FINANCIAL RISK OF THE HOME PURCHASE DECISION

By

JAMES S. GRUENENFELDER

Bachelor of Business Administration

University of Portland

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Report Approved:

Claudia Peck

Report Advisor

Gwendolyn J. Brewer

Sue E. Williams

Norman N. Durham

Dean of the Graduate College

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In 1985, there were 87 million households in the United States. This number is expected to increase to 106 million by the year 2000. "Single family homes should account for 80 percent of the increase in households; owner-occupied units should account for 82 percent" (American Demographics, 1987, p.62). According to American Demographics (1987), the proportion of married couples in the United States who are homeowners will increase from 80% in 1985 to 84% by the year 2000.

It is evident that there will be an increasing number of American consumers purchasing homes in the next several years. A variety of psychological and sociological factors influence the home purchase decision, and there may be considerable pressure from family or peers to buy. Owning one's home has long been recognized as the American dream. In short, Americans prefer to own their home.

The home purchase decision, however, is the largest purchase decision that most consumers will ever make. For some consumers, a home purchase will prove to be very profitable. Their homes will appreciate in value rapidly and the interest on a mortgage tailored to their needs will help to reduce their income taxes.

On the other hand, many consumers will not realize the tax savings they anticipated due to misunderstanding the tax law or failing to calculate potential tax savings prior to purchase. In addition, some property will depreciate and cost homeowners thousands of dollars. If interest rates increase, some consumers with adjustable rate mortgages will be unable to meet the higher payments. Conversely, if interest rates decline, some consumers with fixed rate mortgages will be paying more than they would with an adjustable rate mortgage.

Objectives

Since there is substantial financial risk associated with home purchase and also potential for great financial rewards, the home purchase decision should only be made after a conscientious information search. This paper is intended to aid the consumer and the financial counselor with the information search and clarification of the financial risks of purchasing a home. In particular, this paper will discuss the risks, advantages, and disadvantages of various types of home mortgages; the factors that affect appreciation and depreciation of houses; and also clarify some common misunderstandings about the tax advantages of homeownership.

The consumer will be better prepared to select a property once he or she understands some of the factors that affect property appreciation and depreciation.

Likewise, with a thorough knowledge of home mortgages, the consumer will be better prepared to choose a mortgage with an acceptable level of risk suited to his or her needs. Finally, examples of miscalculation of income tax benefits, and a basic knowledge of the Tax Reform Act of 1986 will prepare consumers to determine whether or not homeownership offers any income tax benefits.

MORTGAGES: RISKS, ADVANTAGES AND DISADVANTAGES

From the 1930s

To make an informed decision about a mortgage, a consumer must first have a working knowledge of the different types of mortgages available, and of the varying interest rates, risks and rewards associated with them. Kaufman and Erdevig (1983) stated, "the long-term fixed-rate, fixed-payment mortgage became the prevalent type in the United States in the 1930's" (p.235). For years, lending institutions had a relatively low and stable cost of funds. In other words, they paid their depositors a low interest rate that rarely changed. To stay in business, a lending institution must charge the borrower a rate of interest equal to the interest rate that the lending institution must pay its depositors for deposited funds (also known as the lender's cost of funds), plus a margin sufficient to cover other operating costs and a competitive profit. Since the lenders' cost of funds was low and predictable, fixed rate, long term mortgage loans dominated the market.

On the whole, lending institutions raise funds through short-term deposits. In the late 1970s, the rising inflation rate caused interest rates to increase

markedly. The lenders' cost of funds began to increase rapidly (Tuccillo & Goodman, 1983). In many cases, the cost of funds, plus the margin for operating costs and profit, exceeded the fixed interest rate that lenders were charging their customers. Fixed rate, long term mortgage loans made prior to the increase of the lenders' cost of funds soon proved to be unprofitable (Downs, 1983).

Mortgage Variations and Factors that Affect Mortgage Interest Rates

Fixed Interest Rate Mortgages

The lenders' cost of funds remained unpredictable from the late 1970s to the early 1980s. In order to charge an interest rate sufficient to cover the cost of funds, plus a margin for operating costs and profit, when they loan the funds to borrowers as a long term loan with a fixed interest rate, lending institutions must predict their future cost of funds over the life of the loan (Kaufman & Erdevig, 1983). If the cost of funds is unpredictable, long term, fixed rate loans become very risky for lending institutions. While addressing housing affordability in an inflationary environment, Kaufman and Erdevig (1983) stated:

> In making fixed rate loans, the lender assumes all the risk of unfavorable interest rate changes over the life of the loan. It is effectively selling interest rate insurance to the borrower. Like any

> insurance company, it may be expected to charge a premium for this insurance, the size of which is dependent on the estimated degree of risk incurred. This premium is simply included in the interest rate charged the borrower. (p.236)

A disadvantage of the fixed rate mortgage is that the interest rate is two to two and one half percent higher than on an adjustable rate mortgage. Therefore, it may be more difficult for consumers to qualify for a fixed rate mortgage due to the higher payment necessitated by the higher interest rate. In addition, interest costs will be higher than on an adjustable rate mortgage if interest rates either remain stable or decline. Another disadvantage for the consumer is that when interest rates fall, the borrower continues to pay the higher, fixed interest rate.

The advantages of a fixed rate mortgage are also evident. When inflation and interest rates are rising, the consumer assumes no risk for adverse changes in interest rates. The consumer knows that the principal and interest portion of the mortgage payment will not increase for the life of the loan. This may be especially important for consumers who do not expect their income to rise commensurate with inflation.

Term of the Mortgage

A determinant of the risk involved in granting a home mortgage is the term of the loan. For a lender making a 30 year loan, the interest rate set at the loan origination "must accurately predict the level of inflation that is likely to be experienced over 30 years" (Sears, 1983, p.157). If a lending institution is exposed to the risk of unfavorable interest rate changes for a longer period of time, the lender is exposed to more risk. If interest rates decline significantly during the loan term, a borrower will simply refinance out of the mortgage contract. Thus, the fixed rate mortgage remains fixed only if interest rates remain stable or climb higher. Consequently, the lending institution can be expected to charge a higher rate of interest if it is to assume the risk of a longer term loan (Beaton, 1982; Sears, 1983).

Lending institutions usually make home mortgage loans for periods of 15 to 30 years. The average home purchaser, though, moves and sells the mortgaged property in 10 years (Hamilton & Schwab, 1985). Therefore, a lending institution can normally expect the loan to be paid off long before the term stated in the mortgage contract. If the loan is assumable by the new buyer of the mortgaged property, the lending institution is exposed to more risk. Consequently, an assumable loan can be

expected to have a slightly higher rate of interest than a loan that is not assumable.

Loan Origination Fees and Discount Points

According to Hoagland, Stone and Brueggeman (1977), lending institutions typically charge a loan origination fee to cover their expenses for processing loan applications, preparation of loan documentation, obtaining credit reports, and other expenses. Loan origination fees constitute additional income to the lending institution and increase the cost of borrowing. Lending institutions may also charge discount points. In their discussion of discount points, Hoagland, Stone and Brueggeman (1977) stated:

> This charge also represents an additional finance charge but its sole purpose is to raise the yield on a mortgage loan. In the context of real estate lending, loan discounting amounts to a borrower and a lender negotiating the terms of a loan based on a certain loan amount. The lender then discounts the loan by actually disbursing an amount of funds less than the contract loan amount to the borrower. Payments made by the borrower, however, are based on the contract amount of the loan. (p.187)

Discount points are used primarily to adjust the effective interest rate charge without changing the

contract rate. Both loan origination fees and discount points are additional finance charges that increase the cost of borrowing. The federal Truth in Lending Act requires lending institutions to include loan origination fees and discount points in annual percentage rate computations regardless of what costs, if any, that they are intended to cover. The annual percentage rate calculations always assume that the loan is paid off at maturity. If the borrower repays the loan early, the annual percentage rate will understate the true rate of interest because the cost of the loan origination fee and discount points will not be spread over the entire life of the loan (Hoagland, Stone & Brueggeman, 1977).

Other Factors that Affect Mortgage Interest Rates

The loan to value ratio is the amount of the loan in relation to the lender's appraised value of the property. The higher the loan to value ratio, the greater the risk for the lending institition. High ratio loans may require a higher interest rate, and a lower loan to value ratio loan may result in a lower interest rate. Other factors that affect mortgage interest rates include conditions in the general financial markets, competitive rates and conditions in the lending institution's local lending area, management policies of the lender, qualifications of

the borrower, and the availability and use of private mortgage insurance (Beaton, 1982).

Inflation and Alternative Mortgage Instruments

Unusually high inflation in the late 1970s brought mortgage interest rates well over 16% (Sears, 1983). The high interest rates brought a call for alternative mortgage instruments. Alternatives to the venerable 30 year, fixed rate mortgage include wraparound mortgages, balloon payment mortgages, variable interest rate mortgages, renegotiable rate mortgages, graduated payment mortgages, shared appreciation mortgages, shared equity purchase programs, price level adjusted mortgages, biweekly mortgages, an increased use of mortgages with shorter terms, and an increased use of second mortgages (Beaton, 1982; Iezman, 1983; Kaufman & Erdevig, 1983; Meagler, 1985).

In developing alternative mortgage instruments, mortgage lenders were primarily interested in two major concerns: making the mortgage payments affordable and having the mortgage yield continually reflect the cost of capital to the lender throughout the term of the loan. Not all alternative mortgage instruments solve both problems (Tuccillo & Goodman, 1983). Lenders attempted to reduce the risk brought on by inflation. They demanded protection against the risk of possibly higher future

inflation, typically by using mortgage instruments that would shift the risk to borrowers if inflation increased (Downs, 1983).

The Shared Appreciation Mortgage and the Shared Equity Purchase Program

The inflation of the late 1970s propagated two mortgage instruments, the shared appreciation mortgage and shared equity purchase program.

> A SAM [shared appreciation mortgage] is a loan that has a fixed interest rate set below the prevailing market rate and that gives the lender a contingent "interest" equaling a percentage of the amount that the property securing the loan has appreciated between the closing of the loan and one of these events: maturity, payment in full of the loan, or sale or transfer of the property. (Iezman, 1983, p.244)

There are many variations of the shared equity purchase program. In some cases, an investor only makes a portion of the down payment. In others, the investor may also make a portion of the mortgage payment. One of the major differences between a shared equity purchase program and a shared appreciation mortgage is that the investor shares in the total equity on the former, but, on the latter, the lending institution shares only in the

appreciation above the original purchase price (Iezman, 1983).

There are potential pitfalls for the consumer in either situation. In a shared appreciation mortgage, if the borrower does not sell the property at the end of the mortgage term, he or she may be required to refinance at current rates in order to pay the lender the amount due for contingent appreciation. Additionally, the cost of capital improvements is subtracted from total appreciation on shared appreciation mortgages. Iezman stated, "some improvements, most notably central air conditioning and second bathrooms, may add more to the value than they cost. Swimming pools may add less to value than they cost" (1983, p.245). In the case of a swimming pool, the lending institution loses. In situations where improvements add more to value than they cost, the lending institution gains at the consumer's expense.

In a shared equity purchase program, the investor may easily get the lion's share of the appreciation on the property. In a shared equity purchase program where the investor makes a portion of the monthly payment, the consumer's "major risk is that the investor will fail to make the monthly payments as required" (Iezman, 1983, p.246).

The Wraparound Mortgage

With a wraparound mortgage, the lender advances funds to the borrower on a property that has an existing first mortgage (Beaton, 1982). The interest rate is set higher than the rate on the existing first mortgage, but lower than the rate on an alternative mortgage. The buyer makes payments to the lender, who in turn, makes payments to the lending institution holding the existing first mortgage. One advantage of the wraparound mortgage is that the borrower secures a mortgage with a lower interest rate than would be available otherwise. High mortgage rates and down payment requirements may have increased the cost of purchasing a home so high that purchase would be impossible without a wraparound mortgage or other creative financing (Curcio & Webb, 1983).

A wraparound mortgage may cause problems, though, if the lending institution holding the existing first mortgage is not aware of the new wraparound mortgage. Upon discovering the new mortgage (and depending upon the terms of the existing mortgage), the lending institution may have the right to insist that the existing mortgage be paid off immediately (Federal Trade Commission (FTC), 1986). If this occurs, the consumer would be forced to refinance at the prevailing mortgage interest rate. There is substantial risk that the prevailing rate would be higher than the overall rate on the wraparound mortgage.

The consumer would also have to pay the additional costs associated with refinancing.

The Price Level Adjusted Mortgage

The price level adjusted mortgage uses a real rate of interest as the contract rate of interest. "It is a real rate because it excludes an inflation premium.... The outstanding principal is reevaluated periodically according to changes in the price level index to which it is tied" (Beaton, 1982, p.182). The bottom line with a price level adjusted mortgage is that the amount of principal outstanding is periodically adjusted so that the lender is repaid whatever amount is necessary to maintain the purchasing power of the principal. In times of high inflation, the borrower will find that after making payments for a year, the principal balance has increased (Kaufman & Erdevig, 1983).

The borrower's monthly payment will remain constant in inflation adjusted dollars with a price level adjusted mortgage. If the price index used rises faster than the borrower's income however, the mortgage burden will increase through time (Kaufman & Erdevig, 1983). A significant disadvantage of the price level adjusted mortgage is that the borrower can not take advantage of the appreciation of his or her own home.

The Balloon Mortgage

Lending institutions can be expected to charge a higher interest rate if they are to assume the risk of a longer term loan. Some home purchasers have chosen mortgage terms of 15, 20 or 25 years instead of the 30 year mortgage in order to take advantage of slightly lower interest rates. An even shorter term alternative mortgage instrument is the balloon mortgage. "Balloon mortgages have a series of equal monthly payments followed by a large final payment" (FTC, 1986, p.8). The term of a balloon mortgage is usually three to five years. Some borrowers make monthly payments for interest only (FTC, 1986). If such a borrower continues to refinance the entire principal amount at the end of the mortgage term, he or she never reduces the principal amount. Since the borrower must refinance the loan after three to five years, he or she assumes the risk of any long term increases in mortgage interest rates. Some lenders guarantee refinancing when the final payment is due, although the interest rate could be higher than the original rate. Thus, the borrower runs the risk of having markedly higher mortgage payments. Other lending institutions do not guarantee refinancing. This is a disadvantage for the consumer since he or she must begin a new search for mortgage money, perhaps at a higher interest rate. The consumer may not qualify for a new

loan and risks foreclosure as a result of being unable to make the large final payment. The consumer will also have to pay closing costs and associated refinancing charges a second time (FTC, 1986).

The Renegotiable Rate Mortgage

The renegotiable rate mortgage (also known as a rollover mortgage) is an automatically renewable, short term loan secured by a long term mortgage of up to 30 years. Since the lending institution is transferring some risk to the borrower, the contract interest rate on a renegotiable rate mortgage is generally lower than the rate available on a fixed rate mortgage. The renewable term is usually three to five years; the interest rate and the corresponding payments are adjusted at each renewal. The interest rate at renewal is usually in accordance with a predetermined index. Most renegotiable rate mortgages are governed by regulations that specify the maximum amount that the interest rate can increase or decrease at renewal. Regulations may also specify the maximum amount that the interest rate may increase or decrease over the life of the mortgage. "The borrower has the right to decline the lender's offer of renewal. If the borrower elects not to renew, he or she must pay off the balance of the mortgage" (Beaton, 1982, p.188).

The Adjustable Rate Mortgage

Adjustable rate mortages are very similar to renegotiable rate mortgages. According to Beaton (1982):

> The variable interest rate on mortgages provides for an adjustment upward or downward in the contract rate on the individual mortgage with changes in interest rates in the economy. The rate is tied to an external or internal index, and as the index changes the rate on the outstanding mortgage changes. (p.389)

Federal regulations require that the interest rate index be readily verifiable by the buyer and not under the control of the lender. Selection of an index is left to the lender. Examples of indices include the national average contract mortgage rate for the purchase of existing homes, auction rates for three and six month Treasury bills, the Federal Home Loan Bank District Cost of Funds to savings and loan associations insured by the Federal Savings and Loan Insurance Corporation, and yields on Treasury securities adjusted to constant maturities of one, two, three, or five years (Beaton, 1982).

An adjustable rate mortgage without any restrictions on rate changes would place all of the risk of unfavorable interest rate changes on the consumer. This would be done by changing the mortgage interest rate every time the

lender's cost of funds changed. Consumers would benefit from adjustable rate mortgages if interest rates were to fall. Most consumers, however, tend to be risk averse. They put greater weight on interest rate increases than on interest rate decreases of the same magnitude. With an adjustable rate mortgage, as with a fixed rate mortgage, consumers are "generally willing to pay a premium to insure themselves against the possibility of paying unexpectedly higher rates during the term of the mortgage" (Kaufman & Erdevig, 1983, p.237).

Beaton (1982) stated that with an adjustable rate mortgage:

> Two methods may be used to handle the change in rates: first, the amount of monthly payment may remain the same but the maturity of the mortgage contract is changed; or, second, the maturity of the contract may remain the same, but the amount of the monthly payment is changed. (p.389)

Effective April 30, 1981, the Federal Home Loan Bank Board adopted adjustable rate mortgage loan regulations. These regulations gave lending institutions the flexibility to develop different types of adjustable rate mortgages. The regulations allowed the lending institutions to change the payment amount, the term of the loan, the principal balance, or a combination of these as a result of changes

in the loan's interest rates. The regulations also preempted state laws having direct or indirect effects on adjustable rate mortgages. Among the state laws preempted were those that put limitations on the charging of interest on interest, which is normally done when a loan is negatively amortized (Beaton, 1982).

Negative amortization and payment caps. According to Beaton (1982):

> Negative amortization is an increase in the unpaid loan balance. Negative amortization will occur if the monthly payment is insufficient to cover the interest due on a loan. The interest due that is in excess of the monthly payment will be added to the loan balance. (p.190)

With an adjustable rate mortgage, negative amortization usually occurs when there is a payment cap. A payment cap is a prearranged limit on the amount that the payment can increase. The monthy payment remains constant over a period during which the interest rate changes (Beaton, 1982). Several lending institutions began offering payment caps in 1980. A consumer with a payment cap on his or her adjustable rate mortgage has the advantage of knowing how high the mortgage payment can go (Kaufman & Erdevig, 1983). The consumer still assumes the risk of adverse changes in interest rates, however, and

must also assume some of the risks associated with negative amortization.

General price inflation tends to drive interest rates up, which can increase negative amortization. During periods of negative amortization, the principal outstanding can exceed the value of the mortgaged property. In inflationary times, when house prices are appreciating, this is an unlikely occurrence. Even in times when housing prices are rising rapidly, though, some properties may not rise in value. At any time that property values are not appreciating, and especially when property values are depreciating, the borrower risks having his or her outstanding balance exceed the value of the mortgaged property. In this situation, the borrower's net worth decreases, and the lending institution incurs a significant risk that the borrower will default (Kaufman & Erdevig, 1983).

Federal Home Loan Bank Board and Comptroller of the Currency regulations limit negative amortization. Lending institutions must adjust monthly payments at least every five years to an amount that will amortize the outstanding principal over the remaining term (Kaufman & Erdevig, 1983).

Interest rate caps. The alternative to a payment cap on an adjustable rate mortgage is an interest rate cap. A limit on how high the contract interest rate can rise

reduces the risk for the borrower without adding the risk of negative amortization. There are two kinds of interest rate caps, the periodic rate cap and the aggregate rate cap.

"A periodic rate cap limits the amount that the [interest] rate can increase at any one time.... An aggregate rate cap limits the amount the rate can increase over the entire life of the loan" (FTC, 1986, p.6). For example, a periodic rate cap may limit the interest rate increase to one percent per year regardless of the increase in the index that the adjustable rate is tied to. An aggregate rate cap might limit the increase in the interest rate to five percent over the life of the loan. As mentioned earlier, interest rate caps reduce the borrower's risk. Consequently, the interest rate on an adjustable rate mortgage with an interest rate cap can be expected to be higher than the interest rate on an adjustable rate mortgage without a rate cap.

Lending institutions offer a variety of variable rate mortgages with a variety of different rate caps and payment caps. The initial interest rate on an adjustable rate mortgage is equal to the index rate plus a margin. While some indices have higher values, they are usually tied to lower margins. When shopping for an adjustable rate mortgage, consumers should research how the appropriate index will be used and how often it changes.

(Federal Reserve Board, 1987). Consumers should also research how the index has behaved in the past under various economic conditions.

The Graduated Payment Mortgage

A graduated payment mortgage is an adjustable payment mortgage. Payments increase according to a predetermined schedule that is tied to the income expectations of the borrower. "Graduated payment mortgages are designed primarily for younger families whose incomes are currently low but may be expected to rise faster than average as they enter the more productive years of their lives" (Kaufman & Erdevig, 1983, p.239). Payments in the early years of the mortgage are lower than payments on a traditional fixed rate mortgage, but payments increase during the term of the mortgage (Beaton, 1982). The clear advantage of a graduated payment mortgage is that it makes a home purchase an option for those who otherwise would not qualify for a mortgage loan.

In many graduated payment mortgages, the initial low monthly payments result in negative amortization. Default risk is potentially a serious problem for lending institutions for two reasons. First, with negative amortization, the loan balance may exceed the value of the property securing the loan. Second, the borrower's income may not increase as rapidly as the monthly payments (Kaufman & Erdevig, 1983).

Graduated payment mortgages with adjustable interest rates are available. Such mortgages transfer interest rate risk to the borrower. The lending institution, however, may be exposed to a substantial amount of default risk if rapid increases in interest rates cause accelerated negative amortization (Kaufman & Erdevig, 1983). Consumers should consider that, under these circumstances, monthly payments will eventually be increased to a greater extent than with a regular adjustable rate mortgage.

Selecting a Mortgage

The double digit inflation of the late 1970s and early 1980s that propagated the various forms of creative financing has abated. As a result, fixed rate mortgages and adjustable rate mortgages currently dominate the housing market. Consumers should carefully evaluate short term versus long term risks before selecting a mortgage.

Tuccillo and Goodman (1983) stated, "in periods of high inflation, interest rates rise" (p.22). It follows that with an adjustable rate mortgage, the borrower's long term housing costs (mortgage payments) will rise with inflation. Thus, consumers who have an adjustable rate mortgage are not able to take full advantage of the appreciation of their home during periods of inflation. Consumers with fixed rate mortgages, however, enjoy great profits on their housing investments while the lending

institutions earn abnormally low real rates of return during periods of high inflation (Downs, 1983). These home buyers are also able to repay their mortgages with dollars that have less purchasing power.

The borrower with an adjustable rate mortgage (especially an adjustable rate mortgage with an interest rate cap when interest rates are rising) enjoys short term advantages regardless of inflation and interest rate changes. Since the interest rate on an adjustable rate mortgage is typically two to two and one half percent lower than the rate on a fixed rate mortgage, the borrower with an adjustable rate mortgage will have lower aggregate mortgage interest costs in the early years of the mortgage even when interest rates are rising. If interest rates are declining, the borrower with an adjustable rate mortgage enjoys decreasing housing costs as soon as his or her mortgage interest rate is adjusted downward.

If interest rates remain stable or decline over the long term, the borrower with an adjustable rate mortgage will have lower aggregate mortgage interest costs than the borrower with a fixed rate mortgage. When interest rates fall, consumers with fixed rate mortgages lose just as lending institutions holding fixed rate mortgages lose when interest rates climb. There is an option for consumers, though. The mortgage interest rate is fixed for the lending institution, but the consumer can

refinance at a lower interest rate. The consumer, however, must weigh the ultimate value of a lower mortgage interest rate against the immediate costs associated with refinancing.

Consumers selecting fixed rate mortgages risk having higher housing costs relative to those who have adjustable rate mortgages in both the short term and the long term if interest rates remain stable or decline. Conversely, consumers with adjustable rate mortgages risk substantially higher housing costs in the long term if interest rates go up. The type of mortgage selected will depend upon the prevailing economic environment, the consumer's individual financial situation, and his or her willingness to accept the risk associated with the type of mortgage that is available.

APPRECIATION AND DEPRECIATION

The Investment Aspect of Homeownership

Consumers become homebuyers for a variety of reasons. According to Grebler and Mittelbach (1979), some consumers simply become tired of renting. For others, the income tax benefits of homeownership are important. For the consumer contemplating a home purchase, housing is both a consumer good and an investment (Peiser & Smith, 1985). In recent years, though, the investment aspect of homeownership has grown in importance. Like an investment in common stock, the value of real property can rise and fall, creating capital gains or capital losses for the homeowner.

For many consumers, the appreciation of their home accounts for a substantial portion of their family wealth. Other families have saved for years to amass a down payment, and then watched their wealth wither away as their home depreciated. Grebler and Mittelbach (1979) stated that consumers have often had high expectations of the potential for future capital appreciation of their properties, especially during inflationary times. Consumers should be aware of the risk of depreciation (or less than average appreciation) involved in purchasing a

home, and acknowledge the factors that can affect future housing prices.

Excess Demand

As Kaufman and Erdevig (1983) mentioned, not all property appreciates at the same rate and some property does not appreciate at all. Clearly, the consumer faces a risk of depreciation when purchasing a home. On the other hand, the rewards of housing price appreciation can be enormous. A number of factors shape the housing market. A major factor associated with housing price escalation is excess demand.

According to Grebler and Mittlebach (1979), excess demand can be observed by noting decreasing vacancies of existing homes along with falling inventories of unsold new homes.

> Demand may at least temporarily outpace the available supply of single-family dwellings if it is bolstered by major demographic changes, by substantial gains in consumer income, or by greater availability and reduced costs of mortgage loans such as lower interest rates and/or lower downpayment requirements and longer maturities. Excess demand may also develop if builders are greatly constrained in supplying newly constructed houses. (p.99-100).

Demographic Changes and Excess Demand

Grebler and Mittlebach (1979) stated that nationwide population changes are more likely to affect demand for housing in the long run. Such demographic changes include changes in the birth rate, marriage statistics, divorce statistics, average family and household size, and the growing number of women in the employed labor force. The coming of age of the so called baby boom has had a tremendous effect on the demand for housing. In recent years, housing demand has increased due to a greater number of single and divorced persons entering the market. There has also been a growing number of unrelated couples becoming homeowners.

Consumer Income and Excess Demand

These demographic changes also have a significant effect on consumer income, which is another factor mentioned by Grebler and Mittlebach (1979) as causing excess demand. Childless single and divorced consumers, as well as couples who have decided not to have children, can shift their expenditures from child raising and education to a better dwelling or earlier purchase of a house. The decrease in the number of children in a family has also given consumers more income to spend on housing.

Income increases nationwide have not been sufficient to significantly affect housing demand. However, changes in federal consumer law in the mid 1970s, while not

changing income, changed housing demand. Prior to the mid 1970s, lending institutions frequently disregarded or discounted the income of a woman for loan qualification purposes, although their discriminatory practices varied a great deal. The Fair Housing Act of 1974 and the equal Credit Opportunity Act of 1975 required lending institutions to extend credit without sex discrimination. The obvious result was increased housing demand from women who qualified for mortgage loans as a direct consequence of the legislation. Married couples with two incomes who could not qualify for a mortgage loan prior to the legislation became acceptable risks to lending institutions. Other married couples qualified for larger loans that enabled them to buy higher priced property (Grebler & Mittlebach, 1979).

Availability and Cost of Mortgage Loans and Consumer Demand

The availability and cost of mortgage loans is also a determinant of housing price escalation. Commercial banks increased their participation in the mortgage market in the mid 1970s due to an anemic demand for business loans. One of the greatest expansionary forces in the home mortgage market was the mortgage pool or trust. The mortgage pool is a "financing device that draws on the securities market for mortgage investment" (Grebler & Mittlebach, 1979, p. 105). It was pioneered by the

Government National Mortgage Association and later used by the Federal Home Loan Mortgage Corporation.

While the increased availability of mortgage loans fueled the inflation of housing prices in the late 1970s and early 1980s, mortgage interest rates were also rising. Logically, high interest rates would normally increase housing costs and, therefore, decrease demand for housing. Grebler and Mittlebach (1979) stated that high interest rates are also normally associated with general price inflation. While the contract interest rate is important, it does not represent the true cost of funds to the consumer. The real interest rate is the contract interest rate minus the rate of inflation. It follows that when real interest rates are low, demand for housing will be high.

Restraints on Homebuilding and Consumer Demand

The last factors that determine the inflation of house prices mentioned by Gebler and Mettlebach (1979) are restraints on homebuilding. There are only so many buildable lots in any given community. In addition, local governments have often instituted moratoriums on sewer and water hookups. Other growth management ordinances, environmental reviews, and similar requirements have resulted in delays and added expenses for home builders and developers.

The Effect of the Economy

The National Economy

Grebler and Mittlebach (1979) stated that whether the long run demand for housing transforms itself into effective demand depends upon developments in the national economy.

> Prosperity will reduce the number of recent homebuyers who will find themselves under financial strain. Their income will have a better chance to increase, or the house market may be strong enough to allow resale of properties without substantial loss. Prosperity may even bail out speculators.... Continued economic growth would minimize loan defaults and their impact on lending institutions. A business recession would have the opposite effects. (p.161).

Clearly, the national economy has an enormous effect on the inflation of house prices throughout the country. On the other hand, Iezman (1983) stated that in different regions, real property appreciates at different rates. From 1978 to 1980, housing in the far west appreciated faster than the national average. Housing located in the northeast part of the country appreciated more slowly than the national average. After 1980, though, house prices soared in the economically prosperous northeast, and housing in California continued to appreciate faster than

in the rest of the country. At the same time, falling oil prices helped to cause a regional recession in Texas, Oklahoma, and other western and southern states. Much of the housing in these areas depreciated (Labich, 1986).

Regional and Local Economies

Apparently, regional economies are important determinants of housing prices. Grebler and Mittlebach (1979) studied housing price fluctuations in Seattle, Washington; Miami, Florida; and Orange County, California. They found that local economies can cause housing price appreciation or depreciation. In Orange County and Miami, it took several years to absorb the inventory of unsold housing after developers overbuilt. In Orange County, this occurred despite long term population and economic growth. Grebler and Mittlebach also suggested that a portion of the price decreases in these areas may have been caused by the liquidation of speculative holdings.

Consumers' Expectations

Hamilton and Schwab (1985) studied consumers' expectations of appreciation of housing. They found that actual capital gains were positively associated with past income and population growth. In this respect, they agree with Grebler and Mittlebach, who stated that increasing consumer income and major demographic changes could increase demand for housing (1979).

Additionally, Hamilton and Schwab (1985) found actual capital gains to be positively associated with past capital gains. They also found that consumers' "interpretted past capital gains incorrectly, believing that rapid appreciation in the past implied slower gains in the future" (p.104). Grebler and Mittlebach's studies (1979) of Seattle, Miami, and Orange County suggest that past capital gains may not be a determinant of housing appreciation.

Hamilton and Schwab (1985) stated that although they found actual capital gains to be positively associated with past capital gains, there was no reason to believe that the past capital gains actually caused more capital gains in the future.

Grebler and Mittlebach (1979) stated that inflationary expectations may cause inflation of house prices. The individual consumer's belief that the house he or she was purchasing would appreciate may have made the consumer willing to pay a higher price for it. Grebler and Mittlebach also mentioned that the expectation that housing prices will increase may result in speculative buying, which will tend to drive prices up farther. While speculative buying may contribute to the inflation of house prices, it is not possible to measure what proportion of the the increase in prices is due to speculation.

The Potential Effect of the Tax Reform Act of 1986 on House Prices

Klott (1986) stated that the Tax Reform Act of 1986 could impact housing prices. The new tax law lowered the top tax rate substantially. As a result, the after tax cost of housing increased for many consumers. Klott suggested that this increase could put downward pressure on property values. The biggest potential impact on the housing market is on the "high-priced homes that were purchased by people in the highest tax brackets" (p.70). It follows that future changes in the income tax rate or income tax law could have inflationary or deflationary consequences on housing because consumers' disposable incomes and housing costs would be changing.

UNDERSTANDING THE TAX ADVANTAGES OF HOMEOWNERSHIP

An Example of Misunderstanding

Grebler and Mittlebach (1979) stated that close to two thirds of the respondents in a California survey considered income tax benefits of homeownership to be important or very important in their purchase decision.

Real Estate Today published an article entitled, "Calculate Tax Savings for Prospective Homebuyers." The author set out to instruct realtors on how they could, "show the real tax advantage of home ownership" (Kennedy, 1986, p.24) to their customers. Kennedy (1986) warned his readers, "before making any presentation on the tax benefits of home ownership, you should direct the prospects to also seek the advice of an accountant or tax attorney" (p.24). The warning was appropriate. This paper will show how Kennedy's methods for computing tax savings could result in predicted tax savings far higher than the actual tax savings for many consumers.

Kennedy (1986) began by defining the following terms:

1. Yearly tax benefit is the total dollar tax savings based on the homeowner's tax bracket as a result of interest paid on a home mortgage in the

taxable year. It equals the total interest paid on a mortgage loan in the tax year multiplied by the homeowner's tax bracket percentage.

2. Monthly tax benefit is the yearly benefit, as defined above, divided by the number of periodic payments made in the tax year.

3. Comparable rent is a dollar figure computed to compare the cost of ownership with the cost of renting. It is the monthly periodic mortgage loan payment minus the monthly tax benefit. Comparable rent does not include casualty insurance and other related costs of home ownership. (p.24)

Kennedy's example was a young couple in the 35% tax bracket. The couple would be financing $80,000 over 30 years at 10.5 % interest. Kennedy computed the monthly payment to be $731.79. Interest paid on the loan in the first year was $8,381.09 (1986).

Kennedy (1986) then computed the yearly tax benefit to be $2,933.38. Kennedy computed the yearly tax benefit by multiplying the interest paid in the first year by 35%, the couple's tax bracket ($8,381.09 X 35% = $2,933.38). He also calculated the monthly tax benefit to be $244.44 ($2,933.38 / 12 months = $244.44). Kennedy then computed comparable rent to be $487.35 ($731.79 - $244.44 = $487.35).

These calculations would lead the couple in the example to believe that they could save $2,933.38 a year (or $244.44 a month) in federal taxes by becoming homeowners. Kennedy's comparable rent figure of $487.35 is presumably the couple's after tax cost of owning a home.

Two Flaws in the Example

Unfortunately, there are two major flaws in Kennedy's figures. The first major flaw is that Kennedy does not incorporate the standard deduction into his example. Many taxpayers have few, if any, tax deductions besides mortgage interest and property taxes. For those taxpayers, calculating tax savings attributable to home ownership without considering the standard deduction will overstate the tax savings. The second major flaw is that the tax bracket (marginal tax rate) is not always appropriate for computing tax savings, especially when there are deductions of many thousands of dollars. In many home purchase situations, using the marginal tax rate to compute tax savings will also result in the tax savings being overstated.

1988 Standard Deductions and Tax Rates

Under the Tax Reform Act of 1986

To illustrate and update the effect of the standard deduction on the tax benefits of home ownership, this author will use Kennedy's example using 1988 tax rates

mandated by the Tax Reform Act of 1986. "An individual whose standard deduction is more than the total of his or her itemized deductions should use the standard deduction to figure his or her taxable income" (Internal Revenue Service (IRS), 1987, p.9). Likewise, the astute consumer should consider the effect of the standard deduction when purchasing a home.

The Standard Deduction

The basic standard deduction for each filing status according to the Tax Reform Act of 1986 follows:

Filing Status	Basic Standard Deduction
Single	$3,000
Married filing jointly	5,000
Married filing separately	2,500
Head of Household	4,400
Qualifying Widow(er)	5,000

Adjustment for inflation. After 1988, the basic standard deduction will be adjusted, if necessary, for inflation. (IRS, 1987, p.7)

The Tax Rates

Tables I through IV begin on the following page and contain the tax rates for each filing status in 1988.

Table I

Tax Rates for Individuals

Filing Single Returns

Taxable Income	Marginal Rate
0-$17,850	15%
$17,850-$43,150	28%
$43,150-$100,480**	33%
Over $100,480	28%

(Klott, 1986, p.34)

According to Klott (1986):

** Taxable income between $43,150 and $89,560 is subject to a 5-percent surcharge reflecting the phase-out of the benefit of the 15-percent tax bracket. A 5-percent surcharge is also applied to income between $89,560 and $100,480, reflecting the phase-out of the personal exemption. The surcharges effectively make the top marginal rate on this income 33 percent. Once the personal exemption phase-out is completed, the marginal tax rate on additional taxable income drops back to 28 percent. (p.34)

Table II

Tax Rates for Married Couples

Filing Jointly

Taxable Income	Marginal Rate
0-$29,750	15%
$29,750-$71,900	28%
Over $71,900**	33%
After phase-outs	28%

(Klott, 1986, p.35)

According to Klott (1986):

> ** Taxable income over $71,900 is subject to a 5-percent surcharge reflecting the phase-out of the benefit of the 15-percent tax bracket and personal exemptions. The surcharge effectively makes the top marginal rate on this income 33 percent. The phase-out of the 15-percent bracket is completed when taxable income reaches $149,250. Personal exemptions are then phased out; the income level at which this phase-out is completed will depend on the number of exemptions claimed. Once the personal exemption phase-out is completed, the marginal tax rate on additional taxable income drops back to 28 percent. (p.35)

Table III

Tax Rates for Married Persons Filing Separate Returns

Taxable Income	Marginal Rate
0-$14,875	15%
$14,875-$35,950	28%
$35,950-$113,300**	33%
Over $113,300**	33%
After phase-outs	28%

(Klott, 1986, p.36)

According to Klott (1986):

** Taxable income between $35,950 and $113,300 is subject to a 5-percent surcharge reflecting the phase-out of the benefit of the 15-percent tax bracket. The surcharge effectively makes the top marginal rate on this income 33 percent. The phase-out of the 15-percent bracket is completed when taxable income reaches $113,300. Personal exemptions are then phased out through another 5-percent surcharge; the income level at which this phase-out is completed will depend on the number of exemptions claimed. Once the personal exemption phase-out is completed, the marginal tax rate on additional taxable income drops back to 28 percent. (p.36)

Table IV

Tax Rates for Unmarried Heads of Households

Taxable Income	Marginal Rate
0-$23,900	15%
$23,900-$61,650	28%
Over $61,650**	33%
After phase-outs	28%

(Klott, 1986, p.37)

According to Klott (1986):

> ** Taxable income over $61,650 is subject to a 5-percent surcharge reflecting the phase-out of the benefit of the 15-percent tax bracket and personal exemptions. The surcharge effectively makes the top marginal rate on this income 33 percent. The phase-out of the 15-percent bracket is completed when taxable income reaches $123,790. Personal exemptions are phased out; the income level at which this phase-out is completed will depend on the number of exemptions claimed. Once the personal exemption phase-out is completed, the marginal tax rate on additional taxable income drops back to 28 percent. (p.37)

The Error Resulting From Omitting the Standard Deduction When Computing the Tax Advantages of Homeownership

Example

For 1988, a married couple filling jointly would have a standard deduction of $5,000. Kennedy's example disregarded the standard deduction. An updated version of Kennedy's example uses the following assumptions:

1) Married couple, no children.
2) $45,000 adjusted gross income.
3) $80,000 mortgage at 10.5%, 30 year fixed rate.
4) 28% marginal tax rate.
5) No other itemized deductions.

Kennedy's calculation of the monthly principal and interest payment of $731.79 and first year mortgage interest of $8,381.09 remain the same. Kennedy would calculate the 1988 tax benefit by multiplying the total mortgage interest for the year by the marginal tax rate. (Kennedy did not consider property taxes). According to Kennedy's formula, the yearly tax benefit is $2,346.70. The monthly tax benefit in 1988 is $195.55. Using Kennedy's definition, the comparable rent is $536.24 ($731.79 - $195.55 = $536.24).

Kennedy's method of computing tax savings for prospective home buyers is misleading. His method of computing the yearly tax benefit using the 28% (1988) marginal tax rate indicates a yearly tax benefit of $2346 ($8,381.09 X 28% = $2346). The actual tax benefit for a married couple with no itemized deduction besides mortgage interest is only $946. Figure 1 (following page) will illustrate why the $8381 mortgage interest deduction yields a tax savings of only $946.

Without purchasing a home, the couple would pay $6,240 in federal income tax. As home owners, they would pay $5,294. The tax savings resulting from the home purchase is only $946 ($6,240 - $5,294 = $946). Before 1987, taxpayers had to reduce their itemized deductions by the zero bracket amount before they could subtract their itemized deductions from adjusted gross income. Thus, prior to 1987, it was easier to see that itemized deductions up to the amount of the zero bracket amount would not reduce the total tax. In 1987 a higher standard deduction replaced the zero bracket amount. The effect is the same. A portion of mortgage interest and property taxes equal to the standard deduction does not reduce taxable income.

Kennedy's method of computing yearly tax benefits yielded a benefit of $2,346 using the 1988 marginal tax rate of 28%. Actual tax savings resulting from home

Figure 1. Federal income tax for a married couple with and without a home purchase.

With Home Purchase		Without Home Purchase
$45,000	Adjusted Gross Income	$45,000
- 3,900	Exemptions (2 X $1950)	- 3,900
0	Standard Deduction	- 5,000
- 8,381	Itemized Mortgage Interest	0
$32,719	Taxable Income	$36,100
$4,462	Tax on first $29,750 @ 15%	$4,462
832	Tax on amount over $29,750 @ 28%	1,778
$ 5,294	Total Federal Income Tax	$ 6,240

ownership in the above example were only $946. The difference between the two figures is $1,400. $1,400 is 28% of the standard deduction for married taxpayers filing jointly (standard deduction of $5,000 X 28% = $1,400).

Deductions Will Not Always Reduce Tax Liability

Mortgage interest and property taxes are still deductible under the Tax Reform Act of 1986. But it is clear to see that a portion (if not all) of mortgage interest and property taxes paid will not reduce the tax liability of the home purchaser. An amount of itemized deductions equal to the standard deduction is, in effect, not deductible. The annual tax savings on a smaller, less expensive home (or any home with a relatively small mortgage balance) could easily be zero.

For example, a married couple with an average mortgage balance throughout the year of $41,000 financed at 10.5% interest would expect to pay $4,305 per year in mortgage interest. Assume the couple also pays $600 per year in property taxes. Under the Tax Reform Act of 1986, the mortgage interest and property taxes are deductible. In this situation, however, the combined total of mortgage interest and property taxes ($4,905) is less than the $5,000 standard deduction for a married couple. Provided the couple has less than $95 in other deductions ($4,905 + $95 = $5,000), they would take the standard deduction. In

effect, all of their mortgage interest and property taxes are not tax deductible.

The threshold of nondeductible mortgage interest and property taxes is determined by the tax filing status of the taxpayer/home purchaser. As described earlier, it ranges from $3,000 per year for a single person to $5,000 per year for a married couple filing jointly or a qualifying widow(er). Nondeductible interest and property taxes were not the only flaws in Kennedy's method of calculating tax savings for prospective home purchasers.

The Error of Using the Marginal Tax Rate When Calculating the Tax Advantages of Homeownership

Kennedy multiplied the total interest paid by the marginal tax rate to compute the yearly tax benefit. The marginal tax rate is the tax rate on the last dollar of income earned. In many situations, however, tax deductions can put home purchasers into a lower tax bracket.

Example

A previous example illustrated how a married couple with an annual adjusted gross income of $45,000 would have an annual tax savings of $946 as a result of deducting interest ($8,381) from a 10.5% 30 year loan on an $80,000 mortgage. Figure 2 (following page) will illustrate how the tax savings on the same mortgage will be even less for

Figure 2. Federal income tax for a married couple when the marginal tax rate is not the rate applicable to tax savings.

With Home Purchase		Without Home Purchase
$39,000	Adjusted Gross Income	$39,000
- 3,900	Exemptions (2 X $1950)	- 3,900
	Standard Deduction	- 5,000
- 8,381	Itemized Mortgage Interest	0
$26,719	Taxable Income	$30,100
$4,008	Tax on first $29,750 @ 15%	$4,462
0	Tax on amount over $29,750 @ 28%	98
$4,008	Total Federal Income Tax	$4,560

a couple with the same mortgage but a smaller adjusted gross income of $39,000 annually.

Without purchasing a home, the couple would pay $4,560 in taxes. As home owners, they would pay $4,008. In this situation, the tax savings is limited to $552 ($4,560 - $4,008). Before the home purchase, the couple had only $350 of their income taxed at the 28% tax rate. The remainder of their income was taxed at the 15% rate.

As home owners, the couple has a mortgage interest deduction that is $3,381 larger than the standard deduction for a married couple filing jointly. The first $350 of the $3,381 excess reduces their tax liability at the 28% rate because it reduces their taxable income to $29,750; the threshold of the 28% tax bracket for their filing status. The remaining portion of the $3,381 excess over their ($5,000) standard deduction yields tax savings at the 15% rate because it reduces the couple's taxable income within the 15% tax bracket.

Computing the Tax Advantages of Homeownership

Clearly, Kennedy's method of computing yearly tax benefits is amiss. To properly estimate federal income taxes after a home purchase, consumers need to have accurate estimates of adjusted gross income, personal exemptions, mortgage interest, property taxes, and other itemized deductions that may affect their income taxes.

Then, consumers can estimate their taxable income by subtracting personal exemptions, mortgage interest, property taxes, and other itemized deductions from adjusted gross income. Once they have an estimate of taxable income, consumers can compute their estimated tax by multiplying their taxable income by the appropriate tax rates.

Consumers must also compute their estimated federal income tax without deducting mortgage interest and property taxes from adjusted gross income if they want to compute the real tax savings they may realize from a prospective home purchase. In most cases, this will mean using the standard deduction. The actual annual tax savings from a home purchase is determined by comparing the estimated tax with a home purchase to the estimated tax without a home purchase. Dividing the annual tax savings by 12 can help consumers determine how their after tax monthly house payment compares with the cost of renting.

The First Year

In their first year of home ownership, many consumers may realize little or no tax savings. The reason is simple. After making mortgage payments for less than a full year, the total amount of mortgage interest and property taxes may only exceed the standard deduction by a few dollars, if at all.

Recall the example of the married couple with an adjusted gross income of $45,000. Instead of moving into their house on the first of January, assume they close the sale and move in on the first of September. Since they own the house for only a third of the year, their mortgage interest deduction is cut to $2,794. To make the example more realistic, assume that the couple can deduct one third ($400) of the annual property taxes of $1,200, and that they have deductible personal interest and charitable contributions totaling $1,800. Their itemized deductions are as follows:

Mortgage Interest	$2,794
Property Taxes	400
Deductible Personal Interest and Charitable Contributions	1,800
Total Itemized Deductions	$4,994

In this example, the standard deduction is larger than the total of itemized deductions. The couple should take the standard deduction instead of itemizing. The tax savings resulting from their home purchase, personal interest, and charitable contributions is zero.

The Future

Consumers considering the purchase of a home should look to the future when calculating their tax savings also. Young married couples should consider the effect of additional personal exemptions if they have one or more children. Couples who already have children should consider the loss of these exemptions when their children leave the nest. A spouse joining the work force may reduce the after tax cost of housing by moving the family into a higher tax bracket. Conversely, a spouse leaving the work force may increase the after tax cost of housing because the family falls into a lower tax bracket.

CONCLUSION

Clearly, there are a great number of risks associated with the purchase of a home. By understanding those risks, the consumer is better prepared to make an optimum home purchase decision. This can be done by carefully analyzing and integrating the risks of various types of mortgages, and the risks of depreciaton (or slower than average appreciation). The consumer should also ensure that he or she fully understands the impact that a home purchase will have on federal income taxes.

As Kaufman and Erdevig (1983) mentioned, some borrowers will be prepared to pay a premium mortgage interest rate so that the lending institution will assume the risk of unfavorable interest rate changes. According to Sears (1983), these homebuyers will be in a position to earn an excellent rate of return on their home equity, if and when their home appreciates. In addition, "inflation causes the actual cost of home ownership to decline over time if the buyer obtains a fixed rate mortgage. As salaries rise, the monthly mortgage payment takes a smaller percentage of monthly income" (p.156).

Peiser and Smith (1985) found that "when homeownership is financed by fixed-rate, level payment mortgages, positive unanticipated inflation lowers the

effective real mortgage rate and substantially increases the ex post returns to homeownership" (p.355). The key word here is unanticipated. If the inflation is anticipated, the rate on the fixed interest mortgage will be higher. Thus, the real interest rate (the contract rate minus the rate of inflation) will be higher and the return on the homeowner's equity will be lower.

Smith (1987) stated that, "in general, the expected real cost of a fixed rate loan will be higher than on an adjustable rate loan" (p.113). This is due to the premium that the homeowner must pay the lending institution to assume the risk of adverse interest rate changes in the future. This does not mean that the long term costs for a fixed rate mortgage loan will always exceed the costs of an adjustable rate loan. While speaking at the Mid-American Consumer Conference, Robert Hobbs, Deputy Director of the National Consumer Law Center, stated that the interest rate on an adjustable rate mortgage loan obtained 10 years ago would have averaged 13.5% (R. Hobbs, personal communication, February 19, 1988). Conversely, fixed rate mortgage rates have dropped into the nine percent range in the last decade.

Smith analyzed the various mortgage instruments available to consumers. He stated (1987) that consumers might not be able to afford the increased monthly payments on an adjustable rate mortgage when inflation caused

interest rate increases if their incomes or the value of the property do not keep up with inflation. He concluded that a fixed rate mortgage contract is more likely to be chosen when "income and asset values decrease with rises in inflation and real interest rates" (p.115). He also stated that a fixed rate contract is also more likely to be chosen by consumers with a high degree of risk aversion and if the interest rate spread between fixed and adjustable rate mortgages is narrow.

Consumers who choose fixed rate mortgages are assured of higher mortgage interest costs in the short run than consumers who choose adjustable rate mortgages. The holder of an adjustable rate mortgage is subject to the long term risk of rising interest rates, but he or she benefits from stable or declining interest rates. The consumer who chooses a fixed rate mortgage can only benefit from declining interest rates by absorbing the costs of refinancing.

The individual consumer has no control over rising and falling interest rates. Consumers can, however, analyze their own financial situations and determine whether or not they can accept the risks associated with the available types of mortgages. Just as individual consumers have no control over interest rates, they have no control over the appreciation or depreciation of house prices. Consumers, though, can analyze demographic

changes, local incomes, restraints on home building, and the national, regional and local economies. Such analysis should help consumers determine whether or not they are prepared to risk making a home purchase.

Prior to any home purchase, the prospective home buyer should compute the expected tax advantages of homeownership. This paper has revealed only a few of the potential errors that can be made in calculating expected tax advantages. This writer recommends consulting a tax professional.

The relationships described here are complex and interrelated. In theory, the consumer should purchase a home when his or her after tax cost of buying is less than the cost of renting. That equation can change, however, with changing income tax rates, appreciation or depreciation, and changing interest rates.

Ideally, just prior to an inflationary period, but when inflation is not anticipated, the consumer would buy a home with a fixed rate mortgage. By virtue of the fact that inflation is not anticipated, the mortgage loan rate would be low. To perfect the ideal situation, the consumer should buy in an area that has a growing population with rising incomes and also constraints on the supply of new housing. Naturally, the consumer's income should be rising faster, or at least as fast, as the unanticipated inflation.

In this ideal situation, the consumer's home will appreciate faster than the average home. The mortgage payment will remain fixed while his or her income rises, lowering the percentage of income that the consumer must spend on housing. In short, the consumer will enjoy a windfall profit.

Unfortunately, it is impossible to predict the future. Even if it were possible, a consumer could wait a lifetime for the ideal situation to surface. Instead, the consumer can only examine the present situation and make an informed choice.

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VITA

James S. Gruenenfelder

Candidate for the Degree of

Master of Science

Report: THE FINANCIAL RISK OF THE HOME PURCHASE DECISION

Major Field: Housing, Interior Design and Consumer Studies

Biographical:

Personal Data: Born in Carmel, California, August 27, 1955, the son of James O. and Anna L. Gruenenfelder.

Education: Graduated from Clackamas High School, Milwaukie, Oregon, in June 1973; received a Bachelor of Business Administration Degree from the University of Portland, Portland, Oregon, in May 1977; completed the requirements for the Master of Science degree at Oklahoma State University in May 1988.

Professional Experience: Entered U.S. Air Force Undergraduate Pilot Training in February 1978. KC-135Q Aircraft Commander, 349 Air Refueling Squadron (Heavy), Beale AFB, California, June 1979 to April 1983. E-3 Instructor Pilot and Pilot Flight Examiner, 552 Airborne Warning and Control Wing, May 1983 to present. Member of the Order of Daedalians.