

Bull market in homes

Financial counselors have long advocated home ownership as a prime investment for the typical family. The wisdom of this advice has seldom been demonstrated so conclusively as in the past two years. Both starts on new single-family homes and transactions in existing homes have been at a record pace in recent months, and prices have increased sharply—much faster than the general price level.

Some real estate analysts have used the term “panic buying” to describe the 1977 home market. The home boom has been universal throughout the nation, but “panic” is too strong a term for conditions in most regions. In April the average price of existing homes was up 11 percent, nationally, according to the National Association of Realtors (NAR). Home prices in the Seventh Federal Reserve District average 10 to 11 percent higher than last year, both for new and existing homes. In the West, the NAR reports, prices are up 27 percent from a year ago! Press accounts have described speculative purchases of homes in California with builders holding lotteries to ration limited output. The surge in home purchases is least pronounced in the Northeast, among major regions, with prices up 5 percent from a year ago.

Speculation in any booming market carries a threat of an eventual backlash if units bought for quick profits rather than as long-term investments are thrown on the market. While speculative elements doubtless are present to some extent throughout the nation, these forces do not account for the great underlying strength in home buying and building. Solid reasons include: (1) improvement in the overall economy, accompanied by rising incomes and increased confidence; (2) rising household formation; (3) the low level of housing production in the 1974-75 recession; (4) ready availability of mortgage

funds; (5) downpayments provided by large equities in existing properties; (6) an erosion of the stock of suitable housing in central cities. As always, most people have a deep-felt desire for the privacy and other amenities of a house and yard, an attitude that no doubt has been reinforced by the burgeoning problems of central cities. About 65 percent of U.S. dwelling units are owner occupied, up from less than 45 percent prior to World War II. Home ownership is particularly prevalent in the Midwest.

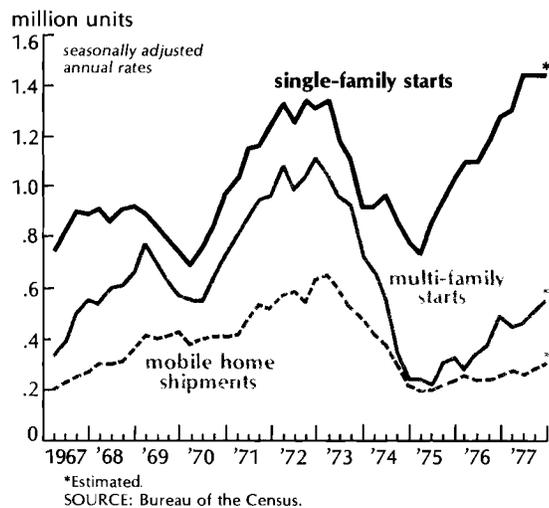
Apartment construction has also increased substantially from the low point of early 1975. However, the rate of multifamily starts so far in 1977 has been less than half of that reached in the peak year of 1972. Demand for existing apartments also has increased, as indicated by rapidly rising rents for desirable units and stronger prices for condominiums. However, potential investors have remained cautious in making new commitments. Many suffered losses when the apartment building surge of the early 1970s led to an overhang of unsold units and widespread financial distress.

Two million starts?

One of the most widely publicized monthly statistical reports is the Census Bureau's data on housing starts. About the middle of each month, initial estimates are released for starts in the previous month and revisions for earlier months. Data cited usually are “seasonally adjusted.” A “start” occurs when ground is broken for a foundation. Single-family homes are usually completed three to six months after the start. Apartment projects may take a year or more.

Housing starts fluctuate substantially with the seasons, especially in the northern states. For the nation as a whole, starts in the spring and summer months average about 80 per-

Homes lead housing recovery



cent above the level of the winter months. Deep frost penetration during the recent severe winter caused more delays than usual. As a result, the underlying strength of the residential construction sector was not clearly evident until the spring was well advanced.

Most analysts expect housing starts to total 1.9 to 2.0 million in 1977, up from 1.5 million in 1976 and less than 1.2 million in 1975. The 1975 total was the smallest number since 1946 when the industry was reviving after World War II. The all-time peak of 2.4 million was reached in 1972.

An important supplement to conventionally constructed housing is provided by "mobile homes" or "manufactured houses" assembled in factories and transported to their sites fully equipped and furnished. Most of these units provide year-round living quarters. Mobile home shipments rose from a level of about 100,000 units per year in the early 1960s to almost 600,000 in both 1972 and 1973. Shipments then declined sharply, reaching a low of 210,000 in 1975. Last year saw a recovery to 250,000, and a further gain is expected this year.

The slight improvement in mobile home shipments has been disappointing to analysts who view these units as a lower cost alternative to conventional home ownership. In 1973 mobile homes were almost 22 percent of

the combined total of housing starts and mobile home shipments. In recent months this proportion has been only about 12 percent. The quality of mobile homes has improved in recent years, partly because weaker producers have dropped out of the market and partly because of federally imposed standards. However, some lenders, particularly commercial banks, suffered losses on repossessions of mobile homes following the 1972-73 boom and have reduced their activities in this sector. Also, existing mobile homes have not appreciated in value in recent years in the manner of conventional homes.

Apartments vs. homes

In the late 1960s and early 1970s, apartment building soared in virtually all large metropolitan areas. Favorable tax rules on depreciation attracted investors, and plentiful funds were available to finance these projects. Loans from insurance companies, pension funds, and other institutions were augmented by those provided by Real Estate Investment Trusts (REITs), which were authorized by federal legislation in 1960 to pass through earnings to shareholders without taxation. Mutual funds, which invest in stocks and bonds, were allowed to pass through earnings untaxed by legislation enacted in 1940. Another factor encouraging apartment construction was the growth of the condominium device under which individuals purchase their apartments and obtain individual mortgages.

Apartments accounted for 19 percent of all housing starts in 1959. Comparable data are not available for earlier years, but various evidence indicates that the proportion of multifamily starts had been in the 15 to 20 percent range throughout the 1950s. The proportion of apartments to total starts jumped to 35 percent in the mid-1960s, to 40 percent in 1968, and finally to 45 percent in the years 1969 through 1973.

Single-family and multifamily starts both declined 13 percent in 1973. The following year singles declined 22 percent and multis 51

percent. In 1975 home starts were as large as in 1974, but multis dropped another 40 percent and their proportion of total starts declined to 23 percent, the lowest since 1960. Bell Savings and Loan Association data for the Chicago area show this phenomenon to a striking degree. Apartments dropped from almost 60 percent of all permits for new housing in the Chicago area in 1971 and 1972 to 36 percent in 1975.

The early 1970s saw substantial overbuilding of apartments in many areas and the development of a large overhang of unrented or unsold units. In the meantime building costs had increased sharply and interest charges were heavy. Construction loans commonly carried rates of 15 percent or more at the peak. Many construction loans and mortgages were defaulted, and the resulting financial morass is still being worked out. Month-by-month, however, the picture has substantially improved.

As the number of vacant apartments has been reduced, continued increases in real estate values and rising rents have restored many projects to financial health, thereby encouraging promotions of new projects.

From a low point of 270,000 in 1975, multifamily starts rose to 375,000 last year and have approached a 500,000 rate in recent months. This is still only half the 1972 level, however, while single-family starts are running 12 percent higher than in 1972. As a result, the proportion of apartment starts to the total is unlikely to much exceed 25 percent this year.

The failure of apartment construction to recover more rapidly is a counterproductive factor in the nation's drive to conserve energy. Apartment buildings are much more efficient in using energy either to heat or cool a given area of living space. Moreover, apartments are more likely to be located near shops and public transportation than are detached houses.

Households and housing units

Two factors largely determine the nation's need for new housing units: (1) the

rate of increase in the number of households, and (2) the rate at which existing units are demolished or abandoned. Complicating factors include net conversions of existing units and acquisitions of second homes for recreation or other reasons. To a degree, cause and effect runs both ways: a growing surplus of new housing units may encourage both household formation and also abandonment of substandard structures.

Official estimates place the number of households in March 1976 at 73 million households; the current number probably approaches 75 million. "Household," a broader concept than "family," includes single persons or groups of persons, unrelated by blood or marriage, who occupy housekeeping units (as opposed to transient or institutional quarters). Nonfamily households have been growing as a proportion of the total in recent years as young unmarried people have more commonly established separate living quarters. The number of households has doubled since World War II, while the population has increased by less than 60 percent. In the past decade households have increased 25 percent, while the population has risen 10 percent.

Net household formations surged in the years following World War II to 1.5 million per year, as marriages delayed by the war took place, and many families living with relatives "undoubled" as the increasing supply of housing permitted. From 1950 through 1965 household formation averaged less than 1 million annually. The rate increased in the late 1960s and since 1970 has averaged 1.6 million annually. The Census Bureau's median projection suggests that household formation will continue near this rate for the next decade.

The sharp rise in households relative to population partly reflects an increasingly affluent and more independent-minded society. But, more importantly, it reflects relative growth in the number of young adults. Since 1968 the 25-34 age group has increased twice as fast as the population; in the past five years—four times as fast.

The number of housing units demolished or abandoned as unlivable is not known, but may exceed a half million per year. Many demolitions occur as land is cleared for expressways or urban renewal projects. Abandonments have occurred steadily in areas where farms have been consolidated, mineral or forest resources have been exhausted, or an exodus of industry has occurred for other reasons. Increasingly, abandonment of dilapidated or burned-out structures in depressed areas of inner cities has led to evacuation and eventual demolition of whole blocks. In New York, Chicago, Detroit, and other large cities, tens of thousands of housing units have been abandoned or demolished in the past 15 years and the pace has accelerated sharply in the 1970s.

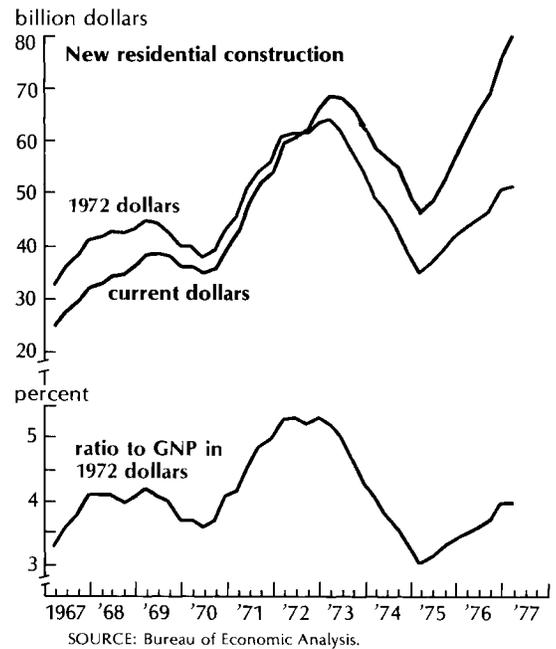
Housing and the cycle

Since World War II residential construction activity usually has moved “counter cyclically,” leading general business both in declines and recoveries. Moreover, housing has traced fluctuations that had no counterpart in total output, e.g., peaks and subsequent declines occurred in 1955 and in 1965 when total activity measured by the gross national product (GNP) continued its upward course. The highly cyclical nature of this sector is further exemplified by the fact that increases and declines have shown far greater amplitude than general business.

Peaks in residential construction, adjusted for price changes, have usually been reached several quarters before peaks in real GNP. Leads in recoveries typically have not been nearly so long, but uptrends in housing usually have been rapid and a greater source of strength in the early stages of an expansion than have business capital expenditures, which usually gather steam only after margins of unused capacity have narrowed significantly.

The cyclical nature of residential construction to a large extent reflects changes in the availability of mortgage credit. Interest as a portion of total costs is very important to housing activity both during construction and

Residential construction —a volatile sector



in the monthly payments that amortize loans. When business needs for funds are moderate, market interest rate patterns encourage inflows of funds to the savings and loans and mutual savings banks, which specialize in mortgage lending. In such periods, moreover, commercial banks and insurance companies are more likely to be attracted to mortgage investments.

As general business expands and interest rates rise, the forces that provided ample funds for housing are reversed. Inflows of savings to thrift institutions slow down and may give way to net outflows—as in 1969 and 1973-74. Mortgage commitments become less available. The problem is compounded by ceilings on the rates that can be paid on savings and time accounts, and by state usury laws applicable to home mortgages. (Usury ceilings in many states, for example, Illinois, have been made more flexible by recent legislation.)

Another factor that may increase the volatility of housing is the tendency for government to establish new or expanded

programs when activity is depressed. Such programs may not become fully effective until a new expansion in building is well under way.

Although of great importance, a large and steady flow of mortgage funds at moderate rates probably would not guarantee long-term stability in residential construction. The need for new units rises fairly steadily year after year, while new units are provided in waves as new projects are developed. Partly because of the length of time required to bring new housing to the market, especially apartments, there is a strong tendency to overbuild. After one or more boom years a backlog of unsold houses and vacant apartments must be absorbed before a new expansion can be supported.

The residential construction cycle was vividly illustrated in the recent recession. Residential construction, in real terms, peaked in the first quarter of 1973—three quarters earlier than the peak in real GNP which coincided with the oil embargo. Residential construction bottomed out in the first quarter of 1975 after a two-year decline and a drop of 45 percent. Real GNP also hit its low in the first quarter of 1975, after a decline of 8 percent. Since the recession low, both residential construction and real GNP have increased in each successive quarter.

As a proportion of GNP, residential construction reached a high of 5.3 percent in 1972. In the first quarter of 1975, this ratio had declined to only 3 percent. In the comeback the ratio reached 4 percent in the first quarter of 1977. It probably increased further in the second quarter, but remained well below the 1972 level. If apartment construction had advanced at the same pace as single-family homes, the 1972 ratio probably would have been regained by mid-1977.

Mortgage funds ample

Residential mortgage debt totaled over \$660 billion at the end of 1976, up 12 percent during the year, with most of the gain in the second half. Mortgage debt doubtless will rise more than 10 percent this year as more new

homes and apartments are completed and the number of transactions in existing properties continues at a record pace and at ever-rising prices.

Total credit market debt owed by all non-financial sectors, public and private, now exceeds \$2.6 trillion, having doubled since 1968. During this period residential mortgages have increased from less than 24 percent of total debt to over 25 percent. Despite heavy borrowings by government and business, the residential mortgage sector has been able to increase its share of total funds raised.

Home mortgages on properties with one to four units (including condominiums) totaled \$559 billion at the start of the year, compared to \$102 billion outstanding on multifamily properties. Home mortgages and multifamily mortgages have both more than doubled since 1968. In 1975 and 1976 when home mortgages increased by over \$100 billion or 23 percent, multifamily mortgages rose by only \$2 billion or 2 percent. This reflected the sharply lower level of multifamily construction, paydowns, or write-offs of existing loans on apartments, and conversions of some apartments to individually owned condominiums. Growth in condominium ownership continues despite some widely publicized problems associated with communal operation and maintenance.

The relative shares of home mortgages and multifamily mortgages that are held by various groups of lenders vary substantially, as shown in the accompanying tables. Savings and loan associations (S&Ls) now hold 47 percent of all home mortgages, up from 42 percent in 1970 and far more than any other group. Last year S&Ls accounted for 55 percent of the rise. Commercial banks are the second largest holders of home mortgages with 16 percent, a somewhat larger share than a decade ago. Mutual savings banks (MSBs) have 10 percent, down from 15 percent a decade ago. Slower growth of MSB mortgage holdings partly reflects the slower growth of the northeastern region where they are concentrated. The share of life insurance companies, once major lenders on home mortgages, declined from 13 percent in 1966

TABLE 1
 Holders of home mortgages, one to four units

	<u>1966</u>		<u>1968</u>		<u>1970</u>		<u>1972</u>		<u>1974</u>		<u>1976</u>	
	<i>(billion dollars, year-end)</i>											
Total	232.9	100.0%	264.6	100.0%	297.7	100.0%	372.8	100.0%	449.9	100.0%	559.3	100.0%
Savings and loans	97.4	41.8	110.1	41.6	124.5	41.8	167.0	44.8	201.6	44.8	261.7	46.8
Mutual savings banks	35.6	15.3	39.5	14.9	42.1	14.1	46.2	12.4	49.2	10.9	53.2	9.5
Commercial banks	32.8	14.1	38.8	14.7	42.3	14.2	57.0	15.3	74.8	16.6	87.9	15.7
Life insurance companies	30.2	13.0	29.0	11.0	26.8	9.0	22.3	6.0	19.0	4.2	16.1	2.9
Government and related agencies ¹	10.7	4.6	15.1	5.7	23.7	8.0	26.5	7.1	36.8	8.2	40.4	7.2
Mortgage pools ²	.5	0.2	1.4	0.5	3.0	1.0	10.7	2.9	18.6	4.1	42.0	7.5
Individuals and others ³	25.7	11.0	30.8	11.6	35.2	11.8	42.9	11.5	49.9	11.1	57.8	10.3

¹Includes federal, state, and local government agencies, Federal National Mortgage Association (FNMA), Federal Home Loan Mortgage Corporation (FHLMC).

²Outstanding principal balances of mortgages backing securities guaranteed by Government National Mortgage Corporation (GNMA), FHLMC, Farmers Home Administration (FmHA).

³Includes mortgage companies, noninsured pension funds, state and local retirement funds, real estate investment trusts, credit unions.

SOURCE: Federal Reserve Board.

TABLE 2
 Holders of multi-family mortgages, five or more units

	<u>1966</u>		<u>1968</u>		<u>1970</u>		<u>1972</u>		<u>1974</u>		<u>1976</u>	
	<i>(billion dollars, year-end)</i>											
Total	41.3	100.0%	48.3	100.0%	60.1	100.0%	82.6	100.0%	99.9	100.0%	102.0	100.0%
Savings and loans	8.6	20.8	10.5	21.7	13.8	23.0	20.8	25.2	23.7	23.7	28.1	27.5
Mutual savings banks	6.6	16.0	7.3	15.1	7.8	13.0	10.9	13.2	12.9	12.9	14.2	13.9
Life insurance companies	10.3	24.9	12.8	26.5	16.0	26.6	17.3	20.9	19.6	19.6	19.2	18.8
Commercial banks	2.1	5.1	2.7	5.6	3.3	5.5	5.8	7.0	7.6	7.6	6.3	6.2
Government and related agencies ¹	2.3	5.6	3.1	6.4	5.6	9.3	9.8	11.9	17.1	17.1	19.4	19.0
Individuals and others ²	11.4	27.6	11.9	24.6	13.6	22.6	18.0	21.8	19.0	19.0	14.8	14.5

¹See Table 1.

²Includes mortgage companies, noninsured pension funds, state and local retirement funds, real estate investment trusts, mortgage pools.

SOURCE: Federal Reserve Board.

to 3 percent currently. The most rapidly growing suppliers of home mortgage funds are "mortgage pools," which issue securities backed by mortgages. This group, which includes securities guaranteed by the Government National Mortgage Association (GNMA), now holds 7.5 percent of all home mortgages, compared to almost none 10 years ago.

Savings and loans are also the largest holders of multifamily mortgages with 28 percent of the total. Government and related agencies, including the Federal National Mortgage Association (FNMA), hold 19 percent, having increased their share sharply in recent years. Life insurance companies hold 19 percent, and mutual savings banks 14 percent.

Savings and loans, MSBs, and commercial banks reported sharp increases in savings and time deposits in 1976 and early 1977. Mortgages closed and new loan commitments reached record highs. In April, for example, deposits of insured S&Ls totaled \$346 billion, up 16 percent from a year ago. Mortgage loans outstanding were up 17 percent; loans closed and loan commitments outstanding were both up 37 percent. New savings inflows at S&Ls and MSBs slowed in the spring, but remained at a fairly high level. Also, a large volume of funds is available from loan repayments, including advance repayments as properties changed hands. If savings inflows do shrink, S&Ls can expand their borrowings from Federal Home Loan Banks and other lenders.

Interest rates and home prices

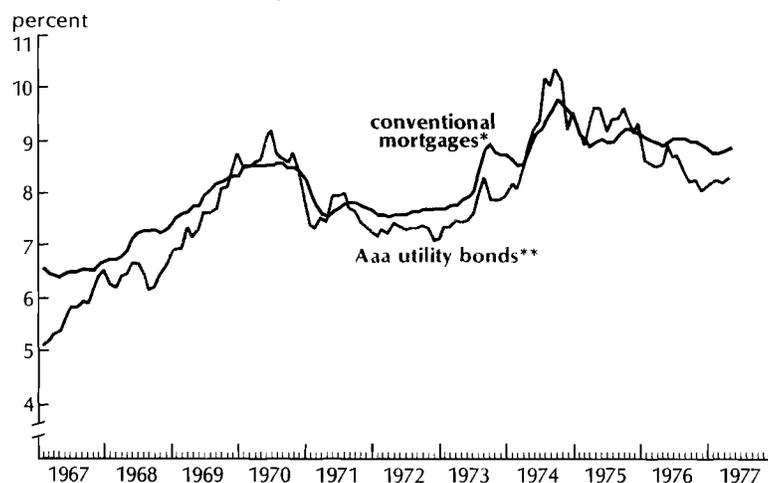
In the early 1960s the typical new home carrying a conventional mortgage, according to

Federal Home Loan Bank Board (FHLBB) data, cost \$23,000 and carried a 75 percent 25-year, 6 percent loan. All of these measures increased in the 1960s. In the tight credit period of 1969-70, mortgage interest rates rose sharply, moving to 8.5 percent or more for a limited period. Such rates were unprecedented and exceeded usury ceilings in many states. The median purchase price of new homes exceeded \$35,000 in 1970, partly because of inflation, but also because the average new home was larger and more fully equipped.

Home mortgage contract rates dropped in 1971-72 to about 7.5 percent. In the second half of 1974, rates rebounded to a new high of over 9 percent, then receded to 8.75 percent—a level about maintained through the present. Fees raise effective rates to about 9 percent. Rates increased moderately in most areas this spring.

The median price of new homes has increased very sharply since 1973, about 10 percent per year, despite some trend toward smaller-sized houses. In addition to rising costs of material and labor, tighter building codes have added further to costs of construction. Impediments to the development of new sites reflecting environmental restric-

Rates on home mortgages have held near 9 percent for two years



*Rates on conventional new home mortgages, excluding fees and charges, based on HUD field office surveys.

**Newly issued Aaa utility bonds.

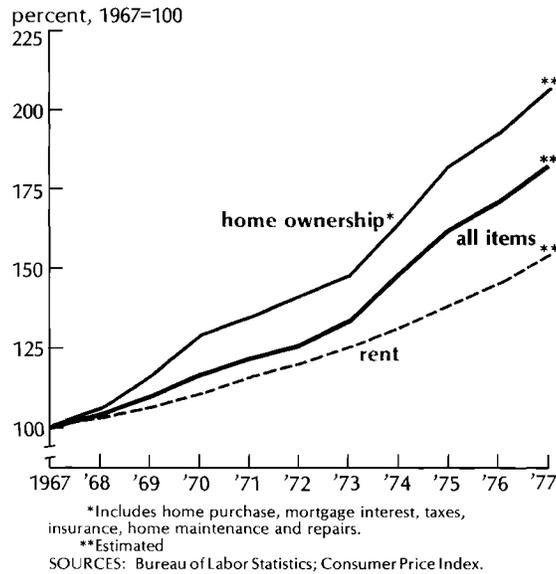
tions and limited access to natural gas, water, and sewerage facilities have sharply limited the supply of buildable lots in many areas, especially in California, thus causing lot prices to soar.

In May 1977 the average new home price was \$52,000. The average loan was \$39,400, the average downpayment 23 percent, and the average maturity 28 years.

Longer maturities reduce average monthly amortization payments, but this tendency has been more than offset by higher interest rates. In 1965 a typical \$18,000, 25-year, 5.75 percent loan carried monthly amortization payments (principal and interest) of \$113. Currently, the monthly payment of a typical \$39,000, 30-year, 9 percent loan is \$314. In addition, payments for taxes, fuel, maintenance, insurance, and utilities have increased at least as fast as home prices.

As home prices have risen in recent years, there have been widespread complaints that the typical family, especially a young couple, "cannot afford" a single-family home—new or used. However, families are buying homes at an amazing pace.

Costs of home ownership have risen faster than either rents or the total "cost of living"



Median annual family income currently exceeds \$15,000, 50 percent higher than in 1970. FHLBB data show new home prices up somewhat less than 50 percent in this period. Since 1965 medium income has increased 120 percent, while new home prices are up about 110 percent.

More family incomes have been augmented by a second wage earner in the past 10 or 15 years, and fewer couples have the expense of rearing children. Downpayments on new or more expensive homes are often available from increased equities in homes previously purchased as a result of paydowns on mortgages and inflation.

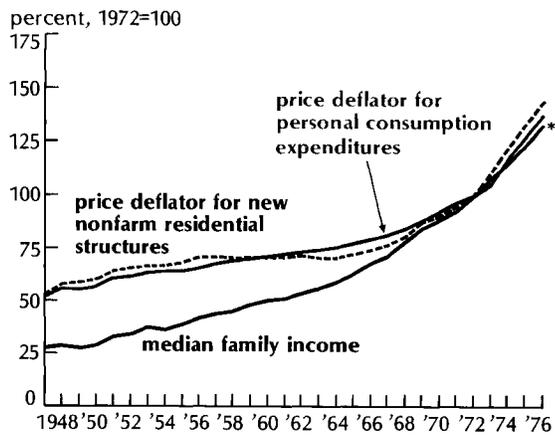
Federal aids to housing

Until the early 1960s federal activities in the housing field were largely limited to providing Federal Housing Administration (FHA) insurance on unsubsidized mortgages, Veterans Administration (VA) guarantees, and financing of public housing, usually administered by local authorities. In the past 15 years a variety of programs have provided subsidies to aid home ownership or reduce the burden of rental payments.

FHA insurance played an important role in reviving the housing industry in the late 1930s after the Depression. VA guarantees were provided after World War II and aided many veterans in acquiring homes on favorable terms. In recent years the part played by these unsubsidized government-backed mortgage insurance programs has been relatively small. At the end of 1975 they accounted for only 11 percent of all mortgages held by S&Ls. Ceiling rates on FHA-VA loans, regulations governing the characteristics of properties financed, and administrative delays have discouraged many lenders from participating actively in these programs. Increasingly, private mortgage insurance has been substituted for government insurance on low downpayment loans.

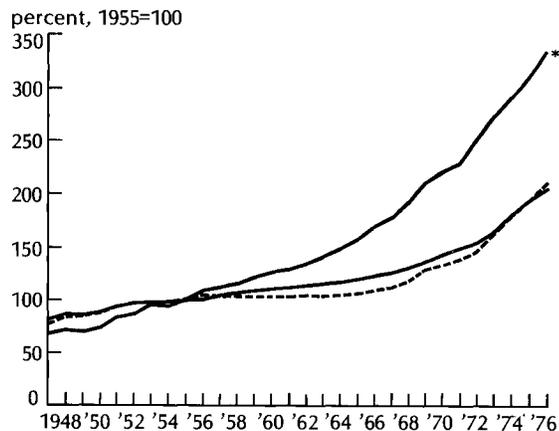
Public housing has never been a large factor in the total housing picture in the United States. Only about 1.5 percent of all units now occupied, including special hous-

Price increases for new housing have about matched income gains in recent years. . .



*Estimated.
 NOTE: This pair of charts illustrates the importance of the selection of a base year. 1972=100 in the first and 1955=100 in the second, in comparing trends in home prices with other prices and with income.
 SOURCES: Bureau of the Census; Bureau of Economic Analysis.

. . . but income has far outpaced house prices since the mid-1950s



ing for the elderly, are under public ownership. Only 10,000 public units were started last year, down from 35,000 in 1970. While experience with public housing has varied by project, "high-rise" units erected in inner cities have generally proved unsatisfactory. Some high-rises of relatively recent construction deteriorated to the point that demolition was necessary.

A variety of federal rental supplements have been available since the mid-1960s, especially under Section 236 of the Federal Housing Act. In addition, under Section 235, the FHA has encouraged home ownership with subsidized insured loans on new homes. Little or no downpayment is required, and subsidies reduce monthly payments. Experience with many "235" loans made in the late 1960s and early 1970s has been unsatisfactory. The FHA has been forced to foreclose loans on thousands of abandoned properties. Mismanagement, fraudulent appraisals, and shoddy construction, on the one hand, together with poorly prepared home owners with no equity to protect, on the other, have cast a shadow over prospects for subsidized home ownership programs. The revised 235 program attempted to deal with these

problems, for example, by requiring higher downpayments.

Currently, two federal programs may provide extensive subsidies for multifamily renters in the near future. Under Section 8, enacted in 1974, the Department of Housing and Urban Development (HUD) hopes to provide assistance to 80,000 rental unit housing starts in the current fiscal year. Section 8 provides federal subsidies to keep rental payments below 25 percent of adjusted income for families whose income is less than 80 percent of the median for designated areas. (This implies that 40 percent of all families might qualify for subsidies.) Another active program is GNMA's "tandem plan" under which the agency raises funds at market rates and buys multifamily mortgages at below market rates—the difference measuring the amount of the subsidy.

The full dimension of federal subsidies to either home owners or renters cannot be evaluated merely by analyzing programs that provide aid specifically for housing. Any income from welfare or other benefit programs can be used for house-related payments, and this need is often specifically taken into account in providing such payments.

To sustainable levels

In the late spring there were reports that the explosive bull market in family houses was tapering off, even in California. For several months many lenders have been screening mortgage loan applications more closely to exclude borrowers who do not intend to occupy the houses they contract to purchase. Any slowing in the rate of price rise of homes would tend to discourage speculators who desire a quick profit. Mortgage funds continue to be readily available, meanwhile, with rates and fees only moderately higher than at the start of the year.

Most observers of housing market trends expect that new home construction will remain strong in 1978, although single-family starts may be somewhat fewer than in 1977. A further expansion in multifamily construction is widely expected. Vacancy rates have declined to the lowest level in several years, and rising rents will justify additional projects. HUD is reported to be pushing hard for additional subsidized housing.

Recent higher levels of residential construction have been accompanied by scattered reports of spot shortages of brick, cement, insulation, and other building materials, but nothing critical. Most areas, according to *Engineering News Record*, have adequate numbers of skilled construction workers.

Availability of suitable sites for new residential buildings with access to water, sewerage, and utility services apparently is the major factor limiting developments in the vicinity of metropolitan areas. To a considerable degree the "lot shortage" reflects stiff new environmental standards and a reaction to the haphazard, poorly planned expansion of some suburban areas in the past 10 to 15 years. For many years to come, public policy will be challenged by the need to balance desires to protect and improve the setting of urban life with requirements for new living space.

*George W. Cloos
William R. Sayre*