

The Affordability of the American Dream: An Examination of the Last 30 Years

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Abstract

This article investigates how the affordability of single-family housing has changed by analyzing whether a home of a given quality from, say, 15 years ago is now more affordable for a household similarly situated to one that occupied the home then.

For low-skilled workers occupying low- to moderate-quality homes, ownership is less affordable. Constant-quality prices of their housing bundles have risen, and their real wages have fallen. The only way they can still afford a home of a given quality is to have another worker in the household. Many of these households appear to be allowing the quality of their homes to deteriorate because of reduced maintenance. There is not an analogous affordability change for higher income households. Even with slower real wage growth over the past two decades, they can still afford the high-quality homes from the 1970s.

Introduction

The affordability of a single-family home has joined traditional housing issues such as substandard units, neighborhood decay, and racial discrimination as a focal point of housing policy debates. The visibility of the issue rose as the average homeownership propensity fell by more than 1 percentage point from its peak in the mid-1980s. Government concern about affordability problems for lower- and middle-class homeowners has been expressed in the media and in the title of the most recent national housing bill—the National Affordable Housing Act of 1990.

What is meant by housing affordability often is not precisely defined. Linneman and Megbolugbe (1992) note that how affordability is defined can have important policy consequences. For example, the most

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widely known affordability index, published by the National Association of Realtors (NAR), is constructed so that a value of 100 implies that the median-income family qualifies for the median-value home. Because interest rates are more variable than incomes, changes in the NAR index primarily reflect variations in mortgage rates. Given currently low long-term interest rates, the NAR index indicates that single-family housing is more affordable now than at any time in well over a decade, yet homeownership rates have not skyrocketed (see NAR 1993, 6). The NAR measure implies that affordability crises are best dealt with through mortgage subsidy programs and policies that lower long-term interest rates.

Such policies are insufficient to deal with the affordability problems of ownership many households currently face. For example, Linneman and Wachter (1989) find that implicit wealth constraints embedded in down payment requirements significantly affect the ability to buy a home, even if the household can qualify to purchase in terms of the monthly payments. Thus, the levels and growth rates of savings and incomes, in addition to the paths of home prices and interest rates, are key components of the affordability issue.

We address the affordability of the so-called American Dream for homeownership by asking a simple question: Is a home of a given quality from, say, 15 years ago more affordable or less affordable today to a household similarly situated to the one that occupied the home then? In addressing this question, we define the American Dream as a site with one single-family, owner-occupied unit on it. Most such units are detached, but city row houses and suburban town houses also fit our definition. Condominiums and cooperatives in multifamily structures do not.

A key contribution of this article is to demonstrate that focusing solely on the median-priced home yields an incomplete and at times misleading picture of housing affordability both over time and at specific points in time. This idea is illustrated over the 1960–89 period by analyzing the important changes in real house prices, residence quality, and real earnings that are common across the nation's markets. Future work will explore variations in affordability across metropolitan areas.

Real home prices have appreciated significantly over the past 30 years, in both unadjusted and constant-quality terms. However, price growth has varied across different types of homes and over different periods. We find substantial real home price growth across the full housing-quality spectrum from 1960 to 1974. Nevertheless, no affordability problem existed for most workers because of strong real

wage growth during this period. That is, we find that a household in 1974 that was similarly situated (in real terms) to a 1970 owner could easily afford to purchase its 1960 home (quality held constant) in 1974.

Affordability conditions for less well educated and lower income households began changing in the mid-1970s. Falling real wages for lower skilled workers combined with rising constant-quality real home prices to make even homes of lower quality—which were affordable in, say, 1974—unaffordable to many comparably situated households by 1989. Additionally, the substantially reduced earning power of many low-skilled workers who do own homes has probably led them to defer major housing maintenance (possibly forever). We find that there has been a substantial drop in the quality of lower priced existing homes over the past 15 years.

We do not believe this growing affordability problem will abate during the 1990s. Virtually no new housing is being produced that is of low enough quality to be affordable to low-skilled households who want to become owners. While there is demand for such homes—perhaps of the quality of the original Levittown homes—strict building codes, approval delays, stringent low-density zoning, and impact fees may have made producing such housing economically infeasible by for-profit builders. Further, because the real wages of low-skilled workers continue to be eroded by an increasingly competitive global economy, we envision little help from the labor market. An important implication of this burgeoning affordability problem is that the strong rise in ownership that most demographers are predicting as baby boomers age will not happen, because many unskilled boomers will never be able to afford ownership.

For higher end homes, real prices have risen substantially since 1974. However, even in the face of slower real wage growth for the typical high-income demanders of such homes, there is not similarly pressing affordability problem. The real prices rises are attributable primarily to substantial housing-quality growth, which may have been induced by changing tastes associated with a positive skewing of the income distribution and an increase in the number of two-earner professional couples.

Housing, Wage, and Income Data: Sources and Description

Our definition of the American Dream encompasses only single-family, owner-occupied residences with one unit per site. While most such units are detached, this definition permits us to include city row houses

and suburban town houses in the sample, but not condominiums or cooperatives from multifamily structures. We also restrict our samples to units that were occupied when surveyed.

The first primary housing data source is the decennial Census of Population and Housing, published by the Bureau of the Census. We extensively analyze the 1960 census data, which are the first to contain substantive housing-related information. We do not focus on the 1970 census because a second Bureau of the Census data source, the American Housing Survey (AHS) series, spans much of the 1970s. The widely used AHS database begins in 1974, and 1989 is the last year for which microsamples of the surveys are available. Throughout the 1970s, this survey was published annually; biennial publication began in 1981. The AHS is designed as a panel data set. However, the panel was broken in 1985 so that there are two panels, one from 1974 to 1983 and the other from 1985 to 1989. A close analysis of the data reveals many probable coding errors as well as many observations entering and leaving the sample over time. Consequently, we treat these data as time series of cross sections in our analysis. The interested reader should see Thibodeau (1992, chap. II) for an extensive overview of the AHS sample design and its limitations. In this article, we use only the national core files. Future work will examine the metropolitan area samples.

Home prices from both sources reflect owner-reported values.¹ Before 1985, values are reported in interval form, with interval boundaries and the top-coded price changing through time. We assume that the price is the midpoint of any interval (or the top-coded amount for homes reported in the highest price interval). For the 1985–89 AHS, values are reported in continuous form. In practice, responses tend to cluster around large, round numbers. All dollar amounts used in this article are reported in constant 1992 dollars, with nominal home prices being deflated by the Consumer Price Index (CPI) less its shelter component.

The census and AHS databases also contain a wealth of information regarding the quality of housing. To maintain consistent measurement and interpretation of housing-quality traits across the many years of our time series cross sections, only a limited number of variables can be used to construct constant-quality real home prices. There are 12 structural and neighborhood characteristics available for this purpose (table 1). Five are dichotomous dummy variables for

¹There is an extensive literature on whether owner-reported values are systematically biased. Kain and Quigley's (1972) seminal investigation found there was no such bias in large samples, a conclusion also reached by Thibodeau (1992) in his study of the AHS data through 1983.

Table 1. Structure Traits Variable Key

Variables	Description
DETACH (detached unit status)	Dichotomous 1=detached unit
GARAGE	Dichotomous 1=garage present
CELLAR	Dichotomous 1=cellar present
CENTAIR (central air-conditioning)	Dichotomous 1=central air present
CENTCITY (central-city location)	Dichotomous 1=located in central city
AGEHSE (age of house in years)	Continuous
BATHS (number of bathrooms)	Polychotomous: 4 categories 1, 1.5, 2, 2.5+*
BEDROOMS (number of bedrooms)	Polychotomous: 5 categories 1, 2, 3, 4, 5+*
OTHRooms (number of other rooms)	Polychotomous: 6 categories 1, 2, 3, 4, 5, 6+*
HEATSYS (heating system codes)	Polychotomous: 4 categories central warm air, steam, electric, other
HQUAL (overall structure quality rating)	Polychotomous: 4 categories excellent, good, fair, poor
NQUAL (overall neighborhood quality rating)	Polychotomous: 4 categories excellent, good, fair, poor

*Denotes top-coded amount.

which a 1 indicates that the housing unit contains the relevant trait. These variables reflect whether the home is detached (DETACH), has a garage (GARAGE), has a basement (CELLAR), is equipped with central air-conditioning (CENTAIR), and is located in the central city or the suburbs (CENTCITY, where a 1 indicates a central-city home).

Six of the quality measures are polychotomous. Three measure the number of rooms in the house (BATHS, BEDROOMS, OTHROOMS). The top codes reported for the number of rooms apply to the 1974–83

AHS files. Expanded information on the number of rooms is reported beginning in 1985; however, to maintain consistency across all years, we use the reporting intervals for the earlier years of the survey throughout our study.

Another polychotomous variable (HEATSYS) controls for the type of heating system. Houses that did not have central warm air, steam, or electric systems were grouped into a category labeled “other.” The vast majority of houses in the census and AHS samples in any given year have one of the three main heating systems. The final two variables are owner-reported quality ratings of the overall house structure (HQUAL) and the surrounding neighborhood (NQUAL). For each of these variables, there are four possible quality evaluations: excellent, good, fair, and poor.² A final housing quality variable, and the age of the home (AGEHSE), is transformed to continuous form by using the midpoint of the reported interval.

We also use family income and occupational wage data from the decennial census and the AHS. The income data include all cash income received by the household head and all relatives living in the housing unit. This includes wages and salaries, as well as interest income, Social Security, pensions, alimony, and the like. Additional wage and salary information is obtained from the decennial censuses and the Census Bureau’s annual core files of the Current Population Survey (CPS). These data include wages, salaries, and self-employment income. In addition, these samples are restricted to those who worked at least 27 weeks in the previous year in order to allow comparisons for full-time workers’ earnings. Real household incomes and employee wages are calculated by deflating by the *overall* CPI (not the CPI less shelter, as with home prices) and are always expressed in 1992 dollars.

The income and wage data understate the real resources available to many households, since cash incomes do not account for in-kind transfers, which have risen appreciably since the 1960s. Moreover, nonwage benefits have become an increasingly large component of overall worker

²There is no neighborhood rating variable in the census. The metrics by which housing quality is measured in the decennial census and the AHS are inconsistent and cannot be reconciled. In our statistical analysis, we use quality variables only in the AHS survey years. Even within the AHS, the metric changed beginning in 1985. Before 1985, there were only the four ratings categories listed in table 1. Subsequent ratings were on a scale of 1 to 10, with 1 being the poorest quality. To make the ratings systems compatible across survey years, we considered ratings of 9 or 10 to indicate the highest, or excellent, quality. Evaluations of 7 and 8 were assumed to translate into the next highest, or good, quality. Scores of 3 to 6 were considered fair quality assessments, and scores of 1 and 2 were considered poor. These assumptions led to a very slight shift up in the distributions of structure and neighborhood quality in the 1985 AHS data relative to the previous survey in 1983.

compensation. For example, A. Foster Higgins & Co., Inc., a benefits consulting firm, reported that an average of \$3,968 was spent on health benefits per worker in 1992—a 10.1 percent increase over 1991.³ Of course, these benefits may be capitalized into wages or reflected in fewer hours worked. Recent evidence suggests that the effect on wages may be quite large. Gruber (1992) reports that certain mandated health benefits related to maternity are fully reflected in lower wages. Even if capitalization into wages is not complete, the lower growth in both household cash incomes and worker wages is partially attributable to larger benefit packages over time.

The Homes and Their Owners

Summary statistics on the socioeconomic characteristics of the households that own the American Dream home are provided in table 2. Data about the nature of the homes are presented in table 3. To simplify exposition, we concentrate our discussion here on three years: 1960, 1974, and 1989. The mean family income data from table 2 illustrate one of the key factors precipitating the housing affordability problem. After rising by 29 percent (1.8 percent per year) between 1960 and 1974, real average household income of the owners in our samples rose by only another 3.3 percent (0.2 percent per year) from 1974 to 1989.⁴ The 1970s saw a significant and largely adverse change in the trend of income for families seeking the American Dream. In fact, there were double-digit percentage real income declines between 1974 and 1989 for occupants of lower quality homes (from the 10th and 25th percentiles of the relevant house price distributions).⁵

As shown in table 2, the vast majority of homeownership household heads are white males. However, there is a notable increase in female-headed households since the mid-1970s, with more than 21 percent of the owner-occupied homes in our sample inhabited by female-headed families in 1989. Changes over time in the educational achievement

³ The number is based on a nationwide survey of 2,448 employers. See the article by Gilbert M. Gaul in the February 28, 1993 business section of the *Philadelphia Inquirer* for the details. Obviously, the high growth rate may not fully reflect an increase in the true benefit level.

⁴ These data understate real cash income growth among worker households not just because of an increase in noncash benefits such as tax-shielded company health plans. Some of the households in these samples are retired and have no wage income. There also is a slight increase in the number of retirees in the sample over time.

⁵ The interested reader can refer to the appendix tables to our working paper (Gyourko and Linneman 1993) that present owner and structure characteristics for homes valued at the 10th, 25th, 50th, 75th, and 90th percentiles of the house price distribution in each year.

Table 2. Owner Characteristics

Trait	Year		
	1960	1974	1989
Maximum number of observations	12,365	12,508	13,650
Family income	\$37,196 (23,654)	\$48,117 (30,427)	\$49,721 (36,617)
Age of head (years)	48.4 (14.2)	49.0 (14.6)	51.6 (16.0)
Race of head (percent)			
White	93.6	90.9	92.3
Black	5.8	7.7	6.2
Other	0.6	1.3	1.5
Sex of head (percent male)	87.6	85.8	78.6
Marital status (percent married)	84.3	81.4	71.5
Education of head (percent)			
Elementary	10.9	4.6	2.7
Some high school	39.5	23.1	15.0
High school grad	24.5	35.8	36.1
Some college	11.6	15.9	19.6
College grad	8.1	11.4	14.7
Some grad school+	5.4	9.2	11.7
Persons in household	3.54 (1.71)	3.42 (1.70)	2.83 (1.42)
Persons per room	0.64 (0.32)	0.57 (0.27)	0.45 (0.23)

Source: 1960 Census of Population and Housing; 1974 and 1989 American Housing Survey, National Files.

Note: Sample is all single-unit, single family homes. Values in parentheses are standard errors.

of homeowners are especially pronounced, with ownership of the American Dream increasingly associated with high educational attainment. In 1960, 50 percent of our sample of owners had less than a high school education, while only one-quarter had attended college. By 1974, less than 30 percent of homeowners were not high school graduates, with that fraction falling to 18 percent by 1989. By the end of the 1980s, poorly educated owners were to be found owning only the lowest priced homes. By 1989, almost half the heads had some college

Table 3. Structure Traits

Trait	Year		
	1960	1974	1989
Maximum number of observations	12,365	12,508	13,650
Bathrooms			
Mean	1.24	1.58	1.66
Median	1.00	1.50	1.50
Bedrooms			
Mean	2.74*	3.01	3.03
Median	3.00*	3.00	3.00
Other rooms			
Mean	2.95*	3.15	3.38
Median	3.00*	3.00	3.00
Percent detached units	92.0	95.3	97.4
Percent with garage	NA	78.6	79.2
Percent with cellar	60.0	56.9	52.8
Percent with central air-conditioning	3.0*	23.5	45.7
Percent with warm air heating system	49.9	64.6	60.7
Age of house (years)			
Mean	18.6	21.3	32.1
Median	15	19	34
House quality rating (percent)			
Excellent	NA	47.3	56.8
Good	NA	44.0	34.5
Fair	NA	8.0	7.2
Poor	NA	0.7	0.9
Neighborhood rating (percent)			
Excellent	NA	45.5	51.5
Good	NA	42.3	33.9
Fair	NA	10.6	10.5
Poor	NA	1.5	3.2

Footnotes at end of table.

Table 3. **Structure Traits** (continued)

Trait	Year		
	1960	1974	1989
Percent	45.9	33.0	26.1

Source: 1960 Census of Population and Housing; 1974 and 1989 American Housing Surveys, National Files.

Note: Sample is all single-unit, single-family homes. "NA" denotes that the information is not available or the variable is not consistent with data and definitions in the AHS.

* Nonmissing responses for the number of bedrooms and other rooms as well as the percentage of units with central air-conditioning are available only for a select sample of homes in the 1/1000 1960 census. Reported values for these three variables are based on a sample of 3,171 observations from the 1960 census. Unfortunately, we cannot tell whether those observations are single-family units or whether they are detached. Thus, the reader should make inferences from them with great care.

education, with more than one-quarter being college graduates. These data suggest that single-family ownership has rapidly become only a dream for those who do not at least attend college, and this change poses a new major issue for U.S. housing policy.

Another important change in homeowners over time has been the decrease in household size. Since 1960 the average number of persons in owner-occupied households has dropped by more than half a person, from 3.54 to 2.83. Crowding has decreased not only because household size has fallen, but also because the number of rooms has increased. That is, there is a clear trend of smaller households occupying larger homes.

The housing-quality information reported in table 3 highlights important changes in the type of single-family unit being consumed. In terms of the number of rooms, the most significant change is in the number of bathrooms. The median rose by half a bath from 1.0 in 1960 to 1.5 in 1974. The median was still 1.5 in 1989, but 44.2 percent of homes had at least 2 full baths and the mean was rising. This trend probably reflects a shift in housing preferences. With dual-career households increasing, low-density, single-family product now appears designed to cater to the needs of the two-worker household.⁶

⁶ The census and the AHS (before 1985) contain no information on either lot sizes or living areas of the homes in our sample. Data on new homes compiled by the National Association of Home Builders (NAHB) indicate that lot sizes and living areas increased materially over the past decade. In 1978 the median new home in terms of living area contained 1,655 square feet. By 1990, the median square-footage had increased to 1,905. Median lot sizes of new homes have changed only slightly, from 9,790 square feet in 1978 to 10,000 square feet in 1990 (see NAHB 1992, table 1).

The spread of central air-conditioning is another major structural change in single-family housing. The percentage of homes with central air has doubled to 46 percent since 1974, up from just 3 percent in 1960. A noticeable trend toward central warm air heating systems also began in the 1960s. This represents a movement away from room-specific or steam heating systems (or no heating at all for a small fraction of 1960 homes) and is a trend that is particularly striking among lower priced homes.

The average age of the housing stock has also increased through time. This is the only obvious dimension on which housing quality has declined. However, the increase in the age of the single-family stock is much slower than that of the overall housing stock (including multi-family) because there has been plentiful building of new, suburban single-family homes since 1960.

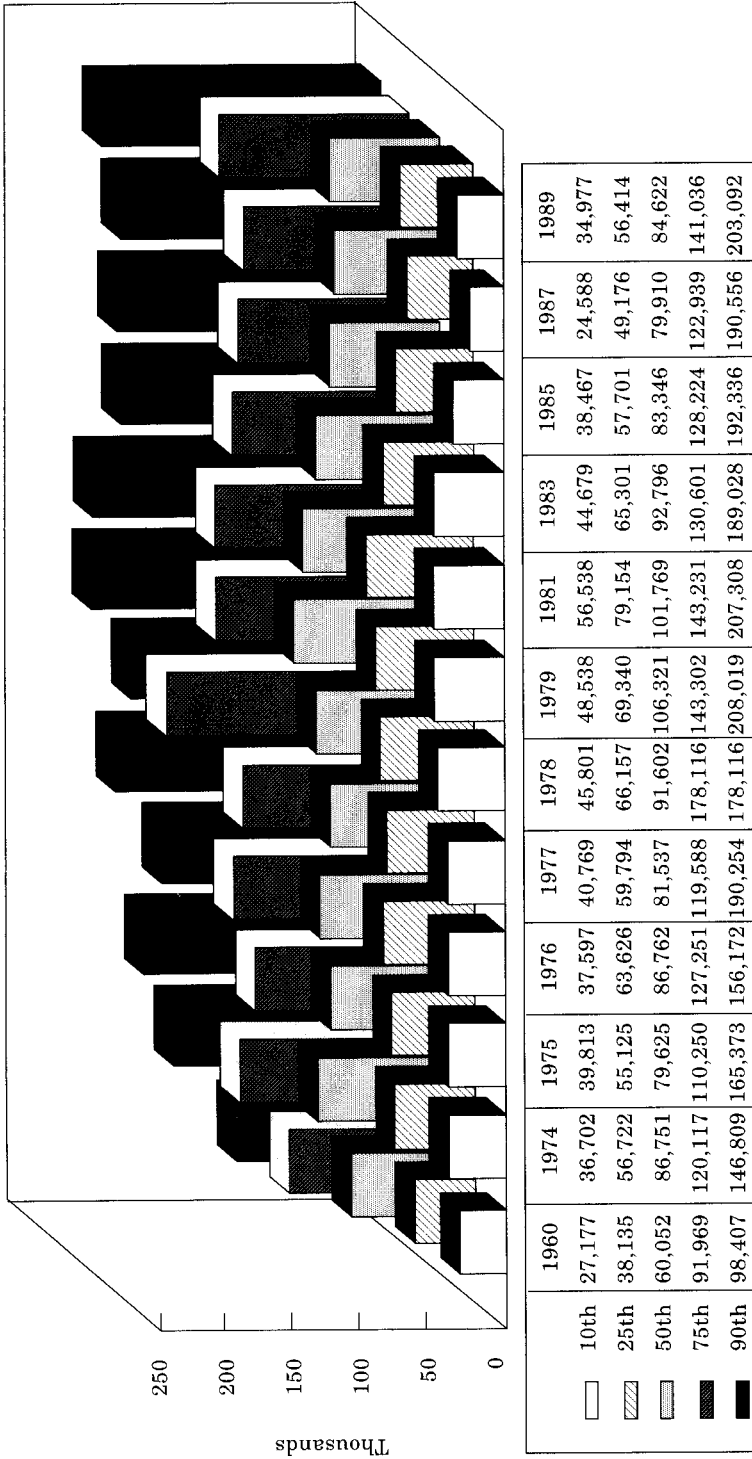
It is noteworthy that the American Dream home was easily found—and chosen—in the cores of metropolitan areas in 1960, with just under 50 percent of our sample located in the central city. This proportion had fallen to one-third, and declined further to only 26 percent by 1989. Also reported in table 3 are the frequencies with which the owners rated the structure and neighborhood of their houses as excellent, good, fair, or poor in the AHS data. General house quality appears to have improved over time, as evidenced by the 9-percentage-point increase in homes rated in the highest structure-quality category (excellent) between 1974 and 1989. There is a similar, but weaker, trend in the owners' evaluation of neighborhood quality.

In sum, the American Dream home has become larger and better in terms of structure and neighborhood quality and has more bathrooms and better housing amenities. These quality improvements have not been free. As a result, any discussion of ownership affordability must distinguish between home price increases associated with providing better homes and those associated with rises in the cost of constant-quality homes. Before proceeding to our estimates of constant-quality prices, we explore the raw real home price series.

Real Home Price Patterns since 1960

The prices of homes from the 10th, 25th, 50th, 75th, and 90th percentiles of the real home price distribution for the 1960–89 period are plotted in figure 1, while the annual real home price appreciation rates over various periods are summarized in table 4. Single-family housing

Figure 1. Real Home Price Distribution: Percentiles of Price Distribution over Time



Source: 1960 Census of Population and Housing; 1974-89 American Housing Surveys, National Files.

Note: Prices in 92(2) dollars.

Table 4. Real Home Price Growth Rates — National Data from Figure 1

Percentile of Price Distribution	Period			
	1960–89	1960–74	1974–81	1981–89
10th	28.7 (0.9)	35.1 (2.2)	54.1 (6.4)	–38.1 (–5.8)
25th	47.9 (1.4)	48.8 (2.9)	39.6 (4.9)	–28.7 (–4.1)
50th	40.9 (1.2)	44.5 (2.7)	17.3 (2.3)	–16.8 (–2.3)
90th	106.4 (2.5)	49.2 (2.9)	41.2 (5.1)	–2.0 (–0.0)

Note: Numbers in parentheses are average real annual appreciation rates.

has become more expensive in real terms over the past 30 years.⁷ However, the pattern of price change has varied over time and across points in the housing price distribution. Except for the cheapest of homes, the 1960–74 period shows relatively similar percent real price increases for most homes (column 2, table 4). Real prices continued to rise throughout the remainder of the 1970s, with by far the largest increases occurring in the tails of the distribution (column 3, table 4). The 54.1 percent increase in the real price of homes valued at the 10th percentile represents a remarkable 6.4 percent annual appreciation rate over the 1974–81 period. The most expensive homes (from the 90th percentile) appreciated at a real rate of 5.1 percent per year. Even the median-priced homes appreciated by 2.3 percent per year during this era.

⁷ While real price appreciation has been substantial since 1960, the level of home prices reported in the AHS is below that reported in the NAR's price series (for the median home, of course), and the disparity has increased over time. For example, in 1978 the median home from our AHS sample was valued at about 10 percent below the price of the median home from the NAR's sample of sold homes. By 1989 this disparity had doubled to 20 percent. A large part of the reason for the differences in the levels of prices between the two series has to do with quality. Homes that actually sell usually are fixed up and improved before they go on the market. Thus, it is not surprising to observe that the NAR's median price is above that found in the AHS. The reasons for the increasing disparity in the 1980s are less clear. As we discuss later, we suspect that part of the reason has to do with quality declines in the stock of low- to moderate-quality homes. With quality declines and the relatively few homes that are sold each year still being improved by their owners before going on the market, the disparity between the two series should widen.

The 1980s saw a dramatic reversal in this pattern. Over this decade, there was a negative correlation between the rate of price appreciation and ranking in the price distribution. The drops in real value for the cheaper homes (in the 10th, 25th, and 50th percentiles) were so significant that by 1989 their real prices had reverted to 1974 levels (see figure 1). The more expensive homes (in the 75th and 90th percentiles) had flat real prices during the 1980s, resulting in 1989 real prices above their 1974 values, but below their late-1970s peaks.⁸

Part of the general increase in real housing prices since 1960 could be attributable to a heightened desire to live in lower density suburban settings. However, the data indicate that increasing suburbanization is not largely responsible for the increasing inability of some families to afford the American Dream home. Even in the suburbs, real median home prices declined from their peak levels, achieved in the early 1980s. In the central city, low-density, single-family units of moderate to high quality became increasingly costly relative to 1960 levels. Particularly in the 1980s, the typical suburban price premium fell substantially. For example, in 1979 the median-priced suburban home was 21 percent more expensive than the median-priced central-city home. By 1987, there was little difference in the AHS data, while in 1989 there was again a positive suburban differential of about 14 percent. Throughout the AHS sample period, the spreads between the prices of suburban and city homes are even narrower at the extremes of the price distribution. That is, one can find very cheap housing in both the city and the suburbs. Further, high-income households choosing to live in the central city can find high-quality housing comparable to that in the suburbs.

It is the availability of new low-density, single-family homes that dramatically distinguishes the suburbs from the central city. The availability differs because almost all new single-family construction since 1974 has taken place in the suburbs. Price and selected trait data for these new *suburban* homes (one year old or less) are presented in table 5. Rankings of the median-priced new home in the price distribution of all owner-occupied homes (new and existing, city and suburb) are presented in the second row of the table. The rankings indicate that the typical new home has been more expensive than at least two-thirds of the total housing stock for the past 30 years.

⁸ While cheaper homes appreciated at faster rates in the 1970s, the far higher base prices of the expensive homes resulted in a notable positive skewing of prices during the 1970s and 1980s. The skewness coefficient rose from 0.4 in 1974 to a high of 2.2 in 1978 before declining to 0.84 in 1989. Figure 2 of our working paper (Gyourko and Linneman 1993) is a plot of the third moment of the real price distribution over time.

Table 5. New Home Summary Statistics

Variable	Year												
	1960	1974	1975	1976	1977	1978	1979	1981	1983	1985	1987	1989	
Number of observations	315	371	316	343	328	311	407	176	154	377	335	241	
Rank of median-priced new home	73.2	85.5	81.3	75.5	83.8	91.1	78.4	73.4	72.1	66.7	71.4	75.6	
Price (1992 dollars)													
Mean	\$83,164	\$166,465	\$120,339	\$117,833	\$139,135	\$163,021	\$163,280	\$159,293	\$142,374	\$117,436	\$119,713	\$139,295	
Median	71,011	120,117	110,250	104,115	119,588	178,116	143,302	128,154	116,854	102,579	110,645	137,651	
Bathrooms													
Mean	1.44	2.08	2.09	2.04	1.98	2.07	2.19	2.16	2.15	2.35	2.31	2.40	
Median	1.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.50	2.50	2.50	
Other rooms (all but bathrooms and bedrooms)													
Mean	2.86*	3.41	3.44	3.38	3.28	3.40	3.55	3.29	3.42	3.26	3.34	3.51	
Median	3.00*	3.00	3.00	3.00	3.00	3.00	3.50	3.00	3.50	3.00	3.00	4.00	
Percent with central air	5.6*	52.8	53.8	54.5	60.7	60.8	61.7	58.5	58.4	65.3	70.1	80.5	
Housing quality (percent)													
Excellent	NA	67.3	69.0	70.3	63.8	76.1	70.1	76.0	76.6	79.8	76.4	78.0	
Good	NA	29.5	25.6	27.7	33.4	22.9	27.2	22.3	21.4	15.9	20.7	18.7	
Fair	NA	2.7	4.7	1.2	2.8	1.0	2.5	1.1	1.9	4.0	2.7	3.3	
Poor	NA	0.5	0.6	0.9	0.0	0.0	0.2	0.6	0.0	0.3	0.3	0.0	

Footnote at end of table.

Table 5. New Home Summary Statistics (continued)

Variable	Year											
	1960	1974	1975	1976	1977	1978	1979	1981	1983	1985	1987	1989
Family income (1992 dollars)												
Mean	\$39,243	\$58,553	\$56,607	\$55,308	\$51,840	\$56,674	\$52,249	\$52,579	\$51,635	\$52,065	\$51,079	\$61,414
Median	35,262	51,720	52,082	50,722	50,252	55,009	48,630	53,944	55,069	45,572	45,851	54,232

Source: 1960 Census of Population and Housing; 1974-89 American Housing Survey, National Files.

Note: "NA" denotes that the information is not available or the variable is not consistent with data and definitions in the AHS.

* Data on the number of bathrooms and the percentage of units with central air-conditioning are based on a smaller sample of 124 observations. Nonmissing responses for these variables are available for a select sample of homes in the 1/1000 1960 census. We cannot tell whether those observations are single-family units or whether they are detached. Thus, the reader should make inferences from these numbers with great care.

One reason new homes are relatively expensive is their newness. However, an examination of table 5 reveals that new homes also have housing-quality traits consistently superior to those of most existing single-family homes. For example, new homes are far more likely to have central air-conditioning and more bathrooms than existing homes.

Even the cheapest of new homes have become both absolutely and relatively more expensive since the mid-1980s. Real prices of new homes from the 10th percentile of each year's new home price distribution did dip during the 1982 recession.⁹ However, their real prices rose by more than 14 percent between 1985 and 1989, to \$73,339, an amount equal to 87 percent of the median price for homes (existing and new) for the nation. In 1981, the price of inexpensive new homes (from the 10th percentile) was only 78 percent that of the median home. If data from the 1950s and 1960s were available, we suspect we would find that many newly constructed homes were truly inexpensive, as in Levittown. The price behavior of even the least expensive new homes over the decade reflects a marked contrast to the prices of relatively inexpensive *existing* homes, which have fallen continuously from 1981, with a 9 percent drop since 1985.

These price patterns imply that if the relative prices of lower priced new homes had remained at 78 percent of the median home price (the 1981 figure), these new homes would have been \$7,000 cheaper than their actual prices in 1989. Stated differently, during the 1980s the real price of the cheapest new homes rose by an amount roughly equal to the minimum down payment allowable for such homes. It is true that in any given year, newly built homes account for only a small fraction of the entire stock.¹⁰ However, the cumulative effects over the past three decades of the consistently increasing quality of new homes combined with the post-1985 trend of increasing real prices for these new homes has helped reduce the affordability of the American Dream and will continue to do so in the future.¹¹

⁹ The data are plotted in Gyourko and Linneman (1993, figure 4).

¹⁰ NAR data imply that new homes constitute about 1.5 percent of the existing stock on average. The NAR figures show that about 1 million single-family units are built in any given year. The Bureau of the Census estimates that there are about 65 million owner-occupied housing units. Not all the new homes built in any year meet our definition of low density, and the 65 million homeowners include some in high-density settings. However, 1.5 percent (1/65) is a good guide to the fraction of the stock that is new each year. Our samples typically are in the range of 1 to 2 percent.

¹¹ Poterba (1991) also has examined lengthy series of cross sections of house prices, using median existing home prices from the NAR and constant-quality home price series from the Bureau of the Census. Qualitatively, his findings regarding real house price patterns over time are similar to ours. Poterba also investigates possible explanations

Constant-Quality Prices

To examine the extent to which real home prices have risen over time because of improved housing quality, constant-quality prices are estimated for a variety of different qualities of homes. Five housing-quality packages were chosen to reflect the traits typical of homes in the 10th, 25th, 50th, 75th, and 90th percentiles of the price distribution in 1974. Another five were selected as reflective of homes at the same percentiles in 1989. The characteristics of these 10 housing bundles are reported in tables A.1 and A.2.

Hedonic price regressions were used to price the 10 quality bundles.¹² The hedonic price equations were estimated for the 1974–89 period spanned by the AHS data.¹³ We priced the five 1974 bundles going forward from 1974, and the five 1989 bundles backward in time to 1974.

Equation (1) describes the regression specification estimated for each quality type for each year of the AHS data (the quality-type and year subscripts are suppressed),

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for these patterns. He concludes that changing federal tax policy has had more influence on prices than has the nation's changing demographics. We agree with that general conclusion. In terms of the affordability of ownership that is the focus of this article, the next two sections illustrate that we also suspect that major changes in the real incomes of certain types of workers have played a large role in generating an affordability problem for a segment of our population that traditionally has been able to own.

¹² The hedonic approach is not the sole strategy that can be used to generate constant-quality price series. The most prominent alternative is the repeat-sales approach (see Bailey, Muth, and Nourse (1963) for the original use of this technique and Case and Shiller (1987 and 1989) for a modern updating). Others—such as Case and Quigley (1991) and Case, Pollakowski, and Wachter (1991)—analyze methodologies that include hybrid strategies employing both hedonic and repeat-sales techniques. More recently, Crone and Voith (1992) compare the various estimation approaches in a carefully controlled setting. They conclude that there is no meaningful statistical or economic difference in the quality of the series' in-sample predictive ability when the traditional mean square error measure is used as the loss function.

¹³ Because of inconsistencies in the available variables and their definitions, it was not feasible to construct constant-quality prices with the combined census-AHS data. As previously noted, the decennial censuses do not contain neighborhood or housing structure quality measures similar to those reported in the AHS. Both turn out to be empirically important in the hedonic regressions using only the AHS data. In addition, the top-coding for some variables in the 1960 census is so severe that forcing the AHS data into the limited census reporting intervals eliminates important variance in the data.

where HP represents the real house price, i indexes the individual observations, β_j represents a coefficient or coefficient vector, the regressors correspond to the dichotomous or polychotomous variables defined in table 1, and ϵ is the standard error term. A limited Box-Cox search was conducted across linear, semilog, and double-log functional forms for each survey year. For the first three surveys (1974–76), a linear specification proved superior. As prices became increasingly skewed in the late 1970s, a semilog functional form proved superior. The underlying hedonic coefficients and implied trait prices for each year do not merit discussion here and are available upon request. Not surprisingly, the results accorded with both common sense and with the extensive hedonic pricing literature.¹⁴

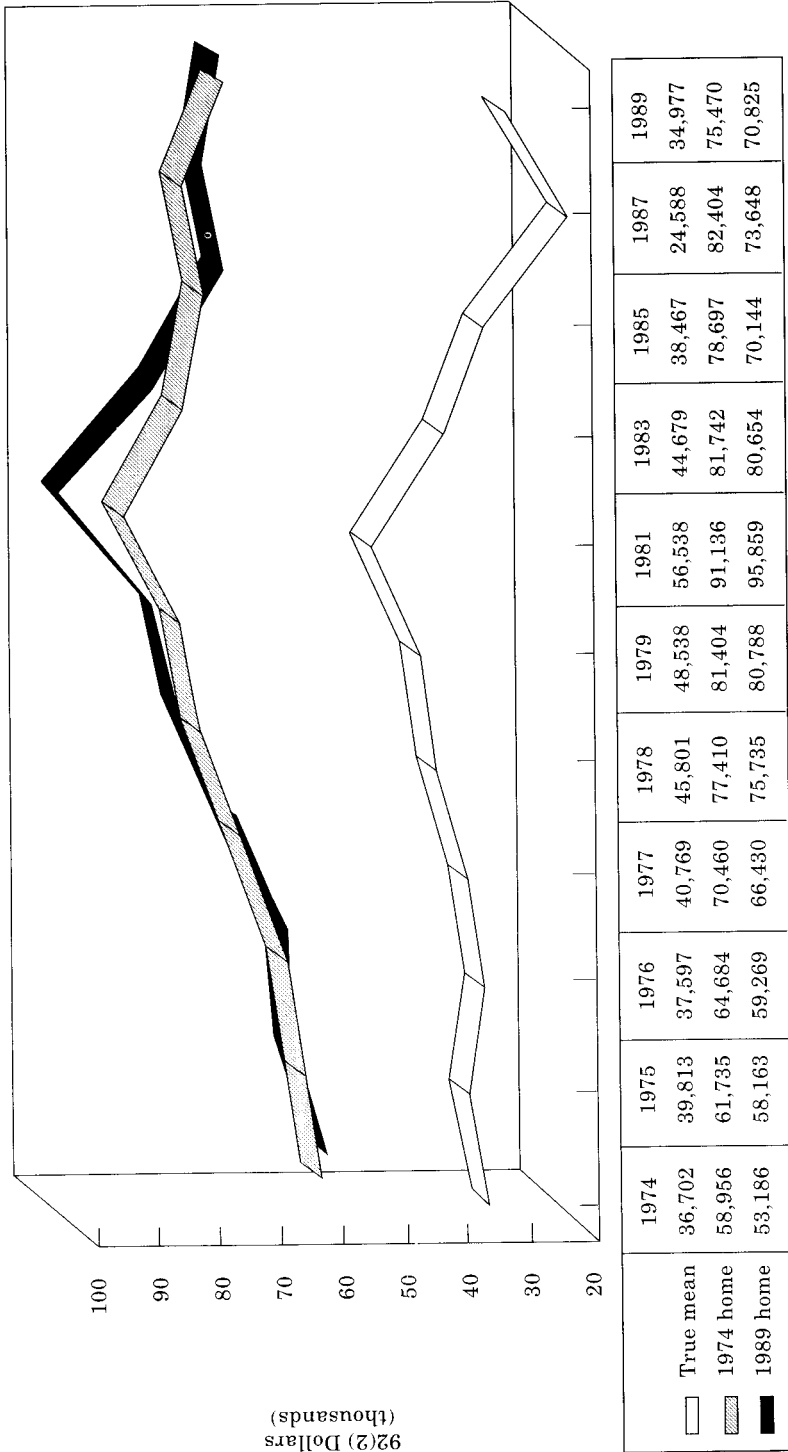
Constant-quality bundle prices are presented in figures 2 through 6. In each figure, the partially shaded plot represents the estimated price of the 1974 bundle, the fully shaded plot tracks the estimated value of the 1989 bundle, and the unshaded line plots the true mean value of the relevant home. Aggregate and average annual appreciation rates for each series over the 1974–89 period are reported in table 6. Since in no case does the 1989 real price represent a peak, we also calculate appreciation rates from 1974 to each relevant peak year, and from the relevant peak year to 1989.¹⁵

For lower quality bundles, constant-quality real price growth is significantly greater than the appreciation in actual home prices. In fact, the

¹⁴ The number of annual observations ranged from 9,928 in 1981 to 15,248 in 1985. One notable feature of the results is a 40 percent decline, from 0.55 to 0.33, in the adjusted R^2 over the 1974–89 period. There is a 17 percent decline in explanatory power just from 1983 to 1985, which is when the AHS panel was broken and some variable redefinitions occurred. We suspect that redefinitions of the structure and neighborhood quality variables introduced added measurement error. As noted earlier, before 1985 survey takers had four choices of quality: excellent, good, fair, and poor. Beginning in 1985, they had 10 choices. The secular decline in adjusted R^2 also may be attributable to the convergence in quality for homes across the price spectrum in terms of measurable traits such as rooms, cellars, and garages (see Gyourko and Linneman 1993, appendix tables). However, the results also suggest that the importance of unobserved quality differences has increased over time. The most obvious omitted trait is lot size. If, as seems reasonable, the real value of land rose over this time span, the explanatory power of our equations would diminish with the omission of this variable.

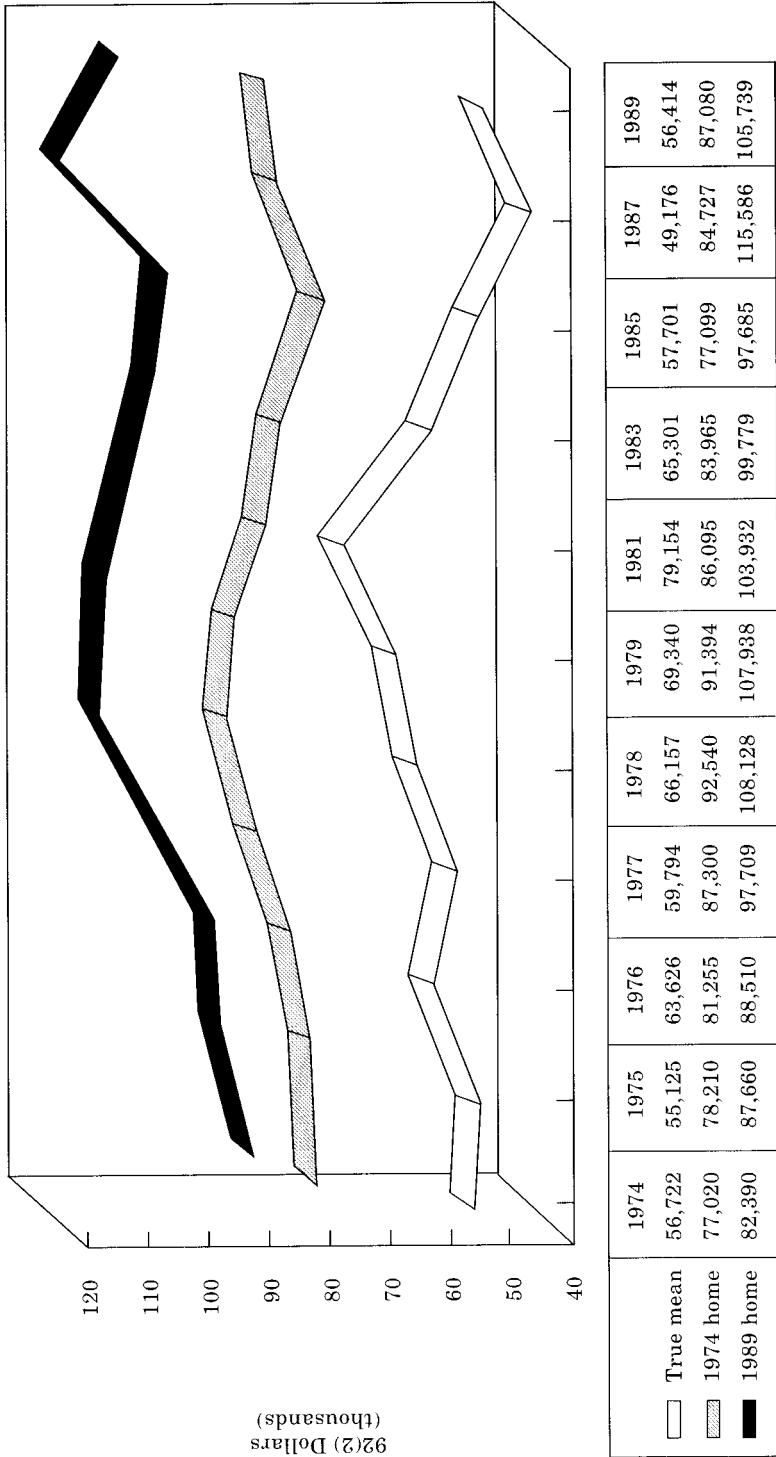
¹⁵ It is noteworthy that the estimated prices of the housing-quality bundles for the 10th, 25th, and 50th percentile homes exceed the actual average values of those homes in 1974 (see figures 2 through 4). However, the estimated and actual prices for the 75th percentile home are virtually identical (figure 5), with the 90th percentile home's actual price being less than our predicted price (figure 6). Ignoring nonlinearity issues, if all relevant housing-quality dimensions were incorporated, the estimated trait bundle prices should equal the actual average home prices in 1974. It turns out that the categorical nature of our housing-quality variables causes the constant-quality bundles to overstate the quality of homes priced at the median or below. The second appendix to our working paper (Gyourko and Linneman 1993) explores this data issue in more detail. The issue does not affect our conclusions in any material way.

Figure 2. Constant-Quality Prices: Trait Bundles of Homes in 10th Percentile of Price Distribution



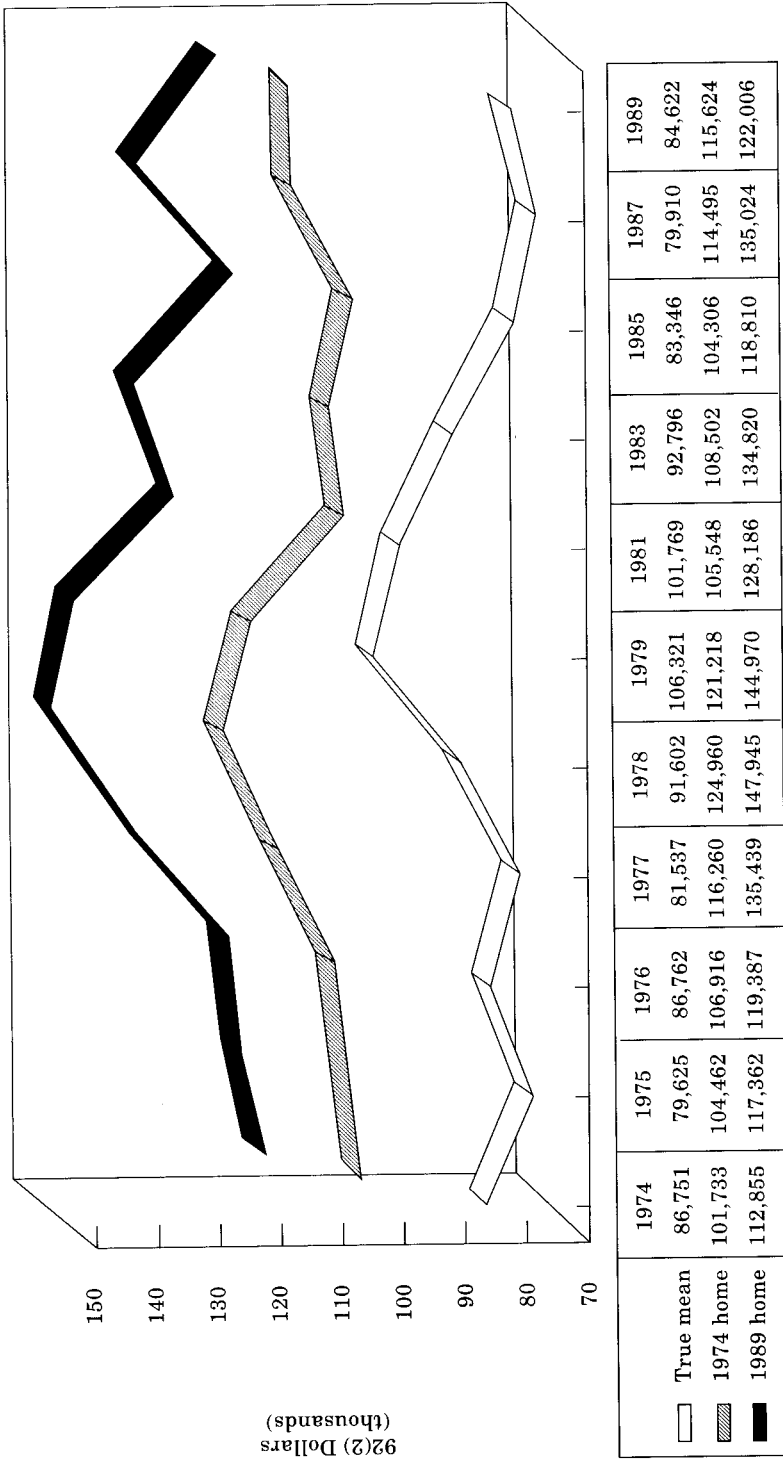
Note: 1974 home and 1989 home plot estimated prices of trait bundles of homes in 10th percentiles of 1974 and 1989 price distributions, respectively. True mean plots price of homes in 10th percentile in each year. 92(2) denotes second quarter of 1992.

Figure 3. Constant-Quality Prices: Trait Bundles of Homes in 25th Percentile of Price Distribution



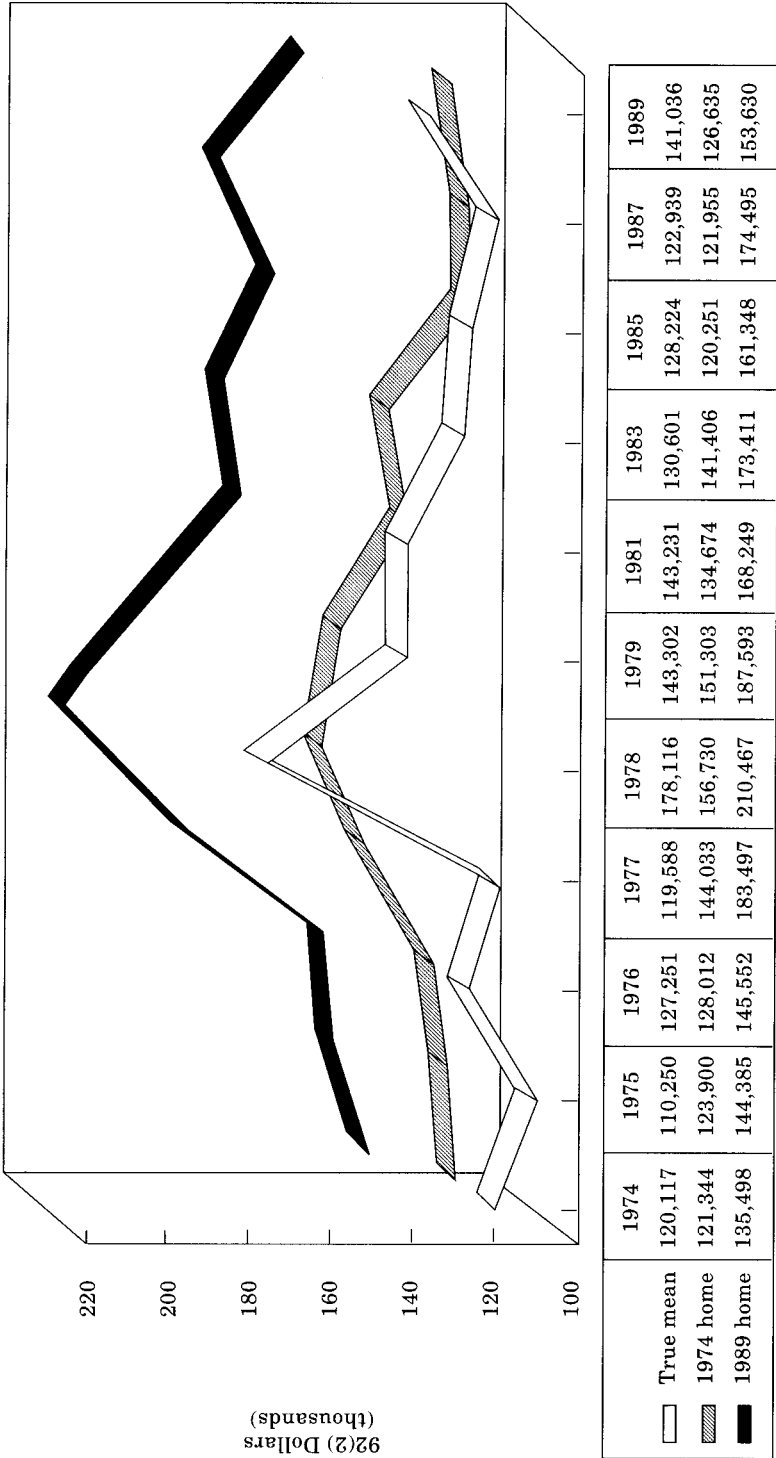
Note: 1974 home and 1989 home plot estimated prices of trait bundles of homes in 25th percentiles of 1974 and 1989 price distributions, respectively. True mean plots mean price of homes in 25th percentile in each year. 92(2) denotes second quarter of 1992.

Figure 4. Constant-Quality Prices: Trait Bundles of Homes in 50th Percentile of Price Distribution



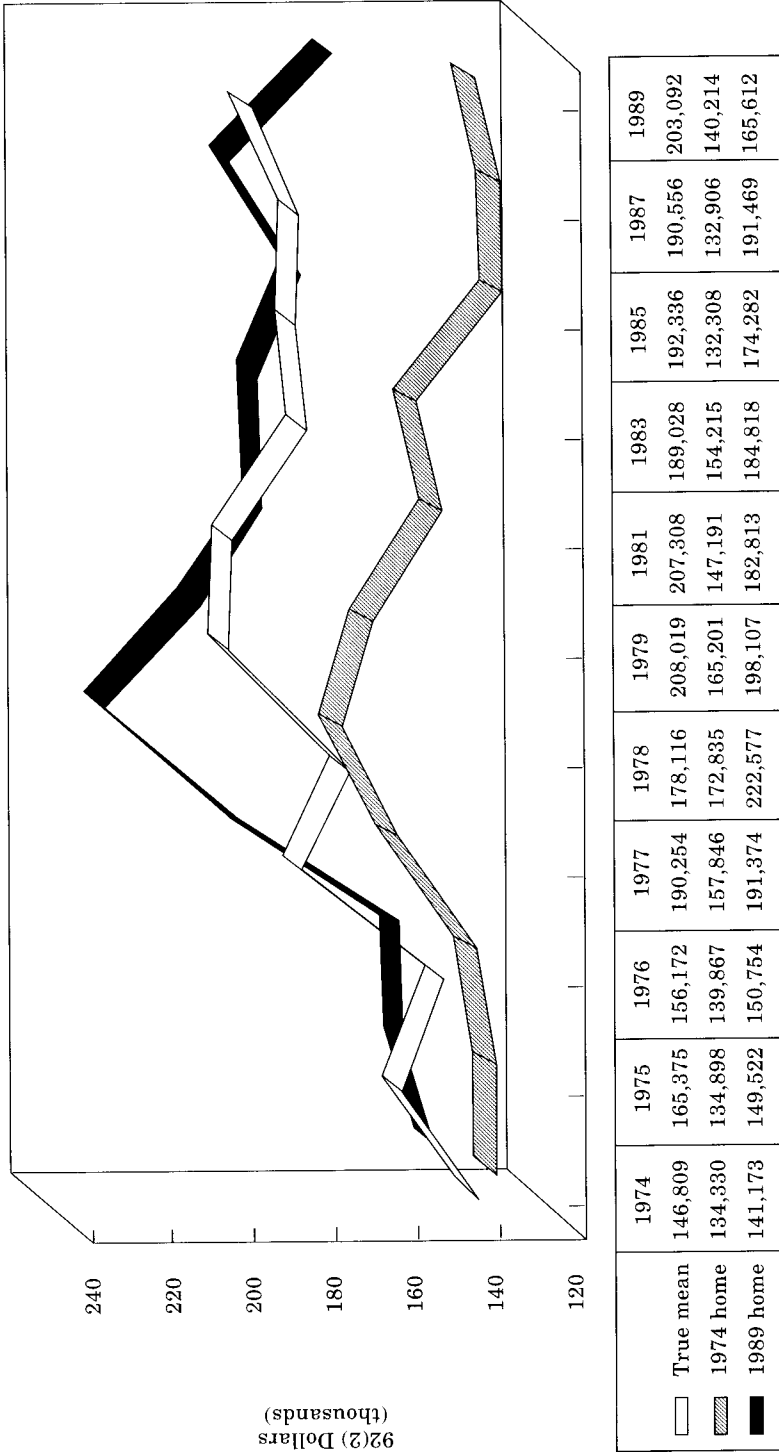
Note: 1974 home and 1989 home plot estimated prices of trait bundles of homes in 50th percentiles of 1974 and 1989 price distributions, respectively. True mean plots mean price of homes in 50th percentile in each year. 92(2) denotes second quarter of 1992.

Figure 5. Constant-Quality Prices: Trait Bundles of Homes in 75th Percentile of Price Distribution



Note: 1974 home and 1989 home plot estimated prices of trait bundles of homes in 75th percentiles of 1974 and 1989 price distributions, respectively. True mean plots mean price of homes in 75th percentile in each year. 92(2) denotes second quarter of 1992.

Figure 6. Constant-Quality Prices: Trait Bundles of Homes in 90th Percentile of Price Distribution



Note: 1974 home and 1989 home plot estimated prices of trait bundles of homes in 90th percentiles of 1974 and 1989 price distributions, respectively. True mean plots mean price of homes in 90th percentile in each year. 92(2) denotes second quarter of 1992.

Table 6. Constant-Quality and Unadjusted Price Appreciation: Homes and Trait Bundles from the 10th, 25th, 50th, 75th, and 90th Percentiles of the Price Distribution

	1974 Trait Bundles			1989 Trait Bundles			Unadjusted Prices		
	1974-1989 (%)	1974-Peak (%)	Peak-1989 (%)	1974-1989 (%)	1974-Peak (%)	Peak-1989 (%)	1974-1989 (%)	1974-Peak (%)	Peak-1989 (%)
10th percentile									
Total appreciation	28.1	54.6	-17.2	33.2	80.2	-26.1	-4.7	54.1	-38.1
Avg. annual appreciation	1.7	6.4	-2.3	1.9	8.8	-3.7	-0.3	6.4	-5.8
		Peak = 1981			Peak = 1981			Peak = 1981	
25th percentile									
Total appreciation	13.1	20.2	-5.9	28.3	31.2	-2.2	-0.5	39.6	-28.7
Avg. annual appreciation	0.8	4.7	-0.6	1.7	7.0	-0.2	-0.0	4.9	-4.1
		Peak = 1978			Peak = 1978			Peak = 1981	
50th percentile									
Total appreciation	13.7	22.8	-7.5	8.1	31.1	-17.5	-2.5	22.6	-20.4
Avg. annual appreciation	0.9	5.3	-0.7	0.5	7.0	-1.7	-0.2	4.2	-2.3
		Peak = 1978			Peak = 1978			Peak = 1979	
75th percentile									
Total appreciation	4.4	29.2	-19.2	13.4	55.3	-27.0	17.4	48.3	-20.1
Avg. annual appreciation	0.3	6.6	-1.9	0.8	11.6	-2.8	1.1	10.4	-2.0
		Peak = 1978			Peak = 1978			Peak = 1978	
90th percentile									
Total appreciation	4.4	28.7	-18.9	17.3	57.7	-25.6	38.3	41.7	-2.4
Avg. annual appreciation	0.3	6.5	-1.9	1.1	12.1	-2.7	2.2	7.2	-0.2
		Peak = 1978			Peak = 1978			Peak = 1979	

Source: 1974-89 American Housing Surveys, National Files.

1974 and 1989 housing-quality bundles associated with the lowest quality homes rose by 28.1 percent and 33.2 percent over the 1974–89 period, while the actual price series declined by 4.7 percent. This finding indicates not only that these raw price series misrepresent the affordability of a specific low- or moderate-quality bundle over time, but also that there was a serious erosion of housing quality among lower priced homes. This erosion may reflect the inability of many low-income households to afford to adequately maintain their homes after expending most of their wealth to purchase homes.¹⁶

As also shown in table 6, the price behavior for these homes varied substantially over time. During the 1970s, all housing qualities experienced strong real price growth. From 1974 to 1981, the actual real price of 10th percentile homes appreciated at an incredible mean annual rate of 6.4 percent. Our analysis indicates that this spurt is not attributable to quality growth, since during this period the constant-quality price of these homes' 1974 trait bundle rose by almost exactly the same amount as did the constant housing-quality bundle price (54.6 percent versus 54.1 percent).

The evidence is quite different for the 1980s. Actual prices of low-end homes fell by 5.8 percent annually, while the constant-quality prices of the 1974 trait bundle fell by only 2.3 percent per year. That is, up to 60 percent of the reduction in real prices among the lowest cost homes during the 1980s may be associated with quality declines. There are similar, but less severe, patterns for bundles from the 25th and 50th percentile homes. While the unadjusted real prices of homes at or below the median returned to their 1974 levels (figure 1), this is not the case for the six analogous quality-adjusted price series. The fixed-quality bundle prices of the median and lower quality units have risen since 1974 (figures 2 through 4), with the rise largest for the lowest quality bundle.

The pattern of actual versus constant-quality prices for more expensive homes is very different. For example, the 1974 housing-quality bundle

¹⁶ There is a significant pure aging effect in the actual prices of lower quality homes. Because virtually no new homes of low quality have been constructed recently, the stock of homes from the 10th and 25th percentiles ages by one year each year. This is not the case with samples of higher quality homes. The mean age of homes from the 75th percentile increases by only 7 years (from 19 to 26) between 1974 and 1989. However, holding all else constant but age does not eliminate the disparity between the "quality-adjusted" and actual price series. For example, if we fix the quality of the 10th percentile home in 1974 in all respects but age, its real price appreciation from 1974 to 1989 is 17.1 percent (versus 28.1 percent when age is held constant). This still far exceeds the real price appreciation of -4.7 percent, indicating that housing quality at this end of the price spectrum has fallen for reasons beyond the fact that lower quality homes tend to have been 16 years older in 1989 than they were in 1974.

for 90th percentile homes appreciated by only 0.3 percent per year (4.4 percent in total). The higher quality 1989 bundle grew at a 1.1 percent annual rate, but was still far below the actual annual growth rate of 2.2 percent (38.3 percent in total). Thus, quality improvements have been the key factor behind the substantial price appreciation of more expensive homes over time.

Real price declines during the 1980s for higher quality homes failed to return prices to 1974 levels. However, the fact that the 90th percentile homes experienced almost no change in actual real prices over the 1979–89 period, while high-end constant housing-quality prices were dropping at annual rates of at least 1.9 percent further documents the dramatic quality improvements at the very top of the price distribution that took place during the 1980s.¹⁷

The Problem of Affordability: Real Prices, Housing Quality, and Earning Power

An important aspect of the affordability story is that the increases in the real constant-quality prices of lower to median-quality housing bundles over the 1974–89 period coincide with substantially reduced real wage growth (and growth expectations), especially for lower skilled workers. Levels and growth rates of real earnings from wages and salaries for private-sector workers with different levels of educational achievement and with at least five years of labor-force experience are reported in table 7. We focus on experienced workers because the inability of new labor-force entrant to afford a single-family home does not constitute a housing affordability problem.

As demonstrated in tables 6 and 7, the affordability problem for lower and middle-income families has been growing since the mid-1970s. Before the mid-1970s, there was substantial real home price growth, which was accompanied by even stronger real wage growth. For example, real wages and salaries of experienced workers increased by at least 20 percent, regardless of educational attainment, from 1960 to 1974. This suggests that if a household could afford to purchase the American Dream in 1960, a similarly situated family could still afford that home in 1974. In fact, many households could have afforded a better home in 1974 than in 1960. This was especially likely for existing

¹⁷ Henderschott and Thibodeau (1990) and Peek and Wilcox (1991) have produced recent estimates of mean housing-quality growth. Our results are not inconsistent with their findings of generally high-quality growth. An important contribution of our study is to demonstrate that changes in real constant-quality prices and in the qualities of the homes themselves vary substantially by quality of home. It is that variance that contributes to the affordability problem for many lower and middle-class households.

*Table 7. Real Wages and Salaries, 1960-89:
Private-Sector Workers with More than Five Years of Experience*

	Real Wage and Salaries Amounts, 92(2) Dollars (number of observations)			Aggregate Appreciation in Real Wages and Salaries (average annual appreciation rate)		
	1960	1974	1989	1960-89 (%)	1960-74 (%)	1974-89 (%)
Full sample	\$24,369 (n = 24,822)	\$32,253 (n = 21,018)	\$30,241 (n = 27,770)	24.1 (0.7)	32.4 (1.9)	-6.2 (-0.4)
Education						
Less than high school education	\$20,514 (n = 13,039)	\$25,126 (n = 5,995)	\$19,681 (n = 3,913)	-4.1 (-0.1)	22.5 (1.5)	-21.7 (-1.5)
High school graduate	\$24,230 (n = 7,172)	\$29,568 (n = 8,854)	\$25,227 (n = 11,277)	4.1 (0.1)	22.0 (1.3)	-14.7 (-1.0)
More than high school education	\$35,485 (n = 4,611)	\$43,032 (n = 6,169)	\$38,022 (n = 12,580)	7.2 (0.2)	21.3 (1.3)	-11.6 (-0.8)

Source: 1960 Census of Population and Housing; 1974 and 1989 Current Population Surveys, Annual Demographic Files.

Note: 92(2) denotes second quarter of 1992.

homeowners in the 1960s, as the equity growth they experienced because of fixed-rate debt, inflation, and rising real home prices facilitated trading up in quality as they aged. Thus, there certainly was no greater lower and middle-class affordability problem in 1974 than in 1960.¹⁸

A very different situation emerged after 1974. Workers with less than a high school education experienced a 21.7 percent real wage loss between 1974 and 1989, a decline that returned these low-skilled workers' wages to pre-1960 levels. High-school-educated workers experienced a less severe, but still large, 14.7 percent decline over the same period. By 1989, their real wages were only 4.1 percent higher than in 1960.

The constant-quality housing price and earnings data strongly suggest that households headed by low-skilled workers can now afford low-density single-family housing only by having two earners or reducing the quality of the home they consume (or both). Obviously, there are limits to the extent one can shift down the housing-quality spectrum, as one cannot move very far down from the 10th percentile quality bundle. For example, if the 10th percentile home's housing quality in 1974 is reduced so that it has two bedrooms, no garage, and only fair ratings for structure and neighborhood quality, its estimated real price in 1989 was \$43,301, a value that still is 18 percent higher than the \$36,702 price of the same housing-quality bundle in 1974. This illustrates not only the growing affordability problem for younger less well educated households desiring to enter the owner-occupied market, but also the fact that prospects for low-skilled existing owners to trade up in quality must seem remote given their real wage decline and the likely loss of home equity they have experienced.

For the typical occupant of a home above the median quality, there is no affordability problem in any meaningful sense. Even though the real wages of some well-paid professionals declined between 1974 and 1989, the real prices of higher quality constant-quality housing bundles barely rose.¹⁹ Thus, acceptable high-quality homes are affordable by highly educated professionals now just as they were in the mid-1970s.

¹⁸ Of course, there was significant variation in wage growth across occupations, with lawyers, secondary school teachers, and nurses achieving the highest wage gains during this period. Data on those and eight other occupations that are consistently classified in the census and CPS data from 1960 to 1989 are presented in Gyourko and Linneman (1993, table 12).

¹⁹ Moreover, we suspect that it is for these households that growing benefits packages have had their greatest negative effect on wages. Given the extensive noncash (and untaxed) benefits offered to many professionals, the real consumption power of these workers probably has risen much more in recent years than the pure wage data suggest.

Conclusions

A significant shift in homeownership affordability has occurred since 1974 for less well educated and lower income households. Falling real wages have combined with rising constant-quality real home prices to make lower quality homes, which were affordable in 1974, unaffordable to many comparable households in 1989. This problem promises to worsen in the 1990s and real wages of low-skilled workers continue to erode in an increasingly competitive global economy and as ever higher quality homes slowly filter down the housing stock. One potentially important implication of the growing affordability problem is that the rise in ownership that demographers predict will occur as the baby boomers age will not result, because many unskilled baby boomers will never be able to afford homeownership. They are likely to remain renters of smaller units in higher density settings. This more lengthy stay in a rental tenure is likely to change the type of multifamily unit demanded, particularly by families.

Actual real average prices of high-end homes have risen substantially since 1974. However, even in the face of slower real wage growth for the typical demander of such homes, there is not a similarly pressing affordability problem. The real price rises are due primarily to substantial housing-quality growth, which may have been induced by changing tastes associated with a skewing of the income distribution and an increase in the number of two-earner professional couples.

*Appendix***Table A.1. 1974 Trait Bundles from 10th, 25th, 50th, 75th, and 90th Percentiles of Price Distribution**

Trait	Percentile of Price Distribution				
	10th	25th	50th	75th	90th
Actual price, 92(2) dollars	36,702	56,722	86,751	120,117	146,809
Bathrooms	1.00	1.00	1.50	2.00	2.00
Bedrooms	3.00	3.00	3.00	3.00	3.00
Other rooms	3.00	3.00	3.00	3.00	4.00
Detached unit	Yes	Yes	Yes	Yes	Yes
Garage	Yes	Yes	Yes	Yes	Yes
Cellar	No	Yes	Yes	Yes	Yes
Heating system	Central warm air	Central warm air	Central warm air	Central warm air	Central warm air
Central air- conditioning	No	No	No	No	No
Age of house (years)	31	23	19	17	16
Overall structure quality	Good	Good	Excellent	Excellent	Excellent
Overall neighborhood quality	Good	Good	Good	Excellent	Excellent
Central-city location	Yes	No	No	No	No

Source: 1974 American Housing Survey, National Files.

Table A.2. 1989 Trait Bundles from 10th, 25th, 50th, 75th, and 90th Percentiles of Price Distribution

Trait	Percentile of Price Distribution				
	10th	25th	50th	75th	90th
Actual price, 92(2) dollars	34,239	56,414	84,622	141,036	203,092
Bathrooms	1.00	1.50	2.00	2.50+	2.50+
Bedrooms	3.00	3.00	3.00	3.00	3.00
Other rooms	3.00	3.00	3.00	3.00	4.00
Detached unit	Yes	Yes	Yes	Yes	Yes
Garage	Yes	Yes	Yes	Yes	Yes
Cellar	No	Yes	Yes	Yes	Yes
Heating system	Central warm air	Central warm air	Central warm air	Central warm air	Central warm air
Central air- conditioning	No	No	Yes	Yes	Yes*
Age of house (years)	45	38	28	26	24*
Overall structure quality	Good	Excellent	Excellent	Excellent	Excellent
Overall neighborhood quality	Good	Good	Excellent	Excellent	Excellent
Central-city location	No	No	No	No	No

Source: 1989 American Housing Survey, National Files.

*The number of bathrooms, the presence of air-conditioning, and the age of the house are based on a sample of homes priced at the 80th percentile and above. There are actually 169 homes with prices of \$203,092 (\$185,000 in 1989 dollars). The true mean (and median) number of bathrooms for the 169 homes is 2, only 39 percent have central air-conditioning, and they average 39 years in age. Closer examination showed a significant fraction of them to be located in the Los Angeles, Anaheim, and Boston primary metropolitan statistical areas. Some of the trait bundle characteristics result from a skewed sample with many homes from areas with very high land prices and temperate climates. Most high-priced homes really do have more than 2 full bathrooms, have central air-conditioning (over 80 percent), and are much newer homes (24 years old for the top fifth of 1974 homes in terms of price).

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