

# The Future Of Bank Financial Services

# For Housing

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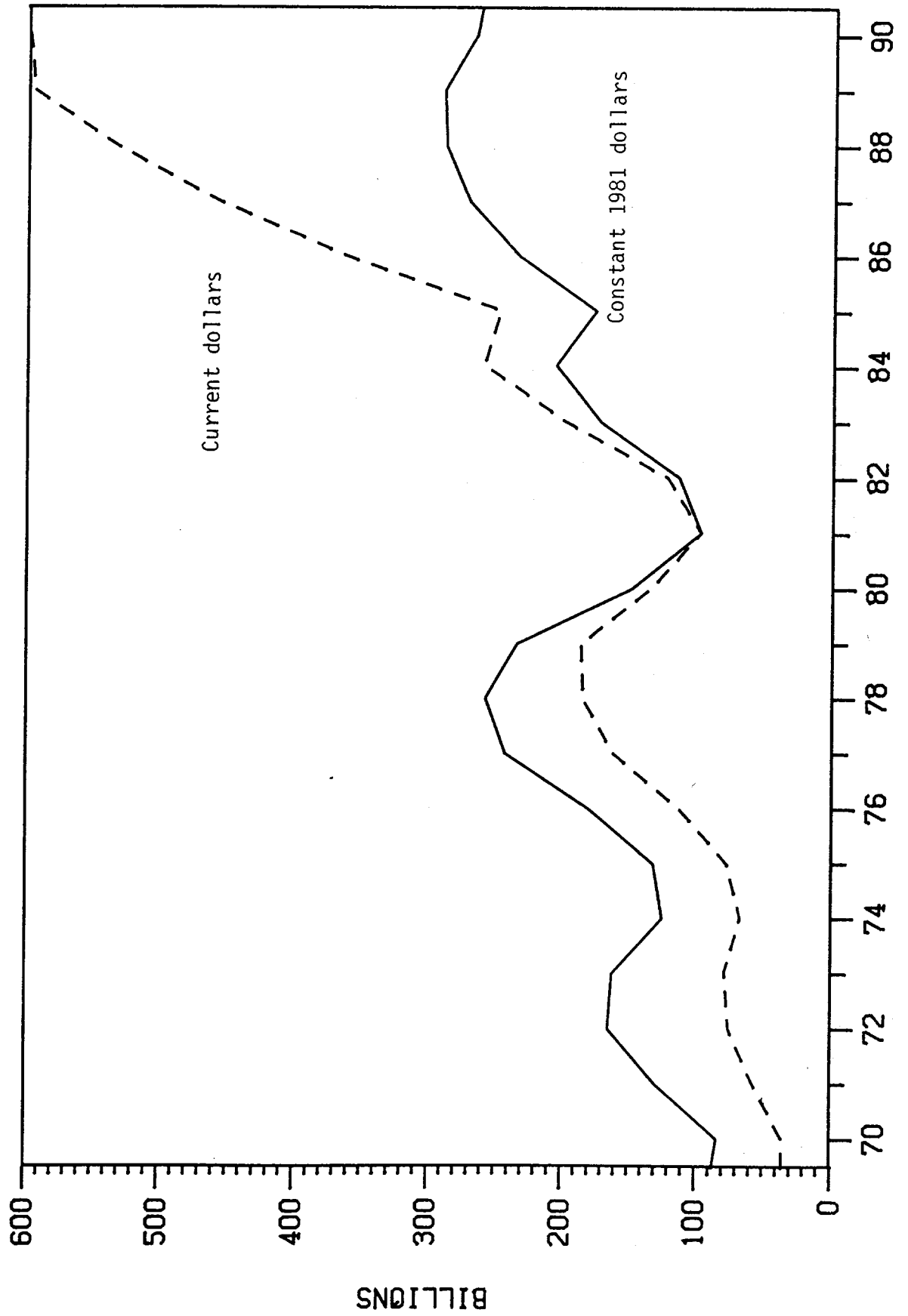
INTRODUCTION AND SUMMARY

Demographic changes over the next decade will produce a rapid increase in the number of family-type households, which will create a heavy demand for credit to purchase new and existing single family homes. This expanded demand for owner-occupied housing and housing finance will collide with the inability of thrift institutions to provide their traditional share of mortgage credit from deposit funds. The resulting mortgage credit gap will be filled primarily by secondary market sales of mortgages, largely in the form of guaranteed mortgage passthrough securities, to institutional investors such as insurance companies and pension funds and to private individual investors.

In order to draw forth the additional funds from the secondary market, the yield on mortgages will have to rise relative to yields on other investments. During the late 1960's and throughout the 1970's, mortgage rates were unnaturally low relative to bond yields as a result of the regulatory treatment of depository institutions plus government intervention in the market. In the 1980's fixed rate mortgages will average about 200 basis points above corporate bond yields, with the spread increasing during periods of interest rate uncertainty.

For commercial banks, the increased relative yield on mortgages and the development of new mortgage instruments which provide some protection against adverse interest rate movements will make mortgages more attractive investments. As a result, mortgages should account for an increased share in bank asset portfolios.

Figure 1  
TOTAL 1-4 FAMILY MORTGAGE ORIGINATIONS  
IN CURRENT AND CONSTANT DOLLARS



The reliance on the secondary mortgage market will increase the importance of the mortgage banking function. This function will continue to be performed primarily by bank-affiliated or independent mortgage banking companies, but increasingly other mortgage originators, especially thrifts, will act more like mortgage bankers. Commercial banks will also find the origination and servicing fees increasingly important sources of profit.

The housing affordability problems posed by inflation and resulting high interest rates are cash flow problems and are directly related to the nature of the traditional mortgage instrument, which places unbearable burdens on the borrower in the initial years of ownership. Most new mortgage instruments do not address the borrower's cash flow problem any better. The market response has been to bypass institutional lenders and turn to various forms of seller financing. Ideally, the problem will be eliminated by the disappearance of inflation, but in the absence of such an ideal world it would behoove the housing finance industry to find other ways to address the borrower's needs.

### HOUSING DEMAND

Over the past decade, there was a large increase in the number of young, nontraditional households among home buyers. The number of housing units owned by non-husband-wife households with heads under 35 years old increased from 550 thousand in 1970 to 2.2 million in 1979.

This was the result of three factors:

1. An increase in the population aged 20 to 35 resulting from the post World War II baby boom.
2. An increase in nontraditional households due to a breakdown of marriage and an increased tendency for single people to establish their own households.
3. A greater propensity toward homeownership, which was true of all types of households, but which was proportionately greater among young, nonfamily households.

The coming decade will see a shift in the age structure toward older age groups. The rapid increase in the divorce rate and the growth of nonfamily households will slow, while the growth in family households will accelerate. The headlong rush toward homeownership as an inflation hedge based on underpriced mortgage credit will slow, but the demographic changes will fuel a continued demand for single family owner-occupied housing. The net result will be a shift in the types of households demanding housing and in types of housing they will demand.

### Population and Households

The most positive factor in housing demand over the next few years is the maturation of the baby boom generation. The number of births reached a peak of 4.3 million in 1957. Beginning in 1963 it dropped precipitously. The babies born in the peak year of 1957 are now 25 years old, and they have thus reached the age where they will begin to seriously consider buying homes.

FIGURE 2  
BIRTHS - 1909 TO PRESENT



Figure 3  
POPULATION BY AGE

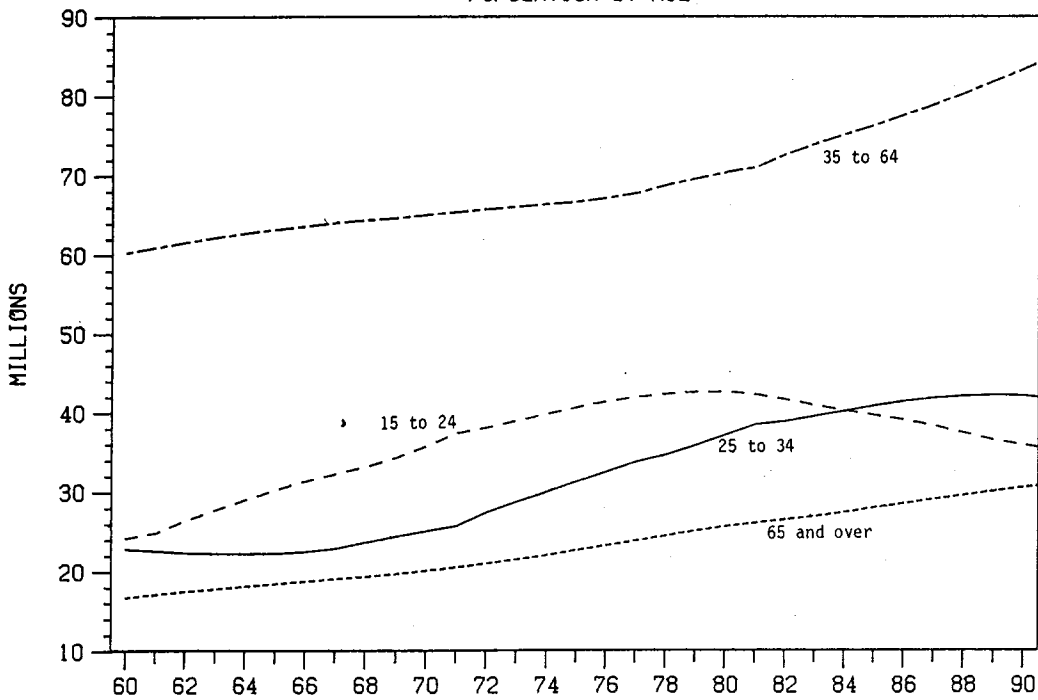


Figure 3 shows the age structure of the adult population. The changes in the relative size of the various age groups are caused primarily by historical fluctuations in births. The number of people aged 15 to 24 has already begun to decline. The 25 to 34 year old group will continue to increase until late in this decade, but the rate of increase is declining. The most rapid growth is occurring among the 35 to 64 year old group--particularly the 35 to 44 year olds.

While the growth in the adult population sets the stage for growth in housing demand, the actual number of housing units demanded depends on the way in which the population groups itself into households. If everyone lived alone, we would require about 230 million housing units, rather than the 82 million currently occupied.

A household is defined as a person or group of people who occupy a housing unit. Over the decade of the 1970's, the average household size fell from 3.2 to 2.8 people, with a consequent increase in the number of occupied housing units relative to the population. While part of the decline in average household size was due to decreases in the number of children, much of it also came from an increased tendency for adults--particularly young adults--to live alone.

We can measure the propensity to form households by the headship rate--the number of household heads relative to the total population in a particular category. Table 1 shows the proportion of the population in each age bracket who were heads of households in 1970 and 1980. The total headship rate is divided into heads of

family households and heads of nonfamily households. A family household is a group where the head of the household is related to at least one other member of the household. Most family households are traditional husband-wife households, although they may also consist of single parents or other relatives. Nonfamily households consist primarily of people living alone, although the category also includes roommates and unmarried couples. Since 1970 the proportion of the population in each age group who were heads of family households has been stagnant or declining, while the proportion who were heads of nonfamily households has grown dramatically.

Table 1  
HEADSHIP RATES BY AGE

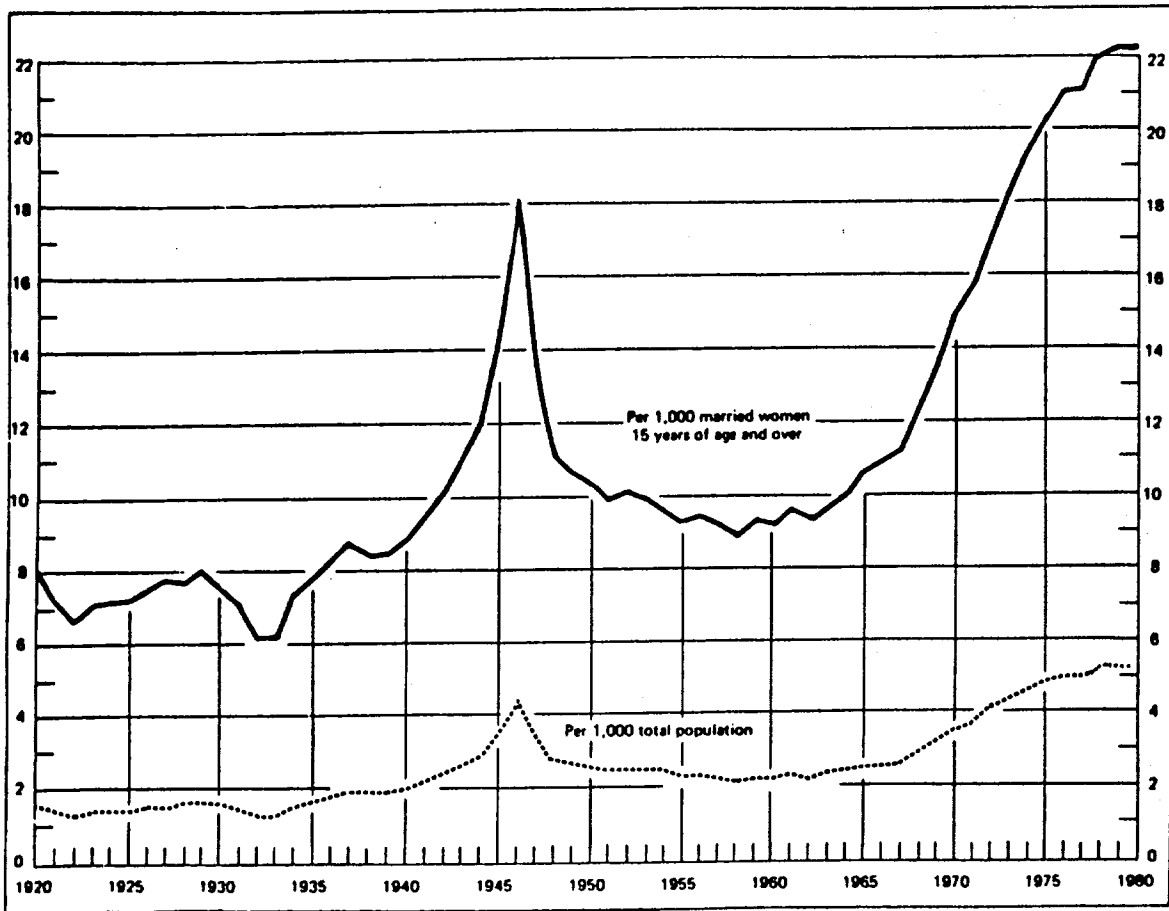
	---FAMILY---		--NONFAMILY--		----TOTAL----	
	1970	1980	1970	1980	1970	1980
15-24	9.9%	9.0%	2.5%	6.5%	12.4%	15.4%
25-34	42.6	38.6	4.5	11.7	47.1	50.2
35-44	47.6	47.8	3.7	6.9	51.3	54.7
45-54	47.1	47.0	6.2	8.2	53.2	55.2
55-64	45.1	44.0	13.2	13.8	58.3	57.8
65&OVER	35.6	35.3	26.2	29.6	61.7	64.9

There is a popular misconception that the growth in the number of young nonfamily households has resulted in large measure from children leaving their parents' homes and moving into apartments at an earlier age. As Table 2 shows, this has not been the case. The proportion of young adults living with their parents has actually increased over the past decade. Moreover, the headship increases have not resulted from fewer young people living with roommates



either. The proportion of young people living in a household headed by a non-relative has also increased (partly due to the rise in unmarried couples). The growth in the number of young nonfamily households is entirely attributable to the incredible increase in the divorce rate and to the postponement of marriage.

Figure 4  
DIVORCE RATES  
UNITED STATES  
1920-1980



Because total headship rates are higher for the older age groups, the aging of the baby boom generation would produce more households even if there were no further increases in headship

rates. Moreover, the shift in the age distribution will produce more family households, since such households predominate among 35 to 64 year olds. During the 1970's, the increase in the number of nonfamily households exceeded the increase in family households, although family households still accounted for 74% of the total at the end of the decade. In the 1980's, family households should account for most of the increase, even if the social trends of the past decade continue.

It is hazardous to predict the future course of divorce rates or marriage rates. Although the changes observed in the 1970's are unlikely to be reversed, it is also unlikely that the movement away from marriage will be as severe in the coming years. The divorce rate has increased much less rapidly in recent years following the sharp increases in the late 1960's and early 1970's.

Economic factors influence headship rates, both directly by affecting the ability of people to afford separate housing units and indirectly by affecting marriage, divorce, and child-bearing patterns. The principal economic factors affecting headship rates are real disposable income, employment opportunities (measured by the unemployment rate), and the cost of housing. The number of nonfamily households is more sensitive to these factors than the number of family households. Table 3 shows our forecasts of the number of households under each economic scenario.

Table 3  
RDA HOUSEHOLD FORECAST UNDER ALTERNATIVE SCENARIOS  
(thousands)

	1980	---BASE CASE---	--OPTIMISTIC--	-PESSIMISTIC-
		1990 CHANGE	1990 CHANGE	1990 CHANGE
<b>FAMILY HOUSEHOLDS:</b>				
15-24	3,815	-659	3,236	3,035
25-34	14,338	1,672	16,873	14,549
35-44	12,300	5,284	17,667	17,455
45-54	10,744	1,317	12,066	12,058
55-64	9,577	-189	9,548	9,174
65&OVER	9,046	1,405	10,583	10,268
TOTAL	59,820	8,831	69,972	66,537
<b>NONFAMILY HOUSEHOLDS:</b>				
15-24	2,755	1,092	4,038	3,489
25-34	4,334	2,715	7,155	6,828
35-44	1,769	1,439	3,387	2,984
45-54	1,882	235	2,181	2,002
55-64	2,995	123	3,185	3,033
65&OVER	7,590	2,220	10,387	8,904
TOTAL	21,326	7,825	30,334	27,240
ALL HOUSEHOLDS	81,145	16,656	100,306	93,777
			19,160	12,631

Table 4a  
HOUSING AND TENURE TYPE  
BY HOUSEHOLD TYPE AND AGE OF HEAD  
MILLIONS OF HOUSEHOLDS - 1979

	-SINGLE FAMILY-			--MULTIFAMILY--			----MOBILE----			TOTAL
	OWN	RENT	TOTAL	OWN	RENT	TOTAL	OWN	RENT	TOTAL	
HUSBAND-WIFE HOUSEHOLDS:										
UNDER 25	0.8	0.6	1.4	0.0	1.0	1.0	0.3	0.1	0.4	2.8
25-34	6.8	1.6	8.4	0.3	1.9	2.2	0.5	0.1	0.6	11.3
35-44	7.8	0.9	8.6	0.2	0.8	1.0	0.2	0.0	0.3	9.9
45-54	7.3	0.6	7.9	0.3	0.5	0.8	0.2	0.0	0.2	8.9
55-64	6.4	0.4	6.8	0.3	0.5	0.8	0.3	0.0	0.3	7.9
65 & OVER	5.2	0.3	5.5	0.4	0.7	1.2	0.3	0.0	0.4	7.1
ALL AGES	34.2	4.4	38.6	1.5	5.5	7.0	1.9	0.3	2.2	47.8
OTHER MALE HEAD - 2+ PERSONS:										
UNDER 25	0.1	0.2	0.3	0.0	0.5	0.5	0.0	0.0	0.1	0.8
25-34	0.3	0.2	0.5	0.0	0.5	0.5	0.0	0.0	0.1	1.1
35-44	0.3	0.1	0.3	0.0	0.1	0.2	0.0	0.0	0.0	0.5
45-54	0.3	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.4
55-64	0.2	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.3
65 & OVER	0.3	0.0	0.3	0.0	0.1	0.1	0.0	0.0	0.0	0.4
ALL AGES	1.4	0.6	2.0	0.2	1.3	1.5	0.1	0.1	0.2	3.6
FEMALE HEAD - 2+ PERSONS:										
UNDER 25	0.1	0.2	0.3	0.0	0.8	0.8	0.0	0.0	0.1	1.2
25-34	0.6	0.5	1.1	0.0	1.2	1.3	0.1	0.0	0.1	2.5
35-44	0.8	0.4	1.2	0.1	0.7	0.7	0.1	0.0	0.1	2.0
45-54	0.8	0.2	1.0	0.0	0.4	0.4	0.0	0.0	0.0	1.4
55-64	0.7	0.2	0.9	0.1	0.2	0.3	0.0	0.0	0.0	1.2
65 & OVER	0.9	0.2	1.1	0.1	0.2	0.3	0.0	0.0	0.0	1.4
ALL AGES	3.9	1.7	5.6	0.3	3.5	3.8	0.2	0.1	0.4	9.7
MALE LIVING ALONE:										
UNDER 25	0.1	0.1	0.2	0.0	0.6	0.6	0.0	0.0	0.1	0.8
25-34	0.4	0.2	0.7	0.1	1.0	1.0	0.1	0.0	0.1	1.8
35-44	0.2	0.1	0.3	0.0	0.4	0.5	0.0	0.0	0.0	0.8
45-54	0.2	0.1	0.3	0.1	0.4	0.4	0.0	0.0	0.1	0.8
55-64	0.3	0.1	0.4	0.0	0.3	0.4	0.0	0.0	0.1	0.9
65 & OVER	0.7	0.2	0.8	0.1	0.5	0.6	0.1	0.0	0.1	1.5
ALL AGES	1.9	0.8	2.7	0.3	3.1	3.5	0.3	0.1	0.4	6.6
FEMALE LIVING ALONE:										
UNDER 25	0.0	0.1	0.1	0.0	0.6	0.6	0.0	0.0	0.0	0.8
25-34	0.2	0.1	0.3	0.0	0.9	1.0	0.0	0.0	0.0	1.3
35-44	0.1	0.0	0.2	0.0	0.3	0.3	0.0	0.0	0.0	0.5
45-54	0.3	0.1	0.4	0.1	0.4	0.5	0.0	0.0	0.1	0.9
55-64	0.9	0.2	1.1	0.1	0.7	0.8	0.1	0.0	0.1	2.0
65 & OVER	2.8	0.5	3.3	0.4	1.8	2.3	0.3	0.0	0.3	5.8
ALL AGES	4.4	0.9	5.3	0.7	4.7	5.4	0.5	0.1	0.5	11.2
ALL TYPES	45.7	8.4	54.1	3.0	18.1	21.2	3.0	0.7	3.6	79.0

NOTE: Other male head includes all family and nonfamily households of 2 or more persons headed by a male except husband-wife households.

Table 4b  
HOUSING AND TENURE TYPE  
BY HOUSEHOLD TYPE AND AGE OF HEAD  
1979

	-SINGLE FAMILY-			--MULTIFAMILY--			----MOBILE----			TOTAL
	OWN	RENT	TOTAL	OWN	RENT	TOTAL	OWN	RENT	TOTAL	
HUSBAND-WIFE HOUSEHOLDS:										
UNDER 25	27%	23%	50%	1%	35%	36%	9%	4%	14%	100%
25-34	60	14	75	2	17	20	5	1	6	100
35-44	78	9	87	2	8	10	3	0	3	100
45-54	82	6	88	3	6	9	3	0	3	100
55-64	81	5	86	4	7	10	3	0	3	100
65 & OVER	73	5	78	6	11	17	5	0	5	100
ALL AGES	71%	9%	81%	3%	11%	15%	4%	1%	5%	100%
OTHER MALE HEAD - 2+ PERSONS:										
UNDER 25	9%	23%	32%	1%	59%	60%	3%	5%	8%	100%
25-34	26	18	44	4	45	49	4	2	7	100
35-44	49	13	62	6	26	32	3	2	6	100
45-54	58	11	68	9	21	29	2	0	3	100
55-64	61	12	72	6	18	24	3	1	4	100
65 & OVER	71	10	81	5	13	18	1	0	1	100
ALL AGES	38%	16%	54%	4%	36%	41%	3%	2%	5%	100%
FEMALE HEAD - 2+ PERSONS:										
UNDER 25	6%	21%	27%	1%	67%	68%	2%	3%	5%	100%
25-34	23	22	45	2	49	50	3	2	5	100
35-44	41	18	59	3	34	37	3	1	4	100
45-54	52	15	68	3	26	30	2	0	3	100
55-64	61	14	74	6	17	23	3	0	3	100
65 & OVER	65	11	76	6	16	22	2	0	2	100
ALL AGES	40%	17%	57%	3%	36%	39%	3%	1%	4%	100%
MALE LIVING ALONE:										
UNDER 25	7%	16%	23%	1%	69%	69%	6%	2%	8%	100%
25-34	24	12	37	5	54	58	3	2	5	100
35-44	25	11	36	5	53	58	4	2	6	100
45-54	26	13	39	7	46	54	6	2	8	100
55-64	39	11	50	5	37	42	6	2	7	100
65 & OVER	43	12	55	6	33	39	5	1	6	100
ALL AGES	29%	12%	41%	5%	48%	52%	5%	2%	6%	100%
FEMALE LIVING ALONE:										
UNDER 25	3%	10%	13%	0%	83%	83%	1%	3%	4%	100%
25-34	13	9	22	4	72	76	1	1	2	100
35-44	23	9	32	9	53	62	4	2	6	100
45-54	35	8	43	8	43	51	6	0	6	100
55-64	48	8	55	6	34	40	5	1	5	100
65 & OVER	48	8	56	7	32	39	5	1	5	100
ALL AGES	39%	8%	47%	6%	42%	48%	4%	1%	5%	100%

### Housing Choice

The type of housing occupied by a household is largely determined by its demographic character as well as its income, mobility, and longevity (which are closely related). Tables 4a and 4b shows the distribution among structure types (single family, multifamily, mobile) and tenure types (owner, renter) for households in 1979. Among traditional husband-wife households, particularly those headed by someone 35 to 64 years old, single family owner-occupied housing is the overwhelming choice. Rental multi-family housing is favored more by people living alone, especially the young. Mobile homes are favored most by young family households.

About 66% of households own their homes, up from about 63% in 1970. The modest increase in this percentage is the result of two dramatic but conflicting changes. As was noted above, there has been a dramatic increase in the number of young, non-family households. Normally this would have produced a decline in the homeownership percentage, since those households are typically renters. However, during the same period there was a sharp increase in the propensity toward homeownership by all household types (see table 5). Among husband-wife households, the homeownership percentage increased from 71% to 79%. For husband-wife households with heads under 35, the increases were even greater. For people 25 to 34 years old living alone, the ownership percentage increased from 16% to 26% just in the three years from 1976 to 1979.

Table 5  
Owner Occupants as a Percentage of Total Households

	<u>1970</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
All Households	62.9	64.6	64.7	64.8	64.8	65.2	65.5
Husband-Wife	70.7	74.8	75.4	76.1	77.1	78.1	78.5
Under 25	26.0	32.5	31.3	32.4	35.3	37.0	37.5
25 to 34	56.8	63.4	63.5	65.0	65.7	67.3	67.2
35 to 44	76.7	80.4	81.0	81.1	82.1	82.7	83.0
45 to 54	80.8	85.2	86.3	86.5	86.9	87.3	87.3
55 to 64		84.6	85.3	86.1	86.5	87.6	88.1
65 and over	78.4	81.7	82.6	82.9	83.1	84.0	84.5
Other Male, 2+ pers	55.8	48.7	49.3	48.0	47.7	48.4	48.1
Under 25	27.6	12.2	11.4	11.5	10.7	13.3	13.8
25 to 34		26.0	32.3	31.4	33.3	33.3	36.0
35 to 44		59.3	60.5	59.9	54.8	61.0	60.9
45 to 54	65.3	70.2	66.3	63.6	67.9	68.2	69.9
55 to 64		69.7	71.2	69.6	72.6	74.7	72.5
65 and over	72.2	74.0	76.3	80.2	79.7	80.2	78.4
Female Head, 2+ pers	48.0	46.7	46.5	46.0	46.0	45.8	45.6
Under 25	20.6	7.2	4.7	6.0	6.9	8.9	8.7
25 to 34		24.6	25.8	25.8	26.0	29.1	27.7
35 to 44		45.7	45.0	45.5	46.9	46.1	47.1
45 to 54	53.7	59.5	59.6	60.9	59.7	58.6	57.8
55 to 64		67.8	71.5	69.2	72.2	69.8	68.9
65 and over	69.7	70.9	71.1	70.8	70.6	70.9	72.4
Living Alone	42.7	42.8	42.5	42.2	42.2	44.2	45.2
Under 25	11.8	7.0	6.5	7.7	7.6	9.9	9.1
25 to 34		16.5	16.4	15.8	19.2	23.3	26.2
35 to 44		28.8	28.3	28.4	27.0	34.5	35.0
45 to 54	41.6	39.0	39.0	39.5	41.4	42.0	44.3
55 to 64		54.5	53.9	53.5	52.3	54.0	55.7
65 and over	54.1	56.4	56.2	56.6	57.1	58.4	58.8

The dramatic increase in the propensity toward homeownership among all types of households was due in large measure to anticipated capital gains juxtaposed against cheap mortgage finance. Homeownership was perceived, correctly, as an excellent inflation hedge. With mortgage finance not so underpriced, and with capital gains apparently not so inevitable, it is unlikely that the shift toward homeownership will continue. For many types of households, particularly those types which historically have not been homeowners, it may even be partly reversed. Since the population age distribution is now shifting toward the middle-aged groups who are most inclined toward homeownership, the aggregate percentage of homes which are owner-occupied should continue to increase.

Affordability

Over the past decade, house prices and average monthly mortgage payments on newly purchased houses rose faster than incomes (see table 6). Yet, as discussed above, there was a shift toward home-ownership over the same period and there was an increase in the size and an improvement in the quality of new homes built.

Table 6  
HOUSING COST VS. INCOME

	MEDIAN EXISTING HOME	MORTGAGE RATE	MORTGAGE PAYMENT	MEDIAN FAMILY INCOME	PRICE /INCOME	PAYMENT /INCOME
1960	\$15,950	6.26%	\$ 884	\$5,620	2.84	0.16
1965	18,500	5.81%	978	6,957	2.66	0.14
1970	23,000	8.45%	1,584	9,867	2.33	0.16
1971	24,800	7.74%	1,598	10,285	2.41	0.16
1972	26,700	7.60%	1,697	11,116	2.40	0.15
1973	28,900	7.95%	1,900	12,051	2.40	0.16
1974	32,000	8.92%	2,301	12,902	2.48	0.18
1975	35,300	9.01%	2,559	13,719	2.57	0.19
1976	38,100	8.99%	2,757	14,958	2.55	0.18
1977	42,900	9.01%	3,109	16,009	2.68	0.19
1978	48,700	9.54%	3,698	17,640	2.76	0.21
1979	55,700	10.77%	4,687	19,661	2.83	0.24
1980	62,200	12.66%	6,044	21,023	2.96	0.29
1981	66,400	14.70%	7,413	23,000	2.89	0.32

Mortgage payment based on 30 year mortgage with 25% down payment

Data sources: Income - Census Bureau (Current Population Survey)  
Mortgage Rate - Federal Home Loan Bank Board  
House Price - National Assn. of Realtors

This seemingly anomalous experience reflects the fact that the homebuyer was looking beyond the initial price and monthly cash outlay and was taking account of income tax savings and future capital gains. Table 7 shows the total net cost of homeownership, with the assumption that home buyers expected house prices to increase at the rate experienced in the preceding three years.

Table 7  
ANNUAL USER COST OF HOUSING

	(1) MORTGAGE PAYMENT	(2) OPPORTUNITY COST OF DOWNPAYMENT	(3) PROPERTY TAX	(4) MAINTENANCE	(5) INCOME TAX SAVINGS	(6) EXPECTED CAPITAL GAIN	(7) USER COST (1)+(2)+(3) +(4) -(5)-(6)	USER COST /INCOME
1970	1,584	462	345	230	334	1,384	903	9.2%
1971	1,598	458	372	248	244	1,781	651	6.3%
1972	1,697	481	401	267	182	1,848	816	7.3%
1973	1,900	538	434	289	285	2,262	612	5.1%
1974	2,301	686	480	320	429	2,808	549	4.3%
1975	2,559	779	530	353	392	3,407	422	3.1%
1976	2,757	803	572	381	416	3,638	458	3.1%
1977	3,109	860	644	429	441	4,357	244	1.5%
1978	3,698	1,063	731	487	740	5,456	-217	-1.2%
1979	4,687	1,341	836	557	1,022	7,437	-1,038	-5.3%
1980	6,044	1,857	933	622	1,587	8,112	-243	-1.2%
1981	7,413	2,352	996	664	2,105	7,153	2,168	9.4%

Opportunity cost based on AAA bond rate

Tax savings includes absence of tax on opportunity cost and is based on estimates of marginal tax rates and excess standard deductions shown in Douglas Diamond, "Taxes, Inflation, Speculation, and the Cost of Homeownership" AREUEA Journal (Fall 1980).

The ratios of house price to income and monthly payment to income are not irrelevant. They are measures of the cash flow constraints. The current problem of housing affordability is primarily a problem of cash flow rather than overall cost, related to the effects of chronic inflation on interest rates.

To see the impact of inflation on mortgage payments, consider a situation where all wages, prices, and nominal interest rates fully reflect the inflation rate and where the following conditions exist at the start:

Household Income = \$20,000  
 House Price = \$50,000  
 Down Payment = \$10,000  
 Real Interest Rate = 3 1/2%  
 Real Income Growth = 2%

Table 8a shows the mortgage payment at different points over the life of the mortgage loan under an assumption of no inflation. Initially, mortgage payments absorb 10.9% of the household's gross income. Because of the assumed increase in real income, the fixed mortgage payment becomes gradually less of a burden over time, and in the 25th year represents 6.8% of the household's income.

Table 8a  
 MORTGAGE PAYMENTS WITH  
 INFLATION RATE = 0%

YEAR	ANNUAL MORTGAGE PAYMENT	INCOME	PAYMENT /INCOME	MARKET VALUE OF HOUSE	LOAN PRINCIPAL	EQUITY
1	2,175	20,000	10.9%	50,000	39,225	10,775
2	2,175	20,400	10.7%	50,000	38,423	11,577
3	2,175	20,808	10.5%	50,000	37,593	12,407
4	2,175	21,224	10.2%	50,000	36,734	13,266
5	2,175	21,649	10.0%	50,000	35,845	14,155
10	2,175	23,902	9.1%	50,000	30,910	19,090
15	2,175	26,389	8.2%	50,000	25,049	24,951
20	2,175	29,136	7.5%	50,000	18,087	31,913
25	2,175	32,168	6.8%	50,000	9,820	40,180
30	2,175	35,516	6.1%	50,000	0	50,000

Now consider a world with a 12% inflation rate. The nominal interest rate becomes 15 1/2%, requiring an annual mortgage payment of \$6,283, representing 31.4% of income in the first year. With income increasing at 14% per year (2% real growth plus the inflation rate), the fixed mortgage payment represents only 9.7% of income in ten years and on 2.6% in twenty.

Table 8b  
MORTGAGE PAYMENTS WITH  
INFLATION RATE = 12%

YEAR	ANNUAL MORTGAGE PAYMENT	INCOME	PAYMENT /INCOME	MARKET VALUE OF HOUSE	LOAN PRINCIPAL	EQUITY
1	6,283	20,000	31.4%	50,000	39,917	10,083
2	6,283	22,800	27.6%	56,000	39,820	16,180
3	6,283	25,992	24.2%	62,720	39,709	23,011
4	6,283	29,631	21.2%	70,246	39,581	30,666
5	6,283	33,779	18.6%	78,676	39,433	39,243
10	6,283	65,039	9.7%	138,653	38,266	100,387
15	6,283	125,226	5.0%	244,355	35,870	208,485
20	6,283	241,110	2.6%	430,636	30,943	399,693
25	6,283	464,236	1.4%	758,927	20,816	738,111
30	6,283	893,845	0.7%	1,337,490	0	1,337,490

Table 8c shows an intermediate case with 6% inflation:

Table 8c  
MORTGAGE PAYMENTS WITH  
INFLATION RATE = 6%

YEAR	ANNUAL MORTGAGE PAYMENT	INCOME	PAYMENT /INCOME	MARKET VALUE OF HOUSE	LOAN PRINCIPAL	EQUITY
1	4,067	20,000	20.3%	50,000	39,733	10,267
2	4,067	21,600	18.8%	53,000	39,440	13,560
3	4,067	23,328	17.4%	56,180	39,120	17,060
4	4,067	25,194	16.1%	59,551	38,769	20,782
5	4,067	27,210	14.9%	63,124	38,385	24,739
10	4,067	39,980	10.2%	84,473	35,842	48,632
15	4,067	58,743	6.9%	113,044	31,839	81,205
20	4,067	86,312	4.7%	151,278	25,537	125,741
25	4,067	126,820	3.2%	202,443	15,617	186,826
30	4,067	186,339	2.2%	270,914	0	270,914

Relative to income and relative to purchasing power, the traditional mortgage instrument in an inflationary environment requires the borrower to make larger payments at the start and smaller payments in the later years. What is required in order to take account of chronic inflation is a mortgage instrument which calls for smaller nominal monthly payments at the start.

While lenders have produced a plethora of new mortgage instruments in the past two years, in most cases these new instruments have addressed the problems of lenders but not the problems of borrowers.

Adjustable rate mortgages do not address the borrower's cash flow problem. If rates are high but constant, as in the example above, an adjustable rate mortgage effectively becomes a fixed rate mortgage. It is only in the very limited sense that ARM's tend to carry slightly lower rates that they represent greater affordability.

Short-term interest-only mortgages do not produce a substantial reduction in payments, because at high rates very little amortization takes place in the initial years.

There are several mortgage instruments which do address the cash flow affordability problem. One major category is the Graduated Payment Mortgage, which provides for payments which are lower at first and which increase gradually under a predetermined schedule. Generally, this involves some negative amortization in the initial years. A second category is the Shared Appreciation Mortgage, by which the borrower sacrifices a share of the capital gains in return for a lower payment. A third type, the Equity Adjusted Mortgage, reduces the payments by increasing the loan as the value of the house increases--a sort of automatic second mortgage to pay the first mortgage.

Although the FHA section 245 graduated payment program has been relatively successful--accounting for about a third of FHA loans on 1 to 4 family homes--lenders have generally not responded to the home buyer's cash flow problems by offering these alternative mortgage instruments. The problem has been addressed instead by a variety of ad hoc arrangements involving participation by builders and sellers of existing homes. These ad hoc arrangements, which have come to be known as "creative financing" include buy-downs, loan assumptions, and seller financing. The current widespread use of creative financing is discussed below.

The reluctance of lenders to offer instruments such as graduated payment mortgage is often justified in terms of greater risk associated with instruments with negative amortization. The risk of default consists in part of the possibility of nonpayment and in part of the uncertainty that the securing property is sufficient collateral from which to obtain restitution. A graduated payment loan may increase the uncertainty about whether the collateral is sufficient, but it will generally decrease the likelihood of default, at least compared to alternatives such as loosening standards for maximum payment to income ratios, entering into buy-down arrangements providing for abrupt payment increases after a few years, or making balloon payment short term loans.

Mobility

Americans have tended to be a restless lot. Nearly half of the population in 1980 lived in a different house than in 1975. Most of those who moved during that period remained in the same county, but about 20% of movers moved from another state or from abroad. 1/ While movement among homeowners was much less frequent than among renters (only 11% of homeowners moved in 1978 vs 37% of renters 2/), the housing turnover resulting from this frequent movement is a major contribution to mortgage credit demand.

The most mobile age group consists of people 25 to 30 years old. Once past 30, people are increasingly likely to stay put. The percent of people in 1980 who lived in a different house than in 1975 was as follows:

Table 9  
People Living in Different House in 1980 than in 1975

<u>Age</u>	<u>All Movers</u>	<u>Interstate</u>
5 to 9	61.1%	11.4%
10 to 14	45.7	8.5
15 to 19	39.5	7.1
20 to 24	67.9	12.9
25 to 29	80.8	16.8
30 to 34	67.5	13.8
35 to 44	46.9	9.2
45 to 54	30.4	5.8
55 to 64	25.1	4.6
65 & Over	21.2	4.2

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1/ U.S. Bureau of the Census, Current Population Reports, Series P20, No. 368, Geographical Mobility March 1975 to March 1980 (U.S. GPO, Washington, D.C. 1981)

2/ U.S. Bureau of the Census, Current Housing Reports, Series H-150-78, Housing Characteristics of Recent Movers for the United States and Regions: 1978, Annual Housing Survey, Part D (USGPO, Washington, 1980).

People with more education are likely to move more often and further than those with less education. The relationship to income is less clear.

The population age structure implies continued high mobility over the remainder of the decade. On the other hand, high mortgage rates discourage mobility, particularly among homeowners with non-assumable low rate mortgages. On balance, we expect the turnover of the owner-occupied housing stock to rise for most of the decade but to remain below the feverish rate of 1978. However, because the size of the housing stock will be greater, the number of existing home sales (which equals turnover rate times stock) will exceed the 1978 record in the latter part of the 1980's.

#### Interstate Migration

Net migration is by far the most important factor producing differences in relative housing construction activity among states.

The dominant net migration flows continue to be out of the Northeast and North Central states and into the South and West. Also, there is a continuing migration out of the central cities and into the suburbs and nonmetropolitan areas.

The movement of population both reflects and produces the more rapid growth of industry in the Sunbelt and non-urban areas. The movement of industry to the hinterlands has often been attributed to lower wage costs. But wage differentials are no greater now than they were during the extended period when industry and population became concentrated in the urban areas of the Northeast and North Central regions. However, in the past it was much easier to operate a busi-

ness in the established areas convenient to transportation, supplying industries, markets, skilled labor, etc. Changes in the technology and economics of transportation (notably as a result of the construction of the Interstate Highway System), improvements in communications, changes in the technology of production for many industries, and the increased attraction of the boondocks to skilled labor all combined to reduce the relative advantages of the older urban areas. Once set in motion, the process of industrial decentralization feeds on itself, as the infrastructure for further development is established. This process has by no means run its course, and we see no reason to expect a reversal of these trends in the foreseeable future.

In explaining and forecasting net migration of population by state we have found that the primary determinants are relative employment opportunities (measured as the difference between the state unemployment rates and national unemployment rate) and relative real income (the ratio of state per capita personal income divided by state cost of living index to national per capita personal income divided by national CPI).

The fact that workers are attracted by high real income, while industry is attracted by low nominal wages and other low costs points to the importance of living costs and costs of production in determining net migration flows.

Local area cost statistics are difficult to come by. At RDA we have constructed a state cost of living index comparable to the national CPI based on data from the BLS on prices in selected metropolitan areas. Table 10 shows these data and several other measures of costs for states. Note that although many of the sunbelt states have lower average costs, the faster-growing low cost areas have shown

above-average increases in living costs since 1970, so that their cost advantage is diminishing.

Table 10  
 SELECTED MEASURES OF LIVING COSTS - 1980  
 WITH PERCENT CHANGE 1970-80

	RDA "CPI" INDEX			500 KWH ELECTRIC			MEDIAN HOUSE(1)			PER CAP TAXES(2)		
	1980	RANK	CHG	1980	RANK	CHG	1980	RANK	CHG	1980	RANK	CHG
ALABAMA	216	48	114%	23.63	32	153%	33,900	49	178%	386	51	167%
ALASKA	338	1	118	24.20	30	62	76,300	3	236	1,234	2	409
ARIZONA	243	26	119	31.02	11	159	54,700	14	236	919	7	178
ARKANSAS	217	47	118	22.61	37	122	31,100	51	196	434	50	248
CALIFORNIA	259	6	116	22.79	36	127	84,500	2	266	887	9	129
COLORADO	252	15	127	22.85	35	128	64,100	7	271	788	14	180
CONNECTICUT	259	5	107	33.93	8	210	65,600	6	157	763	16	173
DELAWARE	232	38	111	37.76	2	243	44,400	28	160	580	32	204
DIST OF COLUMBIA	248	20	108	20.09	45	127	68,800	4	223	1,067	4	213
FLORIDA	209	51	105	25.53	23	127	45,100	26	201	453	47	143
GEORGIA	219	46	115	21.70	42	136	36,900	41	153	567	35	186
HAWAII	277	3	100	37.65	3	180	118,100	1	236	1,028	5	141
IDAHO	242	29	125	13.65	50	46	45,600	23	223	536	37	158
ILLINOIS	254	13	112	27.55	17	155	52,800	16	167	788	15	120
INDIANA	242	28	113	26.68	20	159	37,200	40	170	599	29	126
IOWA	239	32	115	28.80	13	141	40,600	32	192	738	19	187
KANSAS	236	35	116	25.21	27	164	37,800	39	212	694	22	166
KENTUCKY	219	45	117	20.34	43	119	34,200	48	171	487	43	136
LOUISIANA	216	49	114	20.32	44	94	43,000	30	195	478	44	244
MAINE	261	4	124	26.05	21	120	37,900	38	196	635	26	141
MARYLAND	244	24	115	28.57	14	146	58,300	11	212	849	10	128
MASSACHUSETTS	280	2	106	34.41	6	196	48,400	18	135	1,246	1	252
MICHIGAN	250	18	116	25.65	22	230	39,000	35	123	831	11	186
MINNESOTA	247	21	113	23.57	33	116	53,100	15	195	792	13	177
MISSISSIPPI	215	50	120	25.02	28	160	31,400	50	180	477	45	171
MISSOURI	243	27	115	27.01	19	138	36,700	42	155	568	34	139
MONTANA	243	25	124	14.99	48	31	46,500	22	232	643	24	219
NEBRASKA	236	34	116	22.46	40	162	38,000	37	206	751	18	184
NEVADA	249	19	118	25.31	25	137	68,700	5	207	515	39	60
NEW HAMPSHIRE	257	9	115	34.41	7	202	48,000	19	193	460	46	233
NEW JERSEY	258	8	100	35.12	5	234	60,200	8	157	795	12	176
NEW MEXICO	241	30	122	30.85	12	197	45,300	25	248	507	40	210
NEW YORK	257	10	103	40.07	1	197	45,600	24	103	1,233	3	158
NORTH CAROLINA	223	42	117	24.05	31	156	36,000	44	181	521	38	191
NORTH DAKOTA	233	37	118	22.94	34	84	43,900	29	238	546	36	156
OHIO	244	23	117	28.26	15	171	44,900	27	155	599	28	244
OKLAHOMA	226	41	119	22.51	38	137	35,600	45	221	449	48	231
OREGON	254	14	123	16.01	46	128	56,900	13	269	707	21	153
PENNSYLVANIA	245	22	111	31.56	10	220	39,100	33	188	641	25	291
RHODE ISLAND	258	7	107	35.42	4	234	46,800	21	157	755	17	236
SOUTH CAROLINA	220	44	117	25.40	24	154	35,100	47	170	501	41	190
SOUTH DAKOTA	233	36	117	24.92	29	112	36,600	43	221	591	30	112
TENNESSEE	221	43	114	14.80	49	93	35,600	46	185	436	49	201
TEXAS	231	39	122	25.28	26	149	39,100	34	226	489	42	236
UTAH	251	17	122	27.86	16	204	57,300	12	241	681	23	182
VERMONT	257	12	119	27.10	18	164	42,200	31	157	617	27	83
VIRGINIA	238	33	114	33.10	9	228	48,000	20	181	590	31	181
WASHINGTON	257	11	122	9.40	51	56	59,900	9	224	718	20	125
WEST VIRGINIA	226	40	120	22.49	39	135	38,500	36	241	571	33	240
WISCONSIN	251	16	117	21.71	41	126	48,600	17	181	902	8	147
WYOMING	240	31	125	15.43	47	60	59,800	10	291	948	6	252

NOTES: (1) Median house value as reported in decennial census.  
 (2) Total state and local property, general sales, and individual income tax divided by resident population.

## Housing Supply

### The Supply of Existing Housing

In the short run, most housing demand is met by existing structures. Even in times of peak production, new construction in one year will represent less than 3% of the existing stock.

The quality of the housing stock has now improved to the point that, by most measures, there are very few remaining substandard units.

While not all units which are removed from the stock are substandard, the decline in substandard units suggests that replacement demand for housing will be smaller in the coming years than it has been in the past.

The breakdown of the housing stock into structure types in 1979 was as follows:

Table 11

	Total 1979 Stock		Stock built since 1970	
	<u>Thousands</u>	<u>Percent</u>	<u>Thousands</u>	<u>Percent</u>
All Year Round Units	84,586	100.0	18,146	100.0
Single Family Detached	53,879	63.7	9,760	53.8
Single Family Attached	3,401	4.0	772	4.3
2 to 4 Units	10,785	12.8	1,482	8.2
5 or more: Lowrise	9,081	10.7	3,195	17.6
Highrise	3,829	4.5	829	4.6
Mobile Homes	3,610	4.3	2,108	11.6

Source: Bureau of the Census, Annual Housing Survey, 1979

The relatively large proportions of multifamily units and mobile units added since 1970 reflect booms in those sectors in the early

part of the decade. More recently, single family units have accounted for a larger share. With the demographic changes of the coming decade, we expect a further increase in the single family share of new construction.

#### Characteristics of New Construction

Throughout most of the last decade, new single family homes showed consistent, significant, improvement in terms of size and amenities. This is illustrated by the measures shown in table 12. In addition there were improvements in construction quality, most notably in the area of energy efficiency. After 1978, however, there has been some tendency toward smaller, less elaborate homes, consistent with the increase in user cost discussed above. The affordability problems have led a number of observers to predict that new houses will be smaller and more spartan in the coming years.

Table 12  
 Characteristics of SF Homes Completed

<u>Year</u>	<u>Floor Area</u> (Square Feet)		-----Percent of homes with-----				
	<u>Avg.</u>	<u>Median</u>	<u>2 or more</u> <u>Bathrooms</u>	<u>4 or more</u> <u>Bedrooms</u>	<u>Fire-</u> <u>place</u>	<u>Central</u> <u>Air</u>	<u>2 Car</u> <u>Garage</u>
1966	1,535	1,460	50%	24%		25%	
1967	1,570	1,505	52	25		28	
1968	1,580	1,500	51	26		31	48%
1969	1,605	1,530	56	26	45%	36	49
1970	1,500	1,385	48	24	35	34	39
1971	1,520	1,375	48	24	36	36	39
1972	1,555	1,405	53	23	38	43	42
1973	1,660	1,525	60	23	44	49	48
1974	1,695	1,560	61	23	49	48	52
1975	1,645	1,535	60	21	52	46	53
1976	1,700	1,590	67	23	58	49	59
1977	1,720	1,610	70	23	61	54	60
1978	1,755	1,655	73	24	64	58	62
1979	1,760	1,645	74	23	62	60	62
1980	1,740	1,595	73	20	57	63	56

Source: Bureau of the Census, Construction Reports (Series C25)

Note: The 1970 decline is due to the influence of the Section 235 subsidy program.

While there may be some further movement toward smaller houses, with more town houses and cluster housing, we doubt that there will be any substantial shift in that direction. The affordability problems will probably be no more severe in the next few years than they are now, provided that inflation continues to abate and nominal interest rates decline. Moreover, single people, young couples, and first time home buyers, who would tend to favor smaller homes, are likely to account for a smaller share of new homes sales.

In some localities, land use controls or natural limits may force builders to use smaller lots and to build smaller, clustered houses.

The Mobile Home Share

Similar to the view that homes in the future will be smaller and more spartan is the idea that mobile homes (also known as manufactured housing) are the wave of the future. Mobile home shipments have displayed relative strength in the current housing depression, accounting for 18% of the total supply of new housing units in 1981.

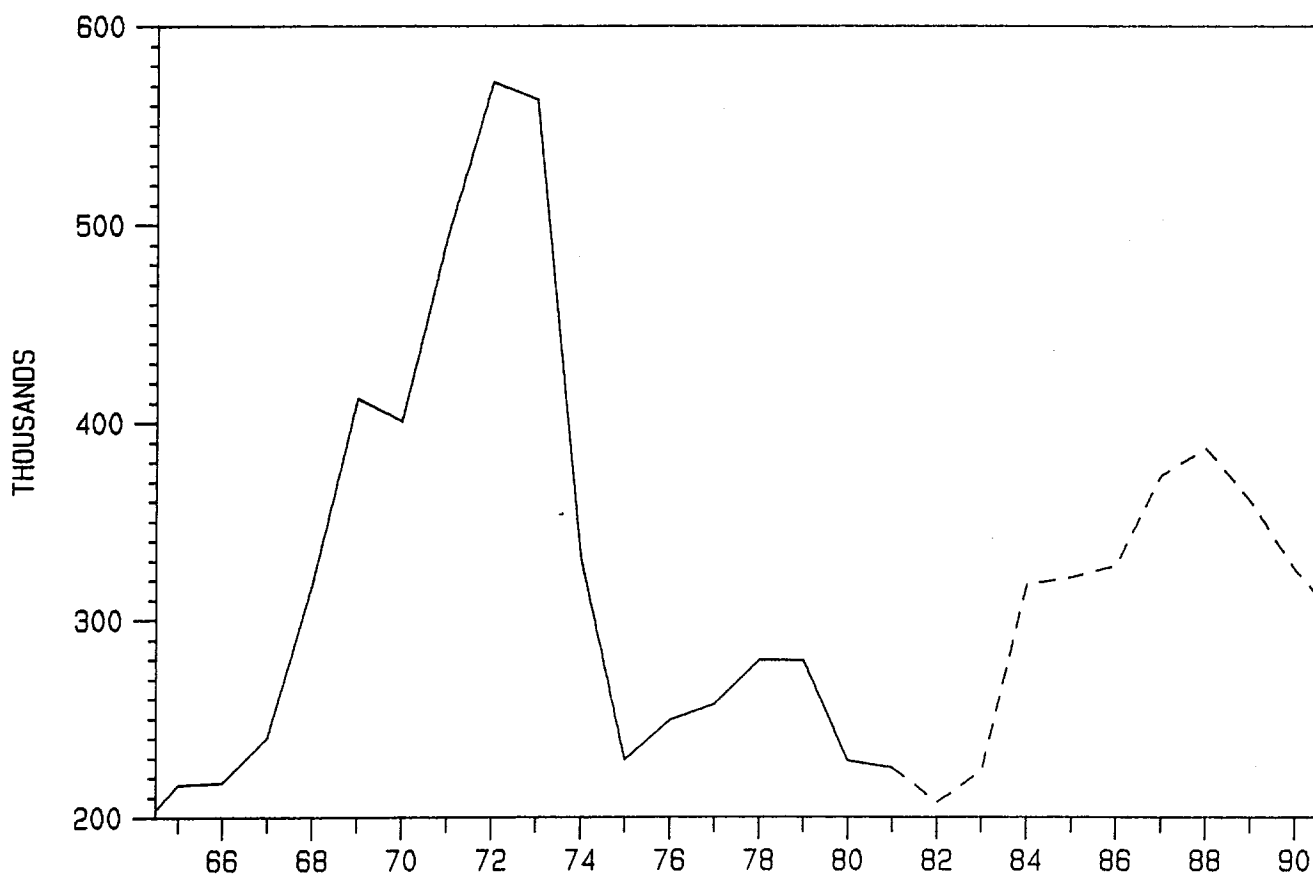
There are a number of reasons for viewing the prospects of mobile homes favorably, including continuing improvements in product quality, relaxation of zoning restrictions, and the fact that mobile homes have had their greatest acceptance in the sunbelt and nonmetropolitan areas which are enjoying the greatest population growth.

Tables 4a and 4b showed the distribution of mobile home occupancy among various household types in 1979. While the changes in the age structure over the next few years have very favorable implications for single family conventional housing, the implications for mobile homes are much less favorable. The groups with greatest propensity to live in mobile homes are households with heads under 35 years old, and especially those under 25 years old. The peak growth for these groups has already passed, and the group under age 25 is declining in size, reflecting the post-1962 "baby bust."

After increasing from 2.1 million in 1970 to 3.7 million in 1974, the number of occupied mobile homes remained essentially stagnant for the remainder of the decade of the 1970's. Between 1974 and 1979, the number of occupied mobile homes actually declined slightly to about 3.6 million. The 1.3 million mobile homes shipped during that period represented replacement demand. This indicates a removal rate of about 7 1/2% per year, implying an average lifetime of less than thir-

teen years--not very comforting for lenders making 15- to 20-year loans. The quality of mobile homes has improved significantly over the past decade, particularly since the implementation of national standards in 1976. While this should enhance the attraction of mobile home ownership, it also suggests a gradual decline in the replacement demand.

Figure 5  
MOBILE HOME PLACEMENTS



The quality issue was a major factor in the loss of popularity after 1972. In the late 1960's and early 1970's many new firms

entered the industry, often producing shoddy products and disappearing before purchasers had a chance to seek redress. Many purchasers simply abandoned the units, resulting in a leap in the rate of repossessions by lenders. The disenchantment of both households and lenders has lingered.

The decline in the propensity toward mobile home living also reflects the perception that ownership of conventional homes represents a superior inflation hedge.

What are mobile homes like? Although the industry prefers to talk about the large multi-wide units which are purported to rival conventionally-built houses, three-fourths of mobile home shipments are single-wide units 12 to 14 feet in width shipped in one piece and containing 600 to 900 square feet of floor space. Although 75% are owner occupied, most owners do not own the land underneath. About half of mobile homes are located in mobile home parks. Only 5% are ever moved after being placed on a site.

The affordability problems facing potential home buyers, the tarnishing of the investment image of conventional housing, improved availability of long-term financing for mobile home purchases, and technological advances all suggest a favorable outlook for mobile homes. However, the mobile home industry will be swimming against the tide of demographic change. It is unlikely that unit sales will ever approach the peaks of 1971-73.

#### Federal Government

Direct Federal government involvement in housing falls into three general categories: rental subsidies, mortgage credit, and tax expenditures.

The rent subsidy programs, which apply to both privately and publicly owned rental housing, consists of payments to landlords of the differences between the rent charged for a unit and what the subsidized tenant is presumed to be able to afford. Many of the rental subsidy programs (especially Public Housing, Section 8 new construction, Section 8 rehabilitation, and Farmers Home Administration rental subsidies) have attempted to also increase the housing supply while giving assistance to low-income subsidy recipients. This has been done by promising to provide subsidized tenants at generous rents for extended periods (up to 40 years) to developers or public housing authorities who construct new housing or rehabilitate existing housing. Generally, these subsidy agreements have been further augmented by below market rate financing, either through access to tax exempt financing or through purchases of project mortgages at subsidized yields under the GNMA "Tandem Plan".

While the efforts to increase housing supply through rent subsidies and public housing subsidies have succeeded in producing a substantial number of new units, this has been accomplished at tremendous long-term cost. The open-ended commitments to provide future subsidies are estimated by the Administration to have already reached \$250 billion. The administration has proposed to eliminate virtually all subsidy commitments for new construction.

Except for GNMA Tandem Plan purchases of project mortgages at below market rates and Farmers Home Administration interest rate subsidies for home purchases by low income households in rural areas, most government mortgage credit programs consist of guarantees under which home buyers are able to borrow under more favorable terms

because their debts are partially enshrouded in the risklessness attributed to government obligations. These programs do not require direct expenditures by the government, although they do implicitly have a cost to government and corporate borrowers because they preempt credit.

Several important developments are underway in these federal credit operations. FHLMC has asked congress to transform it into a private corporation like FNMA, which would allow it to expand its activities. Both FNMA and FHLMC have pilot programs or plans to guarantee passthrough securities similar to Ginnie Maes, but based on pools of conventional, rather the FHA/VA, mortgages.

The Administration has proposed cutting back the GNMA passthrough and FmHA programs and making FHA and VA mortgages less attractive. However, these popular, successful programs will probably be continued. The GNMA Tandem Plan program appears to be on the way out, however.

#### Tax Benefits

Several provisions of the federal income tax code provide generous support for homeownership. The primary provisions affecting owner-occupants of single family homes are:

- Deductibility of Home Mortgage Interest Payments
- Deductibility of Property Tax
- Deferral of Capital Gains
- Exclusion of \$125,000 of capital gains for taxpayers 55 and older

Except for the special treatment of capital gains, these benefits are not exclusively housing-related. Taxes and interest are generally deductible.

The effect of these provisions is considerable. The Congressional Budget Office estimates that in 1982 homeowners will receive benefits of \$39 billion, with 2/3 of the benefit result from the deductibility of interest 1/.

The value of the deductibility of interest increases under inflation. If inflation is at 10% and the real interest rate is 3%, producing a nominal interest rate of approximately 13%, (actually 13.3%) then for a taxpayer in a 25% bracket or above, the nominal after-tax interest rate is less than 10% and the real after-tax rate is negative. It is this phenomenon, as well as extraordinary increases in house prices and low pretax real rates, which produced the very attractive user cost of housing discussed above.

There have been recurring suggestions that the deductibility of mortgage interest rates should be eliminated or limited or that the imputed rental value of owner-occupied homes should be counted as income.

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1/ Congressional Budget Office, The Tax Treatment of Homeownership: Issues and Options (Washington, Government Printing Office, September, 1981).

HOUSING FINANCE

Demand for Mortgage Credit

The fundamental factors affecting the demand for mortgage originations are the volume of new and existing home sales and house prices, plus changes in loan-to-value ratios and in the proportion of homes purchased without institutional mortgages (bought with cash, assumed mortgages, or seller financing).

Approximately 90% of home purchases involve some type of mortgage credit. In the last few years, high mortgage interest rates have caused dramatically increased use of assumptions and seller financing, reducing the value of originations relative to the value of transactions in existing homes. In the case of new homes, high mortgage rates have also brought forth various creative responses, but these have typically still involved institutional mortgage originations. The extent of creative financing is suggested by the ratio of mortgage originations to sales volume times average loan to value ratio:

Table 13  
 INSTITUTIONAL FINANCING  
 (mortgage originations relative to  
 sales volume times avg. loan/value)

	NEW HOMES	EXISTING HOMES
1972	95%	97%
1973	85	89
1974	87	74
1975	87	76
1976	85	86
1977	89	91
1978	90	79
1979	88	72
1980	92	55
1981	73	45

As the decade proceeds, unless there are further increases in mortgage rates these ratios should increase back to the more normal 80% to 90% range. Together with increases in the number of new and existing homes sold and increases in house prices, this implies greatly increased credit demands. The need to refinance balloon-payment loans made in the past two years will also increase housing credit demands.

Table 14  
MORTGAGE ACTIVITY BY MAJOR INSTITUTIONAL LENDERS  
1981  
(millions of dollars)

	ORIGI- NATIONS	PURCHASES	SALES	NET ACQUI- SITIONS	REPAYMENTS	CHANGE IN HOLDINGS	HOLDINGS
SAVINGS & LOANS	41,980	10,037	12,402	39,615	24,477	15,138	424,852
MUTUAL SAVINGS BANKS	4,023	245	446	3,822	4,129	-307	67,886
COMMERCIAL BANKS	20,780	2,801	4,023	19,558	12,734	6,824	153,705
MORTGAGE COMPANIES	23,826	4,360	26,715	1,471	1,114	357	7,402
LIFE INSURANCE COS.	478	159	255	382	883	-501	16,875
PRIVATE PENSION FUNDS	133	31	5	159	71	88	891
STATE & LOCAL PENSIONS	5	430	15	420	121	299	3,810
R.E.I.'S	26	0	13	13	31	-18	0
FEDERAL CREDIT AGENCIES	4,464	12,397	7,047	9,814	3,435	6,379	70,726
STATE & LOC CREDIT	1,563	5,016	0	6,579	641	5,938	27,644
MORTGAGE POOLS	0	20,340	3,085	17,255	3,255	14,000	133,454
ALL 11 LENDERS	97,278	55,817	54,006	99,089	50,891	48,198	907,245

Source: Dept. of H.U.D.

Table 15  
MORTGAGE ACTIVITY BY MAJOR INSTITUTIONAL LENDERS  
1981  
(percent of all lenders)

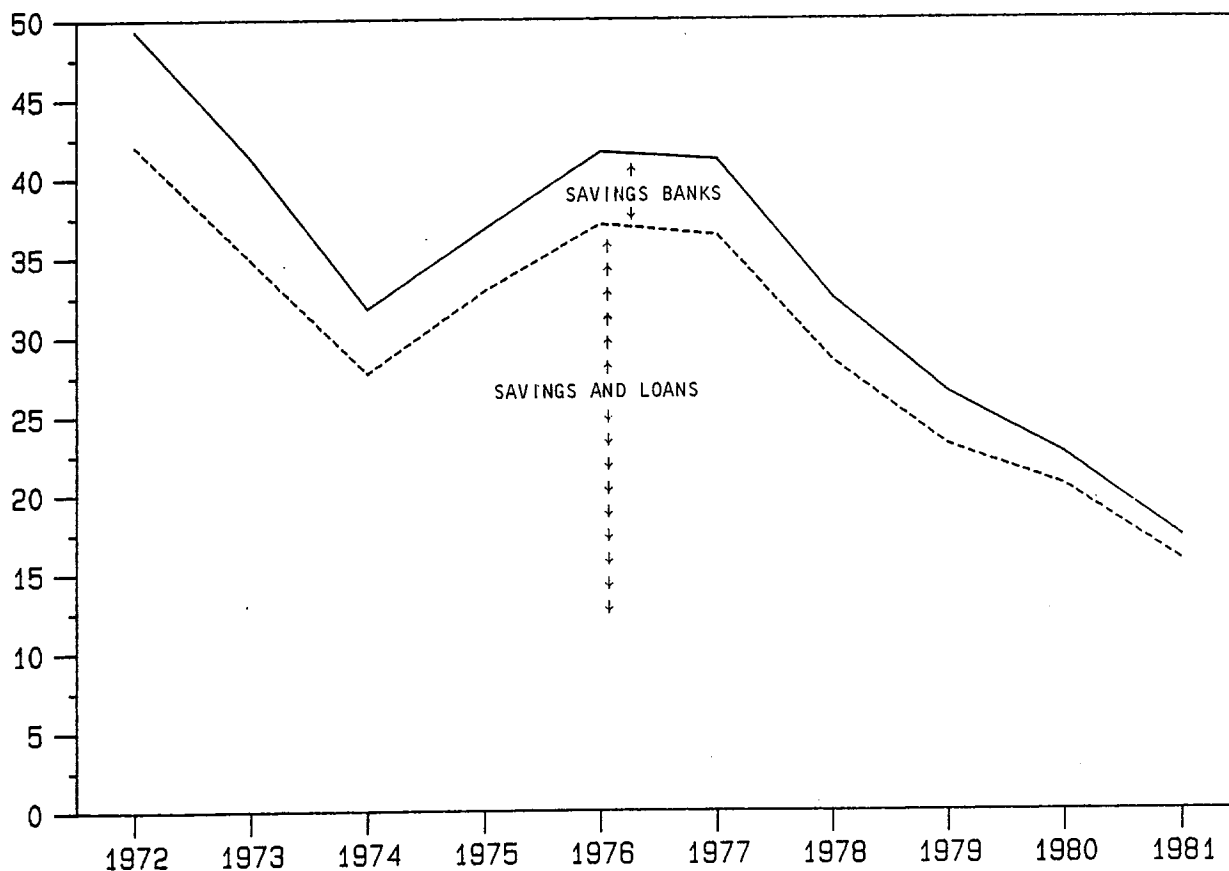
	ORIGI- NATIONS	PURCHASES	SALES	NET ACQUI- SITIONS	REPAYMENTS	CHANGE IN HOLDINGS	HOLDINGS
SAVINGS & LOANS	43.2	18.0	23.0	40.0	48.1	31.4	46.8
MUTUAL SAVINGS BANKS	4.1	0.4	0.8	3.9	8.1	-0.6	7.5
COMMERCIAL BANKS	21.4	5.0	7.4	19.7	25.0	14.2	16.9
MORTGAGE COMPANIES	24.5	7.8	49.5	1.5	2.2	0.7	0.8
LIFE INSURANCE COS.	0.5	0.3	0.5	0.4	1.7	-1.0	1.9
PRIVATE PENSION FUNDS	0.1	0.1	0.0	0.2	0.1	0.2	0.1
STATE & LOCAL PENSIONS	0.0	0.8	0.0	0.4	0.2	0.6	0.4
R.E.I.T.'S	0.0	0.0	0.0	0.0	0.1	0.0	0.0
FEDERAL CREDIT AGENCIES	4.6	22.2	13.0	9.9	6.7	13.2	7.8
STATE & LOC CREDIT	1.6	9.0	0.0	6.6	1.3	12.3	3.0
MORTGAGE POOLS	0.0	36.4	5.7	17.4	6.4	29.0	14.7
-----							
ALL 11 LENDERS	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Dept. of H.U.D.

### Mortgage Supply

Most mortgage credit has been supplied by depository institutions, particularly thrift institutions. Tables 14 and 15 show the share each of the 11 major institutions had in mortgage lending in 1981. Although the thrifts' share of total institutional originations is down from a peak of 60% in 1976, thrift institutions continue to be the dominant element both in originations and in holdings of mortgages. However, the capacity of thrifts to provide mortgage credit from their own funds depends on the flows of deposits and the rate at which their previous mortgage investments are repaid.

Figure 6  
THRIFT MORTGAGE ACQUISITIONS  
AS A PERCENT OF TOTAL HOME SALES VOLUME



The decline in the ability of thrifts to provide mortgage credit has actually been greater than their share of institutional originations would suggest. S&L's, which until 1977 were net purchasers of mortgages, have now emerged as net sellers. Moreover, in the past two years a major share of housing credit has had to come from noninstitutional sources (mainly, home sellers). Figure 6, which shows the ratio of thrifts' mortgage acquisitions (originations minus net sales) to housing sales volume demonstrates the extent of the gap between demand for housing credit and the ability of thrifts to fulfill that demand.

The inability of the thrifts to fund as large a portion of mortgage originations from deposit flows as previously results from changes in the regulation of depository institutions as well as increased sophistication on the part of savers. Table 16 shows the share of deposits going to depository institutions--Savings & Loans, Mutual Savings Banks, and Commercial Banks--and money market funds.

Table 16  
TIME DEPOSIT FLOWS  
(billions of dollars)

	Savings & Loans	Savings Banks	Commercial Banks	Money Funds
1972	31.8	10.1	43.5	--
1973	19.9	4.9	51.6	--
1974	15.5	2.2	59.1	2.4
1975	41.9	11.2	26.6	1.3
1976	49.5	13.0	29.6	--
1977	50.0	11.1	60.6	0.2
1978	44.0	8.7	65.3	6.9
1979	38.7	3.3	45.6	34.4
1980	40.6	7.0	95.3	29.2
1981	13.3	0.5	86.3	107.5

Includes interest credited

Sources: Federal Home Loan Bank Board, National Assn. of Mutual Savings Banks, Federal Deposit Insurance Corp., Federal Reserve (Flow of Funds)

While the thrift industry will probably not be permitted to disappear entirely, it is unlikely to regain its previous vitality or protected position. Even under the most favorable of circumstances, by 1990 thrifts will probably be unable to fulfill much more than a third of mortgage credit demand.

Commercial banks have accounted for an average of 22% of institutional mortgage originations over the past decade. They have sold more mortgages than they have purchased (excluding mortgage-backed securities), with net sales averaging 10% of originations. Commercial bank 1 to 4 family mortgage holdings have been equivalent, on average, to about 18% of their time deposits (compared to 82% for S&L's and 48% for Savings Banks). Although few bankers currently profess to find home mortgages wildly attractive, as mortgage yields rise relative to yields on other investments (see below) we expect some increase in the share of assets devoted to mortgages. Alternative mortgage instruments with adjustable rates or short maturities will comprise the bulk of the mortgages held in portfolio, since these are more in keeping with the liability structure of banks.

However, unless the home finance system continues to retreat to the nineteenth century practice of seller financing, the additional money will have to come primarily from the secondary market. Moreover, the fixed rate long term mortgage which will still be preferred by many borrowers despite higher rates is a more appropriate investment for secondary market purchasers with long term liabilities.

### Mortgage-backed Securities

If the funds required to close the mortgage credit gap are to come from sources such as pension funds, private investors, and insurance companies, there will probably need to be further development of mortgage-backed securities. These non-specialized investors are not likely to find whole mortgages attractive instruments, even where the mortgages are fully or partially insured against default and where servicing is handled by originators or other specialists. Whole mortgages are still illiquid, in small non-standard denominations, and subject to erratic prepayment experience. Also, even if fully insured, delinquency or default represent something of a burden.

There are two basic types of mortgage-backed securities. Mortgage-backed bonds are standard debt issues secured by mortgages. Generally the value of the mortgages securing the debt must exceed the value of the obligation in order for the rating agencies and the markets to provide funds at attractive rates. Currently, there are about \$3 billion in mortgage backed bonds outstanding, almost exclusively issued by S&L's.

Passthrough securities are more peculiar to the mortgage market. Interest payments and scheduled amortization, as well as unscheduled prepayments, are distributed to holders of securities representing shares in a pool of mortgages. Typically, the security holders are guaranteed prompt payment even if the mortgagor defaults or is delinquent.

The premier example of passthroughs is the Ginnie Mae, which represents a share in a pool of FHA and VA mortgages, with prompt payment guaranteed by the full faith and credit of the US government. The

securities are issued by private originators, GNMA's role is only that of guarantor. Currently the stock of outstanding Ginnie Maes has a face value of about \$125 billion.

Another major category of passthrough is the FHLMC participation certificate, based on pools of partially-insured conventional mortgages. FHLMC is both the issuer and the guarantor of the securities. There are about \$26 billion of these outstanding. Although the prompt payment of PC's is not guaranteed by the majesty of the government, only by the quasi-independent FHLMC, yields are only a few basis points more than on GNMA.

Privately issued passthroughs from banks (particularly Bank of America), thrifts, and mortgage insurance companies account for close to \$2 billion worth of mortgages. These currently carry yields of 100 basis points or more above GNMA.

FNMA has recently begun to guarantee mortgage pools. Thus far, one half billion dollars worth have been issued. FHLMC has announced that it too plans to guarantee privately-issued passthrough securities backed by pools of conventional mortgages.

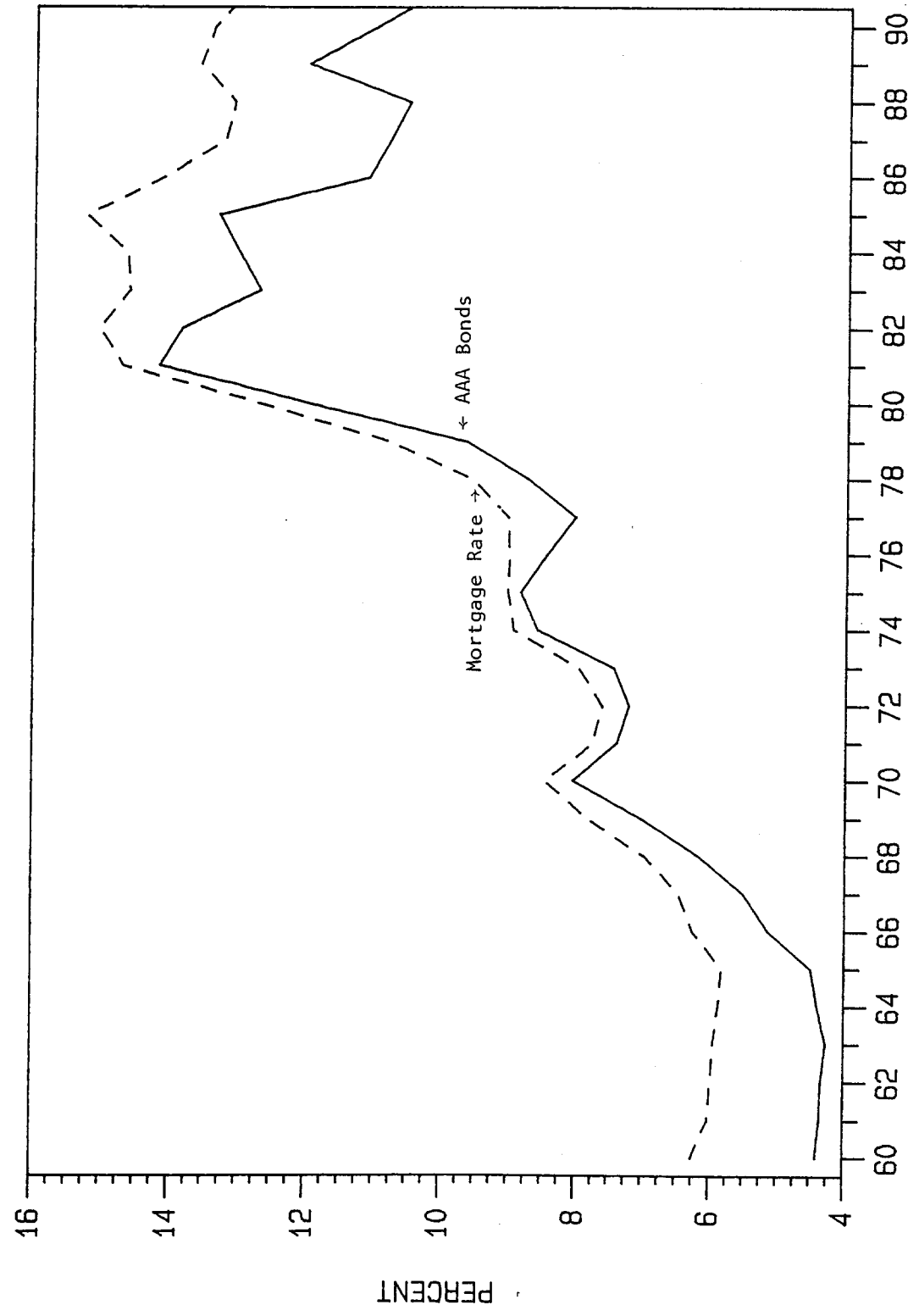
The potential growth of GNMA passthroughs as a source of mortgage funds is limited by the fact that only FHA and VA mortgages can be sold in GNMA pools. Anyway, the current administration is anxious to reduce the direct government role in mortgage credit guarantees. It is unlikely that passthrough securities guaranteed by private lenders or mortgage insurance companies will ever have the same characteristics of liquidity, standardization, or investor acceptance as Ginnie Maes. Moreover, the cost of insuring strictly-private passthroughs to the extent necessary to satisfy bond rating agencies is substantial.

It is the FNMA and FHLMC guaranteed passthrough programs which are most likely to become the primary conduit for attracting additional funds to the secondary market through mortgage-backed securities.

#### Mortgage Rates

Beginning in the late 1960's the price of mortgage credit shrank to only a very slight premium over the yields on high grade corporate bonds, despite the much greater administrative cost and risks (see figure 7). The narrowing of the spread between mortgages and bonds was primarily a reflection of ceilings on interest rates paid to depositors of thrift institutions, first imposed in 1965. These ceiling rates were below market rates but above the rates commercial banks were allowed to pay, producing a large, though occasionally disrupted, supply of cheap funds. The thrifts, coaxed by the carrot of tax benefits and the stick of regulation, in turn invested those funds in bargain rate mortgages. This diversion of credit resources into housing was further buttressed by the activity of the government and the federally-sponsored credit agencies, which used their superior access to credit markets to pump additional funds into mortgages. With the increased sophistication of savers and ongoing deregulation, combined with the retreat of the government from credit handouts, the system of mortgage subsidies at the expense of depositors, other borrowers, and taxpayers is coming to an end. In order for the supply of housing credit to meet the demand, the yield on mortgages will have to increase to properly reflect the administration cost and risks associated with such investments.

Figure 7  
MORTGAGE RATE VS. BOND RATES



In assessing the risks of mortgages, it should be recognized that the primary risk is not one of default, as is evidenced by the fact that the default risk can be fully insured against for about 50 basis points. A more important risk is the risk of interest rate changes. All long term fixed rate investments present this risk, and thus mortgages should not be viewed less favorably than bonds for that reason. The greatest risk is the risk of adverse prepayment. The borrower has the option to prepay if rates fall, making mortgages much like callable bonds. The price of a call option is always higher where prices (rates) are uncertain or volatile, where the rate of discount is high, and/or where there is an expectation that prices will rise (rates will fall).

The importance of this call option feature can be seen by comparing the yields of Ginnie Maes with 10 year treasury bonds. Since 1972, the average spread has been 86 basis points, but recently the spread has been about 200 basis points.

#### Second Mortgages

One area of possible expanded activity for commercial banks is second mortgage lending, both in the form of purchase money mortgages to facilitate home purchase and loans to homeowners for home improvement or simply as a device for homeowners to extract accumulated equity.

The accumulated equity in existing homes has mushroomed as home prices grew over the past decade. The value of the existing stock has been as follows:

Table 17  
HOUSING EQUITY  
(billions of dollars)

	AGGREGATE VALUE	MORTGAGE DEBT	AGGREGATE EQUITY
1970	1,143	267	876
1971	1,275	293	983
1972	1,405	328	1,077
1973	1,566	363	1,203
1974	1,733	394	1,340
1975	1,934	435	1,500
1976	2,142	493	1,649
1977	2,465	579	1,886
1978	2,926	678	2,248
1979	3,488	788	2,700
1980	4,041	858	3,183
1981	4,418	907	3,511

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Aggregate value based on housing stock and average existing home price. Mortgage debt data from HUD.

The capital gains accruing to homeowners have been widely credited with spurring consumption and depressing the savings rate. While some of this behavior was simply the psychological--homeowners felt they needn't save because the equity in their homes represented so much wealth--there were attempts to realize the gains.

There are three primary mechanisms by which homeowners can extract the equity in their homes: sell the house, refinance the first mortgage, or take out a second mortgage. By far the most popular method was to sell the house. In the course of selling one house and buying another, homeowners would use only a part of the equity in the previous house as a down payment on the new one. When rates on first mortgages were low and stable, refinancing the first mortgage with a larger loan made sense to homeowners who didn't want to move. Until recently, the resort to second mortgages was limited to the desperate or reckless, and it was the least popular of the three methods 1/.

Increasingly, various disincentives to housing turnover and refinancing--most especially high rates on first mortgages--make second mortgages more attractive to borrowers.

At the same time, there have been several factors increasing the capacity and motivation of second mortgage lenders. Liberalization of bankruptcy statutes has made secured real estate loans more attractive relative to unsecured consumer loans. Regulations which restricted the freedom of some lenders to make second mortgage loans have been eased. Also, a secondary market has begun to develop and mortgage insurers have begun to insure second mortgages. The aggressive entry into second mortgage lending by consumer finance companies and the greater freedom of S&L's to make such loans suggest that the competition will be fierce. If homeowners actually do begin to seek such financing, it could become an important market. Moreover, it will be difficult to maintain a role as a full service institution without becoming seriously involved in second mortgages.

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1/ David F. Seiders, Mortgage Borrowing Against equity in Existing Homes: Measurement, Generation, and Implications for Economic Activity. Staff Economic Studies 96. (Washington, Board of Governors of the Federal Reserve System, 1978).

A FORECAST FOR THE DECADE AHEAD

Over the course of the decade from 1982 to 1991, we expect housing starts to average 1.8 million per year, somewhat above the 1.67 million average of the 1972-1981 decade. Moreover, due largely to the demographic changes discussed above, along with the cutback of federal subsidies for construction of rental housing, we expect the single family share to average 71%, compared to the 66% share in the last decade. This shift to single family was actually already apparent in the late 1970's. It is only the extraordinary strength of multifamily activity in the early 1970's, plus the extraordinary weakness of single family construction in 1980 and 1981, which kept the single family share down in the 1972-1981 period.

The expected strength in single family starts, plus an increase in house prices at a rate 1 to 2% above the inflation rate and a gradual reduction of non-institutional creative financing, will require originations of mortgages for 1 to 4 family homes to increase at an average annual rate of 20% from the depressed 1981 value. We expect the real mortgage rate (mortgage rate less CPI growth) to average 5%, a substantial increase from the 1 1/2% real rate in the 1972-1981 period. This is the result of an increase in real long term rates in general (real AAA bond rates averaged only 1% during 1972-1981) and an increase in the spread between mortgage rates and bond rates.

Our forecast of housing and mortgage activity is of course dependent on our assumptions about the general economy. Table 17 shows the forecast values used in our base case (most likely) forecast scenario and under somewhat more optimistic and somewhat more pessimistic sets of assumptions.

Table 18  
Forecasts 1982-1991  
Annual Rates

	Ease Case	Optimistic	Pessimistic	Preceding Decade
ASSUMPTIONS				
GROWTH RATES:				
REAL PER CAPITA INCOME	1.7	3.1	-0.3	1.9
CONSUMER PRICE INDEX	9.2	6.5	12.1	8.4
AVERAGE:				
AAA BOND RATE	11.8	9.7	15.7	9.3
TREASURY BILL RATE	10.6	7.2	15.8	7.8
PRIME RATE	13.2	9.5	18.0	10.1
RESULTS				
HOUSING STARTS: (a)				
SINGLE FAMILY	1,285	1,454	871	1,104
MULTIFAMILY	533	655	356	568
TOTAL	1,817	2,109	1,227	1,672
MOBILE HOME PLACEMENTS (a)	314	381	218	322
EXISTING HOME SALES (a)	3,789	4,165	2,918	2,866
MORTGAGE ORIGINATIONS: (b)				
NEW HOMES	\$124,756	137,700	86,486	38,564
EXISTING HOMES	\$276,010	292,830	211,008	79,199
GROWTH RATE IN HOUSE PRICES:				
NEW HOMES	10.8	10.1	11.1	10.6
EXISTING HOMES	10.7	9.6	11.7	10.3
AVG MORTGAGE INTEREST RATES:				
COMMITMENTS: FHLBB	14.0	12.1	17.1	NA
FNMA	14.3	12.1	17.8	NA
FHLMC	13.9	11.8	17.2	10.3
CLOSINGS: FHLBB	14.0	11.9	17.1	9.9
AVG LOAN/VALUE - NEW HOMES	73.5	73.4	75.0	75.5

(a) figures in thousands of units

(b) figures in millions