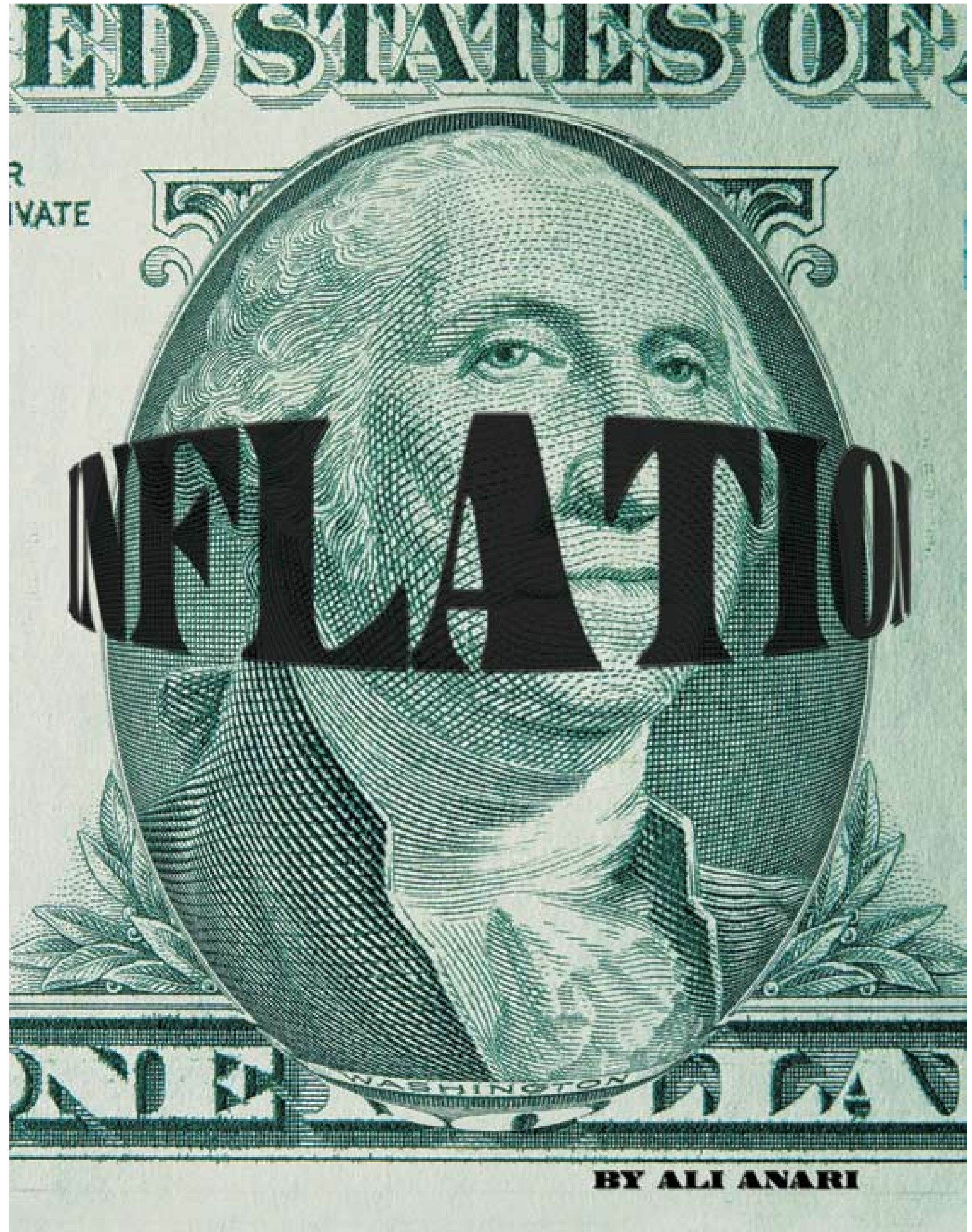
A Reprint from *Tierra Grande*



Inflation is a rise in general levels of prices of all goods and services produced and consumed over a given period. On a smaller scale, inflation refers to changes in the prices of individual goods or services; house price inflation, for example, refers to increases in home prices.

Inflation reduces the purchasing power of money. As prices rise, and given a finite amount of goods and services, the same amount of money buys smaller quantities of goods and services.

Causes of Inflation

Different theories exist regarding what causes inflation. The Keynesian school of economics asserts that inflation is the result of the market forces of supply and demand causing changes in prices. Higher demand for goods and services results in "demand-pull" inflation. That is, more employees and higher incomes lead to more expenditures and more demand for goods and services.

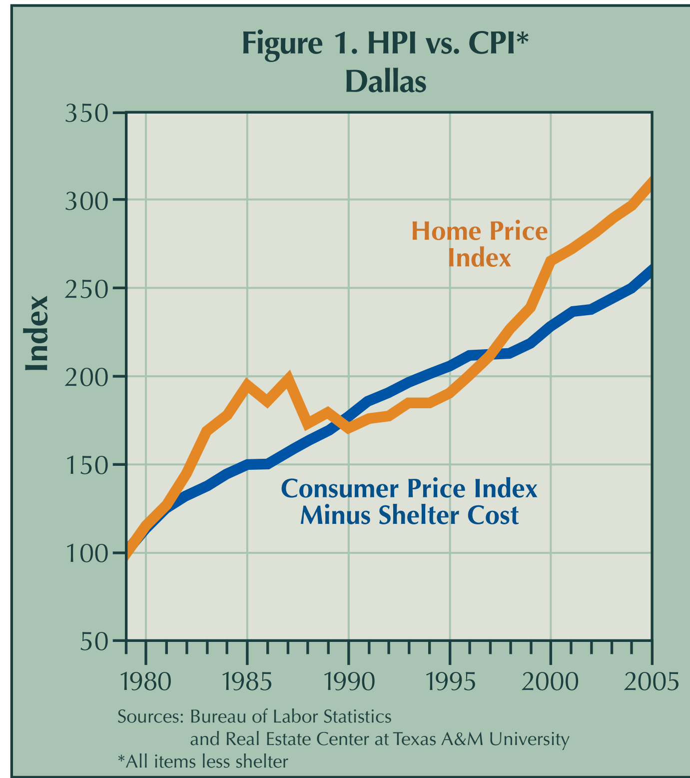
On the supply side, higher costs of supplies and services result in higher product prices, leading to "cost-push" inflation. For instance, when the cost of bricks rises, buildings cost more to construct.

A combination of cost-push inflation and demand-pull inflation can result in built-in-inflation or a price-wage spiral. In this scenario, higher wages lead to higher prices of goods and services, which in turn lead workers to demand pay raises.

In the Keynesian view, money supply does not play a key role in causing inflation. Inflation is determined by aggregate demand measured in terms of gross domestic product (GDP). Money supply is just one of many determinants of aggregate demand.

The Keynesian school also proposed the concept of optimal level of production, known as potential aggregate output or natural GDP. This is the highest level of GDP an economy can produce without adding to inflation pressures. The level of GDP in any period may be higher or lower than potential GDP, and the difference is known as the output gap.

Another theory, the monetary school of economics inflation, says inflation is caused by an increase in the quantity of money in circulation relative to the supply of goods and services. As the late Milton Friedman, a Nobel Prize-winning economist, stated, "inflation is always and everywhere a monetary phenomenon."



Measures of Inflation

The Consumer Price Index (CPI) computed by the U.S. Bureau of Labor Statistics (BLS) is "a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services." The BLS each month collects prices for more than 80,000 items used by urban consumers. Prices are averaged by weights, using the relative importance of money spent on that product compared with total expenditures by consumers.

To compute weights, the BLS collects information on consumer spending and the consumption habits of more than 30,000 individuals and families, including professionals, the self-employed, the poor, the unemployed, retired persons, urban wage earners and clerical workers. Persons living in rural nonmetropolitan areas, farm families, members of the armed forces, and those in institutions such as prisons and mental hospitals, are not included.

Mild Inflation, Positive Impact

Mild inflation, defined as an annual inflation rate of less than 3 percent, has a positive impact on the economy. Consumers, anticipating higher prices to come, buy now rather than later. At the same time, savers and investors, knowing that inflation will erode the purchasing power of their savings, have an important incentive to invest.

During periods of mild inflation, a pay raise of two percent above an inflation rate of three percent gives employees the perception of a 5 percent pay raise, which tends to make them happier than a pay raise of two percent when inflation rate is zero. In both cases, the pay raise is the same in real terms.

High Inflation, Negative Impacts

Higher inflation rates adversely affect an economy in various ways.

Inflation Breeds Inflation

Inflationary expectations lead suppliers of labor, capital, goods and services to add an inflation premium to wages in wage contracts, to loanable funds in lending-borrowing contracts, to rents in rental contracts and to the costs of goods and services. These higher costs of labor, capital, goods and services erode suppliers' incomes and lead to further inflationary expectations.

The relationship between nominal interest rates and inflation rates is important. According to Irving Fisher, a well-known American economist, the nominal interest rate is equal to the real interest rate plus the expected inflation rate. Short-term and long-term interest rates, including mortgage rates, contain a number of premiums for different kinds of risks associated with loans over the terms of loans. Inflationary expectations are the most important component of interest rates.

Misallocation of Resources

Prices of goods and services in various industries do not normally increase simultaneously and proportionately during periods of higher inflation rates. Consequently, prices do not reflect the true scarcity of goods and services, and relative prices are distorted. This leads to misallocation of resources.

Price Volatility

Prices are more volatile during periods of high inflation, resulting in more risk and uncertainty, which in turn leads to lower investments.

Adverse Income Distribution

Inflation erodes the incomes of fixed-income earners, such as pensioners, and transfers incomes from those who earn wages to those who earn profits.

More Taxes

Higher nominal incomes caused by higher inflation moves taxable incomes to higher brackets, meaning that taxpayers pay more income taxes even though real incomes may have actually decreased.

Curbing Inflation

Both the United States and the United Kingdom used administrative controls on wages and prices combined with rationing to control inflation during wartime. The strategy proved effective. In peacetime, the Nixon administration and Edward Heath's administration in the United Kingdom used price and income policy to control inflation, but their successes were short-lived. Inflation returned as soon as the controls were lifted.

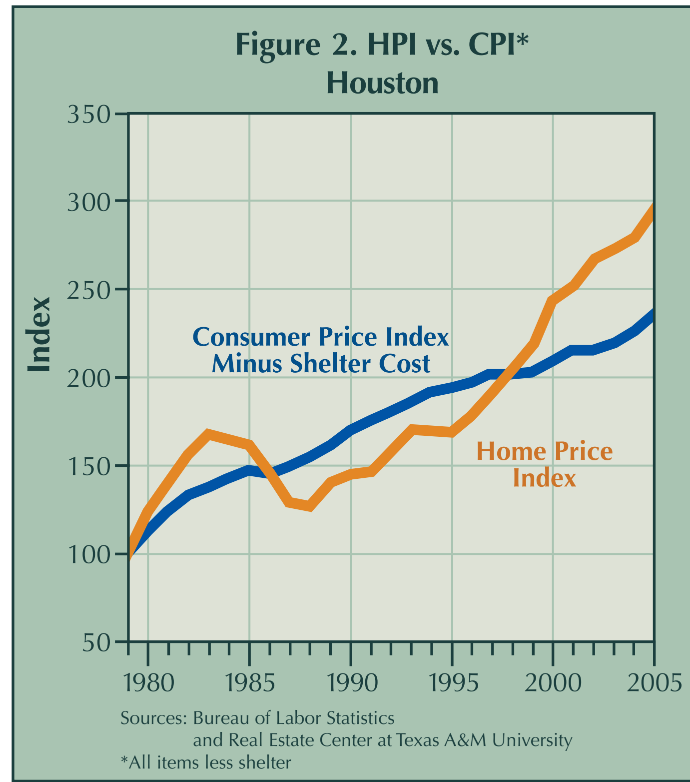
The Keynesian and monetary schools propose different approaches for controlling inflation. Keynesians recommend reducing effective demand for goods and services through changes in government expenditures and income taxes. The monetarists' strategy is to reduce the quantity of money in circulation and increase interest rates.

Over the past four decades, governments have tried various combinations of Keynesian and monetarist proposals for controlling inflation and have learned that the monetary approach, especially setting interest rates, has been more effective. In the United States, changes in the Fed funds rate, the interest rate on overnight loans between banks, has proved the most effective monetary policy for controlling inflation and fine-tuning the economy.

The Fed increases (or decreases) the Fed funds rate to decelerate (or accelerate) the growth rate of the U.S. economy. For instance, in the aftermath of the 2001 recession, the Fed reduced the Fed funds rate 13 times, from 6.5 percent in January 2001 to 1 percent in June 2003. As the U.S. economy came out of the recession and experienced higher growth rates, the Fed began to raise the Fed funds rate. Since June 2004, it has raised the rate 17 times, to 5.25 percent by June 2006.

Inflation and Real Estate

Inflation has both positive and negative impacts on property owners' wealth. It increases the price of real estate properties and deflates the value of mortgage loans. Price appreciation of buildings and land increases owners' equity in homes, office buildings, retail and industrial buildings.



Inflation depreciates the amount of mortgage loans in real terms. Real estate owners with mortgages on real estate properties pay back their mortgage loans with dollars that get less valuable each year.

The negative impacts of inflation on real estate properties result from the effect higher mortgage rates have on property prices. Mortgage loans are long-term financial assets, and their rates are determined by long-term inflationary expectations, but in the short run, rates are also influenced by changes in the Fed funds rate. Higher inflation rates lead to higher mortgage rates, resulting in higher monthly payments on real estate loans, which in turn lower the demand for real estate properties and lower price appreciation.

When variable-rate mortgage loans constitute a large proportion of outstanding mortgages, the negative impacts of higher mortgage rates on property prices are more volatile. Fixed-rate mortgages smooth the negative impact of mortgage rate fluctuations and spread the impact over mortgage terms.

Homes Good Hedges

Studies of the relationship between inflation and home price appreciation conducted by the Real Estate Center have found that homes are good hedges against inflation. Figures 1 and 2 compare home price appreciation in Dallas and Houston with inflation in the two metropolitan areas, using average prices of new and existing homes sold.

While average home prices in Dallas and Houston have tripled from 1979 to 2005, the corresponding CPIs in 2005 were only 2.5 times their 1979 levels. The average annual rates of home price appreciation for Dallas and Houston from 1979 to 2005 were 4.4 percent and 4.2 percent, respectively, compared with annual inflation rates of 3.3 percent and 3.4 percent, respectively, for the two metropolitan areas. Clearly, homeownership can take the edge off inflation and help consumers maintain their wealth.

Homeowners' equity represents the biggest chunk of household wealth in the United States, after pension funds. Total U.S. homeowners' equity in the third quarter of 2005

was $10,979.1 billion compared to pension funds reserves of $11,633.8 billion.

Owners' equity is an important source of financing for real estate properties, especially in residential real estate markets. Higher inflation rates lead to more home equity and more home sales, offsetting the negative impact of higher mortgage rates caused by higher inflation.

Inflation adversely affects renters, transferring wealth from the renters to real estate property owners, whose real estate wealth grows during inflationary periods. When setting rents, landlords anticipate inflation rates over the terms of rent contracts and adjust rents according to those expectations. As a result, renters pay higher rents.

An optimal inflation rate keeps inflation sufficiently high to help real estate property owners accumulate equity but low enough to avoid high mortgage rates, which lead to lower property values. This optimal rate benefits real estate professionals if property owners use their equity to buy more or higher-priced properties.

The Center created a model of Texas residential sales that showed the optimal annual rate of inflation is 3.8 percent. Annual inflation rates higher than 4 percent have negative impacts on homeowners as well as home sales.

Fortunately for homeowners, real estate professionals and renters alike, the Fed is not expected to allow inflation rates in the United States to climb over this rate.

Dr. Anari (m-anari@tamu.edu) *is a research economist with the Real Estate Center at Texas A&M University.*

THE TAKEAWAY

Inflation has both positive and negative effects on property owners' wealth. Price appreciation increases owners' equity, but inflation makes mortgage rates rise, which lowers demand for properties. Real Estate Center studies show that homes are good hedges against inflation.

MAYS BUSINESS SCHOOL

Texas A&M University
2115 TAMU
College Station, TX 77843-2115

http://recenter.tamu.edu
979-845-2031

Director, Gary W. Maler; **Chief Economist,** Dr. Mark G. Dotzour; **Communications Director,** David S. Jones; **Associate Editor,** Nancy McQuistion; **Associate Editor,** Bryan Pope; **Assistant Editor,** Kammy Baumann; **Art Director,** Robert P. Beals II; **Graphic Designer,** JP Beato III; **Graphics Assistant,** Whitney Martin; **Circulation Manager,** Mark Baumann; **Typography,** Real Estate Center.

Advisory Committee

David E. Dalzell, Abilene, chairman; D. Marc McDougal, Lubbock, vice chairman; James Michael Boyd, Houston; Catarina Gonzales Cron, Houston; Tom H. Gann, Lufkin; Jacquelyn K. Hawkins, Austin; Barbara A. Russell, Douglas A. Schwartz, El Paso; Denton; Ronald C. Wakefield, San Antonio; and John D. Eckstrum, Conroe, ex-officio representing the Texas Real Estate Commission.

Tierra Grande (ISSN 1070-0234) is published quarterly by the Real Estate Center at Texas A&M University, College Station, Texas 77843-2115. Subscriptions are free to Texas real estate licensees. Other subscribers, $20 per year. Views expressed are those of the authors and do not imply endorsement by the Real Estate Center, Mays Business School or Texas A&M University. The Texas A&M University System serves people of all ages, regardless of socioeconomic level, race, color, sex, religion, disability or national origin. Photography/Illustrations: JP Beato III, p. 1.