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CHAPTER XII

FLOW OF CAPITAL FUNDS INTO RESIDENTIAL CONSTRUCTION

THE estimates of the residential mortgage debt, presented in Chapter XI, yield no more than the annual net changes in total indebtedness. They permit no deductions about the flow of funds into residential mortgages. There is no consistent relationship over time between net changes in holdings and the gross volume of loans made. This relationship is conditioned not only by the volume of new loans and whether they are made for refinancing or purchase but also by a host of other factors, such as the proportion of unamortized and amortized mortgages in portfolios, the contract length of loans and the actual rate of repayments, and extinguishments of debt through foreclosure and voluntary surrender of title to mortgagees. In this chapter, data at least approximating a measurement of the gross flow of funds into residential mortgages are presented. Even these data, however, do not measure the gross flow of capital funds into new residential construction, for they cover mortgage loans made for all purposes, including the acquisition and improvement of existing real estate as well as the financing of new construction. More important, they give no clue to the flow of equity funds into new residential real estate. For these reasons, estimates of the flow of equity and mortgage funds into residential construction were prepared in the course of this study and are presented later in this chapter.

Mortgage Recordings

One of the series that approximate the gross flow of debt funds is an estimate of the number and amount of recorded nonfarm mortgages of $20,000 or less, available for years since 1939. The data have serious weaknesses. They are based on reports with uneven and often inadequate geographical coverage. The reports were not devised as a measurement of the flow of residential mortgage funds. On the one hand, they include loans of $20,000 or less on nonresidential properties, such as small commercial buildings or garages. On the other hand, they exclude mortgages on the larger multi-family residential properties, which usually exceed $20,000. Nevertheless, the movement of this series reflects closely the movement of funds into residential mortgages, subject to the qualifications stated earlier in respect to the classification of purchase money mortgages in fund analysis.

Both the number and the amount of mortgage recordings have shown a spectacular increase since 1939. The number of recordings in 1950-1952 was about double the number of the early forties, and the amount was four times greater. The average amount per mortgage in 1952 was more than double the 1939 average. The largest proportion of these increases occurred during the postwar period (Table 46).

The data highlight some simple facts basic to an understanding of the historical development of institutional arrangements in residential mortgage finance and their projection into the future. Roughly 1½ to 3 million mortgages were recorded annually during the period covered. The average principal amount of these loans was about $2,700 to $2,800 before the war but increased steadily with the higher price levels of the postwar period to more than $5,000 in recent years. Mortgage financing of residential real estate typically involves a multitude of small transactions in comparison with the average size and frequency of capital financing for manufacturing, mining, and public utility enterprises. It represents a part of the capital market characterized by retail rather than wholesale operations. This character of operations has a distinct bearing on the cost of lending, the position of noninstitutional lenders as sources of funds, the number and size of institutions or institutional departments engaged in residential mortgage lending, and the methods of government activity in this field.

Home Mortgage Lending Activity

Another partial measure of the gross flow of funds into residential mortgages is represented by estimates of the amount of loans made on one- to four-family houses. These estimates, although probably less reliable than those of mortgage recordings, are more useful for analytical purposes because they cover a longer period, beginning in 1925, and can be related directly to the mortgage debt on one- to four-family homes. No similar data exist for lending activity on multi-family dwellings.

Table 47 shows the annual volume of home mortgage loans made in relation to the home mortgage debt outstanding, as well as annual estimates of the "gross reduction of debt." The latter represents repayments and terminations of loans through refinancing, foreclosures, and voluntary surrenders of title to mortgagees (in lieu of foreclosure).

From an apparent high plateau of almost $5 billion a year in 1926, 1927, and 1928, the volume of home mortgage loans made declined steadily to a low of a little over $1 billion in 1933. The recovery during the following three years was greatly influenced by the refinancing activities of the Home Owners' Loan Corporation, with almost 40 per

TABLE 46

Estimated Number and Amount of Recorded Nonfarm Mortgages of $20,000 or Less, 1939-1952[a]

	Number	*Amount (millions of dollars)*	*Average Principal Amount per Mortgage*
1939	1,288,032	$ 3,507	$2,723
1940	1,455,865	4,031	2,769
1941	1,628,407	4,732	2,906
1942	1,351,290	3,943	2,918
1943	1,273,993	3,861	3,031
1944	1,445,616	4,606	3,186
1945	1,638,557	5,650	3,448
1946	2,497,122	10,589	4,241
1947	2,566,632	11,729	4,570
1948	2,534,702	11,882	4,688
1949	2,487,521	11,828	4,755
1950	3,032,452	16,179	5,335
1951	2,877,860	16,405	5,701
1952	3,028,157	18,018	5,950

[a] *Housing Statistics*, Housing and Home Finance Agency, July 1951 and January 1953. Compiled by the Home Loan Bank Board from monthly reports prepared by cooperating institutions.

The data and their limitations are described by the compiling agency as follows: "The coverage on which estimates are based includes approximately 500 areas containing about three-fifths of the total nonfarm population. To relate this series as closely as possible to home-financing operations, it is limited to mortgages of $20,000 or less; however, these statistics cover all mortgages (or deeds of trust) secured by nonfarm real estate. Since almost every mortgage is recorded, the series provides an adequate means of determining trends in real estate financing activity, as well as the role being played by various types of lenders. Summaries are made on the basis of the originating mortgagees, and, for this reason, assignments of mortgages are not reflected in the series. To the extent that certain lenders (e.g., insurance companies) purchase mortgages originated and recorded by other lenders (e.g., mortgage companies), the recording statistics may overstate or understate the importance of a particular type of lenders as the ultimate source of mortgage credit. It should also be pointed out that mortgage recording data are not directly comparable with estimates on home mortgage lending . . . ; the periods covered are not necessarily the same, because lending statistics are reported as of the date of loan commitment, while recording figures reflect the actual date of mortgage registrations. Furthermore, alterations in the terms of an existing contract may necessitate a new registration. In the case of refinancing an institution's own mortgage, for example, the face amount of the instrument would appear in the recording totals, whereas only that portion which represented an increase of funds loaned would be included in the lending figures." *Statistical Summary 1951*, Home Loan Bank Board, 1951, p. 31. In addition to first mortgages, the series includes junior loans which may be $20,000 or less even in the case of larger residential and nonresidential properties. The mortgage recording data are not comparable with the debt data in Chapter XI above, which cover all residential mortgage loans regardless of size.

TABLE 47

Mortgage Debt, New Loans, and Gross Reduction of Debt, One- to Four-Family Houses, 1925-1950

(*dollars in millions*)

Year (1)	*Debt at Beginning of Year*[a] (2)	*Loans Made during Year*[b] (3)	*Column 3 as a Per Cent of Column 2* (4)	*Gross Reduction of Debt during Year*[c] (5)	*Column 5 as a Per Cent of Column 2* (6)
1925	..	$ 4,240	..	..	..
1926	$12,984	4,863	37.5%	$3,038	23.4%
1927	14,809	4,857	32.8	3,233	21.8
1928	16,433	4,947	30.1	3,476	21.2
1929	17,904	4,442	24.8	3,434	19.2
1930	18,912	3,189	16.9	3,210	17.0
1931	18,891	2,232	11.8	3,019	16.0
1932	18,104	1,408	7.8	2,857	15.8
1933	16,655	1,093	6.6	2,396	14.4
1934	15,352	3,170	20.6	2,892	18.8
1935	15,630	2,259	14.5	2,452	15.7
1936	15,437	2,302	14.9	2,354	15.2
1937	15,385	2,588	16.8	2,455	16.0
1938	15,518	2,437	15.7	2,190	14.1
1939	15,965	2,912	18.5	2,340	14.8
1940	16,337	3,510	21.5	2,501	15.3
1941	17,346	3,931	22.7	2,919	16.8
1942	18,358	3,319	18.1	3,451	18.8
1943	18,226	3,362	18.4	3,753	20.6
1944	17,835	4,004	22.5	3,892	21.8
1945	17,947	4,867	27.1	4,271	23.8
1946	18,543	10,011	54.0	5,495	29.6
1947	23,059	11,207	48.6	6,105	26.5
1948	28,161	11,357	40.3	6,257	22.2
1949	33,261	11,069	33.3	6,834	20.5
1950	37,496	16,008	42.7	8,405	22.4

[a] From Table L-4. These debt estimates refer to one- to four-family houses only, while those in Chapter X relate to all types of residential properties.

[b] Estimates of the Home Loan Bank Board ("Estimated Home Mortgage Debt and Lending Activity, 1950," July 10, 1951). The sources for these estimates are the same as those for column 2, except that the volume of new loans made by savings and loan associations is based since the middle of the thirties directly on activity reports of member associations of the Home Loan Bank System and on estimates for nonmembers. For the other types of lenders the estimates of new home loans made are probably less reliable than the estimates of debt outstanding, which are at least partially derived from balance sheet information. The HLBB estimates of new loans made were discontinued after 1950.

[c] Obtained by taking the outstanding balance at the beginning of the year plus mortgages made during the year minus outstanding balance at the end of the year. See text for the components of this item. As a result of the 1950 mortgage census plus other new data, the Home Loan Bank Board made extensive revisions in the outstanding debt series; no revisions in the loans-made series have as yet been made. The derived series on gross repayments is therefore not completely reliable.

cent of the total lending activity represented by HOLC loans.[1] A prewar peak of $3.5 billion, substantially below the high of the late twenties, was reached in 1940. It was not until 1946 that the volume for this high plateau of the twenties was exceeded. For four years, 1946 to 1949, the volume of home mortgage loans made hovered around $10 to 11 billion; this was followed by a rise to $16 billion in 1950.

Fluctuations in the volume of gross reductions of home mortgage debt have been much less pronounced. Gross retirements of debt fell from under $3.5 billion during the late twenties to only $2.2 billion in 1938, exceeded the level of the late twenties during the war when repayments were high, and rose steadily from $5.5 billion in 1946 to $8.2 billion in 1950.

The greater stability of gross retirements of debt is due in large part to the compensating variation of their component elements. During periods of high incomes, such as the twenties and forties, genuine repayments and refinancing form the bulk of gross reductions in debt; the rate of repayments tends to be high under such conditions. During periods of low income, such as the thirties, foreclosures and voluntary surrenders represent a large and even major portion of gross retirements of debt and tend to keep these retirements high. Here again, the refinancing activities of the HOLC explain partly the high level of gross reductions from 1934 to 1936.

The ratio of loans made to the debt outstanding shows great variability—from a low of 6.6 per cent in 1933 to a high of 54 per cent in 1946—with large ratios concentrated in periods of high lending activity, such as the late twenties and forties. As would be expected from the foregoing observations, the ratio of gross reductions of debt to the outstanding debt is characterized by much less variability—from a low of 14 per cent in 1933 and 1938 to a high of nearly 30 per cent in 1946, with a rather small range of 14 to 19 per cent during the thirties.

Although variations in these ratios are the net result of many forces, the data may nevertheless be analyzed for possible systematic relations during periods of high lending and low foreclosure activity. The two periods selected for analysis are those of 1926-1929 and 1946-1950. In these years the bulk of gross reductions of mortgage investment were represented by repayments, with foreclosures at a low level;[2] and re-

[1] Without HOLC loans the figures in column 3 of Table 47 are as follows: 1933, $952 million; 1934, $929 million; 1935, $1,664 million; $1936, $2,186 million. Thus the low for new home loans exclusive of HOLC loans was 1934 rather than 1933.

[2] The annual index of nonfarm real estate foreclosures from 1946 to 1950 ranged from 10.5 to 21.3 (1939 = 100). The indexes for 1926 to 1929 were higher and increasing—67.5 in 1926, 90.1 in 1927, 114.9 in 1928, and 148.7 in 1929. *Housing*

financing activity was low at least in the sense that there was no wholesale raiding of portfolios among private lending institutions and no government operation of the HOLC type.

During the period 1926-1929 new loans ranged from 37.5 to 24.8 per cent of loans outstanding. During the period 1946-1950 the comparable ratios varied between 54.0 and 33.3 per cent. Two phenomena merit analysis. First, the level of the ratios was substantially higher during the late forties than during the late twenties. This difference is probably due in large part to a difference in the character of the two periods. There had been several years of rapid building up of mortgage portfolios before 1926. In contrast, the recent postwar period witnessed the first expansion of portfolios after the war; a much larger volume of new loans was related to a relatively low base of mortgage debt, compared with the late twenties. Second, the ratio of new loans to the outstanding debt showed a steady decline in both periods, except for the year 1950. This relationship is probably typical of periods in which new lending activity is high. The rate of repayment on new loans, through regular or irregular amortization, tends to be low. Thus the volume of loans outstanding would increase at a faster rate than the volume of new loans. The exception noted for 1949-1950, when the ratio of new loans to debt outstanding increased, is associated with a dramatic rise in the volume of new loans from $11 to 16 billion.

Annual gross reductions of mortgage investment, considered here to represent primarily repayments, ranged from 23.4 to 19.2 per cent of the debt outstanding during the late twenties and from 29.6 to 20.5 per cent during the late forties. These ratios do not permit any direct estimate of the average life of loans in portfolios, but they confirm lenders' experience that, because of prepayments and refinancing, the actual average life of an individual loan is much shorter than contract maturities would indicate. The higher level of the ratios during recent years, compared with those of the late twenties, is consistent with the greater prevalence of amortized loans in current holdings and of prepayments due to large liquid assets and high incomes. However, the difference in the level of the ratios is not large—an indication that partial amortization and repayment in full of straight loans were not so infrequent during the twenties as has often been assumed.

Yet another way of looking at the relationship between new loans and mortgage portfolios is to compute the amount of new loans made for every dollar of *increase* in such portfolios, as shown in Table 48.

In the period 1926 to 1929 from $2.66 to $4.41 in new loans were

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Statistics Handbook, Housing and Home Finance Agency, 1948, Table 120, and *Housing Statistics*, Housing and Home Finance Agency, July 1951, p. 27.

TABLE 48
Amount of New Home Loans per Dollar Increase in Home Mortgages Outstanding, Selected Years
(*dollars*)

1926	2.66	1946	2.22
1927	2.99	1947	2.20
1928	3.36	1948	2.23
1929	4.41	1949	2.61
		1950	2.11

Source: Table 47.

made for every dollar of increase in portfolios.[3] During the period 1946-1950 from $2.11 to $2.61 in new loans produced a dollar increase in portfolios, and if 1949 is omitted, the range was only from $2.11 to $2.23. Here again the variation between the two periods is probably due to the difference in the character of the periods, described before.

In conclusion, it would seem reasonable to expect, under conditions of fairly high employment, large lending activity, and a low volume of foreclosures and refinancing, that (1) new loans would equal roughly one-quarter to one-third of outstanding balances, (2) the ratio of new loans to debt outstanding would tend to decline, (3) two to three dollars in new loans would be required to produce a dollar of new increase in mortgage portfolios, and (4) repayments would approximate 20 per cent of portfolios. These relationships might be altered, however, by substantial changes in terms of loans and in the relative desirability of mortgages as investment outlets.

Loan Repayments as Sources of Funds

The data presented in Table 47 also suggest the relative importance of loan repayments as sources of funds for new mortgage loans. Net savings are, of course, the ultimate sources of net increases in mortgage holdings as well as other investments. If the focus, however, is on funds for gross lending activity, and if shifts of investments held by institutions and individuals are disregarded, the principal sources of funds for new mortgage loans are direct savings placed with mortgage lenders and mortgage loan repayments received by mortgagees. Whether either direct savings or repayments on mortgage principal are invested in mortgage loans will depend upon the demand for such loans and their attractiveness relative to other investments, including cash and cash equivalents. Nevertheless, observed relationships between loan repayments and the volume of new loans under stated

[3] The rise in this ratio from 1926 to 1929 may be due to the increasing volume of foreclosures, which tended to slow up the growth of holdings. See footnote 2.

conditions are of analytic value. These relationships are shown for two periods in which lending activity was high and gross reductions in mortgage investment represented primarily loan repayments rather than foreclosures (Table 49).

TABLE 49
Home Mortgage Repayments as a Percentage of Home Mortgage Loans Made, Selected Years

	All Types of Lenders		*All Types of Lenders*
1926	62.5	1946	54.9
1927	66.6	1947	54.5
1928	70.3	1948	55.1
1929	77.3	1949	61.7
		1950	52.5

Source: Table 47, column 5 as a percentage of column 3.

This record suggests that in periods of high mortgage lending activity, and under an institutional system providing for amortization of long-term mortgage loans, the importance of repayments as sources of loan funds is probably greater than the increase in savings entrusted to mortgage lending institutions and invested in mortgages.

Importance of Loans on New Construction

How important are loans on new construction in the total gross flow of mortgage funds? This question can be answered directly for savings and loan associations, the only type of mortgage lender for which information on the purpose of loans has been available since 1936 (Table 50).

In the case of savings and loan associations, from 6.5 per cent to about one-third of the loans made each year during the period 1936-1953 went into new construction. Even omitting 1942 through 1946, when the volume of residential building was restricted, loans on new construction represented not more than 23 to 34 per cent of all mortgage loans. As would be expected, the ratio increased when the volume of new construction rose (1939-1940 and 1948-1950). The average ratio for the entire period (exclusive of 1942 through 1946) was about 30 per cent.[4]

Before generalizations from this information are attempted, it is

[4] A similar ratio was found in a sample study of mutual savings banks in Massachusetts. Approximately 25 per cent of all loans made on single-family houses from 1918 to 1931 were on new construction, although most of this period fell into the construction boom of the twenties. John Lintner, *Mutual Savings Banks in the Savings and Capital Markets*, Harvard University Press, 1948, Table 48.

necessary to exclude at least refinancing loans from the aggregate volume of new loans. When all types of lenders and total lending volume are considered, refinancing should cancel out except for any increases in loan amounts associated with it. On this basis, omitting the years 1942 through 1946, one-third of the total loans made by savings and loan associations went into new construction.

This proportion was probably higher for the aggregate of all lenders.

TABLE 50

Mortgage Loans Made on New Construction by Savings and Loan Associations, 1936-1953

(*dollars in millions*)

	Amount	*Per Cent of Total Loans*	*Per Cent of Total Loans Other than Refinancing*
1936	$ 178,387	23.6	30.9
1937	234,102	26.1	32.7
1938	220,458	27.6	34.5
1939	301,039	30.5	37.4
1940	398,632	33.3	39.8
1941	437,065	31.7	36.8
1942	190,438	18.1	22.6
1943	106,497	9.0	10.5
1944	95,243	6.5	7.4
1945	180,550	9.4	10.5
1946	615,542	17.2	18.3
1947	893,572	23.4	25.5
1948	1,045,704	29.0	31.8
1949	1,082,559	29.8	33.4
1950	1,766,674	33.7	36.8
1951	1,656,941	31.6	34.7
1952	2,105,029	31.8	34.9
1953	2,475,147	31.9	34.8

Source: *Housing Statistics*, Housing and Home Finance Agency, January 1954, p. 45. The data should be fairly reliable. All savings and loan associations insured by the Federal Savings and Loan Insurance Corporation are required to file with the Corporation periodic statements on the amounts of new loans by purpose. Total assets of insured savings and loan associations in recent years have accounted for roughly 80 per cent of the total assets of all savings and loan associations. The loans made by uninsured associations are estimated by the Home Loan Bank Board from data on member institutions of the Federal Home Loan Bank System and on nonmembers. The reporting sample represents nearly 90 per cent of the total assets of all savings and loan associations (*Statistical Summary, 1951*, Home Loan Bank Board, p. 31).

Loans on new construction are defined as the first permanent mortgage loans placed on new construction (as distinguished from advances during construction). It is not clear, however, whether the definitional instructions are rigorously followed by the respondents. The margin of error should be small and would more often affect the timing of reporting than result in double counting of construction advances and first permanent mortgage loans.

Historically, savings and loan associations seem to have been less active in the financing of new construction than other types of institutions, although they have expanded in this field since the late thirties. Moreover, the adjustment for refinancing loans is inadequate when total lending activity of all mortgage lenders is considered.[5] However, allowing for probable understatements of the relative importance of loans on new construction in savings and loan statistics, it is unlikely that these loans in the long run have represented more than 40 per cent of the loans made by all types of lenders. It thus appears that the *gross* mortgage funds required for financing transactions within the existing stock of residential real estate have been at least as large as, and probably larger than, the gross funds required for financing the purchase of new residential construction.

The Flow of Mortgage and Equity Funds into New Residential Construction

The changing proportion of borrowed to equity funds is a particularly interesting part of the history of capital formation in residential real estate. An attempt has therefore been made to estimate directly the amounts of mortgage loans and equity capital used for the first acquisition of new residential facilities, from 1911 to 1952.

The estimating procedure is necessarily hazardous and, in the absence of any but the most sketchy data, involves judgments in respect to financing practices. The probability of error in making these judgments is partially mitigated by the fact that the estimates were developed by working back from the most recent years, for which information is available from the Surveys of Consumer Finances, statistics on FHA and VA loans, and special investigations. The further the estimates extend into the past the more shaky are the results. The margins of error are unknown and probably wide. Nevertheless, this effort may at least serve to open up a field of investigation which is unduly neglected.

The procedures and the statistical and conceptual problems in preparing these estimates are described fully in Appendix M. One of the

[5] Refinancing loans in savings and loan statistics refer to cases in which the borrower under the new mortgage is the same as the borrower under the old mortgage. Other refinancing transactions are associated with loans for home purchase. For example, when A buys an existing house from B, he may obtain a $10,000 loan from a savings and loan association, and B may repay an outstanding loan balance of $6,000 to a mortgagee of a different type. For analytical purposes, the $6,000 should wash out since it involves a mere shift in type of lender, and only $4,000 should be considered in lending activity on existing construction. But there are no data available to indicate the extent of refinancing in the purchase of existing residential real estate.

difficulties concerns the treatment of land. When residential real estate is acquired, land and improvements form one economic unit. Mortgage loans are secured by both land and structures, and their allocation to one or the other would be artificial and without operational significance. By the same token, equity funds cannot be apportioned as between land and buildings. For this reason the estimates measure the flow of funds into new residential construction and land used for such construction, and the composition of these funds. The term "new construction" in this section always comprises land as well as improvements. Another difficulty concerns the purity of the estimates of equity funds, which are derived statistically as a residual. They include an unknown amount of miscellaneous borrowings not secured by mortgages.[6]

The results (Chart 19 and Table 51) permit some broad observations on rough orders of magnitude and approximate changes over time, although the year-to-year movements are probably subject to considerable margins of error. They suggest two major conclusions: First, the flow of equity funds into residential construction has been much larger than is usually assumed, although it has declined relative to the flow of debt funds. Second, debt financing of transactions within the existing stock of housing has become a factor of increasing importance in the growth of the residential mortgage debt.

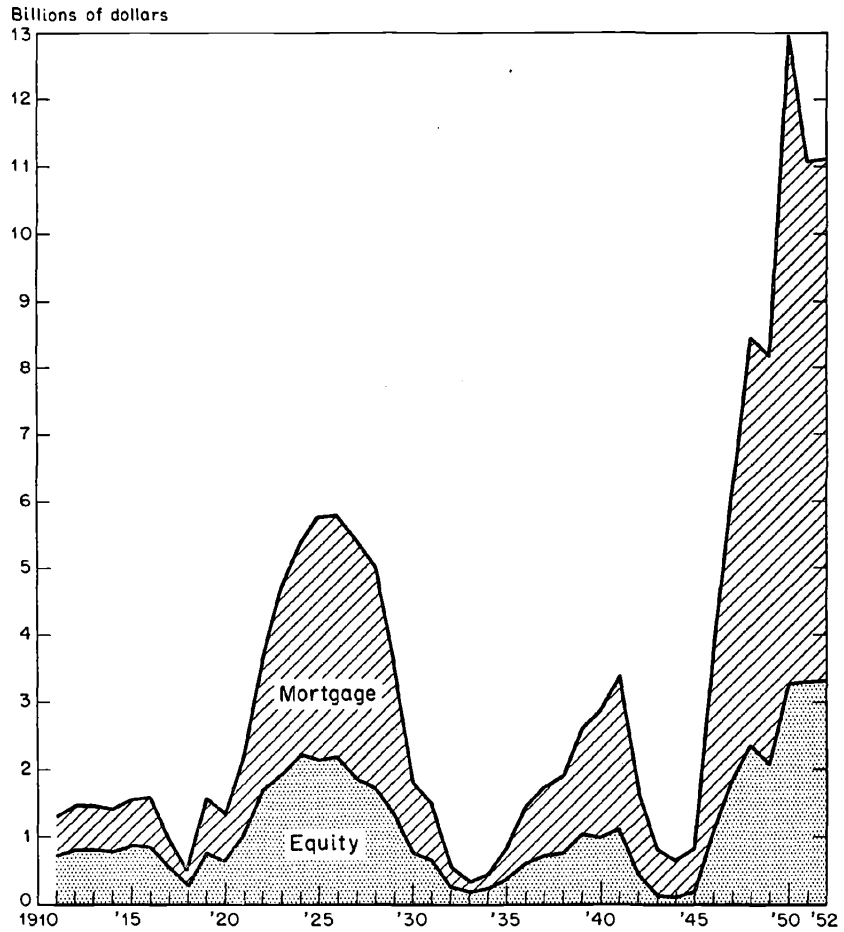
Over the forty-two-year period covered by the estimates, the proportion of equity funds to total expenditures for new residential construction and land for such construction varied roughly between one-fourth and one-half. Only during World War II, when new residential construction was limited to housing for war workers and practically all of its debt financing was under the special liberal terms for FHA-insured mortgages, did the ratio fall below 25 per cent. Even during the recent postwar years of high-percentage debt financing under government aid programs and during the height of the boom of the twenties with its excesses of debt financing, equity funds were estimated as close to 30 per cent of total expenditures (column 5 of Table 51).

The annual data in Table M-1 show that during periods of high residential building activity the amounts of equity funds going into new construction were quite high, of the order of $2 billion per year during the mid-twenties and exceeding $3 billion per year in 1950-1952, in spite of the loosening of credit typically associated with the expansion of new construction. During the twenties equity funds totaled more than $16 billion and were supplemented by about $25 billion in mortgage loans and perhaps $2.5 billion in sales contracts,

[6] Thus the 1949 Survey of Consumer Finances found that approximately one home buyer in twenty made use of some type of nonmortgage credit to finance the purchase of the house. *Federal Reserve Bulletin*, June 1949.

CHART 19

Flow of Mortgage and Equity Funds into New Residential Construction, 1911-1952



Source: Table M-1. For equity funds, column 13; for mortgage funds, column 12. Exclusive of sales contracts.

which are debt obligations but do not appear in mortgage statistics.[7] From 1946 through 1952 the total amount of equity funds was also $16 billion, supplemented by $44 billion of mortgage loans, with few sales contracts. Mortgage loans on new construction during the twenties equaled 72 per cent of residential construction expenditures alone and 58 per cent of the total of these and expenditures for land. The corresponding percentages for the period 1946-1952 are 81 and 71.

[7] See Appendix M for a definition of sales contracts.

TABLE 51

Flow of Mortgage and Equity Funds into New Residential Construction and Net Changes in Residential Mortgage Debt, Half Decades and Decades, 1911-1952
(*dollars in millions*)

Period (1)	*Total Expenditures for Construction and Land* (2)	*Amount of Mortgage Loans* (3)	*Amount of Equity Funds* (4)	*Ratio of Col. 4 to Col. 2* (5)	*Mortgage Debt at Beginning of Period* (6)	*Net Change in Debt* (7)	*Col. 7 Minus Col. 3* (8)	*Col. 8 as a Per Cent of Col. 6* (9)	*Col. 3 as a Per Cent of Col. 7* (10)
1911-1915	$ 7,324	$ 3,190	$ 3,914	53.4%	$ 4,466	$ 1,638	$—1,552	—34.8%	194.7%
1916-1920	6,083	2,864	2,992	49.2	6,104	3,250	386	6.3	88.1
1921-1925	22,896	12,664	8,969	39.2	9,354	9,039	—3,625	—38.8	140.1
1926-1930	22,624	13,712	7,794	34.5	18,393	11,783	—1,929	—10.5	116.4
1931-1935	3,590	2,000	1,555	43.3	30,176	—6,285	—8,285	—27.5	..
1936-1940	10,641	6,478	3,997	37.6	23,891	1,039	—5,439	—22.8	623.5
1941-1945	7,362	5,309	1,906	25.9	24,930	453	—4,856	—19.5	1,171.9
1946-1950	39,796	28,777	10,622	26.7	25,383	29,499	722	2.8	97.6
1948-1952	52,256	37,449	14,285	27.3	35,701	33,860	—3,589	—10.1	110.6
1911-1920	13,407	6,054	6,906	51.5	4,466	4,888	—1,166	—26.1	123.9
1921-1930	45,520	26,376	16,763	36.8	9,354	20,822	—5,554	—59.4	126.7
1931-1940	14,231	8,478	5,552	39.0	30,176	—5,246	—13,724	—45.5	..
1941-1950	47,158	34,086	12,528	26.6	24,930	29,952	—4,134	—16.6	113.8

Column	Source
2-5	Table M-1. See Appendix M for derivation of these columns. Columns 3 and 4 do not add up to column 2 because of the use of sales contracts in the acquisition of new residential real estate, as explained in Appendix M.
6-7	Table L-3.

Column	Source
8	Represents net changes in debt attributable to transactions within the existing stock of residential real estate.
9	Net debt changes attributable to transactions within the existing stock, as a percentage of debt at the beginning of the year.
10	Mortgage loans on new construction as a percentage of net change in debt.

At first glance the estimates seem to be in conflict with common impressions of financing practices in residential construction during the recent and more distant past. These impressions have been fashioned by the notorious "shoestring" financing of operative builders; by the widespread use of junior mortgages, particularly during the twenties; by individual examples of debt financing in excess of costs in the case of mortgage bonds, also during the twenties; by the history of mortgage loans that went into default during the depression of the thirties; and by the recent high-percentage maximum loans permitted under federal mortgage insurance programs. Observations of this kind have led to the assumption that investment in new residential construction has been generally and uniformly characterized by an extremely low proportion of equity capital. However, such an assumption may be an optical illusion.

Shoestring financing by operative builders does not necessarily imply that the sale of houses to owner occupants has been generally financed on a shoestring basis. Moreover, construction and sale of houses by operative builders has only recently become the prevalent mode of operation. Custom-built houses represented a substantial proportion of the volume of single-family and similar houses built in the thirties and before, and even now they are a major segment of the total. It is reasonable to assume that custom-built houses have been financed by more substantial equity capital.

In the case of multi-family structures, the dramatized cases of shoestring financing of large apartment houses in metropolitan centers must be weighed against the numerous four-family and similar small buildings constructed before the thirties, and built by or for small local investors who employed substantial amounts of their own as well as of borrowed funds. It is probably true, however, that the proportion of debt financing has been larger for new multi-family housing than for new housing units acquired by owner occupants. If so, the lower ratio of multi-family construction to total residential building since the early thirties (Chapter III) alone would have tended to increase the share of equity funds used in the acquisition of new residential real estate.

As to junior mortgages, even widespread use of this type of financing during certain periods does not imply that more than, say, one-third of the acquisitions of new construction were financed in this fashion.[8]

[8] According to a 1928 survey of the financing of recently bought single-family houses (new and old), 39 per cent of all respondents used a second mortgage. Over half of those using a first mortgage used also a second mortgage (the difference being accounted for by all-cash purchases and sales contracts). The survey covered larger communities throughout the nation but did not include a representative number of cities of less than 30,000 population. Albert F. Bemis, *The*

Even so, an economic collapse like that of the early thirties could create enough difficulties to endanger the entire structure of mortgage debt and real estate values. Similar considerations apply to other mortgage loans that got into difficulty during the thirties and to individual cases of excessive debt financing.

As to the insurance and guarantee programs of federal agencies, preoccupation with the maximum loan-to-value ratios permitted under the various laws obscures the facts that the average ratios have been below the maximum ratios, as is shown in Table O-6, and that there is still considerable activity in conventional financing, where much lower maximum and still lower average ratios apply.

Thus the estimates are compatible with often-observed phenomena in lending practices, but they place these in proper perspective. In addition, the estimates do suggest a secular tendency toward a declining proportion of equity financing. If the assumptions underlying the estimates are valid, equity funds accounted for roughly half the expenditures for construction and land before the twenties. This proportion declined to about one-third during the building boom of the twenties, increased again during the early thirties, and declined to a low of about 25 per cent during World War II. In the postwar years the ratio of equity funds to total expenditures varied between 25 and 30 per cent, about half the ratio estimated for the period before the twenties. Over and above the cyclical pattern of equity shrinkage in expansion and increase in contraction, the proportion of borrowed funds shows a long-term increase. In other words, a given volume of new residential construction has evoked a larger demand for external funds.

Mortgage loans on new construction have been the strategic long-term factor in the growth of the residential mortgage debt. In eight of the nine half decades shown in the table, the volume of loans on new construction approximated or exceeded the net increase in the residential mortgage debt. But there is some evidence that, in the long run, loans on new construction have been of declining importance to the growth of residential mortgage debt (Table 51, column 10). This evidence is clearer from inspection of decade figures than from the five-year data, which are more heavily influenced by cyclical variations. As the housing stock grows and accretions diminish in relation to the total (Chapters IV and V), it seems that mortgage loans on new construction also represent a declining outlet for investment compared

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Evolving House, Massachusetts Institute of Technology Press, 1934, Vol. II, pp. 581-584.

with loans for the purchase, modernization, or refinancing of existing facilities.

The finding that the bulk of the increase in residential mortgage debt over this long period is attributable to the debt financing of new construction is consistent with other findings in this monograph. Thus the strategic role of loans on new construction in the growth of the debt is related to the fact that debt on existing residential real estate has been repaid at rapid rates, except for the thirties. Amortization of residential mortgages has been more frequent, even before the late thirties, than is often assumed (Chapter XV). Also, repayments on the whole seem to have been substantial even on loans not providing for any systematic amortization, except for the period of the Great Depression.

The apparent trend toward a larger proportion of debt financing of new residential construction is one of great significance. Under existing mortgage loan practices it creates increasingly large *fixed* payments for interest and amortization, while incomes of home owners and revenues of owners of rental housing fluctuate with business conditions. Consequently, both debtors and creditors (or government mortgage insurance agencies) are increasingly exposed to the hazards of economic fluctuations.[9] The more general adoption of regularly amortized mortgage loans tends to mitigate this exposure, but the simultaneous extension of mortgage loan maturities (Chapter XV) has had the effect of reducing sharply the rate of amortization during the early life of mortgage loans, so that the exposure of unseasoned debt remains great.

On the other hand, the hazards of the tendency toward increasing proportions of debt financing can be easily exaggerated. While acquisitions of new (and probably existing) residential real estate have been financed with larger proportions of debt, the ratio of debt outstanding to the value of existing residential real estate in 1952 was still substantially below the 1930-1931 ratios, the ratio of debt to disposable income has not even approximated that of 1930, and the percentage of owner-occupied one- to four-family houses that were mortgaged and the debt-to-value ratio of these houses in 1950 were actually lower than in 1940, in spite of an unprecedented volume of debt financing in the intervening decade (Chapter XI). It appears that, at least to date, the trend toward more debt financing in new transactions has

[9] On the general problems raised by the tendency toward debt financing, see Homer Jones, "The Flow of Savings," Parts I and II, *Journal of Finance*, October 1948 and March 1949. Also, Randolph Paul and Miles L. Colean, *Effect of the Corporate Income Tax on Investment in Rental Housing*, National Committee on Housing, 1946.

been offset by a tendency of borrowers to repay mortgage loans at a fast rate.

Other Factors Affecting Net Changes in Debt

The estimates of the amounts of mortgage loans on new construction make it possible to derive estimates of those net changes in the residential mortgage debt which are attributable to transactions within the existing stock of housing, such as loans on existing construction, loan repayments and extinguishments, and foreclosures. The negative figures in column 8 of Table 51 denote repayments and loan extinguishments on existing property in excess of new loans on existing property. Positive figures denote new loans in excess of repayments and loan extinguishments.

Net changes in the debt attributable to transactions within existing residential real estate have been highly variable, ranging from a debt reduction of $8.3 billion in 1931-1935, partly due to the wave of foreclosures, to a debt increment of more than $700 million in 1946-1950. Positive figures are found in only two of the nine five-year periods shown in the table—1916 to 1920 and 1946 to 1950. In these half decades net increases in debt of 6 and 3 per cent, respectively, were solely attributable to the net flow of funds into the existing stock of housing. Characteristically, these were periods of severe housing shortage, in which transfers of existing property at steeply rising prices, involving large amounts of mortgage financing, reached an exceedingly high level.

The preponderance of negative figures in this series suggests again that, in the long run, new capital formation rather than the financing of transactions in the existing stock of housing has been the principal dynamic factor in the demand for mortgage funds, although the quantitative importance of this factor, as was pointed out before, seems to have declined.

The negative figures, however, have different connotations in various periods. During the World War II period, they reflect accelerated loan repayments made possible by high incomes and shortage of goods. The debt reductions during the thirties must be ascribed primarily to foreclosures, although repayments by wider use of amortized loans increased during the late years of that decade. To judge from the estimates, repayments and loan extinguishments exceeded new loans on existing property even during the twenties, when excesses in debt financing were notorious. This finding is consistent with previous observations in this chapter and data presented in Chapter XV, which tend to modify the view that the great bulk of residential mortgage loans in the twenties provided for no amortization whatever. Also,

prices for existing houses seem to have remained fairly stable throughout that decade after a sharp rise in the early twenties, so that refinancing did not necessarily and on the average involve higher loan amounts.[10]

Still another significant relationship can be established from these estimates: the ratio of net change in debt attributable to transactions within the existing housing stock to the debt itself (Table 51, column 9). While the mortgage debt in the absence of new construction would have tended to shrink rapidly in most periods, the rate of decline in the debt attributable to transactions in the existing inventory has been diminishing since 1920. Given the 1921-1930 volume of debt extinguishments and lending on other than new construction, the entire mortgage debt outstanding at the end of 1920 would have been fully retired in little less than twenty years; given the 1941-1950 volume, the debt outstanding at the end of 1940 would have been fully liquidated in not less than sixty years. This difference may be influenced by the wave of foreclosures during the thirties, but it reflects also the lengthening of loan maturities and the growing importance of the existing stock of housing as an outlet for mortgage investment.

[10] Cf. Appendix C and Ernest M. Fisher, *Urban Real Estate Markets: Characteristics and Financing*, National Bureau of Economic Research, 1951, Table 6.