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CHAPTER 11

Residential Mortgages as Financial Assets and Liabilities

Mortgage Debt Outstanding

POSITION OF MORTGAGES AMONG ASSETS AND LIABILITIES

RESIDENTIAL mortgages play a much smaller role among intangible assets and liabilities than housing among tangible assets. In 1958, at their highest level in sixty years, nonfarm residential mortgages were only 6½ per cent of all financial assets and 9 per cent of liabilities (Table 74). Adding mortgage debt on agricultural residences would increase these figures only very little, because the debt-to-value ratio on agricultural real estate is low, and most of the value of agricultural real estate is land, which we assume to be nonresidential.[1]

In 1929-33 and the late 1950's residential mortgages formed a larger part of intangible assets and liabilities than in earlier years back to 1900 (Table 74). This impression of an upward trend is reinforced by the suggestion of Grebler, Blank, and Winnick that early mortgage levels were overstated.[2] But the swings in the ratio are so wide that it is difficult to speak confidently of a trend, particularly since the 1933 ratios were quite similar to all but the highest of those of the 1950's.

If residential mortgages are compared with liabilities other than those of the federal government, there is more indication of a long-term rise in importance. The recent levels, in particular, are clearly higher than those of the 1930's. The trend is still stronger if comparison is made with corporate debt. The share of residential mortgages in the total of mortgage and long-term corporate debt rose from 16 per cent in 1900 to over 40 per cent in the early 1950's.[3]

At the time of the earliest national balance sheet, in 1900, nonfarm residential mortgage debt accounted for less than half of all mortgages; but by 1958 their share had risen to more than three-quarters. Most of this gain was at the expense of farm mortgages, which were mainly on nonresidential property, but residential mortgages also grew faster than nonfarm nonresidential mortgage debt.

[1] There are no published figures on farm residential mortgage debt because farm mortgages typically cover the farm as a whole. But a rough estimate can be made by assuming that the ratio of farm residential to total farm mortgage debt is equal to the ratio of the value of farm residential structures to the value of total farm structures and land.

[2] Leo Grebler, David M. Blank, and Louis Winnick, *Capital Formation in Residential Real Estate*, Princeton for NBER, 1956, pp. 168-169.

[3] *Ibid.*, pp. 166-167, 450.

TABLE 74

SHARE OF NONFARM RESIDENTIAL MORTGAGES IN NATIONAL ASSETS AND LIABILITIES, 1900-58
(per cent)

	Total Intangible Assets (1)	Total Liabilities (2)	Total Liabilities exc. Federal Government (3)	Total Mortgage Debt (4)
1900	4.3	6.6	6.8	43.6
1912	3.5	5.5	5.6	41.6
1922	3.4	5.1	5.8	40.4
1929	4.5	7.9	8.4	53.6
1933	5.2	7.7	8.6	55.2
1939	4.3	6.0	7.2	58.7
1945A	2.4	3.1	5.0	65.7
1945B	2.4	3.0	4.7	65.5
1946	2.9	3.6	5.5	67.3
1947	3.3	4.1	6.1	69.0
1948	3.7	4.6	6.7	70.5
1949	4.0	5.1	7.3	71.6
1950	4.4	5.7	7.9	73.6
1951	4.7	6.1	8.3	74.6
1952	4.9	6.4	8.7	75.3
1953	5.3	6.8	9.1	76.1
1954	5.5	7.3	9.7	76.7
1955	5.7	7.9	10.2	77.4
1956	6.1	8.3	10.6	77.5
1957	6.4	8.6	10.9	77.4
1958	6.4	8.9	11.2	77.4

SOURCE: 1900-45A: Vol. II, Table Ia.
1945B-58: Vol. II, Table I.

The wide fluctuations in the importance of residential mortgage debt seem to have been related to the rate of building. The share of residential mortgages increased in both the postwar building booms, to a much greater extent than the ratio of housing to total tangible assets. As will be seen later, the share of residential mortgages moved similarly to the debt-to-value ratio for housing, increasing rapidly in the 1920's, reaching a peak in 1933 and a very low point after World War II, and then rising rapidly and uninterruptedly to the highest recorded level in 1958.

Although mortgages are held by most sectors, they are of major importance only to the portfolios of the finance sector where they have moved from 8 per cent in 1900 to a low of 4.6 per cent in 1945 and to over 16 per cent in 1958 (Table 75). Even within the finance sector, only a few groups hold a large part of their assets in mortgages. Savings

TABLE 75

SHARE OF NONFARM RESIDENTIAL MORTGAGES IN TOTAL ASSETS, BY SECTOR, 1900-58
(per cent)

	Financial Institutions						*Nonfinancial Sectors*		
	Total	Commercial Banks	Mutual Savings Banks[a]	Savings and Loan Associations	Life Insurance Companies	Other	Total	Nonfarm Households	Federal Government
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1900	8.0	1.9	21.8	75.7	10.5	3.2	1.1	2.6	—
1912	8.7	2.7	26.4	89.0	10.6	3.3	.7	1.6	—
1922	8.2	2.7	27.5	88.1	9.1	2.1	.8	1.6	—
1929	12.4	5.1	35.6	83.4	15.5	2.0	1.0	1.9	—
1933	12.7	6.6	33.4	71.8	12.6	1.3	1.2	2.3	1.0
1939	7.4	4.3	26.9	69.7	8.7	.6	1.2	1.6	8.5
1945A	4.5	2.2	16.5	60.0	8.1	.2	.7	1.1	1.1
1945B	4.6	2.1	19.9	60.2	8.2	.3	.6	1.0	1.1
1946	5.7	3.4	19.1	68.3	8.3	.4	.6	1.0	1.1
1947	6.7	4.4	19.9	74.0	9.7	.5	.6	1.0	.9
1948	7.7	5.1	23.0	77.3	12.1	.5	.6	1.0	.9
1949	8.6	5.4	25.5	77.3	13.9	.6	.6	1.0	1.6
1950	10.0	6.1	31.0	78.7	17.1	.9	.6	.9	1.7
1951	10.8	6.2	36.3	79.0	19.8	.8	.6	.9	2.1
1952	11.4	6.3	38.8	79.1	20.3	.9	.6	.9	2.5
1953	12.3	6.6	41.4	80.1	20.9	1.0	.6	.9	2.8
1954	13.2	6.9	44.7	80.5	21.7	1.1	.6	.8	2.8
1955	14.4	7.4	49.3	81.3	23.1	1.3	.6	.8	2.9
1956	15.3	7.7	52.6	81.2	24.4	1.3	.6	.8	3.3
1957	15.7	7.5	53.6	80.9	24.3	1.2	.6	.8	4.4
1958	16.1	7.6	55.0	80.7	23.8	1.4	.6	.8	4.4

SOURCE: 1900-45A, cols. 1, 7-9: Vol. II, Table Ia; cols. 2-6: Mortgages from Vol. II, Table IV-b-11c-1. Total assets from R. W. Goldsmith, *A Study of Saving in the United States*, Princeton, 1955, Vol. I, Tables L-24, L-29, J-2, J-6, and I-5.
1945B-58: Vol. II, Tables I and II.

[a] Grebler, Blank, and Winnick (*Capital Formation*) give higher estimates: 1900—26.0, 1912—31.5, 1922—32.8, 1929—41.9, 1933—39.9, 1939—32.7, and 1945—19.9.

and loan associations are the most specialized in this direction (aside from mortgage companies which are primarily dealers in mortgages rather than holders), followed by mutual savings banks, life insurance companies, and commercial banks.

The pattern of changes in the ratio of nonfarm residential mortgages to total assets for the finance group as a whole was repeated in several components. There was an increase in importance from 1900 to 1929, particularly in the 1920's, except for savings and loan associations, and a further rise until 1933 in one case. This was followed by a col-

lapse to exceptionally low levels by the end of World War II, and then renewed growth until the earlier peaks had been far surpassed.

Savings and loan associations were an exception to this pattern. They exist primarily for the financing of homes, and have always been highly specialized, but their concentration on nonfarm residential mortgages in 1912-29, approximately 88 per cent, has never been reached again since the war. However, commercial banks, mutual savings banks, and life insurance companies have all sharply increased the role of mortgages among their assets since World War II.[4]

The share of residential mortgages in the assets of nonfinancial sectors, always small, was sharply reduced during World War II and never recovered. A similar pattern of changes applies to the holdings of nonfarm households. The federal government, however, had a large proportion of its assets in mortgages in the 1930's, mainly owned by the Home Owners' Loan Corporation. A large part of these was liquidated during and after the war, and the proportion was also cut by the great rise in total federal government assets. Since 1948 the proportion has been growing again, mainly as a result of purchases by the Federal National Mortgage Association. It reached 4.4 per cent in 1958 and has probably gone above 6 per cent since then.

Since 1935 the mortgage market has been made up of two distinct types of claims; government-insured or government-guaranteed mortgages, and conventional mortgages. The former have some of the safety of government securities and wider geographical markets than conventional mortgages.[5]

After the war, the finance sector raised the share of its assets held in both conventional and government-insured mortgages, the latter more rapidly (Table 76). The different types of lending institutions did not all react in the same way. Commercial banks distributed their net additions and holdings about equally between the two types, whereas mutual savings banks, which were overwhelmingly in conventional mortgages before the war, held these at about 18 per cent of their assets while bringing FHA and VA mortgages up from 2 to almost 37 per cent. Savings and loan associations were the only group whose portfolio re-

[4] For data on and a fuller discussion of long-term trends in the importance of mortgages in the portfolios of financial institutions see, Grebler, Blank, and Winnick, *Capital Formation*, pp. 195-204, and J. E. Morton, *Urban Mortgage Lending: Comparative Markets and Experience*, Princeton for NBER, 1956, pp. 54-60.

The relations among the growth of federal mortgage guarantee programs, the development of mortgage companies, and the postwar shift in investments by mutual savings banks and life insurance companies are discussed in Saul B. Klaman, *The Postwar Rise of Mortgage Companies*, NBER Occasional Paper 60, New York, 1959.

[5] Grebler, Blank, and Winnick (*Capital Formation*, pp. 242-245 and 249-250) describe the place of government-insured loans in total mortgage debt since the inception of the program.

TABLE 76

SHARES OF GUARANTEED AND CONVENTIONAL MORTGAGES IN TOTAL ASSETS OF FOUR MAIN FINANCIAL INSTITUTIONS, 1945-58
(per cent)

	Guaranteed (FHA-Insured and VA-Guaranteed) Mortgages					*Conventional Mortgages*				
	Four Main Institutions	Commercial Banks	Mutual Savings Banks	Savings and Loan Associations	Life Insurance Cos.	Four Main Institutions	Commercial Banks	Mutual Savings Banks	Savings and Loan Associations	Life Insurance Cos.
1945	1.7	1.0	2.1	6.3	3.1	5.2	1.1	17.8	53.8	5.2
1946	2.5	1.5	2.7	13.6	3.1	6.2	1.9	16.4	54.6	5.2
1947	3.7	2.2	4.1	21.0	4.3	6.6	2.3	15.8	53.0	5.4
1948	4.9	2.7	6.6	22.6	6.2	7.2	2.5	16.3	54.6	5.9
1949	5.7	3.0	9.1	22.4	7.7	7.5	2.5	16.4	54.9	6.1
1950	7.0	3.3	13.5	22.5	10.2	8.3	2.7	17.5	56.2	6.9
1951	7.8	3.5	18.1	20.7	12.2	8.8	2.7	18.2	58.3	7.6
1952	8.1	3.5	21.2	18.9	12.2	9.5	2.9	17.6	60.3	8.1
1953	8.5	3.5	23.9	18.7	12.1	10.4	3.0	17.5	61.4	8.8
1954	9.1	3.6	27.3	18.5	12.6	11.2	3.3	17.4	62.0	9.1
1955	10.1	3.8	31.4	19.2	13.6	12.1	3.5	17.9	62.0	9.5
1956	10.7	3.9	34.3	18.8	14.3	13.0	3.7	18.3	62.3	10.1
1957	10.7	3.7	35.1	17.9	14.1	13.7	3.8	18.5	63.1	10.2
1958	10.5	3.6	36.4	16.7	13.7	14.3	4.0	18.6	63.9	10.2

SOURCE: Vol. II. Total assets from Tables III-5c, III-5d, III-5e, and III-5h. Mortgages from Tables IV-b-11a-3 through IV-b-11a-6.

mained heavily weighted with conventional mortgages—54 per cent of total assets in 1945 and 64 per cent in 1958. The share of FHA and VA mortgages did, however, more than double over this period. Life insurance companies took an intermediate position. They increased the share of their assets held in conventional mortgages from 5 to 10 per cent, but never brought it up to prewar levels, and they raised their holdings of FHA and VA mortgages from 3 to 14 per cent of assets.

Guaranteed and conventional mortgages grew in importance at different times. Commercial banks and life insurance companies increased the share of government-guaranteed mortgages in their portfolios very rapidly until 1950 or 1951—more rapidly than that of conventional mortgages. But after that, the importance of guaranteed mortgages hardly grew at all, while that of conventional mortgages continued to rise. In the case of mutual savings banks, virtually all of the growth in mortgages was in guaranteed ones; it was most rapid before 1951 but continued at a brisk pace even after that. Savings and loan associations, after more than tripling the share of FHA and VA mortgages (mainly the latter) in their total assets in the late 1940's while

keeping the share of conventional mortgages constant, shifted back to the latter in the 1950's.

On the whole it can be said that the increase in importance of guaranteed mortgages had almost stopped by 1951. Only mutual savings banks, which had previously been prevented from satisfying their appetite for them, continued to raise the share of guaranteed mortgages in their total assets.[6]

The sectoral breakdown of mortgage liabilities, like that of housing described in Chapter 10, is based on slight evidence and must therefore be used with caution. The levels of the postwar data are based on the single benchmark of the 1950 Housing Census and upon the fact that one- to four-family housing is very largely owned by households.

Residential mortgage debt has always occupied a larger place in the liabilities of nonfarm households than of any other major sector (Table 77). At every benchmark since 1900 except one, its share was at least 46 per cent of total liabilities. The exception was 1929, when loans on securities were particularly high. In every year since the war, residential mortgage debt has been more than 60 per cent of household liabilities. Most of the data, with the exception of the high figure for 1900, point to a long-term rise in the importance of mortgages among household liabilities. It is probably not as great as suggested by the ratios—the 1945 overlap indicates some understatement in the earlier data relative to the later estimates.

For both corporate and nonfarm unincorporated business, the importance of residential mortgage debt in liabilities rose greatly between 1900 and the 1930's, reflecting the growth of multifamily housing. It appears, from the two 1945 estimates, that the growth before the war may have been exaggerated by the estimation procedure. After World War II there was a decline in the unincorporated business ratios, while those for corporations held quite steady, partly because some one- to four-family mortgage debt was allocated to corporations and partly because there was a shift of multifamily debt from unincorporated to corporate business.

THE COMPOSITION OF MORTGAGE PORTFOLIOS

If attention is concentrated on the composition of the mortgage portfolio itself, two trends stand out (Table 78). One, starting at the beginning of the century, is the threefold rise in the importance of multifamily mortgages from 10 to 24 and 27 per cent in 1929 and 1933 and the subsequent decline almost to the initial level. The other, a postwar phenomenon, is the growth of guaranteed mortgages from 19 to over 40 per cent, mainly between 1945 and 1950 or 1951.

[6] Saul B. Klaman, *The Postwar Residential Mortgage Market*, Princeton for NBER, 1961, pp. 150-155.

TABLE 77

SHARE OF NONFARM RESIDENTIAL MORTGAGE DEBT IN TOTAL LIABILITIES, BY SECTOR, 1900-58
(per cent)

	Nonfarm Households (1)	Nonfarm Unincorporated Business (2)	Nonfinancial Corporations (3)
1900	57.5	5.8	0.6
1912	47.8	10.0	0.8
1922	46.0	14.3	1.8
1929	43.0	20.1	3.7
1933	49.7	24.8	4.4
1939	51.8	21.1	5.0
1945A	55.5	18.1	4.4
1945B	59.8	13.8	3.8
1946	63.0	12.2	4.1
1947	62.7	10.8	4.2
1948	62.7	10.9	4.4
1949	61.6	11.6	5.1
1950	60.9	10.7	5.2
1951	63.1	12.0	5.1
1952	62.2	11.7	5.2
1953	62.2	11.5	5.3
1954	63.7	10.5	5.4
1955	63.2	9.8	5.2
1956	64.1	9.4	4.9
1957	64.7	9.3	4.8
1958	65.9	9.3	5.1

SOURCE: 1900-45A: Total liabilities from Vol. II, Table Ia. Mortgage debt from Vol. II, Table IV-c-11e-1, lines 11, 12, 15, and 16.
1945B-58: Total liabilities from Vol. II, Table I. Mortgage debt from Vol. II, Tables IV-c-11a and IV-c-11b.

The importance of multifamily debt in the mortgage holdings of life insurance companies, mutual savings banks, commercial banks, and other investors, reached peaks in the 1920's or 1930's.[7] In each case the share of multifamily mortgages at least doubled between 1900 and 1920 and at some point before 1939 was a third of total holdings of nonfarm residential mortgages. Then there was a shift back toward home mortgages; the next thirteen years saw the institutions continuing to reduce the proportion of multifamily debt in their mortgage portfolios until by 1958 it was almost down to the level of the beginning of the century.[8]

The postwar switch from conventional to guaranteed mortgages took place within multifamily and one- to four-family debt and was not just

[7] Goldsmith, *A Study of Saving*, Vol. I, Tables M-5, M-6, M-9, and M-10.
[8] Vol. II, Tables IV-b-11a and IV-b-11a-1. See also J. E. Morton, *Urban Mortgage Lending*, pp. 16-18.

TABLE 78

PERCENTAGE DISTRIBUTION OF NONFARM RESIDENTIAL MORTGAGES OUTSTANDING, BY TYPE, 1900-60

	Multifamily Mortgages			*1- to 4-Family Mortgages*			*All Nonfarm Residential Mortgages*	
	Total	Conventional	FHA	Total	Conventional	FHA and VA	Total Conventional	Total FHA and VA
1900	10.0	10.0		90.0	90.0		100.0	
1912	16.0	16.0		84.0	84.0		100.0	
1922	21.8	21.8		78.2	78.2		100.0	
1929	24.1	24.1		75.9	75.9		100.0	
1933	27.1	27.1		72.9	72.9		100.0	
1939	21.6	21.1	0.5	78.4	70.0	8.4	91.1	8.9
1945A	20.2	19.1	1.1	79.8	61.4	18.4	80.5	19.5
1945B	20.1	19.1	1.0	79.9	61.5	18.4	80.6	19.4
1946	18.0	17.3	0.8	82.0	60.3	21.7	77.5	22.5
1947	16.5	14.8	1.6	83.5	56.0	27.5	70.8	29.1
1948	16.0	13.1	2.9	84.0	52.5	31.5	65.6	34.4
1949	16.2	11.4	4.8	83.8	50.4	33.4	61.8	38.2
1950	15.7	9.7	6.0	84.3	49.1	35.2	58.8	41.2
1951	15.8	9.7	6.0	84.2	47.0	37.3	56.7	43.3
1952	15.1	9.4	5.7	84.9	48.1	36.8	57.5	42.5
1953	14.3	9.1	5.2	85.7	49.3	36.4	58.4	41.6
1954	13.2	8.5	4.7	86.8	50.0	36.8	58.5	41.5
1955	12.3	8.3	4.0	87.7	49.0	38.7	57.3	42.7
1956	11.7	8.2	3.5	88.3	49.2	39.2	57.4	42.7
1957	11.3	7.7	3.6	88.7	49.8	38.9	57.5	42.5
1958	11.5	7.8	3.8	88.5	50.8	37.7	58.6	41.5
1959	11.6	7.9	3.7	88.4	52.0	36.4	60.0	40.1
1960	11.8	8.2	3.7	88.2	52.9	35.2	61.1	38.9

SOURCE: 1900-45A: FHA mortgages, Grebler, Blank, and Winnick, *Capital Formation*, p. 243. VA mortgages, *Housing Statistics*, April 1962, p. 60. Total mortgages, Vol. II, Tables IV-b-11c-1 through IV-b-11c-3.
1945B-60: Vol. II, Tables IV-b-11a through IV-b-11a-6. These were based mainly on estimates by Klaman (*Volume of Mortgage Debt*) and have been carried through 1960 using the methods described there.

a reflection of the decline in the former. Even while total multifamily mortgages were falling from 20 to 16 per cent of all mortgages between 1945 and 1951, FHA-insured multifamily mortgages rose from 1 to 6 per cent. After that they declined even faster than conventional mortgages but were still almost a third of all multifamily mortgages in 1960.

The rise from 80 to 84 per cent between 1945 and 1951 in the share of one- to four-family mortgages in the total nonfarm residential mortgage debt was made up of a fall in the conventional share from 61.5 to 47 per cent and a doubling of the guaranteed share which began at

18.4 per cent. Thereafter the conventional mortgages regained some of the lost ground and again reached more than half of outstanding home mortgages.

Switching into guaranteed mortgages took place mainly before 1951 for every institution except the mutual savings banks. With the same exception, there was then some shifting back into conventional mortgages.[9] All three of the institutions holding substantial portions of their mortgage portfolios in multifamily debt reduced that share. Only during the first few years, and only partially even then, were reductions in the share of conventional mortgages offset by increases in guaranteed multifamily mortgages.

Savings and loan associations owned virtually no multifamily mortgages. The most marked feature of their distribution, aside from the fact that they have remained heavily concentrated in conventional mortgages, was the sharp shift from conventional to guaranteed mortgages in 1945-47 and the drift back to conventional since 1948.

Commercial banks increased the share of one- to four-family guaranteed mortgages rapidly between 1945 and 1949, mainly by reducing the importance of multifamily holdings. After 1951, however, they began shifting back to conventional home mortgages, first by reducing the share of FHA multifamily and then, after 1956, by sharply cutting down the share of guaranteed home mortgages.

Life insurance companies raised their guaranteed one- to four-family mortgages from 34 to more than 50 per cent between 1945 and 1951, decreasing the share of conventional home mortgages slightly, but reducing that of conventional multifamily debt from 34 to about 15 per cent. Since 1951 they have substituted conventional home mortgages for multifamily debt.

Mutual savings banks were the only group that increased its emphasis on guaranteed mortgages constantly throughout the period. They did this through parallel reductions in conventional home and multifamily mortgages from a total of 90 per cent of their mortgage portfolio in 1945 to only a third in 1960. Until 1952 both home and multifamily guaranteed mortgages increased their share in total holdings; after that, multifamily guaranteed and conventional mortgages receded. The rate of change in the composition of mortgage holdings has slowed greatly since 1956.

For one date, August 1950, some further information is available from the Housing Census on the composition of mortgage portfolios (Table 79). The division between one- to four-family and multifamily

[9] Mortgage investment policies of the various financial institutions during the postwar years are discussed more thoroughly in Chapter 6 of Klaman's *Postwar Residential Mortgage Market.*

TABLE 79

DISTRIBUTION OF NONFARM RESIDENTIAL MORTGAGE DEBT, BY TYPE OF INSTITUTION AND TYPE OF PROPERTY, AUGUST 1950

	Owner-Occupied		*Renter-Occupied*				
	1 Unit	2-4 Units	1 Unit	2-4 Units	5-49 Units	50 Units and over	Total
			DISTRIBUTION BY TYPE OF INSTITUTION				
Commercial banks and trust companies	21.7	15.4	20.6	18.3	11.8	7.0	18.8
Mutual savings banks	8.9	13.9	7.5	11.5	28.6	34.3	13.2
Savings and loan associations	24.8	34.4	23.1	26.0	8.3	0.9	22.6
Life insurance companies	20.3	6.6	16.1	11.6	22.1	45.4	20.2
Mortgage companies	1.4	0.7	1.1	1.2	1.5	1.5	1.3
Federal National Mortgage Association	3.3	0.7	2.9	0.8	—	0.1	2.4
Individual	16.3	25.1	24.3	26.7	21.2	3.5	17.6
Other	3.2	3.1	4.4	4.0	6.5	7.2	3.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
			DISTRIBUTION BY TYPE OF PROPERTY				
Commercial banks and trust companies	74.0	9.6	4.6	3.2	6.0	2.7	100.0
Mutual savings banks	43.3	12.3	2.4	2.9	20.6	18.6	100.0
Savings and loan associations	70.5	17.7	4.3	3.8	3.5	0.3	100.0
Life insurance companies	64.5	3.8	3.3	1.9	10.4	16.0	100.0
Mortgage companies	68.5	6.3	3.3	2.8	10.8	8.2	100.0
Federal National Mortgage Association	89.8	3.4	5.0	1.1	0.2	0.4	100.0
Individual	59.6	16.7	5.8	5.0	11.4	1.4	100.0
Other	53.4	9.3	4.8	3.4	15.9	13.3	100.0
Total	64.2	11.7	4.2	3.3	9.5	7.1	100.0

SOURCE: *U.S. Census of Housing: 1950*, Vol. IV, Part 1, Table 2 of each section, pp. 157, 317, 467, 549, 589, 601.

mortgages in this source agrees fairly well, although not perfectly, with that shown in Table 78.

Of the 83 per cent of nonfarm residential mortgages which were on one- to four-family properties (84 per cent in Table 78), 76 per cent were on owner-occupied and 7.5 per cent were on rental properties. Slightly less than 70 per cent of total nonfarm residential mortgage debt is on owner-occupied housing (or dwelling units), if account is taken of the fact that owner-occupied two- to four-unit properties are partly rented. Despite the fact that one- to four-family structures accounted for more than two-thirds of the value of rental units (Table 69), multifamily properties carried more than two-thirds of the rental housing mortgage debt.

Since most of rental housing debt is on multifamily properties, the institutions which invested heavily in the latter, such as mutual savings banks and life insurance companies, were the ones with a high proportion of their mortgage investments in rental properties. But there was considerable variation within the structure and tenure types. Within one- to four-family mortgages, for example, mutual savings banks, savings and loan associations, and individuals put between a fifth and a quarter of their investment into mortgages on two- to four-unit properties while life insurance companies and the FNMA confined themselves almost entirely to single-family structures. Individuals also had a much larger part of their one- to four-family mortgage holdings in rental property mortgages than any of the other investors except the "other" class.

The distribution of rental property mortgages differed very widely among institutions. Mutual savings banks, life insurance companies, and mortgage companies concentrated more than three-quarters of their holdings on multifamily properties while savings and loan associations and especially the FNMA held mortgages mainly on small rental properties. Individuals had almost half their rental housing mortgages in five- to forty-nine-unit properties but virtually none in the larger structures.[10]

DISTRIBUTION OF RESIDENTIAL MORTGAGES AMONG INVESTORS

The outstanding trend in the ownership of mortgage debt over the past sixty years has been its institutionalization. In 1900 more than half of the outstanding one- to four-family residential mortgage debt was held outside of the main lending institutions, almost entirely by individuals (Table 80). By 1958 the holdings of the nonfarm house-

[10] Data on other aspects of the composition of mortgage holdings by type, from the NBER survey of urban mortgage lending, appear in Morton, *Urban Mortgage Lending*, pp. 73-75.

TABLE 80

PERCENTAGE DISTRIBUTION OF OWNERSHIP OF ONE- TO FOUR-FAMILY AND MULTIFAMILY NONFARM RESIDENTIAL MORTGAGE DEBT, BY TYPE OF INVESTOR, 1900-60

	Commercial Banks (1)	Mutual Savings Banks (2)	Savings and Loan Associations (3)	Life Insurance Companies (4)	Federal Government Agencies (5)	Other (6)
			ONE- TO FOUR-FAMILY MORTGAGES			
1900	5.9	16.7	14.0	5.8		57.7
1912	9.8	18.9	20.2	8.3		42.8
1922	8.6	13.7	28.5	5.8		43.5
1929	11.7	12.1	32.7	8.6		34.9
1933	12.4	15.3	29.1	10.4	0.9	31.9
1939	13.0	13.0	22.9	9.1	13.4	28.5
1945A	15.5	10.2	27.8	12.4	4.6	29.6
1945B	15.4	10.2	27.7	12.4	4.8	29.4
1950	20.8	9.5	29.0	18.8	3.2	18.6
1955	16.9	12.6	34.0	20.0	3.4	13.1
1958	14.8	13.3	36.4	19.0	3.9	12.4
1960	13.6	13.6	39.2	17.6	5.0	11.5
			MULTIFAMILY MORTGAGES			
1900	12.9	28.5		10.2		48.5
1912	23.4	33.0		15.1		28.4
1922	23.1	25.7		11.6		39.5
1929	18.4	20.5[a]		18.0		43.1[a]
1933	13.5	21.8[a]		18.0		46.8[a]
1939	15.2	23.5[a]		23.7		37.5[a]
1945A	13.4	19.4[a]		29.2		38.0[a]
1945B	11.0	31.9	2.4	29.9	0.2	24.6
1950	11.2	32.5	3.2	31.0	0.3	21.8
1955	6.5	36.1	6.3	28.7	2.4	19.9
1958	6.2	34.5	11.9	23.1	3.4	20.9
1960	5.9	31.3	18.4	20.4	4.7	19.4

SOURCE: Vol. II, Tables IV-b-11a-1, IV-b-11a-2, IV-b-11c-2, and IV-b-11c-3. Estimates for postwar years are based mainly on Klaman, *Volume of Mortgage Debt*, Tables 5 and 6, and have been continued by the methods described there.

[a] Substitution of estimates from Grebler, Blank, and Winnick, *Capital Formation*, Table N-6, pp. 478 and 479, would yield the following figures for cols. 2 and 6:

	Col. 2	Col. 6
1929	30.8	32.8
1933	34.0	34.6
1939	38.8	22.2
1945A	31.8	25.6

hold sector had dwindled to less than 10 per cent.[11] The four major mortgage lenders—commercial and mutual savings banks, savings and loan associations, and life insurance companies—increased their share from 42 per cent in 1900 to 84 per cent in 1960.[12]

Within the growing institutional share of home mortgage holdings, there were substantial shifts among the four main lenders. All except mutual savings banks increased their shares between 1900 and 1960. Commercial banks went into one- to four-family mortgages vigorously before the war and for a few years after, their share growing through the late 1940's and then falling. The share of life insurance companies rose steadily to a peak of 20 per cent in the early 1950's and has declined since then. The mutual savings banks' proportion, highest of all the lenders' in 1900, fell to less than 10 per cent for several years after the war and then started to rise just when the commercial banks' share began declining. Savings and loan associations have been the leading lenders, frequently owning twice the share of any other type of institution. By 1960 they held almost 40 per cent of the home mortgage debt.

The history of the financing of multifamily mortgage debt is not as clear because there are considerable differences among estimates of institutions' holdings. But both the sources mentioned in Table 80 agree that noninstitutional holdings dwindled in importance between 1933 and 1960.[13] The role of commercial banks was at its peak very early, just before and after World War I, when they held almost a quarter of the multifamily debt; now their share is below 6 per cent. Life insurance companies increased their share until 1950 and then cut it back. The postwar years have seen the growth of two new sources of financing: savings and loan associations, whose share jumped from 2 to 18 per cent,[14] and the federal government, which rose to 5 per cent.

For both types of mortgages, the early 1950's were a turning point, marking the beginning of a decline in participation by commercial banks and insurance companies and a rise in the importance of the two main savings institutions.[15]

[11] Vol. II, Table IV-b-11a-2.

[12] See Grebler, Blank, and Winnick, *Capital Formation*, pp. 192 ff., for a discussion of some of the reasons for this shift in ownership. One of these, the ineligibility of noninstitutional lenders under the FHA program, has since been removed.

[13] Grebler, Blank, and Winnick suggest, furthermore, that the estimating procedure understates the shift to institutional ownership of mortgages (*Capital Formation*, p. 192).

[14] The rise in the value of savings and loan association holdings of multifamily mortgages appears suspiciously rapid. Since the method of estimation is indirect, it is possible that part of the rise may result from an understatement of the growth of nonresidential mortgages, which have been assumed to form a constant part of the mortgage portfolio. See Klaman, *Volume of Mortgage Debt*, Table 16.

[15] The history of participation in the nonfarm residential mortgage market by several types of financial institutions is reviewed in Grebler, Blank, and Winnick,

When the postwar mortgage market is subdivided by type of mortgage and of structure, new differences in sources of financing appear (Table 81). Among conventional one- to four-family mortgages, savings and loan associations established a predominant position, raising their share to over 50 per cent and replacing "other investors" whose

TABLE 81

PERCENTAGE DISTRIBUTION OF OWNERSHIP OF FOUR TYPES OF NONFARM RESIDENTIAL MORTGAGE DEBT, BY TYPE OF INVESTOR, 1949-60

	1945	1950	1955	1958	1960
			ONE- TO FOUR-FAMILY		
Conventional					
1. Commercial banks	9.5	16.3	14.2	13.9	13.2
2. Mutual savings banks	10.9	7.0	5.6	5.1	4.7
3. Savings and loan assoc.	32.2	35.5	46.1	49.8	52.7
4. Life insurance cos.	7.3	10.5	13.1	12.8	11.8
5. Federal government	6.0	0.2	1.1	1.5	1.9
6. Other	34.1	30.5	19.9	16.8	15.8
FHA and VA					
1. Commercial banks	35.2	27.0	20.3	16.0	14.3
2. Mutual savings banks	7.6	13.1	21.4	24.3	25.5
3. Savings and loan assoc.	12.8	20.1	18.7	18.4	18.9
4. Life insurance cos.	29.6	30.3	28.7	27.4	26.4
5. Federal government	0.7	7.5	6.3	7.1	9.8
6. Other	14.1	2.0	4.5	6.7	5.1
			MULTIFAMILY		
Conventional					
1. Commercial banks	11.0	6.7	6.4	2.5	3.7
2. Mutual savings banks	33.1	40.9	34.6	35.2	32.7
3. Savings and loan assoc.	2.4	4.4	9.1	17.2	26.2
4. Life insurance cos.	28.6	33.0	27.0	23.1	21.5
5. Federal government	0.2	0.2	1.6	1.9	2.0
6. Other	24.8	14.6	21.4	20.1	13.9
FHA					
1. Commercial banks	12.7	18.3	6.8	13.8	10.8
2. Mutual savings banks	9.3	18.8	39.4	33.2	28.2
3. Savings and loan assoc.	2.5	1.1	0.4	1.0	0.9
4. Life insurance cos.	54.4	27.6	32.3	23.1	17.9
5. Federal government	—	0.4	4.3	6.4	10.6
6. Other	21.1	33.7	16.8	22.5	31.6

SOURCE: Vol. II, Tables IV-b-11a-3 through IV-b-11a-6. Based mainly on estimates by Klaman (*Volume of Mortgage Debt*) and extended to 1960 by using his methods. The 1960 figures for commercial banks include small amounts for banks in possessions.

Capital Formation, pp. 194-205, and Morton, *Urban Mortgage Lending*, pp. 35-39. See also Raymond J. Saulnier, *Urban Mortgage Lending by Life Insurance Companies*, New York, NBER, 1950, and Carl F. Behrens, *Commercial Bank Activities in Urban Mortgage Financing*, New York, NBER, 1952.

share was cut by half. Less important declines in mutual savings banks' and the federal government's shares were taken up by commercial banks and life insurance companies. Among guaranteed home mortgages, it was mainly the commercial banks whose share was cut sharply while mutual savings banks tripled theirs. Increases were registered also by savings and loan associations and the federal government, while "other investors," as in the case of conventional mortgages, lost ground.

Both commercial banks and other investors declined as holders of multifamily conventional loans and their places were taken by savings and loan associations and the federal government. The less important category of insured multifamily mortgages, of which more than half was held by life insurance companies in 1945 and less than a quarter in 1958, shifted to a considerable extent to mutual savings banks and the federal government.

Table 79 again supplies additional information on the structure of financing. Life insurance companies (45.4 per cent) and mutual savings banks (34.3 per cent) almost monopolized mortgages on properties of fifty or more units. Individuals and savings and loan associations held 29.5 per cent of loans on properties of five to forty-nine units but only 4.4 per cent of those on the larger ones.

Debt-to-Asset Ratios for Housing

AGGREGATE DEBT-TO-VALUE RATIOS

Mortgages, unlike most forms of debt, are tied not only to the sectors whose liabilities they are but also to specific tangible assets. It is true that funds raised through mortgage debt can be used for purposes other than housing and that forms of borrowing other than mortgages can be used for the purchase of houses. But a residential mortgage cannot be secured without the existence of housing assets and the majority of real estate transfers involve a flow of mortgage funds. Thus the matching of housing assets with mortgage liabilities is a more meaningful procedure than most comparisons of assets with specific liabilities.

The proportion of the value of housing covered by mortgage debt has been higher in the last few years than at any previous time in our records (Table 82). Similar calculations by Grebler, Blank, and Winnick[16] indicate that they are the highest in a seventy-year period extending back to 1890, and that even the low point in the ratio after World War II was considerably higher than some of those before World War I. Despite the very wide fluctuations, then, there are indications of a rising trend in the extent to which housing is mortgaged.

[16] *Capital Formation,* pp. 167-169 and Appendix Table L-6.

TABLE 82

RESIDENTIAL MORTGAGE DEBT AS A PERCENTAGE OF VALUE OF PRIVATE NONFARM RESIDENTIAL HOUSING, 1900-60
(per cent)

		Sector			*Type of Structure*	
	All Sectors	Nonfarm Households (1)	Nonfarm Unincorporated Business[a] (2)	Nonfinancial Corporations[a] (3)	1- to 4-Family[b] (4)	Multifamily[b] (5)
1900	14.7	13.4				
1912	15.4	13.3				
1922	15.4	12.5				
1929	21.9	18.0				
1933	23.8	18.8				
1939	19.1	16.1				
1945A	15.0	12.8				
1945B	14.6	12.8	18.3	40.6	12.8	32.1
1946	15.0	13.4	17.0	40.9	13.5	30.7
1947	14.8	13.4	15.3	40.4	13.6	28.6
1948	16.1	14.7	15.3	40.6	14.8	29.5
1949	18.4	16.9	16.8	45.8	17.0	33.3
1950	18.9	17.3	16.8	48.0	17.5	34.5
1951	20.3	18.7	17.9	49.9	18.7	37.8
1952	21.6	20.0	18.6	50.8	20.0	39.3
1953	23.2	21.7	19.1	52.0	21.7	40.5
1954	25.3	23.9	19.8	54.9	23.9	42.2
1955	26.9	25.6	20.2	55.0	25.6	43.2
1956	28.0	26.9	20.5	53.7	26.8	43.9
1957	29.0	28.0	21.1	53.6	27.8	45.0
1958	30.4	29.1	22.7	58.4	28.9	49.3
1959	31.4				29.8	53.4
1960	32.7				30.9	58.0

SOURCE

Mortgage Debt:

1940-45A: Col. 1: Vol. II, Table IV-c-11e-1, sum of lines 10 and 14.
Col. 2: *Ibid.*, line 11.

1945B-60: Estimates are based mainly on Klaman, *Volume of Mortgage Debt*, and are extended by using his methods.
Col. 1: Vol. II, sum of Tables IV-c-11a and IV-c-11b, line 8.
Col. 2: Table IV-c-11a, line 1.
Col. 3: Table IV-c-11b, line 2.
Col. 4: Sum of Tables IV-c-11a and IV-c-11b, line 4.
Col. 5: Table IV-c-11a, line 8.
Col. 6: Table IV-c-11b, line 8.

Value:

1900-45A: Col. 1: Goldsmith, *National Wealth*, sum of Tables A-35, cols. 2, 3, and 5, and A-40, Col. 1.
Col. 2: *Ibid.*, sum of Tables A-35, col. 2, and A-40, col. 2.

SOURCE TO TABLE 82 (concluded)

1945B-58: Table 67.
Col. 1: Lines 1 and 8.
Col. 2: Lines 4 and 5.
Col. 3: Lines 13 and 14.
Col. 4: Lines 6, 7, 11, and 12.
Col. 5: Line 1.
Col. 6: Line 8.

[a] These ratios were not computed for 1900-45A because the estimated distribution of mortgage debt between corporate and unincorporated business, based on Goldsmith, *A Study of Saving*, Vol. I, Table R-29, does not appear to be compatible with the distribution of residential structures from Goldsmith, *The National Wealth of the United States in the Postwar Period*, Princeton for NBER, 1962, Table A-39.

[b] Not available for 1900-45A.

Swings in the debt-to-value ratio have appeared to follow the movements of long building cycles, rising rapidly in the 1920's and the postwar period and falling during the 1930's and early 1940's. The movements of the series are quite similar to those of the share of mortgages in total liabilities (Table 74).

It is apparent that high rates of building tend to raise the aggregate debt-to-value ratio. This is presumably because they add to the housing stock a large number of new units, of which a high proportion are mortgaged and on which the debt-to-value ratios are much higher than on old houses. But it is also clear that the building rate is not the only influence, for the debt ratio rose sharply from 1929 to 1933 when there was little new construction. In that period the rise was a result of a decline in house prices—the only substantial decline in our record.

Grebler, Blank, and Winnick note that a puzzling feature of the trend is the failure of the debt ratio to rise in the long period before World War I. There was a considerable increase in the proportion of owner-occupied houses mortgaged and, at least between 1890 and 1920, a small rise in the debt ratio for mortgaged houses. It is conceivable that there were offsetting changes in rental housing. Or, as the authors suggest,[17] this may be a statistical illusion. The 1890 mortgage level, and thus the 1890 debt-to-value ratio, may have been overstated. And an overestimate of the 1920 housing stock may have caused an understatement of the 1920 debt ratio. If their suggestions are correct, there has been an even greater long-term upward trend in the debt ratios than the data show.

The postwar rise in the ratio of mortgage debt to value took place in the face of roughly a doubling of construction costs. The previous large increases in the debt ratio had been in 1922-29, when prices rose only moderately while the building rate was high, and in 1929-33 when prices fell.

[17] *Ibid.*, pp. 168-169.

Part of the explanation for the postwar increase is that the effect of price changes and repayments, which tend to reduce the debt ratio on existing houses, was swamped by the effect of the high rate of new construction, which tends to raise it. The other factor was that owners of old houses, as a group, realized some of the capital gains arising from price increase by raising their mortgage indebtedness.

The evidence on this point is fragmentary because little is known about the proportion of gross mortgage flows which are for new houses. Using any of the estimates quoted later in this paper, it is clear that in two of the years of large capital gains, 1946 and 1947, the net increase in nonfarm residential debt on one- to four-family structures was greater than gross lending on new construction. Thus, in these two years at least, owners of existing houses were increasing their mortgage debt. In later years the picture is obscured by differences among the estimates of mortgage lending on new construction. But there were always large gross additions to debt on existing houses and these always exceeded partial—presumably voluntary—prepayments. However, they were rarely greater than the sum of prepayments and amortization.

Other evidence also points to a tendency for owners of existing houses to raise their mortgage indebtedness or at least not to permit it to fall. For example, there were 4,805,000 owner-occupied nonfarm houses reported as mortgaged in the 1940 Census (Table 83). Over a period of ten years, it would be expected that many of these mortgages would be paid off, particularly since the great majority of them required regular payments on principal.[18] Yet, in the 1950 Census, there

TABLE 83

NONFARM OWNER-OCCUPIED HOUSES BUILT BEFORE 1940 AND 1930 AND MORTGAGED IN 1940, 1950, AND 1956
(thousands)

	Built Before 1940		*Built Before 1930*
Mortgaged in	1- to 4-Family[a]	1-Family	1-Family
1940	4,805	4,026	2,837
1950	5,060	3,996	2,894
1956		4,034	3,231

SOURCE: 1940: *U.S. Census of Housing: 1940*, Vol. IV, Part 1, pp. 4 and 9.
1950: *U.S. Census of Housing: 1950*, Vol. IV, Part 1, pp. 60 and 162.
1956: *1956 National Housing Inventory*, Vol. II, p. 23.

[a] Number of properties. In a few cases there was more than one structure on a property.

[18] *U.S. Census of Housing: 1940*, Vol. IV, Part 1, p. 5.

were 5,060,000 such mortgaged houses which had been built before 1940. To some extent the increase might be explained by a shift of existing houses from farm to nonfarm and from rented to owner-occupied.[19] But this shift does not seem sufficient to explain the steadiness of the number of mortgaged houses, considering how many mortgages might normally be expected to run out in ten years. For example, from 1950 to 1959, when the mortgage and housing stock was newer, the increase in the number of debt-free houses was 20 per cent of the initial number.[20]

A similar pattern can be seen for one-family houses. Among these there was a very slight decline in number between 1940 and 1950 and then an increase to 1956. For one-family houses built before 1930, the number mortgaged increased slightly between 1940 and 1950 and then jumped by more than 10 per cent in the next six years.

The aggregate debt-to-value ratios discussed so far can be analyzed as the product of mortgage flows and price changes. The flows include new home mortgage lending (which depends on the rate of building and the loan-to-value ratio on new construction), mortgage repayments, scheduled and unscheduled, which operate to reduce the debt ratio, and lending on existing homes. These mortgage flows, and the corresponding equity flows, are discussed in later parts of this chapter.

The effect of price changes is two-edged. An increase in prices, given the level of mortgage debt, lowers the debt ratio. But if it leads home-owners to expect further price increases it may, by tempting them to raise or to retain their mortgages, lead to a rise in the debt ratio. The influence of prices on home-owners' equity is taken up briefly below and has been discussed in more general form in Part Two.

SECTORAL DEBT-TO-VALUE RATIOS

It would be logical to expect households, corporations, and unincorporated enterprises to own different kinds of residential real estate and to finance their holdings in different ways. Sectoral debt-to-value ratios are of interest for the light they can shed on methods of financing. Unfortunately, the sectoral allocations of housing assets and mortgage liabilities are so arbitrary that the ratios must be viewed more as a working out of the allocation assumptions than as independent information.

Unincorporated business, to which only multifamily housing has been allocated, showed the lowest debt ratios, with much less growth

[19] There was an increase in the number of owner-occupied nonfarm units built before 1940 from 11,413 (*U.S. Census of Housing: 1940*, Vol. II, Part 1, p, 12) to 13,739 (*U.S. Census of Housing: 1950*, Vol. II, Ch. 1, p. 6).

[20] *Mortgaged Homes in The United States—Growth in the 1950's*, Washington, Federal Home Loan Bank Board, 1960.

in the ratio than households, and, in fact, a decline for several years. Corporate-owned real estate, including both homes and multifamily structures, carried the heaviest debt, but the increase was fairly slow except during the 1948-50 spurt in multifamily construction. These years were characterized by very high debt ratios on some new apartment buildings including, according to later charges, cases where the debt was greater than the cost. The low rate of increase in the debt ratio for noncorporate housing compared to corporate may be due to the fact that the additions to multifamily housing tended to be in the corporate sector, increasing the proportion of new housing there.

On the whole, the sectoral debt-to-value ratios seem to bear a sensible relationship to those by type of housing in the same table. Nonfarm households follow the ratios for one- to four-family housing very closely and corporations' ratios are similar to, but somewhat higher than, those for multifamily housing. Only the noncorporate ratio appears suspiciously low, considering that this sector holds only multifamily properties. The age of the houses in this sector and the fact that noncorporate holdings tend to be in the five- to forty-nine-unit class and corporation properties in the class of fifty units and over can be cited as possible reasons for the low ratios. As will be seen later, it is the structures of fifty units and over which pull up the debt ratios for multifamily housing. Structures of five to forty-nine units have debt ratios much like those of one to four units.

Debt-to-value ratios for various types of owner-occupied and rental housing can be derived only for 1950 (Table 84). The debt burden (the ratio of debt to the total value of properties) is heaviest on owner-occupied one-family houses and lightest on owner-occupied two- to four-family structures, with rental property in between.[21]

These ratios are the outcome of two opposing factors. On mortgaged properties alone, the debt burden is higher on rental than on owner-occupied properties, mainly because mortgaged properties of fifty units or more carry such a high rate of indebtedness. What lifts the debt ratio for owner-occupied properties in the aggregate is the large proportion of them which are mortgaged—almost 50 per cent in value terms compared to 35 per cent of rental properties. Since one would expect a greater proportion mortgaged among multifamily properties than among smaller rental properties, these findings suggest that only a

[21] The debt-to-value ratios in Table 84 are not strictly comparable with those in Table 82 because the census values of tangible assets used here differ from the perpetual inventory values used elsewhere in this volume (see Table 66). The perpetual inventory estimates are relatively higher for multifamily structures, implying even lower debt-to-value ratios for rental housing than those shown in Table 84.

TABLE 84

RELATION OF MORTGAGE DEBT TO TOTAL VALUE, BY TYPE OF PROPERTY, 1950

	Value of Nonfarm Residential (million dollars)			RATIO (PER CENT) OF			
	Mortgaged and Nonmortgaged Properties (1)	Mortgaged Properties (2)	Mortgage Debt (3)	Value of Mortgaged Properties to Value of All Properties (4)	*Mortgage Debt to Value of Mortgaged Properties* Average (5)	Median (6)	Mortgage Debt to Value of All Properties (7)
Owner-occupied							
1. 1 unit	137,287	68,324	28,566	49.8	41.8	43	20.8
2. 2-4 units	32,678	14,227	5,188	43.5	36.5	38	15.9
3. Total	169,965	82,551	33,754	48.6	40.9		19.9
Renter-occupied							
4. 1 unit		3,622	1,858		51.3	43	
5. 2-4 units		3,831	1,474		38.5	40	
6. 5-49 units		10,302	4,222		41.0	40	
7. 50 units or more		4,647	3,177		68.4	61	
8. Total	63,990	22,402	10,731	35.0	47.9		16.8
9. All properties	233,955	104,953	44,485	44.9	42.4		19.0

SOURCE

Col. 1, line 1: Table A-2, line 2, multiplied by the sum of lines 1 and 4.
2: Sum of Table A-5, lines 14 and 16, and Table A-2, line 2 multiplied by line 3.
3: Sum of lines 1 and 2.
8: Table A-16, col. 9.
9: Sum of lines 3 and 8.

(continued)

SOURCE TO TABLE 84 (concluded)

Col. 2, line 1: Table B-1, line 1.
2: Table A-5, line 4.
3: Sum of lines 1 and 2.
4-8: These values are estimated in several steps: (a) Number of dwelling units, by size of property, from various tables in *U.S. Census of Housing: 1950,* Vol. IV, Part 1. (Total, p. XVI, Table A; 1 unit, p. 467; 2-4 units, p. 554; 5 units and over, total above minus units in 1- to 4-unit properties.) The distribution by property size (number of units in property) of the units in properties of 5 units and over was estimated by multiplying the number of properties in each size class by the midpoint of the class and then adjusting these figures to add to the Census total for properties of 5 units and over (above). (b) Rent per unit: median rents, from *U.S. Census of Housing: 1950* (Vol. IV, Part 1, pp. 474, 557, 596, and 607) multiplied by the mean-to-median ratio (1.10335) from Table A-11. (c) Total value: the total rent in each size class (number of units multiplied by rent per unit) is multiplied by the ratio of value to rent for that class (Table A-16, notes to cols. 3 and 7).
9: Sum of lines 3 and 8.
Col. 3: *U.S. Census of Housing: 1950,* Vol. IV, Part 1, from Table 1 of each section.
Col. 4: Col. 2 divided by col. 1.
Col. 5.: Col. 3 divided by col. 2.
Col. 6: *U.S. Census of Housing: 1950,* Vol. IV, Part 1, from Table 3 of each section.
Col. 7: Col. 3 divided by col. 1.

small proportion of one- to four-unit rental properties are mortgaged.

Some data on number of units by mortgage status confirm the impression that a high proportion of one- to four-unit rental properties are debt free (Table 85). Less than a quarter of such units had mortgage debts in 1950, compared with almost 44 per cent of owner-occupied units. In 1956 the difference was even greater: 15 per cent on rental properties against 55 per cent on owner-occupied units.

An annual series for mortgage debt on owner-occupied nonfarm homes is estimated in Appendix Table B-3, col. 2. Compared with the corresponding home values,[22] it shows a gradual rise in the debt ratio from 13 per cent in 1945 to 33 per cent in 1960. The ratio for one- to four-family rental properties plus vacant units[23] is lower in every year and rises more slowly, from 12 per cent in 1945 to 21 per cent in 1960.

Net Flows of Housing Funds in the Postwar Period

Many aspects of postwar residential housing finance, such as the effects of government policy on the flow of mortgage funds, the distribution of financing among fund supplying institutions, and changes in the investment policies of banks and other financing agencies, have been

[22] Table 69, lines 1 and 5.
[23] Debt from Table B-3, col. 1 minus col. 2; value from Table 69, lines 6, 7, and 8.

TABLE 85

MORTGAGE STATUS OF ONE- TO FOUR-FAMILY NONFARM DWELLING UNITS, BY TENURE, 1950 AND 1956

	Number of Dwelling Units (thousands)			Mortgaged Units as Percentage of Total
	Total	Mortgaged	Not Mortgaged	
1950				
1. 1- to 4-family nonfarm houses	35,300	12,498	22,802	35.4
2. Owner-occupied	19,802	8,707	11,095	44.0
3. Renter-occupied	15,498	3,791[a]	11,707	24.5
1956				
4. 1- to 4-family nonfarm houses	42,896	16,825	26,071	39.2
5. Owner-occupied	25,637	14,203	11,434	55.4
6. Renter-occupied	17,259	2,622	14,637	15.2

SOURCE: Lines 1, 4: *Mortgaged Homes in the United States—Growth in the 1950's.*
2: *U.S. Census of Housing: 1950,* Vol. I, Chapter 1, p. xxxvi. It was assumed that units not reporting mortgage status were distributed in the same proportion as those which did report.
3: Line 1 minus line 2.
5: *1956 National Housing Inventory,* Vol. II, p. 17.
6: Line 4 minus line 5.

[a] This estimate is much larger than the number of rental dwelling units on owner- and renter-occupied nonfarm properties of 1-4 units from Vol. IV of the *1950 Housing Census* (2,999,000, see pp. 322, 472, and 554). Aside from reporting errors, the main difference should be rental units in structures of 1-4 units on properties of 5 or more units.

examined by Saul Klaman in *The Postwar Residential Mortgage Market* and by a number of other studies.[24]

We therefore have bypassed these questions, for the most part, and concentrate on the relationship of housing finance to the household sector and on the distribution between mortgage and equity financing of housing.

The value of both nonfarm residential construction, and total net acquisition of assets[25] by nonfarm households increased until 1955 or 1956 and then declined somewhat (Table 86 and Chart 25). So similar were the movements of the two series that the share of construc-

[24] For example, Grebler, Blank, and Winnick, *Capital Formation*; Jack M. Guttentag, "The Short Cycle in Residential Construction," *American Economic Review,* June 1961, and "Some Studies of the Post-World War II Residential Construction and Mortgage Markets" (unpublished Ph.D. dissertation, Columbia University, May 1958); Leo Grebler, *Housing Issues in Economic Stabilization Policy* (NBER Occasional Paper 72, New York, 1960); and papers by Saul B. Klaman, James J. O'Leary, and Warren L. Smith in *Study of Mortgage Credit* (85th Congress, 2nd Session, U.S. Senate Committee on Banking and Currency, Subcommittee on Housing, Washington, 1958).

[25] Purchases minus sales.

TABLE 86

NET FLOW OF FUNDS INTO NONFARM RESIDENTIAL CONSTRUCTION,[a] 1946-60
(billion dollars)

	Total (1)	Net Mortgage Flows (2)	*Net Equity Flows* Excluding Land (3)	*Net Equity Flows* Including Land (4)
1946	5.06	4.82	.24	1.00
1947	7.84	5.66	2.18	3.36
1948	11.44	5.86	5.58	7.30
1949	10.55	5.27	5.28	6.86
1950	14.29	8.73	5.56	7.71
1951	14.57	7.77	6.80	8.99
1952	14.79	7.48	7.31	9.52
1953	16.10	8.24	7.86	10.28
1954	16.65	10.09	6.56	9.06
1955	20.89	13.42	7.47	10.60
1956	20.26	11.50	8.76	11.80
1957	19.20	9.17	10.03	12.91
1958	19.45	11.74	7.71	10.63
1959	27.41	15.08	12.33	16.44
1960	25.19	12.16	13.03	16.80
1946-60	243.69	136.99	106.70	143.26

SOURCE

Col. 1: Table 72, line 13.
2: Klaman, *Volume of Mortgage Debt*, Table 4, col. 1, corrected and extended to 1960 using his methods and sources.
3: Col. 1 minus col. 2. This is a rough estimate, assuming that all financing of new construction other than mortgages is equity, and omitting investment in residential land.
4: Col. 3 plus 15 per cent of col. 1. See Goldsmith, *National Wealth*, Table A-10, note to col. 2.

[a] Excluding government.

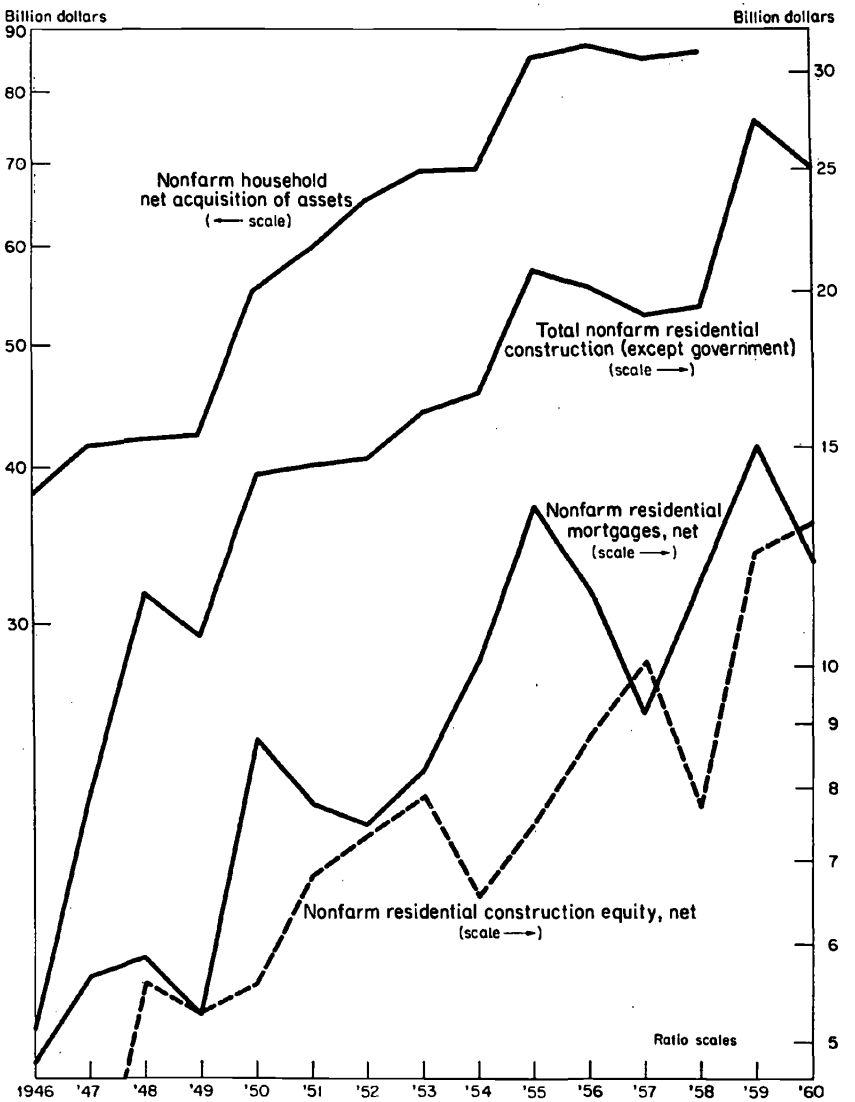
tion varied only between 23 and 27 per cent of asset acquisitions in all the years from 1948 through 1958 (Chart 26).

Mortgage flows contrasted with construction and asset acquisition by undergoing large fluctuations, particularly sharp peaks in 1950, 1955, and 1959. Equity financing of new houses[26] also fluctuated considerably, but with quite different timing. Unlike the three series mentioned previously and unlike even the annual series on personal income, it moved up and down in complete conformity with postwar

[26] Measured here by the difference between construction value and net mortgage flows. This is a crude measure, including any miscellaneous financing such as nonmortgage borrowing.

CHART 25

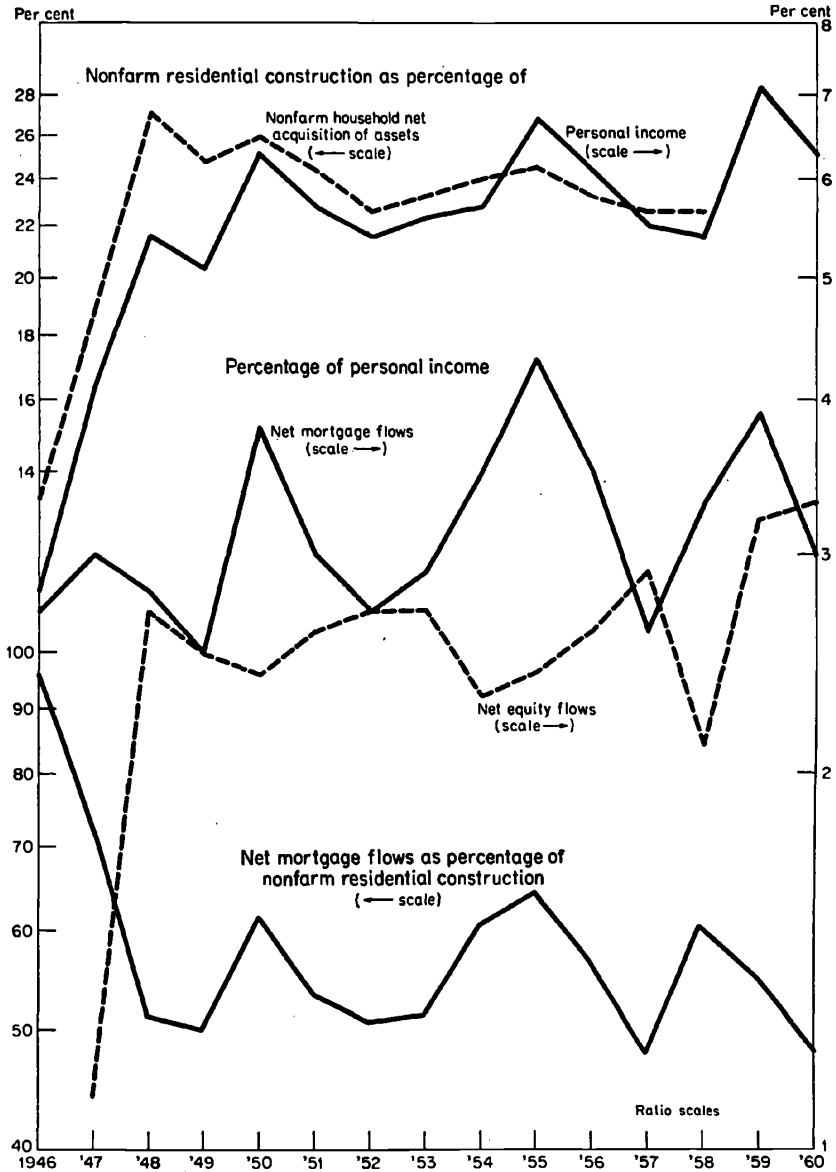
Flow of Funds into Total Net Acquisition of Assets by Nonfarm Households and into Nonfarm Residential Construction, 1946-60



Source: Table 86 and Vol. II, Table VII-1, line V.

CHART 26

Mortgage and Equity Flows into Nonfarm Residential Construction in Relation to Personal Income and Nonfarm Household Net Acquisition of Assets, 1946-60



Source: See source to Chart 25; *Survey of Current Business*, July 1962; and *U.S. Income and Output*.

business cycles. It reached peaks in 1948, 1953, and 1957, and fell in each of the following recessions.[27]

In most of the years after 1949 mortgage and equity flows moved in opposite directions, the main exceptions being the years following troughs—1950, 1955, and 1959. In all three cycles mortgage lending increased wth a rush at or soon after the trough and receded a year later, while equity financing continued to rise throughout the upswing.

Most studies of the postwar housing market have found that the availability of mortgage credit has been an important variable determining the rate of construction. The synchronization between the ratio of mortgage flows to personal income and the ratio of residential construction to personal income (Chart 26) seems consistent with this finding. Consumers do appear to have been persuaded to purchase more new housing in relation to their incomes in 1950, 1955, and 1959, for example, than in any other years. However, the proportion of net acquisition of assets which went into housing was apparently not affected; it does not reflect the flow of mortgage funds at all. In other words, consumers added to other assets as rapidly as to housing assets during the postwar housing splurges.[28]

There were very wide fluctuations in the ratio of mortgage lending to personal income. However, the relation of equity funds to income was almost inverse to that of mortgages. Although, relative to personal income, more housing was built and more mortgage funds were lent in 1950 and 1955 than in most of the other postwar years, home-owners invested comparatively little of their own funds in new construction. Part of the increase in mortgage flows, for example, between 1949 and 1950 and between 1953 and 1955, was absorbed by a rise in the ratio of net mortgage flows to construction expenditures. Presumably, although not necessarily, this rise could have reflected a rise in debt ratios on new construction, but this question involves gross flows which will be discussed later in this chapter.[29]

[27] Some rough calculations with preliminary data for 1961 suggest that the record of perfect conformity continued with a peak in equity financing in 1960.

[28] The stability of the ratio of housing to total asset acquisitions is not due to the overwhelming importance of housing investment. Residential construction was rarely as much as a quarter of total acquisitions of assets.

[29] The measure of equity flow used here, which is the difference between a gross flow (nonfarm residential construction expenditures) and a net flow (increase in nonfarm residential mortgage debt), has several peculiarities. It describes the household sector in the aggregate, not home buyers, because the mortgage repayments are not made by the same households as the construction or house purchase expenditures. Furthermore, this measure of equity covers all sources of funds other than mortgages, and may thus include other types of loans which may be used to finance house purchases.

The treatment of land value also causes difficulties. Construction expenditures do not include land purchases, and equity flows estimated from construction are there-

Gross Flows of Housing Funds in the Postwar Period

SOURCES AND TYPES OF GROSS FLOW DATA

Net flows of funds are only a step away from the national and sectoral balance sheets from which they are derived. From this closeness they gain reliability, but at the price of hiding many important features of the movement of funds through the housing market. Funds are used not only for the purchase of newly built houses but also for the purchase of used houses, for repairs and alterations on existing houses, for mortgage amortization and prepayments, and, to some extent, for purposes entirely unconnected with the financing of residential real estate. Funds enter the market not only via new house mortgages and equity flows but also through mortgages on existing houses, both for refinancing and as additions to mortgages, and through equity flows on and sales of existing houses. To examine these relationships, one must look behind the net flows to the gross flows which give rise to them.

The data on gross flows, which are described in Appendix C, are less reliable than the balance sheets and net flows, but they were constructed in such a way as to fit together with them and to reconcile the net flows with, in most cases, the regularly published series on mortgage recordings of $20,000 or less. The recordings are assumed to represent gross extensions of nonfarm residential one- to four-family mortgage debt. These mortgage recordings are based on reports by mortgage lenders and to that extent are fairly reliable, but they include some nonresidential real estate and exclude some higher-priced residences.[80]

Gross mortgage repayments can be calculated from gross lending and

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fore understated by the cost of land purchased by households from other sectors. The other equity estimate, including land costs, probably is an overstatement, because the figure of 15 per cent represents all land purchases rather than only those from other sectors.

[80] The *Savings and Home Financing Source Book,* Federal Home Loan Bank Board (Washington, 1960, p. 46) gives a more detailed discussion of the series. A more thorough examination of gross flow data and the problems involved in measuring them can be found in Saul B. Klaman, "Mortgage Flow Data for Current Market Analysis," *1959 Proceedings of the Business and Economic Statistics Section of the American Statistical Association.* Appendix C of this paper describes some of the gross flow data for types of mortgages and institutions on which these aggregates are based.

Another series on mortgage loans made on one- to four-family nonfarm homes, covering 1925-50, was published by the Federal Home Loan Bank Board in *Estimated Home Mortgage Debt and Financing Activity, 1950* (Washington, 1951). The series was discontinued after that date.

Grebler, Blank, and Winnick (*Capital Formation,* Table M-1) estimated the gross flow of mortgage and equity funds into all residential real estate for 1911-52.

net changes in mortgage debt outstanding. The breakdown of repayments by the FHLBB into amortization, partial prepayments, and prepayments in full is less reliable than the total

Figures for tangible uses of funds are NBER estimates based mainly on official data for new construction, repairs, and alterations.[31] If, as now seems likely, these are substantially understated, we have probably correspondingly underestimated net equity flows into housing and overstated the relative role of mortgages in housing finance.

Transactions in existing houses are taken from a roughly estimated series formerly published by the Federal Reserve Board as part of its flow-of-funds accounts but since discontinued. We have extrapolated them to 1958 on the basis of FRB estimates of the number of purchases of existing houses and average values of one-family houses insured by the FHA under Section 203, and to 1960 by a FHLBB series for mortgage lending on existing houses and FHA data on loan-to-value ratios for existing house loans under Section 203.

Both the Federal Reserve Board and the Federal Home Loan Bank Board have made estimates of the division between lending on new houses and lending on existing houses. The FRB figures have not been published officially but most of them appear in Klaman's monograph.[32] There is some foundation for the breakdown in data published for savings and loan association lending[33] and for FHA and VA mortgage extensions. The FHLBB gives consistently lower figures for extension of mortgages on new homes and therefore implies greater equity financing of them. The two series differ more in level than in movement which is close to being parallel except in a couple of years.

Mortgage loans other than on new houses, among sources of funds, are broken down by the FHLBB into refinancing, which is estimated as being equal to the item on the uses side called "prepayments in full," and "additional financing." The FRB estimates are divided into mortgage credit for "existing house purchases" and for "other purposes." This classification is based on, and estimated from, the data for savings and loan associations mentioned above. The "other" category presumably includes, therefore, loans for repairs, additions and alterations, and refinancing.[34] The FRB totals for "other purposes," however,

[31] Goldsmith, *National Wealth*, Appendix B.

[32] Klaman, *Postwar Residential Mortgage Market*, Chart 22 and Table A-10.

[33] The discussion by Klaman (*ibid.*, pp. 159-163) suggests that the savings and loan data contain many defects. "Loans classified as for construction of homes include temporary loans to builders as well as permanent loans to individuals. Loans classified as for purchase of homes include loans for purchase of both new and existing houses. Moreover, the figures given are confused by a significant degree of duplication; loans reported once under the construction category are reported again under the purchase category."

[34] See, for example, note in *Federal Reserve Bulletin*, August 1960, p. 908.

TABLE 87

GROSS SOURCES OF FUNDS, ONE- TO FOUR-FAMILY NONFARM HOUSING, 1946-60
(billion dollars)

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
1. Extension of mortgages on new houses	2.4	3.9	5.4	5.3	8.6	7.7	7.5	8.5	9.6	13.3	12.1	10.5	10.6	14.8	13.9
2. Additional financing on existing houses	4.0	3.4	2.3	2.0	2.3	3.0	4.0	4.2	5.4	5.1	5.4	5.6	7.6	7.0	5.9
3. Refinancing on existing houses	4.2	4.4	4.2	4.5	5.2	5.6	6.5	7.1	8.0	10.1	9.6	8.1	9.2	10.4	9.5
4. Gross mortgage loans	10.6	11.7	11.9	11.8	16.2	16.4	18.0	19.7	23.0	28.5	27.1	24.2	27.4	32.2	29.3
5. Receipts from sale of existing houses	9.5	8.6	8.1	9.0	11.6	12.4	17.0	17.4	20.2	21.4	22.2	20.7	23.0	23.3	20.4
6. Equity flow for new house purchases	.8	1.5	3.2	2.3	2.9	4.2	4.5	4.5	4.1	4.6	4.8	5.2	5.7	9.2	7.6
7. Net equity flow for existing houses	0	1.5	3.5	3.9	4.4	4.7	4.5	4.9	4.1	5.3	6.2	7.0	5.4	7.9	9.8
8. Gross sources of funds	20.9	23.3	26.7	27.0	35.1	37.7	44.0	46.5	51.4	59.8	60.3	57.1	61.5	72.6	67.1

SOURCE

Lines 1, 2, 3, 1950-60: *Savings and Home Financing Chart Book: 1962*, FHLBB, pp. 25a and 26a.

1, 1946-49: Extrapolated back from 1950 by estimate of mortgage loans on total new residential construction from Grebler, Blank, and Winnick, *Capital Formation*, p. 455, col. 12, adjusted to exclude multifamily construction. This was done on the basis of the ratio of 1- to 4-family to total housekeeping construction expenditures (Table 72).

2, 1946-49: Line 4 minus the sum of lines 1 and 3.

3, 1946-49: Table 88, line 12.

4: *Estimated Home Mortgage Debt and Financing Activity, 1961*, FHLBB, 1962.

5: Table 88, line 4.

6: Table 88, line 3, minus line 1 of this table.

7: Table 88, lines 8 and 13, minus the sum of lines 2, 3, and 5 of this table.

8: Sum of lines 4-7.

are much lower than the FHLBB figures for refinancing alone and it therefore seems likely that the FRB excludes refinancing in connection with house sales.

Tables 87 and 88 summarize the available data on total gross flows of funds through the one- to four-family housing market. The tangible uses represent, for the purchasers, real investment in housing. This includes a small amount of dealers' margins on sales of existing houses and land costs on new homes. All of the tangible uses, excluding the purchase of existing houses but including the cost of the transactions in them, are the real components of the changes in the stock of housing in the national balance sheets. The intangible uses involve the repayment of housing debt out of equity funds or out of the item "additional financing of existing homes."

CHANGES IN THE LEVEL OF GROSS MORTGAGE FLOWS

One feature common to almost all the absolute series on tangible housing expenditures and gross flows of mortgage credit is their lack of synchronization with the cyclical fluctuations of the economy as a whole. They did undergo cycles, but the peaks and troughs did not, in general, coincide with those marked out by National Bureau reference dates. There is, in fact, some evidence that mortgage flows moved countercyclically.[35] Among the uses of funds, prepayments and purchases of new houses were at their peak in 1955 (Chart 27) and purchases of existing houses in 1956. All three of the series showed troughs in 1957—a reference peak. Prepayments and existing home purchases hit their troughs in 1948, and only new construction coincided with the reference trough in 1949. None of the three, at least in these annual data, was marked by the 1953-54 business cycle. The only area of gross uses which followed the reference dates was repairs and alterations which increased in every year except 1949, 1954, and 1958, declining in the first and third recessions and remaining steady in the other. Amortization payments rose in every year without regard to cyclical phase.

Among the sources of funds, refinancing and sales of existing houses are entirely or mainly the obverse of prepayments and existing house purchases and therefore need no additional description. The extension of mortgages on new homes exhibited the familiar sharp peaks in 1950, 1955, and 1959, and troughs in 1952 and 1957. "Additional financing" on existing homes, after falling for several years, rose rapidly from 1949 to 1958. It reached peaks in two trough years, 1954 and 1958.

It is, of course, not correct to say that the housing and mortgage series are unaffected by the business cycle; the apparent dependence of

[35] See, for example, Guttentag, "Some Studies of the Post-World War II Residential Construction and Mortgage Market."

TABLE 88

GROSS USES OF FUNDS, ONE- TO FOUR-FAMILY NONFARM HOUSING, 1946-60
(billion dollars)

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
Tangible Uses															
1. Expenditures on new structures	2.8	4.8	7.6	6.7	10.1	10.5	10.5	11.4	11.9	15.6	14.6	13.4	13.8	20.2	17.9
2. Cost of land under new structures	.4	.6	1.0	.9	1.4	1.4	1.5	1.6	1.8	2.3	2.3	2.3	2.5	3.8	3.6
3. Total cost of new structures	3.2	5.4	8.6	7.6	11.5	11.9	12.0	13.0	13.7	17.9	16.9	15.7	16.3	24.0	21.5
4. Purchase of existing houses	9.5	8.6	8.1	9.0	11.6	12.4	17.0	17.4	20.2	21.4	22.2	20.7	23.0	23.3	20.4
5. Cost of transaction in existing houses	.8	.7	.8	.8	1.0	1.0	1.1	1.1	1.2	1.3	1.3	1.2	1.2	1.4	1.3
6. Total cost of transfers of existing houses	10.3	9.3	8.9	9.8	12.6	13.4	18.1	18.5	21.4	22.7	23.5	21.9	24.2	24.7	21.7
7. Repairs and alterations	1.3	2.0	2.4	2.1	2.3	2.4	2.7	2.9	2.9	3.3	3.6	3.8	3.7	4.8	5.0
8. Total expenditures on existing houses	11.6	11.3	11.3	11.9	14.9	15.8	20.8	21.4	24.3	26.0	27.1	25.7	27.9	29.5	26.7
9. Total expenditures on new and existing houses	14.8	16.7	19.9	19.5	26.4	27.7	32.8	34.4	38.0	43.9	44.0	41.4	44.2	53.5	48.2
Financial Uses															
10. Amortization	1.4	1.7	2.1	2.5	2.8	3.3	3.7	4.1	4.5	5.0	5.7	6.5	7.0	7.5	8.0
11. Partial prepayments	.5	.5	.5	.5	.6	.9	1.0	1.0	.9	.8	1.0	1.0	1.2	1.2	1.4
12. Prepayments in full	4.2	4.4	4.2	4.5	5.2	5.6	6.5	7.1	8.0	10.1	9.6	8.1	9.2	10.4	9.5
13. Total gross repayments	6.1	6.6	6.8	7.5	8.6	9.9	11.2	12.2	13.4	15.9	16.3	15.7	17.3	19.1	18.9
14. Total gross uses of funds	20.9	23.3	26.7	27.0	35.0	37.6	44.0	46.6	51.4	59.8	60.3	57.1	61.5	72.6	67.1

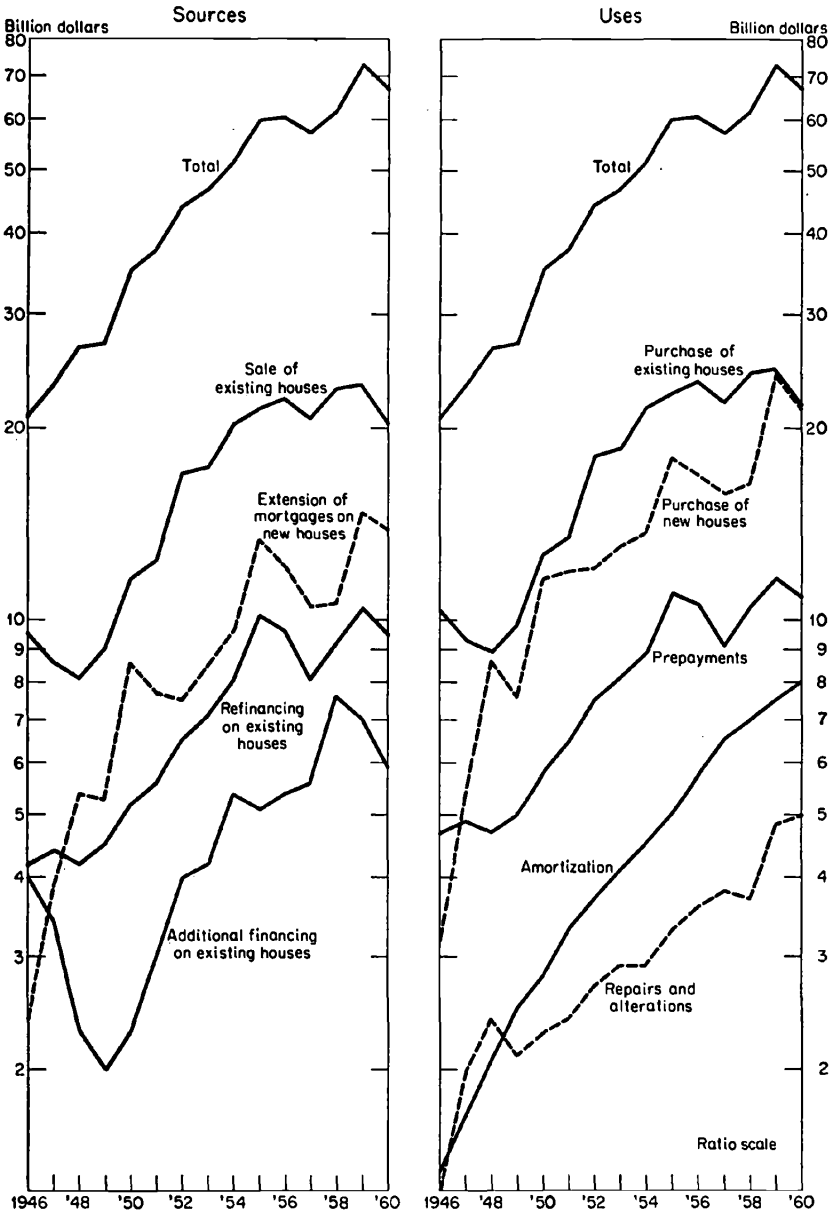
SOURCE TO TABLE 88

Data from Goldsmith, *National Wealth*, have been corrected and extended to 1960 using the sources and methods cited there.

Line 1: *Ibid.*, Table B-2, sum of cols. 1, 2, 3, and 5.
2: Line 1 multiplied by *ibid.*, Table B-11, col. 4.
3: Lines 1 plus 2.
4: Lines 6 minus 5.
5: *Ibid.*, Table B-4, col. 5, multiplied by 1.3333.
6: 1946-57 from Table 63 of FRB, *Flow of Funds in the United States, 1939-1953* and of "Flow-of-Funds Sector and Transactions Accounts, 1950-1955" (mimeographed), and FRB worksheets. The 1957 figure was extrapolated to 1958 by the product of FRB estimates of the number of transfers of existing homes and FHA figures for average value of existing homes mortgaged under Section 203 (*Annual Report of Housing and Home Finance Agency*, 1958, p. 108). The 1958 estimate was extrapolated to 1960 using FHLBB data on mortgage lending on existing houses (*Savings and Home Financing Chart Book, 1962*, pp. 25a and 26a) and FHA data on average loan-to-value ratios for existing house loans under Section 203 (*Annual Report of Housing and Home Finance Agency*, 1960, p. 114).
7: Goldsmith, *National Wealth*, Table B-2, col. 4.
8: Lines 6 plus 7.
9: Lines 3 plus 8.
10, 1950-60: *Savings and Home Financing Chart Book: 1962*, p. 26a.
1946-49: Extrapolated from 1950 via debt outstanding at beginning of year (Vol. II, Table IV-b-11a-2).
11, 1950-60: Same as line 10.
1946-49: Assumed 10 per cent of difference between lines 13 and 10 as in 1950.
12, 1950-60: Same as line 10.
1946-49: Line 13 minus the sum of lines 10 and 11.
13: Nonfarm mortgage recordings of $20,000 or less minus net change in mortgage debt outstanding from *Home Mortgage Debt and Financing Activity, 1961*, FHLBB, 1962.
14: Lines 9 plus 13.

CHART 27

Gross Sources and Uses of Funds, One- to Four-Family Nonfarm Houses, 1946-60



Source: Tables 87 and 88.

the flow of funds into new housing mortgages on interest rates in other sectors is evidence enough of a connection. But the timing of postwar reference cycles is not clearly imprinted on these flows, with the possible exception of the repair and alteration series.

Many of the gross flow series for housing show signs of a slackening or an interruption of growth after 1955. This appeared in several components of the total, not only in the extension of mortgages on new homes, which had undergone a considerable decline after 1950, but also in refinancing and sales of existing houses, both of which had risen uninterruptedly since 1948.

The one important source of funds not shown in Chart 27 is the flow of equity funds into housing: the flow of owners' funds, excluding capital gains. This is one element, not always the most important, in the change in owners' equity, a breakdown of which is given in Table 89 and Chart 28. The flow of owners' equity funds (gross saving) for

TABLE 89

COMPOSITION OF CHANGE IN OWNERS' EQUITY, ONE- TO FOUR-FAMILY NONFARM HOUSES, 1946-60

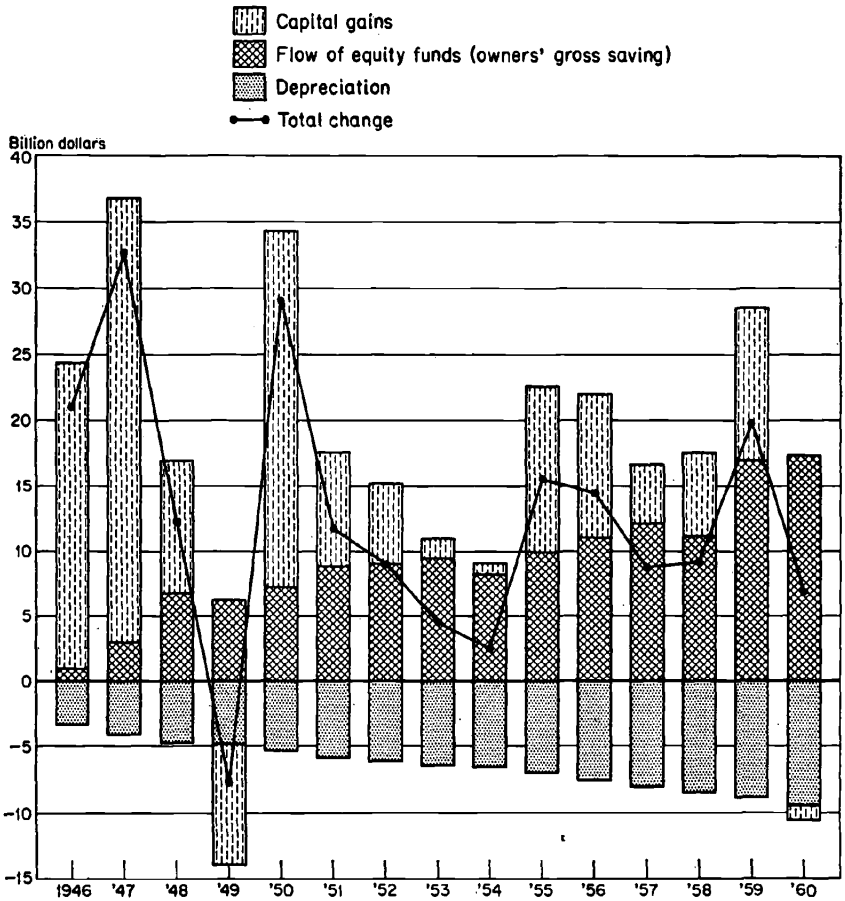
	Change in Owners' Equity (1)	Gross Investment (2)	Change in Mortgage Debt (3)	Owners' Gross Saving (4)	Depreciation (replacement cost) (5)	Owners' Net Saving (6)	Capital Gains (7)
1946	20.9	5.3	4.4	.9	3.4	—2.5	23.4
1947	32.6	8.1	5.2	2.9	4.2	—1.3	33.9
1948	12.2	11.8	5.1	6.7	4.8	1.9	10.3
1949	—7.7	10.5	4.3	6.2	4.9	1.3	—9.0
1950	29.0	14.8	7.6	7.2	5.3	1.9	27.1
1951	11.7	15.3	6.5	8.8	5.9	2.9	8.8
1952	9.0	15.8	6.8	9.0	6.2	2.8	6.2
1953	4.5	17.0	7.6	9.4	6.5	2.9	1.6
1954	2.5	17.8	9.6	8.2	6.6	1.6	.9
1955	15.5	22.5	12.6	9.9	7.1	2.8	12.7
1956	14.4	21.8	10.8	11.0	7.6	3.4	11.0
1957	8.7	20.7	8.6	12.1	8.0	4.1	4.6
1958	9.2	21.2	10.1	11.1	8.4	2.7	6.5
1959	19.7	30.2	13.2	17.0	8.8	8.2	11.5
1960	6.8	27.8	10.4	17.4	9.4	8.0	—1.2

SOURCE

Col. 1: Change in total value (Table 67) minus change in mortgage debt (col. 3).
2: Table 88, sum of lines 3, 5, and 7.
3: *Estimated Home Mortgage Debt and Financing Activity, 1961*, FHLBB, 1962.
4: Col. 2 minus col. 3.
5: Goldsmith, *National Wealth*, Table B-5.
6: Col. 4 minus col. 5.
7: Col. 1 minus col. 6.

CHART 28

Composition of Change in Owners' Equity, One- to Four-Family Nonfarm Houses, 1946-60



Source: Table 89.

such requirements as amortization payments and down payments on new houses is seen to follow all of the postwar reference cycles. It reached peaks in 1948, 1953, 1957, and probably, judging from preliminary data mentioned earlier, in 1960 also; and fell in 1949, 1954, and 1958.[36]

During the first two years after the war the flow of equity funds was not even sufficient to offset depreciation. After 1948 the equity flow

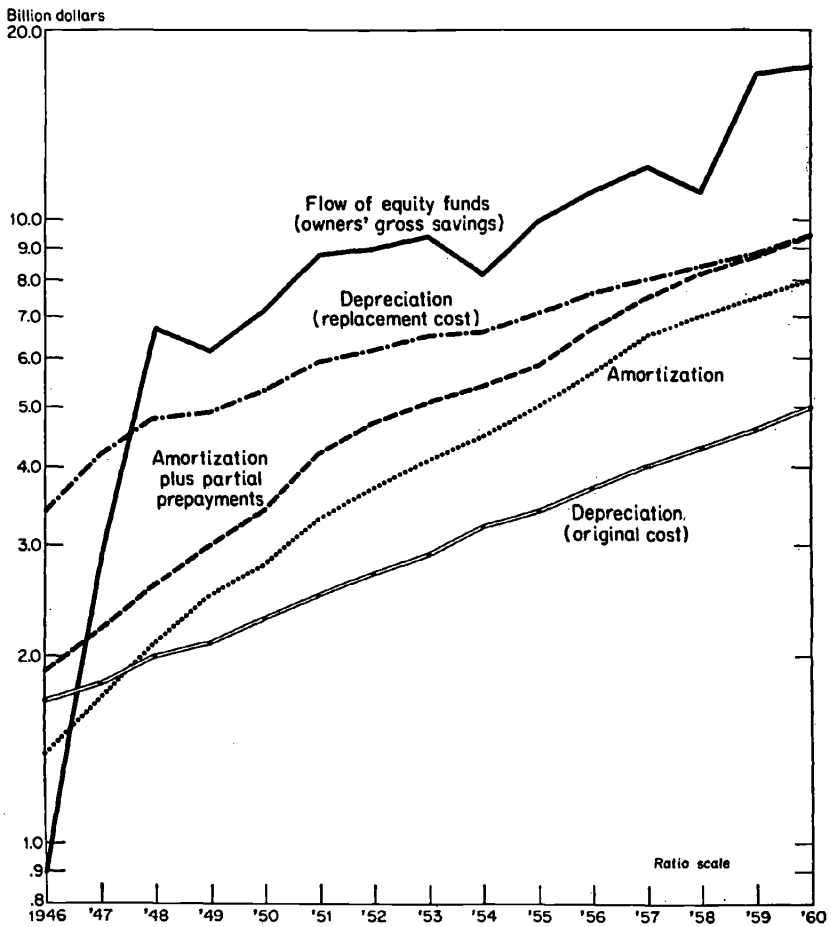
[36] This is a somewhat broader concept of equity flow than that shown in Table 86 since this one includes net saving in existing houses.

exceeded depreciation by about $2 billion at first and then $3 to $4 billion. At the end of the period the difference jumped to $8 billion. But the three postwar recessions cut into this excess sharply.

Amortization payments never equaled depreciation, and even amortization plus partial prepayments on mortgages (total prepayments are assumed to be all for refinancing) only caught up with depreciation in 1960 (Chart 29). The main reason for the gap was the large element in depreciation which represents price change. Depreciation, when measured at replacement cost, varies with the price level, while amor-

CHART 29

Depreciation, Amortization, Equity Funds, One- to Four-Family Nonfarm Housing, 1946-60



Source: Tables 88 and 89 and Goldsmith, *National Wealth*, Table B-5.

tization is related to the original cost of building and is not affected by subsequent price changes. If the comparison is made with original cost depreciation, amortization was higher except in the first two years, and rose more rapidly.

The low level of gross saving compared to depreciation in the first five years after the war did not mean that home-owners' equity was failing to grow. Except in the recession year 1949, there were very large gains in equity, three of them (1946, 1947, 1950) being greater than any later ones. These were due to large capital gains from increases in house prices, represented in these computations by construction costs. Capital gains far outweighed saving as a source of increases in equity in the early postwar years and were still of considerable importance in the 1950's. In a number of ways fluctuations in the level of capital gains follow those in such series as the ratio of house purchases to the stock of houses (see below).. Both were at a high level just after the war, fell to troughs in 1949; both hit peaks in 1950, 1955, and 1959, and troughs in 1957, and declined sharply in 1960. The three peaks in capital gains were all in periods of considerable residential construction.[37]

RELATIONSHIP OF NEW HOUSE PURCHASES TO TOTAL HOUSE PURCHASES AND STOCK OF HOUSING

The period of rapid growth (from 2 to 5 per cent) in new house purchases relative to the existing stock of housing ends with the 1950 peak (Chart 30). After that no upward trend is in evidence, although each of the following peaks was slightly above its predecessor. The distinctive cyclical swings observed in insured mortgages and related series stand out clearly. Sales of existing houses, on the other hand, were large relative to the total housing stock just after the war. They sagged quickly, then rose again until 1955, more than matching their initial ratio to the housing stock, and have declined almost every year since then.

The distribution of house purchases reflects these differences in rate of growth. The share of new houses in total purchases was less than one-quarter in 1946; it rose rapidly to almost a half in 1948, and then began a gradual fluctuating decline which brought it to about 40 per cent by 1958. In the last two years, however, it suddenly reached close to 50 per cent again. At first, after the war, there were very few new houses to buy, and there was probably considerable purchasing of former rental housing of prewar vintage, which accounted for the

[37] Grebler, Blank, and Winnick (*Capital Formation*, pp. 181-189) discuss the flow of mortgage and equity funds into new residential construction from 1911 to 1952.

importance of the purchases of existing houses. Then, after the first postwar housing boom had built up a considerable reservoir of postwar houses, these began to be sold by their first owners, slowly increasing the existing house share of the market until the recent reversal.[38]

GROSS MORTGAGE FINANCING RATIOS

One of the advantages of gross flow data is that they give a much clearer picture than net flows of the financing needs and practices of home buyers. The net financing ratio (the ratio of net mortgage extensions to purchases of houses) describes the financing of the nonfarm sector as a whole, but the gross financing ratio describes the financing of the part of the household sector that is doing the buying. It does not cancel out mortgage repayments by home-owners against mortgage borrowing by home buyers.

There are two sources of gross mortgage flow data, the Federal Reserve Board and the Federal Home Loan Bank Board. The FRB data, some of which were published by Klaman, diverge substantially from those of the FHLBB, mainly by showing a lower level of lending on new homes, despite the fact that the two agencies start from the same estimates of total gross lending. However, they generally agree well in movement except for the sharp fluctuations in the FHLBB series in 1950 and 1951 (Chart 31).

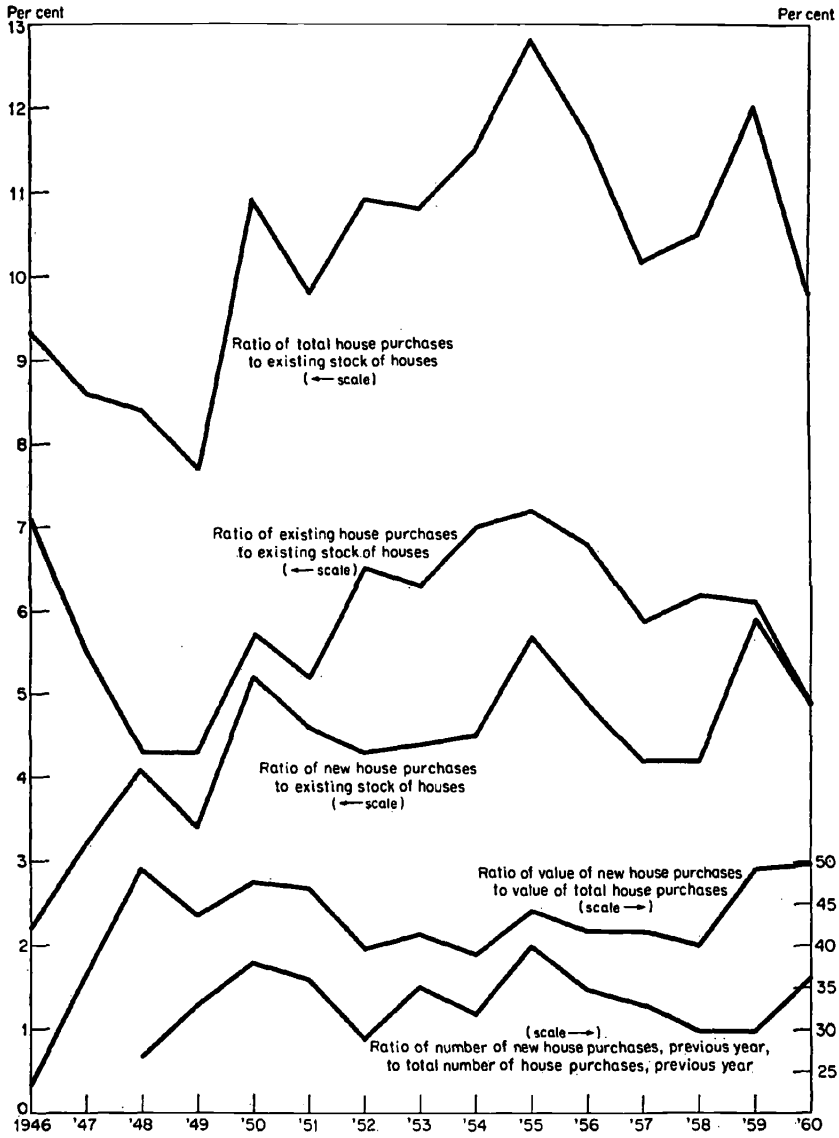
Gross financing ratios were very high just after the war, declined to a low point in 1952, and crept up after that but not to anything near the 1946 and 1947 levels. At times the two components moved quite differently. The new house financing ratio reached high levels in 1946, 1950, and 1955 and has undergone wide swings without any decided trend, despite the efforts of government guarantee programs. The financing ratio for existing houses reached very high levels—80 to 84 per cent—just after the war. Then they fell to approximately 60 per cent in the early 1950's and rose to 70 per cent and above in 1958-60, higher, surprisingly, than ratios for new houses.

It seems unlikely that all of the financing on existing houses was connected with transactions in them. Even the loan-to-value ratios for FHA-guaranteed mortgages, usually higher than on conventional loans, did not reach the level of the gross financing ratio in 1946 and 1947.

[38] Estimates of numbers or proportions of new and existing houses purchased in 1947-58 were made in Survey of Consumer Finances reports published in the *Federal Reserve Bulletin*. The share of new houses in numbers was generally below the value shares (Chart 30), an appropriate relationship since average values of new houses are considerably higher than those of old ones. But a puzzling feature of the series is that in most years after 1948 it leads the value ratios consistently by a year. The aggregate values of house purchases estimated in these reports were far below those in Table 88.

CHART 30

Purchases of New and Existing Housing in Relation to Stock of Housing, 1946-60



Furthermore, only in 1946-48 did the ratios of mortgage extension to value of transactions on existing houses exceed that on new houses until 1958-60. The burst of mortgage financing just after the war seems to have reflected not only the high level of housing market activity but also the raising of debt on houses which were not transferred.

Source: New and existing house purchases are from Table 88. Stock of one- to four-family housing is from Table 69. Number of new and existing house purchases is as follows (in millions):

	New	Existing	New as Percentage of Total
1947[a]	0.6	1.6	27
1948[a]	0.8	1.6	33
1949[b]	0.6	1.0	38
1950[b]	0.8	1.4	36
1951[b]	0.7	1.7	29
1952[c]	0.6	1.1	35
1953[c]	0.7	1.5	32
1954[c]	1.0	1.5	40
1955[c]	0.9	1.7	35
1956[d]			33
1957[e]			30
1958[e]			30
1959[f]			36

These data are from *Federal Reserve Bulletin* as follows: [a] July 1951; [b] August 1955; [c] August 1956; p. 820; [d] June 1957, pp. 628-629; [e] September 1959, p. 1099; and [f] *1960 Survey of Consumer Finances*, p. 53.

It is possible that the postwar surge of existing house transfers, although it was not as great in comparison to the housing stock as that of 1954-56 (Chart 30), required a higher proportion of mortgage financing. A larger part of the sales during the 1940's than in the 1950's may have been to former renters who were entering the market without equity from sales of other houses. Such purchasers would be forced to rely more heavily on mortgage credit than former home-owners.

Several features of the data on gross financing ratios are reflected in the information for FHA-insured loans under Section 203, the main FHA home mortgage program. The peaks in 1950 and 1955, the trough in 1952, and the rapid fall from 1955 to 1957 all show up in both sets of data for new houses (Chart 32).

The existing house ratios under Section 203 confirm the 1955 peak, but they were fairly steady before 1954 and add to the evidence that the high ratios of 1946-48 were not a product of transactions in houses.

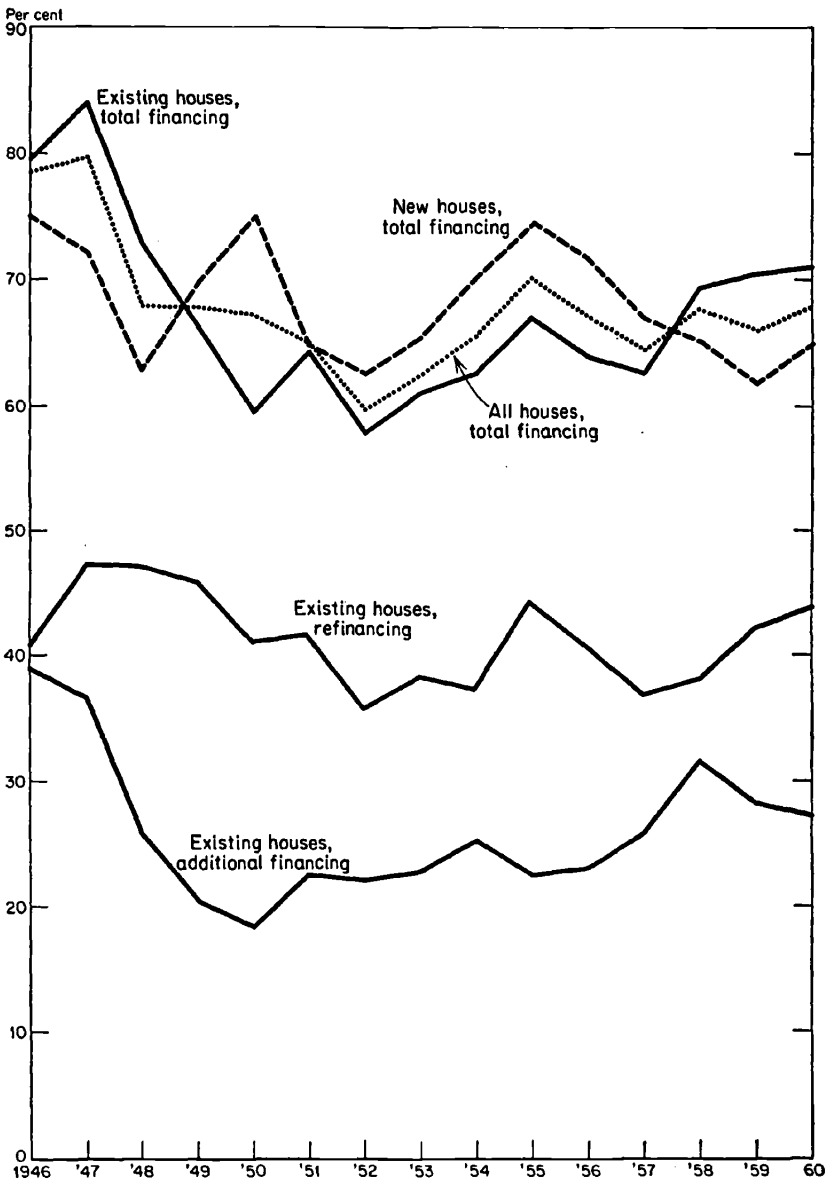
The FHA ratios do contain one distinctive feature hardly visible at all in the totals. That is a very rapid rise from 1957 to 1959 in the financing ratios for both new and existing house transactions to the highest levels in the postwar years. The only reflection of such a rise in Chart 31 is in lending on existing houses, and even that ratio does not reach a level higher than in the 1940's.

DISTRIBUTION OF GROSS FLOWS AMONG TYPES OF MORTGAGE AND FINANCING INSTITUTION

Data on net mortgage flows show how much credit is being supplied to the mortgage market by each institution or through each type of mortgage, after deducting the funds received from mortgage sales and repayments. But since the mortgagors receiving new credit are typically

CHART 31

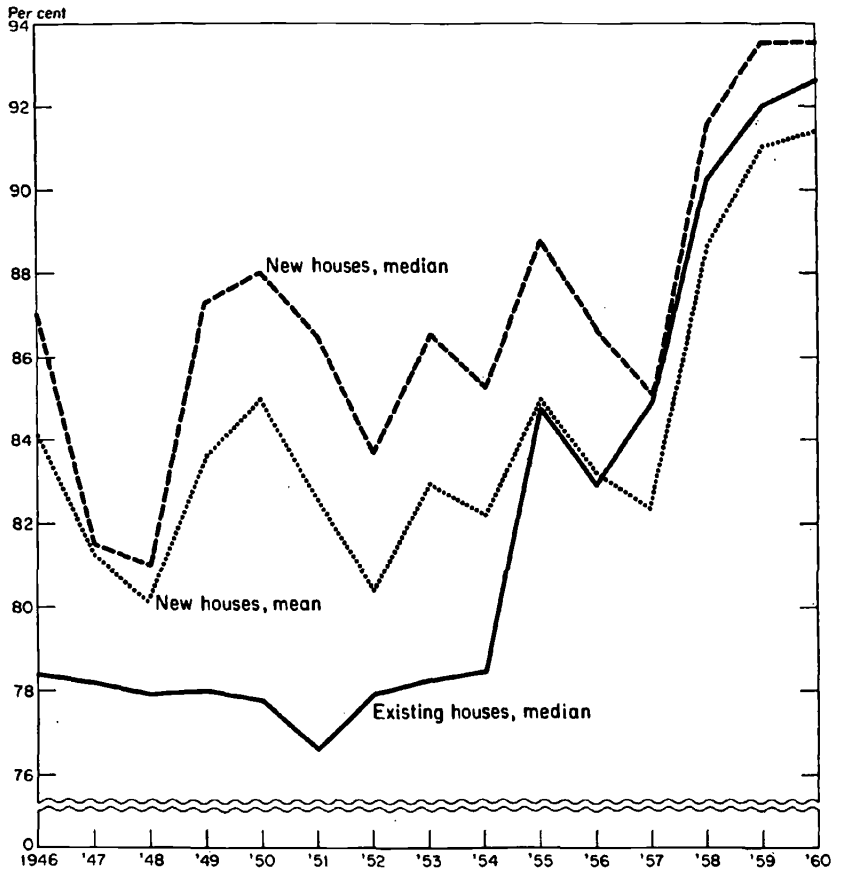
Financing of New and Existing House Purchases, Gross Extension of Mortgages as Percentage of Cost of Houses, 1946-60



Source: Tables 87 and 88.

CHART 32

Mortgage Financing Ratios, Transactions Under FHA Section 203, 1946-60



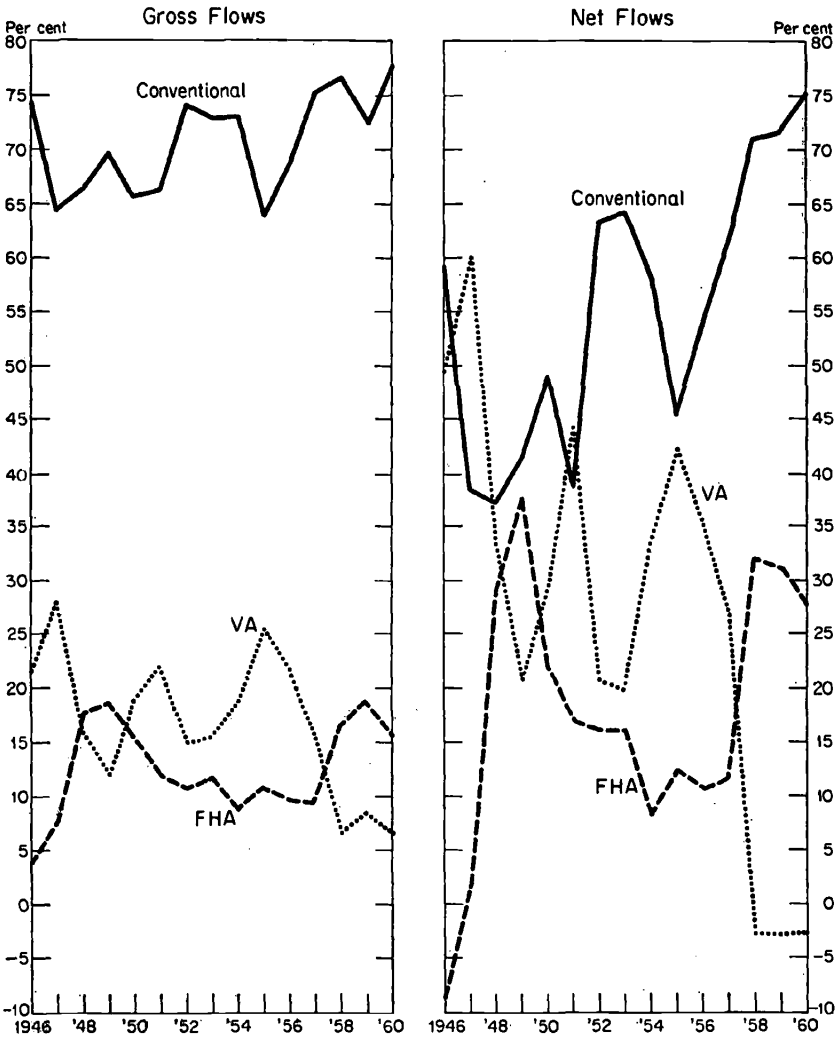
Source: *Annual Report of Housing and Home Finance Agency*, various issues, 1947-60.

not those who are making mortgage repayments, the gross flows of mortgage credit may be more useful for tracing the influence of credit conditions on the mortgage market.

The most striking difference between the picture presented by gross flows and that shown by net flows is in the distribution by type, among conventional, FHA, and VA mortgages (Chart 33). Conventional mortgages supplied less than half of the net flow from 1947 through 1951 and never above 65 per cent until 1958. Their share increased after that, reaching 70-75 per cent in 1958-60. Gross flows show the share of

CHART 33

Percentage Distribution of Gross and Net Flows, One- to Four-Family Nonfarm Residential Mortgages, by Type of Mortgage, 1946-60



Source: Net flows are from Klaman, *Volume of Mortgage Debt*, Tables 26, 31, 33, and 35, corrected and extended to 1960 using his methods. Gross flows are from Appendix Table C-2.

conventional mortgages always above 64 per cent of the total, and rising considerably higher in recent years.

The net flows exhibit violent shifts from year to year in the proportions supplied in the three forms. The width of the fluctuations is illustrated by their range: from 37 per cent of the net mortgage flow to 75 per cent for conventional mortgages, from 60 to —3 per cent for VA mortgages, and from 38 to —9 per cent for FHA mortgages. Not only were the shifts in net sources large over the period as a whole, but most of the range was covered in periods of a year or two.

No such radical shifts in the type of mortgage funds supplied appear in the gross flow data. Here conventional mortgages are of much greater importance than in the net flows, supplying 64 to 78 per cent of the gross funds in every year. There was an upward trend in this ratio, imparted mainly by the data for 1957-60. Gross flows of VA loans varied between 7 and 28 per cent of the total (mostly between 15 and 22 per cent) and FHA loans between 4 and 19 per cent.[39]

In both gross and net flows, conventional loans moved inversely to VA lending very regularly. The net flows of the two types moved in the same direction only three times in the fourteen years, and the gross flows only twice. FHA and VA loans changed in opposite directions at times, particularly in 1948-51 and in 1958, but conventional and FHA loans seem much less closely related. These facts suggest the existence of competitive relationships, perhaps in response to changes in interest rate differentials, between VA and conventional mortgages more than between FHA and VA or between conventional and FHA mortgages.

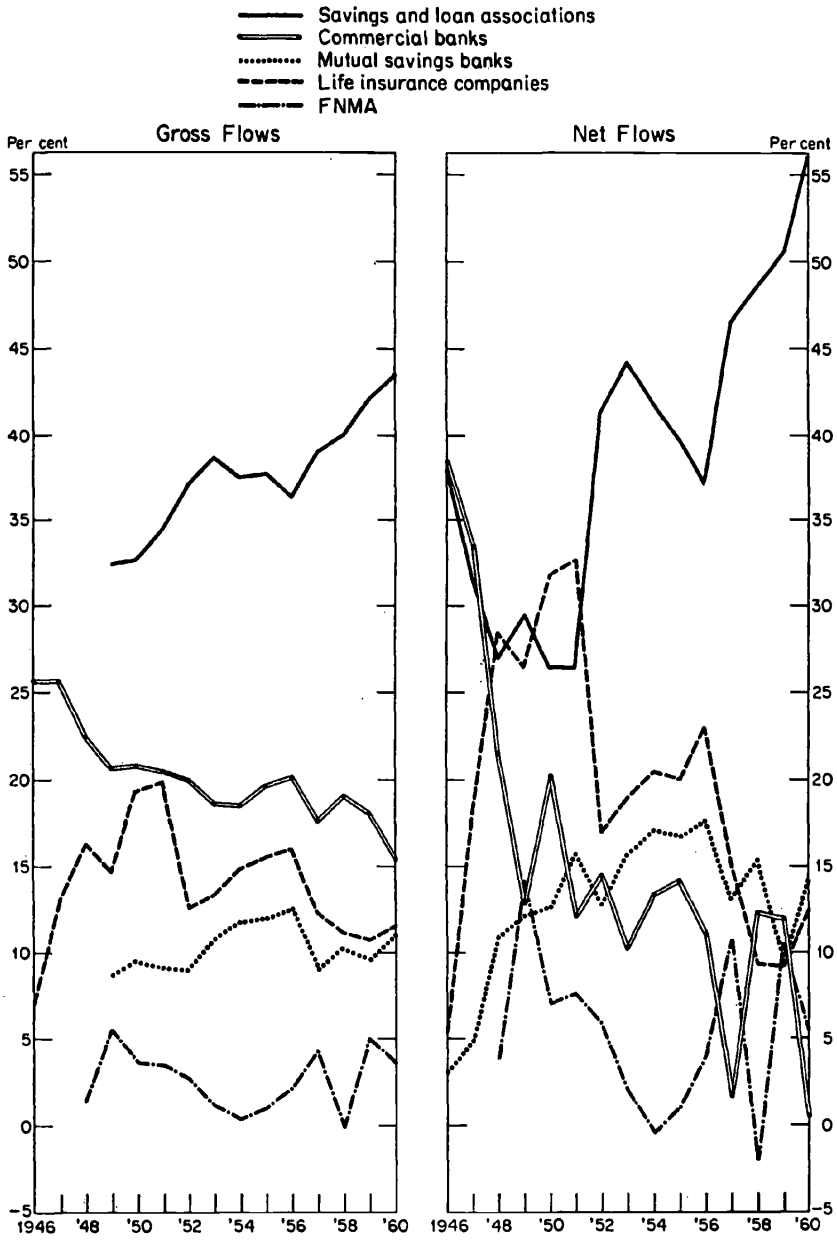
Use of gross instead of net flows modifies the picture of the institutional distribution of mortgage financing also (Chart 34). In every case, both the extent of year-to-year fluctuations and the total range of fluctuation are greatly reduced.

Of more interest is the fact that shifting to gross flows reduces the shares of several major sectors in mortgage financing. The share of life insurance companies is reduced from 18 to 14 per cent for the postwar period as a whole, that of savings and loan associations from 42 to 38 per cent, that of mutual savings banks from 14 to 10 per cent for 1949-60. Commercial banks and others, mainly individuals, are considerably more important in the gross flows, supplying 37 per cent in 1949-60 compared to 25 per cent of the net. The whole group of commercial and mutual savings banks and others were responsible for 48 per cent of the gross flow of funds in the postwar years against 41 per cent of net flows. The Federal National Mortgage Association played

[39] The presence of construction loans among conventional mortgages tends to exaggerate their importance but should not influence the stability of their share.

CHART 34

Percentage Distribution of Gross and Net Flows, One- to Four-Family Nonfarm Residential Mortgages, by Type of Institution, 1946-60



Source: Net flows are from Klaman, *Volume of Mortgage Debt*, Tables 20 and 26, corrected and extended to 1960 using his methods. Gross flows are from Appendix Tables C-1, C-10, C-14, and C-17, and, for FNMA, from *Annual Reports of Housing and Home Finance Agency*, purchases minus sales of VA and FHA home mortgages (Sections 8, 203, 221, 222, 603, 809, and 903) in secondary market operations and special assistance activities.

about the same part in both measures of financing, the main difference being the smoothing of fluctuations.

The greater instability of the net flows is not a surprising finding; for they are the result of subtracting from the fluctuating series on gross acquisitions two much steadier series: a very mildly fluctuating but rising series for repayments in full, and a series for amortization which showed a steady upward trend with no fluctuations at all. Therefore, when the gross flow remains constant the net flow falls. The size of the difference between the two measures is a function of the size of, and the trend in, mortgage repayments.

REPAYMENTS RATIOS

Data on repayments appear to be less reliable than those on gross extensions or on holdings of mortgages. All or almost all of the repayments estimates are derived by subtracting net changes in holdings from gross or net purchases of mortgages, and they therefore suffer from the defects of both series, magnified by the fact that the repayments series is smaller than that on gross extensions. Among the items that may end up in a supposed series on repayments are the effects of timing differences in the recording of gross flow and net flow data and the effects of differences of concept and coverage between the recordings data and those from balance sheets.[40]

Despite the ambiguities in the repayments data, two conclusions stand out clearly. The first is that the ratio of repayments to outstanding debt is much higher for conventional mortgages than for guaranteed mortgages, and among the latter, higher for FHA than for VA mortgages. The second conclusion is that the repayment ratio has been falling during the last fifteen years for total mortgages, for each type of mortgage (except VA mortgages after 1958), and for mortgages held by each type of financial institution.

This decline in the repayment rate is apparently not a long-term phenomenon. Grebler, Blank, and Winnick[41] found that the rates were quite low before the war. They ranged between 14 and 17 per cent in

[40] These differences, as well as some other information on gross flows, are discussed by Klaman in the *1959 Proceedings of the Business and Economic Statistics Section of the American Statistical Association*, pp. 211-212, and are summarized in Appendix C below.

[41] *Capital Formation*, pp. 175-179.

every year but one from 1930 through 1941. But in the late 1920's they were above 20 per cent, as in the building boom after World War II.[42]

Repayments estimates for all mortgages or for all of a given type, FHA, VA, or conventional, are likely to be more reliable than those for particular sectors, because the former do not require information on purchases and sales of mortgages among sectors. These intersector transactions, about which very little information is available, cancel out when the economy as a whole is studied.

The declines in repayment ratios for the major types of mortgages stand out clearly in Chart 35. Part of the fall in the ratio for all mortgages arose out of the shift from conventional to guaranteed mortgages, especially in the first few postwar years, but the trend was down within the FHA and conventional mortgage categories as well.

Repayment ratios for VA mortgages have been lower than those for FHA mortgages in all but four years. Conventional mortgage repayment rates have been as much as three times as high as FHA rates. At least part of the explanation for this high level rests on the inclusion of construction loans, which have high turnover rates, in conventional mortgages. Many of these are made by savings and loan associations.[43] In their short-term fluctuations, ratios for guaranteed mortgages partly reflect cycles in construction, particularly the peaks in 1950, 1955, and 1959.

Repayment rates can be separated into amortization rates, which show a smooth and mild downward trend, and prepayments, which show an even sharper decline after 1955 than total repayments. Prepayments are divided by the source into partial and total. It is the latter, representing transactions associated with refinancing, which account for this sudden drop from over 14 per cent in 1955 to slightly over 8 per cent in 1960.

There are some opportunities for testing these findings on what are at least partly independent data for individual types of financial institutions. These estimates, together with some notes on their construction and their many limitations, can be found in Appendix C.

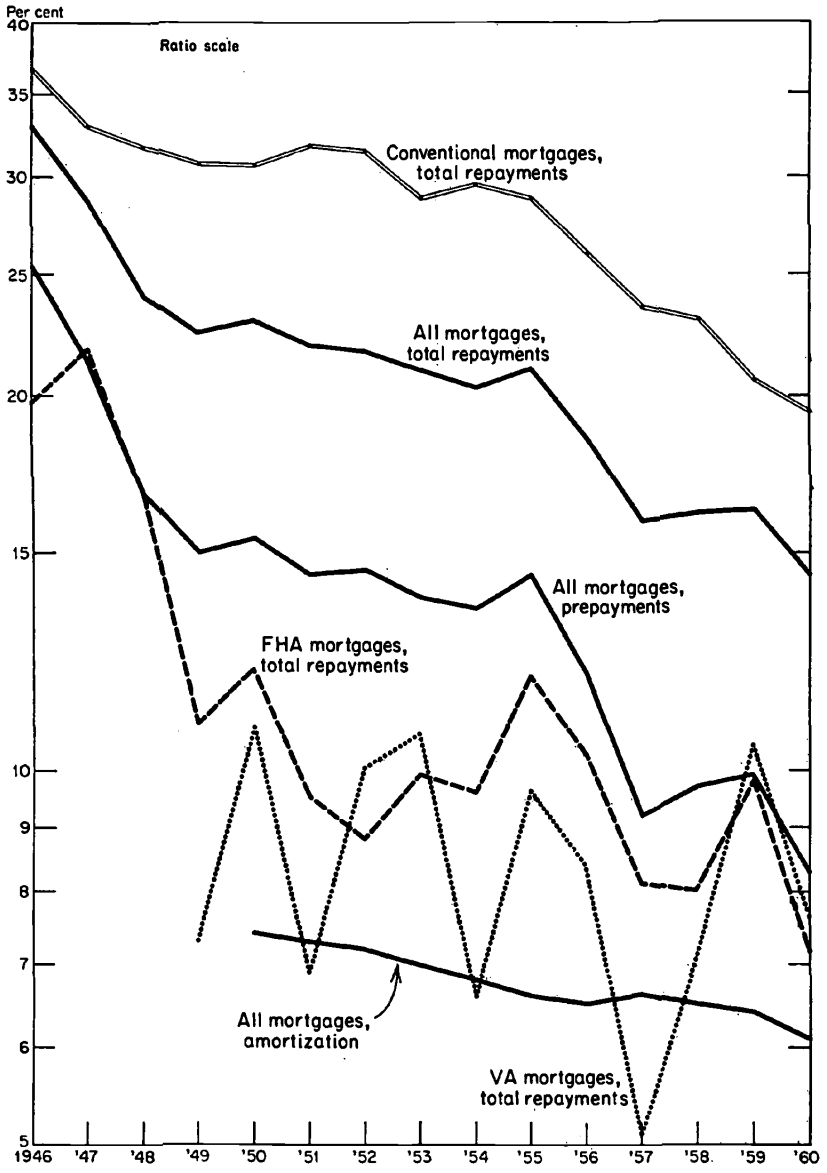
For the most part the data for individual institutions, crude as they are, support the findings for total mortgage debt. Repayment rates on conventional mortgages were higher in every case than those on guaranteed mortgages and, with the sole exception of conventional debt held by mutual savings banks, trends in repayment ratios were downward (Chart 36).

[42] For data on the relationship between actual and contract lengths of mortgages, see Morton, *Urban Mortgage Lending*, pp. 116-119.

[43] See Klaman, *Postwar Residential Mortgage Market*, pp. 159-163, for a study of savings and loan association loans. The higher level of repayment ratios for conventional mortgages is confirmed, however, by data for mutual savings banks for whom temporary construction loans are not important (*ibid.*, p. 155).

CHART 35

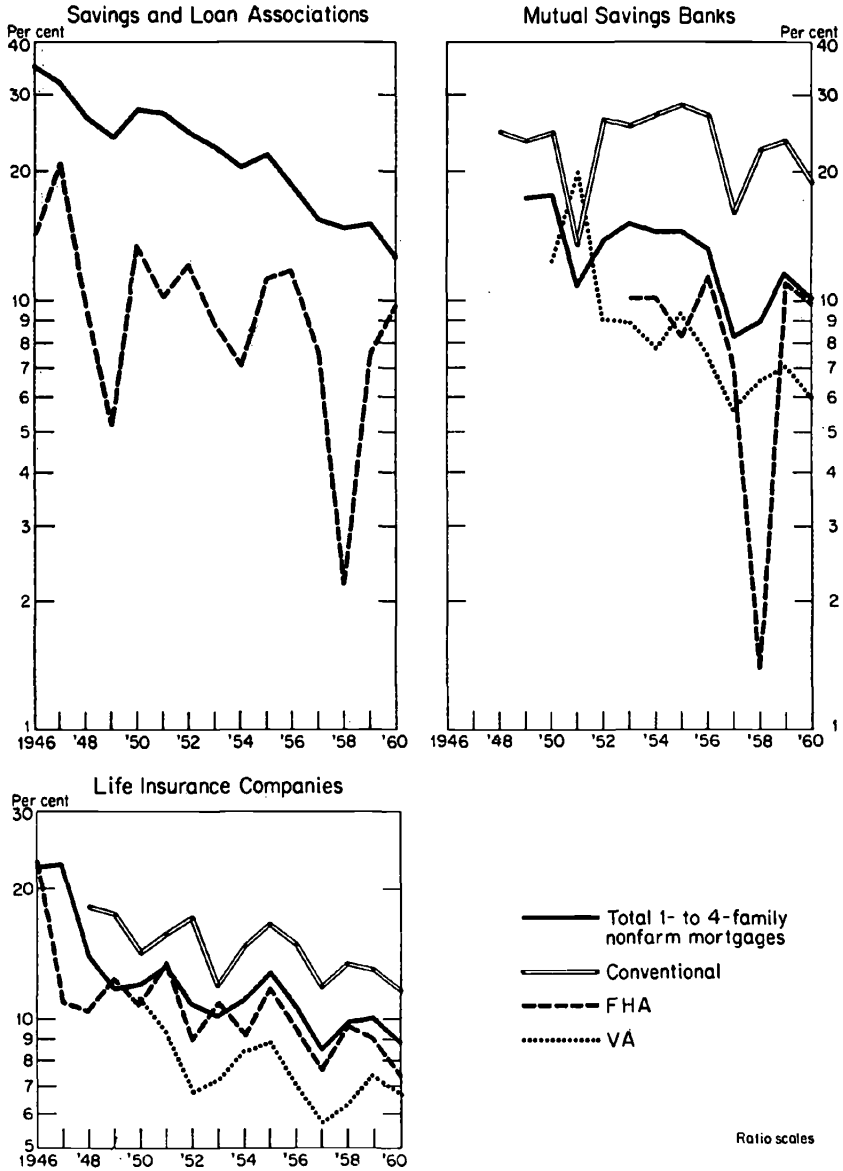
Estimated Repayments as Percentage of Mortgage Debt Outstanding, by Type of Mortgage, 1946-60



Source: Mortgage debt outstanding is from Klaman, *Volume of Mortgage Debt*, Tables 5, 10, 12, and 14. All mortgages, amortization, prepayments, and total repayments are from Table 88. FHA, VA, and conventional mortgages, total repayments, are from Table C-2 minus net change in mortgage debt outstanding.

CHART 36

Estimated Repayments as Percentage of Mortgage Debt Outstanding, by Type of Lending Institution, 1946-60



Source: Tables C-12, C-16, and C-19.

Savings and loan association repayment rates for total home mortgages, shown here, do not take account of purchases on the open market. But data for insured associations, in which repayments are given directly, confirm both the trend and the fluctuations in this series.

The mortgage investments of life insurance companies are much more heavily concentrated in guaranteed debt than those of savings and loan associations. This fact alone is a partial explanation of the lower repayment rate for total mortgages held by the insurance sector. But it is not a sufficient explanation because the rate for insurance sector conventional mortgages alone is lower than the total repayment rate for savings and loan associations. It seems likely that temporary construction mortgages in the savings and loan sector must partly account for the high repayment rates there.

Conventional loan repayment rates fluctuated much more in the insurance sector than in the others and in closer conformity with the rates for other types of mortgages. All three types reached peaks in repayment rates in 1955 and troughs in 1957. The earlier peak was scattered, VA loans hitting it in 1950 (VA loan rates before 1950 are not shown because they fluctuated violently and were probably not reliable), FHA loans in 1951, and conventional loans in 1952.

The only other major financial sector for which these gross flows are available is mutual savings banks, and the data are fragmentary. The decline in repayment ratios is again visible in the total and in VA mortgages and, for a few years in FHA mortgages. But it is not at all evident in conventional mortgages, and it may be that the fall in total repayment ratios is due more to the shift from conventional to government-insured mortgages than to the decline within these types. The high repayment rates for conventional mortgages appear here as in other sectors.

To a considerable extent, the much higher repayment ratio on conventional mortgages must be related to their shorter terms. In 1950, for example, the median term of both FHA and VA mortgages was twenty years, while that of conventional first mortgages was only eleven years and of conventional junior mortgages seven years.[44] This fact, however, affects only amortization, which was never as much as half of total repayments and was usually close to one-third. It does not explain at all the fluctuations in repayment ratios or the sharp decline which took place in the more recent part of the period.

Some part of the decline in repayment ratios can be ascribed to the lengthening of mortgage terms. In 1946, for example, FHA mortgages on new houses insured under Section 203 averaged 21.0 years and those on existing houses 18.9 years. By 1960 they had reached 29.2 and 25.8 years, respectively.[45]

[44] *U.S. Census of Housing: 1950*, Vol. IV, Part 1, p. 42.
[45] *Annual Report* of *Housing and Home Finance Agency*, 1961, p. 104.