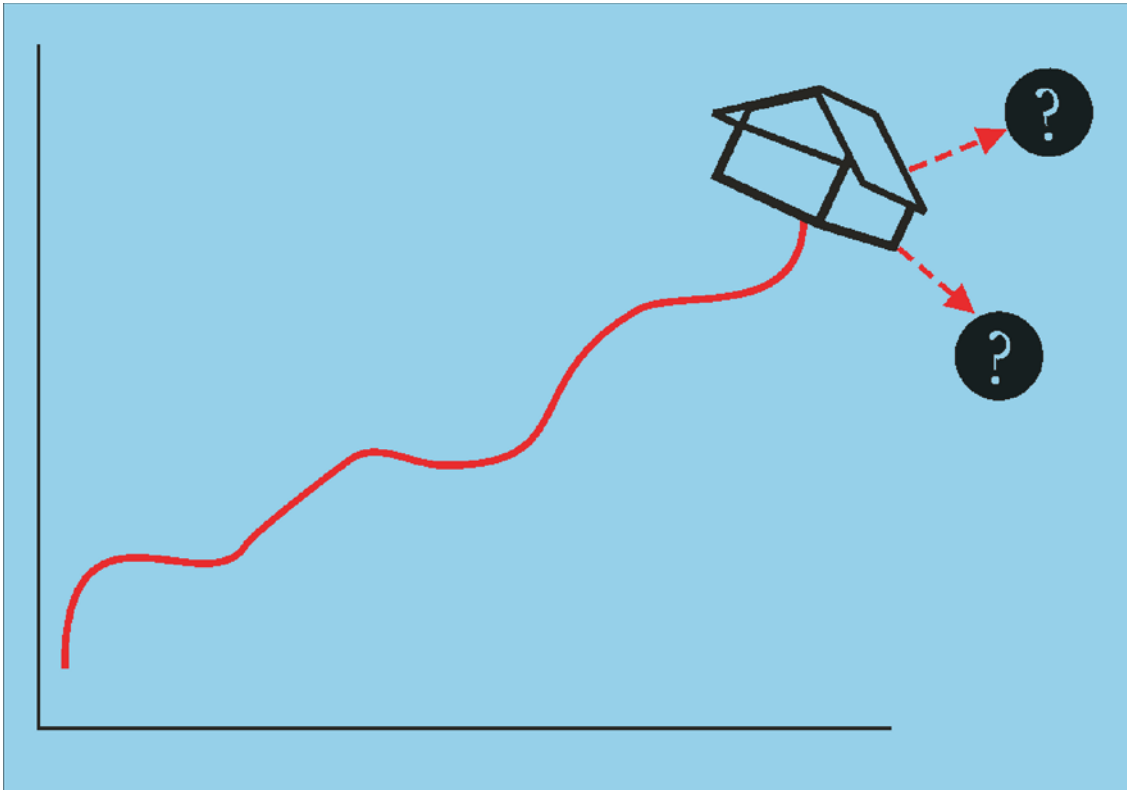


How Vulnerable Is the Recovery to a Fall in Housing Prices?



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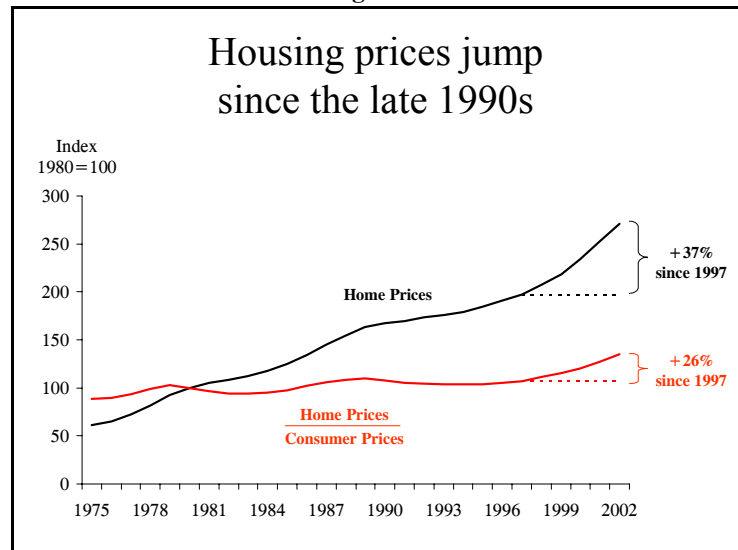
Introduction

In recent years, home prices have risen dramatically, by 37% since 1997 and by 26% when adjusted for overall inflation (**Figure 1**). Such increases have raised concerns that the economic recovery is vulnerable to a fall in home prices. Lower housing prices could slow home construction by deterring families from buying new homes and slow consumer spending by reducing housing wealth. This is important because, as emphasized by Federal Reserve Chairman Greenspan, housing wealth and the increased ability of households to extract it have aided consumer spending in recent years, helping to offset the drag from declining stock wealth.¹

To address how vulnerable the recovery is to a fall in housing prices, I will first briefly review how housing has helped the economy in recent years. Then, I will assess the downside risks to housing prices, emphasizing the importance of tracking both the vulnerability of prices to an unanticipated slowdown in economic growth and the magnitude of those economic shocks. One key finding is that there is little evidence of a national home price

bubble. However, there are some areas, particularly in the Northeast and Pacific Coast, where housing prices are vulnerable and where price declines could trigger negative local wealth effects on spending. As a result, housing prices pose some risk to how quickly the economy will recover. An important mitigating factor has been that the magnitude of bad economic shocks has been milder than in most prior recessions and higher priced areas have not, as yet, been as disproportionately hit by high unemployment as they were a decade ago. Regardless of whether regional price declines materialize, it is most likely that housing markets will provide less stimulus to economic growth in the next few years.

Figure 1



¹Please see "Monetary Policy Report to the Congress," Board of Governors of the Federal Reserve System, July 2003.

How Housing Construction and Wealth Buttressed the Economy

The combined effects of sustained home construction over the last several years coupled with an increased ability and willingness of families to tap accumulated housing wealth have buttressed the U.S. economy in recent years. For example, in contrast to most post-war recessions, inflation and interest rates fell both just before and during the entire 2001 recession. As a consequence, instead of plunging as in earlier recessions, residential construction edged up. This is illustrated by the black line in **Figure 2** where the vertical line indicates the first quarter of recession. The slight rise in residential construction is in sharp contrast to earlier recessions, in which home building declined by an average of 25 percent in the first two quarters of recession shown by the red line. The flip-side of this resiliency is that there was less of a build-up of pent-up demand for housing during the downturn and a smaller surge in construction during the recovery, which began in the first quarter of 2002.

Figure 2

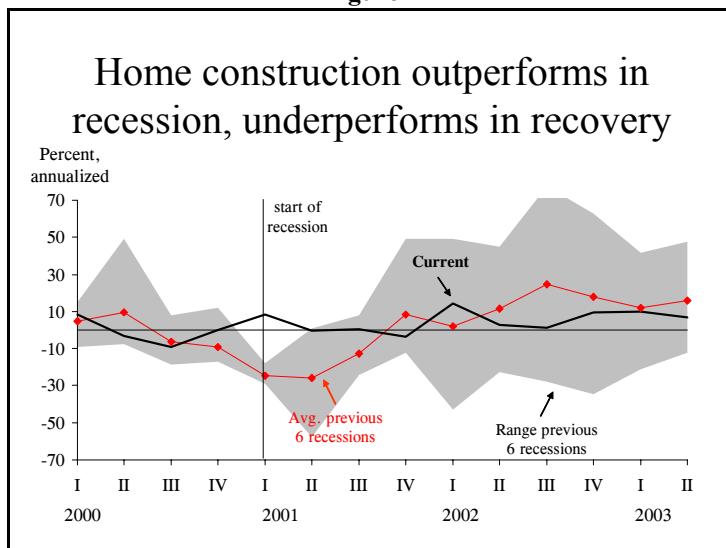
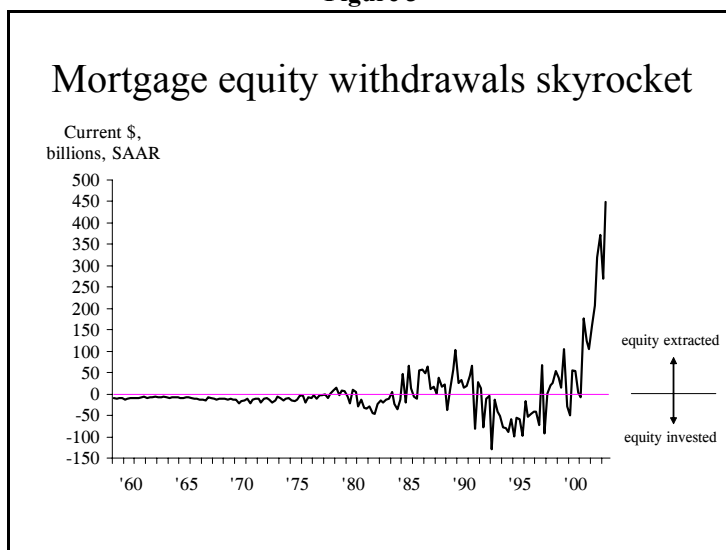


Figure 3



Nevertheless, housing has contributed much during the recovery in another way. Namely, people have increasingly used mortgage equity withdrawals to tap housing wealth to fund consumption. They have done this in three ways: by cashing out some equity when refinancing their mortgages, by using home equity lines, and by withdrawing housing wealth when selling homes. The last sort of equity withdrawal can occur when a family does not fully reinvest accumulated housing wealth from the sale of their old home into the down-payment on their next home. Despite the advent of home equity lines in 1986, mortgage equity withdrawals were not large before the late 1990s, but have surged since then (**Figure 3**).²

²For more on this issue, please see "Mortgage Refinancing in 2001 and early 2002," *Federal Reserve Bulletin* 88, 469-81, by Glenn Canner, Karen Dynan, and Wayne Passmore.

These large withdrawals are economically important. Historically, one-quarter of the funds from equity withdrawals was used to pay off non-housing debt and one-half was used to fund consumer spending and home improvements over the subsequent year. Using this rule of thumb, mortgage equity withdrawals could directly boost GDP growth by as much as 1¾ percentage points this year, up from 1¼ percentage points last year.

Note that some caution in viewing these rule-of-thumb calculations is advisable. These estimates are probably overstated because if some families were not able to extract housing wealth, they could indirectly spend more in response to rising wealth by saving less. On the other hand, the rough calculations are understated because the calculation of mortgage equity withdrawals does not net out home improvements, which contribute to economic activity. In addition, if one-quarter of equity withdrawals are used to repay other debt, there may be an indirect cash flow boost to household spending as well. The size of this indirect effect depends on whether households spend the debt service savings or relevel by subsequently borrowing more. The same is true of any reduction in debt service burdens arising from lowering one's mortgage interest rate or lengthening the term of one's mortgage when refinancing or buying another home.

On the whole, the 1¾ point calculation for the impact of 2003:H1 mortgage activity is likely to be more of an upper-bound estimate of the GDP boost from mortgage equity withdrawals. Nevertheless, mortgage equity withdrawals have helped offset the drag to consumer spending from earlier stock wealth losses. At some point, the pace of withdrawals will likely slow, and their impact on growth will fade or possibly unwind. Housing equity withdrawals depend on mortgage rates and housing prices, which brings us to issues regarding home prices.

Considerations in Gauging the Vulnerability of Housing Prices

Some General Background

Several considerations are important in assessing whether housing prices are vulnerable to sizable declines. The first is that the demand for housing reflects a need to consume housing services, while owning a home entails owning an asset whose price has upside and downside risks. As a consequence of consumption considerations, household income and other aspects of affordability matter, while asset price considerations imply that the relative returns on housing as an investment are also important. Second, housing markets tend not clear as quickly as securities markets,³ with a tendency for home prices to rise more quickly than they fall. This can occur because the large costs and hassles of moving give families reasons to delay selling their homes, particularly if they lack the liquidity to sell at a loss in a

³Please see "Regional Evolutions," *Brookings Papers on Economic Activity* 1992:1, 1-75, by Olivier Blanchard and Lawrence Katz.

down market.⁴ For example, housing price declines in some parts of the Northeast and California occurred over several years in the early 1990s. In addition, rather than characterizing houses as over- or under-priced, it is more useful to gauge the vulnerability of housing prices to negative economic outcomes along with the size of those negative shocks. The magnitude of economic shocks can be tracked using familiar indicators, such as the unemployment rate, job growth, or income growth. A final consideration is that because housing prices and economic growth can diverge across the U.S., we need to distinguish between national and regional price vulnerabilities.

Gauges of How Vulnerable Prices Are to Negative Economic Developments

Two general types of gauges of how vulnerable home prices are to negative economic developments reflect the consumption and investment demands for housing. The first type is based on consumption demand and includes the ratio of home prices to income and home affordability, which takes into account home prices, income, and mortgage interest rates. If prices rise relative to income without an offsetting decline in interest rates, then the vulnerability of housing prices is higher according to this approach.

The second general type of vulnerability gauge emphasizes investment considerations having to do with equilibrium between the owner-occupier and rental segments of the housing market, and between housing and other assets.⁵ If rents fall relative to home prices, equilibrium can only be preserved if the rent-to-price ratio moves in line with yields on alternative assets, such as the long-run Treasury yield. (Think of the rent-to-price ratio as the equivalent of interest or dividends earned on a bond or stock.) If not, then the returns on rental housing would need to adjust. For example, suppose that the rent-to-price ratio fell below its long-run relationship with inflation-adjusted Treasury returns without any changes in taxes or effective taxation to justify this relative decline. Then, investors would earn higher returns on Treasuries, inducing less investment in or demand to buy rental housing, thereby pushing up rents with fewer additions to the supply of housing or pushing down prices for buying rental units, respectively. Either way, rents would need to rise or home prices would need to fall for asset returns to be sustainable.

Of these two approaches, this article relies more on the price-to-income or affordability approach for several reasons. First, the rental stock of housing differs from the owner-occupier stock and there are limited data on rents of detached (e.g., non-condominium) homes.

⁴Please see “Loss Aversion and Seller Behavior: Evidence from the Housing Market,” *Quarterly Journal of Economics* 116 (November 2001), 1233-60, by David Genovese and Chris Mayer.

⁵Please see “House Price Bubbles,” Federal Reserve Bank of San Francisco *Weekly Letter*, March 7, 2003, by John Krainer.

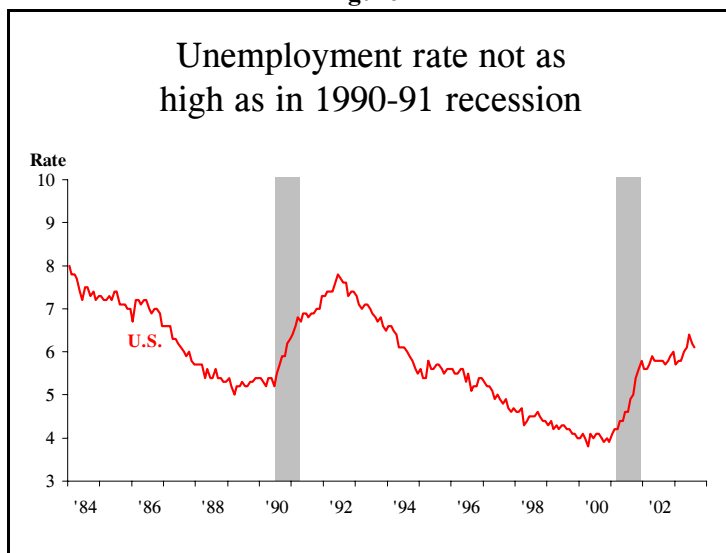
Second, both rents and home prices may be so high in an area relative to income, that even though the home price-to-rent ratio may not be high, the ratio of home prices to income may be very high. In such a situation, the high cost of living may undermine the competitiveness of an area, driving out employers and residents, inducing declines in both rents and home prices. One recent factor pushing down rents to prices has been a jump in FHA-issued mortgages which has helped boost home-ownership rates and indirectly reduce the demand for rental housing.

Third, this problem is compounded by evidence that apartment rents, not just home prices, are sometimes slow to adjust.⁶ For this reason, the ratio of home prices to income may be more reflective of home price fundamentals than the price-to-rent ratio. In order to interpret the price-to-rent ratio, it would need to be constructed in a way that it can be compared to interest rates. For example, if we had readily available data on rents of homes (in dollars) that were directly comparable to prices of equivalent homes (in dollars), then one could compute a rent-to-price ratio that can be likened to an earnings-price ratio on homes. Such a ratio, in turn, could be compared to an inflation-adjusted bond yield to see if homes yield a return comparable to bonds-with a suitable adjustment for differences in risk. Unfortunately, only indexes of rents using a base year are readily and inexpensively available, and these are not well-linked to movements in inflation adjustable bond yields. In contrast, using a price-to-income ratio coupled with some publicly released affordability data can arguably give a better sense of sustainability. Ideally, using both the rent-to-price ratio and the price-to-income ratio or affordability data could yield more accurate assessments. However, owing to cost and time constraints, this was not feasible-particularly for analyzing regional prices.

Are Nationwide Housing Prices Vulnerable To Sizable Declines?

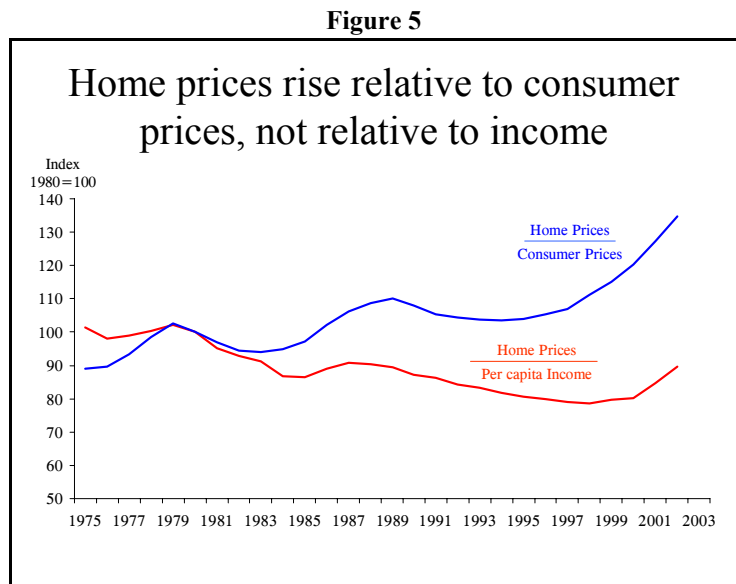
In looking at the housing fundamentals for the U.S., it is reassuring that the size of negative shocks at the national level is less than that of prior recessions, both in terms of the unemployment rate and real disposable income. For example, the unemployment rate did not rise above the levels seen in the prior 1990-91 recession, or its aftermath (**Figure 4**).

Figure 4



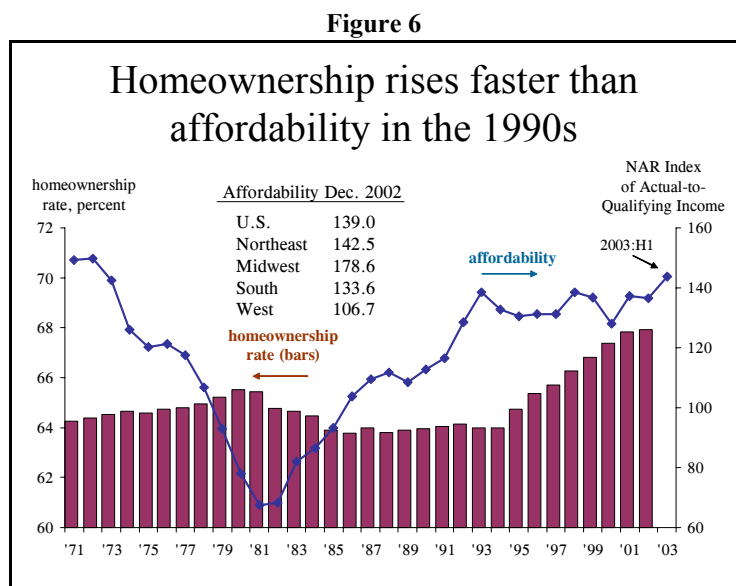
⁶Please see “The Nominal Rigidity of Apartment Rents,” *The Review of Economics and Statistics* 85 (November 2003), 844-53, by David Genovese.

Turning to the national vulnerability of prices, housing prices seem high relative to inflation as shown in **Figure 5** by the ratio of constant quality home prices to the PCE price deflator. However, national vulnerability appears low when assessing home prices relative to income. Furthermore, this vulnerability is even lower when looking at a measure of how affordable housing is, which takes into account mortgage interest rates.



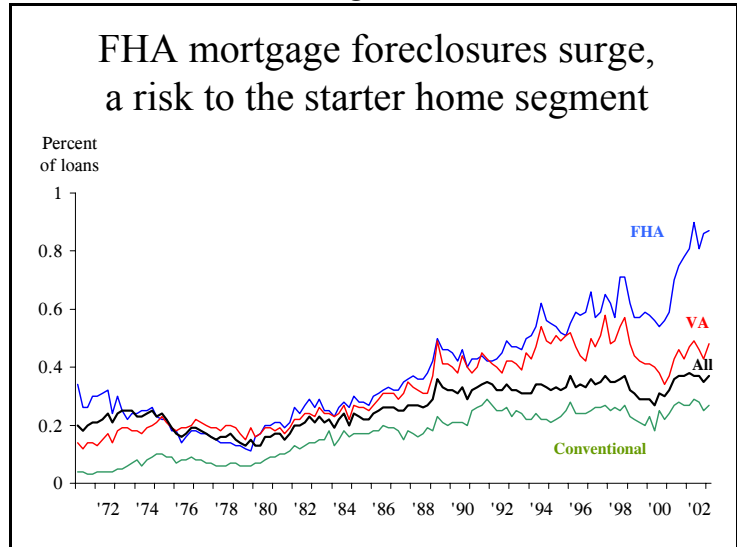
Indeed, housing is very affordable across the U.S. according to the National Association of Realtors' index (**Figure 6**). This index measures actual median income relative to the income needed to qualify to buy a median priced home with a 20 percent downpayment with the balance financed at the average prevailing mortgage rate. For example, as shown in the inset, actual median income was 139 percent of that needed to qualify to buy a median priced home. Notably, affordability was high in most broad regions, except for the West. Also encouraging is the combination of high affordability and rising homeownership rates, which suggests that people are not speculating or grossly rushing to buy, at least at a *national* level. This may have occurred in the late 1970s as early baby boomers came of age and bought homes, pushing up homeownership rates and bidding up housing prices out of fear of rising inflation so much that affordability fell. Together, the mild recession and the high level of affordability imply little downside risk to overall U.S. home prices.

Nevertheless, there are some risks worth noting. First, rising mortgage rates could cut affordability. Fortunately, even if mortgage rates rose a full point from their springtime lows, affordability would still be high—as mortgage rates would be around one-half point above their second quarter average, used in the last data point plotted. Second, much of the strength in real estate occurred in the starter home segment, which may not show much further strength. Particularly troubling is that many first-time buyers use FHA-insured loans, whose foreclosure rates have risen to very high levels and may



prompt some tightening of credit standards which could slow the starter segment (**Figure 7**). Indeed, the FHA foreclosure rate has surged to nearly 1 percent, while the conventional mortgage foreclosure rate has remained within the range seen in the 1990s. But perhaps the largest risk is that the national averages mask regional differences—in particular, home prices in the Northeast and Pacific Coast seem high, while prices in the Midwest and the South seem low. One factor behind this pattern is that the supply of new homes in the Northeast and Pacific Coast areas is less responsive to prices because zoning restrictions and other factors limit the supply of new building lots.⁷

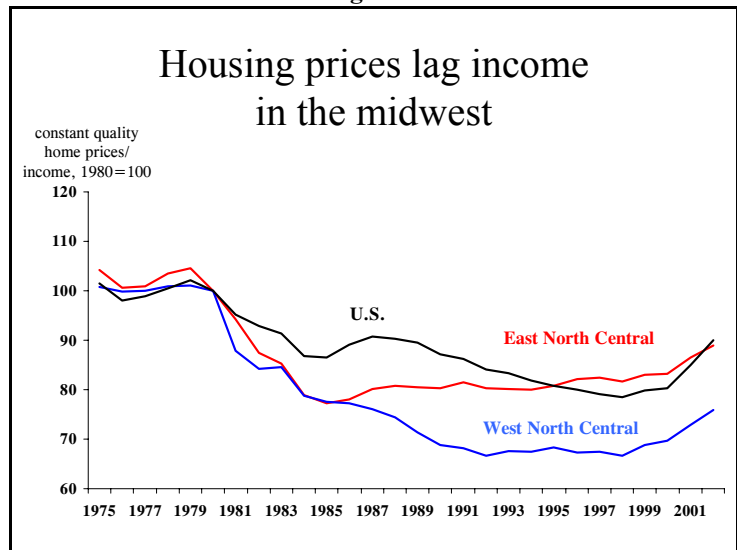
Figure 7



How Vulnerable Are Regional or City Housing Prices To Sizable Declines?

In assessing whether there are regional bubbles, I will focus on tracking the vulnerability of home prices using the ratio of home prices to income, for reasons mentioned earlier. While the price-to-income ratio will vary by area, the similarity of mortgage rates across the U.S. implies that affordability is lower in areas where the ratio of home prices to income is above the U.S. average. Looking at the home price-to-income ratio, several patterns emerge over the last two decades.

Figure 8

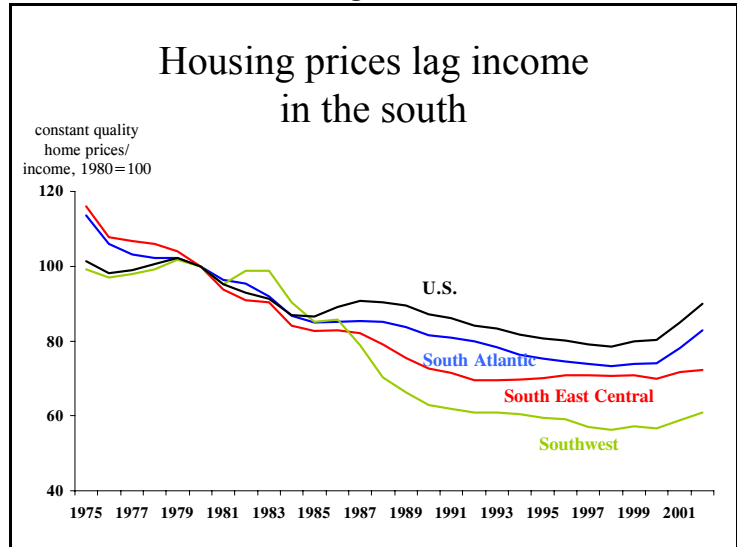


Midwest prices have generally lagged income, following the U.S. pattern (**Figure 8**). In the eastern half of the Midwest, the price-to-income ratio in the East North Central region has generally followed the U.S., while the ratio in the West North Central region has lagged behind the national average.

⁷Please see “The Behavior of Home Buyers in the post-2000 Real Estate Boom,” *Brookings Papers on Economic Activity*, 2003:1, by Karl E. Case and Robert J. Shiller.

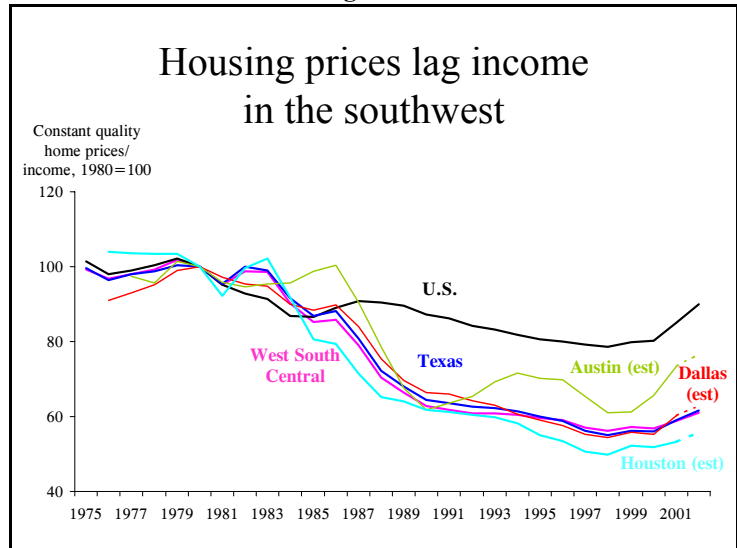
In the South, the price-to-income ratios in all three sub-regions have lagged the nation (**Figure 9**). The ratio in the South Atlantic area has kept closer to the national average, perhaps reflecting a relative increase in demand for living near ocean beaches and migration down the eastern seaboard. Prices relative to income in the Southeast Central area have more notably lagged the U.S., with the Southwest trailing by even more. The ratio in the Southwest fell the most relative to the nation during the oil bust years of the late 1980s.

Figure 9



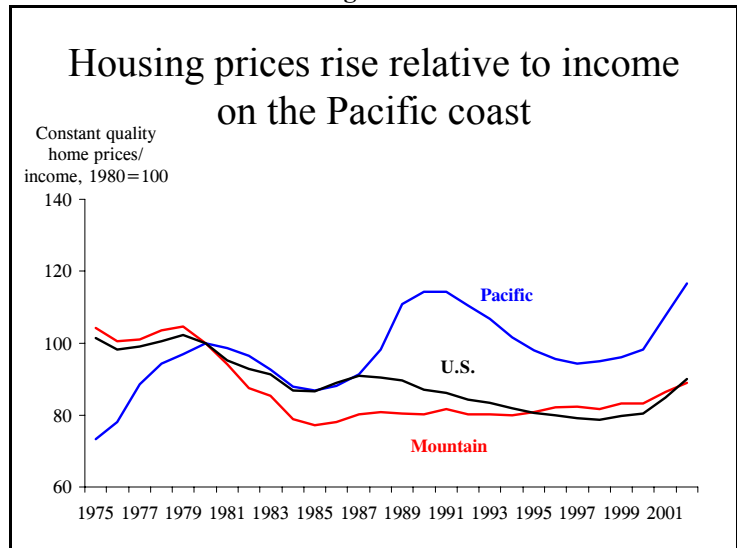
Within the Southwest (**Figure 10**), Dallas has closely tracked the regional ratio, with Houston slightly lagging, and more volatile and tech-dependent Austin outperforming the region during the high-tech boom of the late 1990s.

Figure 10



Turning to the West, the price-to-income ratio in the Mountain sub-region has kept pace with the U.S. (**Figure 11**), perhaps reflecting a more abundant supply of build-able land compared to the Pacific Coast which prevents existing prices from rising as much. By contrast, prices in the Pacific sub-region have risen much relative to the national average, with the relative gap roughly as large as that during the bubble years of the late 1980s.

Figure 11



Note how quickly the 1980s' bubble grew and how less quickly it unwound later. This may reflect that people who bought at the top are slow to sell out at a loss. For example, during the bi-coastal housing price bust of the early 1990s,

home prices fell some in the Pacific Coast and Northeast. However, most of the adjustment toward more normal ratios of home prices to income arose mainly from income increases as housing prices remained stagnant to slightly down in those regions. While home prices in the Pacific Coast area may seem bubbly once more, some caution in interpretation is warranted. Much of the gap may be sustainable if there has been a long-run increase in the demand to live by the ocean. In this regard, note how the fall of Pacific prices during the bust years of the early 1990s only partially eliminated the gap with the national average.

A pattern of a higher gap during the late 1980s followed by a narrowing gap during the early 1990s and a relative rise in the late 1990s also characterized the ratio of New England home prices to income (**Figure 12**). Mid-Atlantic prices showed a similar-though more muted-pattern up through the mid-1990s, but have not risen that much relative to the U.S. average in recent years. But even sub-regional averages can mask important trends. For example, the price to-income ratio in Massachusetts has risen relative to most of New England, while New York State prices have outstripped Mid-Atlantic prices. Even within states, prices in certain cities seem more vulnerable, particularly in Boston and New York City.

In reviewing the magnitude of shocks across the regions, it is noteworthy that recently unemployment rates have moved more closely together, following a more national cycle (**Figure 13**). This is in contrast to the mid-1980s through mid-1990s, when a more bi-coastal pattern was apparent. In particular, the Northeast had seen its unemployment rate plunge well below the U.S. average by 1988, only to subsequently rise above the national average. And in the West, unemployment, which had tracked the nation through the late 1980s, rose above the U.S. average in the early 1990s, when high costs and defense cutbacks pushed up the unemployment rate. While the recent, more national cycle in unemployment is helpful with respect to home prices

Figure 12

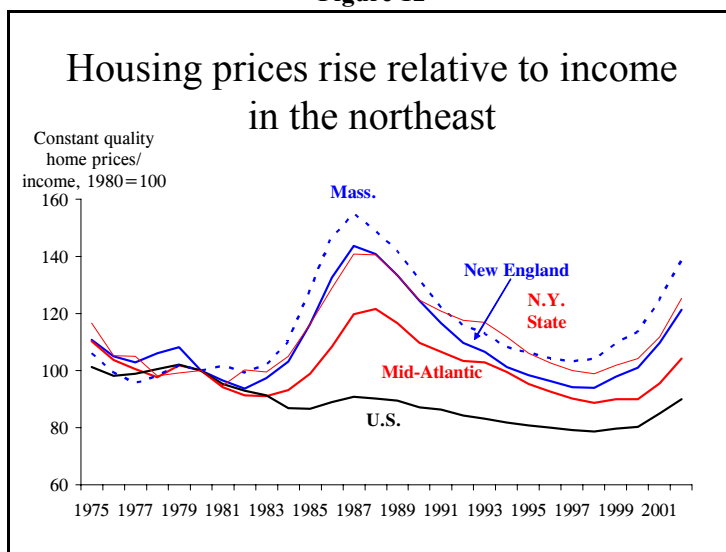
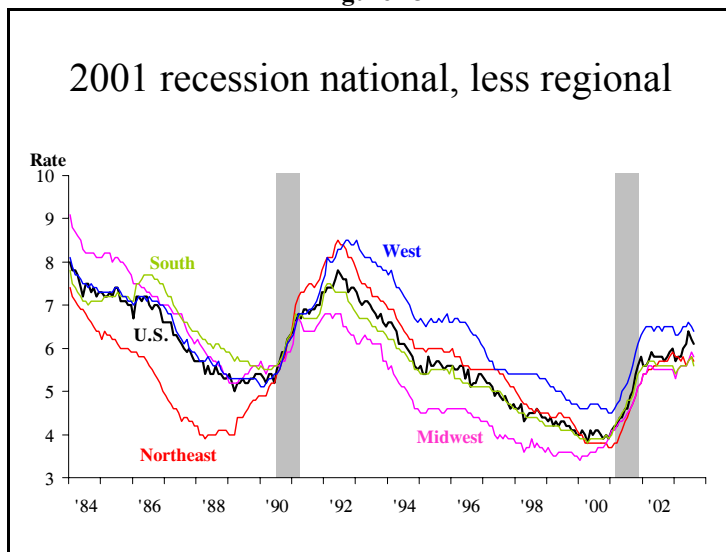


Figure 13



in the Pacific and Northeast areas, the situation warrants monitoring because job growth across major cities has recently been weaker in high-cost, high-tech, or manufacturing-oriented cities.

Indeed, high cost cities, such as Boston, New York City, and San Francisco (**Figure 14**), have seen large percentage declines in payrolls over the last three years. There have also been pronounced job losses in the manufacturing-oriented cities of the Midwest—followed by somewhat less weakness in the high-tech towns outside of the Bay area and Boston—including Dallas. Other cities have fared relatively better, with some like Los Angeles, Washington, and San Diego benefiting from increased defense spending or from prices not being as high as in other major cities within their respective regions.

Looking within regions is important. Indeed, home prices have risen very sharply relative to income in three of our most expensive cities (**Figure 15**) where job growth over the last year has been among the weakest: San Francisco, Boston, and New York. Furthermore, housing affordability is very low in these three cities, with housing affordability readings below 100 indicating that families earning the median income there cannot qualify for a standard mortgage on a median-priced home. While Dallas has taken its share of job losses, its prices were not that out of line with income, implying that the downside risks to Dallas home prices are more limited.

Another important concern is that state income tax receipts have been hurt in high-tech or high-cost states that have income taxes owing to greater job losses and the greater impact of stock prices on taxable income in these areas. Of the nine states suffering the largest percentage declines in income tax receipts last year (adjusting for tax law changes), all are either in the high cost areas of California or the Northeast, or are states having a

Figure 14

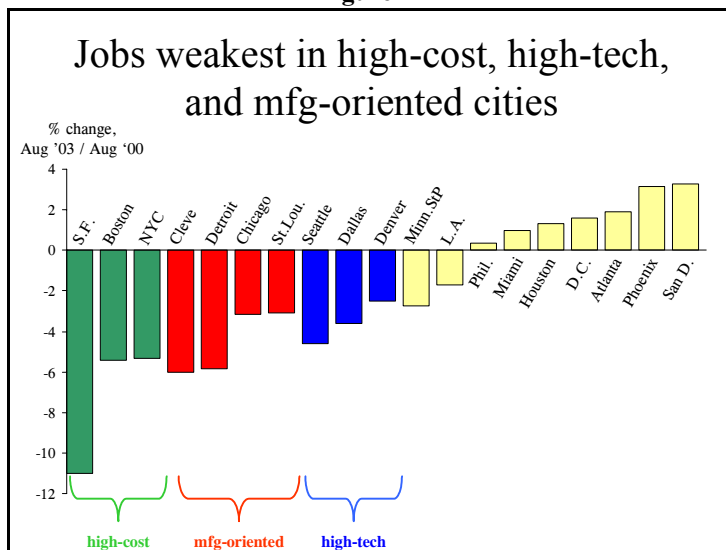
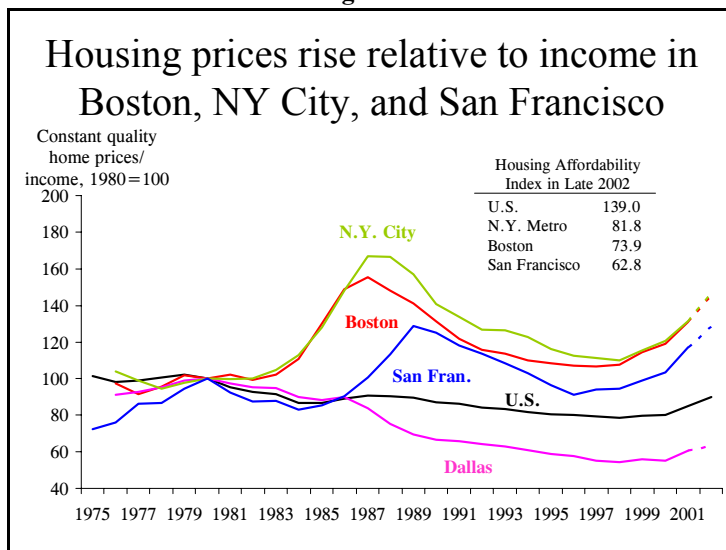


Figure 15



disproportionate share of high tech activity.⁸ The latter include Oregon, home to the Silicon Forest, and Colorado, home to telecommunications-dependent Denver.

Conclusion

Overall there is little risk of a national housing price bubble, but prices in some Northeast and Pacific Coast cities seem vulnerable. Fortunately, the national unemployment rate is lower than in the last recession and rises in regional unemployment have been less bi-coastal than in the early 1990s, when housing prices declined in the Northeast and California. Nevertheless, the situation warrants monitoring, because over the past year, high cost and high tech areas of the country have posted some of the weakest job growth across major cities and many of those areas have seen the biggest declines in state tax revenues. Given the importance of the Pacific and Northeast regions, high home prices in those areas pose some risk to how quickly the U.S. economy will grow. But even if housing prices declined in those areas, it is reassuring that much of the recent strength in home construction has been in the South and Midwest, where housing prices have not been risen out of line with income. Going ahead, it is more likely that housing markets will boost overall economic growth less, particularly because home equity withdrawals are likely to slow, thereby aiding consumption growth less. Fortunately, this is likely to occur when other offsetting factors will likely boost growth.

John V. Duca, Vice President
Federal Reserve Bank of Dallas
October 2003

⁸Please see “The Personal Income Tax: Once a Strong Source of State Revenue Growth is Now a Source of Budget Problems,” *The Rockefeller Institute State Fiscal News*, Vol. 3, No. 3, (April 2003), by Nicholas W. Jenny.

Sources:

Figure 1: Bureau of Labor Statistics, Office of Federal Housing Enterprise Oversight, and author's calculations.

Figure 2: National Income and Product Accounts and author's calculations.

Figure 3: National Income and Product Accounts, Flow of Funds, and author's calculations.

Figure 4: Bureau of Labor Statistics.

Figure 5: Bureau of Labor Statistics, Office of Federal Housing Enterprise Oversight, and author's calculations.

Figure 6: National Association of Realtors and U.S. Census Bureau.

Figure 7: Department of Housing and Urban Development.

Figures 8-12: Bureau of Labor Statistics, Office of Federal Housing Enterprise Oversight, and author's calculations.

Figure 13: Bureau of Labor Statistics.

Figure 14: Bureau of Labor Statistics and author's calculations.

Figure 15: National Association of Realtors, Bureau of Labor Statistics, Office of Federal Housing Enterprise Oversight, and author's calculations.