

# The Economic Impact of Restricting Housing Supply

By Edward L. Glaeser, Rappaport Institute for Greater Boston, Harvard University

Compared to both the nation and the region's past history, very little new housing has been built in greater Boston in the last decade. In addition to increasing housing costs and reducing housing affordability, the lack of new housing has four other important economic consequences.

**First, limits on new construction are responsible for the declines in Massachusetts's population reported in the recent Census estimates.**

High housing prices ensure that there is no lack of demand for living in Greater Boston, but without new supply population declines because older housing units depreciate and the number of people per housing unit continues to decline. This means that if permitting of new housing does not increase in greater Boston, the region will become a smaller and smaller player in the global economy.

**Second, restricting housing supply leads to greater volatility in housing prices.** In today's still solid housing market, we may have forgotten the historical correlation between housing price growth in one period and decline over subsequent periods. For example, Joseph Gyourko and I have found that if an area has a \$10,000 dollar increase in housing prices during one period, relative to national and regional trends,

that area will lose \$3,300 dollars in housing value over the next five-year period, again relative to national and regional trends (Glaeser and Gyourko, forthcoming). Such housing cycles occur almost everywhere, but the dollars involved are far bigger in metropolitan areas with restricted housing supply such as many parts of California, New York City and Boston. Illustratively, booms and busts in the Atlanta region have been relatively modest while in Boston, the last boom was followed by a 30 percent drop in housing values between 1988 and 1994. Moreover, this boom-bust cycle was associated with significant dislocation in the regional economy.

**Third, significant price increases associated with restricted supplies of housing subsequently appear to lead to declines in employment and income.** In the short run, high housing costs force firms to pay higher wages but in the long run, firms generally leave high-cost areas. Joseph Gyourko and I estimated, for example, that places with rapid price increases over one five-year period are more likely to have income and employment declines over the next five-year period (Glaeser and Gyourko, forthcoming).

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## Edward L. Glaeser

*Edward L. Glaeser is the Fred and Eleanor Glimp Professor of Economics in Harvard's Faculty of Arts and Sciences and is director of Harvard's Rappaport Institute for Greater Boston. He teaches urban and social economics and has published papers on cities, economic growth, and housing prices.*

*This policy brief is based in part on "Housing Cycles," a forthcoming working paper by Edward L. Glaeser and Joseph Gyourko.*

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**Finally, high housing prices change an area's demographic mix.** High housing prices ensure that only affluent people can afford to live in greater Boston, which is one reason why the region increasingly has become an enclave of highly skilled people. This concentration of skills is unlikely to harm economic vitality, but it does ensure that the region will continue to become less diverse and instead evolve into a boutique city catering only to a small, highly educated elite.

**The economy cannot grow unless population grows and the population cannot grow without new housing.**

## Background

Between 1980 and 2004, real housing prices in the Boston-Quincy area rose by 210 percent and prices in the Cambridge-Newton area rose by 180 percent (OFHEO, 2006). Only the Nassau-Suffolk region in Long Island had faster housing price appreciation over the same time period. The remarkable increase of prices in greater Boston reflects a growing demand for housing that accompanied the region's remarkable transformation from a declining manufacturing area to an idea producing, information-age hub. However, rising demand alone does not have to produce high prices. After all, while demand for housing has risen even more spectacularly for such areas as Las Vegas and Phoenix, prices in those areas are one-half those in greater Boston, mainly because governments in those region allow the market to respond to the demand for more housing.

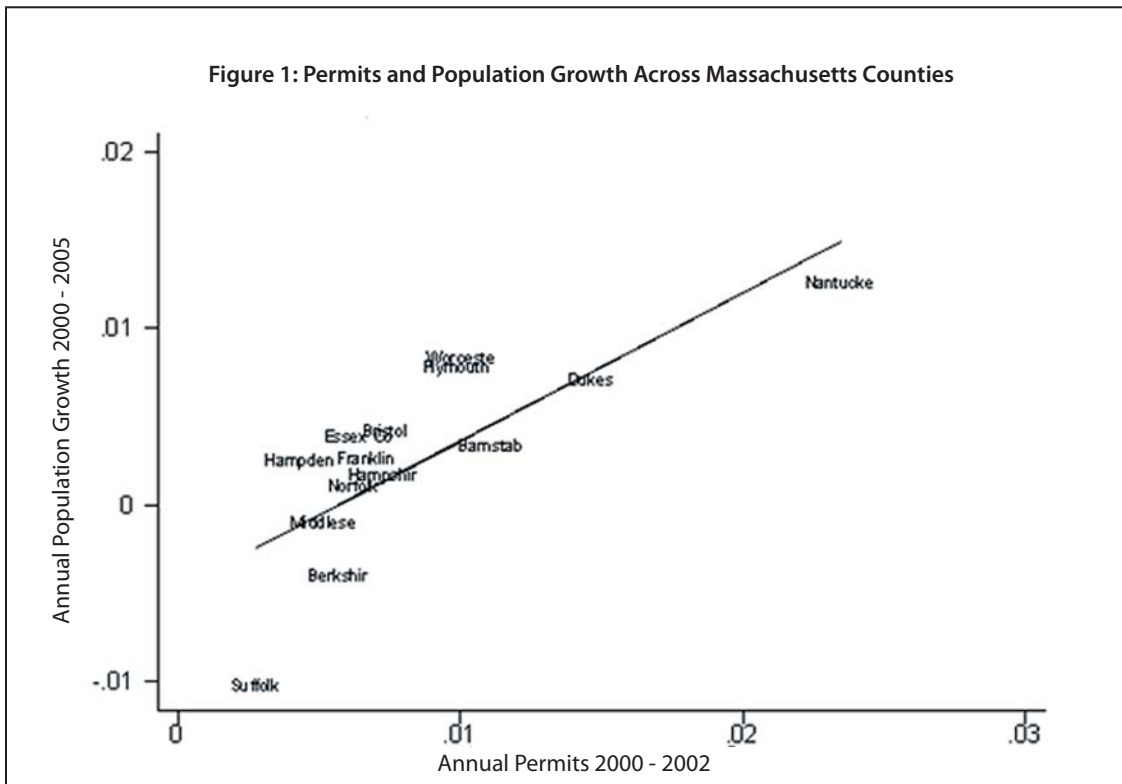
Illustratively, the city of Phoenix permitted 16,500 units in 2004, more than 10 times the number permitted in Suffolk County. Even dense places are much more permissive than

greater Boston. Cook County, Illinois, for example, has only 15 percent more land area and 3.67 times the population of Middlesex County, Massachusetts. However, in 2004, 13,900 new housing units were permitted in Cook County, while only 3,800 units were permitted in Middlesex County.

In previous work, Jenny Schuetz, Bryce Ward, and I argued that sluggish increases in the supply of new housing in greater Boston in the last decade primarily is due to local land-use regulations not a lack of land (Glaeser, Schuetz, and Ward, 2006). Housing densities in many communities in greater Boston, for example, are less than those in growing areas of the Southwest. Moreover, greater Boston's least dense communities are less likely to allow new housing and such communities are more likely not only to require larger minimum lot sizes but also to adopt other regulations that restrict the construction of new housing, such wetlands regulations that go beyond statewide standards. These findings are consistent with new research by Andrew Jakobovics of MIT's Center for Real Estate's Housing Affordability Initiative, who found that the median lot size for new construction for new single-family houses built in Greater Boston between 1998 and 2002 was 0.91 acres, up from .76 acres between 1990 and 1998 (Jakobovics, 2006).

## No Homes, No People, No Jobs

Between 2003 and 2005, the State of Massachusetts lost 18,000 people or .3% of its population, more—in both absolute and percentage terms—than any other state in the country. These losses generated great hand wringing and much discussion about whether the economy or an unfriendly culture drove people away and deterred others from moving here. Such speculation misses the fact that even as people have been leaving Massachusetts, housing prices have not only remained extraordinarily high but also continued to increase. The National Association of Realtors,



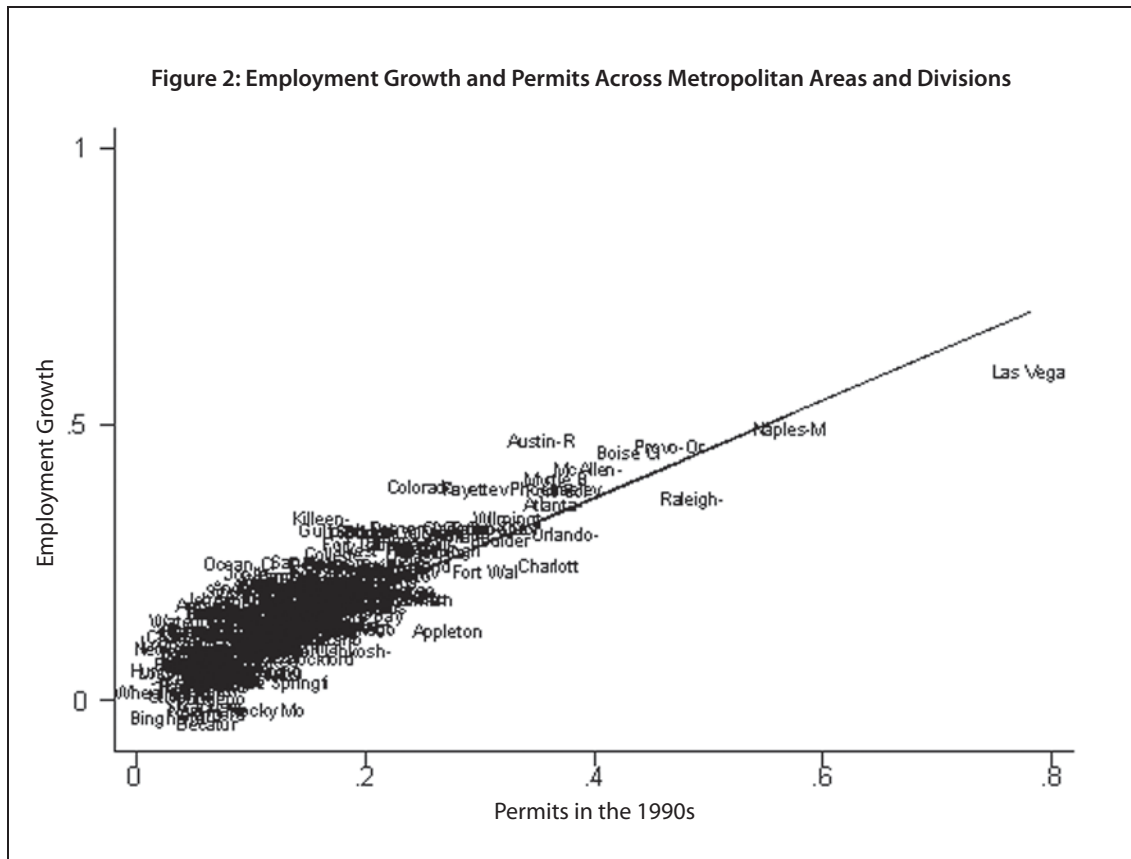
for example, reports that the median price of a single-family home in greater Boston prices rose from \$365,000 in mid 2003 to \$419,000 in mid 2005 (NAR, 2006). Such high and rising prices mean that there is no lack of demand to live in greater Boston, which in turn suggests that it is inappropriate to suggest that the economy or our culture are responsible for recent declines in population.

Rather, there is a strong relationship between permitting, population growth, and employment. Why? Because the economy cannot grow unless the population grows and the population cannot grow without new housing. Figure 1 illustrates the relationship between housing and population by showing the tight correlation between

annual population growth from 2000 and 2005 and annual permitting from 2000 and 2002 in each of Massachusetts' 14 counties.<sup>1</sup> Figure 2 illustrates the relationship between housing and employment by showing the correlation across metropolitan areas between the number of new units permitted in the area in the 1990s and the growth in employment (measured by log employment) over the same time period.<sup>2</sup>

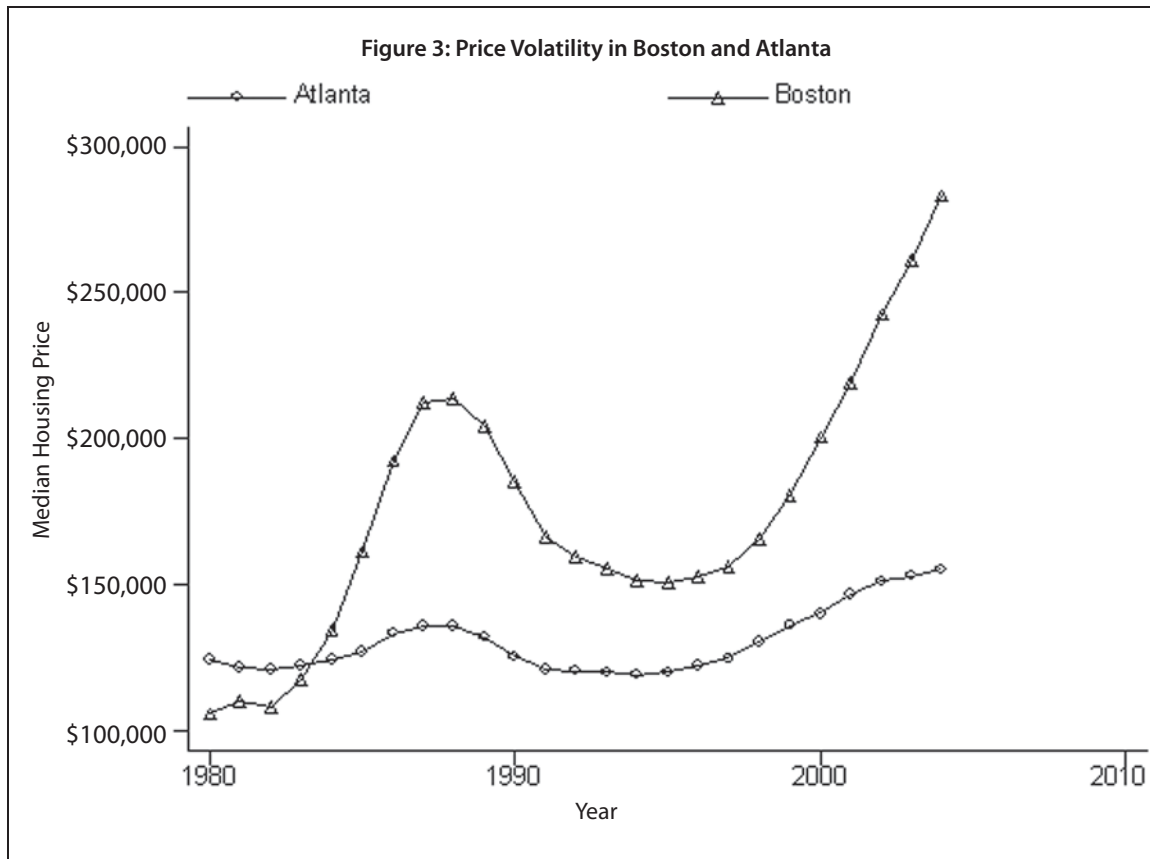
Moreover, because housing depreciates, population will shrink unless new units are built. In central cities, for example, between 1.3 and 1.8 percent of the housing stock permanently disappears every two years (Glaeser, Gyourko and Saks, 2005). In addition, the number of people per housing unit has declined from 2.96 persons per unit in 1970 to

Figure 2: Employment Growth and Permits Across Metropolitan Areas and Divisions



2.66 persons per unit today and that decline has been even steeper in urban areas. In fact, as Joseph Gyourko, Raven Saks, and I have shown, changes in population across space are almost never the result of changing vacancy rates or changing occupancy (Glaeser, Gyourko and Saks, 2005). In the Northeast and the Midwest, the population of central cities does not grow unless the number of new units equals approximately .4% of the existing housing stock per year. This means that Boston needs to permit at least 1,000 units annually to keep even, a target it has met for the last three years but that it met only once between 1996 and 2002 (U.S. Census Bureau, 2006).

Is it bad if the population of Massachusetts does not increase or even continues to decline? On the one hand, there is a large body of economic research showing that places with less population are less productive and have lower wages (Ciccone and Hall, 1996, Glaeser and Mare, 2001). On the other hand, it may be that such losses are more than offset by less crowding on the roads and a more peaceful lifestyle for the region's remaining residents. At the very least, however, it is clear that continuing policies that greatly restrict the supply of new housing in greater Boston will ensure that the region will play an increasingly smaller role in the nation and the world. Moreover, as a nation, our economy loses because housing restrictions make it much



harder for firms and workers to move into highly productive areas such as the Boston, New York and the San Francisco metropolitan areas.

### Restricted Supply Means Greater Price Volatility

In the short term, restricted supply leads to lower quantities and higher prices. Over time, however, restricted supply leads to more volatility in prices and less volatility in quantities. In places with flexible supply, increases in demand lead to more building, not more prices, and decreases in demand lead to less building, not lower prices. In places where supply is inflexible, increases and decreases in demand do not change

supply, and all of their impact is felt on prices. This logic implies that restrictions on new construction in greater Boston create housing price volatility where booms are spectacular and busts are extremely painful. Figure 3 shows median house prices<sup>3</sup> for metropolitan Boston and metropolitan Atlanta, which has a fairly permissive permitting environment. Relative to its housing stock, the Atlanta region issues about seven times as many permits as the Boston region. As the figure shows, median housing prices in Boston are higher and more volatile than housing prices in Atlanta, which did not share Boston's 1980-1988 boom when real prices doubled, nor suffer from Boston's 1988-1994 bust when prices lost 50 percent of that previous gain.

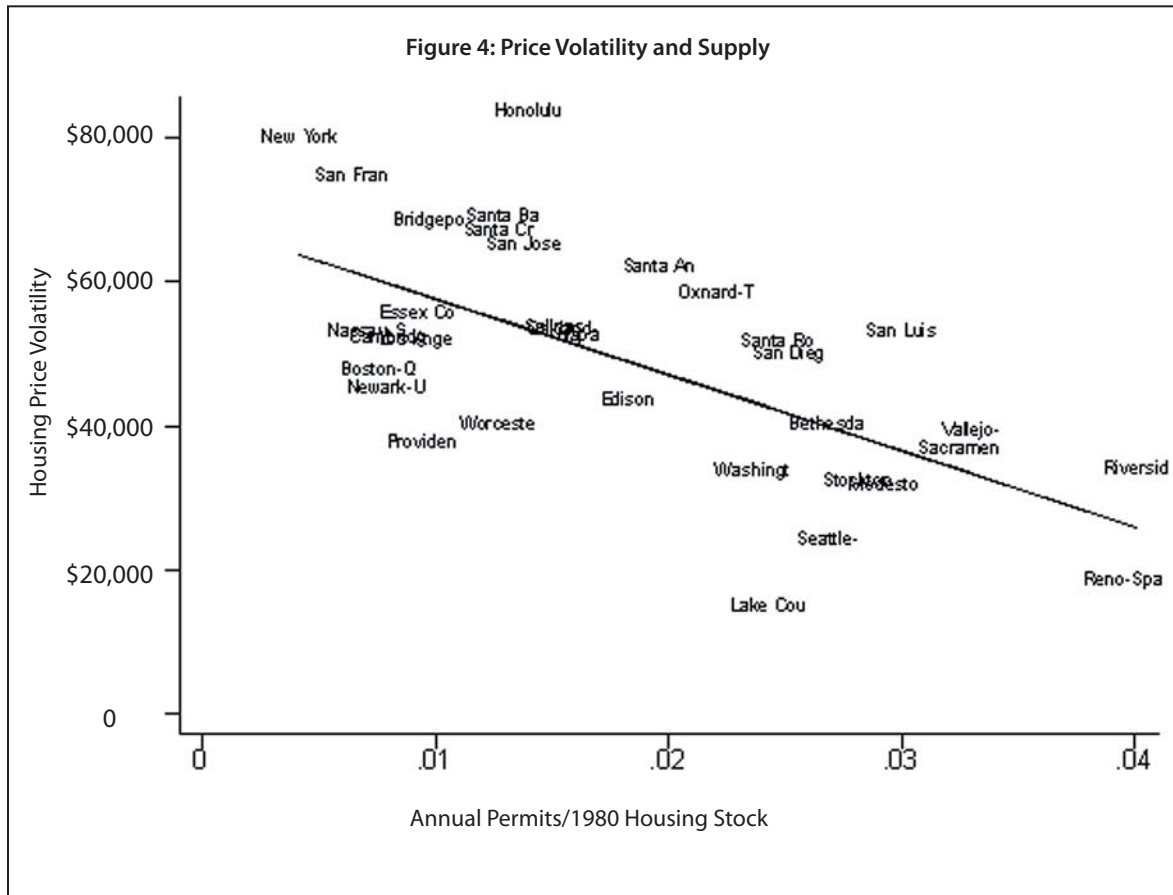


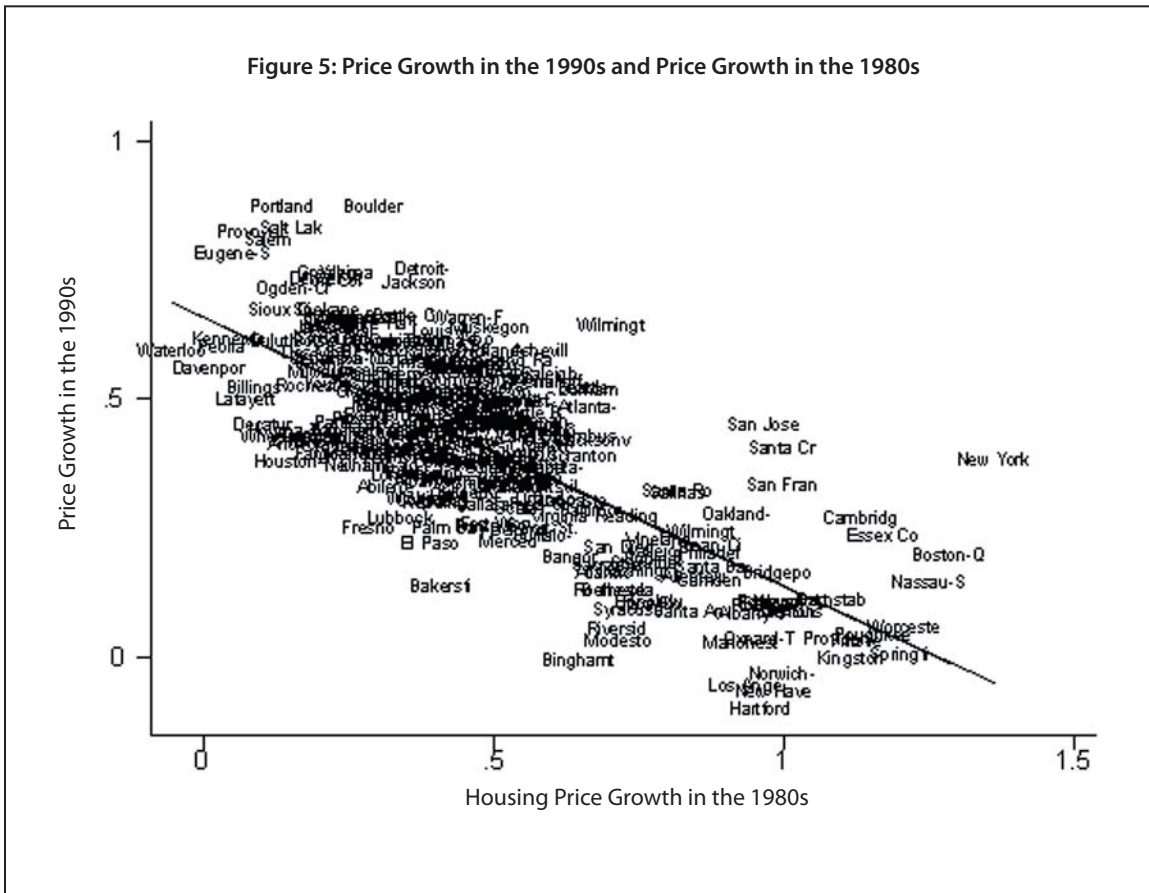
Figure 4 shows the relationship between price volatility and supply more systematically. The measure of price volatility is the average of the absolute value of the difference between a region’s five-year growth in housing prices and its usual housing price growth between 1980 and 2004. For places that always grow by the same amount, this quantity will be zero. For regions than sometimes grow by \$50,000 over five-year periods and sometime do not grow at all, this measure will be 25,000. The measure of supply is the average number of annual housing unit permits in a region divided by its stock of housing units in 1980. To reduce the role of differences in demand conditions, the sample is restricted to those areas that had housing prices above the average in the sample as of 1990, which was \$108,000. The overall relationship is extremely negative. As

permits relative to stock rise by one percent, the average gap between price changes and average price changes drops by \$10,000. In short, places with restricted supply are much more volatile than those that allow more housing to be built.

People tend not to mind price volatility when prices are rising, but dramatic drops in home values can be quite damaging both to homeowners and to the outside economy. Figure 5 uses Census data on median home values to show the relationship between housing price growth in the 1980s and housing price growth in the 1990s. In that figure, a 10 percent greater increase in prices in the 1980s is associated with a five percent smaller increase in prices in the 1990s. Using more sophisticated techniques, Joseph Gyourko and I found that



Figure 5: Price Growth in the 1990s and Price Growth in the 1980s



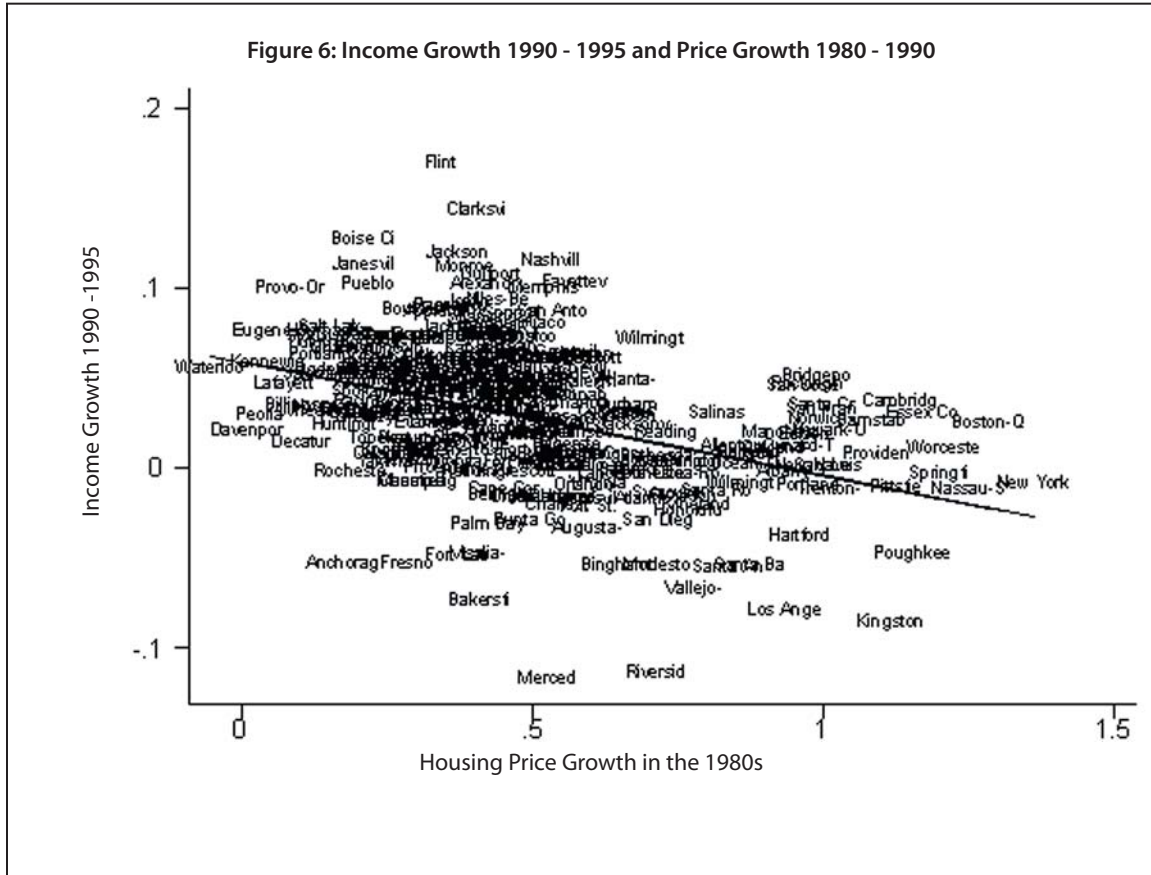
over the last 25 years, for every dollar increase in prices over a five-year period relative to regional and national trends, we should expect to see a 33 cent decrease in prices over the next five years relative to those national and regional trends (Glaeser and Gyourko, forthcoming).

What does this mean for Boston? Since housing prices in the region have risen dramatically over the last eight years, the model suggests that at best prices will not increase as fast as other parts of the country and at worst they will drop precipitously as they did in the late 1980s and early 1990s. Housing price volatility also has the potential to bring dislocation to the banking and construction sectors. Moreover, if people buy less when their home values

drop, other markets will also become more volatile. Furthermore, while California’s risk may ultimately be limited because of its extraordinary amenities, Boston has no equivalent guarantee of regional success.

**Price Increases Predict Decreases in Income**

High housing prices mean that employers need to pay workers more to induce them to come to or stay in a region. On average a \$50,000 increase in housing price is associated with a \$4,000 decrease in wages across metropolitan areas, relative to the metropolitan area’s norm and the contemporaneous U.S. economy. This means that high housing costs push up the high costs of doing business in a region, and we should not be surprised when employers complain about high housing costs as a major problem with doing business in greater Boston



(See Blanton, 2006). Of course, at this point in time, employees do not mind that high housing prices are offset by higher wages.

However, firms do not necessarily accept the high costs of doing business in a region standing still. Throughout the second half of the 20th century, for example, many businesses moved from higher wage, heavily unionized areas of the Midwest and Northeast to new plants in the cheaper wage, non-unionized, right-to-work states in the South. Today, high private-sector wages in greater Boston reflect the need to offset high housing costs, not unions. Nevertheless, the high wages have the capacity to repel employers just the same. Joseph Gyourko and I estimated, for example, that after controlling for area trends and year effects, a \$50,000 increase in housing prices

in one five-year period is followed by an almost five-percent decline in employment in the subsequent five-year period (Glaeser and Gyourko, forthcoming).

Employment declines reflect the fact that firms leave high-cost areas. This exodus reduces income as well. Figure 6 shows the relationship between housing price growth in the 1980s and income declines between 1990 and 1995. The places with the fastest price growth had the sharpest declines over the next five years. Using the past 25 years of data, Joseph Gyourko and I found that after controlling for area trends and year effects, a \$50,000 increase in housing prices over one five-year period is associated with a \$1,500 decrease in income in the next five-year period (Glaeser and Gyourko, forthcoming). If these results hold in the future,



then greater Boston should expect a reduction in future income growth because as employers respond to high housing costs by leaving the area.

### **Restricted Supply and the Character of Greater Boston**

Perhaps the most disturbing possibility is that instead of being just another cost of doing business in greater Boston, high housing costs will permanently change the region's character in ways that will harm its long-term future. High and rising housing costs might do so in three important ways. First, high costs might ensure that only people with higher wages and skills can afford to live in greater Boston. Second, high housing costs might repel younger people who cannot afford large down payments and high monthly mortgage payments. Third, high housing costs might keep away talented outsiders who would otherwise move here.

The first effect is clear: the correlation between high housing costs and the share of the region's population who are college educated is extremely robust. In 2000, as a metropolitan area's housing costs increased by \$50,000, the share of its adults with college degrees increased by four percent, a significant amount given that the average across metropolitan areas is 22 percent. Moreover, over the past 20 years, across places with high levels of demand, fewer permits meant a greater increase in the share of the population with college degrees. Restrictions on housing supply, therefore, are helping to make greater Boston a boutique region for educated elites because people with lower incomes just cannot afford to live here. This effect is troubling for anyone who cares about living in a diverse region. However, because long-run urban growth increases as the share of the population with college degrees increases, this does not signal a long-run economic demise for the region.

Indeed, the tendency of high housing prices to shut out those without degrees probably boosts the region's income growth at the expense of those who are not fortunate enough to be able to afford homes in greater Boston.

A second possible implication of rising housing prices is that younger people will be priced out of the market. If younger people play key entrepreneurial roles creating urban success then this could indeed be problematic for greater Boston. However, across metropolitan areas, there is no relationship between residents' median age and high housing values and places that got more expensive over the last 20 years did not get older. Moreover, there is little actual evidence suggesting that youth is a necessary ingredient for innovation. As such, while this is an interesting hypothesis, it is not a cause for policy action.

### **Large increases in housing costs will be followed not only by drops in housing prices, but also by declines in incomes and employment as well.**

Finally, restricting housing supply might freeze greater Boston socially just as it is being frozen physically. Certainly, this state is not full of outsiders. In the 2000 U.S. Census, 11 percent of the state's residents reported that they lived outside of Massachusetts in 1995. The comparable number for Nevada is 29.2 percent. But it is Nevada, not Massachusetts, that is unusual because in the 2000 U.S. Census only about 11 percent of all Americans said they lived outside their current state in 1995. In fact, 13.7 percent of those living in Middlesex County in 2000 had lived outside the state in 1995, more than the country as a whole and more than the county's similar figure in the 1990 U.S. Census. Thus while housing policies

help ensure that the region is home to more affluent people, they do not seem to be keeping outsiders away from greater Boston.

### Policy Implications

None of these economic consequences prove that restricting housing supply is a bad thing. Obviously, there are costs and benefits associated with being a smaller, more expensive region. However, if the region's leaders and residents chose to continue limiting growth, they should understand that those policies create a smaller region with highly volatile house prices. Moreover, large increases in housing costs will be followed not only by drops in housing prices but also by declines in incomes and employment as well.

If the region's leaders and residents decide that change is necessary, a promising route forward might be for the state to use stronger incentives to localities that encourage the construction of more housing. Chapters 40R and 40S, which both reward localities for allowing more housing, point the way. To be really effective, however, these approaches need larger financial incentives and fewer restrictions tied to accessing those incentives. A better system would be to give targets to local communities based on current prices and current density levels, so places with the highest prices and the lowest density levels would have the biggest targets. Then state aid can be redirected from places that fail to meet targets to places that exceed their targets. While such an approach might be controversial, it still would allow localities to chart their own future but in ways that appropriately reward those communities taking steps that most benefit the region as a whole.

### Endnotes

1. Population growth is the change in the logarithm of county population from the U.S. Census Annual Population Estimates. Housing permits is the ratio of permits at the county level between 2000 and 2002 divided by the number of total housing units in the county according to the Census in 2000. Permit data was graciously supplied by Raven Saks.
2. New units permits are defined as the number of units in the 1990s divided by the housing stock in 1990. Employment growth is the change in the logarithm of total persons employed between 1990 and 2000. The unit of observation is the Census Metropolitan Area or Metropolitan Area Division where applicable.
3. The prices are calculated using the Office of Federal Housing Enterprise Oversight repeat sales index. Technically, the median housing value in the 2000 census is multiplied by the rate of growth to find housing prices for later years and shrunk by the past growth rates to calculate prices in previous years.

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