desirable substitutes are worth, while the worth of equally desirable substitutes is indicated by prices paid in the market.

We may also deal with "investment value" which expresses the present value of future benefits to an investor. It too represents a ratio of exchange. The ratio used in comparing properties is the capitalization rate or discount rate, which expresses the relationship between what one will give up today and what one will get in the future. That rate or ratio varies with the risk and is subject to competition in the market place; the competition is in the selection of an investment among alternative investments, the higher risk alternatives requiring higher rates to induce investors. The alternatives may have the same general risk-reward features as other comparable real estate investments, or they may be substantially different compared to the risk-reward features of bonds, mortgages or other financial assets. The difference in capitalization or discount rate between individual properties or classes of property reflects differences in types of risks as well as in the extent of risk applicable to any particular type.

The appraisal process is well suited to reach this kind of "investment value." We will pursue this analysis using the income approach and the investment value concept, later returning to market value.

As an aside, it can be noted that the income approach uses three residual techniques and that two of these techniques split the property income between land and improvements. Such a methodology provides an excellent basis for reconciling differences in results obtained through a market comparison approach and the income approach. It is based upon the use of market-determined capitalization or discount rates, presumably using the same comparable property to determine (a) the indicated value of the subject property by direct comparison and (b) the capitalization or discount rate used in the income approach.

Cost

Cost, as used in the cost approach and elsewhere, is what has to be given up to get the resources. The cost of the land may be treated as an acquisition cost although valued by market comparison. The cost of the improvements is what it takes to acquire the resources and bring them together, including an entrepreneurial profit sufficient to induce the development.

If the value of what results is greater than the cost, then the project is likely to be built. More accurately, if the expected value exceeds the expected costs, then there is an expected profit that induces the entrepreneur to proceed with the development. The project is then said to be feasible.

Market Analyses

Equilibrium

If the market were in equilibrium, each of the three approaches would be expected to give the same answer, assuming of course that adequate information were available and that it were properly handled. One can readily show a reconciliation between the income approach and the market approach. Reconciling the cost approach with the other two approaches is based upon logic and certain underlying assumptions without any clear mathematical relationship except in the sense that cost may be used as an upper limit of value. The logic is that the expected profit is necessary to induce development. If the market is in equilibrium the expected profit is just enough for that purpose.

The problem is that markets are rarely in equilibrium. They are moving toward balance or overshooting the mark. There is an equilibrium point at which the market would be in balance but by the time the supply is adjusted to meet a previous change in demand, forces may have changed the equilibrium point. Further, the momentum of the supply process tends to carry the change in supply right on through the equilibrium point. The market thus goes rapidly from undersupply to oversupply. The resulting glut is then adjusted as the process reverses.

Rising prices serve to induce the increase in supply. A softening in prices signals the end of the need for more production. These changes in price levels yield different values at different times. Measuring the equilibrium point may involve using estimates of value based on market conditions that are unduly optimistic or pessimistic, and are often obsolete. Ideally, though, the market comparison approach shows the prices at which property is currently selling, and appraisers are well advised not to argue with the ticker tape.

If one really knew what future market conditions were going to be, it would simply be a matter of mathematics to convert the expected conditions to an income stream that could be capitalized. This process would give an investment value that might be higher or lower than market value. Reconciliation of the two figures is based upon differences in expectations about future incomes and

sales price, or on differences in capitalization or discount rates and procedures. The capitalization process may not derive its rates from the market for comparable projects, but rather from other investments having different degrees of comparability. Obviously, in an overpriced market knowledgeable investors become sellers, while in an underpriced market they pay no more than necessary even though they believe the market is undervaluing the property. In horse race parlance, it is an "overlay."

Definition of Market Analysis

Within this framework market analysis may be defined as follows: "An analysis of the effective demand at prevailing prices for a specified quantity and quality of space services of a particular land use type and location."

The type of land use may be residential, commercial or industrial and may be further classified and segmented. The location may be a market area or site specific. If a market area, it may be as large as a metropolitan area, or as small as a neighborhood.

The effective demand is a relationship between societal need as measured in the market place with users and/or investors who are ready, willing and able to pay, and suppliers of space who are ready, willing and able to supply the space at prevailing prices.

Overlays, gaps in the market, windows, or whatever one chooses to call them, exist when it is exceptionally profitable to supply the need at prices currently obtainable. Overbuilt situations exist when at the prevailing price no more additions to supply are needed. The market system may adjust by reducing prices, which would enable more space to be absorbed, or by simply waiting until demand catches up.

CLASSIFICATION OF MARKET ANALYSES

Site Specific

Site specific analysis refers to situations involving an identified parcel of real estate. All appraisals are site specific analyses. They are generally not considered market analyses, although they could be so considered.

An appraisal answers a question about the value of a parcel of real estate. It should utilize market analysis in the process although, as a practical matter, most of the analyses are of historical or current conditions and not of changing conditions and expectations, as they should be. This is a serious criticism because real estate changes hands in a market determined by expectations, so that one cannot reasonably be believed to be accurately interpreting and reporting market conditions unless one understands what is being expected by buyers and sellers in the marketplace.

Market analysis answers questions about the effective demand for real estate. In the case of site spcific analysis the questions might be as follows:

1. What use should the site be put to?
2. What product should be provided?
3. What prices should be charged?
4. How fast will the product be absorbed?

The questions may not be asked in that order. Indeed, market analysis often starts at different points in a logical sequence. It is pursued to a line of detail sufficient to satisfy the decision maker, who then goes on to the next question or action. Later the analysis resumes at some other point in the logic, or even at the same point. The subsequent analyses are, however, usually much deeper in detail.

Highest and Best Use Studies

Highest and best use studies focus on the question of what use will give the land its highest value. The question is the use of the land to its greatest economic advantage. Consideration must be given of course, to all legally permitted uses and potential changes in permitted uses, although all of these need not be analyzed in detail.

A variation of highest and best use is "most probable use." The question in this variation is slightly different; it asks what use is most likely to emerge. Market or other conditions may be such that the timing of the development, or the entrepreneur who is likely to develop the land, is going to bring the property to some use other than its "highest and best" use, but instead the use that might be concluded to be the most economic under those conditions—hence, the most probable use.

Targeting Analyses and Marketability

Once a type of land use have been decided upon, with or without a highest and best use study, some decision on the market to be served must be made. The decision as to the type of land use specifies a market, but not in a great amount of detail because it deals with the physical product more than the users. A market can be met most effectively by understanding the needs or perceived needs of the users. One may even help them along so that they will perceive new needs or new ways to meet old needs.

A targeting analysis would sort through the demographics and other characteristics of the user population to see who they are and what can be sold to them. Such analyses apply to office space as well as housing, but housing examples are easier to use because one can readily see many factors of design and layout that would provide amenities responsive to the targeted group.

Traditional marketing literature would place this targeting within the concept of positioning oneself in the market. Positioning, however, places much more emphasis on strategy, cutting through a number of classifications.

Whether a profitable product comes out of the positioning process or more specifically out of a targeting analysis, the key question is the marketability of the product. Marketability is the obverse of targeting. In marketability one has a product and wants to know whether it will sell or rent. One then goes through a series of market analyses to make a determination.

Note that there are many types of market analyses. The term by itself, especially as generally used, is too vague to specify exactly what will be done in the analytical process.

Competitive Analyses

An analysis of the competition or potential competition may be called a competitive analysis. It will be used for marketability, judgments or positioning, and may also be used to set prices, or in fact appraising property—as it should be, in the market comparison and income approaches. It refers to shopping the competition and seeing other products and prices.

A competitive analysis is an excellent example of a component of analysis, that is, a subanalysis which may be used as a building block in other analyses. There are a lot of ways to combine and recombine such components.

Absorption Analyses

Given that there is a determination of the product and its price, the next logical question is how fast it will sell or rent. That question is answered by an absorption analysis.

A market analysis should always do more than focus on demand. It should also focus on supply, because it is the relationship between the two that makes the market.

An analysis of the forthcoming supply is a "pipeline" analysis. Its relevance at present is that the rate at which the market will take the product being supplied at a specific site depends in part on the rate at which others are supplying competing products. The price and quality as well as the character of those competing products are also important.

The result of an analyses of absorption is then a sales or rental rate, which will produce the dollar amount of gross receipts. These gross receipts, whether sales proceeds or rental income, are critical to the analytical system and we will return to them in due time. It is especially important to note here that this figure is very much dependent on the non-site specific analysis which we will discuss shortly.

The Circuitous Route

Our feasibility analyses require some form of value estimate. This estimate may be based upon an expected price, whether a sale or a rental, which produces a stream of income or cash flows, possibly projected well into the future. The net proceeds from the sale, whether now or deferred, or the value created by the development process influences its profitability, as does the net income stream, which is also related to the events that produce it. The value of the project depends upon the timing of the receipts as well as their expected amounts.

The site specific analyses just discussed entailed the selection of a product and then an analysis of expected prices and absorption rates, whether in terms of sales or rentals. The results of such an analysis will be value created whether or not the property is sold.

An analysis of the market forces that will generate the demand for the product typically requires greater attention than it is usually accorded. This is the key to value. An understanding of these forces is enhanced by focusing first on an aggregate analysis and then disaggregating. In the jargon of market analysis, this is a "top down" method. The disaggregation involves a segmentation of the market such that at some point market absorption is measured for a specific type of land use by price category and/or by location.

Many analyses may be done "bottom up." In these cases absorption rates of competitive projects are used to forecast the absorption of the subject project. The method is useful for obtaining precision although not necessarily accuracy, as the approach extrapolates the past and is thus likely to miss the turning points.

What one wants is to aggregate the production rates of all the competition to see what will be produced for a particular market segment or segments. One may forecast the absorption rates for each of the competitive projects. The subject project carves out a share of the market and may be assumed to have a competitive absorption rate. Typically the market analyst ascribes a higher absorption rate to the subset than is typical in the market place.

Another way of getting at the size of the market is to disaggregate the market by segments. This "top down" method is excellent for identifying turning points, but the precision may be forced because data are generally not sufficient to justify the level of detail required. The results may be numbers that come out in spurious detail.

The combination of both techniques—"bottom up" and "top down"—gives the best results because the one gives a high level of detail for current activity close to the subject project while the other watches the major forces which should identify the turning points.

Relying on "bottom up" alone may bring "belly up."

Non-Site Specific Analysis

Non-site specific analysis deals with market segments specified by geographical area, type of land use or tenure, without designation of a particular site or sites that are to be used to meet the demand. For example, while a site specific analysis may deal with the absorption rate for office space or single family houses, non-site specific analysis would forecast the absorption rate of a particular type and quality of space in a specified geographic area, whether sales or rentals are involved. Obviously, the analyst might be aware of a site that could fill the need, but the non-site analysis focuses on demand that might be filled by unspecified sites.

How is one to determine the extent to which the market demand exists for a particular segment? The key to not being caught in an unjustified extrapolation is to go to the fundamentals of demand, which require an understanding of the engine of the local economy. Employment or any other economic activity that commands income from beyond the borders of the community is that engine.

Analyses of the local economy are traditionally included in appraisal and market analyses. What is generally lost is

the line of reasoning between this non-site specific analysis and the conclusion of value, absorption or feasibility.

Local Economy

Everyone knows that appraisals and market analyses must include a section on the local economy. They may not know why; indeed, they may not know how. What is usually done is to provide a description of the local economy.

Somehow after providing the description the author leaps to a conclusion, without a visible line of reasoning. To identify this line it is useful to discuss particular types of land use. For this purpose we will use housing and industry although the principles have broader coverage.

The local economy may be analyzed using a variety of techniques. These include:

1. Economic Base Analysis
2. Location Quotient Analysis
3. Shift Share Analysis
4. Input-Output Analysis

Economic base analysis projects basic employment and utilizes the relationship between basic employment and non-basic employment to project total employment. It may then use the population/employment relationship to project population. The analysis of economic base may be used not only for projections of growth, but also to assess stability. Employment data are typically handled by the use of a Standard Industrial Classification Code (SIC Code). Thus we can see what kind of employment drives the local economy.

Location quotient is a form of analysis that relates the percentage of employment in a local area in any particular classification to the percentage of employment in that same classification in a larger area, typically the United States as a whole. The resulting ratio, when greater than 1.0 to one, indicates a concentration in the specific type of employment. When less than one, it indicates less than average employment in that category. These ratios or index numbers may then be used to indicate the relative importance of each type of employment.

Shift share deals with a changing structure of employment. It looks at changes in the local economy as they relate to changes in other local economies.

Input-output analysis is the most sophisticated technique of local economics. It relates changes in one employment sector to changes in other employment sectors so that the effect of forecasted changes as they reverberate throughout the local economy may be more precisely measured.

When making an analysis of the housing market it might be sufficient to deal with the question: "Is the growth and stability of the local economy strong enough over the short term to enable the for-sale project to be absorbed?" If it is a small project in size and share of the market, very little detail is required.

If, however, the project is a major one in both size and market share, then the growth of employment needs to be projected and related to population so that the population forecast can be used to provide an aggregate analysis of housing demand.

In the case of industrial or other basic space the level of detail required might be such that each employment classification should be used in an employment forecast, permitting the quantity of space demanded to be estimated.

Aggregate Analysis

The analysis of the local economy should give an output which becomes an input into the aggregate analysis. In the case of housing, this output is the forecast of growth in number of households.

The net income for households is adjusted in the aggregate analysis to reflect new demands for additional units. The adjustment includes consideration of loss from inventory and changes in vacancy rates.

In the case of industry or other basic employment the number of employees is translated into space required by use of the ratio of space to employees. The result can be an aggregate amount of building space that could later be segmented; or, the analyst might go directly to segmentation.

Segmentation Analysis

Segmentation analysis is based upon a disaggregation. Thus, total housing demand is divided by tenure (ownership versus rental), and may be further segmented by type of construction (e.g., single family dwelling versus multifamily) or price classification. It might also be segmented by location (e.g., by county within a metropolitan area).

Segmentation for industrial or other basic space may fall into a variety of classifications. Indeed, the aggregate analysis and the segmentation analysis may be done at the same time. An analysis for an industrial park, for example, might look at the change in employment in general while also looking at a change in employment for the specific type of occupant required, coming up with a forecast of the net additional requirement for that kind of space. Such an analysis might be further segmented by location.

Supply Analysis

In each case consideration must be given to what is being supplied as well as the changes in demand. Whether or not society needs more space in the locality and for the particular land use can be determined by such analyses.

The results of the aggregate analysis, however, provide too coarse a grain to enable the analyst to see into the niches in the market at the finest level of detail shown in the segmented analysis. The market as a whole may be overbuilt, but there may yet be excellent opportunities in submarkets.

The population analyses are made both for aggregate analysis and segmentation analysis. The level of detail in pipeline analysis depends on the questions being asked.

One should not, however, underrate the importance of the aggregate analysis, because the segmented markets are related. Overbuilding in one segment may reverberate to other segments; an excessive supply of rental units, for example, may depress sales because renting is such a bargain. Or an excessive supply of prime or high quality space in the best locations may depress markets in less desirable locations and reduce prices at the inferior locations because such good bargains are available at the better ones, providing a lot more services for a little more money.

Absorption Analysis

One may conduct an absorption analysis as a follow-up to a segmentation analysis by simply focusing on the quantity which is likely to be absorbed in any period of time. An analysis of the supply situation will indicate whether the particular segment of the market as to type, price and location is currently being over- or under-supplied. What is done on an aggregate basis is to determine the quantity which would be absorbed.

On a site-specific basis one looks at the share of the market a particular project is likely to get. If one aggregates the absorption expected in a period of time for all the known projects and makes some allowance for potential projects not yet announced, one comes at the same answer from the "bottom up." The connection between the "top down" and the "bottom up" is made at this absorption point.

CONCLUSION

This classification, or really reclassification, of analysis has pointed out that it is very useful to see the relationship of the disaggregation of demand to the various site specific analyses in order to determine absorption rates. In addition, the absorption rate is critical to the profitability of the venture and the profitability judgment is critical to successful real estate decisions. The key lies in a line of reasoning. What this reclassification has done is provide a structure for that line of reasoning.

Real estate analyses which do not contain a line of reasoning are of little use except perhaps for the data they might contain, which would in turn be used by someone else in his or her own line of reasoning. The key is to understand what is really involved in the various types of analyses.

Mathematical Formulations and Classification of Analyses

Look at these ideas in terms of mathematic formulas although it is not necessary to quantify them at this point:

Analysis of Local Economy: Economic Base

1. $\frac{\text{Non-basic}}{\text{Basic employment}}$ = economic base ratio
2. Project increase in basic employment
3. Change in basic employment times ratio – change in non-basic employment
4. Change in basic + change in non-basic = total change
5. Existing employment + change = total employment
6. $\frac{\text{Population}}{\text{employment}}$ = ratio of population to employment
7. Change in employment × ratio of population to employment = Change in population

Aggregate Analysis: Housing Market

8. $\frac{\text{Population}}{\text{Household size}}$ = households
9. Households + inventory loss + vacancy change = Net additions

Segmented Analysis: Ownership Market for Sub-Metro Area

10. Net additions × ownership ratio = ownership units
11. Ownership units × local area share = units demand in local area
12. Units by income class (according to distribution of household income for local area) × ratio of income to house price by class = units (share of market) by price class

Absorption Analysis: Includes Segmented, Supply and Bottom Up Analyses

13. United by price class – units in pipeline in subject class = net demand for additional space in period

13. (alternative) Units by price class × competitive share obtainable = absorption rate for period

13. Bottom up Summation of absorption rate of computative projects most similar to subject – number of competition projects = average absorption rate

Average absorption rate × superior factor = project absorption rate

Feasibility Analyses

14. Projected absorption rate × gross receipts per unit = projected gross
15. Projected gross – costs = projected profit for period
16. Summation of projected profits for period to sell-out discounted to present value = aggregate profit
17. Expected profit – minimum profit, if positive signals go

Note that substantial refinement in analyst's technique is available for steps 13-17. Only one crude measure has been used. What is critical are steps 1 through 13 which is where opportunity is determined.

The Appraisal Journal

JULY 1984

Published quarterly:
January, April, July and October by:

American Institute of Real Estate Appraisers
430 North Michigan Avenue
Chicago, Illinois 60611

Subscription rates (1 year): Members, $20; Nonmembers, $25; Foreign, add $2.

Single copy, $7.50.

The Real Estate Securities Journal

Summer/1984

Published quarterly:
Winter, Spring, Summer, Fall by:

The Real Estate Securities and Syndication Institute (RESSI®)
An Affiliate of the NATIONAL ASSOCIATION OF REALTORS®
430 North Michigan Avenue
Chicago, Illinois 60611

Subscription included in RESSI® membership. Additional copies are $8.00 for RESSI® members, $20.00 for non-members. Subscription rates are: $60 for one year (four issues), $100 two years (eight issues). Group discount information is available upon request.

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