REAL ESTATE ISSUES

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Enterprise Zones: The Tax Code as an Urban Development Tool

Real Estate Feasibility Analysis and the Emerging Public-Private Partnership in Land Use Decisions

The Effect of Fully Flexible Mortgages on Consumers

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Editor's Statement

The future of public housing in the United States appears doubtful, raising the question of what is to be done about existing inner-city projects. Andrew Olins suggests that the British experience may offer useful guidance in his interesting exploration of the British Council Housing sales program. On related themes, Carl Struever uses lessons learned in Baltimore to evaluate Kemp-Garcia as the centerpiece of President Reagan's urban program, and Charles Wurtzebach casts new light on the concept of feasibility in his discussion of the public role in land use decisions.

Turning from public-interest concerns to those of the borrower, Patricia Rudolph explores the effect of fully flexible mortgages on those who must use them to finance home purchases. James Hawk discusses leasehold loans in connection with land purchase-leasebacks, pointing out that the computer has made this vehicle much easier to use and is sparking a resurgence of the format.

This number of *REI* offers two important articles on risk assessment and on real estate investment decision making. Richard Curcio, James Gaines and James Webb raise interesting questions about the nature and extent of risk in real estate, while C. F. Sirmans and Daniel Page expand on the wealth maximization approach to real estate decisions. Bruce Wardrep and Austin Jaffe continue, and we hope conclude — at least for now — the discussion of optimal holding period analysis in these pages. We close with Maury Seldin's suggestions on the use of leverage in the 1980s, another in the continuing series "Seldin on Change."

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Editor-in-chief



Fall / Winter 1981

The British Conservative Party's Council Housing Sales Program, A Political View: Implications for the U.S. Andrew M. Olins, Page 1

Recent housing policy changes in England now give residents of council housing the right to buy their publicly-owned units, coupled with pricing and financing incentives. After studying the political causes and implications of these policy changes, the author attempts to show how the British experience may offer important lessons for the U.S. housing situation.

Enterprise Zones: The Tax Code as an Urban Development Tool

Carl William Struever, Page 6

The Kemp/Garcia "Enterprise Zones and Urban Jobs Act" bill, modified and reintroduced in June, continues to focus on creating jobs for the hard-core unemployed in distressed inner city neighborhoods by means of stimulating business by offering a range of tax incentives. This strategy is based on a belief that traditional Federal development incentives such as low interest financing and public improvements are ineffective. But 30 years of experience in urban revitalization in the U.S. argues that traditional incentives are essential and tax incentives are inefficient and wasteful.

Real Estate Feasibility Analysis and the Emerging Public-Private Partnership in Land Use Decisions Charles H. Wurtzebach, Page 12

Real estate feasibility analysis has been stressed as a prerequisite for both new development and investment in existing projects. Typically, this analysis has focused on the individual investor's point of view at the expense of the public sector's perspective. The land use decision environment is presented as a partnership among the public sector, investors/producers and users.

The Effect of Fully Flexible Mortgages on Consumers Patricia M. Rudolph, Page 17

Federally chartered savings and loans and mutual savings banks can now make flexible mortgages with no limits on the change in payment, interest rate or maturity. To evaluate the impact of this increased flexibility on consumers, two mortgages (a fully variable rate mortgage and a Wachovia-type mortgage) are compared as if these loans had been available for the last five years. The payments, total interest paid and the internal rate of return for the flexible mortgages are compared to a fixed-rate fully amortized loan.

Land-Purchase-Leaseback/Leasehold Loan: An Old Idea Whose Time Has Come

James J. Hawk, Page 21

Old real estate financing ideas are not always obsolete as presented in this article on an "old" concept — the landpurchase-leaseback/leasehold loan. In the prevailing money market characterized by the cost and shortage of investment capital, this concept can offer a manageable financing structure with benefits for both the lender and developer.

Alternatives for Assessing Risk in Real Estate Investments Richard J. Curcio, James P. Gaines and James R. Webb, Page 25

Past treatment of risk in real estate investment has involved the use of intuitive techniques such as adjusting the discount rate or the anticipated cash flows and mean-variance, sensitivity analysis and the use of dispersion measures of investment return probability distribution. This study explores the reasons for and possible use of alternatives for assessing risk such as semi-variance, skewness/kurtosis and stochastic dominance.

The Real Estate Investment Decision-

A Wealth Maximization Approach

C.F. Sirmans and Daniel E. Page, Page 33

During the last decade real estate has been receiving widespread attention as an attractive investment. Although substantial advances have been made in the theory of the investment decision, there is still considerable debate over the best measure to use in ranking investment proposals. In this article, a model is developed that can be used by the real estate investor to determine the investment decision and the holding period that leads to wealth maximization.

Critique — Optimal Holding Period Analysis: Yet Unresolved Bruce N. Wardrep, Page 38

The author criticizes an article on optimal holding period analysis which was presented in the Summer 1979 edition of *Real Estate Issues*. He compares how others have treated the subject of fixed-income securities and points out the need for further study.

Reply-A Reply to New Critics

Austin J. Jaffe, Page 40

In an answer to his newest critic, Jaffe defends his article, "Optimal Holding Period Analysis: Much Ado About Not Much," in *Real Estate Issues* (Summer 1979). He feels that his critic has misunderstood his model and that some of the issues raised in the criticism are irrelevant for his purposes.

Seldin on Change: A Strategy for Using Leverage Maury Seldin, Page 42

Investors in the '80s who don't prepare for the downside risk in real estate investment are in for trouble. Besides keeping substantial liquid assets, investors need to diversify the real estate portfolio not only by the type and location of the property but by leverage. The strategy of using leverage to capture the gain from increasing inflation while considering the downside risk is discussed.

Letter

Bruce P. Hayden, Page 46

A Connecticut developer and fellow Counselor raises some questions concerning an article, "New Perceptions of Value" by Counselor Lloyd D. Hanford, Jr., which appeared in the last edition of *REI*.



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THE BRITISH CONSERVATIVE PARTY'S COUNCIL HOUSING SALES PROGRAM, A POLITICAL VIEW: IMPLICATIONS FOR THE U.S.

by Andrew M. Olins

England recently embarked on a course that will dramatically alter its long established housing policy. The changes resulted from the Conservative party's election in 1979 and its having assumed the mandate to restructure the underlying philosophy of the role of Central Government. The British experience offers lessons to the United States because the functions and responsibilities of our own national government currently are being questioned and restated in a similar way.

As the recipient of the Boston 350 Jubilee Fellowship in Housing awarded by the Boston Branch of the English-Speaking Union, I had the opportunity to study the political causes and implications of these policy changes. I will attempt to outline what the housing policy changes might suggest for the U.S.

For the first time, residents of England's council housing (comparable to the various subsidized housing programs in the U.S.) have been given the *right to buy* their publicly-owned units, coupled with pricing and financing incentives designed to encourage tenant ownership. This particular issue, however, is only part of a much larger discussion about the appropriate role of Britain's Central Government.

The "role of Government" question is argued daily between the two major political parties, and during October 1980 was played out energetically at the national party conventions. It became clear that Labour and Conservative politicians confront each other from philosophical extremes. Viewed from that perspective, what seemed at first to be an innovative plan for dealing with housing problems turned out to be a basic concept to the Tories' view of Government.



The Conservatives are attempting to diminish the role of Central Government with special emphasis on monetary and fiscal policy. Mrs. Thatcher's Government is prepared to make choices among programs in order to reduce its presence in the British economy. The Government's general position is not to kill programs but rather to say to local government that if it wants certain programs it should pay for them from either general national government allocations or locally-raised revenues (rates).

In the area of housing, the policy will narrow Central Government's financial exposure to the operating costs of council housing. In addition, the Tory solution proposes to sell the public stock at attractive prices and terms while raising rents significantly and reinforcing the alternative of tenant ownership.

This article was written as a special report for the Boston Branch of the English-Speaking Union, which selected the author as its Boston Jubilee 350 Scholar.

Andrew M. Olins is a partner in The Finch Group, a real estate development company in Boston, Massachusetts. Formerly, he was special assistant to the Mayor of the City of Boston, where he was responsible for the Office of Housing, Development and Construction.

The right-to-buy issue engendered grassroots political support that surprised both Labour and Conservatives. In many traditional Labour constituencies, the Tory ownership proposal was too tempting to refuse and may have been the most important issue that turned 15 to 20 Parliament seats from Labour to Conservative which resulted in a shift of possibly 30 to 40 seats. Since the Conservatives have a majority of 40 seats, the importance of the right-to-buy council housing as a political issue is obvious.

I first proposed to study the implications of this dramatic shift in England's housing policy in order to transfer possibly the British approach to council housing sales to the various programs of subsidized housing in the U.S. I found that Britain has centralized and coordinated basic housing policy planning far more than in the U.S. - its housing policy is linked directly to its general economic policy. In addition, British housing-related issues are more integrated into basic political party philosophy. The Conservatives see housing expenses as part of the total spending package of Central Government, where the national goal is to reduce current expenditures. Labour sees housing costs as part of its social platform and is less concerned with the costs of achieving the various ingredients. Basically, Labour feels everyone should have a decent house at a price they can afford, and it de-emphasizes the national budgetary implications of that policy.

The Conservatives feel that housing as a major element of Government spending is subject to the priorities of total Government policy which now seeks to limit its involvement in local matters and to cut central costs. The policy toward sales of council housing is consistent and reasonable within this frame of reference. Whether or not it is good policy when seen in another frame of reference is open to question.

General Political Objectives

Housing policy as political policy became the theme of my observations and discussions in Britain which were mostly with elected politicians rather than bureaucrats or academics.

The political brilliance of the Conservative right-tobuy council housing position was that it went to the heart of an important Labour party constituency and offered the opportunity for home ownership, which was never available before. Discounts and financing sweeteners were powerful added incentives. The constituency was Labour's upwardly mobile middle class — those with high technology jobs and those in the new towns — that put self-interest above issues of the larger good, at least in the housing area, and endorsed access to the program by voting the Conservatives in. The Tories could not lose with this position; it did not cost them votes but brought new ones from Labour. Unlike Labour, the Conservatives understood that an overwhelming majority of people wish to own their home. From this understanding of personal motivation flowed the more traditional Conservative philosophy of the benefits inherent in private property rights and an individual stake in society through the security and stability of homeownership.

The basic philosophical differences between the two predominant political parties can be outlined simply. Labour believes in a socialist concept of central ownership and centralized planning decisions. It supports a strong body of social objectives and is willing to spend money to meet those objectives. The Conservative party is more willing to rely on the private sector. It wants decisions made at the local level and funded locally.

The Conservative Government's policy to bestow on tenants the right to buy council housing, regardless of how local authorities feel about the program, is viewed by the Tories as the ultimate attempt to give individuals a meaningful choice in how they live. Labour sees the program as the sale of a valuable public asset forced upon all local authorities regardless of their view of the program. Conservatives feel their program is no more dogmatic toward local authorities than was Labour's dramatic restructuring of the public secondary education system three decades earlier.

Implications For Local Government

At the heart of the Conservative Government's policy is a definition of the limits as well as the budget of government. Inherent in that philosophy is the decision that choices among programs must be made and priorities established.

As part of their basic strategy to limit government spending, the Tories are moving toward a block grant approach where local government will get a finite Central Government appropriation, that is, "cash limit," to spend, but the choice on how to allocate the money will be made locally. The net result will be Government's move toward its major objective of reduced spending while forcing hard program choices at the local level. Within traditional Tory constituencies, less government spending is popular; within traditional Labour constituencies, government spending and involvement are essential to basic programs. Labour councils must negotiate and compromise with these local constituencies. Less central money will buy fewer local programs and it is the local Labour councils who will feel the heat from their constituencies. Central Government will be shielded from the fireworks. The political effect on local Labour councils no longer able to fund traditional programs can only be guessed.

Under the British system, Central Government has broad revenue raising powers while boroughs and councils have limited resources. In the past, Central Government has chosen to fund nationwide programs, housing being one of the most important, that were controlled and managed at the local level.

As the Conservative Government cuts public sector spending and its contribution to local government, it forces the establishment of local priorities. In addition, the new formulas used to determine Central Government's share of local housing costs push an increasingly larger share of operating costs to local government, which inevitably means increasing costs to council tenants.

The Tory policy strikes particularly hard at traditional Labour jurisdictions where tenant benefits historically have been liberal. Local councils must hit their constituencies with cutbacks in general services coupled with charging more for services provided. In political terms, this exposes local government to great day-to-day pressures and leaves Central Government one step removed from the heat and able to defuse the negative local political implications by tying the policy to the broader context of dealing with Britain's underlying economic problems.

Major Elements Of The 1980 Housing Bill

The major points in the "Housing Act 1980" (Chapter 51) relative to the sale of council houses are as follows:

1. Every secure tenant of three years standing has the right to buy his house or , if a flat, a right to a 125-year lease.

(Previously, individual councils could sell if they chose.)

2. Councils must sell at a discount from market value varying from 33 percent for tenants of four years or less to 50 percent for tenants of 20 years standing.

(Sales cannot be made at less than the original cost of building the house.)

- 3. All eligible tenants have the right to a council mortgage according to income.
- 4. Up to five family members may become joint mortgagors.
- 5. Two-year options to hold a property at its original price are available.
- 6. Potential speculative profit on resale is captured by requiring repayment of a decreasing part of the discount which is 80 percent after one year, reducing by 20 percent per year to a 20 percent recapture after five years.
- 7. Handicapped or elderly tenants living in specially designed housing are exempt from the right-tobuy.
- 8. Central Government has the power to enforce a tenant's right to buy against a recalcitrant council.

The council housing program in England is large

and comprises in excess of 30 percent of the total housing stock while an additional 55 percent of the stock is owner-occupied. Of the remaining supply, 14 percent represents the residual private rental sector and about one percent is cooperatively owned.¹ By comparison, 66 percent of America's housing stock is owner-occupied and 33 percent is private rental housing. The public stock, in aggregate, is negligible.²

In essence, Britain no longer has a private rental housing market, which is a direct result of decades of strong rent control and a series of legislation that gave tenants an ever-increasing number of rights. English housing is fundamentally of two types: either one owns a home or one rents from the council, that is, local government. Currently, the private sector will not build or invest in rental housing even for the top of the market. Existing rental housing is either converted into "flats for sale" as soon as a tenant moves or is leased to foreigners who are unlikely to take advantage of tenant protection laws.

Housing finance has become one of the most complicated parts of local government operations. Three sources of housing revenue available are: rents paid by tenants, rates (which are comparable to local property taxes) and Central Government subsidies.

In order to reduce inflation by cutting spending, the Thatcher Government has moved aggressively to limit housing expenditures. Its plan calls for reducing housing spending as a percentage of all public expenditures from 5.3 percent for 1980 to 1981, to 3.9 percent in 1983 to 1984, in current pounds.

The Government has established block grant allocations to local councils for major programs such as social services, education, and housing. The councils can decide how to divide the block grants, but the grant defines the limit of Central Government funding. If total expenses exceed a set cash limit, local rates must cover the difference. This affects local authorities harder than Government departments.

In addition, Central Government has moved to limit its current housing subsidy expenses by requiring councils to raise rents. The Government's position is that council rents have not kept pace with, but rather have declined relative to incomes.

The position of the former Labour Government was that rents should rise with average earnings. The Conservatives want rents to rise no less than average earnings and maybe closer to the inflation rate. Over the last 20 years, rents have risen an average of one percent less than the yearly rise in price levels.

Rents were about 8 percent of national average earnings in 1974 to 1975, but had declined to about 6.4 percent by the start of 1980. Current government goals call for rents of about 9 percent of the average weekly industrial wage of £125, or about £11 per week. Rental income as a percentage of total housing costs has fallen from about 70 percent in 1965 to about 40 percent. Central Government's share of the costs has risen from 19 to 43 percent while local rates have stayed constant at 11 percent. The 6 percent of unallotted income above came from miscellaneous sources, including interest from mortgages on the sale of council houses.

Government argues that the sales program not only saves subsidy costs but produces a profit. Program opponents feel the profit is illusionary since housing is being sold at prices below its replacement costs but not below its production costs. In fact, the program saves in current outlays. The issue of how much sold council housing is to be replaced with new construction as well as traditional production goals is unclear. It is clear that sales proceeds are not reinvested in new units but are used to reduce current costs of the existing program. Current costs reduction is constant with Central Government policy.

Technically, the absence of income limit on eligibility for council housing in Britain distinguishes the program from subsidized "welfare" housing in the U.S. Over 33 percent of council tenants have incomes in excess of the average wage. As rents go up, the Government expects these tenants to purchase, since they have less need than lower-income people for a continuing operating subsidy. Government's desire to reduce expenditures encourages tenants to buy and offers them a politically positive inducement, thus saving Government from the politically difficult but financially consistent alternative of eviction.

Critics of the housing sales program point out that the most well-off and upwardly mobile tenants will opt to purchase their homes, which will inevitably "cream" the program of its best tenants and houses. Conservative spokesmen rationalize the implications by claiming reduced government subsidies for housing. The purchasing tenant doesn't leave the housing estate but just owns a unit within that estate. Since it is argued that this tenant would be unlikely to move given the inherent operating subsidies in the council housing program, the one-time subsidy to purchase saves the Government money. Because Government feels that the tenant would be unwilling to move anyway, it is not sympathetic to positions that argue for reduced availability of units for new letting or transfers.

The policy requiring council tenants to pay higher rents near the level of the costs of their housing has direct implications for the council housing sales program. In 1980, the average council rent was about £8 per week. Long-term tenants — those in residence over 20 years, who are eligible for 50 percent market discounts — may see the rent increase as a final encouragement to make the purchase choice.

A second peculiar situation has emerged. As workers are laid off (Britain's current unemployment rate is

moving above and beyond 12 percent) they receive "redundancy" severance payments that could make them ineligible for rent allowances that are special government subsidies available for low-income council tenants. The redundancy money might be sufficient to cover the downpayment necessary to participate in the housing sales program. The more council housing is sold off, the less is Government's continuing operating cost exposure, which enforces the basic Conservative policy of reducing spending. The sales program will not, however, reduce Government's debt service obligations, since a major part of the sales program is with government financing that keeps existing debt in place.

In the past, to the degree that tenants have not exercised their option to buy, it can be assumed they recognized that their rent obligations did not even cover general unit repairs and maintenance. The new rent levels may push the subsidy equation towards the buy-side for previously unconvinced council tenants.

The argument could be made that tenants are better off with fixed mortgage obligations rather than rents that inevitably will move upward with inflation. The implicit assumption has to be that a homeowner can and will more effectively control the operating costs for his unit than will council management for the estate as a whole.

Raising tenant rent levels is not all cost-saving for the Government. Compensating deeper rent rebates will be required for the one million means-tested tenants now benefiting from this program and for the one and a half million tenants on social security. Over 45 percent of council tenant families are paid under these programs. These entitlement income maintenance programs are funded by Central Government and are not subject to the cash limits imposed on local authorities. Income security programs account for about 25 percent of Britain's total government expenditures and include health and social service programs as well as housing.

Conclusions

Important lessons are to be learned from the British housing experience. If one believes that a housing system should offer the greatest number of choices to people, and if the private sector is expected to provide that choice, one must take great care in the amount and degree of governmental controls placed on the private market. If general costs have gone up, the private market cannot be expected to absorb those costs and still exist in its traditional form. In fact, the British housing experience is the classic example of how a policy that was appropriate and reasonable at one time but unchanging as conditions changed, has created an entirely new set of unanticipated problems. For the great majority of English citizens, private rental housing no longer exists as an option. People either own their own home or rent council housing from the Government.

A danger is inherent in letting social conscience or objectives obscure an understanding of economic reality. If housing costs more than one thinks it should, and if one wants to shelter certain income or social groups from the burden of those costs, direct government decree to the private sector that limits rent charged or prevents the conversion of rental units to ownership may help to deal with an immediate problem. That immediate problem is symptomatic of a far more serious underlying condition which government decree leaves unaddressed. In fact, as the British experience so dramatically suggests, a short-term solution may exacerbate the underlying problem.

Solutions to the housing challenge in America could follow at least two interrelated paths. Instead of trying to control the private sector by decreeing what it cannot do, a far more constructive course would be to develop a series of incentives to encourage the private market to achieve those social objectives deemed appropriate by the political process. If the costs of the private market middleman are unacceptable, then the second path can be followed which is direct government involvement as a producer/owner/manager of housing.

I am not sure that in the long run government would be less expensive than the private sector, but there is a public perception that non-profit sponsorship is cheaper. At the very best, direct government involvement in housing would provide a product that otherwise might not be provided or only provided at a publicly unacceptable cost.

Britain's dilemma and the emerging underlying issue in America is whether housing of a particular quality and price is a basic right of all citizens. The Labour party has said "yes" and has moved vigorously with a narrow but deep set of programs. Labour policies discouraged the private sector from any role except building single-family houses for sale. The private sector saw that it was effectively blocked and withdrew entirely from the rental housing business.

The lack of alternative housing choices may have provided one of the market demands fulfilled by the Tory housing sales program. It certainly captured the support of a considerable number of Labour party voters.

The almost doctrinaire avoidance of any role for private housing in Britain may be rooted in England's feudal past and historic landlord/tenant relationship. That same narrowness in viewing problems can be seen in current English politics where extreme positions in each major party exist. Certainly in the case of Labour, these positions have spawned a new, more centralist group who seem to be able to draw from disillusioned Conservatives. At least in Britain, housing problems are argued at the national level and most major political figures have an understanding of the issue and the constituencies concerned. In the U.S., housing discussions have not been raised beyond what local government can do to help protect people for whom the system no longer works. Local policymakers are condemned to treat symptoms because the underlying causes are not discussed in any coordinated way at either the state or the Federal government level where the Internal Revenue Code has a most profound effect on individual housing decisions.

It is my hope that in America a national housing policy designed to preserve a broad range of housing choices ultimately will develop. An established national policy will make it easier to construct programs, define roles, and provide incentives for the achievement of those policies. Perhaps President Reagan's Special Housing Commission will address these issues. It is of paramount importance, however, that housing policy is not set in a vacuum. Housing's economical viability is directly related to tax laws and without this link no reasonable objective can be achieved. Today there are few national policies that either define the problem or establish appropriate lines of responsibility for achieving results. As a consequence, local government faces a series of day-today housing crises that it wrongly is presumed to be able to resolve.

Local government must recognize the abilities and limits of the private sector and continue to understand the dilemma inherent in local market control programs. Given that understanding, how needy people are assisted without appropriate policies, programs, and funding from the Federal government is a serious problem that is entwined with national housing, economic, and tax policies. Many people in this country can no longer afford to buy or rent housing offered by the traditional supplier — the private unsubsidized market. Where are they to go ...?

NOTES

1. Cooperative housing in England is different than in the States. Government funds a Housing Corporation to work with the voluntary housing movement. Often charitable organizations, the volunteers establish registered co-ownership associations for membership in and funding by the Housing Corporation.

2. The 1980 U.S. Census indicated that about 1.4 percent of the country's total housing stock was public or Indian housing.

ENTERPRISE ZONES: THE TAX CODE AS AN URBAN DEVELOPMENT TOOL

by Carl William Struever

Over the last few years the Federal programs that played a key role in Baltimore's revitalization — the Urban Development Action Grant program, the Economic Development Administration, the Comprehensive Employment & Training Act and the Small Business Administration to name a few — pumped literally hundreds of millions of dollars of economic development assistance into the city. Today this array of Federal support, a victim of the Reagan Administration budget, is on the verge of collapse. EDA and UDAG are to be eliminated entirely; CETA and the SBA are to be reduced to a vestige of the previous effort.



Background On Enterprise Zones

Out of this radical retrenchment only one new initiative is a possible new Administration urban policy: enterprise zones. First presented in this country in 1980 by Stuart Butler of the conservative think-tank Heritage Foundation, the basic concept of enterprise zones is to "green line" distressed areas of our inner cities by providing a host of tax incentives and by reducing government regulation. This would create what Butler called "pioneering in the inner city:" the growth of small business, creation of jobs, and in particular the stimulation of entrepreneurship.

Introduced in Congress last year by the partnership of the ex-quarterback "supply sider" Republican from Buffalo, Jack Kemp, and the liberal Democrat from New York City, Robert Garcia, "The Urban Jobs and Enterprise Zones Act" is soon due for reintroduction. The '81 version that was introduced June 11 is substantially improved over the somewhat primitive original version. Kemp and Garcia deserve much of the credit for making a major effort to solicit advice on the enterprise zones concept from a wide range of local elected officials, urban development professionals, community organizations and business groups.

The new bill responds to many criticisms raised. A complaint voiced by the NAACP is "gentrification," the claim that middle-class home renovators of inner-city neighborhoods displace poor residents. The response was anti-speculation provisions and tax incentives for construction of low income rental housing. The National League of Cities raised the criticism that jobs won't go to those most in need; the response was that businesses would be required to hire 40 percent of their workers from those who are "CETA eligible" in order to receive tax breaks. The National Conference of Mayors objected that property tax reductions proposed were neither legally nor politically feasible; the response to this was to drop the property tax reduction feature and substitute a more flexible local commitment. Now cities could streamline zoning and building regulations, build streets and sidewalks or provide financing. Private organizations could offer technical assistance to new zone businesses. Funds for this local commitment could come from other Federal grant programs.

Carl William Struever is president of Struever Bros. & Eccles Inc., a leading company in Baltimore, Maryland that specializes in custom residential and commercial renovation. As chairman of Baltimore's Economic Development Committee, he works closely on the city's unemployment and housing problems, and has been invited throughout the country to speak on Baltimore's revitalization program.

Kemp and Garcia also propose to replace the reductions in social security taxes with refundable Targeted Jobs Tax Credits and employee tax credits. The eligibility criteria for zone designations are broadened to be comparable to UDAG "pockets of poverty" and to allow localities more responsibility in the setting of enterprise zones boundaries.

To help provide financing for zone businesses, 40 percent of interest income on zone business loans would be tax-exempt, similar to an automatic industrial revenue bond. The most important change, perhaps due to concerns voiced by urban interest groups such as NAACP, the League of Cities, the Conference of Mayors and others, is that the enterprise zones is not designed to replace existing jobs, housing, or urban development programs like CETA, UDAG, and EDA, but to be a complement to existing programs.

Even after all these changes, however, the primary strategy of the enterprise zones proposal remains consistent. The focus is on the creation of jobs as the most effective means of battling the social and economic ills of the city. It is expected that a person with a meaningful job that pays a decent wage will have the self-confidence and capability to take care of his own housing, medical care, or schooling problems.

For long-term economic stability, jobs should be created in the private not public sector. Citing recent studies like the Birch report from MIT, "Enterprise Zoners" say that incentives should be targeted to the particular needs of new and small businesses since they are the source of the greatest number of new jobs. The enterprise zones also seek to create the right environment for business and job growth purely through tax incentives, or as supply siders like to call it the elimination of tax disincentives, rather than the more traditional direct Federal subsidies such as job training, public improvements and financing.

The "Urban Jobs and Enterprise Zones Act" draws its strength and weakness from this focus on urban revitalization through the provision of tax breaks to generate private sector growth and the creation of jobs. The strong tax relief and business growth orientation gives the Act a tremendous basis of support both in Congress and the White House. Enterprise Zones is the only new urban revitalization initiative that older cities can hope for in today's political climate.

Unfortunately it is this same single-minded, simplistic orientation that does not bode well. This country has been active in the urban renewal business for more than three decades and we've learned that the city is a complex environment of interwoven cultures where physical scale affects social life-styles and vice versa. Urban problems interlock as well. A good education is essential to job training; a solid home environment is important for successful schooling. The best and most successful development practitioners know that complex urban problems require comprehensive multifaceted solutions, not characteristics of the Enterprise Zones and Reagan urban policy.

Flaws Of The Concept

Few critics of the enterprise zones concept oppose its principal goals of stimulating business growth in distressed inner city areas and providing new jobs for needy people. Economic development and the creation of private sector jobs were the centerpiece of the Carter urban policy. Many liberals support the enterprise zones strategy of using the U.S. tax code as a weapon to fight urban decay.

Robert Embry, the past assistant secretary of HUD for community development and a chief architect of the Carter urban policy, can detail the efforts of the previous administration to end tax policies such as the Investment Tax Credit that encouraged business to abandon cities in favor of new plant development in suburban areas. The 10 percent Investment Tax Credit for renovation of commercial buildings which are at least 20 years old, and accelerated amortization provisions for rehabilitation of certified historic structures, made a first step toward encouraging reuse of deteriorated inner city buildings. Thus, "place specific" tax incentives as proposed by the Enterprise Zones Act would be a major step forward for urban redevelopment.

The great criticism of enterprise zones as the centerpiece of Reagan's urban policy is that the zones are not only the centerpiece, but practically the entire Reagan urban policy, with the exception of homesteading. Homesteading, where homeowners buy a vacant, deteriorated house for \$1 in return for a commitment to renovate and live in the house themselves, became in 1974 one of the Federal "categorical" programs so disliked by the Republicans. Over 60 cities have experimented with varying success with homesteading. When Reagan announced during the first Presidential debate that homesteading was his remedy for urban blight, knowledgeable analysts were stunned by his apparent ignorance of the fact that homesteading was not a new concept and by the inadequacy of the program as a comprehensive solution to complex urban problems. Embry, who directed in Baltimore what is widely acclaimed as the most successful homesteading program in the country, calls the concept "nice" but limited and only a tiny component of an overall urban redevelopment policy.

Despite belated claims by the enterprise zones bill's sponsors Kemp and Garcia that the "Urban Jobs and Enterprise Zones Act" is a complement to existing programs, the intent is to present enterprise zones as the grand new solution. On a larger scale, just as Enterprise Zones is the new Reagan approach to city problems, it also becomes the standard bearer for less government participation, less taxes, and a business-can-do-it-all attitude.

As a large-scale solution Enterprise Zones is criticized in two ways: 1) Tax incentives are mechanically the least effective means for the public sector to stimulate business growth and create jobs, in comparison to other public programs such as financing assistance, site preparation, and labor force training; 2) Enterprise Zones and tax incentives ignore the complex relationship between business growth and public sector support for the overall urban environment, from arts and culture to rodent control, transportation, and the school system.

Three Point Development Plan

Testifying before the Business Roundtable on Enterprise Zones, Bernie Berkowitz, president of the Baltimore Economic Development Corporation (Bedco), described the key elements of the publicprivate sector partnership in economic development, none of which are included in the Enterprise Zones Act. As president of Bedco, the city's principal industrial development agency, and formerly the economic development coordinator to Mayor Schaefer of Baltimore, Berkowitz could speak with authority about the public program he felt played a key role over the last 10 years in Baltimore's startling renaissance. The areas were:

1. Site preparation — Inner cities lack developable sites due to their congested, built-up condition. Federal funds from the Economic Development Administration often supported the acquisition, clearance, and consolidation of sites followed by the construction of the necessary public infrastructure to create an attractive environment for business investment. Help in obtaining necessary building and zoning permits, environmental clearances, and other government regulatory approvals can also play an important role.

2. Financing — A wide range of financing aids were offered for long-term capital improvements, equipment and fixtures for a business' physical plant, for short-term working capital and inventory financing to ease cash flow problems during the first few years of rapid growth, and for venture capital financing to provide the equity or "risk capital" to encourage banks to make the primary long- and shortterm loans. For new and small businesses which are the target of Enterprise Zones incentives, the failure rate is so high that private financing is difficult to obtain. The Birch report estimates that four out of five small businesses fail in the first five years. Small business financing was difficult even when the prime rate was 7 percent. With interest rates at their recent levels, obtaining sufficient cash for a business startup is extremely difficult.

As a result, both publicly supported direct loans and loan guarantees became a key element in economic revitalization. For example, loan guarantees from the SBA not only reduced the risk for the private lender but permitted longer-term amortization and reduced monthly debt service costs. Direct loans were at a lower rate of interest because the SBA took advantage of the Federal government's ability to obtain funds less expensively than private lenders and further reduce debt service. Urban Development Action Grants were structured as "gap" financing making up the difference between the amount private lenders were willing to invest in a project and the actual cost.

In most development projects private financing still provided the majority of funds while public programs shouldered some of the risk, satisfied the fund shortfall, and reduced the effective cost of the overall financing package so that the project would be feasible for both the private lender and the business.

3. Support services — Even after providing a suitable site and financing to build and operate on, Berkowitz pointed out that other public programs were still essential to attracting new business and ensuring the continued viability and growth of that business after its door opened. First and foremost was labor force training.

A study conducted by Roger Schmenner of the Harvard-MIT Joint Center for Urban Studies surveyed 410 companies owning 18,000 manufacturing sites to determine the implications for public policy of location decisions of large firms. An astonishing 76 percent of the plants listed a favorable labor climate as a must in choosing a new plant location. A good supply of skilled workers becomes critical. Schmenner goes on to describe the successful use of customized preemployment skill training in attracting new business in the southeastern United States.

If the goal of enterprise zones is to provide jobs for the hardcore unemployed who lack marketable skills, on-the-job and skill training subsidies are essential. New and small businesses in particular cannot afford the high cost of providing training opportunities where new workers can often reduce production output. Not only do new, untrained workers have low outputs, but they also take up time from experienced, highly paid workers. Another recent study from Laura Morlock of Johns Hopkins University documents the successful record of the Comprehensive Employment and Training Act (CETA) in preparing the unskilled for private employment. Two years after the end of CETA program training, 78 percent of the trainees had permanent, unsubsidized jobs. After five years, only 6 percent were still looking for work which was less than the unemployment rate in the Baltimore area.

Technical assistance can also aid new and small business survival. Commercial Credit, with a Federal grant from the Department of Commerce, is establishing Business Resource Centers that provide legal, accounting, marketing and management assistance to small businesses in a comprehensive setting.

Berkowitz goes on to explain how site preparation, financing, and job training can work together to stimulate business growth. At Fort Holabird, Baltimore used an Economic Development Administration grant to purchase land and a \$9 million UDAG to pay for bridge and road improvements essential to a \$220,000,000 proposed expansion of the General Motors plant that saved 5,000 jobs for the city. In a neighborhood commercial area in South Baltimore, a \$900,000 EDA grant paid for heating and air conditioning for the local public market and the SBA and city combined loan programs to finance the renovation of deteriorated storefronts. In three years 50 new businesses opened and created hundreds of jobs and millions of dollars in increased tax base.

Park Circle in Northwest Baltimore, often cited as a prime enterprise zones candidate, is an industrial park project in a black community with a 20 percent unemployment rate that will use the whole range of development tools. Public funds will be necessary to acquire land and build the infrastructure. The city will back a tax exempt industrial revenue bond issue for the construction of a Control Data-operated Business & Technology Center. By providing shared low-cost legal, accounting, and service facilities, the center will become a breeding ground for new business. A direct city loan financed the first minority-owned business. CETA funds pay a private developer, City Ventures, Inc., to manage the project and provide the critical link between businesses and the hiring of unemployed residents in the neighborhood. CETA will also provide subsidies for on-the-job and skill training.

Tax Breaks As Incentives

The experienced City Ventures staff feels that tax breaks would be a good additional incentive to development. However, they and Berkowitz maintain that without the other public development tools tax incentives would be ineffective. First of all, new and small businesses don't need tax breaks because they don't make enough money to warrant paying taxes. They are concerned with finding the money to construct and equip their plant, to pay their payroll every Friday and pay suppliers at the end of the month. Secondly, tax breaks have a historical tendency to end up with big businesses anyway. According to Milt Stewart, editor of Inc. Magazine, small manufacturing firms with sales of less than \$100,000 receive tax credits of only 5.8 percent of total tax liability. whereas billion dollar firms get credits amounting to a whopping 61.1 percent of tax liability.

Third, big business doesn't relocate much, to say nothing about moving into enterprise zones. Both

Birch and Schmenner provide substantial evidence that plant migration is not a major factor in economic development.

Fourth, even for those established businesses that do move, tax incentives are not important in the decision making process. In his study of the location selection process, Schmenner lists labor force training, public infrastructure improvements, livability of the area, and other related factors as being the most important. According to Schmenner, tax incentives are ineffective. His study reported that less than a third of relocating plants moved to areas with lower tax rates. Only 14 percent of new plants took advantage of tax abatements as compared to 38 percent that required public infrastructure improvements. A 1980 report from North Dakota indicated that only seven of 125 new firms that received the state's five-year income and property tax exemption felt that the exemption contributed significantly to the decision on a plant location.

Fifth, tax incentives are not cost effective. Embry points to the UDAG program which has a "but for" provision that limits funding only to those projects that have substantial public benefits and would not go ahead "but for" the UDAG. Tax incentives as in the North Dakota example are not so efficient when the same tax breaks go to the 118 firms who would have located in the state anyway. Estimates on the slippage of the Investment Tax Credit range from 40 to 70 percent of the lost tax revenue going to firms that would have made the investment regardless of the tax incentive.

Sixth, tax incentives require expensive lawyers and accountants. Anyone who has been through an industrial revenue bond settlement, where the interest from the loan is tax free, or through a syndication of the accelerated depreciation write-offs of a low income housing project, is aware of the mountains of necessary legal agreements and opinions. The \$30,000 average legal fee for an industrial revenue bond issue has made that type of financing prohibitively expensive for the small businesses targeted by enterprise zones. Japan has two lawyers and accountants and 76 scientists for every 10,000 people, while the United States has 200 lawyers and accountants and one scientist for the same number of people. Enterprise zones will help keep those 200 lawyers and accountants busy, but might not do much for the scientists.

Seventh, tax incentives are difficult to target on specific public benefits. For example, if the goal is to get jobs to needy people, a grant program like UDAG on a case-by-case basis can use some flexibility with individual developers to establish minimum hiring and job training goals suitable to a particular project. Such sharp targeting while retaining compliance flexibility is difficult to achieve within the context of the tax code. The poor response from businesses to the Targeted Jobs Tax Credit is a good indicator of the limited potential for zeroing tax breaks in on a complex problem.

Such a condemnation of tax incentives as a development tool elicits a spirited defense from supply siders like Kemp and others who maintain that tax incentives don't cost the government anything because they are unleashing private sector growth that wouldn't pay taxes otherwise. Embry counters with a documentation of business growth generated by a grant program like UDAG that costs the government X dollars on a budget appropriation but pays back X+Y dollars in taxes. Any tax break given to one of these UDAG generated businesses is truly a tax expenditure.

The supply sider and Enterprise Zoner obsession with tax breaks rests on the need to try something new based on a belief that everything the Federal government had previously tried in urban redevelopment was unnecessary. David Smick, chief of staff for Jack Kemp, likes to ridicule public sector financing by waving a graph showing that 90 percent of all new businesses finance their ventures from personal or family savings and only 3 percent use SBA or other public loan or loan guarantee programs. Wherever that statistic came from, it is not applicable in an enterprise zones situation where there is a deteriorated physical plant requiring extensive renovation or new construction. High technology firms, often cited as prime zones candidates, are particularly capital intensive. Minority-owned businesses, which should be a zones target, rely heavily on public financing.

Criticism Of "Federal Bulldozer"

A more fundamental flaw of the enterprise zones concept is the underlying philosophy that all previous Federal urban redevelopment programs are failures. Both Butler and Kemp refer to the need for an alternative to the "Federal Bulldozer," that is, something new and different from the ravages of classic urban renewal where square miles of inner city neighborhoods were demolished for grand development plans that never materialized. Butler quotes Senator John Chafee (R-RI), a strong supporter of enterprise zones, as saying:

"Since the great 'Urban Renewal' surge of the 1960s, all we have been doing is bulldozing great holes in our cities and throwing billions of Federal dollars down them. Little has resulted, little has changed. We need a bold new approach."

Unfortunately for Kemp, Butler and Chafee, however, the "Federal Bulldozer" died out as a Federal development strategy 20 years ago. In the early '60s the emphasis began to shift to neighborhood-based rehabilitation programs. Plans were thought out in cooperation with community organizations or Project Area Committees. Jane Jacobs, in *Death and Life* of *Great American Cities* and Herbert Gans, in *Urban* *Villagers,* helped us understand cities as complex environments. Simplistic solutions to urban problems, like urban renewal, led to disastrous consequences.

In 1968 Congress fashioned the ultimate response to complex, interlocking urban problems with the multifaceted Model Cities Program in which improvements of all aspects of neighborhood life became top priority.

The uncontrolled spending on the Vietnam War sabotaged Model Cities before it got under way. When Nixon froze housing program funds, he signaled a step away from Federal targeting of programs on specifically defined renewal areas. Incentive programs were offered on a citywide basis. Block grants allowing greater local government flexibility were emphasized. Broadbased Federal incentives sought to stimulate private sector growth, culminating in Carter's public-private sector partnership for the '80s and the UDAG program.

Since the "Federal Bulldozer," some programs have failed and others, such as UDAG, proved effective. With the revitalization of cities such as Baltimore, "The Renaissance City," we've learned that the key to success is a comprehensive, balanced development strategy. As Berkowitz pointed out, balanced business incentives — financing, site preparation, labor force training - must work together. Making the city an exciting place to live is a top priority. As Schmenner says in his business location study, liveability is an "awesome competitive advantage" in attracting new business. Support for arts and cultural institutions, entertainment, parks, historic and architectural preservation, all make a vibrant environment. A major league ball team or a top notch symphony may well be more effective than a 15 percent business tax reduction. A bright and vital shopping center like Fanueil Hall or Harborplace may bring a business person to Boston or Baltimore faster than a ten-year carry forward of losses. Public grant support is a crucial part of these activities.

Summary

Unfortunately, nothing in the "Urban Jobs and Enterprise Zones Act" or the entire Reagan economic program begins to recognize this complex relationship of social, cultural, and physical factors that make urban redevelopment work. By blindly ignoring our past history in urban revitalization, the Enterprise Zones Act is in danger of making the same blunder that planners made in the 1950s with the "Federal Bulldozer." A simple, business-can-do-it-all solution just will not work. In the name of cutting government waste, the Enterprise Zones as an urban policy will only create more waste.

As one component of a comprehensive urban policy, however, enterprise zones could be a valuable new

tool to stimulate private investment. Tax incentives, offered with a balance of other necessary public incentives such as financing and site preparation, can help attract desperately needed jobs to distressed communities.

Features such as the 40 percent tax exemption on interest income or loans to zone businesses are a bold and creative move to correct a critical capital shortage for growing businesses. An accelerated depreciation provision, currently not included in the legislation, would be an added attraction.

As Kemp's chief of staff points out, Enterprise Zones,

even with all its problems, is the only urban initiative with a chance of survival in today's political environment. For all the shortcomings of the legislation, Kemp and Garcia should be applauded for their attempt to focus the new conservative economic strategy on the desperate problems of our inner cities.

The new Administration has demonstrated little interest in learning from our past experience in urban revitalization. With the President's giant step backward from our nation's commitment to help the underprivileged, any positive effort at all will help keep us from the social disintegration and chaos that threatens our society.

REAL ESTATE FEASIBILITY ANALYSIS AND THE EMERGING PUBLIC-PRIVATE PARTNERSHIP IN LAND USE DECISIONS

by Charles H. Wurtzebach

During the past several years great interest in real estate feasibility analysis has developed.¹ It has been stressed as a prerequisite for both new development and investment in existing projects. The focus of the analysis primarily has been to justify economically a particular investment decision from the individual investor's point of view. This perspective generally emphasizes investor rate of return based on the availability of project financing, market demand and rent and operating expense levels. Determining user needs has concentrated on project operating income and investor return requirements which often have overshadowed the impact that the public sector has on the feasibility of real estate investment.

In many instances the role of the public sector in land use decisions has been ignored completely.² This has happened despite rapid expansion of local, state and Federal levels of the public sector's role in affecting land use decisions. As a result, although an investor may have obtained a feasibility analysis indicating enough user demand for an acceptable investor return, the project may be dropped due to lack of public support. In many cases this is because the real estate analyst has not included the public's perspective affecting the land use decision as an integral part of the feasibility analysis.

The result of this oversight by an analyst often leads to ill will between the develop/investor and the public, not to mention the deterioration of the client's faith in the analyst. This disagreeable outcome might be avoided if the public sector is viewed as a partner rather than an adversary in the development process.

A framework which incorporates the public sector perspective in real estate feasibility analysis is needed. To develop this framework, the land use decision environment must be viewed as a partnership between the public sector, investors/producers and users. The acceptance of this partnership relationship requires that each partner examines and considers how the other partner's needs are met in land use decisions affecting a particular site.

The Land Use Decision Environment

A realistic view must be taken of the key participants involved in the process in order to analyze the land use decision environment. In a broad sense, these participants include the public sector, developers/investors or producers, and consumers or users.³ Any land use decisions which affect any site or parcel of land will require interaction among these three parties. This interaction suggests the need for cooperation with the ultimate understanding that the three participants are not adversaries but partners. While the specific goals of the individual participants may differ, the participants must recognize each other's needs and work within a partnership atmosphere. Each must survive the short run and prosper through the long run to achieve equilibrium.

The short run constraints for each participant revolve around their cash management cycle. Developers must be able to meet their short run cash needs and remain financially solvent in order to successfully complete the development process. This requires them to accurately estimate, control and finance development expenditures and complete the project on time.

The public sector participants are faced with a similar cash management problem to finance or fund public

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development expenditures. For example, public services to a site usually must be provided following annexation and the initial costs may exceed the revenue generated by property taxes from the annexation. As a result, master planning may attempt to coordinate growth with the public sector's ability to provide public services as well as pay for them.

Real estate users or consumers also must operate within a cash management cycle. Owner-occupants and/or tenants must be able to pay the real estate market price. In commercial real estate, users effectively must meet monthly rental payments and still earn a market profit on their goods and services. Residental real estate users must be able to pay market prices and still meet consumption and saving demands.

In the short run then, land use decisions affecting any site should recognize each participant's cash management needs. Both on a collective and individual basis the participants should work each other's cash management needs into their respective decisionmaking process. It is not suggested that one or two participants must cater to the specific needs or demands of the third participant, but rather each participant should be aware of the others' roles and responsibilities within a partnership atmosphere.

Long run constraints on the development participants revolve around the economic and cultural stability of the community where development occurs. This stability or societal equilibrium requires continued communication among the participants. Developers have a long run responsibility to the community to create or produce real estate services which will provide an acceptable environment. An example of this type of commitment is community political involvement and leadership.

The public sector needs to consider expected demographic and economic changes in planning for future growth. By determining where growth might occur, development and planning can be encouraged.

Real estate users or consumers also contribute to societal equilibrium through their input in the development of local land use policy. Users also can support policy decisions made in the public sector which affect community attractiveness such as public transportation systems and political activism.

Site And Participant Relationships

Each participant in the land use decision process interacts with and relies on the other participants in an effort to successfully develop a particular site. The responsibilities, decisions, and services contributed and/or received by each participant actually are the culmination of extensive participant cooperation. The Figure presents a simplified version of participant and site relationship.

Public Sector/Site

The fundamental relationship between the public sector and the site is presented as 1 in the Figure. This relationship is dominated by the services and policy decisions affecting the site. In return, the site represents the basis for levying real estate taxes which are used to finance the many services provided by the public sector including police and fire protection, utilities, schools, libraries, roadway maintenance, etc. Policy decisions include master planning, zoning, building codes, environmental controls, and capital improvement programs. The availability of public services coupled with the implementation of policy decisions may serve to encourage, discourage or preclude development.

Public Sector/User

The relationship between the public sector and the user (2 in the Figure) concentrates on policy decisions and services to the user, and tax payments and political input to the public sector. Services provided directly to the user include health facilities, schools, transportation, recreational facilities, etc. Policy decisions affecting the user might include utility charges, neighborhood zoning decisions and tax rate decisions. The user pays real estate, personal property, sales, and income taxes,which are used to finance public sector operations. Users also should provide a great deal of input to the public sector, which is directed through the elective process and direct government participation achieved through service on appointed boards and commissions.

User/Producer

User and producer relationships (3 in the Figure) are developed through the market system. Rental levels and purchase prices are the result of the interaction of market supply and demand for real estate services. Relative increases in profits may stimulate new development, while relative declines would discourage it.

Producer/Site

The relationship between the producer and the site (4 in the Figure) is dominated by services and policy decisions of the producer which affect the site and its capital. These services and decisions include development concept, design and actual development. Capital applied to the site includes financing, labor and management skill.



User/Site

Number 5 shows the primary relationship between the user and the site as the net benefits to the user. These benefits represent the utility derived from the site by the user and are either pecuniary or nonpecuniary. Pecuniary benefits could include increased sales due to location or design, while nonpecuniary benefits might include prestige associated with the site.

Public Sector/Producer

Number 6 represents the relationship between the public sector and the producer, perhaps the least understood and recognized of the relationships. With the recent increase of public sector influence in the development process, difficulties have emerged which tend to put the two participants in an adversary position. The primary relationship between the public sector and the producer includes communication and an exchange of ideas, which generally are informal at best and nonexistent at worst.

Producers may perceive the public sector as representing a series of obstacles to development, whereas the public sector may perceive producers as insensitive to macro-socioeconomic issues. Neither perception represents the attitude of the participants who are making efforts to be fair and responsive to each other's needs.

A major problem area in the relationship between the public sector and producers lies in the nature of their day-to-day interaction where often communication only occurs when a problem arises. For example, a request for a zoning change may require interaction that is usually carried out through a fairly well-defined series of steps. An application requesting the change is made and is followed by review and recommendation by the public sector. During the process both parties are aware that something is at stake. Often, if the applicant is asking for something that the public sector does not wish to grant, the parties will be pitted in an adversary position. To remedy this situation it is necessary to develop a communication network or medium devoid of specific confrontation, such as workshops sponsored by the public sector or by producers. Explanations of city growth management policy and producer involvement would provide understanding between the two parties.

Exogenous Shocks To The Public-Private Partnership

In addition to the relationships among the public sector, producers and users, there exist potential exogenous shocks (triangles in the Figure) which affect how the participants affect the site. The participants usually cannot control these shocks which are external, but can respond or react to them.

Public Sector

Exogenous shocks affecting the public sector's impact upon land use decisions can be the result of several factors. Changes in elected officials via appointments to boards and commissions or through a change in support for certain policy decisions may cause a shift in policy orientation towards land use decisions. As elected officials come and go over the years, local government's attitude toward land use policy may change. These changes usually are not controlled by public sector administrators. Therefore, while the employees remain, the policies they must implement may vary.

Changes in key personnel may also cause changes in public sector land use decisions. For example, a new planning department head may recommend new policy guidelines for growth management. Other lower level personnel changes may affect land use planning to a lesser extent.

Citizen support could also affect public sector land use which may result in an attitude change. For example, a desire for less government may result in a demand by citizens for tax cuts. Existing public sector land use policy may require substantial expenditures of public funds generated by either taxes or bond proceeds. Unwillingness to approve tax increases or bond referendums could result in reduced public sector activity in land use policy areas.

These exogenous shocks basically are outside the control of the public sector. As a result, public sector land use decisions must respond to these shocks on a continuous basis. Policy changes cause difficulties not only for the public sector but also for producers and users who discover that the "rules of the game" have changed as reflected in land use policies and guidelines.

Users

The majority of exogenous shocks to owner-occu-

pants and tenants affect user's ability or willingness to pay for real estate services. Macro-economic changes to general economic activity, employment and inflation significantly can affect user decisions. Corporate users will plan plant and office expansions based on expectations of future economic growth. If their expectations are jolted by major changes in economic policy decisions, the response may change drastically the outcome of decisions concerning a particular site. Just as adverse economic news may cause a reduction in demand, optimistic news may increase it.

Other sources of exogenous shocks that directly affect users and normally cannot be controlled include job transfers, promotions, loss of job, death, illness or divorce. These shocks can significantly alter personal land use decisions.

Producers

Exogenous shocks to all producers or an individual producer could develop in the general marketplace. These shocks would include the same macroeconomic changes which affect users such as increases in unemployment and inflation. Inflation increases cost which must be passed on to the ultimate consumer; unemployment can reduce demand for real estate services.

Exogenous shocks affecting individual producers, or micro shocks, would include increased competition, major local employer relocations and produceremployee labor problems. Policy decisions from the public sector such as growth policy, zoning decisions, and local ordinances on development may impact a producer's ability to develop a site in a certain manner. Financial changes such as project failure may limit a producer's ability to attract adequate backing for future projects.

Implications For The Participants

The framework here implies the need to develop new relationships among the participants. The public sector, producers and users must realize that they are partners in the development and growth of a city. The public sector and producers especially share responsibility in developing this partnership.

Users contribute to the partnership through the market system, public forums and governmental involvement. Through the market system and their willingness to buy or rent the developed properties, users accept or reject the site development. In the public forum, users voice their ideas and comments concerning local growth patterns and specific site developments. Generally not organized structurally as well as the public sector or producers, users usually cannot provide the physical framework for partnership development. Thus, user responsibility in this area lies primarily in supporting the concept and participating with the public sector and producers through the development of neighborhood associations and other organizations of concerned citizens. Public sector and producer responsibility in the development of the partnership lies in the area of communication and idea exchange. The process of this exchange is evident through permit and zoning variance requests and the public meetings where these decisions are ultimately made. Often, the public hearing results in misunderstanding and confusion due to ill preparation on the producer's part. The concept of a public-private partnership requires development of a forum to enhance producer ability to understand public sector development requirements. This could be facilitated through workshops, seminars and informal presentations.

Through explanation of policies, growth strategies and ordinances, etc., by the public sector, and through the acceptance of feedback from producers, land use policy could develop which would be better accepted, understood and implemented. A framework is necessary where public sector land use decision makers can interact professionally with producers in a nonconfrontative atmosphere, resulting in producers better understanding and appreciating the public sector perspective and vice versa.

The development of this framework of cooperation may require the creation of a new professional role in the land use decision environment. This role might be filled by land use government relations specialists who act as consultants to both the public sector and producers and concentrate on providing the link to advance communication and idea exchange. This role actually would be quasi-legal and enable the public sector to convey development ordinances and laws to producers, while advising both sides of the varied impact of land use decisions on the participants. The input of a land use government relations specialist would be an extension of the role of a market and economic feasibility analyst.

Feasibility Analysis And The Public-Private Partnership

Increases in public sector involvement in land use decisions should recognize the impact of a developing public-private partnership in real estate feasibility analysis. Understanding the framework in which land use decisions are made has become a prerequisite to the complete real estate feasibility analysis. This framework includes not only the administrative steps for development approval but also an appreciation of the short run constraints affecting participants. Analysis of the short run constraints often deals with immediate land use decisions. For example, in cases where residential development might hinge on utility extension, the short run costs materially may affect the public sector's ability to support the land use decision. A complete feasibility analysis must also consider the long run impact of land use decisions such as development of transportation lines which may be made well in advance of individual land use decisions.

Since the complete real estate analysis includes a market and economic analysis, the critical relationships among the public sector, producers and users would be analyzed directly in the market study. A full analysis of the public-private partnership is essential to a complete market study and the land use government relations specialist should provide such input. The market study should include the short run and the long run constraints affecting the development partners. The analysis should be broken down into the perspectives of each participant. As such the analyst must understand fully the respective viewpoints of the public sector, producer and user.

The results of the complete market analysis will be used as inputs for the economic analysis which will reflect the critical relationships among the land use decision participants. The market study provides a more accurate picture of the actual land use decision environment and allows the economic study to more accurately reflect the expected outcome. By tying the relationship among the public sector, producer and user into the economic analysis via the market analysis, the resulting land use decision should represent a successful development that finds the participants in equilibrium.

NOTES

1. John **8**. Bailey, Peter F. Spies and Marilyn Kramer Weitzman, "Market Study and Financial Analysis = Feasibility Report," *The Appraisal Journal* (October 1977), 550-577; Richard U. Ratcliff, "Appraisal Is Market Analysis," *The Appraisal Journal* (October 1975), 485-490; James A. Graaskamp, "A Rational Approach to Feasibility Analysis," *The Appraisal Journal* (October 1972), 513-521; James A. Graaskamp, A Guide to Feasibility Analysis, Society of Real Estate Appraisers, 2nd Edition, (Chicago, Illinois, 1973).

2. It should be noted that this has not been true of Graaskamp's work that is cited above.

3. Much of the material in the following sections was adapted and expanded from the "Two-Day Workshop: Real Estate Feasibility for the Appraiser," sponsored by the American Institute of Real Estate Appraisers, as prepared by James A. Graaskamp and *Modern Real Estate* by Alvin L. Arnold, Charles H. Wurtzebach and Mike E. Miles, (Warren, Gorham and Lamont, 1980).

THE EFFECT OF FULLY FLEXIBLE MORTGAGES ON CONSUMERS

by Patricia M. Rudolph

In March 1981 the Federal Home Loan Bank Board changed its regulations to allow federal savings and loan associations and mutual savings banks to make fully flexible mortgages.¹ These regulations place no restriction on the size or frequency of the adjustments made in the contract rate, or on the payment or the maturity, nor are there limits on the level of negative amortization.



Residential mortgage lenders view this increased flexibility as necessary, while prospective homebuyers express concern that the increased uncertainty effectively will bar them from the housing market. Both consumers and real estate professionals have difficulty assessing the impact of the fully flexible mortgages on the consumer.

No historical experience on which to base predictions exists. Yet borrowers and lenders will soon be faced with the task of choosing among the different types of flexible mortgages. In order to demonstrate the effect that the more flexible mortgage instruments will have on the consumer, two types of mortgages with unlimited interest rate flexibility will be compared with the traditional mortgage, as if they had been available in the past.

The payments, interest paid, loan outstanding and internal rate of return (IRR) for a fully variable rate mortgage are computed and compared with the traditional fixed-rate, equal payment mortgage and with another variable rate loan — the Wachovia-type mortgage. These computations are based on the average new home purchased in 1976 and the economic conditions which prevailed over the next five years. It is assumed that the house was sold in 1980 at a price reflecting the average increase in the price of existing houses over the period 1976 to 1980. This time period should illustrate some of the worst effects of the fully flexible mortgages, since in periods of high and rising interest rates the consumer is most adversely affected by the fully flexible rate loans.

Description Of The Mortgage Loans

The fully variable rate loan is compared with the traditional fixed-rate, equal payment loan and a Wachovia-type loan. The fully variable rate loan used here ties its interest rate to the Treasury bill rate with a 300 basis point spread. The payment is recalculated each month based on the current interest rate, the new loan outstanding and the number of months to maturity. No limitation is placed on the size of the change in the payment from month to month.

The Wachovia-type mortgage has a floating interest rate, 300 basis points above the 90-day Treasury bill rate. The interest rate is adjusted every three months; however, the payment is fixed for the first five years. The adjustment in the interest rate will affect only the division of the payment between interest and loan amortization. At five-year intervals the payment can

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be adjusted by a maximum of 25 percent. At year twenty-five the payment can be adjusted by any amount necessary to repay the loan by year thirty. In year thirty if the loan has not been paid off, the borrower may refinance.

Assumptions

The comparison of the three loans is based on the following scenario. In 1976, the consumer buys a house for the average price of a new home, \$48,400. The down payment is \$12,500, which implies a loan outstanding of \$35,900. It is assumed that the buyer will sell the house for \$82,900 at the end of 1980. The selling price of the house was calculated by taking the percentage change in the average price of existing homes sold and applying it to the 1976 average price of \$48,400.

In this description, several factors are not included such as any discussion of the tax effects on buyers in different tax brackets. Also ignored are loan initiation fees and commission costs, which are assumed to be the same for each of the loans.

A Comparison Of Cash Flows

Table 1 contains a comparison of the payments, interest paid and the loan outstanding for the three types of loans in each year. For the first two years, 1976 and 1977, when interest rates were relatively stable, the differences among the three are small. The initial payments of the fully variable rate and the Wachovia-type loans are lower than the fully amortized loan. This is not surprising since the short term rate was well below the long term rate at that time. The variability in the payment of the fully variable rate loan in 1976 and 1977 is relatively small. The difference between the highest and lowest payment is eighteen dollars in the first year and forty-four dollars in the second year. In the first two years, the flexible loans have an advantage over the fixed-rate loan. The loan outstanding at the end of 1977 and total interest paid are less for the flexible loans than for the fixed-rate loan.

Beginning in 1978 as interest rates rise, the flexible loans become less attractive. The payments on the fully variable rate loan in 1979 vary from a high payment of \$440 to a low payment of \$367. Between 1978 and 1979 the loan outstanding on the Wachovia-type note actually increases. The payment is fixed and not sufficient to cover the interest as rates rise.

By 1980 the fully amortized fixed-rate loan is extremely attractive relative to other types of loans. The high payment on the fully variable rate mortgage during 1980 is \$534. The fully variable rate payment which started out slightly below the fixed-rate loan payment is \$251 above it by the end of 1980. The loan outstanding on the Wachovia-type note increases again to \$38,227 — more than the initial loan. Comparing total interest paid over the five years, the fixed-rate loan is the lowest at \$15,534. The fully variable rate loan comes second at \$18,664, and the Wachovia-type loan has the highest interest paid over the five years — \$18,831.

					TAB Loan Co	The second secon				
	Fully Amortized Equal Payment Fixed-Rate Loan			Wachovia-type Loan		Fully Variable Rate Loan				
	Loan Payment	Interest Paid	Loan Outstanding	Loan Payment	Interest Paid	Loan Outstanding	High Payment	Low Payment	Interest Paid	Loan Outstanding
1976	\$283	\$3,138	\$35,642	\$275	\$2,943	\$35,542	\$275	\$257	\$2,883	\$35.604
1977	283	3,115	35,361	275	2,802	35,043	292	248	2,881	35,287
1978	283	3,090	35,055	275	3,411	35,153	355	290	3,494	35,042
19/9	283	3,061	34,720	275	4,431	36,285	440	367	4,481	34,881
1980	283	3,031	34,355	275	5,244	38,227	534	317	4,925	34,725
Total	Interest									
F	Paid	\$15,435			\$18,831				\$18,664	
Net P	roceeds									
Fro	m Sale		\$48,545			\$44,673				\$48,175

				Cash	Outflows				
	Fixed-Rate			Wachovia			Fully Variable Rate		
	Interest Paid	Principal Reduction	Cash Outflow	Interest Paid	Principal Reduction	Cash Outflow	Interest Paid	Principal Reduction	Cash Outflow
1976	\$3,138	\$258	\$-3,396	\$2,942	\$ 348	\$-3,300	\$2,883	\$296	\$3,178
1977	3,115	281	-3,396	2,801	499	-3,300	2,881	317	3,198
1978	3.090	306	-3,396	3,300	-110	-3,300	3,494	245	3,739
1979	3.061	335	-3.396	3,300	-1,132	-3,300	4,481	161	4,642
1980	3,031	365	-3,396	3,300	-1,942	-3,300	4,925	156	5,081

TABLE 2

In Table 2 the annual division of cash flows between interest and principal is presented. The annual cash flows are constant for the fixed-rate and Wachoviatype loans. For the Wachovia-type loan in 1978, 1979 and 1980 the interest accrued is greater than the payment, causing the loan outstanding to increase. This excess of interest over the payment is seen as the negative principal reduction for the Wachovia-type note. The fully variable rate mortgage does not experience this negative amortization but the cash outflow increases drastically in 1979 and 1980.

If, as assumed, the house sells at the end of 1980 for \$82,900, the net proceeds of the sale (sale price less loan outstanding) will differ for the three types of mortgages based on the loan outstanding at the time of sale. Net proceeds from the sale for the Wachoviatype loan are lowest because negative amortization has occurred. The net proceeds from the sale will be only \$44,673 for the Wachovia-type loan, compared to \$48,175 for the fully variable rate loan and \$48,545 for the fixed-rate loan.

The IRR Compared

To evaluate the effect of the different types of mortgages on the rate of return on residential investment, the IRR is calculated for each of the three mortgages. In each case the down payment is \$12,500, the cash flows are as presented in Table 2 and the net proceeds from the sale, as in Table 1. The difference in the IRR on the three types of mortgages is small. The fixed-rate loan has the highest IRR at 15.33 percent, and the Wachovia-type and the fully variable rate loans are close at 13.18 percent and 13.17 percent, respectively.

In the period between 1976 and 1980, the largest part of the return on residential housing was in the form of price appreciation. Since the type of financing is not as important as expected, the variable rate loans are not disadvantageous to the consumer as they would seem. From the buyer's perspective, the preferred loan would be the fixed-rate loan; the higher IRR (15.33 percent) reflects the low locked-in interest rate. However, this type of loan may not be available in the future. The use of flexible mortgages would decrease the return on residential housing investment, but they may not imply an unacceptably low IRR.

Risks Associated With Flexible Mortgages

The difference between the return on the investment financed by the two flexible mortgages is only one basis point. In deciding between the two types of loans, one should consider not only the return but also the risks.

The Wachovia-type loan has the advantage of a fixed payment for five years and limits the size of the payment adjustment for the first 25 years; however, this fixed payment and limited adjustment introduce the possibility of negative amortization. The rising loan balance will reduce the net proceeds from the sale. This is not a serious problem so long as the price of the house rises at least as fast as the loan grows. During the five years used in this comparison, the price appreciation more than compensates for the rising loan balance. In the future there is no guarantee that prices will continue to rise fast enough.

The fully variable rate loan does not permit negative amortization but it does introduce uncertainty into the cash outflows involved in homeownership. To explain the impact of the payment changes on the consumer, Table 3 contains the payment for each mortgage expressed as a percentage of the median income in the United States. The percentage of income needed to make the fixed payments of the fixed-rate and the Wachovia-type mortgages declines steadily over the five years. The percentage of income which is used to meet house payments for the fully variable rate loan varies widely from a low of 18.6 percent in 1977 and 1980 to a high in 1980 of 31.3 percent. The increasing burden of making the highest payment along with the uncertainty introduced by the variable payment make the fully variable rate mortgage unattractive.

Conclusions

Comparing the fixed-rate loan with a Wachovia-type loan and a fully variable rate loan as if they had been

			Mortgag of N	ge Payment as Ionthly Median	a Percentage 1 Income			
	Fully A	Mortized	Wachovia-type		Fully Variable Rate Loan			
	Payment	Payment as % of Income	Payment	Payment as % of Income	High Payment	High Payment as % of Income	Low Payment	Low Payment as % of Income
1976	\$283	22.7%	\$275	22.1%	\$275	22.1%	\$257	20.6%
1977	283	21.2	275	20.6	292	21.9	248	18.6
1978	283	19.3	275	18.7	355	24.1	290	21.7
1979	283	17.3	275	16.8	440	26.8	367	22.4
1980	283	16.6	275	16.1	534	31.3	317	18.6

TADIE 2

available in 1976 clearly indicates that consumers have cause to prefer the fixed-rate loan. The fixed rate implies a higher rate of return on the investment and the fixed payment implies a decreasing burden of debt as income rises. However, the fixed-rate loan is likely to become less and less common. Consumers may be faced not with the choice of fixed vs. flexible loans but rather with different types of flexible loans. Although the flexible loans reduce the return on residential investment, they do not appear to make the return unacceptably small. In the example the IRR is 13.8 for the fully variable rate loan and 13.7 for the Wachovia-type.

Each of the variable rate mortgages which are used here has its own risks. The Wachovia loan implies the possibility of negative amortization while keeping the payments flat for at least five years, and limiting the size of the payment adjustment. The fully variable rate loan will not permit negative amortization but does imply highly variable cash flows. Given that price increases in the housing market are likely to outpace the rate of negative amortization, the Wachovia-type loan seems more attractive.

Although the numbers presented are not real numbers since the flexible mortgages have not been available, the examples do convey a feeling for the impact these types of mortgages are likely to have on consumers if interest rates continue to behave as they have in the past five years.

NOTE

1. David Seider, "Changing Patterns of Housing Finance," Federal Reserve Bulletin 67 (June 1981), 468-469.

LAND-PURCHASE-LEASEBACK/LEASEHOLD LOAN: AN OLD IDEA WHOSE TIME HAS COME

by James J. Hawk, CRE

It may be an understatement to say that today's cost and shortage of investment capital have adversely affected real estate. How long these conditions will last is anybody's guess. But what do we do in the meantime? It is *not* the American way to respond to challenges with passive indifference. It *is* the American way to improvise and progress.

The Problem

If inflation has increased the cost of investment capital, then uncertainty has in part created the shortage. The conventional sources of capital can't predict the direction or magnitude of inflation and, therefore, will not provide long-term fixed-rate capital in the amounts needed by the market. Instead, these money merchants are slowly and cautiously exploring alternative real estate investment structures while at the same time evaluating the prospects of their long-term role as either a dominant source of capital (life insurance company) or broker and marketeer for a new source of capital (pension funds). Even if the role of life insurance companies does change, the pension funds (corporate, union and government) will not immediately replace the lost investment capital. While pension fund assets are growing geometrically, it has still taken 10 years, from 1970 to 1980, for their commitment to real estate to go from a nominal amount to an estimate of up to 3 percent of their asset base.1

This means that despite market conditions, developers and institutional investors, whether life insurance companies or pension funds, have an opportunity to adopt alternative investment structures that can maximize benefits to each other and still develop real estate. One such investment structure is the Land-Purchase-Leaseback/Leasehold Loan or "LPL."

An Alternative Investment Structure

As an approach to creative financing and investing, the Land-Purchase-Leaseback/Leasehold Loan concept has been made manageable with advanced computer technology and comprehensive software programs (one of which is described here) developed and enhanced over the last two major down cycles in the real estate market.

General benefits of the LPL approach vary:

- To the *developer*, greater leverage may be achieved by financing a higher percent, perhaps 100 percent, of the land and development costs.
- To the *investor*, higher overall loan-to-value financing may be achieved and after-tax benefits enhanced in that the ground rent and overage are 100 percent deductible and the leasehold estate is 100 percent depreciable.
- To the *institutional investor/lender*, equity appreciation in fee ownership of the land, stabilized cash flow from the mortgage, and a hedge against inflation through participation in cash flow from ground rent overages and perhaps from appreciation of the leasehold estate may be achieved.

Neither the concept nor economic cycles that reallocate investment capital are new. Technology and reliable software are new. The combination of the old concept and new technology in today's economic climate can offer an investment alternative and opportunity to the developer and institutional investor, but not without limitations that are described here.

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Points Of View On The LPL

The LPL approach is ideally created by a single institutional "investor" who buys the land under a proposed or existing project and concurrently commits to make a long-term mortgage loan on the improvements. The other improvements, such as buildings that are built on and subject to a land lease, are called leasehold improvements or leasehold estate. For example, a "developer" could buy a parcel of ground with the expectation of building a shopping center or office building. To induce an investor to provide the necessary investment capital, the developer may choose to sell the land to the investor and enter into a long-term leaseback of the land at a negotiated rental rate plus rental adjustments. Adjustments may be based on various mechanisms, such as an increase commensurate with the increase in the Consumer Price Index or payment by the developer to the investor of a percentage of the project income in excess of a negotiated "floor." Concurrently, with the purchase of the land by the investor and the leaseback of the land by the developer, the investor would make a long-term mortgage loan on the leasehold estate, perhaps based on prevailing market terms and conditions. Upon completion of the foregoing, the investor will own the land in fee as an equity investment and will have leased the land back to the original developer on a long-term basis. Also, the investor will have made a mortgage loan to the same developer at a fixed interest rate and on negotiated terms and conditions. The terms may call for a land repurchase option at fair market value by the developer and perhaps a payoff of the mortgage, both at negotiated intervals. But for practical reasons the mortgage investment must be underwritten so that the unpaid mortgage balance at a call date, if any, does not exceed approximately two-thirds of the project's value excluding land. Otherwise, the developer could have difficulty obtaining new financing elsewhere, especially if the leasehold estate is built on land subject to a nonsubordinated ground lease.

From the developer's point of view the LPL offers an alternative to a joint venture, an equity/debt combination, a convertible mortgage, or a straight equity participation. Several of these structures can minimize after-tax yields for the developer or ultimate buyer. The severity of the reduced after-tax yields in some cases may even make the legal documentation of the LPL structure tolerable.

The LPL combines two separate and distinct investments: 1) the investment in the land; and 2) the investment in the mortgage. Each investment stipulates a minimum land rent or mortgage payment. In the case of the land ownership, a mechanism by which additional ground rent is paid as an overage can be provided for in the ground lease. This structure is designed to achieve three distinct investment objectives: 1) an equity investment that can appreciate and provide a hedge against inflation; 2) a mortgage investment that can stabilize the portfolio yield as well as generate a return of capital that can be reemployed at prevailing market rates; and 3) a cash flow that is also a hedge against inflation and a compounding mechanism to help an investor's portfolio grow. The first objective can include the investor's participation in the appreciation of the residual value of the improvements. However, cash-flow-conscious investors in an inflationary climate may elect to increase their overage participation rather than speculate on longer term potential appreciation of the leasehold improvements.

Underwriting

The general mechanics by which the investment in the land and mortgage are made are as follows: the investor purchases the land for the developer's cost plus reasonable off-site and holding costs or fair market value. (It is desirable to consult with a tax advisor concerning the tax impact of a purchase at fair market value.) The minimum ground rent that the developer pays to the investor under the terms of the ground lease will be a negotiated percent of the total amount funded by the investor for the land. As a ground rent overage paid in addition to the minimum ground rent, the developer would be obligated to pay a percentage of the completed project's income in excess of a negotiated floor. The floor can be based on an estimate of adjusted gross income, defined net income or defined spendable cash flow. The percentage of the project income that is paid as an overage is negotiable and usually based on a variety of factors including the level of minimum rent and whether it is a facilitating minimum that is below the prevailing market for comparable investments. Another factor is that a mortgage investment can be underwritten conservatively, or if the investor is an aggressive investor, the amount loaned can be what is described as a "full loan." After the analysis and evaluation of an investment pro forma and determination of a satisfactory net income, the loan amount, rate and terms become a function of the loan-to-value ratio, capitalization rate and the required debt-service coverage. These can be varied individually in order to produce a higher or lower indicated loan amount. Usually the underwriting criteria of a mortgage on a leasehold estate wherein the landowner and lender (mortgagee) are one and the same will be similar to the underwriting criteria of a conventional mortgage loan. The investment criteria for a mortgage loan on a leasehold estate are more rigid when the land is owned by a third party (for example, not the developer or investor) and the mortgage loan is subordinated to the ground lease.

Overage Calculation

The mechanics by which the ground rent overage percentage is determined are usually a function of the investor's initial yield objectives. Once that objective is achieved, a secondary overage percentage

is based upon arbitrary negotiations between the investor and developer. For example, the investor buys the land, enters into a ground lease and requires a minimum return of 10 percent on the land purchase price. In return for a favorable initial rate of return on the land price (10 percent) by comparison to the prevailing market, and/or in return for advancing a generous land purchase price and mortgage loan which combined may equal 80 to 100 percent of the total development cost including the land cost, the investor may require 50 percent of the project income in excess of a negotiated floor. For example, when the combined cash-on-cash rate of return equals 12 percent, after dividing the minimum ground rent, ground overage payment and mortgage interest by the land cost and unpaid mortgage balance, the percentage of project income in excess of the negotiated floor may be reduced to 25 percent which reduces the rate of accelerating yield that the investor will recognize. The reverse philosophy can be employed if the investor wants to lessen the burden on the cash flow during the earlier phases of a new project. In either situation an investor may have a minimum internal rate of return (IRR) requirement, in which case how the investor structures

his participation will affect the targeted IRR in, for example, an assumed 10-year holding period.

The Elements Are The Same

An LPL structure uses the same fundamental underwriting assumptions as conventional investment structures, that is, debt-service coverage, loan constant, holding period and resale value of the asset, inflation rate(s), and investor share of the operating cash flow and residual value of the asset upon sale, etc., but they are melded and determine the burden on the property and/or return to the investors. The principal formula is to return to the investor a minimum yield on the mortgage and ground lease and a share of the upside if the project is successful; and to return to the developer maximum leverage and his share of the upside if the project is successful.

Computer Technology And An Old Idea

Again, the LPL concept is not new but is now a manageable concept. Time-consuming manual calculations and broad approximations of cash flow and yields are unnecessary. Instead the LPL concept is made manageable, fast and accurate by an analytical software program that produces the examples below.



The report simulates a project's cash flow before and after payments for debt service, ground rent, and ground-rent overages, and will translate those cash flows into accurate pre-tax and after-tax cashon-cash and IRR yields for either the institutional investor who owns the land and has made the mortgage loan on the leasehold estate, or the investor/ developer who owns the leasehold estate.

The report consists of three parts: 1) Property Analysis; 2) Ownership Analysis; and 3) Lender (Investor) Analysis.

On the first page of the Property Analysis, the last two columns to the right indicate a dollar and percent yield on the institutional investor's land purchase investment and mortgage investment. The return of principal or amortization is not included in these yields. The initial annual yields are low because they are either partial years or maximum occupancy has not been achieved. Reporting a consolidated yield as in this report is for convenience only and is not intended to indicate that the land purchase and mortgage are melded, thereby creating a financing vehicle in the eyes of usury states. The ground rent and mortgage payments including principal and interest should be paid separately to the investor, as provided for in the respective documents. The Ownership Analysis is available for a single ownership entity or up to 10 partners. The Lender Analysis consolidates the return on a cash-on-cash basis and a 10-year rate-of-return basis for a conventional lender(s) or an institutional investor, using a mortgage participation or an LPL structure. The amortization is included in the IRR calculation in this report. All investment structures work with the same elements, that is, cash flow, residual, and tax benefits or liabilities. They differ in timing, emphasis and combination of each of the elements.

The program² that produces the sample figures is not a substitute for sound judgment and underwriting — it merely helps optimize the right combination of these elements for the particular needs of the parties involved.

This decision-making tool is employed using the investor's assumptions which are easy to input and offer broad latitude to simulate the most subtle refinements of manual real estate underwriting techniques. The manageability of the LPL approach, as provided by the computer program, enables the investor to be fast, accurate and competitive in evaluating prospective investments, and such criteria are necessary to attract quality investments.

The disadvantage(s) of the LPL approach, in some states, is the issue of usury; and in all states, the complexity of the legal documentation. Pension funds and life insurance companies, both inside and outside California, employ the LPL concept but many have withheld using it because of usury and/or the complex, time-consuming undertaking that is required to underwrite the investment if the computer program or similar technology is not employed. The fundamental disadvantage of the LPL concept is that the developer by selling the land and paying a ground-rent overage gives up a portion of the project income that would otherwise contribute to the economic value of the property, if and when the project is sold. Usually, the LPL concept is not employed because of the foregoing reasons. But when high interest rate markets prevail and/or a shortage of investment capital develops, the concept becomes attractive to both the developer and investor: to the developer because he wants the increased leverage or cannot find the necessary money without offering a "kicker;" to the investor because he wants the hedge against what he perceives as the devaluing effect of inflation.

Conclusion

The LPL concept in today's market is a viable investment structure and has been made fast, accurate and manageable to underwrite with computer technology and reliable software. The following linear curve diagram best illustrates the advantages of computer technology and a reliable software program.



Perhaps the most important prerequisites of any software are that it be reliable, compact and readable, flexible, and relevant to the objectives of the user.

Technology has overtaken the real estate profession and technical problems do exist for the practitioner, but today's capital-need problems all but demand initiative and resourceful thinking. For some, the Land-Purchase-Leaseback/Leasehold Loan investment structure, made manageable with technology and reliable software, can solve some otherwise insoluble problems.

NOTES

1. Money Market Directories, June 1981.

2. "ComA," Copyright James J. Hawk, 1978.

ALTERNATIVES FOR ASSESSING RISK IN REAL ESTATE INVESTMENTS

by Richard J. Curcio, James P. Gaines, and James R. Webb

The assessment of risk in real estate investing is being given more and more attention. In a comprehensive evaluation of previous empirical evidence on real estate returns, Roulac [1976] concluded that while real estate and stock market returns are comparable over time, for given levels of return, real estate generally is less variable and more predictable. Roulac attributes this lower risk level to the basic economic pattern of real property as compared to corporate enterprise, and also to the enhanced dispersion of results from common stock securities. Roulac's conclusion that real estate investments have relatively lower risk than securities is based on highly restrictive empirical studies which rely on the variance or a variance-related measure such as the standard deviation or coefficient of variation for the assessment of risk. Webb and Sirmans [1980] also use coefficient of variation.

The validity of the variance as a proper risk surrogate has been questioned.¹ Its principal limitation is that its reliability depends on the shape of the relevant distribution of returns. For symmetric distributions, the problem is somewhat reduced; however, the general existence of symmetry in investment portfolios has not been established.² For the pure equity non-security form of real estate investment returns, the existence of symmetry appears even more suspect because for a given wealth position real estate investing seems to provide less ability for diversification and more potential for large losses than investments in securities. Conclusions regarding the riskiness of real estate investment securities may have to await more extensive empirical studies.

Alternative risk measures and risk screening approaches that have received substantive attention in the investment literature and particularly in regard to securities are beta, semi-variance, skewness, kurtosis, and stochastic dominance. This study considers the applicability of established security risk measures as alternatives in assessing real estate investment risk.

Review Of Previous Studies

Much treatment of the risk in real estate investment



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has involved to some degree the use of intuitive techniques such as adjusting the discount rate to correspond with the riskiness of the investment [Shipp, 1970] or adjusting the anticipated returns downward to reflect their relative uncertainty (that is, using certainty equivalents) [Wiley, 1976]. Another popular approach to risk in real estate investing is sensitivity analysis [Farrell, 1969; Higgins & Cunningham, 1970]. While neither measuring nor adjusting for risk, sensitivity analysis does enable the identification of the critical variables underlying forecasts of return, and this allows for more effort to be allocated to obtaining greater accuracy in estimating these variables and implicitly producing more reliable return forecasts.

The use of probability distributions for evaluating risk in real estate investing is more explicit and promising than the above method.³ Prominent empirical studies which employed probability distributions or distribution parameters for assessing risk in real estate are the works of Wendt and Wong [1965], Friedman [1970], and Robichek, Cohn and Pringle [1972].

Wendt and Wong compared the investment experience of 20 FHA-financed apartment houses with 76 randomly chosen industrial stocks. They used the coefficient of variation on the distribution of internal rates of return, and their results indicated considerably lower risk for real estate than for common stock investments.

Friedman attempted adaptation of the mathematical models used to analyze and select security portfolios to the evaluation and selection of real estate portfolios. Using samples of 50 properties from two sources⁴ and 50 common stocks from the New York Stock Exchange, he generated efficient frontiers for each class of assets on a before and after-tax basis. His results indicated a lower level of risk associated with a specific rate of return for real estate than for common stocks. Computed as the variance of past yields, the variance was employed to measure risk. Because of a lack of market data, however, Friedman was forced for the real estate sample to assume a constant compound rate of growth over the sample period, 1963 to 1968, which may have resulted in underestimation of the total variance for the real estate investments.5

Robichek, Cohn and Pringle compared the investment merits of farm real estate with eleven alternative investment media. The coefficients of variation for the farm real estate were found to be considerably lower than the others which included the Standard and Poors Industrial Index.

These empirical results on the explicit measurement of risk in real estate may suggest that real estate investments are less risky than common stock. The results, however, were based on highly restrictive real estate samples and may have involved measurement errors. In addition, the studies relied largely on the variance or variance-related measures to evaluate risk. Deficiencies of the variance and related gauges cause questions about their soundness in assessing risk and the conclusions relating to risk in real estate investments.

Risk Measurement In Real Estate

Explicit measurement of investment risk has focused in general on the analysis of subjectively-derived probability distributions of investment return. In these analyses, quantitative risk surrogates typically are used to replace common verbal definitions of risk which do not yield easily to measurement. Usually these surrogates represent some measure of the dispersion of outcomes in the relevant probability distribution. As such, each is regarded as a gauge of the uncertainty characterizing this distribution and is thus considered a viable measure of the risk inherent in the asset or asset combination from which the particular distribution is derived.⁶

Not all the risk surrogates will yield identical assessments either on an absolute or relative basis. The assessment of risk, the relative ranking of the alternatives and the ultimate investment decisions may vary substantially depending on the choice of a risk surrogate.

The popular use of variance type measures to assess real estate risk is explained when one considers that most, if not all, of the current methods for treating real estate risk have drawn substantially from the Markowitz portfolio selection model. In adapting the Markowitz model, financial writers have tended to accept his mean-variance (E-V) criterion for choosing among risky alternatives even though no conclusive evidence supports the use of variance as the proper risk surrogate. Ease of computation and broad familiarity are its most often cited advantages and dependence on the configuration of the underlying distribution is its greatest limitation. Symmetry in the distribution of returns substantially alleviates the problem. For widely skewed distributions, consideration of the third and higher moments or other measures of dispersion such as the semi-variance may be more appropriate.

Systematic Risk

The capital asset pricing model (CAPM) defines the following equilibrium pricing relationship for securities:

$$E(R_i) = R_f + \beta_i [E(R_m) - R_f]$$

where E is the expectation operator, R_i and R_m the return on the ith security and the market portfolio, respectively, and R_i the risk-free rate of interest.⁷ Beta (β_i) denotes the systematic risk or market sensitivity of the ith security and is expressed mathematically as:

$$\beta_{i} = \operatorname{Cov}(\widetilde{R}_{i}\widetilde{R}_{m})/\operatorname{Var}\widetilde{R}_{m}$$

where the (\sim) denotes a random variable.

Estimates of β_i are typically determined from a time series regression of the following variant of the first equation:

$$R_{it} = \alpha_i + \hat{\beta}_i R_{mt} + \eta_{it}$$

where R_{it} and R_{mt} represent the realized values in period t, α_i and β_i the intercept and slope coefficients, respectively, and η_{it} is a random disturbance term with zero mean and zero intertemporal and intercompany covariance.

Limitations to the applicability of systematic risk in real estate become apparent when one examines the model's assumptions. The CAPM requires that all investors: 1) be single-period, risk-averse, expected utility maximizers; 2) have homogenous expectations about future returns for each asset; 3) be content to characterize assets on the basis of mean and variance of return; and 4) be able to borrow or lend as much as they like at the risk-free rate. The model also assumes no transaction costs or taxes, and requires each asset to be perfectly divisible.

Unlike securities, real estate investments tend to be large, indivisible, illiquid and highly leveraged. Real estate transaction costs are typically large; and mortgage interest rates generally are well above those of riskless instruments. Perhaps of greater significance, real estate markets appear to be relatively inefficient compared to security markets. Some evidence of nonrandomness in real estate price changes was found by Upson [1975]. Also, Roulac [1976] delineates a comprehensive list of explanations and reflects on the lack of quality and quantity of information among reasons for existing real estate market inefficiencies.

In addition, the CAPM requires an appropriate and adequate market index (not yet identified for real estate investments) and assumes that investors will diversify sufficiently to eliminate random or what is called unsystematic risk.⁸ Friedman [1970, 1972] used the Sharpe [1963] diagonal model — a single index approach — to generate an efficient frontier of a sample of real estate assets. The index employed constituted an average of the Boeckh construction cost indexes for residences, apartments, hotels, commercial construction and factories and the American Appraisal Association Index. It appeared to be severely limited and produced the questionable result that real estate assets were less risky than common stocks, bonds and mortgages.⁹

Also, the relatively larger size (in terms of dollar cost) of individual real estate investments as well as the greater required involvement in operating management may limit the pure real estate investors' ability to diversify away unsystematic risk. For example, given an initial equity level of \$150,000, a common stock investor could purchase (assuming no transaction costs) 100 shares of 20 different companies at \$75 per share (approximately the current average

price of a share of stock on the NYSE). For comparison and if one assumes no leverage, a real estate investor with the same initial equity could purchase only one \$150,000 property, a somewhat conservative price for a typical income producing real estate investment.¹⁰ If one considers leverage, the common stock investor using the current maximum allowable leverage of 50 percent could purchase 100 shares of approximately 40 companies. With the same 50 percent leverage, the real estate investor could only purchase two \$150,000 properties. Even if one considered 70 to 80 percent leverage which is more typical for real estate investment, he still would be able to purchase only three or at most five properties.

Diversification (reduction of random risk) is assumed to increase with the number of investments in specific, unrelated assets included in the portfolio. Empirically, Evans and Archer [1968] found that for security investments, unsystematic risk approached zero with the inclusion of between 7 and 15 randomly selected securities. While comparable evidence does not exist for real estate, it appears that for a given initial equity position, removal of unsystematic risk will occur more readily with securities than for a pure real estate portfolio.¹¹

A real estate equity investor, that is, one who purchases the actual property, requires a greater role in operating management than is necessary in securities investment. The equity investor may manage the property on his own or hire a professional. Either way, there may be a tendency to restrict the property investments to the same or proximate geographic region for practical and economic advantages. This may impede the opportunity for the important consideration in real estate investment of interregional diversification. Management specialization, that is, the condition that different expertise is required for managing various classes of properties, may tend to restrict the number of property types in the portfolio.

These characteristics of real estate investments and markets would seem to place heavy limitations on the application of the CAPM to direct equity real estate investing. Such limitations may be overcome in time, since there are indications that the real estate investment market is becoming less inefficient. Roulac [1976] points out that recent trends toward real estate in securities, the institutionalizing of the real estate investment business and increased government involvement in the control of land use, housing, transportation, and socio-economic patterns will enhance the overall efficiency of the real estate investment market.

The CAPM has demonstrated appealing tractability in securities investment applications. The ability to capture an investment's complete relevant risk composure in a single, highly comparable measure, the beta or market risk factor, has contributed to a relatively rapid and growing practical acceptance of the CAPM by investors and investment counselors.¹² Insofar as this tractability extends to real estate, it seems to justify the search for an appropriate real estate or multi-asset index and to stimulate efforts to overcome other obstacles to the application of the CAPM to real estate investing.

Semi-variance

The semi-variance is defined by:

$$S_{h} = E\{Min[(R-h), 0]\}^{2}$$

where R is a random variable with a known probability distribution and h denotes a critical value against which actual values of R are compared. Relative to the variance, given by $\sigma^2 = E[R - E(R)]^2$, and which regards all extreme returns as undesirable, the semivariance as a risk measure has the advantage of focusing on reduction of losses. For this reason Markowitz [1959] considered the semi-variance to be superior to the variance, although he opted for the latter because of its familiarity and ease of computation. Mao [1969] explored the merits of the semi-variance risk measure for the corporate capital investment case. His approach primarily involved a conceptual comparison of mean-variance (E-V) versus mean-semivariance (E-S_h). He concluded "that the E-S₀ model is particularly useful in making capital budgeting decisions. In such instances, one is usually concerned with a relatively small number of projects, so that management may not be able to diversify sufficiently to offset large loss possibilities" [1969, p. 664].

Before the relative advantages of semi-variance in real estate investments are examined, it would be instructive to summarize the distinctions between the E-V and E-S_h models.¹³ Comparing the utility functions underlying the E-V versus the E-S_h criterion, Mao demonstrated that whereas a quadratic utility function given by:

$$U(R) = a + bR + cR^2$$

justifies the E-V criterion, a utility function of the form represented by:

$$U(R) = a + bR + c [Min(R-H), 0]^{2}$$

implies the E-S_h criterion of investment appraisal. Such a utility function is classified as a hybrid in that it is quadratic for R \leq h and linear for R >h. Figure 1 depicts these utility functions: (a) represents the E-V utility function; and (b) represents the corresponding function for the E-S_h criterion.

The E-V or quadratic utility function describes an investor who avoids both extreme positive and negative returns. The hybrid utility function allows for aversion toward risk at low return and neutrality at high return. For a risk averse investor, the indifference curves that correspond to each of the utility functions would both be upward sloping and concave downward, but the shapes of the curves would differ. Coupled with the fact that the respective ef-



ficient sets depend in part on the measure of risk, different optimal portfolio selections may be expected under the E-V and E-S_h criteria of choice.

Other observations regarding the E-V versus $E-S_h$ models pertain to cases where h takes on the values of E and zero. For investments with asymmetric distributions, the E-V and $E-S_E$ criteria may indicate different optimal solutions. The E-V criterion is insensitive to the direction of skewness, whereas the $E-S_E$ is prejudiced against distributions skewed to the left and insensitive to distributions skewed to the right. For investments involving only symmetric distributions, both models will produce the same optimal solutions which follows since V = $2S_E$ for symmetric probability distributions.

The case in which the reference point h is zero is of particular interest. The risk measure S_o focuses on the downside deviations from the zero profit point, that is, the distribution of losses. In evaluating investment alternatives, the $E-S_o$ criterion is prejudiced against investments having the greater scatter of points to the left of zero. Further, ranking investments by the E-V and $E-S_o$ criteria can produce different results regardless of whether the underlying distributions are symmetric or asymmetric.

The E-S_h model typically will have greater informational and computational requirements than the corresponding E-V model, which follows since computation of the portfolio semi-variance requires the joint probability distribution of investment returns, whereas portfolio variance could be computed from the variances of return of the individual underlying properties and the correlation coefficients of return between pairs of properties. The use of simulation may somewhat alleviate the problem.¹⁴ Much additional research is required before the E-S_h model can be operationalized.

Skewness And Kurtosis

Financial writers have suggested that investors should evaluate investments on the basis of the third and

fourth moments as well as the mean and variance of the distribution of returns.¹⁵ The third moment, M_3 , is given by $E[R-E(R)]^3$ and measures the skewness of a distribution; the fourth moment, M_4 , given as $E[R-E(R)]^4$, measures the "tailedness" of a probability distribution and is often associated with kurtosis. Kurtosis is actually a measure of "peakedness" and refers to the normalized fourth moment rather than the raw fourth moment.

Although empirical evidence is mixed, usually it is believed that the investor's utility function should be an increasing function of M_3 — indicating a preference for positive skewness, and a decreasing function of M_4 — implying an aversion to "tailedness." Using data on individual securities and mutual funds Arditti [1967, 1971] found a statistically significant coefficient for skewness that indicated preference for positive skewness. In a more comprehensive study on mutual funds, Francis [1975] reported that previous evidence on the subject is sample dependent and inconclusive, and investors do not take cognizance of skewness. However, both the Arditti and Francis studies were limited since they tested pooled samples of multiple types of mutual funds rather than evaluating skewness preference behavior on subcategories of mutual funds classified by their stated goals.

Although there is the need for empirical and further conceptual investigations regarding skewness and kurtosis in real estate investment decisions, general conclusions regarding investor preferences even among mutual fund investors cannot be drawn. That such factors should be regarded in investment decisions is indeed justified by theory.¹⁶ The nature of real estate investing — the more limited ability to diversify and the greater potential for large losses would indicate a greater likelihood for asymmetric distributions of returns. The need to consider skewness may be greater for real estate than for securities.

Stochastic Dominance

Another alternative to mean-variance analysis is the stochastic dominance approach in which investment selection is conducted by employing efficiency criteria developed from the concepts of first, second and third degree stochastic dominance.¹⁷

First degree stochastic dominance (FSD) places no restrictions on investors' utility functions beyond the assumption that more wealth is preferred to less, that is, (dU/dw) > 0. To demonstrate, consider two probability distributions, Q(X) and R(X), where Q and R denote the cumulative distributions of two different investments or portfolios.¹⁸ FSD states that investment Q will be preferred to R, independent of the concavity or convexity of the utility function if $Q(X) \leq R(X)$. This is equivalent to the condition that the two probability distributions do not intersect. Figure 2 demonstrates this graphically. The plots P, Q and R represent the cumulative probability functions

for three distinct investments or portfolios. Investment P would be eliminated from the efficient set independent of the utility function. Investments Q and R would be retained, since they intersect and lie to the right of P.

Second degree stochastic dominance (SSD) assumes universal risk aversion or neutrality, $(d^2U/dW^2 \le 0)$,



as well as rationality, (dU/dW > 0). This criterion states that Q will be preferred over R if $\int_{-x}^{x} [R(t) - Q(t)] dt \ge 0$, for all x. Intersection between the cumulative probability distributions may occur, but the cumulative difference between R and Q must remain nonnegative over the entire domain x. SSD makes it possible to choose between investments that do not exhibit FSD. Figure 3 shows this graphically. The cumulative unshaded area for which R(x) > Q(x)always exceeds the shaded area for which R(x) < Q(x) over the entire domain of x.

When neither FSD nor SSD enable selection between two investments, the investor can use third-degree stochastic dominance (TSD). TSD also assumes that (dU/dW > 0) and $(d^2U/dW^2 \le 0)$. In addition, TSD requires that $(d^3U/dW^3 \ge 0)$. In essence, the prospect Q will be preferred to R if $_a\int^x {}_a\int^y [R(t) - Q(t)]d_t d_y \ge 0$, for all x ϵ [a, b] and $_a\int^b [R(y) - Q(y)]d_y \ge 0$.¹⁹

Proponents of stochastic dominance argue for its theoretical superiority over the mean-variance method on the grounds that the dominance criteria place less restrictive constraints on the investor's utility function. Unlike the mean-variance criterion, stochastic dominance orderings are independent of the type of probability function under examination. However, in comparison to mean-variance, the application of stochastic dominance rules requires significantly more data. Dominance criteria require estimation of the entire probability function and larger numbers of comparisons are needed to derive the efficient set of portfolios. The recent development of efficient algorithms for applying stochastic dominance tests have partially alleviated these difficulties.²⁰

The less restrictive utility aspects and the more comprehensive nature of stochastic dominance make it more appealing as an efficiency criteria for investments in general. Especially attractive for real estate is the attribute that stochastic dominance orderings do not depend on the type of probability function describing the investment or portfolio. For example, Feldstein [1969] and also Hanoch and Levy [1969] have shown that the E-V criterion requires that the two parameters of the distribution of returns be independent of one another, which limits the generality of the E-V criterion. Arguing that this restriction may not be so severe in practice,²¹ Levy and Sarnat note that "... risk averse individuals tend to diversify their holdings, that is, they build portfolios of a number of securities. Moreover, mutual funds make relatively large portfolios of hundreds of individual securities readily available even to the small investor. To the degree that the returns of the individual securities are independent of one another, the return on relatively large portfolios should approximate a normal distribution." This conclusion is based on the Central Limit Theorem; and indirect empirical evidence shows that the distribution of returns to mutual funds investors does approximate the normal. The normal distribution depends on only two independent parameters — the mean and variance. Levy and Sarnat conclude that the E-V model provides an appropriate criterion for the mutual funds segment of the securities market. They state that "... to the extent that mutual funds provide a relevant proxy for investment portfolios in general, the statistical evidence suggests that the mean-variance criterion can provide an effective decision rule for most riskaverse investors..." [1972, p. 330].

These conclusions seem more applicable to securities investment than to real estate. While it can be assumed that real estate investors are risk averters and attempt to diversify, their abilities seem more limited. Although the real estate investment trusts (REITs) could provide the small investor with a means of diversification as mutual funds provide for security investors, it appears they do not. Investors may not consider investing in REITs as a substitute for direct real estate equity investment, that is, significant distinctions exist between investing in REITs and direct purchase of real estate. For example, REIT securities trade in relatively efficient and organized national security markets in comparison to the markets for direct real estate equity investment. In addition, direct real estate investment involves management costs normally not associated with REITs. The markets for REITs and direct real estate investment appear segmented and appeal to different classes of investors.

Therefore, it seems that neither mutual funds nor REITs provide a relevant proxy to direct real estate equity investment portfolios. The potential for asymmetric distributions of return and the absence of two independent parameter distributions in real estate investing seem greater.

Conclusions

Selected alternative risk measures and risk screening devices were evaluated with respect to their appropriateness and feasibility for assessing risk in real estate investments. Previous empirical studies in this area which have relied largely on variance type measures of dispersion have indicated that real estate returns in general are less risky than those for common stock. Deficiencies of the variance as a risk measure as well as significant distinctions between the return characteristics of real estate and securities justify a more extensive examination.

The alternative risk screening approaches investigated in this study included beta, semi-variance, skewness and kurtosis, and stochastic dominance. Results suggest that direct real estate equity investing for a given amount of wealth appears to offer lesser opportunity for diversification and greater potential for large losses than for securities investment. A greater likelihood for asymmetric distributions of return for real estate as compared with securities is suggested. To the extent that asymmetry occurs in real estate returns, the semi-variance, skewness and kurtosis, and stochastic dominance approaches appear more appealing in concept than the variance. The measure, S_0 , the semi-variance with zero profit as the point of reference, is appealing for real estate even when the distributions of return are symmetric. The more sophisticated approaches entail greater data and computational problems in application than the mean-variance technique. Since real estate portfolios tend to involve fewer distinct assets and require consideration of fewer pre-selection alternatives than security portfolio selection, these problems are not necessarily prohibitive.

The tractability of the systematic risk or beta concept has definite advantages for real estate investing although the nature of current real estate assets and markets severely limits the applicability of the CAPM in direct equity real estate investment.

Conclusions were based on a conceptual analysis of the characteristics of real estate assets. These characteristics are the lumpiness (largeness), indivisibility, illiquidity, extensive leveraging and greater management role inherent in real estate investment. Extensive empirical research is still needed. 1. For a comprehensive summary of the deficiencies of the variance as a risk measure, see Levy and Sarnat [1970, 1155].

2. Empirical evidence of skewness in security portfolios was reported by Arditti [1971].

3. For a conceptual discussion, see Pellatt [1972].

4. Thirty-three properties from Pacific Mutual Life Insurance Company's real estate portfolio were sampled; the balance was properties held by savings and loan associations.

5. An assumed constant compound rate of growth tends to produce a fairly constant annual holding period return and potentially biases downward the estimated total variance of return for the real estate assets.

6. Risk and uncertainty, while not strictly equivalent [Knight, 1921, Ch. VII], generally are interchanged in investment literature. This follows from the assumption that it is always possible to convert uncertainties into risks by introducing subjective probabilities. For a more elaborate discussion, see Levy and Sarnat [1972, 189-191].

7. See Sharpe [1970].

8. To more adequately demonstrate the distinction between systematic and unsystematic or random risk, consider the variance of equation given by $\sigma_{R_1}^2 = \beta_1 \sigma_{R_m}^2 + \sigma_{T_1}^2$. The total variation in returns to the ith asset, $\sigma_{R_1}^2$, is represented as the sum of the systematic variation, $\beta_1 \sigma_{R_m}^2$, and the random or unsystematic variation, $\sigma_{T_1}^2$. The unsystematic risk, $\sigma_{T_1}^2$, entails the potential for return variations due to labor strikes, fires and other occurrences, and is considered diversifiable. Systematic risk, $\beta_1 \sigma_{R_m}^2$, reflects potential variations in return caused by events affecting the general market for all securities. Examples would include changes in interest rates or government taxing policies. Within a given economy the systematic variation is regarded as nondiversifiable. Mathematically this is shown as follows: let $R_p = \sum_{n=1}^{\infty} X_n R_n^2$

the return to the portfolio where X_i (for all i=1,..., n) denotes the

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proportion of total wealth allocated to the ith asset. The variance of portfolio return could then be shown to be

$$\sigma_{R_{\rm p}}^2 = (\Sigma X_i \beta_i)^2 \sigma_{R_{\rm m}}^2 + \Sigma X_i^2 \sigma_{\eta_i}^2$$

Assuming for concreteness that $X_i = 1/n$, let $\beta = \sum_{n=1}^{\frac{\beta}{n}}$ represent the average β for the portfolio and $\sigma_n^2 = \sum \sigma_n^2/n$, the average portfolio random risk. Thus, $\sigma_{R_p}^2 = \beta^2 \sigma_{R_m}^2 + \sigma_n^2/n$. As $n \to \infty$ (that is, diversification is increased), $\sigma_{R_p}^2 = \beta^2 \sigma_{R_m}^2$, or random risk is eliminated.

9. See the comments by Williams and Findlay [1974, 359] regarding the dissertation of Friedman [1972].

10. Individual real estate projects such as a condominium complex, a shopping center or an office building may often cost millions of dollars.

11. This assumes that risk reduction through diversification occurs through an increasing number of distinct assets held in the portfolio. It may be possible that risk reduction occurs more quickly (that is, with fewer distinct assets) in real estate than with common stocks. This is not apparent and cannot be assumed

common stocks. This is not apparent and cannot be assumed. 12. See "Money Management," *Business Week* (October 11, 1976), 100-109.

13. For a more detailed discussion, refer to Mao [1970].

14. Simulation for the purpose of generating probability distributions of return is receiving increased attention in real estate. See Pyhrr [1973] and Findlay, Tarantello and Messner [1976].

Pyhrr [1973] and Findlay, Tarantello and Messner [1976]. 15. See Arditti [1967, 1971] regarding the third moment, and Tuncer [1975] regarding the fourth moment.

16. See Arditti [1967].

17. See Levy and Sarnat [1970, 1972] and Whitmore [1970].

18. This discussion draws largely from Levy and Sarnat [1970].

19. Refer to Whitmore [1970, 457-458].

20. See Porter, Wart and Ferguson [1973].

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THE REAL ESTATE INVESTMENT DECISION— A WEALTH MAXIMIZATION APPROACH

by C. F. Sirmans and Daniel E. Page

During the last decade real estate has been receiving widespread attention as an attractive investment, probably due to the relative price changes it has undergone as well as the increasing awareness of its tax shelter benefits.¹ Substantial advances have been made in the theory of the investment decision; however, considerable debate has arisen over the best measure to use in ranking investment proposals.² Ellwood, Strung, Friedman, and Messner and Findlay believe that the internal rate of return (IRR) or some variation is the best measure to use. Wendt and Cerf believe a net present value (NPV) model is best.

This paper develops an NPV model that will lead to maximization of the investor's current wealth, an objective consistent with the goals of a rational investor.³ The model can be used by the real estate investor to determine: 1) the investment decision; and 2) the holding period that leads to wealth maximization. Sensitivity analysis will be performed to see how a wealth maximizing solution is affected by changing some of the impact variables.

Investment Decisions: Objectives And Criteria

The first step of the investment decision is to identify the investor's goals. Then appropriate criteria for reaching these goals are selected. Reasons for investing in real estate are: 1) investment security; 2) available cash flows; 3) financial leverage; 4) tax shelter benefits; 5) property value appreciation; 6) equity position; and 7) inflation hedge. The basic underlying objective is maximization of current wealth.⁴ Measures of ranking investment proposals have been developed and are the internal rate of return (IRR) or some variation, and the net present value (NPV) method.

The IRR has received significant attention as the standard measure of return on equity investments in real estate.⁵ The Ellwood and Inwood rates are in essence the IRR. Finance literature has long recognized the pitfalls of using the IRR as a measure of ranking investment proposals.⁶ In 1955 Lorie and Savage pointed out the possibility of multiple IRRs when the cash flows have more than one sign change.⁷ Also, maximizing the IRR will not lead to wealth maximization.⁸ In recognition of the problems of the IRR method, other measures based on it were developed including the adjusted IRR and the Financial Management Rate of Return (FMRR).

The adjusted IRR, developed by Strung in recognition of the reinvestment rate assumptions of the IRR, is a modified IRR that allows for cash flows to be invested at some realistic reinvestment rate. A shortcoming of this measure is that it does not account for other problems such as multiple IRRs.

The FMRR was designed by Messner and Findlay in an attempt to account for all shortcomings of the IRR. This measure still introduces a bias in calculating the rate of return generated by a particular investment. The prespecified reinvestment rate of the FMRR may be no more appropriate than the IRR of the investment.

Given all the problems of the IRR, any variations still contain a bias. The NPV method avoids these problems, correctly discounts at the opportunity cost of funds, and is precisely the same thing as maximizing the investor's current wealth.

The Wealth Maximizing Model

The traditional model of real estate investment de-

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cision making can be written as follows:9

$$E = \frac{\sum_{t=1}^{n} \frac{NOI_t - A_t - I_t - T_t}{(1+r)^t} + \frac{SP_n - SE_n - GT_r}{(1+r)^n}$$

Where:

E	\equiv	the present value of the equity
NOI_t	=	net operating income in period t
A _t	=	mortgage amortization in period t
l _t	=	interest paid on mortgage in period
T _t	=	income taxes in period t
SPn	Ξ	sales price in period n
SEn	=	selling expenses in period n
GTn	=	capital-gains tax in period n
n	П	the expected holding period
r	Ш	the required after-tax rate of return

t

This model calculates the present value of the investor's expected after-tax cash flows from operations and sale given a specific holding period (n). If the NPV associated with a specific n is positive, the investment should be undertaken. Since real estate values fluctuate over time, the NPV calculated for a specific n may not be at a maximum. As stated earlier, a rational investor will try to maximize current wealth by selecting the holding period that maximizes net present value. Finding this holding period requires the calculation of the NPV for each year of the investment's economic life. The resale value of the investment in each year of its economic life also must be considered. Ignoring these resale values may lead to a suboptimal investment decision.

Extending the traditional model to allow for selling the investment in any year, and assuming that all cash flows are known with certainty, leads to the following model.¹⁰

$$\underset{n^*}{\text{MAX}} \text{ NPV}_{\text{E}} = \frac{\sum_{t=1}^{n^*} \frac{\text{ATCF}_t}{(1+r)^t} + \frac{\text{ATER}_{n^*}}{(1+r)^{n^*}} - \text{E}_{\text{o}}$$

Where:

 $n^* = expected holding period$ $NPV_E = net present value of the equity investment$ $ATCF_t = the after-tax cash flow in year n^*$ $ATER_{n^*} = the after-tax equity reversion in year t$ $E_o = initial equity investment and all other variables as previously defined$

The holding period of the investment is the period, n*, that will maximize the NPV of the equity invest-

ment. Steps to determine maximum n* NPV are as follows:

- 1. Set n* = 1, 2, 3, ..., n, where n = the economic life of the investment
- 2. Compute NPV₁, NPV₂, NPV₃, . . . , NPV_n
- 3. Select the n* that maximizes the NPV
- If maximum n* > 0, buy the investment and sell in the year that corresponds to the maximum n*

The use of the model is twofold: 1) to make the investment decision; and 2) to determine the holding period of the investment. To make the investment decision, the investor would choose a specific n*. If NPV associated with that n* were positive, the investment should be made. However, the NPV for a specific n* may not be at a maximum. By doing a complete enumeration over the economic life of the investment, the maximum NPV could be found.

Comparative Statics

The maximum n* NPV is a function of the after-tax cash flows from operations and reversion. Table 1 is an analysis of the comparative static changes in the holding period resulting from changes in key variables. By allowing only one variable to change while holding all other variables constant, the effect on the holding period can be observed. For instance, if rents were to increase (other things being equal), the holding period that maximizes the NPV would increase. An increase in operating expenses will result in the holding period decreasing.

An increase in ope holding period dec	erating expenses will result in the creasing.
	TABLE 1
Comp. In Maximum n*	arative Static Changes NPV With Holding Period (n*)
Variable	Effect on Holding Period

		0	
Rent	∂n* ∂rent	> 0	
Operating expenses	∂n* ∂OE	< 0	
Property value	∂n*		
Property value	∂property	value	> 0
Lateration of the A	∂n*	< 0	
Interest rate (Ioan)	$\begin{array}{c} \begin{array}{c} \partial rent \\ \partial rent \\ \hline \partial 0 e \\ \partial 0 E \\ \partial n^{*} \\ \end{array} < 0 \\ \hline \partial n^{*} \\ \hline \partial property \ value \\ \hline \partial n^{*} \\ \hline \partial i \\ \hline \partial i \\ \hline \partial i \\ \hline \partial SE \\ n \\ \end{array} < 0 \\ \hline \partial n^{*} \\ \hline \partial r \\ \end{array} < 0$		
C II:	∂n*	< 0	
Selling expenses	∂SE	< 0	
	∂n*		
Atter-tax required rate of return	ðг	< ()	

Simulation

To illustrate the application of the model, a hypothetical project was proposed.¹¹ An investor considers purchasing a small office building with the following characteristics:

Purchase price: \$88,515 Rent per month: \$1,500 Growth rate in rent per year: 4% Occupancy rate: 95% Property tax and insurance per month: \$200 Growth rate of taxes and insurance per year: 4% Operating expenses per month: \$180 Growth rate of operating expenses per year: 4% Depreciation basis: \$78,115 Depreciation method:¹² 150% declining balance; component method with replacement of assets as they reach the end of their useful life Amount borrowed: \$70,812 Length of loan: 15 years Expected appreciation of property value per vear: 4% Selling expenses at time of sale: 10% Investor's tax rate: 50% Required after-tax return on equity: 12% Table 2 lists the expected after-tax cash flows, after-

tax equity reversion, the present value of the equity investment, and the NPV of the equity investment for 20 years. To make the investment decision, the investor would choose a specific holding period n*, and determine the NPV for that holding period. If the NPV is positive, the investment should be made. For



Year	ATCF	ATER	PV	NPVb
1	\$ 4.537	\$ 12.617	\$15,316	\$-2.387
2	3,999	15.616	19.688	1,985
3	3.666	19,441	23,686	5,983
4	3,421	24.031	27,295	9,592
5	1,196	29,526	29,455	11,752
6	-2,077	35,674	29,722	12,019
7	3,732	41,770	32,232	14,529
8	3,535	48,721	34,442	16,739
9	-3,206	57,206	34,238	16,535
10	3,876	65,333	35,892	18,189
11	-7,622	75,628	34,407	16,704
12	4,519	84,845	35,603	17,900
13	1,114	95,601	35,990	18,287
14	4,143	107,102	36,844	19,141
15	3,441	119,831	37,541	19,838 ^C
16	5,421	124,642	36,866	19,163
17	5,476	129,481	36,188	18,485
18	15,451	133,255	36,668	18,965
19	-3,077	141,028	35,356	17,653
20	16,489	145,353	35,760	18,057

TABLE 2

a) See text for assumptions

$$\begin{aligned} b) \quad NPV_E &= \sum_{t=1}^{n^*} \frac{ATCF_t}{(1+r)^t} &+ -\frac{ATER_{n^*}}{(1+r)^{n^*}} - E_0; \\ & \text{where } E_0 &= \$17,703 \end{aligned}$$

c) Wealth maximizing holding period

Rent per month	Wealth maximizing holding period
\$1,250	10 years
1,500	15
1,750	15
2,000	20
2,280	20
Interest rate on loan	
.05	15 years
.07	15
.09	15
.11	15
.13	15
.15	15
.17	15
Growth rate in property value	
0%	15 years
2	15
4	15
6	15
8	15
10	18
12	20
After-tax required rate of return	
6%	20 years
8	20
10	18
12	15
14	10
16	8
18	8

Sensitivity Analysis

example, if the investor chooses a holding period of 10 years, the NPV would be \$18,189. Through the use of the model, the investment decision can be made. This holding period, however, does not maximize the investor's wealth. As seen in the table, NPV is maximized in the 15th year. According to the model, this would be the holding period. The NPV of the equity investment at the maximum would have a value of \$19,838. This example (portrayed graphically in the Figure) illustrates why it is necessary to perform a complete enumeration over the investment's entire life.

Although the holding period of this example was 15 years, all real estate investments do not have a holding period of this length. The assumptions of the investment determine the holding period. Sensitivity analysis to examine the change in the holding period was performed on four key variables: 1) rent per month; 2) the interest rate on the loan; 3) the growth rate in property value; and 4) the investor's required after-tax rate of return. Table 3 lists the changes in the wealth maximizing holding period when the model was simulated over various ranges of these variables. As expected, the direction of the change in the holding period was the same as in the comparative static analysis in Table 1. The interest rate on the loan and the growth rate in property value had little effect on the maximum NPV.

Summary And Conclusions

A model was developed that could be used by a real

estate investor to: 1) make the investment decision; and 2) determine the wealth maximizing holding period. The model is an NPV approach to wealth maximization and by using it the shortcomings of the popular IRR method are eliminated. An example illustrated that complete enumeration over the life of the investment must be performed to determine the holding period that maximizes the investor's wealth. Sensitivity analysis showed how an optimal solution changed when key variables changed.



NOTES

1. A study conducted by Eugene Fama and G. William Schwert, "Asset Returns and Inflation," *Journal of Financial Economics* 5 (November 1977), 115-146, estimated the extent to which Treasury bills, Treasury bonds, Common stocks, private residential real estate, and labor income provided hedges against expected and unexpected inflation for the period of 1953-71. They found that real estate was a complete hedge against both types of inflation.

2. Techniques for the valuation of real estate investments range from rules of thumb — gross income multiplier (GIM), to discounted cash flow models — net present value (NPV), to computer simulation models. For a discussion of these techniques, see C. F. Sirmans and Austin J. Jaffe, *Real Estate Investment Handbook*, Prentice-Hall, 1981, Chapters 8 and 9, and Oakleigh J. Thorne, "Real Estate Financial Analysis—The State of the Art," *The Appraisal Journal* (January 1974), 7-37.

3. Eugene F. Fama and Merton H. Miller, *The Theory of Finance* (Illinois: Dryden Press, 1972, Chapter 1).

4. C. F. Sirmans and Austin J. Jaffe, Real Estate Investment Handbook (Prentice-Hall, 1981, Chapter 2).

5. Stephen D. Messner, Irving Schreiber, and Victor L. Lyon, Marketing Investment Real Estate: Finance Taxation Techniques (Illinois: The Realtors National Marketing Institute® of the National Association of Realtors®, 1975), 43.

6. For a review of the literature on the IRR, see Austin J. Jaffe, "Is There a 'New' Internal Rate of Return Literature?" AURUEA Journal (1977), 482-503.

7. Multiple IRRs are not the only problems of the IRR method. The IRR is also sensitive to the size of the initial outlay and the timing of the cash flows. Also, the reinvestment rate assumption of the IRR method may not be appropriate. For a discussion of the problems of the IRR, see Eugene F. Brigham, *Fundamentals of Financial Management* (Illinois: Dryden Press, 1978), 277-286.

8. Thomas E. Copeland and J. Fred Weston, *Financial Theory and Corporate Policy* (Addison-Wesley Publishing Company, 1979, Chapter 2).

9. Paul F. Wendt and Alan R. Cerf, Real Estate Investment Analysis and Taxation (New York: McGraw Hill, 1979 2nd Edition), 52-54.

10. The future cash flows in investment analysis are often uncertain. To allow for these random variables, the model can be written as:

$$\begin{array}{rcl} \max & \operatorname{NPV}_{E} &= & \sum \limits_{t=1}^{n^{\star}} & \operatorname{ATCF}_{t} & \operatorname{ATER}_{n^{\star}} \\ & & & \\ n^{\star} & & & \\ \end{array} + & \underbrace{(1+r)^{t}}_{t+1} & + \underbrace{(1+r)^{n^{\star}}}_{t+1} & = E_{c} \end{array}$$

Where: all variables as previously defined, except the tildes (-), indicate random variables

Assuming a discrete probability distribution could be specified for each cash flow, a finite set of cash flows would occur in each period. Expected values and variances could then be calculated. The cash flows are not independent from one year to the next. Cash flows in year t+1 would depend on events in period t. The model would basically be a one-period autocorrelation model. Each year the investor's forecast would improve concerning upcoming cash flows. Thus, the model would become a dynamic programming problem. Technically, the model would perform the same. The investor would select the holding period that maximized expected current wealth. Abandonment options under uncertainty are discussed more fully in Charles P. Bonini, "Capital Investment Under Uncertainty With Abandonment Options," *Journal of Financial and Quantitative Analysis* (March 1977), 39-54.

11. The cash flows for this example were calculated by a computer program called JMODL, which was developed by the Texas Real Estate Research Center. The basic assumptions of the program are: 1) cash flows can be estimated with certainty; 2) taxes are computed using the 1978 real estate tax laws with no provision made for minimum tax; and 3) any year that a negative cash flow is projected, the investor will borrow funds at some specified shortterm interest rate. These borrowings are repaid with future positive cash flows.

12. The components are depreciated as follows. The land had a cost of \$10,400 or 11.75% of the total cost of the investment.

Asset Description	Cost	Percent Of Total Cost	Economic Life
Basic structure	\$51,254	57.90%	20 years
Electrical system	3,606	4.07	20
Plumbing	8,000	9.04	18
Roof	800	.90	15
Vacuum system	3,500	3.95	10
Light fixtures	1,157	1.31	8
Appliances	2,226	2.51	8
Carpet/vinvl	4,614	5.21	5
Draperies	1,000	1.13	5
Paint/stain	1,958	2.21	4
	\$78,115	88.25%	

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2. Friedman, Jack P., "The Internal Rate of Return Plus the Pull Factor," The Real Estate Appraiser (March/April 1976), 29-32.

3. Lorie, James H., and Savage, Leonard J., "Three Problems in Rating Capital," Journal of Business 28 (October 1955), 229-239.

4. Messner, Stephen D., and Findlay, III, M. Chapman, "Real Estate Investment Analysis: IRR Versus FMRR," *The Real Estate Appraiser* (July/August 1975), 5-20.

5. Strung, Joseph, "The Internal Rate of Return and the Reinvestment Presumptions," Readings in Real Estate Investment Analysis (Massachusetts: Ballinger Publishing Company, 1977), 25-36.

6. Wendt, Paul F., and Cerf, Alan R., Real Estate Investment Analysis and Taxation (New York: McGraw Hill, 1979 2nd Edition).

Critique Optimal Holding Period Analysis: Yet Unresolved

by Bruce N. Wardrep

Austin J. Jaffe presented a criticism of the role of optimal holding periods in real estate analysis to the readers of *Real Estate Issues* in "Optimal Holding Period Analysis: Much Ado About Not Much."¹ Jaffe concludes that "since changes in the holding period have been found to be relatively insignificant, the recent attempts to identify, measure, and analyze the optimal holding periods for real estate projects nearly becomes a futile exercise."² Jaffe's conclusion that the importance of optimal holding period analysis for decision making is barely worth the effort, if useful at all, is based on an analysis by Messner and Findlay³ and on his own research.⁴

The main purpose of the Messner and Findlay paper was, as I see it, to introduce the FMRR technique. That and subsequent papers suggest that a use of FMRR may be to identify optimal holding period. Jaffe's own quote may suggest the importance of the role of investment abandonment in real estate decision making. He quotes: "From this analysis, we can say that an investor planning to hold the property 15± three years would optimize his position ... The greater the spread in years, the less important are exact knowledge of the investor's circumstances or market conditions at the optimal moment of disposition."⁵

Investment decision making is a trade-off between the holding period of an investment and its income producing life. As the difference between the time horizons becomes larger, risk increases and should be offset by increased return.

Trainer, Yawitz and Marshall show this for fixedincome, fixed-principal securities.⁶ They showed an absolute risk in rate of return of up to 8.15 times for holding periods unmatched to security lives. (The risk measurement is the mean absolute value of unanticipated changes in return over the holding period.) In their example, a 50 percent change in



holding period, by a reduction from 10- to 5-year holding periods for a 30-year security, yields a 49 percent increase in risk. It is assumed that such an increase in risk would underscore the importance of holding period analysis. The parallel nature of 30-year securities and real estate investments is important in terms of durability of the investment vehicle and the timing of abandonment decisions. The fixed-principal nature of the security is quite different from real property investments.

This last point elicits a comment about Jaffe's model. Jaffe has described a bond-type investment, and he includes depreciation, debt considerations and income tax considerations. The model does not, however, allow for any changes in income except for

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the decreasing tax deductibility of the debt service payments, creating a nearly fixed-income status. More importantly, the model does not allow for a change in the eventual selling price of the asset, that is, treats it like a fixed-principal security. The reader may be misled and believe that IRR is insensitive to holding period when one cannot draw that conclusion from the data given. What Jaffe presents is a case of apples, from which he concludes that the presence of oranges is unimportant. Trainer, Yawitz and Marshall deal with the situation described in Jaffe's model, bond-type investments, but extend the analysis to recognize price changes.⁷

One may simplify assumptions, but it is not okay to assume away the problem for purposes of simplifying the model. The analyses criticized by Jaffe do not assume that real estate is a fixed-principal security. Perhaps there is a lesson to be learned from those analysts, the portfolio managers, and the financial managers. We have not learned, however, from the sensitivity analysis of a situation that is constant. Jaffe has resolved little regarding the importance of the analysis of optimal holding periods.

The bottom line? The jury is still out on the importance and the cost effectiveness of optimal holding period analysis for real estate decisions. The key problem is an analysis that can disaggregate the effects of changes in various input variables simultaneously using a simulation approach. This is a difficult problem, yet one that should be addressed prior to drawing conclusions on any single factor specified in the analysis.

NOTES

1. Austin J. Jaffe, "When Should Real Estate be Sold?': A Comment" and "Optimal Holding Period Analysis: Much Ado About Not Much," *Real Estate Issues* 4 (Summer 1979), 79-95. 2. *Ibid*, 93.

3. Stephen D. Messner and M. Chapman Findlay, III, "Real Estate Investment Analysis: IRR Versus FMRR," *The Real Estate Appraiser* 41 (July/August 1975), 5-20.

4. Jaffe, supra note 1.

5. Ibid, 89 and Messner and Findlay, 18-19.

6. Francis H. Trainer, Jr., Jess B. Yawitz, and William J. Marshall, "Holding Period is the Key to Risk Thresholds," *The Journal of Portfolio Management* 5 (Winter 1979), 48-54.

7. Trainer, Yawitz and Marshall, supra note 6.

A Reply To New Critics

by Austin J. Jaffe

Upon presentation in 1978 of a working paper entitled, "Optimal Holding Period Analysis: Much Ado About Nothing,"¹ I received a number of comments which argued against the basic premise and specific methodology used in the paper, that is, whether or not sensitivity analysis could be used to identify crucial variables in normative real estate analysis.



Changes in those inputs which exhibited relatively small impacts on output were judged to be relatively unimportant to the analyst. Subsequently, critics frequently pointed out that changes in a set of inputs would result in different sensitivity effects than

would changes in individual parameter values in isolation. This hypothesis was and is undoubtedly correct. After the first dozen demonstrations, however, I thought I had heard them all.

It was hoped that the change in title from the working paper to the published article ("... Much Ado About Not Much")² would permit additional breathing space for skeptics and other critics. In a world where investment analysis was costless to perform and where market efficiency was presumed to be poor, at best, optimal holding period analysis seemed likely to matter. In other words, it remains a frivolous exercise.

Recently, two new critics have appeared armed with new ammunition: a time-tested bow-and-arrow famous in ancient battles but still employed today by "real-world" warriors³ and a shiny new cannon developed in the battles of fixed-income securities fought elsewhere but hopelessly misapplied to the battles waged in this journal.⁴ Since I have previously dealt with the earlier criticism in a different context,⁵ I wish to reply here to the latest thrasher with perhaps the unrealistic hope of ending this particular battle, if not the entire phase of the war.

The author's concern seems to be over the alleged neglect of investment abandonment decisions in the study of sensitivity analysis of real estate projects. Despite a well-defined body of literature on capital budgeting and abandonment value⁶ to which the author appeals, the analysis of optimal holding period selection is perfectly consistent in concept with the consensus of that literature. The techniques of abandonment value analysis were not particularly relevant for my purposes in evaluating the relative futility of optimal holding period analysis.

The author seems to misunderstand the model used in the sensitivity analysis and accuses me of creating a fixed-income investment as a strawman to reject

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the usefulness of the determination of optimal holding period analysis. He then proceeds to cite others who have shown that risk can be viewed as a function of the holding period for fixed-income investments. Therefore, "holding period is the key to risk thresholds."

If the real estate valuation model were similar to that used for fixed-income securities cited, the length of the holding period might matter. However, contrary to the author's beliefs, the discounted cash flow model used in the sensitivity analysis allows for changing net operating income levels as well as for permitting growth in the anticipated sales price of the asset's property rights. Thus, the sensitivity results were shown for an asset which is quite dissimilar to the one the author had hoped to use for a comparison.

If the real estate valuation model were dissimilar to that used for fixed-income securities, then it seems we truly have "a case of apples (where) the presence of oranges is unimportant." But the author also states that "the fixed-principal nature of the security is, of course, quite different from real property investments." Either real estate valuation is or is not comparable to the relevant properties of fixed-income securities. In either case, my basic results seem unaffected by the answer.

Recent research on fixed-income securities has demonstrated the usefulness of alternative measures of yield (for example, duration, coupon bias, etc.) which can be used in valuation.⁷ Much of this research has implied that holding period considerations can affect the riskiness of borrower/lender or buyer/seller positions. However, none of it is particularly relevant to the issue of the usefulness of determining the optimal holding period for real estate investment analysis.

Fundamentally, real estate valuation remains a function of the property's location and this certainly seems true here. The author concludes that "the jury is still out on the importance and cost effectiveness of optimal holding period analysis for real estate decisions." I guess the validity of that conclusion depends on where the courthouse is located.

NOTES

1. Austin J. Jaffe, "Optimal Holding Period Analysis: Much Ado About Nothing," paper presented at the American Real Estate and Urban Economics Association Meetings in Chicago, Illinois, August 1978.

2. Austin J. Jaffe, "Optimal Holding Period Analysis: Much Ado About Not Much," *Real Estate Issues* 4 (Summer 1979), 79-95.

3. Letters to the Editor, "Optimal Holding Period," Real Estate Issues 4 (Winter 1979), 87.

4. Bruce N. Wardrep, "Optimal Holding Period Analysis: Yet Unresolved," *Real Estate Issues* 6 (Fall/Winter 1981), 38-39.

5. Austin J. Jaffe, "'When Should Real Estate be Sold?': A Comment," *Real Estate Issues* 4 (Summer 1979), 79-81.

6. Alexander A. Robichek and James C. Van Horne, "Abandonment Value and Capital Budgeting," *Journal of Finance* 22 (December 1967), 557-589 and others.

7. For example, George G. Kaufman and George E. Morgan, "Standardizing Yields on Mortgages and Other Securities," *American Real Estate and Urban Economics Association Journal* 8 (Summer 1980), 163-179.

Seldin On Change A STRATEGY FOR USING LEVERAGE

by Maury Seldin, CRE

In the previous issue of this journal I wrote about the risk of betting on inflation (see Spring/Summer 1981 — "Betting on Inflation"). A decline in the rate of inflation would produce income streams lower than expected. The price paid for such income expectations would also decline. The double whammy would wipe out the "equity" of many highly leveraged investors.

Since most of us don't really expect the inflation rate to subside in the '80s, we are not ready to give up on real estate or on leverage. Yet, it is prudent to prepare for the unexpected and such preparation is called strategy.

In this issue I will discuss the strategy of using leverage to capture the gain from increasing inflation while at the same time considering the downside risk.

Downside Price Movements

A downside price movement of real estate is less likely to occur than runaway prices. But the low probability is no consolation to the investor who has to live with disastrous results.

This article is the second in a series by Dr. Seldin, which will focus on the problem of change in the real estate industry.



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One way to avoid potentially disastrous results of a downside price movement is to plan on it happening. Prices would drop sharply if the market switched from expecting a rising income stream to expecting a stable or declining income stream. Declining income may come about with individual properties, but if it happens in the market as a whole, many investors who purchased at current prices would simply have to let their real estate go to foreclosure.

A sharp price drop would be a reflection of changed income potentials and the prices paid for income potential. The prices paid would drop sharply because of the combined effect of a lesser income expectation and an increase in the capitalization rate. Thus, it would be the worst time to unload investment real estate.

Over time we could expect a recovery: the income expectation would rise and capitalization rates would move back toward their long run trend. The investor could obtain a reasonable price.

The prudent investor should design staying power on an individual property by not overfinancing it, or for a portfolio by providing for cash flow from some investments in the portfolio to meet the negative cash flow requirements of other investments. Substantial liquid resources are advisable in the portfolio approach because in difficult times the cash flow producing investment may produce less cash than was anticipated.

Leverage As Part Of Defensive Tactics

A focal point for defensive tactics is the strategic use of leverage.

If one has an aggressive strategy, that is, fairly high risk in order to get high reward, then all of the cash flow may be sacrificed in order to capture the appreciation with as little cash as is practicable. The extent to which cash flow has to be given up is first limited by the amount a lender or seller will finance and then by the extent to which the annual constant exceeds the overall capitalization rate.

The annual constant is the ratio of annual mortgage payments to original balance of the mortgage. The overall cap rate is the ratio of debt-free cash flow to acquisition price. To the extent that the annual constant exceeds the overall cap rate, additional borrowing disproportionately reduces the cash flow. With interest rates rising more rapidly than capitalization rates, investors find that the mortgage repayment requirements sop up cash flow so fast that loan-to-value ratios are being reduced.

Some investors such as pension funds and wealthy individuals who wish to protect their assets buy for all cash and thus do not have much risk of negative cash flow. More and more investors either will be buying for all cash or will go about half way by paying cash for the seller's equity and taking over low interest rate assumable loans

The big benefit is to control the property with little cash in order to capture the appreciation with a small investment. The cost of borrowing money is deductible and 60 percent of the long term capital gain is excluded from taxable income. Thus, it doesn't take much appreciation to compensate for high interest rates — at least not numerically.

If the property doesn't appreciate and the debtfree cash flow was not at least equal to the interest cost, then the only benefit will be the tax shelter. Even the tax shelter can become insufficient to produce any profit if the price at which the investor gets out is substantially below the acquisition cost.

What makes sense is to plan on a sales price and date with which the investor can live. The sales price does not have to be the target or most likely sales price; it needs to be only large enough to protect the capital and perhaps a nominal return.

Most projected sales prices are extrapolations of the past and are as useful as projecting the Dow-Jones Industrial averages by extrapolation. They work except for the turning points, and it is the turning points which count.

Projecting Sales Prices For A Defense

In developing a safe strategy for the '80s, the projected sales price should be based on current income adjusted only for relative price changes because the location gets better, and on long run capitalization rates. Such projected prices are lower than acquisition costs. The only way the number will work is for the projected sales date to be far in the future — so far that one could live with the income stream of the property. Living with the income stream is not just a matter of rate of return but also of liquidity.

For aggressive investors prepared to risk all of the down payment to capture substantial equity gains, the approach recommended is to hedge with extreme rather than average leverage.

A 10 percent down payment will capture the gain. The equity will get wiped out fast on the downside. A little more equity will not help much and a lot more will keep the investor there. An investor with 30 percent equity is in both the best and worst positions: the best position because he can probably get enough income to carry the property through difficult times yet give up all cash flow during the most troublesome period; the worst position because he is taking all the downside risk. He would do better to buy with 10 percent down (and the price may be inflated for the terms) and hedge his bet by putting 50 percent down on a comparably priced property. If inflation runs wild, he has two winners, one bigger than the other. He could have made more by using greater leverage on the second, but the foregone profit is a modest price to pay for the security of being able to handle a significant downturn where the 10 percent down property is gone. It is presumed that the property was bought with a sole security clause so that the investor escaped personal liability. The second property produces a positive cash flow through thick and thin.

The plan on the upside called for the high cash flow on the second property to offset the negative cash flow of the first property. In a substantial downturn, the first property is let go, and the second still produces positive cash flow. Although the dollar amount of the cash flow has lessened with hard times, there is not the other property to carry.

The internal rate of return (IRR) could be calculated on each of the two properties under various assumptions. The objective is not to maximize but rather to optimize. Under the most likely scenario, the IRR would be above a minimum level. This threshold strategy permits one to plan on adversity and pay for protection.

Optimization And Factors Affecting IRR

A number of mathematical relationships occur because of the amortization of acquisition and selling costs and the tax structure which augurs for longer holding periods. These are in conflict with the short run gains from rapidly rising prices when one can shift from property to property. Such shifts are not easy and the benefits of time may be too valuable to give up.

The first benefit is amortization of acquisition and selling costs. Acquisition costs vary by jurisdiction and how the investor calculates the cost, with one or two percent being a bare minimum. If the investor's time is worth anything, then the total may be three to five percent or more. We will assume the acquisition cost is three to four percent.

Depending on commission, the selling cost is usually much more. The total of acquisition and selling costs could easily be 10 percent. If the total were 10 percent and the investment period were two years, the result is that about five percent of the average price would be deducted from the total gain when calculating the average annual return. If the holding period were five years, that number reduces to two percent. At 10 years, it is one percent. Short holding periods are expensive, and the average costs decline sharply with time but become of minimal importance after five years or more.

A less obvious benefit related to time is income taxes. For a given projected rate of increase in income and sale price, the IRR increases over time if other factors are equal. That means that unless the rate of appreciation accelerates, the IRR increases with the holding period.

This occurs because IRR is calculated on an aftertax basis. If a property is sold at a gain, some taxes are paid even if at a long term capital gains rate. Reinvested, the money will earn anew but there will be less money on which to earn more profits. The longer holding period uses the wouldbe-tax money to earn more money.

Investors have known this intuitively and have met the situation by trading, which transfers the tax basis and postpones the gain. Although trading is a good way to go, it usually requires a third party to purchase the traded property and some new financing. Unfortunately, long term debt financing at fixed rates may become an anachronism for the '80s.

Lenders have learned the hard way about the interest rate risk. They are setting the due dates so short that investors have cause to worry. It's true that there may be rollover provisions or a variable rate so that the balance does not have to be paid in a lump sum. But what may have to be paid in each successive period is a rising interest rate. Rising rents are expected to offset rising interest rates. Rents either change because of the change in the price level or the change in the real market for property services. Overfinanced properties facing excessive competition or located in declining parts of town are bad bets since they will not necessarily be able to support the rising cost of money.

An excellent handicapper, who can pick properties better than the market in general, can be aggressive with the financing. He or she can also get in and out frequently and afford to bear the transaction and tax costs.

Whether achieved by luck or astute analysis, a winner is a winner and picking them is not easy. Sometimes stubbornness *not* to *sell* accounts for a great windfall. Or the risk-prone buyer who buys without adequate information may also get a windfall. One cannot count on these fortuitous circumstances.

The Best Use Of Timing

Count on time being on your side. If you bet on a metro or subway stop being close to your property, a resurgence of downtown or shopping centers, a shortage in moderate priced housing units, or a development of a particular community, there are some risky decisions to be made. It's difficult to pick the type of property and location, and even more difficult to get both the location and timing.

To approach timing so that it's on your side, be a bit early rather than a little late. Your rate of return will accelerate with time. If you want to get the absolute highest rate of return, then you need to get in just before the upsweep and get out fast. After the upsweep, time is going to lower your rate of return. If you paid too much and too late, any softening of the market will hurt you.

Leverage is a two-edged sword that magnifies losses as well as gains. The potential loss should be considered as a real price for the use of leverage. An additional consideration is that the benefit of leverage dissipates over time and its greatest contribution is in acquisition and the early holding period. As the loan ages, the amount of borrowed money reduces although slowly in the early periods. As equity rises because of appreciation or inflation, the ratio of borrowed money to equity changes and the high leveraged investment becomes a low leveraged investment.

Using leverage — sometimes even high leverage makes sense but everything should not be levered all the way and at once. Staging leverage by time is an excellent approach. The high leveraged properties which become low leveraged in time run into tax shelter problems, and the depreciation may no longer exceed the amortization so that taxable income from the property would exceed the cash flow. This so-called tax crossover is usually a pressure to sell or refinance.

The sale should be on its own rather than tax merits. Refinancing may not be attractive at high rates. The lost shelter may be offset with shelter from new real estate investments. There is a natural force for staged investment especially with high leverage.

Developing A Strategy

It is assumed that the investor seeks a profit through investing in real estate. Once the basic decision has been made, the investor may be passive and have others manage the investment, or he or she may be active and do more than make the basic policy. The implementation is included. The investor may also be a developer who builds for his own account and with partners. In any case, the common thread is an estate building activity.

Rather than being directed at the high flyers, these comments are meant for major investor/developers and institutions with substantial assets to protect.

The currents of the '80s are treacherous and investors who don't paddle somewhere are in trouble. Real estate as a vehicle for moving along is excellent but one must use it properly to achieve the objectives within the risks one is prepared to bear. Since there is a substantial downside risk, the question is how to prepare for it. Aside from keeping substantial liquid assets, the strategy calls for diversifying the real estate portfolio not only by type of property and location but by leverage.

It can be okay to pay the seemingly high rates for mortgage money and to buy with no cash flow. Unless one is prepared to put it all on a single spin of the wheel, plan on adversity by using different amounts of leverage on different properties. An effective way of doing this is to stage the buying period or if one can't wait, then vary the leverage among simultaneous purchases.

Whatever the approach decided on, one should plan in order to be able to live with the choices. Luck may be more important than being smart. But as the pro said in response to a comment on his sinking a 22-foot putt: "'Lucky putt.' That's true — it was lucky. And the more I practice, the luckier I get."

Look for the next Seldin On Change article in the Spring/Summer 1982 edition of REI.

Letter

Dear Lloyd:

Let me commend you for your article "New Perceptions of Value" in *Real Estate Issues* (Spring/Summer 1981).

As advisor to one pooled real estate fund and involved with appraisals in other ways, I come in contact with few MAIs who seem to know that appraisals based on debt equity, band of investment, and comparative sales going back four or five years ago "adjusted" by inflation factors are totally irrelevant.

For the pooled real estate investment fund, I have been urging our appraisers to give us one thing only — their best estimate of the present worth of all economic benefits of ownership of the property, with a holding period from 10 to 15 years. If they insist on adding depreciated reproduction costs and comparable sales figures which are meaningless, we allow it but pay them scant heed.

Actually, real estate is like any other pure investment — whether it be stocks, bonds, gold bars, diamonds, postage stamps, etc. If one casts aside any utilization or pride-of-ownership factors as irrelevant, the owner of the particular investment can benefit in only two ways:

- 1. He gets a predictable stream of income which may fluctuate, may be zero or negative, but can be predicted reasonably and its present value can be calculated; and
- 2. He gets something from nothing to possibly a demolition cost at the time his holding period comes to an end, which also can be projected and discounted.

I would like to question your statement in the concluding section (perhaps because I do not understand it). "Attempts to explain changes with new complicated mathematical formulas are noble but artificial for two key reasons: Investors or sellers do not employ these formulas in arriving at buy-sell decisions ..." If you are referring to relatively simple discounting techniques that bring projections back to present value, I disagree. Investors can and do make buy-sell decisions today more on a total return or IRR basis than on our traditional cash-on-cash method. This is not true for all investors, but it is valid for institutional and many foreign ones.

On the other hand, if you are referring to some of the formulas that expound into four pages of mathematical equations and symbols which only the most erudite appraisers use and understand, you're absolutely correct. Neither buyers nor sellers understand them, are suspicious of them, and simply don't use them.

As a reviewer and user of appraisals, I would be delighted if your suggestions — a detailed section on the financing market, an analysis of any existing assumable debt or locked-in debt, in-depth analysis of a typical purchaser market, a supplementary section with impressions and reasons for probable future market changes, qualifications of all assumptions — were common to all appraisals. But I have yet to see one used and one reason is that most appraisers wouldn't know what to do. A bigger and better reason is that a lot of users won't pay enough to permit the appraiser to do this and still make a living.

In our own practice we do little if any appraising. Several times when I have been asked by people to whom I owe particular attention to do an appraisal, I have been told after quoting a price, "Heavens, we didn't think it would cost more than a few hundred dollars. All we want you to do is tell us what it is worth. Don't call us, we'll call you."

Very truly yours,

Bruce

This letter by Bruce Hayden comments on an article by Lloyd D. Hanford, Jr., CRE, which appeared in the last edition of Real Estate Issues. Mr. Hanford is the owner of Lloyd Hanford, Jr. & Co., a real estate counseling and appraisal firm in San Francisco.

Bruce P. Hayden, CRE, is president of Hayden Associates, Inc., a Connecticut real estate firm specializing in development and the development process. He is also a trustee of the Urban Land Institute and its research foundation.

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Jared Shlaes, Editor-in Chief Real Estate Issues American Society of Real Estate Counselors 430 N. Michigan Avenue Chicago, IL 60611

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