HOUSTON BUSINESS BRIEFS

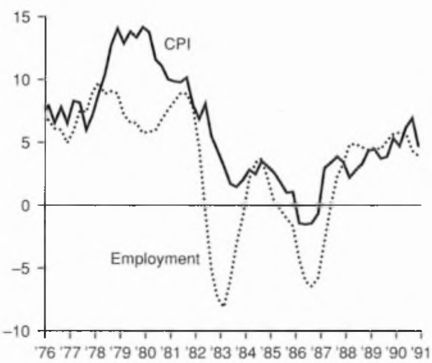
What Determines Inflation in Houston?

Houston's inflation rate in 1990 was 6.5 percent, the highest since 1981. For the first time since 1981, the local inflation rate exceeded the nation's. The price increases in Houston last year generally reflected national trends and were led by the rising energy prices that preceded the Persian Gulf war. For the first half of 1991, inflation moderated significantly as world oil prices returned to levels below $20 per barrel. Through June 1991, the national inflation rate averaged an annual rate of only 3.3 percent; the comparable figure for Houston was 3.1 percent.

This article provides a look at inflationary trends in Houston, focusing on the difference between inflation in Houston and in the United States and the underlying causes of these differences. Figure 1 plots the 12-month percentage change in inflation in Houston since 1976, as measured by the Consumer Price Index (CPI), and compares it to 12-month percentage changes in total nonagricultural employment. The graph suggests a relationship between inflation and the pace of economic activity.

Figure 1
Houston Consumer Prices and Employment

12-month percentage change



SOURCES: Texas Employment Commission, U.S. Bureau of Labor Statistics

Throughout the 1980s, the growth rate in Houston varied widely from that in the United States. Sometimes Houston's growth was much faster, and at other times far slower, than the nation's growth rate, and the influence of regional economic conditions carried through to the local inflation rate. In fact, analysis shows that differing economic conditions were the primary source of difference between price increases in Houston and in the nation.

The Consumer Price Index

The federal government publishes several price indexes that measure overall inflationary trends. The producer price indexes, composed largely of manufactured goods, measure prices received by domestic producers of goods at various levels of processing. The U.S. Department of Commerce, in the process of estimating gross national product (GNP), produces a number of corresponding price measures for both total GNP and its components. The most widely followed barometer of the average price level is the Consumer Price Index.

The CPI is the ratio of prices currently paid by consumers to prices they paid in some base or reference year. Individual prices are weighted according to the importance of each item in a market basket of goods and services purchased in the base period. The current base period is 1982–84, and weights for current releases of the index remain unchanged from this period. Weights change only when the U.S. Bureau of Labor Statistics conducts a new Survey of Consumer Expenditures to determine the contents of a more recent market basket, something that has occurred only six times since 1935.

The Bureau of Labor Statistics publishes two indexes each month. The CPI for urban wage earners and clerical workers (CPI–W) represents expenditures only for this class of consumers; the CPI for all urban consumers (CPI–U) extends this index to the cost of living for the self-employed, managerial and technical workers, as well as the retired and unemployed. People who live in rural areas are the largest group not included in the CPI–U.

Prices of goods and services for the CPI are collected from 21,000 retail and service establishments located in 91 urban areas throughout

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the United States. All items are priced every month only in the five largest urban areas; food, fuel and a few other items are also priced monthly in all urban areas. Items in urban areas other than the biggest five are priced completely every other month. Separate CPI–U indexes are computed and released for 29 of the urban areas sampled, with the Southwest represented only by Houston and Dallas–Fort Worth. Complete indexes for both Dallas and Houston are released on a bimonthly schedule beginning each year in February; only incomplete data on food and fuel are released in the other months.

Thus, if your interest focuses on inflation in the Southwestern United States, the available data is quickly limited to the CPI–U for Houston and Dallas. Other Southwestern cities contribute to the overall index, but samples are insufficient to construct a reliable price index for these areas. Figure 2 shows data for Dallas–Fort Worth comparable to that shown earlier for Houston.

Inflation in the Southwest

The rate of inflation in Houston slowed significantly in the early 1980s. The slowdown resulted in part from a broad slowing of national inflation rates that followed the 1981–82 recession, but Houston's price increases slowed even more than those across the nation. Figure 3 shows the difference between inflation rates in Houston and the United States; the dark bars represent the difference in overall inflation rates, and the line depicts the difference in the inflation rate for shelter and other homeowners' costs. The lighter bars show the inflation rate when shelter is excluded from the overall index.

The sharp fall in relative costs of shelter is hardly surprising, given the collapse of Houston's housing markets in 1982. Both the value of single-family homes and multifamily housing rental rates fell by more than 20 percent from their 1982 peak. Houston's decline looks dramatic in comparison with housing trends in the rest of the United States. As property values fell in Houston, the nation was moving rapidly toward a real estate boom.

Figure 2
Dallas Consumer Prices and Employment

12-month percentage change

SOURCES: Texas Employment Commission, U.S. Bureau of Labor Statistics

Other factors contributed to slower price increases in Houston through much of the 1980s, such as food away from home, household furnishings and (for several years) medical care. Food at home, fuels, apparel and transportation resisted the local recession and continued to follow national trends. But as Figure 3 shows, the difference between the United States and Houston diminishes greatly when shelter is deleted from the index. Except for 1986—the year oil prices collapsed—the lighter bars (representing everything but shelter) stay near zero, even though the darker bars are consistently negative between 1983 and 1989.

Figure 4 shows the same results for Dallas–Fort Worth. The slowdown for the Dallas–Fort Worth area was more shallow and came much later than in Houston; the employment growth in Figure 2 turns negative only in 1986–87, and the negative growth is comparatively mild. The resulting trends in the cost of shelter and overall inflation are accordingly less dramatic here, but similar in their effects.

Inflation and Economic Activity

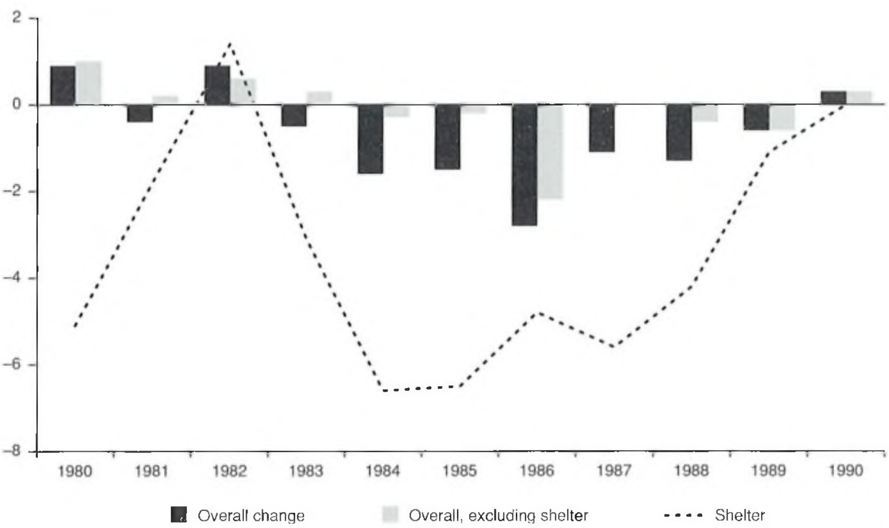
Inflation in the Southwest, as in the United States, is driven partly by general business conditions. Although inflation behaved differently in the Southwest than in the United States during the past 10 years, this difference arises primarily from the region's boom-and-bust cycle. In fact, the influence of economic conditions on inflation seems to be identical in Houston, Dallas–Fort Worth and the nation.

To examine this linkage between prices and growth, I used a simple statistical model that is sometimes called a *brand loyalty model.* The name refers to its origin as a means of estimating the relationship between current advertising expenditures (A_t) and current product sales (S_t). If a long history of advertising has built a widespread loyalty to a product, this attribute is represented by a lagged sales term (S_{t-1}). The model is

$$S_t = a + b_1 A_t + b_2 S_{t-1}.$$

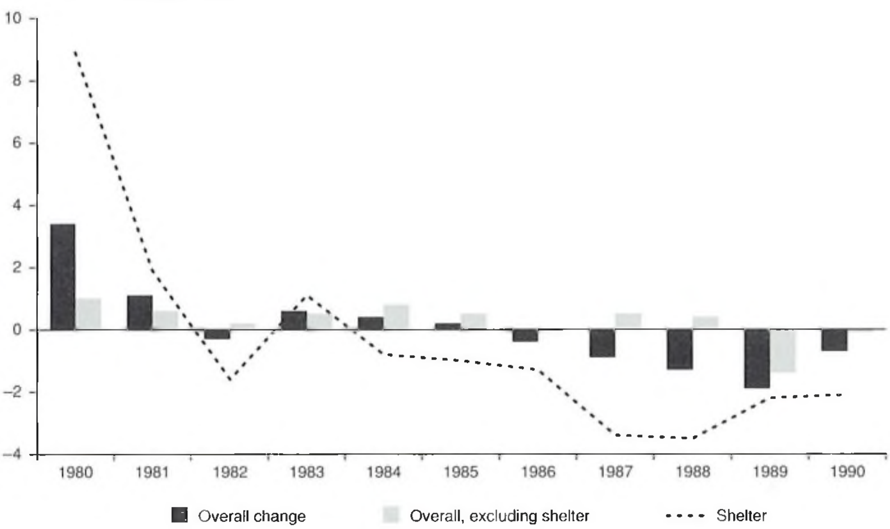
The analogy to inflation is straightforward. Current inflation (p_t) results from current employment conditions (E_t) and a long history of ongoing inflation (p_{t-1}). Current economic conditions matter, but there is also a significant carry-over of recent inflation into the current period. Using quarterly data from 1975 to 1990 and some specific assumptions about the nature of statistical errors, I estimated the

Figure 3
Comparison of Inflation Rates in Houston and the United States
(Houston minus United States)



SOURCE: U.S. Bureau of Labor Statistics

Figure 4
Comparison of Inflation Rates in Dallas and the United States
(Dallas minus United States)



SOURCE: U.S. Bureau of Labor Statistics

following model:

$$p_t = a + b_1 E_t + b_2 p_{t-1}.$$

Very good results were obtained in separate equations for Houston, Dallas–Fort Worth and the United States.

Both current employment conditions and recent inflation proved highly significant in all these equations. (Details are available from the author.) My key result is that the equations estimated for each of the three areas are statistically indistinguishable; prices and the real economy are similarly related in Houston, Dallas–Fort Worth and the nation.

These results, based on the inflation experience of 1975–91, suggest the following rule of thumb: Inflation next quarter will be about 93 percent of that observed last quarter, plus another 0.1 percent for each 1-percent increase in current employment (or a comparable decrease if employment falls). For example, if recent inflation has averaged 4 percent for several quarters, it will accelerate if employment moves above approximately 2.5 percent annual growth rates; inflation will tend to slow as job growth moves below the 2.5 percent mark.

Conclusion

The inflation experience of the Southwest in the 1980s differed from that of the nation, sometimes in significant ways. The deflation of regional real estate markets played a large role in these differences. A more general cause, however, was the regional business cycle. The linkage between price increases and general business conditions was the same in the Southwest as in the rest of the nation. The continued difference in economic health between the United States and the Southwest in the 1980s explains the divergent price behavior.

Houston Beige Book
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The Houston economy has cooled off during the first half of 1991, and job growth—apart from seasonal increases—has been very flat. There are several reasons for the slowdown: we are feeling the national recession in wood products, chemicals, refining and other areas; the cash dividend generated by $30 per barrel oil during the Persian Gulf crisis is now gone; the horizontal drilling boom—taking place in our own backyard—has slowed; last fall's overt optimism about the near-term prospects for natural gas prices has suddenly turned quite negative. The national recovery that appears to be under way is welcome news if we are to offset the growing cutbacks in the energy sector. The recovery is perhaps necessary to keep Houston on a modest growth path.

Retail Sales—Retail sales have see-sawed from one month to the next—good May results, a poor June and now July, which appears to be an excellent month. Auto sales have similarly been up and down, with June off 18 percent from last year, and July bouncing back to match the strong performance of July 1990.

Lumber and Paper—Fundamentals greatly improved for boxes and other paper packaging, as demand reportedly picked up in May and June, with July on track for another increase in shipments. Some price increases have been announced for August. Bleach-board, which has been a healthy product line throughout the recession, continues with good levels of shipments and pricing. Homebuilding products turned around sharply in June, with prices of lumber and plywood pushing toward record levels. Respondents cited several reasons for this price spike: cutting restrictions recently imposed in the Pacific Northwest, wet weather throughout the South, economic recovery and an increase in homebuilding, and a number of mills' going out of service, having been shut down by the recession. If lumber prices remain near their peak, they add $2,000 to the cost of a new $100,000 home in Houston. Prices have already begun to fall, however, and will fall further with dry weather and reopened capacity.

Refining and Petrochemicals—Recent weeks have seen some modest declines in demand for chemicals, but pricing and margins have been under considerable pressure. Order books continue to be confused in some cases as new capacity comes online along the Texas Gulf Coast. Refined product deliveries are down about 4 percent for the first half of this year, compared with the same period last year. Respondents blamed the weakness on recession and a poor driving season. Capacity utilization has slipped below 85 percent for Gulf Coast refineries; they were operating at 95 percent capacity at this time last year.

Upstream Oil and Natural Gas—Disappointing natural gas and oil prices have led to a number of announced layoffs by Houston-based companies, although the local effects of the layoffs are not yet clear. Even with West Texas Intermediate at $20 per barrel, one respondent claims the price of oil is too high for current fundamentals, propped up by possible military action against Iraq and operational problems in the North Sea. The U.S. and Texas rig count continued to decline through June and most of July. Only 40 percent of domestic rigs are now searching for natural gas, down from 44 percent in January, and current figures are inflated by significant renewed federal subsidies for gas in tight sands and coal seams. Texas permits for horizontal wells are reported down 30 percent from last year's levels.

Real Estate—Wet weather and a shortage of developed lots again kept housing starts slower than sales in June. According to one respondent, the inventories of new, complete homes on the ground in Houston is two to two and one-half months, compared with eight months nationally. Used home sales continue at or near record levels. Rents for apartments continue to rise, and high apartment occupancies are an important component of the strong demand for starter housing in the city. Home builders and buyers continue to find financing, but loans for residential developers or for new apartment construction are reportedly very difficult to obtain.

Office vacancies improved only slightly in Houston through the second quarter of this year. The suburban vacancy rate declined, while the downtown rate rose slightly. Rents are unchanged from the first quarter. Industrial vacancies rose during the second quarter, with a "tenant's market" reportedly developing. ❖

For more information, call Bill Gilmer at (713) 652-1546. For a copy of this publication, write to

Bill Gilmer
Houston Branch
Federal Reserve Bank of Dallas
P.O. Box 2578
Houston, Texas 77252