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Forecasting Future Home Sales

By M.A. Anari and Mark G. Dotzour

Every real estate professional wants to know what is going to happen to sales volume in his or her area. While the Real Estate Center has no crystal ball, researchers have developed an economic model that helps make sales volume forecasts.

Many factors — house prices, neighborhoods, house characteristics, interest rates, down payment amount, agent marketing skills and availability of mortgage loans, among others — influence homebuyers and sellers. These factors determine when and where homes are sold. By observing the factors at various stages, it is possible to weigh their importance and to predict, for example, how changes in mortgage rates or homebuyer income affect home sales.

Researchers at the Real Estate Center have constructed a model to estimate Texas single-family home sales (see Center technical report 1368, *What Factors Determine the Volume of Home Sales in Texas?*) The model shows that mortgage rates, per capita disposable income and home prices, all adjusted for inflation, are the most important determinants of Texas home sales volume.

Per Capita Personal Income

Per capita personal income's importance as a determinant of home sales has been increasing in recent years. **Currently, a 1 percent increase in per capita income of Texas residents is expected to increase home sales by 2.4 percent.**

Higher disposable incomes (incomes minus taxes) offer households more purchasing power. More purchasing power makes it possible for people to move to bigger, better houses or neighborhoods or even purchase a second home.

Mortgage Rates

Higher mortgage rates have a negative impact on Texas home sales. **A 1 percent increase in mortgage rates is expected to decrease home sales by 1.9 percent.**

From the standpoint of homebuyers, higher mortgage rates mean higher monthly payments and less affordability. Some buyers may decide not to buy or may postpone buying until mortgage rates fall. From the home builders' standpoint, higher interest rates increase construction costs and home prices and, therefore, reduce demand for new houses.

Homes as Investments

Texas homebuyers treat single-family homes as investments, and there is a positive relationship between home sales and home prices. **A 1 percent increase in home prices is expected to increase home sales by 0.9 percent.**

Debate continues over whether a house is a consumer or investment good. Consumer goods are consumed; investment goods are purchased and held to produce a stream of income over time. Gasoline is a consumer good, but a vehicle used as a taxi is an investment good.

A rented house is an investment good, but when the owner occupies it, the house is both a consumer and investment good. The owner has a home, and the house is an investment that can be realized when the house is sold.

Two-thirds of U.S. households own homes, and homeownership constitutes about one-third of all household wealth. Studies reveal that homebuyers consider themselves both consumers and investors. A 1998 study reported 44 to 64 percent of homebuyers consider investment a major factor in their buying decision. Less than 10 percent of buyers said that investment was not an important consideration.

These findings help explain why increasing home prices can have a positive effect on home sales activity. Rising prices rekindle interest in purchasing homes as investments because buyers see an opportunity for profit. Rising house prices increase sellers' profits, resulting in larger down payments for prospective trade-up buyers and helping sellers offset transaction costs.

Model Limitations

Before using an economic model for forecasting a number of caveats should be considered. First, no matter how sophisticated a model, it is still a simplified version of the complex real world. Many real world factors and variables are not included in a model because data is unavailable.

Second, as in real life, models are based on past experience. The future may not behave like the past. Thus, economic models embody a number of assumptions.

Finally, a forecasting model requires forecasted variables. For the Real Estate Center's home sales model, inflation-adjusted Texas resident per capita income, home prices and mortgage rates must first be determined.

A forecasting model should be only one source of information. Nothing can replace judgement. For these reasons, one approach to using a model for forecasting is to consider various "what if" scenarios. See the related article on the following page for ways to use the Center's model for forming expectations of Texas home sales.

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What If...

By M.A. Anari and Jack C. Harris

Statistical housing models like the one described on the previous page help identify factors that affect sales volume. The model indicates that Texas home sales are stimulated by rising personal income and home prices and depressed by rising mortgage interest rates, all adjusted for inflation.

Because the model not only shows what factors are important, but how much those factors have influenced sales in past years, it also can project sales in future years. However, lest the model appear to be a crystal ball, it should be noted that the accuracy of projected sales depends on how accurately the variables (interest rates, personal income and home prices) are projected.

The best way to use a model like this is to construct a series of "what if" projections based on possible future conditions. For example, what if interest rates continue to rise during the year? The model indicates probable consequences such an occurrence would have on home sales, as is illustrated by the four "what if" scenarios and resulting projections shown here. For perspective, note that home sales through reporting Texas MLSs totaled 181,300 in 1999.

All variables used in the model are "real" numbers, meaning they have been adjusted for inflation. In the case of interest rates, the real rate is the return achieved by the lender after the effects of inflation are subtracted. A nominal interest rate of 8 percent would yield a real return of 6 percent if inflation was running 2 percent per year. According to the model, a rise in nominal rates purely because of a rise in inflation would have no effect on sales volume. Therefore, in the following discussion, a rise in the interest rate is assumed to be caused by changes in the supply of available funds relative to loan demand.

- **Scenario 1.** Suppose the demand for mortgage loans continues to expand but growth of the money supply slows as a result of the Federal Reserve trying to slow economic growth. The real mortgage interest rate rises to 7 percent (as defined in the model, the real rate had a value of 5.6 percent in 1998). A more slowly growing economy also holds down prices and incomes. According to the model, this scenario would result in about an 8 percent **reduction** in home sales (167,500).
- **Scenario 2.** Suppose the economy slows without higher interest rates. Real interest rates hold steady while real personal income declines. Real home prices rise, however, from the momentum of the previous year. Projected sales from this combination are 169,100, nearly 7 percent **lower** than in 1999. This indicates that sales could slow even with no increase in interest rates.
- **Scenario 3.** The Texas economy has been growing slightly faster than the nation. However, that rate has been slowing for the past two years. Assume the trend continues and leads to a significant decline in real personal income. Combined with slight increases in real interest rates and home prices, this scenario produces the least optimistic forecast for home sales. The resulting 160,000 sales would represent almost a 12 percent **drop** from 1999.
- **Scenario 4.** With continuing recovery in oil markets and growing demand for Texas products in the rebounding Pacific Rim economies, the state's slowing economy could reverse. Suppose this turnaround raises real personal income and home prices. Interest rates fall as the national economy slows. This favorable combination of trends yields another record-breaking year, with sales exceeding 198,000, a 9 percent **rise** from 1999.

With the Texas housing market running at such an unprecedented level in recent years, it may be too much to expect it not to slow somewhat. As these projections show, any slowing in economic growth will lead to lower sales volumes. However, should the economy find a way to pick up speed, and interest rates reverse their recent climb, sales could go even higher than recent record levels.

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Year	Real Interest Rate (%)	Real Median Home Price	Real Per Capita Income	Home Sales (MLS)
1998	5.6	$81,700	$14,340	168,700
1999	5.8	84,100	14,900	181,300
Scenario 1 2000	7.0	82,500	14,400	167,500
Scenario 2 2000	5.8	87,500	14,000	169,100
Scenario 3 2000	6.0	86,000	13,800	160,000
Scenario 4 2000	5.5	86,000	15,000	198,200

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