The Distributional Effects of Housing Price Booms: Winners and Losers in Boston, 1980–88

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The past few years have witnessed unprecedented increases in single-family home prices in some regions of the country. Most recently, prices have risen at very rapid rates in Washington, D.C. and in California. Between 1983 and 1986 the Northeast corridor from New York to Boston boomed, with price increases approaching 40 percent per year. In a single month, between May and June of 1988, the California Association of Realtors reported that the median home price jumped 4.1 percent in Orange County and an astounding 10 percent in San Francisco. The median price of existing single-family homes in Boston rose from $82,000 in 1983 to $183,000 in 1988. In Orange County and San Francisco, the figure is now well over $200,000. In boom cities, rents have also risen sharply. Real rents in Boston and California have risen at twice the national rate since 1980.

At the same time, housing in the rest of the country has become significantly more affordable. Since 1980, if we look at the nation as a whole, interest rates have fallen (until very recently), real incomes have risen, and median home price has just kept up with inflation.

The result has been a complex and dramatic change in the distribution of real income and wealth. Homeowners in the boom areas found themselves with large amounts of home equity. Estimates below indicate that about $70 billion in wealth was created in the Boston metropolitan area alone between 1981 and 1987, not counting increases in the value of rental properties. Homeowners experienced constantly declining real out-of-pocket housing costs, as fixed mortgage payments declined in real terms at the same time that housing prices were booming all around them. Renters, on the other hand, experienced rising real housing costs and watched the probability of owning decline.

Housing price booms have not been confined to high-income cities and towns; evidence from Boston shows that prices rose in low-income areas just as fast as they did in high-income areas (Case 1986). Owners at the bottom of the income distribution gained even more than owners at the top in proportion to income.

This article explores the distributional consequences of housing price booms. Who are the winners? Who are the losers? In what ways do people benefit from booms? How are people hurt by them? The first section describes events in two boom areas, Boston and California, in more detail. Next we discuss the character of the redistribution that takes place during such periods. Finally, using Boston as the example, we estimate the actual impacts of a housing price boom on owners and renters by income class.

It should be noted from the outset that these booms are essentially land price booms. No evidence was found to suggest that the run-up in home prices had anything to do with the cost of capital. Construction costs in the Boston area have increased only modestly through the boom period (Case 1986), and housing prices in most of the country have been stable. Further evidence, although not systematic, can be found in the limited data available on raw land sales.

I. Housing Price Booms: Boston and California

Tables 1 and 2 present data on housing prices and rents in the United States, in Boston and in California. Table 1 gives the median price of existing single-family homes, a figure published quarterly for 62 metropolitan areas by the National Association of Realtors. Case and Shiller (1987) have shown in earlier work that these are less than perfect measures of appreciation, but they are the only source consistent enough to allow cross-city comparisons.

The Boston housing price boom began in 1983. The most rapid price increases occurred between 1984 and 1985 when growth rates neared 40 percent per year. Data on properties that sold more than once (presented in Case 1986) confirm rapid acceleration of prices beginning in the first quarter of 1984, peaking in the third quarter of 1985, and slowing through 1986 and 1987. Housing prices doubled between the beginning of 1984 and mid 1987. While home prices stopped rising in 1987, it is unlikely that they will fall back to earlier levels. Evidence suggests that in the absence of real economic collapse, housing prices do not fall at the end of booms, they simply stop rising (Case and Shiller 1988).

One fact important to our discussion below is that during booms, prices seem to rise at comparable rates in all parts of the market. Case (1986) collected

multiple sales data during the Boston boom years from five very different towns. At one extreme was Wellesley, with a 1980 median family income of $36,745 and a median home price of $99,400. At the other extreme was Malden, with a 1980 median family income of $19,819 and a median home price of $46,300. All five towns experienced virtually identical rates of housing price inflation.

Table 2 shows that, during the same period, real rents in Boston were rising sharply. Rents increased nearly twice as fast as prices in general between 1980 and 1988, rising 80 percent in nominal terms and about 26 percent in real terms. Nationally, rents rose about 59 percent in nominal terms and 11 percent in real terms.

Orange County and San Francisco are the most expensive housing markets in the country today, and for the past year they have been booming. In the third quarter of 1988, the median price of single-family homes in Orange County rose at a 50 percent annual rate, while the figure for San Francisco was over 40 percent. Both areas had also experienced a period of rapid increases in home prices during the late

Table 1
Median Price of Existing Single-Family Homes, 1983 to 1988
Thousands of Dollars

Year	Boston	San Francisco	Orange County	United States
1983[a]	82.6	129.5	134.9	70.3
1984: 1	89.4	126.6	133.5	72.4
2	95.6	130.5	135.1	
3	102.0	132.6	134.9	
4	104.8	130.4	130.6	
1985: 1	108.6	134.5	132.1	75.5
2	131.0	141.1	135.4	
3	138.8	143.8	137.8	
4	144.8	n.a.	139.6	
1986: 1	145.6	n.a.	138.0	80.3
2	156.2	n.a.	149.4	
3	163.0	164.9	149.6	
4	167.8	164.8	152.4	
1987: 1	170.0	161.3	156.1	85.6
2	176.2	169.9	167.3	
3	182.2	175.9	167.7	
4	177.5	176.0	174.5	
1988: 1	176.9	178.8	183.8	88.1
2	182.9	196.0	204.0	
3	183.8	213.7	226.2	
4[b]	182.8	228.1	231.2	87.9

[a] Data for 1983 are for the entire year.
[b] Preliminary data, as of February 1989.
Source: National Association of Realtors, Home Sales, monthly.

Table 2

Consumer Price Indexes for Residential Rent and Consumer Prices in General, 1980 to 1986

Year	CPI U.S.	Rent U.S.	Rent Boston	Rent San Francisco	Rent San Diego
1980	100	100	100	100	100
1981	110	109	112	110	108
1982	117	119	123	121	117
1983	121	125	132	133	127
1984	126	132	139	144	139
1985	131	140	151	156	154
1986	133	147	162	169	166
1987	137	153	169	178	176
1988	143	159	180	191	182

Source: U.S. Bureau of Labor Statistics, "Consumer Price Index, Detailed Report," monthly.

1970s. With the high interest rates of 1981–82 and the recession of 1982, the first California boom stopped. Median price stayed flat in nominal terms until 1984, when prices began to creep up again in San Francisco. Orange County picked up in 1986. The height of the boom seems to have come in May 1988. Between May and June, a single month, the California Association of Realtors reported a 10.2 percent increase in the median price of existing single-family homes in San Francisco and a 4.1 percent increase in Orange County.

An important feature of the recent housing booms is that they are confined to specific metropolitan areas and regions of the country. In most of the country, housing is more affordable now than it was 10 years ago. Table 3 reveals a lot about the national housing market over the last decade. The column on the right is an index based on the monthly payment required (principal and interest) to buy the median home at current interest rates, assuming 15 percent down and a 25-year fixed-rate mortgage. Between 1978 and 1981, house prices ran substantially ahead of income, but slightly behind prices in general. Interest rates rose dramatically, however, leading monthly costs of homeownership to nearly double while income only rose 27 percent. After 1981, income rose more rapidly while interest rates dropped sharply. By 1987, median family income, prices in general, and home prices had all increased by almost exactly the

same amount over the decade. The monthly payment required to buy the median home had actually dropped relative to prices in general and income.

II. The Distributional Effects of Booms

The effects of a housing price boom on the distribution of income are complicated. Consider, for example, a household that bought a house for $80,000 in 1983 putting 10 percent down and taking out a 25-year fixed-rate mortgage at 11 percent. The house payment (principal and interest) would be just over $700 per month before tax advantages. Assume that in the next four years the house appreciates to $180,000. Since the family's house payment is fixed in nominal terms for the next 25 years, as is the real quantity of housing services consumed by the household as long as it stays in this unit, in what sense has the household been affected by the boom?

Certainly, that family's net worth has increased by $100,000 as a result of that appreciation. If we take economic income to be consumption plus any change in net worth (the Haig-Simons[1] definition) the family has earned income of $100,000 in the form of an accrued capital gain. A staunch full-base income tax advocate would go further. Correctly measured, income

Table 3

Indexes of Family Income, Consumer Prices and Costs of Homeownership, 1978–87

Year	Median Family Income	General Price Level (CPI)	Median Price of Existing Homes	Required Monthly Payment[a]
1978	100	100	100	100
1979	111	111	114	126
1980	119	126	127	161
1981	127	139	136	195
1982	133	148	139	203
1983	139	153	144	179
1984	150	159	148	180
1985	157	165	155	178
1986	167	168	164	170
1987	176	174	175	169

[a] Principal and interest payment at current interest rates, assuming a 15 percent downpayment and a 25-year fixed-rate mortgage.

Source: Median family income and Consumer Price Index (CPI) from the *Economic Report of the President*, 1988. Median price of existing homes from National Association of Realtors, *Home Sales*, October 1983 and 1988.

includes imputed rent on owner-occupied housing. Using a standard rent multiplier, this unit is now yielding a much higher annual flow of income than it was before the run-up. So not only did our household earn a substantial amount of untaxed income as prices were rising, it continues to earn a substantial flow of additional untaxed income on into the future in the form of net imputed rent on the more valuable asset.

But does the household experience any increase in real income? After all, its newly acquired asset (higher home equity) is just exactly sufficient to cover the now much higher cost of housing in the area. If

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The housing price boom has created an enormous gap between those who owned houses at the time prices boomed and those who did not.

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you told our household that it had earned $100,000 over the four years and that it will continue earning approximately $8,000 per year from now on in addition, it would not sit well. Of course, the individual income tax touches none of it, but the gain does not go unnoticed by everyone. The current needs analysis procedures mandated by Congress for college financial aid count home equity as one indication of ability to pay. Parents cry foul, claiming that they have not gained at all in any real sense, and that home equity is illiquid when compared to stocks and bonds.

In what sense can it be claimed that these people have earned, and will continue to earn, substantial income because of the boom? To see the argument, our household must be compared with its neighbor who rents the identical house next door. If we assume that the housing boom also leads to higher rents, it is clear that the owner household, locked into constant monthly payments, is better off. If capital markets were perfect, and land and capital were mobile between the owner-occupied housing market and the rental market, rents would rise in proportion to the increase in equity in our family's home. In other words, rents would more than double. Then the renter neighbor would be paying more than twice as much to rent his house as our owner household is

paying out of pocket for an identical unit. While the real physical services being produced by these houses have not increased, *the market value of those services has.* Certainly, the owner household is much better off than the renter household.

Looking at it a slightly different way, there has been a relative price change. Housing is now more expensive than it was before, but the owner household, because of appreciation, has an asset that generates an income just sufficient to pay for the higher-priced housing services. Thus, its out-of-pocket costs do not change. Renter households do not reap the benefits of the price increase on the asset side and must pay more.

Note that housing has remained relatively inexpensive in most parts of the country. It is the privilege of living in Boston, or New York, or San Francisco that has become relatively more expensive. It does not cost more than it did in 1983 to live in Milwaukee, Wisconsin. Thus, those in boom areas could easily decide to take the money and run. Our household could move to Ohio and buy a mansion, or cash out some of its accrued gain to buy other goods and services.

Whether one is willing to accept the strict Haig-Simons logic or not, it is clear that the boom has created an enormous gap between those who owned their own houses at the time that prices boomed and those who did not. In addition, there is intergenerational redistribution. One group that is significantly worse off after a boom is the younger generation, not yet ready to enter the housing market. They will face much higher real housing costs and a significantly lower probability of owning their own homes, at least in the boom areas.

III. The Distribution of Costs and Benefits by Income Bracket

The rest of the article will look at owners and renters in the Boston housing market during the 1980s to see what kind of impact the boom actually had. In 1981, our base period, there were approximately 1.1 million households in the Boston metropolitan area. The 1981 Annual Housing Survey shows that 511,000 of them owned their own units. Using appreciation rates calculated from multiple sales data in an earlier study (Case 1986) and applying them to the average house price in 1981 from the Annual Housing Survey, the average house in the Boston metropolitan area appreciated by approximately

$135,000 between 1981 and 1987. If we assume that houses appreciated at about the same rates at the top and the bottom of the distribution, then the nominal value of owner-occupied housing rose by an aggregate $69 billion during that period.

Rents in Boston have risen substantially, but not by as much as the prices of owner-occupied homes, at least so far. Those higher rents have increased the capital value of the rental stock as well. Unfortunately, we know very little about who owns the rental stock in the United States. As a consequence, this article will focus on owner-occupants and renters. But all in all, it is probably safe to say that over $100 billion in wealth was created in Boston as a result of the housing price boom.

We began by looking at the distributions of Boston owners and renters by income class. The Annual Housing Survey gives the distribution of home values, the distribution of monthly contract rents, and the income distributions for owners and renters. Since the original data tapes were not available, we were not able to run a cross-tabulation of income with home value and rent. Instead, we had to assume that rank order was preserved in the distributions. That is, we assumed that the owners with the highest incomes owned the most valuable houses and that the highest-income renters rented the most expensive units. For purposes of the analysis below, we believe it is a reasonable assumption, although we recognize that some homeowners, especially among the elderly, have low incomes and high equity in their homes.

Table 4 gives a crude approximation of the impact of the boom on the income of owners, using the Haig-Simons definition of income. The first two columns divide the population first between owners and renters and then into deciles ranked by income in 1981. The figures give an estimate of the median income in each decile for each group. It is not surprising that owners' incomes are higher than renters' incomes, but it is striking to find that, except for the top decile, owner households in each group earn about twice as much as renter households. The median income for the bottom 10 percent of renters is $4,000, just half the median income for the bottom 10 percent of owners. For the nation as a whole, median household income for owners in 1981 was $22,714, and for renters $13,246.[2]

The 1981–87 gains shown in the third column of table 4 assume that all owner-occupied units in the city appreciated at the same rate, equal to the 13.3 percent increase in median home price for the Boston metropolitan area given by the National Association of Realtors. The fourth column then assumes that the new equity produces an increase in the flow of net

Table 4
1981 Median Income of Boston Owners and Renters by Decile, Plus Gains in Imputed Rent, 1981–87

Decile	1981 Median Household Income: Renters	1981 Median Household Income: Owners	Median Accrued Gain in Housing Equity 1981–87[a]	Increase in Annual Imputed Rent[b]	(4) ÷ (2)
	(1)	(2)	(3)	(4)	(5)
1	$4,000	$8,000	$54,250	$4,300	54.2
2	6,000	13,000	71,750	5,700	44.2
3	8,000	18,000	84,000	6,700	37.3
4	10,500	22,500	94,500	7,600	33.6
5	13,000	27,500	99,750	8,000	29.0
6	16,000	32,500	106,750	8,500	26.3
7	19,500	38,000	119,000	9,500	25.1
8	24,000	47,000	140,000	11,200	23.8
9	32,000	61,000	186,000	14,900	24.4
10	123,000	143,000	420,000	33,600	23.5

[a] The National Association of Realtors' median price of existing single-family homes rose from $74,900 in 1981 to $180,000 in 1987. Although the biggest increases were concentrated between 1983 and 1986, the average annual nominal increase amounted to 13.3 percent. These calculations assume all homes appreciated at the same rate.
[b] Assumes that the increase in net imputed rent is 8 percent of the gross appreciation in housing equity.
Source: Income distributions based on the Annual Housing Survey for 1981 (U.S. Bureau of the Census 1984).

imputed rent equal to 8 percent of the new equity.[3] If we assume a discount rate of 8 percent, the accrued gain is the present value of the expected future flow of increased imputed rent. Column 5 expresses the increase in annual income due to the boom as a percentage of owners' initial incomes in 1981.

While these calculations are crude, they make a point. Owners in boom areas experience a substantial increase in at least one measure of economic income. Whether one accepts the Haig-Simons definition or not, it is clear that housing booms drive an even bigger wedge into an already wide gap between owners as a group and renters as a group.

These calculations do not take account of changes in incomes, interest rates, property taxes and federal tax laws, all of which affect the relative positions of owners and renters. The next section presents a much more detailed set of comparisons.

IV. Boston Owners versus Renters, 1981: A More Detailed Look

Tables 5 and 6 compare the positions of renters and hypothetical homebuyers in Boston in 1981. Table 5 gives rent burdens calculated from the Annual Housing Survey. Table 6 presents a set of calculations designed to get at the burden facing a potential homebuyer in 1981. The calculations assume that the household with the median income in each decile purchases a home with the median value in that decile, paying 10 percent down and financing the rest with a 25-year fixed-rate mortgage at 1981 rates. The calculations also assume 1981 property and income tax rates.

It is important to understand that the burdens calculated in table 6 are not the actual out-of-pocket costs being met by owners in 1981. In fact, most of those who owned in 1981 bought their homes earlier. Their out-of-pocket cash costs depend on interest rates and on the price of their home at the time they bought it. The calculations in table 6 are in a sense just based on 10 hypothetical home purchases. We assume that the homeowner with the median income in each bracket buys the median home owned by households in that bracket in 1981. An assumption about income is needed in order to figure the net cost of buying, including tax advantages.

Interest rates were very high in 1981; the mortgage rate stood at 15 percent. Property tax rates varied across the state, but in most of the Boston metropolitan area, they stood at or near 2.5 percent of

full value, the cap under Proposition 2½. Marginal federal tax rates ranged from 14 to 50 percent. Other assumptions are spelled out in the notes to the table.

Rent burdens ranged from 31.2 percent of household income at the bottom to 17.6 percent in the ninth decile with a drop to 9.4 percent in the top, open-ended, decile. For buyers, burdens appeared to be higher, ranging from 79 percent to 17.5 percent.

The fact that home purchase costs appear to be a very high percentage of income in the bottom brackets probably reflects the fact that many households in the bottom two or three deciles are elderly. Elderly households tend to have low measured incomes and high home equity. Of course some bought their homes many years ago and have paid down the mortgage. Thus, there is a distortion because a new young home buyer in the bottom bracket would no doubt buy a smaller house than the one occupied by the median homeowner with measured income in the bracket.

Tables 7 and 8 present the same set of calculations based on the year 1987. Current Population Reports data for 1981–85 projected to 1987 show that for the Northeast, owners' household income increased at about 7.8 percent per year, while renters' household income increased somewhat more slowly at 6.1 percent. The Bureau of Labor Statistics reports rent increases of 53.2 percent over the seven-year period, or 7.4 percent annually. Thus, rent burdens increased, but not dramatically. Table 7 shows rent bur-

Table 5
1981 Renter Households in Boston: Contract Rent and Income

Decile	Median Income	Annual Contract Rent	Ratio of Rent to Income
1	$4,000	$1,248	.312
2	6,000	1,872	.312
3	8,000	2,400	.300
4	10,500	2,880	.274
5	13,000	3,264	.251
6	16,000	3,648	.228
7	19,500	4,080	.209
8	24,000	4,656	.194
9	32,500	5,712	.176
10	123,000	11,520	.094

Source: Annual Housing Survey for 1981 (U.S. Bureau of the Census 1984).

1981 Homebuyers in Boston: House Payments and Income

Decile	Median Household Income	Median House Value	Annual House Payment[a]	Property Tax[b]	Total House Payment	Interest[c]	Interest and Property Tax	Marginal Income Tax Rate[d]	Tax Benefit[e]	Net House Payment	Ratio of Total Payment to Income	Ratio of Net Payment to Income
1	$8,000	$38,750	$5,360	$969	$6,329	$5,221	$6,189	0%	$0	$6,329	.791	.791
2	13,000	51,250	7,089	1,281	8,370	6,905	8,186	0	0	8,370	.644	.644
3	18,000	60,000	8,300	1,500	9,800	8,084	9,584	14.0	1,342	8,458	.544	.470
4	22,500	67,500	9,337	1,688	11,025	9,094	10,782	16.0	1,725	9,299	.490	.413
5	27,500	71,250	9,856	1,781	11,637	9,600	11,381	19.0	2,162	9,475	.423	.345
6	32,500	76,250	10,548	1,906	12,454	10,274	12,180	22.0	2,680	9,775	.383	.301
7	38,000	85,000	11,758	2,125	13,883	11,452	13,577	25.0	3,394	10,489	.365	.276
8	47,000	100,000	13,833	2,500	16,333	13,473	15,973	29.0	4,632	11,701	.348	.249
9	61,000	132,500	18,329	3,313	21,642	17,852	21,165	39.0	8,254	13,387	.355	.219
10	143,000	300,000	41,499	7,500	48,999	40,420	47,920	50.0	23,960	25,039	.343	.175

[a] House payment based on 90% financing, 25-year term at 15%.
[b] Property tax rate = 2.5%.
[c] Portion of house payment going to interest = 97.4% of annual payment.
[d] Marginal rate taken from tax table, based on median income − (personal exemption + (interest + prop. tax)), with personal exemption = $1,000/person or $2,000/household.
[e] Tax benefit = marginal rate × (interest + property tax).

dens that range from 33.5 percent at the bottom to 18.9 percent in the ninth decile and 10.1 percent in the top decile.

The position of potential buyers has been affected by a number of factors. First, housing prices have increased dramatically. On the other hand, interest rates in 1987 dropped to 10 percent, and household incomes rose substantially. At the same time the Tax Reform Act of 1986 lowered marginal income tax rates and increased the personal exemption and standard deduction. Property tax rates fell as housing prices rose sharply while levies were not permitted to grow by more than 2.5 percent per year. The calculations in table 8 assume a 10 percent mortgage rate and a 1.3 percent property tax rate.

Surprisingly, the overall pattern and level of burdens facing prospective homebuyers have not changed very much since 1981; they were high in both years. In 1981, interest rates made buying difficult, particularly for those in the lower brackets; in 1987, very high housing prices made buying difficult.

Table 9 makes one final comparison of relevance and reveals the substantial redistribution that has taken place. This table takes the hypothetical 1981 homebuyers from table 6 and examines their positions in 1987. We assume that they have refinanced at 10 per-

cent, and that they face the new federal tax laws and local property tax rates. Clearly their housing cost burdens have dropped dramatically. They spend substantially less than either new homeowners or renters. Just under half of those who bought in before the

Table 7
1987 Renter Households in Boston: Contract Rent and Income

Decile	Median Income	Annual Contract Rent	Ratio of Rent to Income
1	$5,706	$1,911	.335
2	8,559	2,867	.335
3	11,413	3,675	.322
4	14,979	4,410	.294
5	18,545	4,998	.270
6	22,825	5,586	.245
7	27,818	6,248	.225
8	34,238	7,130	.208
9	46,364	8,747	.189
10	175,468	17,640	.101

Source: U.S. Bureau of the Census (1983, 1985, 1987); U.S. Bureau of Labor Statistics (1982 and 1988); and authors' calculations.

Table 8

1987 Homebuyers in Boston: House Payments and Income

Decile	Median Household Income	Median House Value	Annual House Payment[a]	Property Tax[b]	Total House Payment	Interest[c]	Interest and Property Tax	Marginal Income Tax Rate[d]	Tax Benefit[e]	Net House Payment	Ratio of Total Payment to Income	Ratio of Net Payment to Income
1	$12,555	$93,000	$9,127	$1,209	$10,336	$8,360	$9,569	0%	$0	$10,336	.823	.823
2	20,041	123,000	11,995	1,599	13,594	10,987	12,586	15.0	1,888	11,706	.678	.584
3	28,248	144,000	14,132	1,872	16,004	12,945	14,817	15.0	2,223	13,781	.567	.488
4	35,310	162,000	15,899	2,106	18,005	14,563	16,669	15.0	2,500	15,505	.510	.439
5	43,156	171,000	16,782	2,223	19,005	15,372	17,595	15.0	2,639	16,366	.440	.379
6	51,003	183,000	17,960	2,379	20,339	16,451	18,830	28.0	5,273	15,066	.399	.295
7	59,634	204,000	20,020	2,652	22,672	18,338	20,990	28.0	5,877	16,795	.380	.282
8	73,758	240,000	23,554	3,120	26,674	21,575	24,695	35.0	8,643	18,031	.362	.244
9	95,729	318,000	31,209	4,134	35,343	28,587	32,721	35.0	11,453	23,890	.369	.250
10	224,413	720,000	70,661	9,360	80,021	64,725	74,085	38.5	28,523	51,498	.357	.229

[a] House payment based on 90% financing, 25-year term at 10%.
[b] Property tax rate = 1.3%.
[c] Portion of house payment going to interest = 91.6% of annual payment.
[d] Marginal rate taken from tax table, based on median income − (personal exemption + (interest + prop. tax)), with personal exemption = $1,900/person or $3,800/household.
[e] Tax benefit = marginal rate × (interest + property tax).

boom are spending less than 15 percent of their incomes on housing. New homebuyers in 1987 must pay, net of all tax benefits, about twice as much, as a percentage of income, as those who happened to have bought in before the boom.

To sum up, the housing boom in Boston has increased the well-being of those who happened to own during the price run-up at the expense of those who did not. Recent homebuyers and renters in boom areas bear very high housing costs relative to those who have accumulated substantial equity.

V. Housing Booms and the Distribution of Income: The Longer Run

So far we have only discussed adjustments in housing costs and income that occur in the short run. In the long run there may be even more redistribution. While this is not the subject of the current paper, the topic deserves some mention if only to stimulate further research.

Traditionally, housing at the very bottom of the income distribution has come from three sources: (1) the filtering process; (2) direct public subsidy (public housing, Section 8, and the like); and (3) indirect public subsidy (tax shelter syndications set up to build low-income housing for tax benefits). The filtering process envisions new units coming on line at the top of the income distribution. As high-income households move into new housing, the unit that they move out of "filters" down to the household below and so on. If the filtering chain moves faster than depreciation, filtering improves the conditions of households at the bottom of the income distribution.

In part because housing has become more affordable in most of the country in recent years, the budget crunch in Washington has meant dramatic reductions in federal housing subsidies. Rent subsidies were cut from $9 billion in 1984 to $3 billion in 1988. Whole programs have been cut, such as Section 8 new and substantial rehabilitation. In addition, the Tax Reform Act of 1986 made it much more difficult to shelter income with losses earned in passive investment projects, abolished the investment tax credit, lengthened depreciation times, and reduced marginal rates. As a result, much of the large pool of tax shelter money once available for low-income housing has dried up.

In boom areas conditions are worse. The rapid run-up of land prices has made private construction

Table 9

1981 Boston Homebuyers in 1987: House Payments and Income

Decile	Median Household Income	Median House Value	Annual House Payment[a]	Property Tax[b]	Total House Payment	Interest[c]	Interest and Property Tax	Marginal Income Tax Rate[d]	Tax Benefit[e]	Net House Payment	Ratio of Total Payment to Income	Ratio of Net Payment to Income
1	$12,555	$93,000	$3,792	$1,209	$5,001	$3,250	$4,459	15.0%	$669	$4,332	.398	.345
2	20,041	123,000	5,016	1,599	6,615	4,299	5,890	15.0	885	5,730	.330	.286
3	28,248	144,000	5,888	1,872	7,760	5,046	6,918	15.0	1,038	6,722	.275	.238
4	35,310	162,000	6,619	2,106	8,725	5,672	7,778	15.0	1,167	7,558	.247	.214
5	43,156	171,000	6,957	2,223	9,180	5,962	8,185	28.0	2,292	6,888	.213	.160
6	51,003	183,000	7,480	2,379	9,859	6,410	8,789	28.0	2,461	7,398	.193	.145
7	59,634	204,000	8,342	2,652	10,994	7,149	9,801	35.0	3,430	7,564	.184	.127
8	73,758	240,000	9,814	3,120	12,934	8,411	11,531	35.0	4,036	8,898	.175	.121
9	95,729	318,000	13,072	4,134	17,206	11,203	15,337	35.0	5,368	11,838	.180	.124
10	224,413	720,000	29,442	9,360	38,802	25,232	34,592	38.5	13,318	25,484	.173	.114

[a] House payment based on 90% financing, 25-year term at 10%.
 Assumes that these owners refinanced if their mortgage in 1981 was at 15%.

[b] Property tax rate = 1.3%.

[c] Portion of house payment going to interest = 91.6% of annual payment.

[d] Marginal rate taken from tax table, based on median income − (personal exemption + (interest + prop. tax)), with personal exemption = $1,900/ person or $3,800/household.

[e] Tax benefit = marginal federal income tax rate × (interest + property tax).

of lower-income rental housing impractical. It has also made conversion of rental properties to condominiums a very profitable business. In a sense, the filtering process is working in the wrong direction. That is, units from the low end of the distribution are filtering up to higher-income households.

Low-income households face a double squeeze. Rents are rising, vacancy rates are falling, and except for a few state governments, no one is building new units for the poor and near poor. In Boston, 20,000 families are on the waiting list for public housing, and the number of homeless is increasing.

It is not clear what will happen in the future. One likely scenario is that rents will continue to rise until they have caught up to housing price increases in boom areas. (Recall that rents have increased only 80 percent since 1980 while housing prices have more than doubled.) If that turns out to be true, then still more people will find themselves paying very high portions of their incomes for housing, and larger numbers will find themselves seeking assistance precisely at a time when the public sector, at least the federal government, is pulling out of the housing business. It is not surprising that housing was the major issue on the table at recent union negotiations between the hotel workers and managers in Boston. As a recent study released by the Joint Center for Housing Studies at Harvard (Apgar and Brown 1988) begins, "America is increasingly becoming a nation of housing haves and have-nots."

¹ The commonly accepted definition of full economic income is "consumption plus change in net worth." The concept was first discussed by Robert Murray Haig in his chapter "The Concept of Income: Economic and Legal Aspects" (Haig 1921), and later by Henry Simons in his book *Personal Income Taxation: The Definition of Income as a Problem in Fiscal Policy*, 1938.

² *Statistical Abstract of the United States, 1982–83*, Table 710.
³ While rent multipliers vary from city to city and location to location, an 8 percent return is roughly consistent with those reported in the literature. The implied rental value of a $120,000 unit at 8 percent is $800 per month.

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