# REAL ESTATE ISSUES

Volume 13
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# 1988 BALLARD AWARD PRESENTED TO MICHAEL FARRELL

Michael Farrell, Ph.D., author of "Speculation in Canadian Housing Markets" in this Fall/Winter 1988 edition of *Real Estate Issues*, has been named the 1988 recipient of the Ballard Award. Given annually by American Society of Real Estate Counselors, the honor recognizes the author whose article best exemplifies the high standards of content maintained in the journal.

In this article, Farrell presents a study of the speculative Toronto housing markets between 1981-1988. He analyzes the use of past prices to predict future costs and calculates the impact of affordability on intrinsic value prices for both the Toronto and the national market.

Farrell found that although the nominal expense of a single family residence in Canada has increased significantly over the last 10 years, housing affordability in terms of debt service may have declined. Given the current uncertainty of future mortgage rates and fear of increased inflation, Farrell states that a downturn in prices in the near to intermediate term could be expected.

Professor Farrell is professor of finance and real estate economics at the Universite du Quebec a Trois Rivieres, Quebec. He holds a masters in mathematics from the University of Waterloo, in Ontario, and a Ph.D. from the University of California at Los Angeles, Graduate School of Management, where he also has been a visiting professor. Farrell has published articles in various academic journals on real estate, finance and urban economics. He is a two-time recipient of the Morguard Literary Awards Competition for his literary work on Canadian housing markets.

Funding for the Ballard Award, which carries an honorarium of $500, is provided by the generous contribution of the William S. Ballard Scholarship Fund in memory of Ballard, a late CRE.

Articles for consideration in next year's competition must be submitted by August 1, 1989 to be eligible.

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The American Society of Real Estate Counselors, a professional affiliate of the National Association of Realtors, was formed in 1953 to establish professional standards for those who provide the public with expert, independent real estate advice for compensation. Membership is by invitation only. The privilege of using the respected CRE (Counselor of Real Estate) designation obligates the Counselor to a strict Code of Ethics and Standards of Professional Practice.

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# Authors Disseminate Information on a Diverse Industry

This edition of *Real Estate Issues* begins with an international real estate flavor. Canadian housing markets (Farrell) and Japanese investment in the U.S. real estate markets (McCoy) collectively provide some unique insights regarding investment attitudes in North America. Later, a special note on the impact of the Canada-U.S. Free Trade Agreement on real estate counseling (Hulley) complements our continuing interest in the globalization of real estate.

The difficult problem of minority interest valuations on the equity side of the market (Patchin) is presented, followed by a switch to the area of tax reform which continues to play a major role in the investment decision-making process. Ongoing discussion concerning the classification of real estate investment assets (Greer) and renewed interest in the use of installment sales as a disposition technique (Levine) brings light to the ever-present relationship between real estate and taxes.

Our final section presents a series of articles on housing and related topics. The measurement of housing affordability (Kamath) begins the section with a note concerning the index (Crellin) appearing later in the journal. Completing the contents are insights into the development of new communities in Florida (Smith and Wilson) and a look at rehabilitation and low income housing tax credits (Bennett & Bible).

As always, you are encouraged to submit your thoughts, comments and, of course, your manuscripts. We again are pleased that the authors in this edition represent practicing counselors, industry leaders and academics.

The journal continues to be a forum offering substantive reflections of the true nature and composition of the real estate field.

Editor in chief

# ROY P. DRACHMAN NAMED RECIPIENT OF 1988 LANDAUER AWARD

Roy P. Drachman, CRE

Roy P. Drachman, CRE, has been awarded the 1988 James D. Landauer Award in recognition of his demonstrated outstanding professionalism in real estate and for furthering the ideals of the Society and the CRE (Counselor of Real Estate) designation.

With 42 years in the real estate industry, Drachman, co-owner Roy Drachman Realty Company, Tucson, Arizona, has provided counseling services to clients in over 80 communities. A national authority on shopping centers and urban land development, he is one of the original partners of Ramada Inns and is co-developer of numerous shopping centers in Arizona and California.

The Roy P. Drachman Institute for Land and Regional Development Studies was founded at the University of Arizona in 1985. The Institute is one of a few research and educational facilities in the United States offering a practical education in the land use and development process.

A member of the Society since 1958, Drachman has served as president, first vice president and as a member of the Board of Governors. He also is a past president of the International Council of Shopping Centers and the Urban Land Institute.

Other honors have included being named first chairman of the Arizona Governor's Advisory Commission on the Environment; Tucson Realtor of the Year; Arizona Realtor of the Year; and 1983 Citizen of the Year by the Arizona Association of Realtors. In 1985, he received an honorary degree from his alma mater, the University of Arizona, for his many contributions to the community of Tucson and to the university.

The Landauer award is named for the late James D. Landauer, CRE, who played a key role in the establishment of the Society and the prestige of the real estate counseling profession. Previous recipients have included Roland Rodrock Randall, CRE, 1986 and James E. Gibbons, CRE, 1987.

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# SPECULATION IN CANADIAN HOUSING MARKET

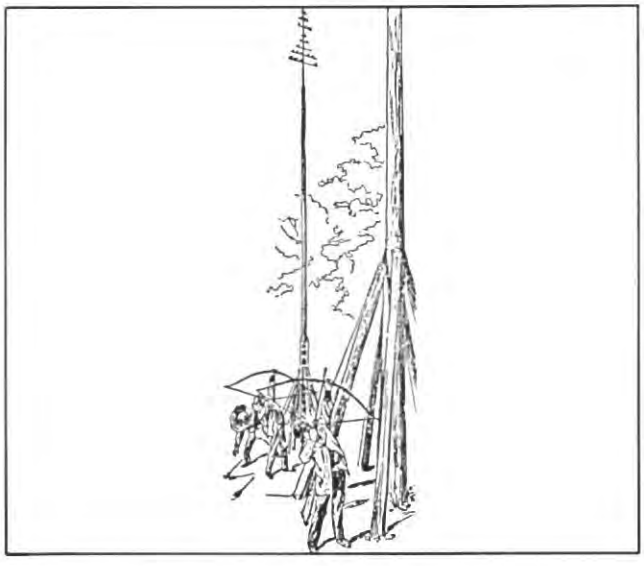
*Uncertain price movements in Canadian single family housing markets imply risk that must be borne by property owners if it cannot be shifted to speculators.*

**by Michael Farrell**

Springtime, to paraphrase Mark Twain, is one of the peculiarly dangerous seasons in which to speculate in real estate; the others are fall, summer, and winter. Mr Twain is right, of course, as many investors who remember the 1982-1984 period of price stagnation in Canadian single family housing markets would agree. But memories are short, and, with the passage of time and a price boom fueled by a prolonged decline in mortgage rates, a generous capital gains taxation exemption, plus a surging stock market, investors are optimistic. Recollections of the boom/bust cycle of 1981 become less immediate as they drift into the conventional folklore of real estate fortunes made and lost during other boom/bust cycles: the boom of 1973-1974 and that of 1969.

Thus, as prices continue to rise, the Canadian housing market appears to be unaffected by the stock market readjustment of the fall of 1987. Some markets are more volatile than others as listing time on the market decreases, and new listings are relatively scarce as prospective sellers hold off in the hope of even higher prices in the near future. Real estate flips in the Toronto residential market, which appeared during the period preceding the stock market crash and indicated a flurry of renewed speculative activity, are dampened by the stock market crash but still show signs of life.

While they do push prices up in short term, successful speculators who do not have enough market power to control prices perform a necessary social function by providing useful information about future prices, reducing uncertainty, and increasing the value of most real estate assets. Government intervention often is advocated as a means of controlling and eliminating real estate



speculation. However, the effect of government intervention, as in the case of the Ontario Land Speculation Tax Act (1974 to 1978), is primarily short term and operates by reversing overly optimistic speculative expectations. Over the longer term, unanticipated secondary effects, including increased uncertainty and a reduction in the efficient allocation of risk, often occur, and these effects impose additional costs on the producers and consumers of real estate services.

The speculator's investment strategy—to buy low and sell high—while easy to enunciate, is much harder to put into practice. Many speculators are essentially technical analysts who look at past prices in an attempt to estimate short-term future prices. They are not interested in fundamental analytical techniques, which attempt to estimate the long-term intrinsic value of a piece of real estate. They are traders who are more interested in immediate price appreciation than in long-term productivity.

The objective of this article is to discuss, in general terms, the impact of speculation in Canadian housing markets.

***Michael Farrell*** is professor of finance and real estate economics at the Universite du Quebec a Trois Rivieres, Quebec, Canada, and visiting professor at the Graduate School of Management, University of California at Los Angeles. He has published articles in various academic journals on real estate, finance and urban economics.

The feasibility of using past prices to predict future prices is discussed, and the impact of affordability on intrinsic value is calculated for both the Toronto and the national markets. While past prices cannot be used to predict future real estate prices, interest rate reductions exert an exponential effect on the prices prospective buyers will pay for single family housing.

### Investor Expectations: The Mechanics Of Speculation And Arbitrage

The value of a real estate investment is determined by the expectations investors formulate concerning the future productivity and profitability of the real estate asset. At any point in time, investors' expectations concerning the impact of factors that influence value, such as interest rates, inflation, income levels, population growth, the impact of government policy on real estate values, etc., are fixed. With the passage of time, unexpected events change expectations about future price levels. Investors continually re-appraise their investments, and prices move up or down in response to the dynamics of supply and demand, generating investment risk which in the absence of speculative markets must be borne by the real estate investor.

Speculation and hedging are two investment strategies that have been developed to bear the risk of changes in value due to shifts in investors' expectations. Arbitrage, although often associated with risk-bearing, is not a risk-bearing device because it does not involve the earning of a return from changes in investors' expectations.

Arbitrage earnings are generated in real estate markets by providing search and information services under conditions of fixed expectations. For example, an opportunity for arbitrage exists if, given fixed expectations, the full information price of a particular piece of real estate is not known. This situation is illustrated in Figure 1, in which the full information price ($P_F$) is not known at time $t_O$. A price spread exists between the bid and the asking price, as indicated. Over time, as more information regarding the full information price of the property becomes available, the price spread narrows, and the bid and the asking price converge on the full information price.

Given the assumption of fixed expectations, $P_F$ will remain unchanged. The real estate arbitrageur can earn an arbitrage profit by purchasing the property at time $t_O$ at a price ($P_S$) below the full information price and selling at some time later ($t_1$) at a price $P_R$ as the bid price approaches the full information price. Since investors' expectations remain unchanged, no speculative profit is earned. The arbitrage profit ($P_R$-$P_S$) is earned for providing search and information services in the real estate market.

In most real estate markets, investors' expectations do not remain constant as the spread between the bid and the asking price converges on the full information price. A combination of arbitrage and speculative profits, the latter generated as a result of changes in expectations, is more likely to occur.

In some cases, arbitrageurs may have a monopoly on information that is unrelated to any special skills but is the result of their access to private or public sector files on prospective land investment decisions or the result of collusion with public officials. When they have access to "insider information," arbitrageurs have expectations that are different from those generally held by the market, and they are in a position to earn a speculative profit due to shifts in market expectations as "insider information" becomes public. In such cases, arbitrageurs act as speculators; the profits they earn are due to changed expectations and not due to providing search and information services.

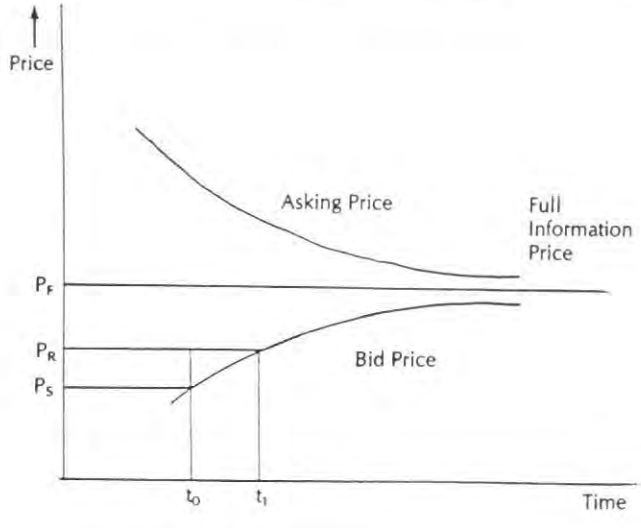
Speculation in real estate markets exists because of the uncertainty concerning the impact of unknown events on the future value of real estate assets. The risk of fluctuations in future values is a fact of life that must be accepted by the asset holder or shifted to someone else. Since most investors do not have the same degree of risk aversion, the existence of speculative markets provides a mechanism for shifting risk. Speculation may be socially desirable in real estate markets when speculators do not have enough market power to influence prices and are knowledgeable in estimating the impact of future events on real estate values.

The purchase of a single family home has two main aspects: (1) the consumption of the flow of housing services generated by the house; and (2) the investment in a piece of real estate.

The demand for the consumption component is determined primarily by such factors as current family income, family size, the price of housing services in comparison with the price of other goods and services, the existence of rent control regulations, etc. The demand for investment in single family homes depends on the present value of the stream of anticipated future cash flows, including the selling price of the property at the time of disposition.

**FIGURE 1**

Arbitrage In Urban Property Markets



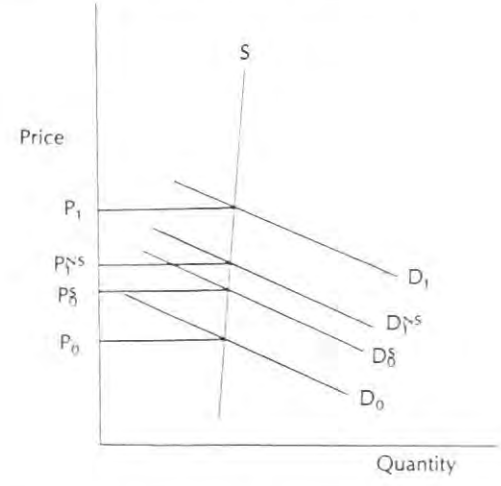
During periods of relative price stability, the investment aspect usually is dominated by the consumption aspect of the purchase decision.

Sudden, rapid increases in prices shift the emphasis from the consumption to the investment aspect of the house purchase as investors become more concerned with capital appreciation. In the short term, speculative purchases are self-fulfilling because the increased speculative demand pushes up prices. This is illustrated in Figure 2, in which the addition of speculative demand at the beginning of the speculative cycle to the base demand ($D_O$), increases the total demand to $D_O^S$ and increases prices from $P_O$ to $P_O^S$. If speculators are skilled in forecasting price movements, sell their holdings, and leave the market in time period $t_1$, demand falls from $D_1$ to $D_1^{NS}$, and prices fall from $P_1$ to $P_1^{NS}$.

Speculators who are skillful in forecasting price fluctuations buy at the bottom of a speculative cycle and sell at the top of the cycle and make a speculative profit. At the same time, they stabilize the boom/bust cycle in real estate markets by pushing prices up at the bottom of the cycle and dampening prices at the top of the cycle. In Figure 2, prices that would have gone from $P_0$ to $P_1$ in the absence of speculators increase only by $P_1^{NS} - P_O^S$ as a result of speculative activity. Investors who miss the cycle pay $P_O^S$ to earn $P_1^{NS}$. If the $P_1^{NS}$ to $P_O^S$ spread is not enough to cover real estate commissions, legal fees, and carrying costs, these investors will lose money and eventually leave the market. Speculators who correctly anticipate future price movements provide useful information about future prices, reduce uncertainty, and increase the market value of most real estate assets. Contrary to what often is assumed by market observers who call for government intervention to control speculation in real estate markets, such intervention may increase uncertainty, reduce the efficient allocation of risk bearing, and impose additional costs on owning, developing and transacting real estate assets.

**FIGURE 2**

The Effect Of Speculation On The Price Of Single Family Housing




### Real Estate Market Price Trends: Technical And Fundamental Analysis

Two different techniques based on opposing sets of assumptions may be used to analyze real estate market price movements. The first, technical analysis, is based on the assumption that past prices contain important information which can be used to predict future prices. Economic factors, such as the location of a particular piece of real estate, its operating performance, the terms and cost of financing, are not considered to be relevant by the technical analyst in determining the timing of real estate investment decisions.

The second technique, fundamental analysis is based on the assumption that a piece of real estate has a basic or "intrinsic" value which can be estimated by a careful assessment of factors that influence value, such as location, financing and operating performance. When prices after transactions costs (e.g., real estate commissions, legal fees, etc., and carrying costs) fall below (or rise above) the estimated intrinsic value, a buying (or selling) opportunity exists because this price shift is a temporary fluctuation that eventually will be corrected. Most of the analytical techniques, including the discounted cash flow (DCF) model used to estimate market or investment value, are examples of fundamental analysis and attempt to estimate the intrinsic value of a piece of real estate.

Critics of technical analysis point out that technicians view investing as a game in which the successful investor anticipates how the market will behave and then adjusts his real estate portfolio accordingly. The technician or chartist believes that, by studying previous market price fluctuations, he can extrapolate past prices patterns and identify future price trends which then can be used to realize above normal returns. Investment advice is based on following and interpreting what the market actually is doing rather than understanding and predicting the economic conditions to which many real estate investors respond.

Although the logic of the fundamental analysis intrinsic value approach is quite respectable over the long term, it may not be the appropriate tool for analyzing speculative price surges that are more short term in nature. The theory of fundamental analysis stresses that the value of a real estate investment should be based on future earnings, including the residual value of the asset at the time of disposition. Whereas real estate investment is a method of purchasing assets to earn a profit in the form of reasonably predictable income and price appreciation over the long term, real estate speculation involves the purchase of real estate with the objective of selling in short term to take advantage of rapid rates of price increase. Income is of little consideration to the speculator and may be negative as in the case of some single family housing markets when, because of rent control, properties are held vacant over the short term and speculative purchases are made with the intention of "flipping" the property before the deal closes.

Lord Keynes, a famous economist and successful investor, pointed out during the Depression of the 1930s that nobody knows for certain what factors will influence future investment values. The estimation of the future revenues and price appreciation growth rates that arise from real estate valuation models can be misleading. If the market becomes overly optimistic about income and growth rates, investors may end up paying too much. As a result, prices may stagnate or even decline while the number of listings increases, time on the market lengthens, and the number of sales is reduced.

In periods of fluctuating investor expectations, uncertainty concerning the timing and the relative importance of factors that influence future investment values tends to increase. As a result, most investors are not concerned about making forecasts of the probable yield of an investment over an extended period of time but about recognizing changes in the conventional basis of investment valuation a short time ahead of the general public.

Keynes compared picking successful investments to participating in a newspaper beauty contest in which you must select, out of a hundred photographs, the three prettiest faces that most nearly conform with the prettiest faces chosen by the group as a whole. One criterion of success is the recognition that personal standards and tastes are irrelevant in determining the contest winner, so the most promising strategy is to choose those faces that the other contestants are likely to find attractive. If it is assumed that the other contestants are likely to do the same thing, then the optimal strategy is not to pick those faces that you think are the prettiest nor those faces that the other contestants are likely to favor. The optimal strategy is to predict what the average opinion is likely to be.

During periods of rising speculative investor expectations, a piece of real estate is worth a certain price to a buyer because he expects to sell it to somebody else at a higher price; the second buyer, in turn, believes that future buyers will be willing to pay a still higher price for the property at some later date. The purchase price is irrelevant as long as another buyer will pay a price that permits the initial purchaser to realize a positive return after paying all costs. There is no logic or intrinsic value, only mass psychology. The value of any asset is worth only what someone else will pay for it, and all the smart investor has to do is beat the market by getting in at the beginning.

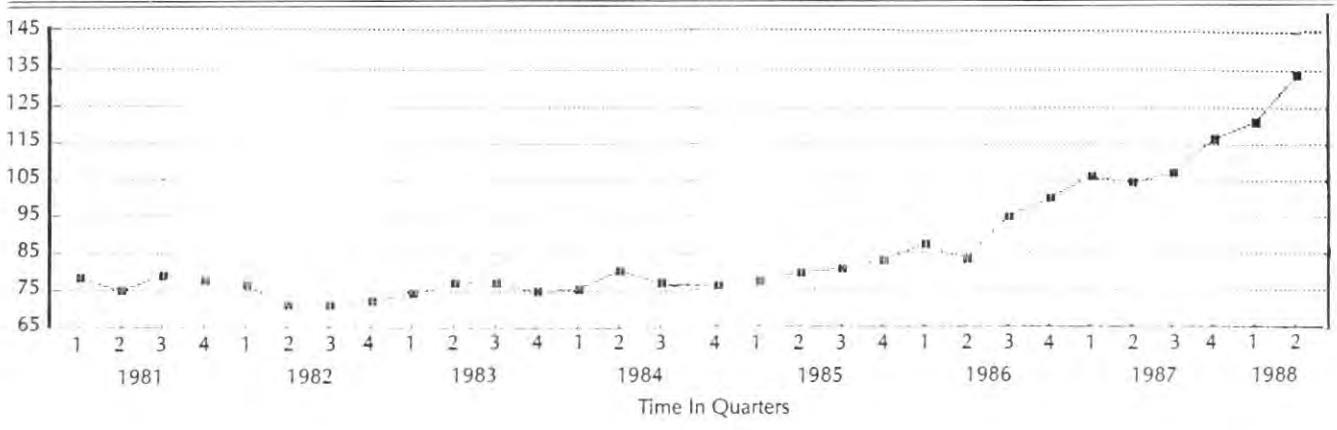
However, sooner or later in a skyrocketing real estate market, some investors will begin to compare the growth premiums that are implicit in current prices with more reasonable estimates of the prospective growth that is likely to be achieved over the longer term. The relatively high rent multipliers typical of overpriced real estate markets are inconsistent with the relatively slow growth in income, increased financing costs and increased risk often found in overheated real estate markets. Over time, fundamental considerations will be re-established as prices stabilize.

In general, there appears to be a yardstick for determining real estate prices, but it is flexible and undependable. Prices are related to certain fundamentals, but the degree of the relationship varies from one time period to another. The standards of real estate value are not fixed and immutable as one would hope; they are fickle and variable relationships that one would expect in a market which is heavily influenced by mass psychology.

### Technical Analysis And Speculation In Canadian Housing Markets

Preliminary analysis of past multiple listing service (MLS) residential price data for all of Canada, presented in Table 1 and Figure 3, suggests that a cyclical price trend occurred from the first quarter of 1981 to the last quarter of 1985, after which prices began to accelerate rapidly. An investment strategy based on technical analysis would encourage investors to use the data to interpret what the market actually was doing in an attempt to measure peoples' emotions rather than try to understand and predict what long-term factors will determine investment value. For example, since chartists would believe there was momentum in the market, Figure 3 could be interpreted as indicating the breakout of an upward trend

**FIGURE 3**
Price Trend (January 1981 to April 1988) – Canada
Price (Thousands Of Dollars)



beginning in late 1984 and early 1985 or the start of a bullish period of continued price increases in the future.

By charting previous market cycles in an attempt to identify price trends in the market, the technical analyst seeks evidence of momentum which, according to theory, indicates that rising prices will continue to rise and falling prices will continue to fall. Accordingly, when residential prices in Canada began, on average, to increase toward the end of 1984, investors would have been advised to enter the market.

Chartists believe that they can identify overbought or oversold conditions which indicate when the price momentum is likely to reverse. For example, an overbought condition is said to exist when price rises have been so dramatic that future buyers are encouraged to buy during the current period to avoid being left behind by the market. An increase in public awareness of rising housing prices, which is produced by newspaper, radio, and television coverage, often whips the market into a frenzy; prospective buyers panic and rush to get into the market, often paying more than list prices.

Overbought positions frequently are followed by oversold positions as speculators and other investors who were trying to time the peak of the market take their profits and run before it is too late. In many cases, however, these profits exist only on paper; thus, in the rush to sell, listings increase, time on the market increases, sales moderate, and the rate of price increase falls or becomes negative.

Since this type of market is based primarily on investor emotion, which can change overnight, it does not easily lend itself to forecasting a shift in price momentum. When investor expectations become too optimistic for the market to carry over the long term, any bad news, such as an increase in interest rates, can induce a shift in investor expectations and initiate a price decline.

Even though prices may seem to repeat, simple price repetition is not enough to enable the technical analyst to forecast future prices. The technician must be able to detect market momentum over time in the form of predictable price patterns in which rising prices are consistently followed by rising prices and falling prices are consistently followed by falling prices.

The existence of price momentum in any real estate market may be tested by comparing the price in any given period with the price in a subsequent period to determine whether successive price movements are sufficiently correlated with each other to permit a forecast of future prices. If prices are significantly correlated, then successive price changes will occur in a consistent pattern, and the pattern can be extrapolated to indicate the direction of future price changes. In Figure 4, the price trend change ($\Delta P$), for Canada is tested statistically, using the runs test, but it does not follow any predictable pattern which can be used to predict future prices; the price changes ($\Delta P$) presented in Figure 4 are random.

In Figure 5, this statistical procedure is repeated for the Toronto market. Even though the price data for the Toronto market in this figure appears to follow an increasing price trend beginning in early January 1985, a statistical check of the price *change* data ($\Delta P$) presented in Figure 6 indicates that the price changes are random and cannot be used to predict future prices in the Toronto market.

Speculators who believe that past prices can demonstrate a rising price trend may be exposed to significant and underestimated risk. While prices may seem to be increasing in an orderly fashion, a closer examination will indicate that the apparent trend is a statistical illusion which cannot predict future prices and earnings above average investment returns. Speculators who are unfortunate enough to fall into this statistical trap may discover that their timing is wrong. If speculators are underfinanced, as is often the case, they may not be able to stay the distance, particularly if the cash flow on the speculation is negative.

**FIGURE 4**

Price Trend Change, $\Delta P$ (January 1981 to April 1988) – Canada
$\Delta$Price (Thousands Of Dollars)

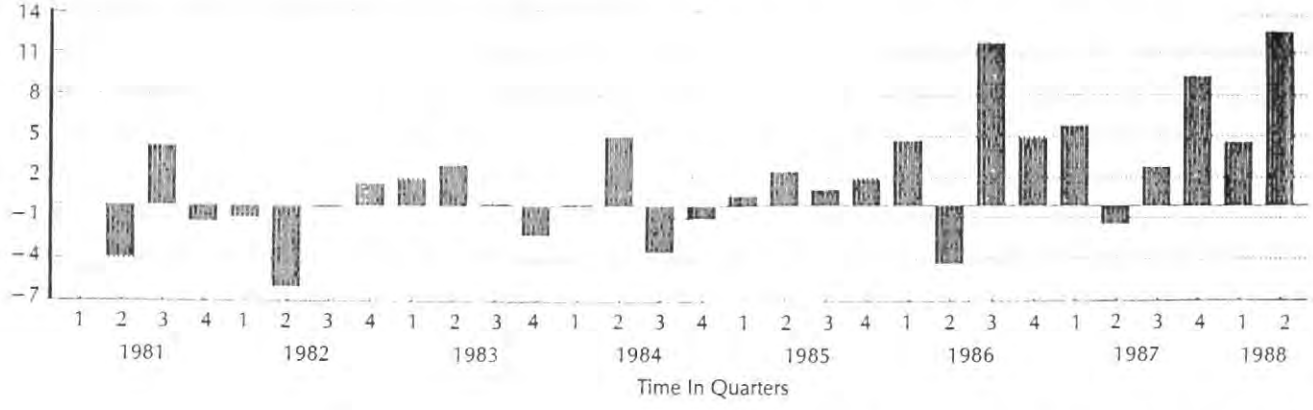


**FIGURE 5**

Price Trend (January 1981 to April 1988) – Toronto
Price (Thousands Of Dollars)

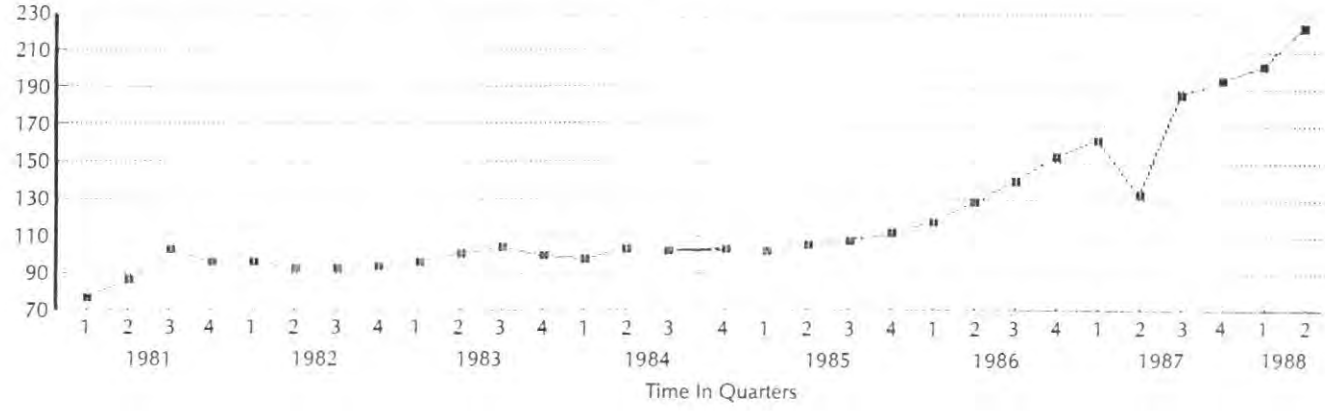
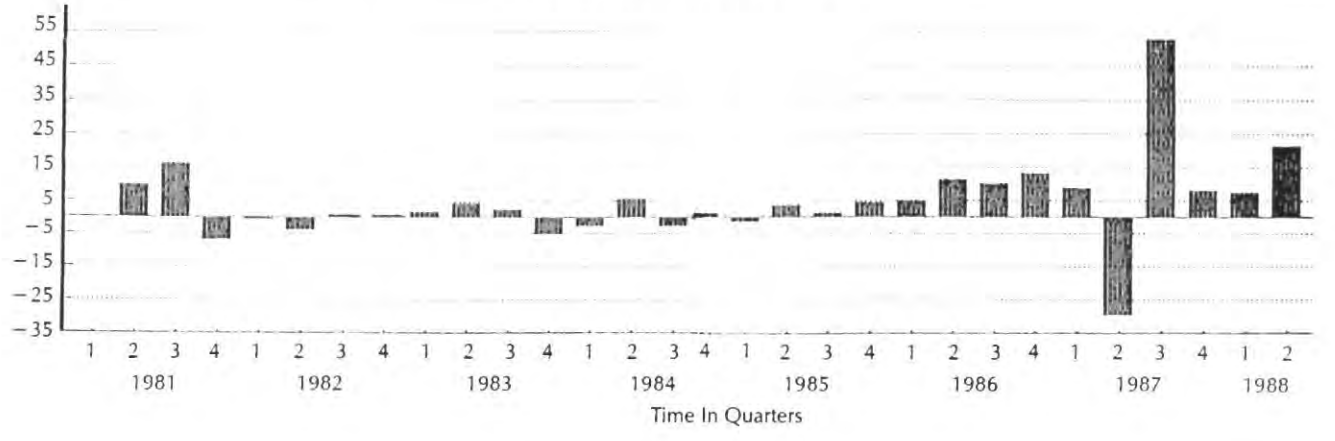



**FIGURE 6**

Price Trend Change, ΔP (January 1981 to April 1988) – Toronto
ΔPrice (Thousands Of Dollars)




## Fundamental Analysis And Speculation In Canadian Housing Markets

The pattern of past real estate prices is of little importance in fundamental analysis, which seeks to determine the proper or intrinsic value of a price of real estate based on the complex interplay between supply and demand. For the fundamental analyst, value is related to growth, income levels, the cost and availability of financing, as well as the riskiness of the investment. If the intrinsic value is above (below) the market price, then the investor should buy (sell) because the market eventually will bid up (down) the price to a level that accurately reflects the real worth of the investment.

Estimating future growth rates, incomes, financing cost and availability and risk, poses a number of serious problems for the fundamental analyst. As a result, most of the analytical techniques for estimating market or investment values must be used with some caution. Even if the data in the analysis is accurate and the analysis is conducted properly, intrinsic value may be affected by external events that cannot be predicted and in many cases appear to occur on a random basis.

For example, the relative growth in suburban real estate market demand in the post-World War II period was fueled in part by relatively cheap transportation costs. During the 1970s, analysts failed to predict the 1973 and 1979 oil embargoes that resulted in a tenfold increase in the international price of oil. Increased fuel costs and the attempt by the federal government to stabilize oil prices increased the uncertainty of all types of investment, including real estate, which could not have been anticipated.

**TABLE 1**

Multiple Listing Service Residential Price And Price Change Data, Canada And Toronto, January 1981 to January 1987 (Quarterly)

| Month/Year | Canada Price | Δ Price Change | Toronto Price | Δ Price Change |
|---|---|---|---|---|
| Jan 1981 | $78,822 | N/A | $77,289 | N/A |
| Apr 1981 | 75,097 | $(3,725) | 87,535 | $10,246 |
| Jul 1981 | 79,400 | 4,303 | 103,946 | 16,411 |
| Oct 1981 | 78,101 | (1,299) | 97,536 | (6,410) |
| Jan 1982 | 77,196 | (905) | 97,235 | (301) |
| Apr 1982 | 71,265 | (5,931) | 94,050 | (3,185) |
| July 1982 | 71,150 | (115) | 94,437 | 387 |
| Oct 1982 | 72,710 | 1,560 | 94,689 | 252 |
| Jan 1983 | 74,576 | 1,866 | 96,822 | 2,133 |
| Apr 1983 | 77,514 | 2,938 | 101,686 | 4,864 |
| Jul 1983 | 77,603 | 89 | 104,553 | 2,867 |
| Oct 1983 | 75,506 | (2,097) | 100,130 | (4,423) |
| Jan 1984 | 75,629 | 123 | 97,821 | (2,309) |
| Apr 1984 | 80,633 | 5,004 | 103,635 | 5,814 |
| Jul 1984 | 77,639 | (3,264) | 101,652 | 1,983 |
| Oct 1984 | 76,476 | (893) | 103,345 | 1,693 |
| Jan 1985 | 77,238 | 762 | 102,566 | (779) |
| Apr 1985 | 79,814 | 2,576 | 106,577 | 4,011 |
| Jul 1985 | 80,982 | 1,168 | 107,855 | 1,278 |
| Oct 1985 | 82,916 | 1,934 | 112,830 | 4,975 |
| Jan 1986 | 87,765 | 4,849 | 118,356 | 5,526 |
| Apr 1986 | 83,591 | (4,174) | 129,647 | 11,291 |
| Jul 1986 | 95,419 | 11,828 | 140,126 | 10,479 |
| Oct 1986 | 100,344 | 4,925 | 153,334 | 13,208 |
| Jan 1987 | 106,148 | 5,804 | 162,690 | 9,356 |
| Apr 1987 | 104,745 | (1,403) | 133,556 | (29,134) |
| Jul 1987 | 107,545 | 2,800 | 186,689 | 53,133 |
| Oct 1987 | 116,900 | 9,355 | 194,896 | 8,207 |
| Jan 1988 | 121,516 | 4,616 | 202,622 | 7,726 |
| Apr 1988 | 134,141 | 12,625 | 224,021 | 31,399 |

Estimating the impact of inflation on market prices is particularly risky because the length of time required by the market to incorporate changed rates of inflation into market prices seems to vary from one time period to the next. During some time periods, housing prices increase faster than inflation, but during other periods, housing prices lag. The increase in prices in Canada lagged behind the rate of inflation for much of the 1982-1988 time period. Price increases were negative in nominal terms in 1982 and 1983 (Table 2) when inflation ranged from 4.9 percent to 11.3 percent (Table 3). The real price increase after adjustment for inflation was 17 percent in 1987 and 10.4 percent in early 1988. Investors who purchased housing in 1982 and sold it in 1986 would not have kept pace with inflation and could have incurred significant losses after paying transactions and carrying costs.

Although the rate of price appreciation in the Toronto market outperformed the national average (Table 1), a comparison of return on total investment (see columns 4 and 5 in Table 3) suggests that the overall productivity of single family homes in Canada may not have varied significantly across the country. This may imply that there was a higher investment premium and higher speculative expectations in the Toronto market than in the entire country.

**TABLE 2**

Annual Multiple Listing Service Residential Price Appreciation Rates (January 1982 to January 1988) (Canada and Toronto)

| | Canada Nominal Rate % | Canada Real Rate % | Toronto Nominal Rate % | Toronto Real Rate % |
|---|---|---|---|---|
| 1982 | (2.1) | (12.9) | 25.8 | 15.0 |
| 1983 | (3.4) | (11.7) | (0.4) | (8.7) |
| 1984 | 1.4 | (3.9) | 1.0 | (4.3) |
| 1985 | 2.1 | (1.6) | 4.9 | 1.2 |
| 1986 | 13.6 | (9.2) | 15.4 | 11.0 |
| 1987 | 20.9 | 17.0 | 37.5 | 33.6 |
| 1988 | 14.5 | 10.4 | 24.5 | 20.4 |

*Source:* The Canadian Real Estate Association

A comparison of the cost of mortgage debt with the return on investment in Table 3 suggests that, in nominal terms, purchasers of single family homes in both the Toronto and the national Canadian markets experienced significant negative leverage during the April 1982 to January 1987 time period. This implies that there were significant carrying costs in nominal terms over extended periods of time which, in the absence of rapid price increases, tends to discourage short-term speculation. After adjustment for inflation, the negative leverage effects were minimal and became marginally positive in January 1985 due to a reduced rate of inflation and falling interest rates. However, to benefit from positive leverage, investors who purchased in 1982 would have had to endure the uncertainty of the large negative nominal rates of leverage during the 1982-1984 time period. Overextended investors who did not have the cash flow to weather the 1982-1984 time period would have been forced to leave the market, often at a loss, unable to "cash in" earned but unrealized returns generated by inflation.

Although nominal prices of residential single family houses have increased significantly over the last 10 years, housing affordability in terms of debt service has not increased appreciably, after adjustment for inflation. In fact, although nominal average monthly debt service (principal and interest) increased from $553 in 1980 to $985 in April 1988 nationally (Table 4), after adjustment for inflation, monthly debt service fluctuated from $869 in 1981 to $503 in 1985. During the 1980-1988 time period, debt service increased from $622 to $754 in constant dollars nationwide.

In the Toronto market, average monthly debt service increased from $468 in 1976 to $1,646 in April 1988, a nominal growth rate of 11.2 percent. After adjustment for inflation, monthly debt service fluctuated from a low of $623 in 1978 to a high of $1,262 in April 1988 and increased at a rate of approximately 4.7 percent from $743 in 1976 to $1,262 in 1988.

While the prospect of a decline in interest rates is questionable, at least in the short term, it would appear that single family homes still are affordable at current prices to

## TABLE 3

Financial Data April 1982 To April 1988 (Quarterly)

| MONTH | CPI (1981 = 100) | Chartered Bank 5 Yr Mortgage Rate | TSE 300 ROI | ROI Canada | ROI Toronto | Rate of Inflation[1] | Nominal Leverage Canada | Nominal Leverage Toronto | Real Leverage Canada | Real Leverage Toronto | Real[2] MLS Price Canada | Real[2] MLS Price Toronto | Return on Equity[3] (Toronto) | | Return on Real Estate (Toronto) Minus Return on TSE 300[4] (Real Return on Equity) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | Nominal | Real | |
| | | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | ($) | ($) | (%) | (%) | |
| April 82 | 108.6 | 19.28 | 12.8 | 7.1 | 7.5 | 11.3 | (12.2) | (11.8) | (0.9) | (0.5) | $ 71,265 | $ 94,050 | (19.6) | 14.3 | 18.7 |
| July 82 | 111.8 | 19.25 | 11.4 | 7.4 | 8.2 | 10.9 | (11.9) | (11.1) | (1.0) | (0.2) | 69,114 | 91,734 | (19.6) | 14.2 | 18.0 |
| Oct 82 | 113.6 | 15.75 | 6.7 | 7.7 | 7.9 | 10.0 | (8.0) | (7.8) | 2.0 | 2.2 | 69,510 | 90,521 | (10.4) | 21.2 | 26.5 |
| Jan 83 | 114.1 | 13.50 | 4.8 | 7.5 | 8.2 | 8.3 | (6.0) | (5.3) | 2.3 | 3.0 | 70,981 | 92,155 | (4.6) | 22.2 | 26.0 |
| April 83 | 115.8 | 13.25 | 3.6 | 7.5 | 8.0 | 6.6 | (5.7) | (5.3) | 0.9 | 1.3 | 72,694 | 95,364 | (5.5) | 16.5 | 17.1 |
| July 83 | 117.9 | 13.50 | 3.6 | 7.4 | 7.9 | 5.5 | (6.1) | (5.6) | (0.6) | (0.1) | 71,482 | 96,306 | (7.2) | 12.1 | 9.4 |
| Oct 83 | 119.2 | 13.00 | 4.3 | 7.5 | 7.9 | 4.9 | (5.5) | (5.1) | (0.6) | (0.1) | 68,792 | 91,226 | (4.2) | 13.8 | 11.5 |
| Jan 84 | 120.2 | 12.50 | 4.9 | 7.4 | 7.7 | 5.3 | (5.1) | (4.8) | 0.2 | 0.5 | 68,330 | 88,381 | (1.9) | 17.8 | 17.4 |
| April 84 | 121.5 | 13.50 | 6.3 | 7.4 | 7.6 | 4.9 | (6.1) | (5.9) | (1.2) | (1.0) | 72,072 | 92,632 | (5.8) | 13.1 | 10.3 |
| July 84 | 122.9 | 15.28 | 7.0 | 8.2 | 7.6 | 4.2 | (7.0) | (7.6) | (2.8) | (3.4) | 68,367 | 89,824 | (10.3) | 6.9 | (3.3) |
| Oct 84 | 123.2 | 13.50 | 6.8 | 8.5 | 8.3 | 3.4 | (5.0) | (5.2) | (1.6) | (1.8) | 67,413 | 91,098 | (3.3) | 11.9 | 6.8 |
| Jan 85 | 124.6 | 12.25 | 6.5 | 8.7 | 8.6 | 3.7 | (3.5) | (3.7) | 0.2 | 0.0 | 67,320 | 89,395 | 3.0 | 20.0 | 18.7 |
| April 85 | 126.2 | 12.50 | 6.9 | 8.9 | 9.0 | 3.9 | (3.6) | (3.5) | 0.3 | 0.4 | 68,683 | 91,714 | 3.0 | 21.3 | 20.5 |
| July 85 | 127.6 | 11.75 | 6.9 | 8.9 | 9.9 | 3.8 | (2.8) | (1.9) | 1.0 | 1.9 | 68,924 | 91,795 | 9.3 | 28.4 | 28.7 |
| Oct 85 | 128.4 | 11.75 | 7.3 | 8.9 | 9.9 | 4.2 | (2.9) | (1.9) | 1.3 | 2.3 | 70,130 | 95,431 | 7.3 | 27.6 | 28.2 |
| Jan 86 | 130.1 | 11.75 | 7.0 | 9.0 | 9.3 | 4.4 | (2.7) | (2.4) | 1.7 | 2.0 | 73,261 | 98,797 | 5.3 | 26.5 | 27.2 |
| April 86 | 131.1 | 11.00 | 6.6 | 8.8 | 8.9 | 3.9 | (2.2) | (2.1) | 1.7 | 1.8 | 69,245 | 107,396 | 4.0 | 23.4 | 23.0 |
| July 86 | 132.9 | 11.00 | 6.7 | 8.3 | 8.5 | 4.2 | (2.2) | (2.5) | 2.0 | 1.7 | 77,972 | 114,505 | 4.7 | 25.7 | 26.0 |
| Oct 86 | 134.0 | 11.25 | 6.2 | 8.7 | 8.5 | 4.4 | (2.5) | (2.7) | 1.9 | 1.7 | 81,324 | 124,269 | 0.7 | 21.9 | 21.8 |
| Jan 87 | 135.2 | 10.50 | 5.3 | 8.7 | 7.5 | 3.9 | (1.8) | (3.0) | 2.1 | 0.9 | 85,264 | 130,681 | 1.0 | 12.7 | 8.7 |
| April 87 | 137.0 | 11.00 | 4.8 | 8.3 | 7.0 | 4.5 | (2.7) | (4.0) | 1.8 | 0.5 | 83,031 | 105,870 | 10.1 | 23.6 | 23.9 |
| July 87 | 139.2 | 11.25 | 4.6 | 8.3 | 7.6 | 4.7 | (3.0) | (3.7) | 1.7 | 1.0 | 83,904 | 145,650 | (0.4) | 13.7 | 11.1 |
| Oct 87 | 139.8 | 11.50 | 6.7 | 8.2 | 7.6 | 4.3 | (3.3) | (3.9) | 1.6 | 0.4 | 90,811 | 151,480 | (3.3) | 10.4 | 5.1 |
| Jan 88 | 140.8 | 11.75 | 7.5 | 8.0 | 8.2 | 4.1 | (3.8) | (3.6) | 0.3 | 0.5 | 93,726 | 156,284 | (2.1) | 10.2 | 4.5 |
| April 88 | 142.5 | 11.25 | 8.0 | 7.6 | 7.0 | 4.0 | (3.7) | (4.3) | 0.3 | (0.3) | 102,230 | 170,728 | (3.8) | 10.3 | 4.6 |

1. Month-to-month inflation rate
2. Real price = (108.6 / current CPI) * (Current price)
3. Return on equity = 4 (return on investment) -3 (cost of debt)
4. Assuming a 100 percent equity investment

Data Sources: Canadian Real Estate Association
Royal Lepage, Survey of Canadian House Prices
The Bank of Canada

**Table 4**

Average Monthly Debt Service (Principal And Interest) Current Dollars And After Adjustment For Inflation. (April 1976 to April 1988) Canada And Toronto

| | Current Dollars[1,2] | | Inflation Adjusted Dollars | |
|---|---|---|---|---|
| | Canada | Toronto | Canada | Toronto |
| 1976 | N/A | $468 | N/A | $743 |
| 1977 | N/A | $450 | N/A | $662 |
| 1978 | N/A | $461 | N/A | $623 |
| 1979 | N/A | $521 | N/A | $645 |
| 1980 | $553 | $626 | $622 | $705 |
| 1981 | $869 | $1,030 | $869 | $1,030 |
| 1982 | $854 | $1,117 | $771 | $1,009 |
| 1983 | $739 | $978 | $631 | $835 |
| 1984 | $693 | $929 | $567 | $760 |
| 1985 | $639 | $859 | $503 | $676 |
| 1986 | $683 | $901 | $514 | $678 |
| 1987 | $742 | $1,155 | $539 | $838 |
| 1988 | $985 | $1,646 | $754 | $1,262 |

1. 25-year amortization period compounded semiannually.
2. 75 percent loan to value ratio.

prospective purchasers who have realized positive rates of growth in real incomes.

The continued affordability of single family homes and the ability of single family housing markets to sustain a prolonged period of price increases will depend on future interest rates as well as the growth rate of real incomes which are difficult to forecast. A measure of the sensitivity of the potential demand for single family housing to shifts in mortgage rates can be estimated from the market price which may be sustained by current debt service payments at varying levels of interest rates. For example, in April 1988, assuming a mortgage rate of 11.25 percent, the monthly debt service on the average residential property in Canada, which cost $134,141, was $985. (This debt service assumes a 75 percent loan-to-value ratio and a 25-year amortization period with semi-annual compounding.) If interest rates increased to 14 percent, $985 per month would support an average price equivalent of $111,900.

The price equivalents that could be supported by the April 1988 monthly debt service are given in Table 5 for the national market as well as the Toronto market. As mortgage rates fall, the rate of price increases that can be supported by a constant monthly payment rises at an accelerating rate. This may explain to some extent the exponential-like increase in positive investor expectations resulting from interest rate decreases which at first glance seem to be overly optimistic when compared with the interest rate reduction.

The exponential effect of interest rate changes also can work in the opposite direction as interest rate increases depress the market price which can be sustained by a constant debt service payment. Five-year term mortgage rates, which vary between 9 percent and 14 percent, imply a price range of $111,900 to $158,700 nationally and $187,000 to $265,200 in the Toronto market.

**TABLE 5**

Price Equivalents[1,2], Canada And Toronto

| Interest Rate (%) | Canada | Toronto |
|---|---|---|
| 1 | $348,600 | $582,500 |
| 2 | 311,000 | 518,300 |
| 3 | 277,600 | 463,900 |
| 4 | 249,700 | 417,300 |
| 5 | 225,900 | 377,500 |
| 6 | 205,300 | 343,500 |
| 7 | 187,600 | 313,500 |
| 8 | 172,100 | 287,600 |
| 9 | 158,700 | 265,200 |
| 10 | 146,900 | 245,500 |
| 11 | 136,500 | 228,100 |
| 11 3/4 | 129,400 | 216,400 |
| 12 | 127,300 | 212,800 |
| 13 | 119,200 | 199,200 |
| 14 | 111,900 | 187,000 |
| 15 | 105,400 | 176,100 |
| 16 | 99,600 | 166,400 |
| 17 | 94,400 | 157,800 |
| 18 | 89,600 | 149,700 |
| 19 | 85,300 | 142,500 |
| 20 | 81,400 | 136,000 |
| 25 | 66,100 | 110,400 |
| 30 | 55,600 | 92,900 |

1. Assumes a 25-year amortization period and a 75 percent loan to value ratio and semi annual compounding.
2. Base rate = April 1988; monthly debt service is $1,646 assuming price of $224,021 and a mortgage rate of 11.25 percent. ($29,134)

Currently, five-year mortgages are approximately 11.75 percent, which implies a price equivalent of $129,400 nationally and $216,400 for the Toronto market. These estimates compare favorably with the latest MLS residential average transaction price of $128,969 nationally and $230,900 in the Toronto market reported in the monthly statistical summary prepared by the Canadian Real Estate Association. The spread between the estimated and the actual MLS price in the Toronto market may indicate that a speculation premium is paid by investors in the expectation of interest rate fluctuations.

Finally, a comparison of the return on equity in the Toronto real estate market with the return on the Toronto Stock Exchange (TSE) 300 index suggests that real estate significantly outperformed common stocks after adjustment for inflation during the April 1982 to April 1988 time period (Table 3). Real estate outperformed the stock market by a wide margin in real terms, ranging from 6.8 percent in October of 1984 to 28.7 percent in July of 1985, and it was outperformed by the stock market only once, in July 1984, when the real return on the TSE 300 index exceeded the real return on the Toronto real estate market by 3.3 percent. The performance of Toronto real estate may be explained in part by leverage effects and fiscal considerations which may, in some cases, be more

readily available to real estate investors than to those who invest in common stocks.

## Conclusion

Most analytical techniques used to estimate market or investment value are examples of fundamental analysis, which attempts to determine the basic or intrinsic value of a piece of real estate based on factors such as location, financing, and operating performance. While fundamental analysis may be the appropriate tool for determining long-term intrinsic value, short-term speculative price changes may fluctuate above or below the intrinsic value, rendering it inapplicable to short-term price estimation. Fundamental analysis suffers from another, perhaps more serious weakness in that it cannot anticipate the impact of unexpected events, such as the oil embargo, on the price of real estate assets.

Indeed, the results of the study presented here showed that during the period from January 1981 to April 1988, there was no indication that past housing prices in Canada or Toronto contained a price momentum which could be used to predict future price movements. Technical charts of real estate prices, which seemed to indicate upward price trends, were more likely to be statistical illusions and provided no useful information for earning above normal returns from investing in real estate.

Although the nominal price of a single family residence in Canada has increased significantly over the last 10 years, housing affordability in terms of debt service may have declined. While nominal average monthly debt service increased from $553 in 1980 to $985 in April 1988, debt service adjusted for inflation increased moderately from $622 to $754. In the Toronto market, the annual nominal debt service grew at approximately 11.2 percent, increasing from $468 in 1976 to $1,646 in April of 1988. After adjustment for inflation, the annual growth in debt service charges dropped to about 4.7 percent in real terms, which may be significantly less than the growth in real incomes for many buyers over the same time period.

Thus, at current interest rates, housing does not seem to be overvalued. However, the impact of interest rate changes appears to have an exponential effect on housing affordability. Upward pressure on mortgage rates will tend to dampen speculative expectations and drive many speculators out of the market. Given the current uncertainty concerning future mortgage rates and fears of increased rates of inflation, a downturn in prices in the near to intermediate term should not be unexpected.

The essential uncertainty of price movements in Canadian single family housing markets implies risk which must be borne by individual property owners if it cannot be shifted to others. Speculators who do not control the market price and who are more skilled and resourceful in bearing risk than other investors perform a needed service by bearing the risk that other investors may not want to carry. Presumably, speculators are less risk averse than the average real estate investor and will take on additional risk in the expectation of earning a return for performing this service.

While government intervention often is advocated as a means of controlling speculation, its objectives may be more political than economic. Short-term speculative activity in most Canadian single family housing markets seems to be dominated by small speculators who cannot influence market prices. Speculation appears to be a cottage industry that appears in response to short-term changes in market price and are beyond the control of individual speculators. Legislation, such as the Ontario Land Speculation Tax Act of 1974 (OLSTA), appears to act as a government sledgehammer to kill a speculative fly which will disappear on its own when the market changes. While OLSTA did reduce overoptimistic investor expectations in the short run, it may have increased uncertainty and imposed additional costs on real estate producers and consumers over the longer term and contributed to future price instability. In attempting to increase price stability, government intervention may have the opposite, unintended effect of increasing price uncertainty and thus encourage the demand for speculative risk bearing.

### NOTES

1. Harris, Jack and Born, Waldo. "Timing real estate acquisitions." *Real Estate Review*, Vol. 16, No 2, (Summer 1986).

2. Malkiel, Burton G. *A Random Walk Down Wall Street* (4th Edition) New York: W.W. Norton & Company, 1985.

3. MacKay, Charles. *Extraordinary Popular Delusions and the Madness of Crowds*. London: Richard Bentley, 1841; Republished Bonanza Books, 1981.

4. Strung, Joseph. "MLS-More than just a listing service," *Canadian Real Estate Journal*, Vol. 2, No 1, (Winter 1981).

5. A discussion of the runs test used to test successive price changes for randomness is beyond the scope of this article. It can be found in most introductory statistics texts.

# JAPANESE INVESTMENT IN U.S. REAL ESTATE

*Barring a major disruption in oil prices or world trade, the Japanese will be investing in U.S. real estate for some time to come.*

**by Bowen H. McCoy, CRE**

The history of dealing with Japanese investment in U.S. real estate can be characterized by two axioms: one only learns how to deal with another when things go wrong; renegotiating a transaction and restructuring a financing are the real tests of a long-term relationship.

One project that had to be renegotiated with the Japanese involved the Westin Bonaventure Hotel in downtown Los Angeles. The project was financed with equity from Mitsubishi International Corporation and a long-term fixed rate mortgage from Equitable Life Assurance. Although the hotel was completed on time and at projected cost, room rates and occupancy levels did not meet *pro forma* projections; the hotel consequently had operating deficits equal to about 20 percent of initial project cost.

To protect their initial investment and prevent others from reaping the benefits of stabilized returns, the Japanese equity investors had to be convinced to provide additional funds to cover the hotel's operating deficits. At the same time, the advisory firm arranged a refinancing program which diluted the developer partner, brought in a tax shelter equity investment group, extended loans from banks and established a first mortgage accrual program.

Almost 10 years later, a project involving the Pac West office building had to be renegotiated. The building was completed on time and within budget, but the leasing period became extended, and a leasing deficit of 20 percent of the project's cost had to be funded. The renegotiations with Mitsubishi Estate Corporation and Meiji Mutual Life Insurance Company took 15 months to accomplish and required four trips to Tokyo to obtain the additional funds and to reallocate partnership losses.

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**Perception Versus Reality**

There are a number of misconceptions commonly associated with Japanese investment in U.S. property.

*Overpayment*

In almost all cases when Japanese institutions paid the highest price for a property in this country, a prospective U.S. purchaser was right behind. Recently, evidence indicates that the initial return requirement for Japanese purchases is increasing.

*Huge Investment Totals*

Japanese investment, while large in recent years, accounts for only 8 percent of the total foreign investment in U.S. property.

*Limited Investment Preference*

Japanese investment never has been limited to existing high-rise urban office buildings. Beginning in the early 1970s, Japanese capital has been invested in residential land deals, development hotels and office buildings, and Japanese investors have purchased shopping centers and extensive industrial property.

*Low Cost Tokyo Takeout*

Interest rates in Japan have been significantly lower than they have been in the United States. For a time, Japanese banks were willing to lend on the unrealized appreciation on property owned in Japan. Such loans obviously entailed exchange risk if they were utilized to purchase U.S. property. More recently, this type of speculative lending has been discouraged. Although U.S. affiliates of Japanese banks have lent dollars to Japanese borrowers, they have done so only at prevailing U.S. interest rates.

**Why Do They Do It?**

Institutional equity investment by the Japanese in U.S. property totaled $5 billion during 1984-1986 with $3.3 billion in 1986. Investment increased to $7 billion in 1987, and an increase to $10 billion is predicted for 1988. Japanese investment in U.S. real estate is prompted by several factors.

*Lower Returns on Real Estate in Japan*

Returns on real estate in Japan typically are 1 percent to 2 percent, making the 7 percent to 8 percent return on U.S. real estate appear uncommonly attractive.

*High Land Cost in Japan*

Land cost for an urban office tower is about 20 percent of the total project cost in the United States but 90 percent of the project cost in Japan. Land may cost as much as $3,000 or even $5,000 per square foot in Tokyo. At a floor-area ratio of 10:1, the land cost per rentable foot is $300 or higher, requiring a rent of as much as $45 per foot annually to achieve a true equity return by U.S. standards. This makes almost any office building purchase in the United States appear attractive at $300 per foot, including the fee interest.

*Favorable Yen/Dollar Exchange Rates*

During the period when returns on real estate in the United States were falling, the Japanese still made more than acceptable returns on their U.S. investments because of the difference in value between the dollar and the yen.

*Liquidity of U.S. Real Estate*

An active trading market in U.S. real estate among principals as well as an active market in real estate mediated by brokers provide Japanese investors with a perceived way out of U.S. investments which has not existed within their own marketplace.

*Cheap Financing*

Japanese real estate has appreciated significantly in recent years, and a large portion of the unrealized gain is being utilized as collateral to support borrowings from the Japanese banking system to acquire U.S. property. The Japanese banking system has been highly liquid and aggressively establishing a position in the U.S. real estate market.

*Tax Incentives*

U.S. depreciation schedules, tax rates, provisions for interest deductibility, etc., are much more liberal than Japanese tax breaks on real estate.

**Where Do They Go From Here?**

A close look at the Japanese and the U.S. economies provides the basis for predicting future investment in U.S. real estate by the Japanese. Strong appreciation since 1985 pushed the yen to historic heights. Despite some retreat (10%) from the highs against the dollar this year, the yen remains one of the strongest currencies in the world. Thus, the yen will remain an attractive currency with which to purchase U.S. assets. Yen appreciation has, however, reduced Japan's export volume and encouraged imports. The drop in export volume is beginning to have a positive impact on the U.S. trade deficit; the deficit is narrowing faster in the physical volume of goods than in dollars because of the yen's appreciation.

The Japanese domestic economy has experienced a dramatic shift from export-driven growth to internal, consumer-driven growth. Domestic consumption has grown so extensively, it has made up for the drop in exports. The Japanese economy also has experienced growth in housing and in major construction. Behind the strength in domestic demand are strong gains in real disposal income. Inflation is less than 1 percent per annum and is driven down by cheap imports. A high personal savings rate of over 15 percent (compared to a U.S. savings rate of less than 4 percent) suggests that domestic consumer spending will continue to expand.

Japanese exports to the United States are continuing at high levels, even though the Japanese are absorbing large foreign exchange losses because they are being paid in weak dollars. Japanese export profits have been cut severely as they have held onto market share. Meanwhile, at current exchange rates, Japanese labor costs have risen over the past four years from 50 percent of U.S. labor costs to close to parity. Because of foreign exchange losses and rising labor costs, it has been estimated that, before long, the Japanese will produce more than 1.5 million automobiles a year in the United States.

Large U.S. trade deficits will continue for several years and require capital inflows. In recent years, the foreign private sector has not been willing to make the required investment, and foreign central banks have had to take up the slack. When the dollar was weakening, foreign investors were discouraged from buying U.S. financial assets (U.S. Treasury securities, corporate bonds and corporate equities), because of repeated currency losses. But now that the dollar is close to its low ebb, long term direct foreign investment in manufacturing and real estate assets is extremely attractive. Multinational corporations worldwide have 15 percent of their plant and equipment located offshore; the Japanese only have 3 percent of their manufacturing capacity offshore.

U.S. economists say the dollar will fall another 1 percent to 15 percent against the yen before trade patterns reverse

and reflect the changes in consumer spending patterns that have occurred in the United States. Such a decline in the dollar carries with it higher interest rates and a heightened risk of recession. Even if the dollar falls, however, it will take at least four years to nullify the trade deficit. Thus, for the next three to five years we may expect to see continuing reinvestment of excess liquidity by the Japanese in the U.S. marketplace. The Japanese will shift their portfolios among the debt markets, the stock market, direct manufacturing investments and real estate as their perception of markets change.

**Conclusion**

The Japanese have established a highly visible position in U.S. real estate, and they no doubt will add to this position in the near future. In certain markets, such as downtown Los Angeles, they actually may be able to excercise a degree of market control within the next few years.

However, the Japanese come from a landlord's marketplace in which annual rents can equal $120 per square foot and landlords require a three year rental deposit upfront. It is difficult to shift mentally from such a landlord's market to a tenant market. The Japanese, therefore, must become educated to provide tenant service, and they must develop first-rate property management and leasing capabilities.

# MARKET DISCOUNTS FOR UNDIVIDED MINORITY INTERESTS IN REAL ESTATE

*Sales of minority interests in real estate are associated with significant discounts.*

**by Peter J. Patchin, CRE**

The fair market value of an undivided minority interest in a parcel of real estate has long been a topic of discussion among real estate appraisers. The major problem encountered in the valuation of a minority interest is an extreme lack of market data upon which to base a value judgment. While undivided minority interests in real estate are not all that rare, the sale of these interests by themselves or separate from the sale of the entire property is comparatively rare.

Publications concerning minority interest valuations have dealt with business enterprises.[1] However, data derived from a study of business enterprises is difficult, if not impossible, to apply to real estate because the rights of individuals with minority real estate interests differ significantly from the rights of minority stockholders in a corporation. One major difference is that the owner of a minority real estate interest may sue for partition of the property by a court. Under this action, all co-tenants are parties to the lawsuit either as plaintiffs or defendants. If the court finds that the property cannot be divided fairly and equitably, it orders the entire property to be sold.

Another major difference is that the co-tenant, or minority real estate interest owner, has the right to sell his interest, by itself. However, such a transaction is often difficult because the following factors detract from the quality of a fractional real estate interest as an investment. Key investment criteria of marketability, liquidity, acceptability as collateral and denomination all are affected:


- The owner of a minority interest in real estate usually has little control over the management of the property.
- Few buyers are willing to purchase fractional interest in a property.
- It is unlikely that mortgage financing can be obtained for the purchase of a fractional interest in property.
- The use of a fractional interest in real estate as collateral to obtain borrowings for other needs also is limited.
- If an owner of a fractional interest exercises his right to enforce a partition sale, substantial legal costs will result. If anticipated, a prospective buyer would deduct these costs from any purchase offer.

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- An owner of a fractional interest may have to wait until the owner of the majority interest sells out in order to avoid partition expenses and realize any capital gain.

When one reviews the difficulties involved in selling a minority interest, a discount from the proportionate value of the whole appears to be reasonable.

In an effort to gather data on market discounts in sales of minority real estate interests, an advertisement was placed in the "Data Search" column of *The Appraiser*, the monthly newsletter published by the American Institute of Real Estate Appraisers. The response to this ad was gratifying in that four MAIs provided data and valuation techniques. This information was used to analyze the results of 54 sales of minority interests in real estate, including 29 sales of minority interests in apartment buildings in Minnesota, 24 sales of minority interests in agricultural lands in Texas and other states, and one sale in a mobile home park in California. Given the wide range of property types and geographical locations, the final results were remarkably uniform.

Table 1 illustrates the differences in the sales of the minority interests by type of property and ownership. Data from 54 sales of minority interests in real estate that were sold by themselves, not as a part of a sale of the full parcel of property, indicate that the sales were associated with substantial discounts. A 35 percent discount appears to be the starting point, with adjustments up or down depending upon individual circumstances. The 29 sales of apartment building limited partnerships have a very large standard deviation, which indicates that the market was disorganized and poorly informed. The agricultural land sales studied have much smaller standard deviations, which indicates that the market was better organized and informed.

The sales of these minority interests involved far more appraisal work than normally would be associated with the same number of other types of sales. Each minority sale first had to be appraised to determine the full value of the property as a whole. Therefore, each minority sale had to be accompanied by from three to six sales of similar properties to derive the value of the whole interest.

Once the valuation of the whole interest was obtained, various techniques were employed for estimating the discount in each minority sale. Depending upon the type of property involved, estimation of minority interest discounts in land sales may be comparatively simple (see Example 1). Estimation of the discount in a sale of improved property may be difficult because of details concerning improvements made on the property and partnership rights (see Example 2).

**Example 1**

An undivided 1/8 interest in a 240-acre parcel of agricultural land was sold, for $21,000 in cash, in an arm's-length transaction in May 1986. Four sales of nearby agricultural lands of similar size and with similar production capabilities indicated that the market for the full interest in the parcel was $1,100 per acre. The minority interest discount for this sale was calculated as follows:

| | |
|---|---|
| Value of Full Interest (240 Acres @ $1,100) | $264,000 |
| Indicated Value of 1/8 Interest ($240,000 × .125) | $ 33,000 |
| Actual Selling Price | $ 21,000 |
| Indicated Discount $\left(\frac{\$33,000 - \$21,000}{\$33,000}\right)$ | 36.6% |

**TABLE 1**

Summary Results Of 54 Sales Of Minority Interests In Real Estate

| Appraiser or Data Source | Property Type | Location | Number of Sales | Size of Interest | Date of Sale | Indicated Discounts Range | Mean | Median | Standard Deviation |
|---|---|---|---|---|---|---|---|---|---|
| Peter J. Patchin, MAI Burnsville, Minnesota | Apartment buildings Limited partnership | Minnesota | 29 | 1.5% to 18% | 1980 to 1986 | 0% to 82.4% | 44.6% | 39.7% | 23.2% |
| Dee McElroy, MAI Wharton, Texas | Agricultural lands | Texas | 6 | 10% to 50% | 1972 to 1981 | 44% to 79.0% | 56.0% | 50.0% | 11.2% |
| James Brabant, MAI Escondido, California | Mobile home park Limited partnership | California | 1 | 14.3% | 1985 | 14.6% | 14.6% | 14.6% | N/A |
| Don Harris, MAI Lubbock, Texas | Agricultural lands | Various | 18 | 10% to 75% | N/A | 15.2% to 54.5% | 32.1% | N/A | 8.3% |
| | | | 54 | | | 0% to 82% | 36.8%* | 34.8% | |

*The mean, when weighted by the number of occurrences in each group, is 41.2%.

**Example 2**

A 4.5 percent interest in a subsidized 320-unit apartment building in good condition, built in 1969 in Minneapolis, Minnesota, was sold in July 1986. Under the terms of the subsidized housing financial arrangements, the partners in the building had the right to withdraw 6 percent of their original equity capital each year as a dividend. In this case, the partner with 4.5 percent minority ownership realized annual dividends of $1,277.28. In addition, each partner had the right to participate in the capital gain obtained from the sale of the property when the subsidized housing restrictions expired in April 1988.

Analysis of comparable sales and rental data indicated that the apartment building had an unencumbered value of $9,100,000 at the time of sale of the minority interest. Assuming 3 percent per year appreciation between July 1986 and April 1988, the anticipated date of the sale of the full interest, the unencumbered value of the building would be about $9,600,000.

The value of the discount for this partnership interest could be summarized as follows:

| | | |
|---|---|---|
| Present Worth of Net Income ($1,277.28/year for 1 year, 10 months @ 15% equity yield discount) | | $ 1,895 |
| Present Worth of Reversion | | |
| Selling Price of Property | $ 9,600,000 | |
| Less: Selling Costs | $ (291,000) | |
| Less: Mortgages & Other Debt | $(3,197,000) | |
| Net Proceeds to Equity | $ 6,112,000 | |
| Present Worth Factor to Date of Reversion @ 15% | × .8197 | |
| Present Worth of Equity Reversion | $ 5,010,000 | |
| Partnership Share @ 4.5% | × .045 | |
| | $ 225,450 | |
| Indicated Market Value of Minority Interest ($1,895 + $227,345) | | $227,345 |
| Actual Selling Price | | $ 50,000[2] |
| Indicated Discount $\left(\frac{\$227,345 - \$50,000}{\$227,345}\right)$ | | 78.0% |

An attempt was made to learn if the minority interest discount varied with the size of the minority interest. Since the cost of a partition action would be the same regardless of whether a fractional interest was 5 percent or 50 percent, one would expect the smaller fractional interest to bear larger discounts. After the results of the sales were arrayed in order by the size of the minority interest, no consistent pattern was found between the size of the discount and the size of the minority interest. Therefore, this particular data group yields no evidence that smaller minority interests bear larger discounts.

## Conclusions

There is considerable published evidence to support the concept of using discounts in the sale of minority interests in real estate. For instance, a recent *Wall Street Journal* article stated that major secondary market buyers of limited partnerships "demand a 20 percent to 40 percent discount from asset value."[3] In addition, the principle of minority discounts has long been a part of case law. A recent court decision reaffirmed the principle, by allowing a 15 percent discount for 50 percent ownership interest.[4] The results of the foregoing study consequently do not stand alone.

Although the study identified a 35 percent mean/median discount in 54 sales of minority real estate interests, the discount most likely will vary depending on the relationship among owners and the likelihood of sale of the full property. If a property is likely to be sold as a whole in the foreseeable future and the various owners are in harmony, the discount may be lower than the 35 percent mean/median discount. On the other hand, if there is discord among the owners and no prospect of selling the whole property in the foreseeable future, the discount may be much larger.

### NOTES

1. Harper, John S., Jr. and Lindquist, J. Peter. "Quantitative support for large minority discounts in closely held corporations," *The Appraisal Journal*, April 1983, p. 270.
2. The actual selling price may be compared to the original investment of approximately $21,000, some 17 years earlier. This apparent capital gain, plus tax advantages derived over the life of the investment, helps explain the seller's motives.
3. Braunigan, Martha and Lipman, Joanne. "Getting out: A secondary market emerges for limited partnerships," *The Wall Street Journal*, May 1, 1986, sec. 3, p. 1.
4. *Propstra* v. *U.S.* 680 F 2d 1248 (U.S.C.A., 9th Cir, 1981).

# THE THREE BOXES OF REAL ESTATE LIFE IN THE NEW AGE OF TAXSPEAK

*The 1986 Internal Revenue Code forces taxpayers to consider the tax implications of real estate transactions.*

**by Gaylon Greer**

The Internal Revenue Code of 1986 contains changes in tax law that make real estate decisions as much an exercise in tax management as one of economic analysis. Moreover, the new code contains about 150 penalty provisions that, together, make errors or oversights in compliance to tax laws ruinously expensive.[1] Every investment and investment management decision now must be made with an eye on its income tax implications.

To protect their share of the consulting market in the new age of "taxspeak," real estate counselors need to develop a heightened sensitivity for the impact of real estate decisions on their clients' income tax positions *vis-a-vis* other assets. Counselors also need to be able to knowledgeably discuss income tax strategy with clients and their tax advisors.

### Tax Skills For The New Age

Who is better positioned to deal with real estate-related income tax complexities than accountants, who are trained in tax law compliance as a part of their professional education? Unfortunately, for those who must compete with public accounting firms for real estate clients, this logic, though flawed, is compelling.

In a very real sense, the new Internal Revenue Code has done much to level the income tax playing field for those who have prior background in tax law. The 1954 Code survived (with numerous and voluminous revisions) for 32 years, but the changes proposed for 1986 were so extensive that lawmakers deemed it prudent to start from scratch with a new code. So little remains of old real estate-related provisions that prior tax knowledge yields only a marginal advantage over newcomers to tax liability management.

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### The Three Boxes

The 1986 Internal Revenue Code forces taxpayers to sort income and expenses into three separate boxes. Within each box, contents are netted to derive taxable income or tax-deductible losses. Net income from the various boxes is then merged to determine aggregate taxable income for the year. Net losses in some boxes, however, may not be netted against income in other boxes; they must be carried forward to the next taxable year—even when taxpayers have significant aggregate taxable income in the other boxes.

Income, expenses and credits are categorized by their source—active, passive or portfolio activities—and each category is consigned to a separate box. Positive net income from the *passive* and the *portfolio* boxes is merged with net income or net losses in the *active* box before income tax liability for the year is determined. With only minor exceptions, however, net losses in the passive box cannot be merged with income in the other boxes. Instead, the passive activity losses must be carried forward and mixed with passive activity income in subsequent years.[2]

Net losses in the portfolio box are fully merged with income or losses in the active income box only if the taxpayer incurred no interest expense in connection with portfolio activities. After a phase-in period, portfolio-related interest expenses may be merged with active income but only to the extent that portfolio losses exceed portfolio interest expenses.

Of course, taxpayers who experience passive activity losses will want to vigorously pursue strategies to avoid carrying the losses forward. A thorough understanding of the designated activity boxes goes far toward suggesting potentially profitable avenues for these taxpayers.

*The Active Income Box*

Income from wages, salary, employment bonuses, etc., fall in the active box. Profit or loss from operating a trade or business is included in this box only if the taxpayer's participation in the business or trade meets stiff criteria for *material participation*. These criteria require the owner to be actively involved in business operations, year-round, on a *"regular, continuous* and *substantial basis."*[3] The tax-writing committee listed several signposts that indicate when a business owner's participation is material:

- Is the activity the taxpayer's principal trade or business?
- How close (geographically) is the taxpayer to the activity?
- Does the taxpayer have knowledge and experience in the activity?[4]

*The Passive Activity Box*

Passive activities include ownership interests in most rental property and in any trade or business in which the taxpayer does not materially participate. All net income or losses and all credits from these activities are deemed passive activity income, losses and credits unless they qualify for a special exception.

*Special Treatment For Landlords.* Rental real estate is defined as a passive activity in Code Section 469(c)(2), which states: "The term 'passive activity' includes any rental activity." Elsewhere in the Code, however, special provisions permit up to $25,000 of losses and loss-equivalent tax credits from rental real estate to be offset against income in the active income box. This special exception is gradually phased out as adjusted gross income (computed before net passive activity losses are determined) moves from $100,000 to $150,000.[5]

To qualify for the exception, a taxpayer must have at least a 10 percent ownership interest in the property and must be an active participant in rental operations. The active participation requirement is less stringent than the requirement for material participation in a business. The Senate Finance Committee's report on enabling legislation describes active participation as making management decisions or arranging for others to provide services such as repairs and maintenance. Moreover, Code Section 469(i) specifies that services performed by a taxpayer's spouse may be attributed to the taxpayer in the determination of active participation.[6]

*Discrimination Against Limited Partners.* Limited partnership interests specifically are excluded from the favorable treatment that is accorded real estate losses incurred by active participants. Code Section 469(h)(2) states: "Except as provided in regulations, no interest in a limited partnership as a limited partner shall be treated as an interest with respect to which a taxpayer materially participates." Section 469(i)(6)(C) states: "No interest as a limited partner in a limited partnership shall be treated as an interest with respect to which the taxpayer actively participates." Taken together, these provisions effectively foreclose any possibility that limited partnership interests may be characterized as anything but passive activities.

*A Temporary Cushion.* The Code incorporates special relief provisions for taxpayers who acquired assets that fit within the passive activities category if ownership was effective (or a binding contract leading to ownership was in effect) prior to enactment of the law. Thus, the Code allows a portion of losses from these activities to be offset against income from other sources until 1991, but it reduces the portion that is eligible for this treatment each year between 1987 and the final cutoff year of 1991.[7]

Even more liberal transition rules apply to ownership of qualifying low-income housing projects that were acquired before enactment of the law. These special transition rules are extremely complex, and they are applicable only in very limited circumstances.

*The Portfolio Activities Box*

Portfolio income consists of interest, dividends, annuities and royalties that are not derived in the ordinary course of a trade or business and gains or losses on the sale of property that generates portfolio income or is held for investment. In this context, investment specifically excludes any interest in a passive activity.

All interest expenses except consumer interest, qualified residential interest and passive activity interest, is investment interest which may be claimed as a currently deductible item only to the extent of portfolio income. Any disallowed investment interest expenses are carried over and included with investment interest expenses in the following year.[8]

**Tax Management Strategies**

Framers of the new Internal Revenue Code attempted to set up impenetrable barriers among the three boxes. Tax avoidance strategy largely consists of attempting to defeat legislative intent by moving activities from one box to another or by having certain items of income or expense identified with activities in a specific target box.

*Transfer Active Income To The Passive Box*

Taxpayers who realize net losses from passive activities need offsetting passive income. Business owners may be able to transfer some business income to the passive box by altering their degree of involvement in a profitable segment of the business so they will not be deemed material participants. Legislators inadvertently set the stage for this strategy by drafting extremely stringent criteria for gauging the materiality of participation.

Any portion of the business that is geographically distant from the proprietor and any distinct activities in which the proprietor is not well versed or frequently involved, is a candidate for transfer to the passive activity box. The business segment or activity must be separable or operated as a separate business entity. If it is not, the Internal Revenue Service simply will re-allocate income and expenses to defeat the taxpayer's effort. A competent accountant can advise taxpayers on the degree of separation that is required and set up separate books.

*Move Interest Expense Between Portfolio And Passive Boxes*

Taxpayers whose net losses in the passive activity box are partly attributable to interest expense and who have portfolio income may be able to eliminate all or a portion of their passive losses by reallocating some of their passive activity interest expense to the portfolio box. This shifting may be done, for example, by borrowing against one's stock or bond portfolio and (indirectly) using the loan proceeds to reduce mortgage indebtedness on rental property or to pay off loans against limited partnership shares.

Investors who have portfolio losses attributable in part to interest expense but who have net passive activity income, can solve their problem by reversing the strategy. They may borrow against passive activity assets and use funds to (again, indirectly) reduce debt that is currently attributable to their stock or bond portfolios.

*Exchanges: Income For Growth Or Growth For Income*

Except for the minor exception outlined earlier, passive activity losses cannot be used to offset income in the active or the portfolio box. Net losses from one passive activity however, can be used to offset net income from others. This suggests a tax avoidance strategy that seeks balance in the passive activity box—balance that results in approximately zero net income within the box.

Balance in the passive activity box is achieved by mixing passive activity loss assets (PALs) with passive income generators (PIGs). A passive activity asset mix that currently generates net losses suggests the need to divest some PAL assets or acquire some PIG assets or perhaps do both. Taxpayers who expect to report net income in the passive activity box may want to adjust their asset mix so it contains a higher portion of PALs.

The need for periodic rebalancing of PIGs and PALs gives like-kind exchanges a new luster.[9] Exchanging low land-to-building ratio properties for high-ratio properties reduces the depreciation component of an investor's income statement; an exchange in the opposite direction increases it. Net income can be banked to offset losses in the future by exchanging cash flow rental properties for properties with little net cash flow but substantial appreciation potential; exchanging appreciated low-cash flow properties for properties with current net income is a way to "cash in" while spreading the income over several years (instead of taking it all in one year as would be the case with a cash sale).

An additional motive for like-kind exchanges to shift from current income-generating assets to growth assets is to keep adjusted gross income below the amount that causes loss of the pass-through of as much as $25,000 of real estate-related PALs to the active income box. Recall that this special treatment of real estate losses is being phased out pro rata as adjusted gross income moves from $100,000 to $150,000. Taxpayers whose adjusted gross income is about to deprive them of this special break can bank a portion of their income by trading income-generating real estate for appreciating property that currently produces little or no net operating income. (Because operating expenses constitute an adjustment to gross income, the net operating income in effect shows up on the investor's tax return as a part of adjusted gross income).

*Exchanging Assets For Stock*

Taxpayers who have an incorporated business other than an S corporation or a personal service corporation can shelter taxes from PALs that otherwise would be carried forward by transferring some of the PAL assets to their corporation. Such transfers are permitted by Code Section 351(a), which stipulates that "no gain or loss shall be recognized if property is transferred to a corporation by . . . persons solely in exchange for stock or securities in such corporation and immediately after the exchange such . . . persons are in control . . . of the corporation."[10] Does this create a PAL carry-over problem for the corporation? No. Closely held C corporations (other than personal service corporations) are permitted to use passive losses and credits to offset net active income.[11] Moreover, because incremental corporate tax rates exceed those of individuals with the same amount of taxable income, the corporation will derive more tax shelter benefit from PALs than the taxpayers would.

Evidence of indebtedness (bonds and notes) is classified as a security if the bonds or notes are of sufficiently long maturity.[12] This means that taxpayers can actually trade passive assets for evidence of corporate indebtedness. However, if the assets transferred to a corporation are subject to any indebtedness, tha taxpayer must be able to show "by the clear preponderance of the evidence" that there was a *bona fide* business purpose for the transfer and that tax avoidance was not the principal purpose.[13] Otherwise, the debt relief will be treated as money received in a transaction, and any difference between the taxpayer's adjusted tax basis in the asset and its market value will be recognized as a gain in the year of the exchange.

**Competing In The New Age**

After the market adjusts to the new income tax environment, real estate investment will regain its appeal. Nonetheless, because tax implications have become an inescapable and continuing element in all rational real estate transactions, investors must incorporate an extensive litany of tax rules into their planning and investment decisions, or they must engage professionals to do so on a continuing basis.

If practitioners who have traditionally provided real estate consulting services do not offer advice on the tax implications of real estate transactions, investors will have to turn elsewhere. The logical alternative is the accountant, who provides tax compliance (that is, tax return) service for investors. In that event, the inherent economy and convenience of one-stop consultative service will enable the accounting industry to accelerate its rate of colonization of the real estate consulting profession.

If, on the other hand, real estate counselors master the rudiments of the new tax rules, they have the opportunity to regain lost competitive ground. It is much easier for a real estate practitioner to master the intricacies of the narrow sliver of the Internal Revenue Code that is required to perform tax-smart real estate consulting than it is for tax accountants to develop competence in real estate analysis. Public accounting firms have attempted an end-run on the real estate consulting business by adding experienced real estate consultants to their staffs. This approach can work the other way: real estate counselors can add to their staffs, or team up with, competent income tax accountants.

**NOTES**

1. Smith, Delos R., "Tax For the Memories. An Interview With Former IRS Commissioner Roscoe L. Egger, Jr., *"Across The Board"* (June 1987): 46-52.

2. Corporations (other than S corporations or personal service corporations) get a better deal; they can offset passive losses against active (but not portfolio) income. See 1986 Internal Revenue Code Section 469(e)(2).

3. IRS Code Section 469(h).

4. Guidelines provided by the tax-writing committee. See *Prentice Hall's Explanation of The Tax Reform Act of 1986* (Paramus, NJ: Prentice-Hall Information Services, 1986): 504.

5. IRS Code Section 469(i). For married taxpayers filing separate returns, the amount of loss that can be offset against active income is reduced to $12,500, and the *pro rata* phaseout occurs between $50,000 and $75,000 of adjusted gross income.

6. IRS Code Section 469(i).

7. IRS Code Section 469(1).

8. IRS Code Section 163(d).

9. IRS Code Section 1031 states that no gain or loss will be recognized on a qualifying exchange when all the assets that are received are of like-kind. To qualify under Section 1031, both the assets that are tendered and those that are received in the exchange must be held for business or investment purposes and not for personal use or resale. For a detailed description of like-kind exchange rules under current law and IRS regulations, see Greer, Gaylon and Farrell, Michael, *Investment Analysis for Real Estate Decisions*, Second Edition (Chicago: Longman Financial Services Press, 1988): Chapter 12.

10. See IRS Code Section 351. Section 351(a) defines *control* as owning at least 80 percent of the corporate stock (whether voting or nonvoting) immediately after the stock-for-assets transactions. Code Section 351(e) exempts exchanges by investment companies and corporations under the jurisdiction of a bankruptcy court.

11. See IRS Code Section 469(e).

12. It is unclear what maturity makes a note a security. The IRS requires maturities of at least ten years before they will issue an advance ruling on the question. See Rev. Proc. 81-10, 1981-1, C. B. 647.

13. IRS Code Section 469(e). Section 357(b) stipulates that transferred liabilities are boot if (a) the principal purpose is tax avoidance or (b) there is no *bona fide* business purpose for the transfer.

# THE DEMISE AND RESURRECTION OF INSTALLMENT SALES

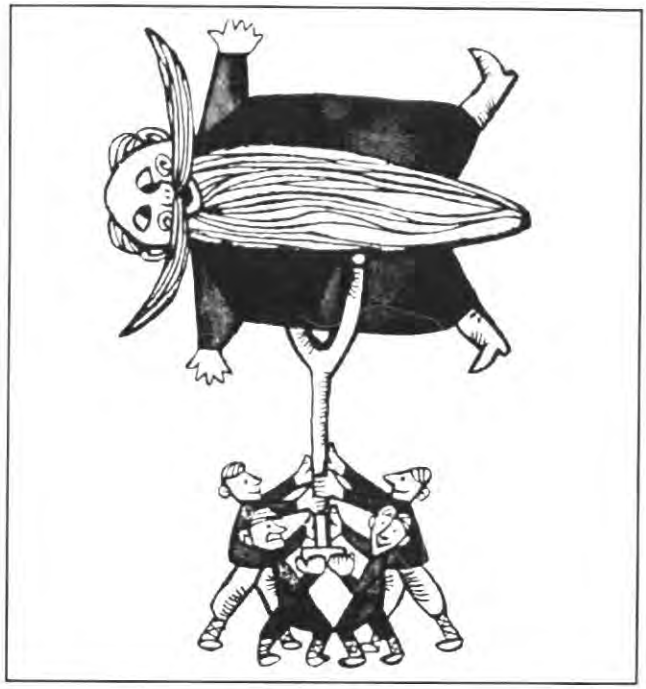
*Government intervention continues to separate the taxpayer from utilizing the time value of money.*

**by Mark Lee Levine**

Historically, the U.S. Congress has allowed taxpayers to undertake a hybrid method of reporting income, aside from the cash or accural methods, by using what has been referred to under the Internal Revenue Code of 1986 as the installment payment method.[1]

Although Congress historically restricted the use of the installment sale technique, prohibiting its use when taxpayers received more than 30 percent of the sales price in the year of sale, that restriction was eliminated by legislation. Congress nevertheless required taxpayers to report as taxable a proportionate part of each principal payment received in a given year, based on a profit ratio. Thus, if a taxpayer sold a property for $100,000 and achieved a gain of 40 percent or $40,000, ignoring the interest on payments that might be owing to a seller who was owed a note (or carried back a note) from the buyer, 40 percent or $.40 of each payment dollar received by the seller would be taxable gain; $.60 of each dollar would be a return of the investment.

One question for taxpayers in this setting is how to determine what payments were received in the year of sale. Payments of option money (when the option is ultimately exercised and the purchaser buys the property), down payments in the year of sale, principal payments made on the note in the year of sale and similar items are treated as payments in the year of sale under the installment sale rules; thus, a proportionate amount of each payment is treated as profit or gain; a proportionate amount (in the example given, 60 percent) is a return of the investment.



On a more sophisticated level, Congress addressed situations involving taxpayers who received the benefit of monies but did not receive payments in the year of sale. Such a scenario could arise when a taxpayer was deemed, by tax law, to have received a payment in the year of sale; for example, when a taxpayer-seller had an encumbrance on a property and agreed with the purchaser to have the purchaser assume or take over (subject to) the encumbrance or mortgage. This was a clear benefit to the taxpayer. The question was whether it was a payment.

Building on this example, if the taxpayer sold the property for $100,000, received $20,000 in cash, and had a mortgage of $10,000 on the property; if the purchaser

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assumed the mortgage, this would be equivalent to the taxpayer actually receiving $20,000 in cash and the apparent cash benefit of $10,000 from the assumption of the loan. One could argue that not only did the taxpayer-seller receive actual or physical payments of $20,000 in the year of sale, but the taxpayer also received the $10,000 mortgage benefit by having the purchaser assume or take subject to the mortgage.

Notwithstanding this position, Congress allowed a purchaser to assume the mortgage of the seller *without* having the seller pick up a payment (the $10,000) in the year of sale. This did not mean that the profit ratio would not be adjusted for the mortgage. The profit ratio in the example given above was 40 percent. However, if a mortgage was assumed, as in the second example, the $100,000 sale price, less $60,000 basis, would be divided by the sale price of $100,000, less the mortgage of $10,000, leaving a fraction of 40 over 90 or 4/9. Each payment then would be considered 4/9 profit and 5/9 return of basis-investment.

Thus, if each payment was 4/9 profit (44.44 percent), the results would be as follows:

| | Year Of Sale | Principal Payment | 4/9 Profit Part | 5/9 Return Of Investment | Total |
|---|---|---|---|---|---|
| | 1 | $ 20,000 | $ 8,889 | $11,111 | $ 20,000 |
| | 2 | 50,000 | 22,222 | 27,778 | 50,000 |
| | 3 | 20,000 | 8,889 | 11,111 | 20,000 |
| Total: | | $ 90,000 | $40,000 | $50,000 | $ 90,000 |
| Plus Mortgage: | | $ 10,000 | n/a | $10,000 | $ 10,000 |
| Totals: | | $100,000 | $40,000 | $60,000 | $100,000 |

As long as this opportunity to obtain cash without picking up a payment of profit was available, some taxpayers took steps to mortgage a property for a more substantial amount than was indicated in the prior example. Thus, if the taxpayer mortgaged the property for $70,000 and had an adjusted basis of $60,000 or an investment of $60,000, the taxpayer not only would receive the payment of the $60,000 (the total investment) by the money borrowed as to the mortgage, but the taxpayer also would receive an amount in excess of the investment, namely, $10,000.

It was this particular situation, when the mortgage was greater than the basis, that gave rise to a rule in the Tax Code: When there is a mortgage that is assumed or taken subject to, which is in excess of the basis, such excess is treated as a payment in the year of sale. This rule was the interpretation of provisions of the installment sale rules under the Tax Code. It was further defined by U.S. Treasury Department Regulations,[2] which interpreted the position that any time there is a wraparound mortgage (when the seller receives payments from the buyer and the seller pays to the lender on the loans placed on the property), the wrap mortgage can generate the equivalent of a cash payment in the year of sale to the seller if his mortgage exceeds the adjusted basis (investment).

To illustrate: In the prior example, if the purchaser made payments to the seller, over time, for the $100,000 and the seller, in turn, made the payments to the lending institution, the wraparound mortgage structure would not be treated any differently than the assumption of the loan, noted above, at least according to the government's position. Thus, this mortgage that exceeded basis would constitute a payment to the seller in the year of sale.

### The Hunt Case

The issue of the wraparound mortgage and payments in the year of sale was involved in *Hunt* v. *Comm.* (1983).[3-4] In the *Hunt* case, the court examined the question of whether there was a payment in the year of sale when a mortgage was in excess of basis when a wraparound mortgage was utilized.[5] The government argued that inasmuch as a wrap mortgage is the same as a mortgage that is assumed or taken subject to by the purchaser, it results in imputed or deemed payments to the seller and the wraparound position of the mortgage does not modify that posture.

Taxpayers have acknowledged that a mortgage in excess of basis that is assumed or taken subject to by a purchaser can generate a payment for installment sale rules. However, taxpayers have argued (and this argument has been supported by court decisions) that the use of the wraparound mortgage, by definition, means that the purchaser does *not* assume or take subject to the mortgage. Rather, the seller retains the existing encumbrance. As such, the new mortgage is wrapped around the existing encumbrance and does not fit within the concept of mortgage in excess of basis; therefore, the government cannot impute a current payment.

It must be emphasized that both constructions will result in the same amount of taxable income. That is, whether there is a mortgage in excess of basis or not, the use of the installment technique results in the same amount of reported gain. The question is *timing:* when to report the gain.

The installment sale technique is a time value of money concept; taxpayers have argued that taxes should not be required on the full amount of gain from a sale until sufficient monies have been received by the taxpayer who would then be in a position to pay those taxes.

To illustrate: If the taxpayer had a sales price of $100,000, with $40,000 of gain and $60,000 as a basis, use of the installment sale technique would not change those numbers. It would merely adjust the timing of the reporting of the gain. Thus, having a mortgage greater than basis simply would accelerate the reporting of the gain.

If, as the government argued in the *Hunt* case, there is a mortgage in excess of basis whether or not there is a wraparound position, the taxpayer would be required to report the gain in the year of the sale. The taxpayer argued, that with a mortgage in excess of basis, when there is a wraparound position, the taxpayer would be able to defer the reporting of some of the gain.

The *Hunt* case supported the proposition that the wraparound mortgage would not generate a payment caused by a mortgage in excess of basis; therefore, the taxpayer

was entitled to the deferral. The government, nonetheless, has continued to support its argument by asserting that new Treasury Department Regulations (§1.453-1) reaffirm the prior regulatory position, under §1.453-4(c), that a wraparound mortgage is an assumption or a loan taken subject to a mortgage. The government has not been successful on this position, as illustrated in the cases, discussed below.

Additional points or changes have been made in this area because of the Tax Reform Act of 1986, the Revenue Act of 1987 and three recent Tax Court cases. These points and changes exacerbate the already complex issues involved in the installment sale field.

## Installment Sales As Impacted By The Tax Reform Act Of 1986 And The Revenue Act Of 1987

*The Tax Reform Act of 1986*

The Tax Reform Act did not address the issue of a mortgage in excess of basis, beyond the positions that had been taken in the Tax Code and the relevant Treasury Department regulations. Nonetheless, the Tax Reform Act had an impact on this area with its addition to the Tax Code, entitled, "Certain Indebtedness Treated as Payment on Installment Obligations" (Code §453C).

Under this provision, the Tax Reform Act provided that if a taxpayer had allocable installment indebtedness (AII) (discussed below) for any taxable year, that indebtedness generated a deemed or imputed additional payment in the year of sale.

The concept of mortgage in excess of basis is consistent with other rules in the Tax Code that are aimed at accelerating the reporting of gain; *e.g.*, when the taxpayer sells an installment sale obligation, the postponed gain is generated in the year of the sale. These rules focus on the same intended result: to eliminate the use of the installment sale technique or to substantially reduce its application. The use of the AII as an additional payment in the year of sale furthers that approach.

To take a step back for a moment, the AII rules under the Tax Reform Act, in concept, merely attempted to augment the already difficult hurdles that existed in the installment sales field. The AII rules classified, as a payment in the year of sale, those amounts that were generated from the following formula:

The deemed payment was determined by dividing the face amount of the taxpayer's applicable installment sale obligations by the balances outstanding of installment sale obligations and the adjusted basis of taxpayer's other relevant assets. This result was multiplied times the taxpayer's applicable debt.

To take an example: If the taxpayer had an installment sale of $200,000, the $200,000 would be the AIO. This figure would be divided by the taxpayer's adjusted bases and installment sale obligations, which is assumed to be $500,000. Assuming that the taxpayer had no other installment obligations (as discussed above), the ratio of $200,000 over $500,000, or 40 percent, would be multiplied by the relevant indebtedness of the taxpayer. If the relevant indebtedness of the taxpayer was $300,000, the 40 percent ratio would be multiplied by $300,000 and yield $120,000. Assuming there were no prior AII considerations, this $120,000 would represent a payment that was deemed to have been received by the taxpayer in the year of sale, even if the taxpayer sold the property without physically receiving any payment, by option money or otherwise, in the year of sale.

In summary: the Tax Reform Act of 1986 added a new dimension to what is accelerated or deemed paid in the year of sale—AII. In so doing, it so adversely affected installment sales that the issue of mortgage in excess of basis became of minor concern, for most purposes.

*Revenue Act of 1987*

It took almost no time for Congress to hear the cries from its constituents as a result of the 1986 Tax Reform Act changes to the installment sale rules. Indeed, on December 22, 1987, President Ronald Reagan signed H.R. Bill 3545, the Revenue Act of 1987, which, for most purposes, returned the installment sale rules to their position prior to the 1986 changes. Thus, the installment sale method regained its import, and the concern with mortgages greater than basis returned as an issue in installment sales. The RA of 1987 for the most part, eliminated the concern with AII.

## New Court Cases

*Erfurth vs. Comm.*

A recent Tax Court decision, *Erfurth vs. Comm.* (1987), addressed the mortgage in excess of basis issue.[6]

In the *Erfurth* case, the taxpayer sold the Colonial View Apartments to Sparks, the purchaser, who gave the taxpayer a note. The amount of this note was the difference between the sale price and the mortgage. The contract provided that Sparks was to make monthly payments *directly* to the taxpayer's mortgage loan account held at the First Wisconsin National Bank of Milwaukee.

The seller did not convey title to the purchaser on the date the contract was executed. The taxpayer was to convey the title within three years of the date of execution. When the taxpayer did convey the title, the purchaser was required to give the taxpayer a promissory note and a purchase money mortgage equal in amount to the then outstanding balance of the underlying mortgage due the First Wisconsin creditor. (This appeared much like a traditional wraparound mortgage approach). The sales contract provided that the mortgage would contain a provision to the effect that the liability of the purchaser was limited to the property and was secured by the purchase money mortgage.

The taxpayer argued that the property was not taken subject to the mortgage. The reason the purchaser was making payments directly to the mortgagee was simply to reduce bookkeeping. No conveyance of title was made in the year of sale.

The court was asked to determine whether the purchaser of the apartment complex assumed the mortgage on the property or took a subject to mortgage within the meaning of the Tax Code and the applicable Treasury Department Regulations. The court noted that one of the clauses in the land contract stated: "It is expressly agreed and understood between the parties hereto that purchaser does not assume the first mortgage to the First Wisconsin National Bank of Milwaukee, and purchaser shall, at no time during the pendency of this land contract or the duration of the purchaser money mortgage in favor of the vendors, be personally liable for payments on the indebtedness to the First Wisconsin National Bank of Milwaukee."

Although there were numerous other issues in the case, the court indicated that taking subject to a mortgage means that the buyer pays the seller for the difference between the amount of the mortgage debt and the total amount for which the property is being sold.[7]

The court indicated that since the purchaser, not the taxpayer, made and was required to make payments directly to the mortgagee, only part of the selling price was paid directly to the taxpayer. The court held that this was strong evidence that the purchaser took the property subject to the mortgage.[8]

The court also noted that a subject to mortgage simply means that a buyer has no obligation to satisfy the mortgage debt, and that the debt is to be satisfied out of the property.

The court held that form alone is not a sufficient test of a mortgage. It stated that when determining whether a property was subject to a mortgage, all the facts and import of all the documents executed by the parties to the contract must be considered.[9]

The court concluded that the application of the Treasury Department Regulation did not depend on whether title was issued. The court supported this point by citing various sources of authority.[10] Since the taxpayer was paid only a net amount by the purchaser, the court held that the purchaser did take subject to the First Wisconsin mortgage. Therefore, there was a mortgage in excess of basis.

Thus, as a result of both an interpretation of a subject to mortgage and poor structure by the taxpayer, this case supported the proposition that a mortgage in excess of basis existed and that additional payments were deemed to have been received by the taxpayer in the year of sale. Thus, more tax was due in the year of sale.

*Professional Equities*

The U.S. Tax Court was faced with the issue of whether the mortgage in excess of basis rule applied, when there was a wraparound mortgage as in the case of *Professional Equities, Inc., v. Comm.* (1987).[11] In this case, the Tax Court reaffirmed the position it had maintained in other, older cases that the imputed or deemed payment did not apply to wraparound mortgages. Thus, it held as invalid the government's position that the Installment Sales Revision Act of 1980, and prior and current Treasury Department Regulations would treat a wraparound mortgage similar to a subject to mortgage.

The court stated: "Our conclusion that wraparound sales are to be taxed under their own distinct method is by now well settled and generally accepted by those courts that have been faced with this issue." The court cited a number of cases supporting this concept, including the *Stonecrest* case (1955).[12]

The court continued: "In the 30 years since *Stonecrest*, we have identified wraparound sales, in part, by the fact that in those sales the purchase price is paid in full directly to the seller. It is true that in wraparound sales the seller may service the underlying mortgage out of the payments received from the buyer, but he is not obligated to do so and instead is free to discharge that mortgage however he chooses."

The court concluded: "While we appreciate that Congress granted the Secretary [of the U.S. Treasury] wide discretion to regulate the recognition of gain in installment sales, we cannot approve an exercise of discretion to reach a result contrary to the basic objective of the statute by requiring the recognition of additional gain beyond what is proportionately reflected in the payments received during the first year." In essence, the court decided that the Treasury, by its regulations, had exceeded its authority.

**The Webb Decision**

The most recent case, the *Webb* decision, provides a very clear-cut statement of the rejection by the U.S. Tax Court of the government's position on mortgage in excess of basis.[13] The court said: "We have rejected respondent's [government's] argument, and have consistently held that where the substance of the transaction is not the same as where the purchaser takes the property 'subject to' or 'assumes' the mortgages outstanding against the property, the transaction will not be taxed pursuant to Section 1.453-4(c). . . . "

The court also noted: "In this type of transaction, no part of the purchase price escapes taxation to the seller; therefore, there is no need to apply a greater gross profit percentage to the installment payments the seller receives."

The court went on to emphasize that the position in the *Webb* case was consistent with the posture the court took in the *Professional Equities* case:[14] "Thus, as we stated in *Professional Equities Inc.*, there is no support in the language or legislative intent of Section 453 for extending the 'subject to' tax treatment to true wraparound financed transactions."

As if to drive in the final nail of the government's coffin, the court stated: "We reject respondent's [government's] argument that Section 15A.453-1(b)(3)(ii), temporary Income Tax Regs., was promulgated to carry out the Congress' intent of the Installment Sales Revision Act of 1980. Congress, in enacting the Installment Sales Revision Act

of 1980, intended to liberalize the eligibility requirements of Section 453, thereby making the installment sale method of reporting more widely available."

Finally, the court stated: "These temporary regulations totally ignore the economic realities of a wraparound finance transaction."

From these cases, it can be seen that the law very clearly supports the taxpayer's position that the installment sale technique may be utilized if the transaction is properly structured as a wraparound mortgage, which thereby avoids the mortgage in excess of basis issue.

## Conclusion

Even with the elimination of the 1986 Tax Reform Act changes[15] and with more restrictive interpretations or decisions, such as in the *Erfurth* case, the use of the installment sale technique as a deferral approach for taxes is becoming much more difficult. Taxpayers must exercise the utmost caution and care in structuring the transaction to comply with the format specified in the *Hunt, Professional Equities* and *Webb* cases.

No matter how the transaction is structured, taxpayers will find that the government's position has been to attack cases that are relevant to installment sales with wraps. The government's position is simply another step down the path of eliminating or reducing deferrals or timing mechanisms that previously allowed the taxpayer to enjoy the time value of money.[16]

### NOTES

1. Internal Revenue Code of 1986, as it now exists, Code §453 and related sections.
2. U.S. Treasury Department Regulations §1.453-4(c), §1.453-1, as modified.
3. Levine, Mark Lee, "Wraps, the '*Hunt*' for an Escape of Mortgage Over Basis,"(1984): 271, *Taxes*. See also Note 15, *infra*.
4. *Hunt*, 80 TC 1126 (1983).
5. This article emphasizes payments in the year of sale, *e.g.*, an examination of mortgage in excess of basis to generate a payment in the year of sale. Obviously, taxpayers should be aware of the fact that there can be other events that generate a payment in the year of sale. A few of these items are discussed herein.
6. *Erfurth v. Comm.*, TC Memo 1987-232.
7. The court, in this position cited one of the historical supports for this posture, *Estate of Lamberth v. Comm.*, 31 to TC 302 (1958). See also *Burnet v. S&L Bldg. Corp.*, 288 U.S. 406 (1933).
8. Obviously the taxpayer-seller would have been much better off had the taxpayer structured the transaction to make sure the payments had been made directly to the taxpayer, who would have, in turn, made the payments to the lending institution that held the mortgage.
9. The court cited, for this authority, *Goodman v. Comm.*, 74 TC 684 (1980), aff'd 673 F.2d 1332 (7th Cir. 1981).
10. See *Hunt v. Comm.*, 80 TC 1126, as cited earlier (1983), and *Estate of Lamberth v. Comm.*, cited earlier.
11. 89 TC #15 (1987).
12. *Stonecrest Corp. v. Comm.*, 24 TC 659 (1955).
13. *Webb v.*, TC Memo 1987-451.
14. See Note 11, *supra*.
15. See Code §453C(e) (1) (A).
16. For more on this, see Levine, Mark Lee, Chapter 25, *Real Estate Transactions, Tax Planning*, West Publishing Company (1988).

# THE MEASUREMENT OF HOUSING AFFORDABILITY

*The underlying assumptions, its strengths, weaknesses and influence on the seller variables.*

**by Ravindra Kamath**

Of the numerous ways to assess the health of our economy, those measures and variables that capture the state of and prospects for single family housing always have occupied a pivotal position. This is perfectly understandable, given the utmost importance that leaders and decision-makers in and out of the government at all levels attach to the goal of making and keeping adequate housing available and affordable for everyone in this nation. Yet, the task of measuring housing affordability has proved to be difficult.

Now, however, the affordability index (AI), which is computed by the National Association of Realtors (NAR) and is published regularly in newspapers throughout the country, seems to satisfy the concerns of many regarding the measurement of affordability of single family homes. This article discusses the information content of the AI, and it evaluates the index's underlying assumptions. Second, it examines the influence that housing affordability, as measured by the AI, has on two important seller variables, namely, the ratio of selling price to the listing price (SPLP) and the number of days on the market (DOM).

### Housing Affordability Variables

Here are the major factors that either increase or decrease housing affordability. The ability to afford a home depends on the following nine variables:

1. The buyer's net income and major contractual obligations.

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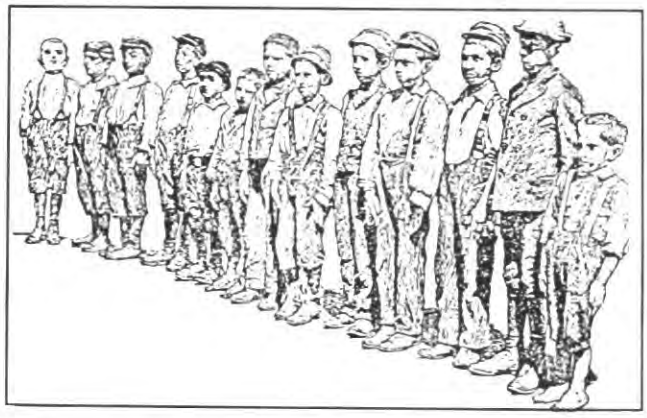

2. The price of the home the buyers are interested in.
3. The amount that is available for a down payment.
4. Points and other closing costs that are required at the time of purchasing the home.
5. The rate of interest on the mortgage.
6. The length of the mortgage.
7. Monthly housing expenses other than principal and interest, such as real estate taxes; hazard insurance; asessments, if any; and private mortgage insurance, if required.
8. The criteria used by the lender to qualify the buyers.
9. The expected value of the buyers' income, the interest rate and monthly housing expenses in the future, for, one to five years if the mortgage loan does not have a fixed rate.

While one may be able to think of other variables, the factors listed above are the generally acceptable considerations of housing affordability. Given the practical constraint faced by most families on the total amount of cash that is available to buy a home, the existence of loan points and other closing costs set a limit on the available down payment. This amount itself affects the rate of interest and the need to have private mortgage insurance (PMI) as well as the loan points. Some of these interrelationships can lead to constraints that are difficult to

overcome. The rate of interest and the length of the mortgage loan, along with the amount financed, gives rise to the required mortgage payment. Depending upon the criteria used to qualify, they may or may not be able to afford the home of their choice. The qualifying criteria may center on the buyer's gross or net income or may account for only the principal and interest (PI); the principal, interest, taxes and insurance (PITI); or the total housing expense (PITI + assessment + PMI).[1] Accordingly, the first eight items together determine the affordability of a particular home for a family, even if the mortgage is a fixed interest rate loan.

Given the popularity of adjustable rate mortgages with lenders during the 1979-1984 period, we have included the ninth item. In a way, this item gives rise to a concept of affordability that changes with time.

### The AI Measure

NAR computes its AI by dividing the median family income (MFI) by the income that is needed to qualify (INQ) for a mortgage loan to finance a median-priced, existing single family home at a given point in time. Accordingly, whenever the median family income is just sufficient to qualify for a mortgage loan to buy a median-priced, existing single family home, we would have an AI of 100 percent.

$$(1)\ \text{The Affordability Index} = \frac{\text{Median family income}}{\text{Income needed to qualify}} \times 100$$

$$\text{that is:} \quad AI = \frac{MFI}{INQ} \times 100$$

How does Equation 1 account for the nine factors that are generally considered to have an impact on housing affordability? The computation of AI makes certain assumptions regarding those nine factors. First, it assumes that homebuyers have a gross income that is equal to the median family income in the United States. Second, it assumes that a median-income family is interested in buying a median-priced, existing single family home. Third, it assumes that the buyers' down payment will amount to 20 percent of the home price. Fourth, it assumes that a 30-year, fixed interest rate loan will be secured. Fifth, it assumes that the rate of interest of the mortgage will equal the effective rate on loans that are closed on existing homes (in a month), as compiled by the Federal Home Loan Bank Board. Sixth, since the AI considers the effective rather than the nominal rate of interest, the AI does not account for the initial cash outflow that is needed to cover the loan points; it assumes the buyers have enough funds to cover the closing costs. Seventh, the AI uses the lending requirements of the Federal National Mortgage Association as the qualifying criteria. By making this assumption, the computation avoids the need to consider real estate taxes, hazard insurance, assessments, if any, and the PMI. Further, it bypasses other contractual obligations the buyers may have. Needless to say, these simplifying assumptions result in a readily usable, compact formula but one that has some bias and that creates problems of interpretation. Before we zero in on these problems, let us first observe a sample calculation of AI.

### A Sample Calculation

In April 1987, the median-priced, existing single family home (MPEH) sold for $85,400. The MFI was $29,633 and the applicable rate of interest was 9.14 percent. The income needed to qualify (INQ) for a 20 percent down payment loan was set at four times the monthly mortgage payment (PI and not PITI) on a monthly basis or 48 times the PI to compute the INQ on an annual basis.

$$\text{Since:} \quad (2)\ AI = \frac{MFI}{INQ} \times 100$$

$$= \frac{MFI}{12 \times (4 \times PI)} \times 100$$

$$(3) = \frac{MFI}{12 \times \{4 \times [(0.80 \times MPEH) \div PVIFA_{i,\, n\, =\, 360}]\}} \times 100$$

In Equation 3, 0.80 × MPEH is the amount that is being financed for 30 years at an annual interest rate of MR percent or a monthly rate of i percent (= MR/12). The calculation—0.80 × MPEH ÷ by the present value interest factor of an i percent, 360-month annuity (PVIFA)—gives the required PI payment on the mortgage. Thus:

$$(4)\ AI = \frac{\$29{,}633}{12 \times \{4 \times [(0.80 \times \$85{,}400) \div 122.7421]\}} \times 100$$

$$(5) \quad = \frac{\$29{,}633}{12 \times (4 \times \$556.62)} \times 100$$

$$= \frac{\$29{,}633}{\$26{,}718}$$

$$AI = 110.9\%$$

Accordingly, in April 1987, the median family income was almost 111 percent of the income needed to qualify for a 30-year mortgage to finance 80 percent of the median-priced, existing single family homes. This simple calculation shows how the AI is calculated by using just three variables; namely, MPEH, MR and MFI.

### The Movements In The Affordability Index

Over the years, observers of the conditions in the single family housing market have witnessed some dramatic changes, at times in very short periods. In February 1972, the AI was 153.1 percent, only to come down to 63.9 percent by September 1981. To get a better insight into the movements of the AI, consider the average of the AI, (calculated monthly) during the years 1972, 1979, 1981 and 1982. The average AIs in these years were 149.76 percent, 98.04 percent, 67.43 percent and 68.34 percent, respectively. Obviously, the massive drop in the AIs could have been caused by massive changes in one, two or all three variables in the index. That is, the steep decline in AI measures could have been caused by large and rapid increases in MPEH and/or by similar increases in MR and/or decreases in MFI. To understand what the primary culprit was, inspect the values of MPEH, MFI and MR:

| Year | Median Price of Existing Homes (MPEH) | Median Family Income (MFI) | Mortgage Rate (MR) | Afford-ability Index (AI) |
|---|---|---|---|---|
| 1980 | $62,200 | $21,023 | 12.95% | 79.9% |
| 1982 | 67,800 | 23,433 | 15.38 | 69.5 |
| 1984 | 72,400 | 26,433 | 12.49 | 89.1 |
| August 1986 | 80,900 | 28,712 | 10.26 | 103.1 |
| April 1987 | 84,500 | 29,633 | 9.14 | 110.9 |

During the 1980-1982 period, the negative effect of a 9 percent increase in the MPEH on the AI would have been more than nullified by an 11.5 percent increase in the MFI *if* the interest rates had not gone up. In other words, if the MR had remained at 12.95 percent, the changes witnessed in MPEH and MFI actually would have raised the AI to 81.65 percent. During the 1982-84 period as well as in the following years, a similar pattern can be observed, although in an opposite and a desirable direction. Thus, given the normal rates of change in the MPEH and the MFI, during most periods, the volatility in the interest rate will tend to make the AI volatile as well. For example, in April 1984, the MPEH was $72,500; the MFI was $25,153; and the MR was 12.07 percent. Thus, between April 1984, and April 1987, the MPEH increased by 16.55 percent, and the MFI increased by 17.81 percent; yet, the AI rose from 87.4 percent to 110.9 percent simply because interest rates declined from 12.07 percent to 9.14 percent. For the most part, it is the interest rate variable that will make or break the AI.

Tables 1, 2 and 3 illustrate this point further. In each table, one variable is held constant at its March 1986 level (that is, MR = 10.62 percent, MFI = $28,283 per year and MPEH = $79,800.) The other two variables increase or decrease by 10 percent, 20 percent, and so on. In Table 1, the mortgage rate is set at 10.62 percent, but the MFI and the MPEH change. As can be seen from the table, the AI remains at 99.92 percent when the MFI and the MPEH increase or decrease by the same percentage.[2] As expected, the increases in the MFI (and/or decreases in the MPEH) increase the AI, while decreases in the MFI (and/or increases in the MPEH) decrease the AI.

Table 2 shows the effect on the AI of changes in interest rates and the MFI; Table 3 shows the effect of changes in interest rates and MPEH. Both tables demonstrate that if the MFI and the MPEH remain at their March 1986 levels, or increase (or decrease) at an equal rate, an interest rate increase to 14.868 percent will bring the AI down to 73.61 percent. Since, in the long run, the MFI and the MPEH are likely to move at an approximately equal pace, any interest rate rise can only mean unpleasant consequences in terms of housing affordability.

### Critique Of The AI

As stated earlier, the AI concept makes quite a few simplifying assumptions to get around otherwise difficult measurement problems. In other words, the AI calculation summarizes the affordability of single family homes within the sphere of its assumptions. An index of 100 percent or higher, as was the case in April 1987, indicates favorable economic conditions for the prospective buyers of single family homes and, therefore, favorable conditions for the sellers, lenders, real estate agents and other interested parties, such as title insurance firms and real estate appraisers. An AI that is significantly lower than 100 percent indicates trouble times for interested homebuyers, as well as others who are dependent upon the single family home market. Based on its ability to quantify and to indicate favorable, adequate and unfavorable economic conditions for purchasing single family homes, the AI measure can be quite useful.

We have seen that the interest rate is the most important variable in determining housing affordability and that the AI does track movements in the MR closely. In fact, by including in its calculation the median income and the median price of a home, the AI gives rise to a much better quantification of overall affordability than the interest rate does by itself or, for that matter, than the other two variables do by themselves. In addition, the simplicity, the compact nature and the ease of calculation of the AI definitely support its use for measuring housing affordability on a national basis. However, when specifics are introduced into the home buying picture, interpretation of the AI tends to get fuzzy.

First of all, the AI calculation relies on the median family income and on the median-priced existing home. Obviously, there are an equal number of existing homes that are priced above and below the median. The same is true for family income. As a result, the AI cannot adequately measure housing affordability for those families with incomes close to the median family income who are forced to consider purchasing a home in an area where all homes are above the national median price. The ability of the AI to indicate housing affordability for families with incomes much smaller or much larger than the median family income is not very good.

Regional differences in the prices of homes also severely strain the credibility of an affordability index that is computed from national MFI, MPEH and MR figures. For example, the national median prices of existing homes were $77,100, $77,400 and $79,800 during the months of April, May and June of 1986. During the same quarter, the MPEH was $160,000 in New York, $156,200 in Boston, $149,400 in Orange County, California, $128,700 in Los Angeles and $127,600 in Hartford, Connecticut. The MPEH figures for Grand Rapids, Michigan; Louisville, Kentucky; Buffalo, New York; Jacksonville, Florida; Toledo, Ohio; and Detroit, Michigan were $51,600, $52,600, $54,200, $57,300, $57,400 and $57,500, respectively.[3] Given these examples, it is easy to see why the AI can be misleading at the local level. For this reason, the AIs calculated for standard metropolitan statistical areas (SMSAs) would be more useful.

A somewhat similar pattern, although not as drastic as the one for MPEH, emerges with median family incomes and effective mortgage interest rates for different regions. For example, during the week ending September 17, 1986,

the average interest rate on a 30-year fixed mortgage for a 20 percent down payment loan in the New York metropolitan area was 10.50 percent plus 2.25 points, while the average interest rate on a similar loan in Houston, Texas, was 9.75 percent plus 2.00 points.[4] Given the fact that the MPEH in Houston was around one-half that of New York[5] and the effective rate of interest in Houston was significantly lower than that in New York, the AI could not adequately measure housing affordability in both places if the median family incomes in the two locations were similar. Once again, the only way to rectify this problem would be to calculate AIs on a regional basis.

Because the AI assumes a 20 percent down payment and does not specifically consider the effect of up-front cash outflow caused by the necessity of having to pay the loan

**TABLE 1**

Affordability Index With A Constant Interest Rate (10.52 Percent) And Changing Median Prices Of Homes (MPEH) And Median Family Income (MFI)

| MPEH | Affordability Index | | | | | |
|---|---|---|---|---|---|---|
| | **MFI $22,626** | **MFI $25,455** | **MFI $28,283** | **MFI $31,111** | **MFI $33,940** | **MFI $34,768** |
| $ 63,840 | 99.92 | 112.41 | 124.90 | 137.39 | 149.88 | 162.37 |
| 71,820 | 88.82 | 99.92 | 111.02 | 122.12 | 133.23 | 144.33 |
| 79,800 | 79.93 | 89.93 | 99.92 | 109.91 | 119.90 | 129.90 |
| 87,780 | 72.67 | 81.75 | 90.84 | 99.92 | 109.00 | 113.09 |
| 95,760 | 66.61 | 74.94 | 83.27 | 91.59 | 99.92 | 103.25 |
| 103,740 | 61.49 | 69.18 | 76.86 | 84.55 | 92.33 | 99.92 |

**TABLE 2**

Affordability Index With A Constant Median Price Of Homes (MPEH = $79,800) And Changing Median Family Income (MFI) And Interest Rates (MR)

| MFI | Affordability Index | | | | | | |
|---|---|---|---|---|---|---|---|
| | **MR 8.496%** | **MR 9.558%** | **MR 10.62%** | **MR 11.682%** | **MR 12.77%** | **MR 13.806%** | **MR 14.868%** |
| $22,626 | 96.06 | 87.38 | 79.94 | 73.53 | 67.98 | 63.14 | 58.89 |
| 25,455 | 108.07 | 98.30 | 89.93 | 82.72 | 76.47 | 72.03 | 66.25 |
| 28,283 | 120.08 | 109.22 | 99.92 | 91.91 | 84.97 | 78.92 | 73.61 |
| 31,111 | 132.09 | 120.14 | 109.91 | 101.10 | 93.47 | 83.82 | 80.97 |
| 33,940 | 144.10 | 131.06 | 119.90 | 110.29 | 101.96 | 94.70 | 88.33 |
| 36,768 | 156.10 | 141.99 | 129.90 | 119.48 | 110.46 | 102.60 | 95.69 |

**TABLE 3**

Affordability Index With A Constant Median Family Income (MFI = $28,283) And Changing Median Prices Of Homes (MPEH) And Interest Rates (MR)

| MPEH | Affordability Index | | | | | | |
|---|---|---|---|---|---|---|---|
| | **MR 8.496%** | **MR 9.558%** | **MR 10.62%** | **MR 11.682%** | **MR 12.77%** | **MR 13.806%** | **MR 14.868%** |
| $ 63,840 | 150.10 | 136.53 | 124.90 | 114.89 | 106.21 | 98.65 | 92.01 |
| 71,820 | 133.42 | 121.36 | 111.02 | 102.12 | 94.41 | 87.69 | 81.79 |
| 79,800 | 120.08 | 109.22 | 99.92 | 91.91 | 84.97 | 78.92 | 73.61 |
| 87,780 | 109.16 | 99.29 | 90.84 | 83.55 | 77.25 | 72.75 | 66.92 |
| 95,760 | 100.07 | 91.02 | 83.27 | 76.59 | 70.81 | 65.77 | 61.34 |
| 103,740 | 92.37 | 84.02 | 76.86 | 70.70 | 65.36 | 60.71 | 56.62 |

points and closing costs, its credibility is reduced. Young couples, who are just starting their families and are looking for starter homes, can hardly find comfort in the knowledge that the national AI is around 110 percent. Even though young couples are interested in homes that are less expensive than the MPEH, their incomes are lower than the MFI. Moreover, with a smaller amount of cash available for the points, the closing costs and the down payment, they wind up initiating a mortgage with just 5 or 10 percent down. This not only leads to a higher effective rate of interest and in turn, a higher PI, but also introduces the cost of private mortgage insurance.

Similarly, AI's assumptions concerning the length of the mortgage at a fixed rate of interest and its assumption regarding qualifying criteria (discussed earlier) also threatens the credibility of the calculation.[6]

In spite of these drawbacks, the housing AI serves as a nice summary benchmark or an indicator, like other commonly used indicators. After all, indicators such as the Consumer Price Index, national unemployment statistics and others are not without their shortcomings.

### The Seller Variables And The Hypothesized Relationship

While the existence of a desirable level of housing affordability is important to everyone concerned, two seller variables—the ratio of selling price to the listing price and the number of days on market—are of crucial importance to sellers, real estate agents and listing brokers. As is true for most housing variables, these two variables are determined by the forces of supply and demand. That is, the supply of and demand for single family homes have a major influence on the ratio of the selling price to the listing price of a home and the number of days a home remains on the market before it is sold.

The factors that are generally considered to have the most influence on shaping the demand for single family homes are the ability of the prospective buyers to afford the homes that are available and the asking price of comparable homes on the market. If it is assumed that the asking price of homes (that is, the listing prices) adequately represent the market values of comparable properties (at the time), the affordability of single family homes would have a major impact on the SPLP ratio and the DOM variable. Under this assumption, increases in the AI would increase the SPLP ratio and decrease the DOM measure. In other words, on an ex-ante basis, the SPLP would exhibit a positive correlation with the AI and the DOM would exhibit a negative correlation with the index. In Equation 6, the estimated coefficient $A_1$ is expected to be positive, and in Equation 7, the estimated coefficient $B_1$ is expected to be negative. The relationships are as follows:

$$(6)\quad SPLP_t = A_0 + A_1 (AI)_t + E_t$$

$$(7)\quad DOM_t = B_0 + B_1 (AI)_t + E_t$$

In the above equations, $A_0$, $A_1$, $B_0$, $B_1$ are the coefficients to be estimated statistically; $AI_t$ is the affordability index at time t; and $E_t$ is the error term.

### Reasonable Listing Price

Before presenting the sample and the findings, it is advisable to consider the assumption that the listing prices of homes adequately represent the market values of comparable properties. The discussion between sellers and their salesperson regarding the worth of the sale property is very sensitive; hence, much has been written on the subject.[7] Quite often, the sellers' perception of the value of their property is unrealistic, and that perception affects the length of time and the effort it will take to find a willing and an able buyer. Most sellers underestimate the cost of overpricing because they feel they always can come down in price if an interested buyer makes a reasonable offer. On the other hand, even the most experienced listing agents with the results of an up-to-date market analysis at their fingertips find it a trying experience to convince sellers to list their property at a reasonable estimate of its market value. The approach suggested by Dallianis appears to be a well-thought-out approach that is designed to engage the sellers in the listing process while providing them with a broad picture of pricing and its potential consequences.[8] Irrespective of the technique that is used to present market analysis data to sellers and in spite of all the training of real estate salespersons, the reasonableness of the listing price depends on how well informed the sellers are and how eager they are to part with their homes.

### The Sample And The Data

To test empirically the relationships between the seller variables and the AI, we used data from 1980 to 1985 from Cleveland, Ohio, and six of its suburbs. We chose three eastern suburbs—Lyndhurst, University Heights and Maple Heights—and three western suburbs—Rocky River, Fairview Park and Parma. The seven cities included in the sample contained a rather mature housing stock that experienced very little new construction during the test period. The chosen cities also had a relatively low percentage of multi-unit homes. These two selection criteria were considered to be important because the independent variable in the study, the AI, is for existing single family homes. Besides, the presence of substantial new home construction and/or the existence of a significant percentage of multi-family homes could affect the supply-demand conditions in the market for existing single family homes.

The data were gathered from *The Cleveland Area Multiple Listing Service Comparable Book*, a publication of the Cleveland Area Board of Realtors (CABOR). Naturally, the homes sold by the owners themselves (without the help of a member of CABOR) were not included in the study. Because *The Cleveland Area Multiple Listing Service Comparable Book* was published biannually until June 1981, and quarterly after that, data for a total of 21 periods were obtained. For each period and for each city, the data contained the number of homes sold, the average listing price, the average sale price, the SPLP ratio and the average number of DOM. To ensure that the SPLP ratio and DOM figures represented only the

sales of existing single family homes, these data were adjusted by removing the sales information on new single family homes.

### Findings

To test our hypotheses, least squares regression was used to estimate the coefficients $A_0$, $A_1$, $B_0$ and $B_1$ in Equations 6 and 7. (The results of the regression are tabulated in Table 4.)

We had expected the SPLP ratio to be positively correlated with the AI but found that the estimated coefficient $A_1$ was positive for only three cities. Moreover, the slope was statistically significant in only one case where it was negative. On the other hand, the constant term ($A_0$) was statistically significant in every case. The average coefficient of determination ($R^2$) was slightly smaller than 10 percent. In other words, on average, the AI could explain only about 10 percent of the variation in the SPLP ratio.

In the case of the DOM-AI relationship tests, the results were even less encouraging. On average, the AI could explain only about 4 percent ($R^2$) of the variation in the days on market variable. While the estimated coefficient $B_1$ was negative, as expected, in five of the seven cities, it was not statistically significant (from zero) in a single case.

Thus, in terms of being able to explain sizable variation in two important seller variables, the AI was found to be rather ineffective for our sample. While numerous factors may be responsible for the lack of impressive results, one major factor may be AI's reliance on national figures rather than regional or local information. While all the data that were needed to calculate local AIs were not available, local interest rates were readily determined. The analysis therefore was repeated, using the local average mortgage rate in place of the AI. The mortgage interest rates during the 1981-1985 period were obtained from *The National Mortgage Weekly, Cleveland Area Edition*. The figures for 1980 were obtained from the Sunday issues of *The Plain Dealer*. (The relationships that were investigated and the results of the investigation are presented in Table 5.)

On the *a priori* basis, the SPLP ratio would correlate negatively with the mortgage rate (MR), and the DOM variable would correlate positively with the MR. In other words, the sign for the coefficient $C_1$ would be negative, while the sign for the coefficient $D_1$ would be positive.

Our results showed that for three cities, the sign of the estimated coefficient $C_1$ was negative as expected but it was statistically significant in only one city; namely, Rocky River. In the other four cities, the statistical relationship was opposite of what would be expected; nonetheless, the relationship was significant in only one case. On average, the local MR was able to explain about 10.5 percent of the variation in the SPLP ratio. The constant term ($C_0$) was statistically significant in all seven cases.

The results of the DOM-MR relationship tests were even less impressive. While the sign of the estimated coefficient $D_1$ had the expected positive sign in three cities, it was not significantly different from zero in any of the seven sample cities. On average, the MR could explain

**TABLE 4**

Relationships Between Seller Variables And The National Affordability Index, 1980-1985

| | **Ratio of Selling Price to Listing Price = $A_0 + A_1$ (Affordability Index)$_t$ + Error term** | | | **Days on the Market = $B_0 + B_1$ (Affordability Index)$_t$ + Error term** | | |
|---|---|---|---|---|---|---|
| **City** | **$A_0$** | **$A_1$** | **$R^2$ %** | **$B_0$** | **$B_1$** | **$R^2$ %** |
| Cleveland | 92.212 | -0.014 | 0.41 | 40.800 | 0.414 | 11.93 |
| | (22.46)** | (-0.28) | | (1.96) | (1.60) | |
| Lyndhurst | 97.571 | -0.073 | 9.67 | 66.451 | -0.065 | 0.13 |
| | (23.70)** | (-1.43) | | (2.03) | (-0.16) | |
| University Heights | 72.607 | 0.227 | 8.64 | 76.071 | -0.196 | 2.27 |
| | (5.33)** | (1.34) | | (3.20)** | (-0.67) | |
| Maple Heights | 93.841 | -0.018 | 3.00 | 55.344 | 0.189 | 1.58 |
| | (51.01)** | (-0.77) | | (2.01) | (0.55) | |
| Rocky River | 88.977 | 0.039 | 16.06 | 90.384 | -0.411 | 9.08 |
| | (54.21)** | (1.91) | | (3.76)** | (-1.38) | |
| Fairview Park | 91.638 | 0.005 | 0.34 | 76.547 | -0.176 | 2.43 |
| | (58.12)** | (0.26) | | (3.71)** | (-0.69) | |
| Parma | 98.108 | -0.074 | 31.22 | 69.506 | -0.018 | 0.02 |
| | (48.37)** | (-2.94)** | | (3.11)** | (-0.07) | |

**values denote significance at 99 percent
t values are in parentheses

**TABLE 5**

Relationships Between The Seller Variables And The Local Mortgage Rates, 1980-1985

| | Ratio of Selling Price to Listing Price = $C_0 + C_1$ (Mortgage Rate)$_t$ + Error term | | | Days on the Market = $D_0 + D_1$ (Mortgage Rate)$_t$ + Error term | | |
|---|---|---|---|---|---|---|
| City | $C_0$ | $C_1$ | $R^2$ % | $D_0$ | $D_1$ | $R^2$ % |
| Cleveland | 90.145 | 0.068 | 0.39 | 98.648 | -1.838 | 9.80 |
| | (26.43)** | (0.27) | | (5.65)** | (-1.44) | |
| Lyndhurst | 87.082 | 0.346 | 9.06 | 67.513 | -0.462 | 0.28 |
| | (25.38)** | (1.38) | | (2.48)* | (-0.23) | |
| University Heights | 108.347 | -1.306 | 11.93 | 57.061 | 0.246 | 0.15 |
| | (9.75)** | (-1.60) | | (2.86)* | (0.17) | |
| Maple Heights | 91.166 | 0.095 | 3.65 | 85.210 | -1.096 | 2.22 |
| | (59.86)** | (0.85) | | (3.74)** | (-0.66) | |
| Rocky River | 95.000 | -0.216 | 20.74 | 32.739 | 1.837 | 7.54 |
| | (71.71)** | (-2.23)* | | (1.63) | (1.25) | |
| Fairview Park | 92.636 | -0.044 | 1.12 | 54.762 | 0.572 | 1.07 |
| | (71.01)** | (-0.46) | | (3.17)** | (0.45) | |
| Parma | 87.676 | 0.335 | 26.73 | 74.07 | -0.447 | 0.57 |
| | (50.43)** | (2.63)* | | (4.00)** | (-0.33) | |

* values denote significance at 95 percent
**values denote significance at 99 percent
t values are in parentheses

only about 3 percent of the variation in the DOM variable. Overall, the expected relationships did not appear even when local mortgage rates were used as the explanatory variable.

Our results showed that in each sample city, the SPLP ratio tended to remain around a certain figure, and it did not exhibit much sensitivity to changes in the MR or the AI. A similar pattern was observed for the days on market statistic. In spite of these results, we could not conclude that neither the MR nor the AI would have any effect on the seller variables in other locations or at different points in time. We also were not in the position to claim that our results were unique.

Specifically, there is no mechanism that allows us to test the validity of the underlying assumption (that is, the sellers' asking prices reflected the market values of comparable properties at the time). Real estate professionals are likely to question the validity of our assumption more than the logic of our hypotheses. They would contend that under favorable market conditions (that is, when the AI is near or above 100 percent), sellers tend to ask a premium and, offer a smaller discount on their properties. If this argument has any merit, then such pricing behavior may not be able to capture the hypothesized impact of the AI on the seller variables.

**Summary**

This article focused on some of the issues that affect the housing affordability index. The affordability index (AI) calculated by the National Association of Realtors was examined within the context of its assumptions, its positive attributes and its drawbacks. It has been argued that the assumptions underlying the calculation of the index increased the appeal of the AI but also gave rise to some of its shortcomings. Yet overall, the AI was a good indicator of affordability of existing single family homes and suggested that one relatively easy way of improving the national AI would be to compute the index on a regional basis.

Historic data on the key AI variables were examined to evaluate the importance of each variable in shaping the affordability measure. This analysis was carried further to evaluate the sensitivity of the index with respect to each variable. The mortgage interest rate was seen as the variable that could cause dramatic changes in housing affordability even in a relatively short period of time.

In addition, the influence of the national AI and the local mortgage rates on two seller variables—the ratio of the selling price to the listing price of existing single family homes and the days on market measure—were investigated. A sample of seven cities—Cleveland, Ohio and six

of its suburbs—was studied over a six-year period beginning with 1980.

In order to evaluate statistically the hypothesized relationships, it was assumed that the listing prices set by the sellers were reasonably good estimates of the market values of comparable properties at the time. The study, however, failed to discover any statistical relationship between the national AI or the local mortgage rate on the seller variables.

**NOTES**

1. For example, see, Johan E. Cyr, "How much house can your buyer afford?" *Real Estate Today* (July/August, 1983).
2. An inspection of Equation 3 would make it clear why this is so.
3. Original source: National Association of Realtors (NAR).
4. These figures are compiled by the Chicago Title Insurance Co.
5. For example, in the second quarter of 1986, MPEH was $160,000 in New York and $72,000 in Houston, Texas.
6. The NAR also calculates AIs for fixed-rate mortgages and adjustable rate mortgages (ARMs) separately. Our discussion has focused on the composite AI.
7. The following recent articles are just a small sample of the published papers on the subject. See Dallianis, Harry T. "The price-value pyramid: A way to master the listing process," *Real Estate Today* (April, 1982); Kyle, Donald L. and Parrish, William D. "Listing prices calculated from MLS 'comps' can mislead," *Real Estate Review* (Spring, 1986); Moore, Betty T. "How to put a price tag on your house," *Real Estate Today* (March/April, 1986); Rudolph, John Jr. "Getting together on the listing price," *Real Estate Today* (May, 1986); Ritchie, William B. Jr. "Houses that move," *Real Estate Today* (June, 1981); Allen, Paul R., Shilling, James D. and Sirmans, C.F. "Sale concessions and market value: Solving the appraiser's dilemma," *The Appraisal Journal* (April, 1986); Kyle, Donald L. and Parrish, William D. "Comps from noncomparable data," *The Real Estate Appraiser and Analyst* (Spring, 1986); Rayda, Roger K. "A quick course in comps," *Real Estate Today* (July/August, 1983).
8. See note 7 above.

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1. All submitted materials, including abstract, text and notes, are to be typed double-spaced with wide margins. No page limit is imposed. Submit five copies of the manuscript, accompanied by a 50- to 100-word abstract and a brief biographical statement.

2. All notes, both citations and explanatory, are to be numbered consecutively in the text and placed at the end of the manuscript.

3. Illustrations are to be considered as figures, numbered consecutively and submitted in a form suitable for reproduction. Type figure legends double-spaced on a separate page.

4. Number all tables consecutively and type double-spaced on separate pages. All tables are to have titles.

# NEW COMMUNITIES IN FLORIDA

*New communities developed over the last 30 years in Florida tend to be steadily smaller in size and satellites to other larger communities that have their own economic bases.*

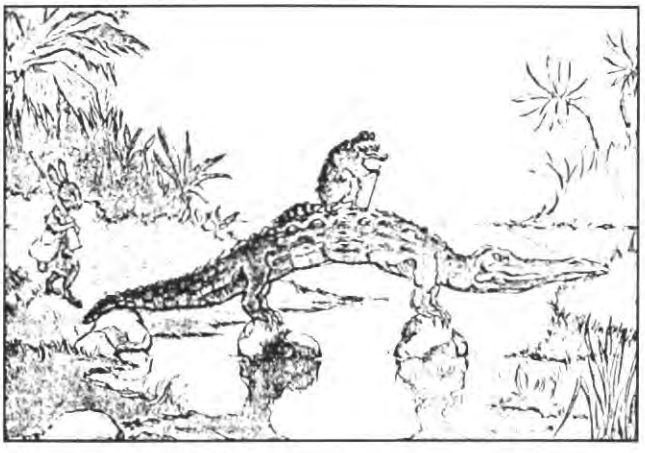
**by Halbert C. Smith and Kimberly Harrington Wilson**

Even though many new communities have been and are being developed in Florida—and in other states as well—their development and occupancy is a phenomenon that has largely been ignored. While we do not have comparative statistics on the number of new communities in various states, we believe there are probably more new communities in Florida than in any other state. We are engaged in a project to study the development and occupancy of these new communities. The objective of our project is to identify newly developed areas that have an overall plan, patterns of land use that should create a sense of community and communities that have definite boundaries and specific names.

### Project Design

Since there is no standard definition of a new community, we used four criteria to identify new communities for study. These are:

1. Development is undertaken by a private developer.
2. The development consists of at least 750 acres.
3. The development incorporates mixed land uses (commercial and/or industrial, residential and recreational).
4. Development was started within the last 30 years.



These criteria eliminate relatively small new areas, such as planned unit developments and larger residential-only subdivisions that are essentially extensions of existing cities. They also eliminate older established cities and free-form development that is the result of urban sprawl.

We identified 32 communities that meet the four criteria. (Exhibit I shows the location of these communities.) Most (25) have been developed by four large development companies—General Development Corporation, Deltona Corporation, Arvida Corporation and Capital Communities Corporation, a joint venture between William Levitt and Old Court Investment Corporation. (The developers and the communities they developed are summarized in Exhibit II.)

Data on the new communities were obtained from printed material (e.g., brochures) provided by the developer of each community, a written questionnaire that was designed to obtain a great deal of information from developers about the physical, social and economic characteristics of the communities or telephone interviews. Personal visits were made to almost all of the new communities.

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Financial support for this project was provided by the Homer Hoyt Institute.

Every new community was classified as either self-contained or satellite. Depending upon each community's characteristics, further subclasses were made. A community was classified as an adult new community when covenants restricted people under age 18 from living within the area. Communities were classified as resorts when they offered a resort type of environment and emphasized this aspect in their advertising. No community was classified as both adult *and* resort.

**EXHIBIT I**

Location Of New Communities

1. Boca West
2. Longboat Key Club
3. Sawgrass
4. Weston
5. Beverly Hills
6. Citrus Springs
7. Deltona
8. Marco Island
9. Marion Oaks
10. Pine Ridge
11. Spring Hill
12. St. Augustine Shores
13. Sunny Hills
14. Tierra Verde
15. Suntree
16. Tampa Palms
17. Julington Creek
18. Port Charlotte/North Port
19. Port LaBelle
20. Port Malabar
21. Port St. John
22. Port St. Lucie
23. Sebastian Highlands
24. Silver Springs Shores
25. Vero Beach Highlands/Vero Shores
26. Williamsburg Orlando
27. Williamsburg Tampa
28. Poinciana Park
29. Palm Coast
30. Sun City Center
31. Sugarmill Woods
32. Coral Springs

**EXHIBIT II**

Developers And Communities Developed

| | |
|---|---|
| **General Development Corporation** | Julington Creek<br>Port Charlotte/North Port<br>Port LaBelle<br>Port Malbar<br>Port St. John<br>Port St. Lucie<br>Sabastian Highlands<br>Silver Springs Shores<br>Vero Beach Highlands/ Vero Shores |
| **Deltona Corporation** | Citrus Springs<br>Deltona<br>Marco Island<br>Marion Oaks<br>Pine Ridge<br>Spring Hill<br>St. Augustine Shores<br>Sunny Hills<br>Tierra Verde |
| **Arvida Corporation** | Boca West<br>Longboat Key Club<br>Sawgrass<br>Weston |
| **Capital Communities Corporation (William Levitt)** | Poinciana Park<br>Williamsburg-Orlando<br>Williamsburg-Tampa |
| **Beverly Hills Development Corporation** | Beverly Hills |
| **Coral Ridge Properties (Westinghouse Electric)** | Coral Springs |
| **ITT Development Corporation** | Palm Coast |
| **Sugarmill Woods** | Punta Gorda Isles Corporation |
| **Sun City Center** | Sunmark Corporation |
| **Fairfield Communities** | Suntree |
| **Gulfstream Development Corporation (Kenneth M. Good)** | Tampa Palms |

## Characteristics Of The Communities

As shown in Exhibit III, the central portion particularly near Orlando, and areas along both coastlines have been the most popular locations for new communities. While some new communities have been developed in the southern sections of the state, growth in these sections has been in the form of subdivision extensions to existing urban areas. High land costs and the extensive development that already exists in South Florida probably have been the most important factors in limiting the number of new communities.

The new communities are classified as either self-contained or satellite. Exhibit IV shows basic data about the communities, their classification, the year they opened and their size. Self-contained new communities must

**EXHIBIT III**

Number Of New Communities By Area Of State

| Area of State | Number of New Communities |
|---|---|
| West Central | 10 |
| East Central | 5 |
| Southeast | 4 |
| Central | 4 |
| Northeast | 3 |
| Southwest | 2 |
| Northwest | 2 |
| South Central | 1 |
| Panhandle | 1 |

have more than 50 percent of their residents employed in the community or have land allocated for industries that will eventually employ a majority of the residents.

In a satellite new community, most residents must seek jobs outside the limits of the area. Occasionally, the residents must rely on the surrounding towns for everyday shopping and other retail purchases.

All of the new communities in our project contain residential land uses. All but one (Tierra Verde) contain recreational uses and all but one (Port St. John) contain commercial land uses. Fourteen of the new communities contain industrially zoned land, while 18 do not. In general, the self-contained communities in our project have industrial areas, while the satellites do not.

A variety of services and recreational amenities are provided in the new communities. Exhibit V shows the type of fire and police protection that is provided, the access to water, and the major recreational facilities in the communities. As can be seen in the exhibit, police protection for almost all communities is provided by the city or county government, and fire protection is provided by the city or county government or by volunteers. Also, most of the communities are located on substantial bodies or streams of water.

### Trends In New Communities In Florida

The timing of the development of new communities is shown in Exhibit VI. From 1956 to 1959, six new communities were opened, with Port Charlotte being the first. A decline in the number of new communities occurred between 1960 and 1967, after which there was a sharp increase in new communities which continued for eight years. Eight new communities were opened during the 1972-1975 period. However, the bottom dropped out during the 1976-1979 period, when only one new community opened. Since 1980, the trend in new community development has been upward.

**EXHIBIT IV**

Basic Data About New Communities In Florida

| Community | Developer | Classification | Subclassification | Year Opened | Size (Acres) |
|---|---|---|---|---|---|
| Beverly Hills | Beverly Hills Development Corp. | Satellite | Regular | 1958 | 3,500 |
| Boca West | Arvida | Self-Contained | Resort | 1973 | 1,450 |
| Citrus Springs | Deltona | Satellite | Regular | 1970 | 15,000 |
| Coral Springs | Coral Ridge Properties (Westinghouse Electric) | Self-Contained | Regular | 1958 | 15,500 |
| Deltona | Deltona | Self-Contained | Regular | 1962 | 15,000 |
| Julington Creek | General Development | Satellite | Regular | 1985 | 4,150 |
| Longboat Key Club | Arvida | Self-Contained | Resort | 1982 | 1,200 |
| Marco Island | Deltona | Self-Contained | Resort | 1965 | 4,090 |
| Marion Oaks | Deltona | Satellite | Regular | 1973 | 15,000 |
| Palm Coast | ITT Development | Self-Contained | Regular | 1972 | 68,000 |
| Pine Ridge | Deltona | Satellite | Regular | 1972 | 9,900 |
| Poinciana Park | Levitt | Satellite | Regular | 1985 | 7,000 |
| Port Charlotte/North Port | General Development | Self-Contained | Regular | 1956 | 100,000 |
| Port LaBelle | General Development | Self-Contained | Regular | 1973 | 32,000 |
| Port Malabar | General Development | Self-Contained | Regular | 1960 | 43,000 |
| Port St. John | General Development | Satellite | Regular | 1959 | 5,530 |
| Port St. Lucie | General Development | Self-Contained | Regular | 1958 | 49,000 |
| Sawgrass | Arvida | Self-Contained | Resort | 1974 | 4,800 |
| Sebastian Highlands | General Development | Self-Contained | Regular | 1959 | 5,060 |
| Silver Springs Shores | General Development | Self-Contained | Regular | 1969 | 17,000 |
| Spring Hill | Deltona | Satellite | Regular | 1967 | 17,000 |
| St. Augustine Shores | Deltona | Satellite | Regular | 1970 | 2,000 |
| Sugarmill Woods | Punta Gorda Isles | Satellite | Regular | 1972 | 15,000 |
| Sun City Center | Sunmark | Self-Contained | Adult | 1962 | 11,000 |
| Sunny Hills | Deltona | Satellite | Regular | 1971 | 19,500 |
| Suntree | Fairfield Communities | Satellite | Regular | 1975 | 2,500 |
| Tampa Palms | Good-Gulfstream | Satellite | Regular | 1986 | 5,400 |
| Tierra Verde | Deltona | Satellite | Regular | 1963 | 740 |
| Vero Beach Highlands/ Vero Shores | General Development | Satellite | Regular | 1959 | 1,530 |
| Weston | Arvida | Self-Contained | Regular | 1985 | 10,000 |
| Williamsburg-Orlando | Levitt | Satellite | Adult | 1979 | 3,100 |
| Williamsburg-Tampa | Levitt | Satellite | Adult | 1982 | 1,800 |

**EXHIBIT V**

Services And Recreational Amenities In New Communities

| Community | Police Protection | Fire Protection | Body of Water | Golf Course | Tennis Courts | Swimming Pool | Equestrian Facilities |
|---|---|---|---|---|---|---|---|
| Beverly Hills | County | Volunteer | Lakes | Practice Range | Yes | Yes | None |
| Boca West | County | County | Lakes | 72-hole | 34 courts | Yes | None |
| Citrus Springs | County | Volunteer | River | 18-hole | 2 courts | Unknown | Yes |
| Coral Springs | City | City | Lakes Waterways | 54-hole | 58 courts | Yes | Yes |
| Deltona | County | Volunteer (Paid) | Lakes | 18-hole | Yes | Yes | None |
| Julington Creek | County | Volunteer | None | 18-hole | Yes | Yes | None |
| Longboat Key Club | County | Volunteer | Ocean | 36-hole | 14 courts | Yes | None |
| Marco Island | County | Volunteer | Gulf River | 36-hole | Yes | Yes | None |
| Marion Oaks | County | Volunteer | None | 18-hole | 2 courts | None | None |
| Palm Coast | County | Volunteer | Ocean Waterways | 36-hole | 16 courts | Yes | None |
| Pine Ridge | County | County | None | 9-hole | 2 courts | None | Yes |
| Poinciana Park | County | County | Unknown | None | Yes | Yes | None |
| Port Charlotte/North Port | City | Volunteer | River Harbor | 36-hole | Yes | Yes | None |
| Port LaBelle | Unknown | Unknown | Rivers Lakes | 36-hole | Yes | Yes | Yes |
| Port Malbar | City | City | Lakes Waterways | 18-hole | 4 courts | Yes | None |
| Port St. John | Unknown | Unknown | River | None | Yes | Yes | None |
| Port St. Lucie | City | City | River Waterways | 72-hole | Yes | Yes | None |
| Sawgrass | County | County | Ocean | 54-hole | 13 courts | Yes | Yes |
| Sebastian Highlands | City | City | Waterways | 18-hole | Yes | Yes | None |
| Silver Spring Shores | County | Volunteer | Lakes | 18-hole | 6 courts | Yes | None |
| Spring Hill | County | Paid | Lakes | 36-hole | Yes | None | None |
| St. Augustine | County | Volunteer | Waterways | 18-hole | None | Yes | None |
| Sugarmill Woods | County | County | Unknown | 27-hole | Yes | Yes | Yes |
| Sun City Center | County | Volunteer | Lakes Creeks | 99-hole | 13 courts | Yes | None |
| Sunny Hills | County | Volunteer | Lakes | 18-hole | Yes | None | None |
| Suntree | County | Paid | Lakes | 27-hole | Yes | Yes | None |
| Tampa Palms | County | County | Unknown | 54-hole (Planned) | Yes | Yes | None |
| Tierra Verde | County | Other | Ocean Waterways | None | None | None | None |
| Vero Beach Highlands/ Vero Shores | County | County | Lakes Waterways | None | 2 courts | Yes | None |
| Weston | County | County | Lakes | 72-hole (planned) | 14 courts | Yes | Yes |
| Williamsburg-Orlando | County | County | Lakes | None | Yes | Yes | None |
| Williamsburg-Tampa | County | County | Lakes | None | Yes | Yes | None |

The size of new communities has decreased over time. As shown in Exhibit VI, the average size during the first ten-year period (1956-1966) was over 21,000 acres; during the second ten-year period, it was roughly 17,000 acres; and during the last ten years, it was under 5,000 acres. The communities range in size from more than 100,000 acres for the Port Charlotte/North Port community to 750 acres for the Tierra Verde community. During the 1976-1986 decade, the size of new communities ranged from 10,000 acres for Weston to 1,200 acres for Longboat Key Club.

### Self-Contained vs. Satellite Communities

To be included in the self-contained category, the majority of a new community's residents must have been employed within the community. If the area was too young to have successfully recruited industry, space had to have been allocated for an industrial park or a research and development park in the community's land use plan. The exceptions were new resort communities in which the majority of the residents were employed in retail and service occupations due to the tourism the community generated. If a community did not meet these requirements, it was considered to be a satellite new community.

**EXHIBIT VI**

New Community Size By Time Period

| Time Period | Average Size (acres) |
|---|---|
| 1956-1966 | 21,164 |
| 1967-1976 | 16,858 |
| 1977-1986 | 4,664 |

The trend in Florida has been to develop a satellite type of community rather than self-contained communities. In the first decade of new community development in Florida, self-contained communities numbered eight and represented 67 percent of all new development. Correspondingly, new satellites represented only 33 percent of all new communities during this time period.

However, during the second decade of new development in Florida, self-contained communities numbered six and represented 46 percent of all new communities, a drop of 21 percent from the previous time period. Satellite new communities numbered seven and represented 54 percent of all new development, an increase of 21 percent over the previous time period.

The downward trend in the development of self-contained communities continued during the third decade of new development in Florida, when self-contained communities numbered only two and represented 29 percent of all new development. This was a 17 percent decrease from the previous time period. New satellite communities numbered five and presented 71 percent of all new development over this same time period. This was an increase of 17 percent over the previous period. Overall, satellite community development has increased 38 percent since 1956, while self-contained development has decreased 38 percent. (Exhibit VII summarizes these trends.)

A possible explanation for this shift from self-contained to satellite community development is the potentially faster payback period for satellites. Developments involving residential and small commercial land uses generally are the quickest to sell out. With a satellite commuity, a developer needs to develop residential, recreational and some commercial land uses but can avoid industrial and large commercial land uses. More importantly, because satellite communities are located near existing metropolitan areas, their economic bases are already in place. This gives the new communities potential residents a job market for support.

**EXHIBIT VII**

Classification Of New Community Development By Type (1956-1986)

| | Time Period | | |
|---|---|---|---|
| **Classification** | **1956-1966** | **1967-1976** | **1977-1986** |
| Self-Contained | 67% | 46% | 29% |
| Satellite | 33% | 54% | 71% |
| Adult | 8% | 0% | 29% |
| Resort | 8% | 15% | 14% |

### Adult New Communities

A new community was classified as an adult community if it had restrictive covenants regarding the required age of the residents, not if it had only retired residents. Many of the new communities in Florida had a majority of retirees as residents, but the areas were not classified as adult because restrictive covenants did not limit the age of their residents.

Over the last 30 years, no apparent trend has emerged with respect to adult new communities. During the first decade of this new development in Florida, only one community was classified as adult. The second decade of new development saw no new adult communities arise. In the third decade, two adult new communities were developed. The four adult communities represented only about 12 percent of 211 new areas in Florida.

It is quite common, and oftentimes necessary, for a new self-contained community to have predominantly retired residents because they do not need to work, and industrial and commercial land uses often are not present at the onset. Developers in these circumstances hope the situation is temporary and generally strive to make the community attractive to a variety of age groups.

### Resort Communities

As with the development of adult new communities, no apparent trend has emerged over the last 30 years in the development of resort communities. These areas have represented only a small percentage (12) of all new communities in Florida. The development of new resort areas has been very steady over time, with at least one and at most two resort communities being developed every ten years.

### Land Use Analysis

The new communities have been analyzed according to four major land use categories—residential, commercial, industrial and recreational. Exhibit VIII summarizes the findings from this analysis.

As common sense would indicate, all new communities have residential land usage. A total of 31 communities (97 percent) have commercial land use plans. To be classified as having commercial land use, a community does not need to have commercial facilities at present; its master plan only needs to allocate land for this use. In fact, two communities classified as commercial have no such facilities because the population is not large enough to support them or because the county has not approved developers' applications for the required permits. About 44 percent, or a total of 14 communities, have industrial land usage included in their plans. Once again, this total includes all communities whose master plan has set aside land for this use, not merely those in which actual development has occurred.

**EXHIBIT VIII**

Breakdown Of New Commuity Land Use

| Community | Type Of Usage Residen-tial | Commer-cial | Indus-trial | Recrea-tional |
|---|---|---|---|---|
| Beverly Hills | Yes | Yes | No | Yes |
| Boca West | Yes | Yes | No | Yes |
| Citrus Springs | Yes | Yes | Yes | Yes |
| Coral Springs | Yes | Yes | Yes | Yes |
| Deltona | Yes | Yes | Yes | Yes |
| Julington Creek | Yes | Yes | No | Yes |
| Longboat Key Club | Yes | Yes | No | Yes |
| Marco Island | Yes | Yes | Yes | Yes |
| Marion Oaks | Yes | Yes | No | Yes |
| Palm Coast | Yes | Yes | Yes | Yes |
| Pine Ridge | Yes | Yes | No | Yes |
| Poinciana Park | Yes | Yes | No | Yes |
| Port Charlotte/ North Port | Yes | Yes | Yes | Yes |
| Port LaBelle | Yes | Yes | Yes | Yes |
| Port Malabar | Yes | Yes | Yes | Yes |
| Port St. John | Yes | No | No | Yes |
| Port St. Lucie | Yes | Yes | Yes | Yes |
| Sawgrass | Yes | Yes | No | Yes |
| Sebastian Highlands | Yes | Yes | Yes | Yes |
| Silver Springs Shores | Yes | Yes | Yes | Yes |
| Spring Hill | Yes | Yes | No | Yes |
| St. Augustine Shores | Yes | Yes | Yes | Yes |
| Sugarmill Woods | Yes | Yes | No | Yes |
| Sun City Center | Yes | Yes | No | Yes |
| Suntree | Yes | Yes | No | Yes |
| Tampa Palms | Yes | Yes | Yes | Yes |
| Tierra Verde | Yes | Yes | No | No |
| Vero Beach Highlands/ Vero Shores | Yes | Yes | No | Yes |
| Weston | Yes | Yes | Yes | Yes |
| Williamsburg-Orlando | Yes | Yes | No | Yes |
| Williamsburg-Tampa | Yes | Yes | No | Yes |

The 14 communities with industrial land use within their master plans represent 82 percent of the communities that are classified as self-contained. The other three self-contained communities have tourism and other service occupations as their main economic bases. Finally, about 97 percent of the communities also have recreational land usage within their master plans. The only community that lacks recreational facilities is Tierra Verde.

*Residential Alternatives*

Although all communities include residential land use, they offer different residential alternatives. (Exhibit IX shows the types of residential alternatives provided in each community.) All of the communities offer single family detached housing, and five communities only offer this type of housing to its residents.

A total of 29 communities (62.5 percent) allow multi-family housing as a residential alternative. Of the 11 communities that specify the type of multi-family homes they offer, nine have townhomes as a housing choice. The number of communities offering townhomes ranks second only to the number of communities offering single family detached housing. Fourteen of the communities offer villas, and 11 offer duplexes, while only one community offers triplexes, and one community offers flats as an attached housing alternative.

Seven communities, or about 22 percent, offer patio homes while only two communities, or about 6 percent, allow manufactured housing as a choice. Interestingly, only about one-half of the communities offer condominium ownership as opposed to fee simple ownership. The communities offering condominiums tend to be younger. Only seven communities (22 percent) offer a rental alternative to ownership; five of these communities offer apartments, while the remaining two offer rental villas.

**Institutional And Amenity Analysis**

Finally, the new communities have been analyzed and identified by institutional facilities, bodies of water and major recreational facilities.

Except in adult new communities, all new developments have sites designated for schools. The number of sites and the designated acreage vary greatly; some communities have only one site for an elementary school, one community has 24 schools ranging from kindergartens to a branch of a university. As a general rule, an elementary school tends to be the first school built within a community, while other schools are built as demand necessitates.

As with school sites, house-of-worship sites also are included in all of the communities' master plans. The house-of-worship sites within Florida's new communities represent the full spectrum of religious preference.

Four communities, or 15.6 percent, provide their own police protection. The remaining communities rely on county sheriff departments and the Florida Highway Patrol for protection. Eleven communities, or 34.4 percent, have volunteer fire departments. Four communities, or 15.6 percent, have paid fire departments. In summary, the majority of new communities in Florida rely on the county sheriff's department for police protection and have their own volunteer fire department.

Of the 32 communities, four can provide no information concerning nearby bodies of water. Of the remaining 28 new communities, three (10.7 percent) have no bodies of water within their boundaries. The remaining 25 communities have lakes, waterways (which include rivers, intercoastal waterways or canals), or ocean frontage.

As can be seen in Exhibit V, nine of the communities (28.1 percent) have only lakes, while five (15.6 percent) have some combination of lakes and waterways. Two of the communities (6.3 percent) offer residents ocean frontage; three communities (9.3 percent) have both ocean frontage and waterways. Six of the communities (18.8 percent) have only waterways within their acreage. Five of the communities, including the four resort communities, have ocean frontage within the community. The fifth new community with ocean frontage is Port Charlotte, located on Charlotte Harbour.

Exhibit V also shows that the two most popular types of bodies of water within Florida's new communities are lakes and waterways. Each of these is found in 14 of the

new communities, representing 43.8 percent of the total for each type. It is surprising that fewer than one-half of the new communities have lakes and/or waterways, since these types of water facilities are popular and can be developed relatively easily.

The types of recreational facilities provided in the new communities are shown in Exhibit V. The major types represented are golf courses, tennis courts, swimming pools, parks, and equestrian facilities. The most popular recreational facility is tennis with 31 (97 percent) of the communities offering this form of recreation. The range of number of courts is from two courts in some communities to 34 Har Tru courts at Boca West, one of the country's largest tennis complexes. Passive forms of recreation are a close second, with 26 of the 27 responding communities (96.3 percent), providing parks and preserves for enjoyment of the residents. Swimming pools are ranked third, with 26 of the 31 responding communities (84 percent), having at least one swimming pool.

Golf facilities rank fourth, with 71 percent of all new communities offering golf courses. One commuity does not contain a golf course but does have a practice range. Of the 25 communities containing golf facilities, 72 percent of them offer fewer than 36 holes of play. The other 28 percent offer 36 or more holes of play, with Sun City Center offering the most (99 holes). The majority of the golf courses are of championship quality. Golf appears to be a very popular activity, particularly in retirement-oriented new communities.

Finally, equestrian facilities rank fifth, with seven new communities, or 21.9 percent, allowing horses to be kept within the community. One may have expected the majority of the new communities with equestrian facilities to be in or around Marion County, the horse capital of Florida. However, neither of the two new communities in Marion County offer equestrian facilities to their residents. Exhibit V summarizes these data.

**EXHIBIT IX**

Residential Alternatives Within New Communities

| Community | Residential Alternatives |
|---|---|
| Beverly Hills | Single family detached (SFD) duplexes, triplexes |
| Boca West | SFD, attached houses, condominiums |
| Citrus Springs | SFD, condominiums, apartments |
| Coral Springs | SFD, patio, townhomes, villas, condominiums, manufactured housing |
| Deltona | SFD, condominiums |
| Julington Creek | SFD, patios, townhomes, apartments |
| Longboat Key Club | SFD, patios, condominiums |
| Marco Island | SFD, condominiums |
| Marion Oaks | SFD |
| Palm Coast | SFD, patios, townhomes |
| Pine Ridge | SFD |
| Poinciana Park | SFD, townhomes |
| Port Charlotte/North Port | SFD, multi-family, villas, apartments, manufactured housing |
| Port LaBelle | SFD, multi-family |
| Port Malabar | SFD, multi-family, townhomes |
| Port St. John | SFD |
| Port St. Lucie | SFD, patios, townhomes, villas, condominiums, manufactured housing |
| Sawgrass | SFD, villas, condominiums |
| Sebastian Highlands | SFD, duplexes |
| Silver Springs Shores | SFD, multi-family, duplexes, condominiums |
| Spring Hill | SFD |
| St. Augustine Shores | SFD, condominiums |
| Sugarmill Woods | SFD, villas, condominiums |
| Sun City Center | SFD, duplexes, condominiums |
| Sunny Hills | SFD |
| Suntree | SFD, villas, condominiums, townhomes |
| Tampa Palms | SFD, patios, townhomes, condominiums |
| Tierra Verde | SFD, condominiums |
| Vero Beach Highlands/ Vero Shores | SFD, multi-family |
| Weston | SFD, patios, townhomes, flats, condominiums, apartments |
| Williamsburg-Orlando | SFD, attached houses, condominiums |
| Williamsburg-Tampa | SFD, attached houses |

## Conclusion

The development of new communities is an economic and social phenomenon that has received little attention. The purpose of this study is to lay the groundwork for further research by identifying the basic characteristics of these communities. Although the 32 new areas selected are not inclusive of all new communities in Florida, they do represent the majority.

Our analysis shows that most of the new communities have been developed in the central part of the state with a number also along the East Coast (but not on the ocean). They have evolved in clusters over time, producing a wave-like development pattern.

The communities have become smaller, in terms of acreage, over time, with the average size of communities declining from over 21,000 during 1956-1966, to about 17,000 acres in 1967-1977, and under 5,000 acres in 1977-1986. Also, the trend has been toward the development of satellite new communities rather than self-contained communities. Developers appear to be increasingly reluctant to commit the resources and time necessary for undertaking the development of relatively large communities that contain their own potential economic base.

Finally, it is apparent that developers recognize the importance of recreational facilities and other amenities in new communities. Almost all these areas provide tennis courts; most offer parks and preserves, swimming pools and golf courses; and several offer equestrian facilities.

# MAXIMUM RETURNS USING LOW-INCOME AND REHABILITATION HOUSING CREDITS

*A cash flow analysis of a low-income housing rehabilitation project shows that net present value and internal rate of return are attractive—with or without tax credits.*

**by Donald E. Bennett and Douglas S. Bible**

Even with housing subsidies, the actual housing stock available for low-income people has not met demand. This article examines the importance of low-income and rehabilitation housing credits as well as recently legislated subsidized rents for single room occupancy housing as a means of increasing the viability of preserving or restoring older housing for low-income tenants.

The research as presented here, examines the influence of historic rehabilitation tax credits and low-income housing credits upon the rate of return and net present value for low-income subsidized housing. The effects of the Tax Reform Act of 1986 are emphasized. To demonstrate these tax effects, the rehabilitation of a vacant, deteriorating hotel, located near the urban center of a medium-sized Southern City, into a single room occupancy (SRO) dwelling, is cited.

### The Rehabilitation Project

The hotel was constructed in 1920 and operated continuously until 1980, when it was closed. It is located in a once-thriving commercial area which deteriorated as businesses moved to the suburbs during the late 1960s and 1970s. Many of the buildings in this area, although historically significant, are unattractive and in poor condition.

Federal and local government incentives have been applied in an attempt to encourage the rehabilitation of buildings and business development in the area. A property tax abatement program has been instituted which allows owners to make improvements and pay ad valorem taxes for five years based on the value of the property before improvements are made. This incentive helps boost operating income, and when coupled with subsidized rents and other tax credits, may encourage development in the area.

The hotel is being converted into a SRO housing unit. SROs, typically found in residential hotels, are similar to dormitories in that bathroom and kitchen facilities are shared, but individual sleeping units and lavatory facilities are provided. To qualify for participation in the U.S. Department of Housing and Urban Development's (HUD) Moderate Rehabilitation SRO program, investors must meet certain maximum income requirements and be recertified annually. The SRO funds are made available through the *Federal Homeless Assistance Act*, which was passed by the U.S. Congress in July of 1987.[1] The project presented here met SRO program qualifications and has been awarded up to $1.3 million in rental subsidy payments by HUD.

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### Rehabiltation Projections

The hotel is being converted into 47 SRO units, including one unit for a manager, one for a resident counselor and 45 units for qualified low-income residents. The 45 units have been approved for Section 8 contract rents for ten years. Increases in the Section 8 rent are expected to be approved, as necessary, to offset future increases in expenses, such as property taxes; annual HUD contributions also are expected to be renewed for an additional ten years.

Besides the residential units, 2,000 square feet of commercial space are to be leased at $6 per square foot. Gross residential rental income is projected to be $138,744, and commercial income is projected to total $12,000 annually. A five percent vacancy rate has been allowed. Operating expenses are projected to be $88,619 per year with an annual variation due to a projected increase of $5,000 in property taxes in year 6 (at the time of expiration of the tax abatement) and changing mortgage insurance premiums (1 percent of the outstanding balance, paid monthly). Net operating income is not expected to change because of the property tax increase; the subsidized rents are assumed to increase in line with increases in operating expenses. The project costs and financing data are shown in Exhibit I.

**EXHIBIT I**

Project Costs And Financing Data

| Mortgages | | |
|---|---|---|
| Private mortgage | $350,000 | at 10.75 percent for 15 years (1 percent fee, 1 percent insurance premium) |
| Neighborhood Investment Leverage Program loan[1] | $250,000 | at 6 percent for 10 years (Principal and interest payments deferred until year 16) |
| Neighborhood Business Assistance program Commercial loan | $ 35,000 | at 3 percent for 15 years |
| Total financing | $635,000 | |

| Acquisition and Rehabilitation Costs | |
|---|---|
| Project costs | |
| Organization and reserves | $ 16,000 |
| Commercial construction[2] | 65,000 |
| Residential building[3] | 700,500 |
| Land value | 13,500 |
| Total project costs | 795,000 |
| Less total financing | 635,000 |
| Equity Required[4] | $160,000 |

Notes

1. Federal funds obtained through the city government.
2. Straight-line depreciation over 31.5 years.
3. Straight-line depreciation over 27.5 years.
4. To be obtained from limited partners.

### Recent Tax Legislation

In determining the investment feasibility of any rehabilitation project, income tax considerations are of major importance. The Tax Reform Act of 1986 has implemented many changes with respect to real estate tax shelters. Perhaps the most important change is the limitation on losses and credits from passive activities. The Tax Reform Act considers all real estate activities to be passive activities. The act allows taxpayers to claim losses from rental activities only to the extent that they have other passive income. Passive losses may be accumulated, however, and claimed in the year of sale.

The Tax Reform Act does provide for a maximum of $25,000 in allowable credits and losses if a taxpayer's adjusted gross income (AGI) is less than $100,000 or in rehabilitation and low-income housing tax credits if AGI is less than $200,000. The $25,000 allowance ordinarily is available only for active participants in real estate ventures. However, limited partners in low-income housing may take advantage of annual tax credits. In order to receive the credit, units must qualify as low-income housing throughout a 15-year compliance period. Limited partners in low-income housing also may suspend passive losses and deduct them upon the sale of the project. The annual tax credit is limited to a deduction equivalent, which is determined by multiplying the investors' tax rate by $25,000 minus whatever passive losses are allowed. If an annual credit exceeds this amount, the unused portion of the credit may be carried forward indefinitely.[2]

With respect to the low-income housing credit, an annual credit of either 9 percent or 4 percent is offered for ten years.[3] For projects placed in service in 1987, a maximum annual credit of 9 percent is allowed for newly constructed or rehabilitated low-income units that are financed with federally subsidized funds, provided that rehabilitation expenditures average out to $2,000 or more per low-income unit. If federal or state subsidies are used to finance the rehabilitation project, the credit is limited to 4 percent per year. A 9 percent credit may be obtained in conjunction with a subsidized loan, provided the basis is reduced by the amount of such a loan. In this project, the 9 percent credit is applied to the residential rehabilitation costs less $228,000, or that portion of the subsidized loan that is allocated for residential rehabilitation.[4]

For residential properties, the historic rehabilitation credit of 20 percent may be taken on certified historic structures placed in service before 1936. To be certified as an historic structure, a building must be listed in the National Register or located in a registered historic district and recognized as historically significant to the district. The hotel in this project is on the borderline of a certified historic district and therefore is not eligible for the 20 percent tax credit. However, efforts are underway to have the property included in the district. If these efforts are successful, the basis of the building will be reduced by the 20 percent credit, which is taken for depreciation purposes.

## EXHIBIT IIa

(Continued on page 44)

Limited Partnership
Projected Taxable Income And Cash Flow Analysis
Without Rehabilitation Credit
(Assumes six investors for a total of $160,000)

| | Total | Initial Investment | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|---|---|
| Total Project | | | | | | | | |
| Investment | $ 160,000 | 160,000 | | | | | | |
| Rent income | 2,311,160 | | 150,744 | 150,744 | 150,744 | 150,744 | 150,744 | 155,744 |
| Vacancy | 115,555 | | 7,537 | 7,537 | 7,537 | 7,537 | 7,537 | 7,787 |
| Net rent | 2,195,605 | | 143,207 | 143,207 | 143,207 | 143,207 | 143,207 | 147,957 |
| Operating expenses | 1,360,493 | | 88,619 | 88,514 | 88,398 | 88,268 | 88,123 | 92,962 |
| Operating income | 835,112 | | 54,588 | 54,693 | 54,809 | 54,939 | 55,084 | 54,995 |
| Debt service | 749,700 | | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 |
| Before tax cash flow | 85,412 | | 4,608 | 4,713 | 4,829 | 4,959 | 5,104 | 5,015 |
| Operating income | $ 835,112 | | 54,588 | 54,693 | 54,809 | 54,939 | 55,084 | 54,995 |
| Interest expense | 364,798 | | 38,169 | 36,990 | 35,682 | 34,231 | 32,622 | 30,836 |
| Depreciation | 413,055 | | 27,537 | 27,537 | 27,537 | 27,537 | 27,537 | 27,537 |
| Amortization | 11,000 | | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | |
| Operating taxable income | $ 46,259 | | -(13,318) | -(12,034) | -(10,610) | -(9,029) | -(7,275) | -(3,378) |
| Loss on Sale | 120,945 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Low income credit | 385,630 | | 38,563 | 38,563 | 38,563 | 38,563 | 38,563 | 38,563 |
| Per limited partner | | | | | | | | |
| Operating income | | | -(2,220) | -(2,006) | -(1,768) | -(1,505) | -(1,213) | -(563) |
| Suspended operating losses | | | 2,220 | 4,225 | 5,994 | 7,499 | 8,711 | 9,274 |
| Operating taxable income | | | | | | | | |
| Loss on sale | | | 0 | 0 | 0 | 0 | 0 | 0 |
| After tax cash flow: | | | | | | | | |
| Initial investment | $ -(26,667) | -(26,667) | | | | | | |
| Before tax cash flow | 14,235 | | 768 | 786 | 805 | 827 | 851 | 836 |
| Tax credits: | | | | | | | | |
| Low income credit | 64,272 | | 6,427 | 6,427 | 6,427 | 6,427 | 6,427 | 6,427 |
| Rehab | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Tax effect oper. income | -(2,159) | | 0 | 0 | 0 | 0 | 0 | 0 |
| Tax effect of loss on sale | 5,644 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 55,326 | -(26,667) | 7,195 | 7,213 | 7,232 | 7,254 | 7,278 | 7,263 |

| | |
|---|---|
| Net present value of after tax cash flows + 20% | $ 4,494 |
| Internal rate of return | 24.58% |
| Mtg balances at end of 15 yrs: | |
| Private mtg | 0 |
| NILP | $250,000 |
| NBAP | 0 |
| Total (Sales price) | $250,000 |
| Invest in project | $784,000 |
| Cumulative depr. | 413,055 |
| Basis at end of 15 years | $370,945 |
| Net loss | $(120,945) |

### Cash Flow Analysis Of The Rehabilitation Project

An analysis of the project shows that after-tax cash flows from the venture appear to provide reasonable returns to limited partner investors, especially when the rehabilitation credit is allowed. The following analysis examines returns to limited partner investors with and without the historic rehabilitation credit.

Exhibit II presents the cash flows that result if the project is not entitled to the rehabilitation credit. In computing before-tax cash flow, operating income is reduced by debt service; this computation shows that cash flow for the partnership in the first year is $4,608. Cash flows for years 1 through 5 are nearly identical; cash flows differ only slightly because of the decrease in the mortgage insurance premium and interest expense. Cash flow for year 6 (the time of the expiration of the tax abatement) reveals an increase in potential of $5,000 and an increase in operating expenses of $5,000.

## EXHIBIT IIb

Limited Partnership
Projected Taxable Income And Cash Flow Analysis
Without Rehabilitation Credit
(Assumes six investors for a total of $160,000)

| | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
|---|---|---|---|---|---|---|---|---|---|
| Total Project | | | | | | | | | |
| Investment | | | | | | | | | |
| Rent income | $ 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 |
| Vacancy | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 |
| Net rent | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 |
| Operating expenses | 92,783 | 92,583 | 92,361 | 92,114 | 91,839 | 91,533 | 91,192 | 90,813 | 90,391 |
| Operating income | 55,174 | 55,374 | 55,596 | 55,843 | 56,118 | 56,424 | 56,765 | 57,144 | 57,566 |
| Debt service | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 |
| Before tax cash flow | 5,194 | 5,394 | 5,616 | 5,863 | 6,138 | 6,444 | 6,785 | 7,164 | 7,586 |
| Operating income | 55,174 | 55,374 | 55,596 | 55,843 | 56,118 | 56,424 | 56,765 | 57,144 | 57,566 |
| Interest expense | 28,852 | 26,652 | 24,208 | 21,493 | 18,479 | 15,229 | 11,408 | 7,272 | 2,675 |
| Depreciation | 27,537 | 27,537 | 27,537 | 27,537 | 27,537 | 27,537 | 27,537 | 27,537 | 27,537 |
| Amortization | | | | | | | | | |
| Operating taxable income | $ -(1,215) | 1,185 | 3,851 | 6,813 | 10,102 | 13,658 | 17,820 | 22,335 | 27,354 |
| Loss on Sale | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 120,945 |
| Low income credit | 38,563 | 38,563 | 38,563 | 38,563 | | | | | |
| Per limited partner | | | | | | | | | |
| Operating income | -(203) | 198 | 642 | 1,136 | 1,684 | 2,276 | 2,970 | 3,723 | 4,559 |
| Suspended operating losses | 9,477 | 9,279 | 8,637 | 7,502 | 5,818 | 3,542 | 572 | 0 | 0 |
| Operating taxable income | | | | | | | | 3,151 | 4,559 |
| Loss on sale | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20,158 |
| After tax cash flow: | | | | | | | | | |
| Initial investment | | | | | | | | | |
| Before tax cash flow | $ 866 | 899 | 936 | 977 | 1,023 | 1,074 | 1,131 | 1,194 | 1,264 |
| Tax credits: | | | | | | | | | |
| Low income credit | 6,427 | 6,427 | 6,427 | 6,427 | | | | | |
| Rehab | 0 | 0 | 0 | 0 | | | | | |
| Tax effect oper. income | 0 | 0 | 0 | 0 | | | | -(882) | -(1,277) |
| Tax effect of loss on sale | 0 | 0 | 0 | 0 | | | | | 5,644 |
| Total | 7,293 | 7,326 | 7,363 | 7,404 | 1,023 | 1,074 | 1,131 | 312 | 5,632 |

Note: Certain amounts may not foot due to rounding.

The low-income annual housing credit of $38,563 provides $6,427 of credits per partner for ten years. The before-tax cash flows, therefore, are increased by the housing credits for ten years and decreased by taxable income only in year 14.

It is assumed that the hotel will remain in compliance with the 15-year low-income housing tax credit requirement. The year of sale consequently is year 15. In the year of disposition, the before-tax cash flow of $1,264 is reduced by $1,277 in taxes on operating income and increased by a $5,644 tax savings from the loss on the sale, for a net cash flow of $5,632 per limited partner. The $20,158 loss on the sale is one-sixth of the total loss, which is determined by deducting the adjusted basis at the end of year 15 ($370,945) from the sale price ($250,000). The sale price of $250,000, the outstanding loan balance after 15 years, represents a worst-case scenario for the limited partners, it assumes the property is taken over by the lenders for the loan balance.

In calculating taxable income or loss, operating income is decreased by interest expense and non-cash expenses i.e., depreciation and amortization. A taxable loss of $13,318 or $2,220 is projected for each limited partner for the first year. As mentioned earlier, the Tax Reform Act allows annual losses to be suspended and applied against future taxable income or claimed at the time of sale. In this analysis, the suspended losses are accumulated through year 7 and depleted in year 14, the last full year before the sale.

At the end of year 15, when the property is sold and the partnership is dissolved, the sale produces a taxable loss. Since the investment is concluded, the limited partner portion of the loss can be claimed, and the balance of passive losses can be brought forward by the limited partners. Exhibit II actually shows that the passive losses accumulated during the first seven years reduce taxable income in years 8 to 14. The after-tax cash flows for limited partners, as shown in the lower portion of Exhibit

## EXHIBIT IIIa

(Continued on page 46)

Limited Partnership
Projected Taxable Income And Cash Flow Analysis
With Rehabilitation Credit
(Assumes six investors for a total of $160,000)

| | | Total | Initial Investment | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|---|---|---|
| Total Project | | | | | | | | | |
| Investment | $ | 160,000 | 160,000 | | | | | | |
| Rent income | | 2,311,160 | | 150,744 | 150,744 | 150,744 | 150,744 | 150,744 | 150,744 |
| Vacancy | | 115,555 | | 7,537 | 7,537 | 7,537 | 7,537 | 7,537 | 7,787 |
| Net rent | | 2,195,605 | | 143,207 | 143,207 | 143,207 | 143,207 | 143,207 | 147,957 |
| Operating expenses | | 1,360,493 | | 88,619 | 88,514 | 88,398 | 88,268 | 88,123 | 92,962 |
| Operating income | | 835,112 | | 54,588 | 54,693 | 54,809 | 54,939 | 55,084 | 54,995 |
| Debt service | | 749,700 | | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 |
| Before tax cash flow | | 85,412 | | 4,608 | 4,713 | 4,829 | 4,959 | 5,104 | 5,015 |
| Operating income | $ | 835,112 | | 54,588 | 54,693 | 54,809 | 54,939 | 55,084 | 54,995 |
| Interest expense | | 364,798 | | 38,169 | 36,990 | 35,682 | 34,231 | 32,622 | 30,836 |
| Depreciation | | 335,070 | | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 |
| Amortization | | 11,000 | | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | |
| Operating taxable income | $ | 124,244 | | -(8,119) | -(6,835) | -(5,411) | -(3,830) | -(2,076) | 1,821 |
| Loss on Sale | | 54,130 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Low income credit | | 255,310 | | 25,531 | 25,531 | 25,531 | 25,531 | 25,531 | 25,531 |
| Rehabilitation credit | | 144,800 | | 144,800 | | | | | |
| Per limited partner | | | | | | | | | |
| Operating income | | | | -(1,353) | -(1,139) | -(902) | -(638) | -(346) | 304 |
| Suspended operating losses | | | | 1,353 | 2,492 | 3,394 | 4,033 | 4,379 | 4,075 |
| Operating taxable income | | | | | | | | | |
| Loss on sale | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| After tax cash flow: | | | | | | | | | |
| Initial investment | $ | -(26,667) | -(26,667) | | | | | | |
| Before tax cash flow | | 14,235 | | 768 | 786 | 805 | 827 | 851 | 836 |
| Tax credits: | | | | | | | | | |
| Low income credit | | 42,552 | | 4,255 | 4,255 | 4,255 | 4,255 | 4,255 | 4,255 |
| Rehab | | 24,133 | | 2,745 | 2,745 | 2,745 | 2,745 | 2,745 | 2,745 |
| Tax effect oper. income | | -(1,866) | | 0 | 0 | 0 | 0 | 0 | 0 |
| Tax effect of loss on sale | | 2,526 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 54,913 | -(26,667) | 7,768 | 7,786 | 7,805 | 7,827 | 7,851 | 7,836 |
| Net present value of after tax cash flows + 20% | $ | 6,096 | | | | | | | |
| Internal rate of return | | 26.43% | | | | | | | |
| Mtg balances at end of 15 yrs: | | | | | | | | | |
| Private mtg | | | 0 | | | | | | |
| NILP | | | $250,000 | | | | | | |
| NBAP | | | 0 | | | | | | |
| Total (Sales price) | | | $250,000 | | | | | | |
| Invest in project | | | $784,000 | | | | | | |
| Cumulative depr. | | | 335,070 | | | | | | |
| Rehab credit | | | 144,800 | | | | | | |
| Basis at end of 15 years | | | $304,130 | | | | | | |
| Net loss | | | $(54,130) | | | | | | |

II, indicate that the low-income credits of $6,427 for ten years combined with two years of taxable income (years 14 and 15) and a loss on the sale of $20,158 yield $5,644 in tax savings or a 24.58 percent rate of return. This rate of return assumes that six investors each contributed $26,667 for a total of $160,000. In addition, it assumes that the investors have less than $200,000 adjusted gross income (the maximum adjustable gross income for taxpayers to receive rehabilitation or low-income tax credits) and have a 28 percent tax rate.[5]

Exhibit III presents the cash-flow projections that result if the project is eligible for the rehabilitation credit. The

projections in this exhibit are the same as those in Exhibit II for rent income, vacancy, net rent, operating expenses, operating income, debt service, before-tax cash flow and interest expense. Since the credit reduces the basis of the depreciable property (the investors' basis in the partnership also is reduced), the annual depreciation charge of $22,338 is lower on this projection than on the previous one. In the first year, the partners are entitled to a 20 percent credit on the limited partner portion of rehabilitation costs; the total rehabilitation credits of $144,800 are determined by taking 20 percent of the $724,000 rehabilitation costs. The partners also are entitled to a reduced low-income housing credit. Again, the annual cash flows are assumed to be distributed to the limited partners.

The sale of the property at the end of year 15 results in a smaller loss on the sale in this projection due to the reduction in basis for the rehabilitation credit. The passive losses are deferred through year 5 and reduce income in years 6 through 10.

Exhibits II and III summarize the cash flows from and to the limited partners. Using 20 percent (assumed to be an acceptable return based on the level of risk), the net present value of the cash flows that result when no rehabilitation credit is allowed is $4,494, and the internal rate of return is 24.58 percent (Exhibit II). Surprisingly, the rate of return increases only slightly, to 26.43 percent, when the additional rehabilitation credit of $144,800 is included (Exhibit III). The individual rehabilitation credit of $24,133 is not fully utilized in year 1 due to the deduction equivalent limitation of $7,000 per year (28 percent of $25,000). The credit is utilized in years 1 through 9 due to the annual limitation.

**EXHIBIT IIIb**

Limited Partnership
Projected Taxable Income And Cash Flow Analysis
Without Rehabilitation Credit
(Assumes six investors for a total of $160,000)

| | | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Project | | | | | | | | | | |
| Investment | | | | | | | | | | |
| Rent income | $ | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 |
| Vacancy | | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 |
| Net rent | | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 |
| Operating expenses | | 92,783 | 92,583 | 92,361 | 92,114 | 91,839 | 91,533 | 91,192 | 90,813 | 90,391 |
| Operating income | | 55,174 | 55,374 | 55,596 | 55,843 | 56,118 | 56,424 | 56,765 | 57,144 | 57,566 |
| Debt service | | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 |
| Before tax cash flow | | 5,194 | 5,394 | 5,616 | 5,863 | 6,138 | 6,444 | 6,785 | 7,164 | 7,586 |
| Operating income | $ | 55,174 | 55,374 | 55,596 | 55,843 | 56,118 | 56,424 | 56,765 | 57,144 | 57,566 |
| Interest expense | | 28,852 | 26,652 | 24,208 | 21,493 | 18,479 | 15,229 | 11,408 | 7,272 | 2,675 |
| Depreciation | | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 |
| Amortization | | | | | | | | | | |
| Operating taxable income | $ | 3,984 | 6,384 | 9,050 | 12,012 | 15,301 | 18,857 | 23,019 | 27,534 | 32,553 |
| Loss on Sale | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54,130 |
| Low income credit | | 25,531 | 25,531 | 25,531 | 25,531 | | | | | |
| Rehab credit | | | | | | | | | | |
| Per limited partner | | | | | | | | | | |
| Operating income | | 664 | 1,064 | 1,508 | 2,002 | 2,550 | 3,143 | 3,837 | 4,589 | 5,426 |
| Suspended operating losses | | 3,411 | 2,347 | 839 | 0 | 0 | 0 | 0 | 0 | 0 |
| Operating taxable income | | | | | 1,163 | 2,550 | 3,143 | 3,837 | 4,589 | 5,420 |
| Loss on sale | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9,022 |
| After tax cash flow: | | | | | | | | | | |
| Initial investment | | | | | | | | | | |
| Before tax cash flow | $ | 866 | 899 | 936 | 977 | 1,023 | 1,074 | 1,131 | 1,194 | 1,264 |
| Tax credits: | | | | | | | | | | |
| Low income credit | | 4,255 | 4,255 | 4,255 | 4,255 | | | | | |
| Rehab | | 2,745 | 2,745 | 2,174 | 0 | | | | | |
| Tax effect oper. income | | 0 | 0 | 0 | -(274) | -(286) | -(301) | -(317) | -(334) | -(354) |
| Tax effect of loss on sale | | 0 | 0 | 0 | 0 | | | | | 2,526 |
| Total | | 7,866 | 7,899 | 7,365 | 4,959 | 737 | 773 | 814 | 860 | 3,436 |

Note: Certain amounts may not foot due to rounding.

## EXHIBIT IVa

(Continued on page 48)

Limited Partnership

Projected Taxable Income And Cash Flow Analysis With Rehabilitation Credit

(Assumes six investors for a total of $160,000)

| | | Total | Initial Investment | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
|---|---|---|---|---|---|---|---|---|---|
| Total Project | | | | | | | | | |
| Investment | $ | 160,000 | 160,000 | | | | | | |
| Rent income | | 2,311,160 | | 150,744 | 150,744 | 150,744 | 150,744 | 150,744 | 155,744 |
| Vacancy | | 115,555 | | 7,537 | 7,537 | 7,537 | 7,537 | 7,537 | 7,787 |
| Net rent | | 2,195,605 | | 143,207 | 143,207 | 143,207 | 143,207 | 143,207 | 147,957 |
| Operating expenses | | 1,360,493 | | 88,619 | 88,514 | 88,398 | 88,268 | 88,123 | 92,962 |
| Operating income | | 835,112 | | 54,588 | 54,693 | 54,809 | 54,939 | 55,084 | 54,995 |
| Debt service | | 749,700 | | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 |
| Before tax cash flow | | 85,412 | | 4,608 | 4,713 | 4,829 | 4,959 | 5,104 | 5,015 |
| Operating income | $ | 835,112 | | 54,588 | 54,693 | 54,809 | 54,939 | 55,084 | 54,995 |
| Interest expense | | 364,798 | | 38,169 | 36,990 | 35,682 | 34,231 | 32,622 | 30,836 |
| Depreciation | | 335,070 | | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 |
| Amortization | | 11,000 | | 2,200 | 2,200 | 2,200 | 2,200 | 2,200 | |
| Operating taxable income | $ | 124,244 | | -(8,119) | -(6,835) | -(5,411) | -(3,830) | -(2,076) | 1,821 |
| Loss on Sale | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Low income credit | | 255,310 | | 25,531 | 25,531 | 25,531 | 25,531 | 25,531 | 25,531 |
| Rehabilitation credit | | 144,800 | | 144,800 | | | | | |
| Per limited partner | | | | | | | | | |
| Operating income | | | | -(325) | -(273) | -(216) | -(153) | -(83) | 73 |
| Suspended operating losses | | | | 325 | 598 | 815 | 968 | 1,051 | 978 |
| Operating taxable income | | | | | | | | | |
| Loss on sale | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| After tax cash flow: | | | | | | | | | |
| Initial investment | $ | -(6,400) | -(6,400) | | | | | | |
| Before tax cash flow | | 3,416 | | 184 | 189 | 193 | 198 | 204 | 201 |
| Tax credits: | | | | | | | | | |
| Low income credit | | 10,212 | | 1,021 | 1,021 | 1,021 | 1,021 | 1,021 | 1,021 |
| Rehab | | 5,792 | | 5,792 | 0 | 0 | 0 | 0 | 0 |
| Tax effect oper. income | | -(448) | | 0 | 0 | 0 | 0 | 0 | 0 |
| Tax effect of loss on sale | | 606 | | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | | 13,179 | -(6,400) | 6,998 | 1,210 | 1,214 | 1,220 | 1,225 | 1,222 |
| Net present value of after tax cash flows + 20% | $ | 3,661 | | | | | | | |
| Internal rate of return | | 47.99% | | | | | | | |

| | |
|---|---|
| Mtg balances at end of 15 yrs: | |
| Private mtg | 0 |
| NILP | $250,000 |
| NBAP | 0 |
| Total (Sales price) | $250,000 |

| | |
|---|---|
| Invest in project | $784,000 |
| Cumulative depr. | 335,070 |
| Rehab credit | 144,800 |
| Basis at end of 15 years | $304,130 |
| Net loss | $(54,130) |

### The Optimal Number Of Investors

The $7,000 deduction equivalent limitation for credits and losses may encourage the use of more limited partners in order to maximize the use of the credits and the rate of return. When no rehabilitation credit is allowed (Exhibit II), six appears to be the optimal number of investors. If five investors were involved, annual credits would total $7,713, of which only $7,000 could be utilized. If seven or more investors were involved, the rate of return would not change.

When the rehabilitation credit is allowed (Exhibit IV), it appears that 25 (or more) investors is optimal. With a total of $144,800 in rehabilitation credits and $25,531 in annual low-income credits in year 1, 25 investors would have $6,813 in allowable annual credits, whereas 24 investors would have $7,097 in credits, of which only $7,000 could be used. As shown in Exhibit IV, the rate of return also would be dramatic, 47.99 percent for each partner, when 25 investors participated.

Additional factors that would need to be considered in the determination of the ideal number of investors are the legal aspects, marketing constraints and costs. It is likely that having ten or fewer partners would substantially reduce the selling and legal expenses.

## Conclusions

This analysis of cash flows shows that an adequate return on equity will result from the conversion of a vacant, deteriorating hotel to an SRO dwelling and that rehabilitation of the hotel is an attractive investment. The net present value and internal rate of return are more appealing when the rehabilitation credit is applied; nevertheless, both net present value and internal rate of return are acceptable when the credit is not employed. This project appears to be most attractive to investors in the 28 percent tax bracket whose adjusted gross income is less than $200,000 and consequently, are able to use the available tax credits.

### NOTES

1. See Department of Housing and Urban Development: Part V. *Federal Register*, Thursday, October 15, 1987.

2. Unused credits upon the sale of the property may be used as deductions for tax purposes in that year or may be carried forward indefinitely and used to offset future tax on passive income.

3. Beginning in 1988, credit rates are computed so that the present value of the ten annual credit amounts at the beginning of the ten year tax period equals 70 percent of the qualified basis of the low-income units. The discount rate is a rate equal to 72 percent of the average of the months-applicable federal rate for mid- and long-term obligations. If the federal rates do not change substantially from those in existence when the Tax Reform Act was passed, the credit still will be approximately 9 percent.

4. The credits are based on qualified residential rehabilitation costs of $656,480 less $228,000 in subsidized loans or (428,480)(.09) = $38,563.

5. For tax years beginning after 1987, two tax rates, 15 percent and 28 percent are applicable. To reduce the advantage of the 15 percent rate and tax exemptions for high-income taxpayers, income ranges have been established which require an additional 5 percent tax on specified income. For example, an individual with one exemption would pay taxes of: (1) $9,761.50 (22.6 percent) if his taxable income was $43,150; (2) $9,761.50 plus 33 percent of the excess over $43,150 if income was greater than $43,150 but less than $100,480; and (3) $28,680.40 plus 28 percent of the excess over $100,480, if income was greater than $100,480. The amount of income subject to the 33 percent tax rate varies with the taxpayer's filing status and the number of exemptions claimed.

### EXHIBIT IVb

Limited Partnership
Projected Taxable Income And Cash Flow Analysis Without Rehabilitation Credit
(Assumes six investors for a total of $160,000)

| | | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Project | | | | | | | | | | |
| Investment | | | | | | | | | | |
| Rent income | $ | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 | 155,744 |
| Vacancy | | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 | 7,787 |
| Net rent | | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 | 147,957 |
| Operating expenses | | 92,783 | 92,583 | 92,361 | 92,114 | 91,839 | 91,533 | 91,192 | 90,813 | 90,391 |
| Operating income | | 55,174 | 55,374 | 55,596 | 55,843 | 56,118 | 56,424 | 56,765 | 57,144 | 57,566 |
| Debt service | | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 | 49,980 |
| Before tax cash flow | | 5,194 | 5,394 | 5,616 | 5,863 | 6,138 | 6,444 | 6,785 | 7,164 | 7,586 |
| Operating income | $ | 55,174 | 55,374 | 55,596 | 55,843 | 56,118 | 56,424 | 56,765 | 57,144 | 57,566 |
| Interest expense | | 28,852 | 26,652 | 24,208 | 21,493 | 18,479 | 15,229 | 11,408 | 7,272 | 2,675 |
| Depreciation | | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 | 22,338 |
| Amortization | | | | | | | | | | |
| Operating taxable income | | 3,984 | 6,384 | 9,050 | 12,012 | 15,301 | 18,857 | 23,019 | 27,534 | 32,553 |
| Loss on Sale | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54,130 |
| Low income credit | | 25,531 | 25,531 | 25,531 | 25,531 | | | | | |
| Rehab credit | | | | | | | | | | |
| Per limited partner | | | | | | | | | | |
| Operating income | $ | 159 | 255 | 362 | 480 | 612 | 754 | 921 | 1,101 | 1,302 |
| Suspended operating losses | | 819 | 563 | 201 | 0 | 0 | 0 | 0 | 0 | 0 |
| Operating taxable income | | | | | 279 | 612 | 754 | 921 | 1,101 | 1,302 |
| Loss on sale | | 0 | 0 | 0 | 0 | | | | | 2,165 |
| After tax cash flow: | | | | | | | | | | |
| Initial investment | | | | | | | | | | |
| Before tax cash flow | $ | 208 | 216 | 225 | 235 | 246 | 258 | 271 | 287 | 303 |
| Tax credits: | | | | | | | | | | |
| Low income credit | | 1,021 | 1,021 | 1,021 | 1,021 | | | | | |
| Rehab | | 0 | 0 | 0 | 0 | | | | | |
| Tax effect oper. income | | 0 | 0 | 0 | -(66) | -(69) | -(72) | -(76) | -(80) | -(85) |
| Tax effect of loss on sale | | 0 | 0 | 0 | 0 | | | | | 606 |
| Total | | 1,229 | 1,237 | 1,246 | 1,190 | 177 | 186 | 195 | 206 | 825 |

Note: Certain amounts may not foot due to rounding.

# CANADA—U.S. FREE TRADE PACT MAY BENEFIT COUNSELORS

**by Robert B. Hulley, CRE**

The Canada–U.S. Free Trade Agreement, "once approved by your Parliament and our Congress, will throw open the doors to the world's largest free trade area," said President Ronald Reagan in his farewell speech to Canadians following the Summit Conference held in Toronto.[1] The Free Trade Agreement (FTA) will create new opportunities for trade in service, giving both Canadians and Americans the right to do business on either side of the border. Counselors, however, seem unaware that real estate is among the service industries covered by the agreement.

"The key element in the FTA pertaining to trade in services is a commitment by both countries to national treatment in all new policies. National treatment means that foreign firms are treated the same under laws and government policy."[2] The obligation, however, to extend national treatment does not mean that treatment has to be the same in all respects. Article 1403,[3] for example, specifies that either government remains free to license and certify providers of specific services, such as real estate, but must ensure that the licensing requirements do not act as a discriminatory barrier for persons of the other nation to meet. Not only will it be easier for Canadians to work on assignments in the United States, but also, it will be easier for firms to sell and accommodate specialized services in the United States, or for Americans to do the same in Canada.

Counselors, whether in Canada or in the U.S., often work together informally, referring clients and assisting one another. Now under the FTA, "temporary entry by business visitors, professionals and intercompany transfers will be liberalized between Canada and the United States . . . Both Countries have restrictive temporary-entry regulations now, but the U.S. restrictions have been particularly troublesome recently."[4] The challenge, therefore, for those preparing the agreement was to ensure that immigration regulations would complement the rules governing the movement of services, but would not compromise the ability of either government to determine who may gain entry.

Free trade already has prompted some Canadian and U.S. professionals to consider joining forces. And, although lawyers are excluded from the FTA, the legal firm of Day, Berry and Howard (Hartford, Connecticut), who "have represented both Canadian and U.S. corporations, is now looking to joint venture with Canadian law firms to provide business clients with legal advice from both sides of the border."[5] According to Robert Siegal, partner, Day, Berry and Howard, they are arranging working relationships – that could mean more business for both entities.

Real estate counselors should be aware of the agreement's possible ramifications, opportunities and limitations. For example, while real estate agents, brokers and managers specifically are included in the agreement, the Standard Industrial Classification (SIC) index, does not include real estate counselors. This could lead to misinterpretation since real estate counselors are not listed as an occupation in either the Canadian or American SIC manuals.[6] However, this may not be a problem, since counselors would probably qualify under the real estate broker or management consultant categories. Counselors on both sides of the border should, however, work toward having this classification amended. After all, trade in service is considered the frontier of international commerce in the 1980s.

"The new, general rules adopted for trade in service are a trail blazing effort and could lay the foundation for further work multilaterally. Applying these rules prospectively will insure that new discrimination will not be introduced. This constitutes a major step toward ensuring that open and competitive trade in services continues between the two countries."[7] And, the process of the agreement becoming law in both countries moved closer when both the House Ways and Means and the Senate Finance Committees unanimously approved the legislation. In signing the implementary legislation, President Ronald Reagan said, "I am sending to Congress what will be one of the most historic pieces of legislation during my Presidency."[8]

Both Canadian and American members of the American Society of Real Estate Counselors are in a preferred position to benefit from the FTA since many already have worked together. Now, the real estate service industries on both sides of the border can profit from the new opportunities and challenges. As stated by Prime Minister Mulroney at the Toronto Summit meeting, "It will promote new ideas and develop a common sense of purpose."[9]

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**NOTES**

1. Remarks by the President of the United States of America, to the members of the Empire and Canadian Clubs, June 21, 1988, Royal York Hotel following the Toronto Economic Summit.
2. Smith, Murray G., Free Trade—The Real Story, Institute for Research on Public Policy.

Gage Educational Publishing Company, Toronto, 1988.
3. The Canada – U.S. Free Trade Agreement, Chapter 14, Articles 1401-1407, 1988.
4. Ibid.
5. Free Trade May Prompt Lawyers to Join Forces, The Financial Post, July 8, 1988.
6. Standard Industrial Classification (SIC) fourth edition, Department of Supply and Services, and United States Office of Management and Budget, Standard Industrial Classifications, 1987.
7. The Canadian Free Trade Agreement Synopsis, External Affairs Canada.
8. Senator Breaks Ranks Over Free Trade Tactic, The Financial Post, July 26, 1988.
9. Quote from Prime Minister Brian Mulroney's Economic Summit Leaders Final Communique, The Toronto Star, June 22, 1988.

*Another Viewpoint*

# HOUSING AFFORDABILITY INDEX—WHAT IT IS AND ISN'T

**by Glenn Crellin**

During the period of soaring mortgage interest rates in the early 1980s, the NATIONAL ASSOCIATION OF REALTORS wanted an understandable measure that could be used to compare the affordability of housing over time. The result was the development of the housing affordability index. A brief explanation of why specific measures were chosen as components of the index may aid in understanding the application of the affordability index.

### Development History

The objective of the index is to measure the affordability of housing to middle-income Americans. Middle-Americans generally purchase typical houses, and there is no better way to measure typical than through the median sales price, the price at which half the homes sold for more and half sold for less. Too often analysis used average home prices, but those values are significantly influenced by the sale of comparatively few, but very expensive properties. This upward bias is suggested by the fact that the average price in 1987 was 24.2 percent higher than the median of $85,600.

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The second component of housing affordability is mortage interest rates. We chose to use the average effective interest rate on existing homes as reported by the Federal Home Loan Bank Board. This was a difficult decision. Intuitively we would have preferred to match our home prices, which are measured at the point of contract rather than closing, with the interest rates consumers were facing in the market place at that point in time. The Bank Board's commitment rate series would have satisfied this condition. However, when the index was being developed loans were actually being made at rates well below what the financial institutions were advertising, using techniques such as buydowns. Moreover, the closing rate allowed the index to be calculated using mortage rates exclusively for resale homes.

Finally, assumptions were required on downpayment and term of mortage. According to the Bank Board's data, the average downpayment on existing homes was 20 percent, leading to the choice of that percentage for the calculation of the index. It is further assumed that the loan is amortized over a 30-year period.

From these two components (median price and mortage interest rate) and two assumptions (20 percent down, 30-year term) a monthly payment can be calculated. However, knowing how much the house costs and how much the payments would be tells only part of the story. Income is the other factor. Exactly how much income is required to carry that mortgage? Clearly, there is no easy answer. It depends, of course, on the other housing costs in an area, especially homeowners insurance and property taxes, not to mention the other debts of the purchasing family. While each financial institution sets its own qualification standards, the realities of the marketplace require that most mortgages be *conforming loans* (they conform with Fannie Mae guidelines on what can be sold in the secondary market). Generally, this means the housing cost cannot exceed 28-30 percent of the purchaser's gross income. For simplicity it was decided to avoid the problem of property taxes (the largest remaining portion of housing costs) by dropping the proportion of income which could be devoted to paying principal and interest costs to 25 percent. Subsequent analysis has determined this is consistent with a 1.0 to 1.5 percent *effective* property tax rate (that is, as a percent of market value or sales price rather than assessed values). Accordingly, an annual *qualifying income* is calculated based on four times the monthly mortgage payment times 12 months.

Now for the critical question. How does this qualifying income compare with incomes available to home purchasers? As usual, choices were required among imperfect measures.

Once again a median measure was preferred, but what median? The Census Bureau produces the two most likely candidates, both derived from the annual Current Population Survey—Median Family Income and Median Household Income. Choice between the two is far from trivial; it amounts to thousands of dollars. While any household may choose to purchase a home, the traditional (and current) home purchases are predominantly families, both married couple and single-parent families. This difference in the characteristics of the housing market led to the selection of the family income measure. Put simply, the purpose of the index was to measure the ability of a typical potential buyer to afford the purchase—and that typical purchaser is part of a family household.

Accordingly, the index is constructed to measure the ability of this middle American family to afford the carrying cost of the purchase of a median price (typical) home. Mathematically:

$$\frac{\text{Median Family Income}}{\text{Qualifying Income}} \times 100 =$$

Housing Affordability Index

Note that the index does not measure the affordability of housing at the present time relative to some previous point in time. It has no base year as does a consumer price index. It is simply an index of the potential for current purchase by the typical family.

Similarly, it does not measure how many American families can or cannot afford to purchase a home. Trying to develop that number requires a myriad of assumptions. For example, the number of households (families) that can afford to purchase a house are not only those with enough income to qualify for a home loan but those who also possess the required downpayment. Moreover, a household which could not qualify for a loan on the median price home with a 20 percent downpayment, if they have the liquid assets, might choose to qualify by increasing their downpayment.

## The Future Of The Affordability Index

The mere fact that the Houing Affordability Index has existed in its current form for several years does not imply the analysis of affordability is stagnant. Two enhancements are currently under development.

First, we have recently developed an affordability index for first-time buyers. Several factors make the current index unsatisfactory for first-time buyers.

- They typically buy smaller, less expensive homes.
- They have not had the good fortune to ride the housing market to an equity position which allows a 20 percent downpayment.
- They are younger and therefore lower on the income ladder.

The first-time buyer index is computationally similar to the existing index in that it assumes a starter home price at 85 percent of the median price. This agrees with observed behavior from our research with recent homebuyers. It assumes a 10 percent downpayment (still a real hurdle) and adjusts the mortgage rate to include a PMI premium. Finally, it compares the resulting qualifying income to the median income of families in their mid-20s to mid-40s who are currently renters, because these are the primary first-time buyers. Preliminary results indicate that, as expected, housing is much less affordable for first-time buyers *and* that the gap between the housing haves and have nots is growing wider.

The other primary enhancement is localization of affordability estimates. While incomes tend to be higher in the same areas where housing prices are higher, the value of the relationship is not well known. The problem we have faced is finding an appropriate measure of income. Census Bureau unpublished data has been reviewed for the 20 largest metropolitan areas. Unfortunately, the development of this data is such a low priority at the Bureau (in large part because the samples do not meet the publication criteria) that the data is computed using 1970 Census geographic definitions. Less satisfactory unpublished family income data at the state level may be used, except in some of the largest urban areas, where the metro income data does meet publication standards. Although the mortgage market has become national, variations in mortgage rates between areas must be considered. The biggest remaining stumbling block relates to the necessity to factor in property taxes which are more nearly standardized across a metro area than they are across the country. Fortunately, data from the Government's Division of Census along with local government trade associations will permit reasonably accurate estimates.

## Summary

What is the Housing Affordability Index? A statistical measure of the ability of Americans to buy homes.

Why was it developed? As a tool to communicate the problems with housing affordability to the public policy makers who were creating the environment in which the housing sector operates.

Is the Housing Affordability Index intended to influence buyers/sellers? Originally no, but more recently it has been used to convince clients that widely publicized price increases have not pushed housing beyond the limits of most Americans. It is not expected to significantly influence the direction of home prices, home sale volumes or time on market.

Is the Housing Affordability Index perfect? Of course not. It is based on assumptions, but it provides a good general overview of the housing market. Enhancements are currently underway that will make the index more widely accepted and understood.