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Volume Title: Household Capital Formation and Financing, 1897-1962

Volume Author/Editor: F. Thomas Juster

Volume Publisher: UMI

Volume ISBN: 0-87014-083-2

Volume URL: <http://www.nber.org/books/just66-1>

Publication Date: 1966

Chapter Title: Household Capital Formation and Credit

Chapter Author: F. Thomas Juster

Chapter URL: <http://www.nber.org/chapters/c1551>

Chapter pages in book: (p. 51 - 73)

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HOUSEHOLD CAPITAL FORMATION AND CREDIT

The factors responsible for the rapid expansion of the share of households in gross fixed capital formation are many and complex. The main economic factors appear to be these: technological innovation, which has resulted in the development of increasingly efficient capital goods designed for the direct production of services in individual household units (automobiles, washing machines, television sets, etc.); rising incomes and declining relative prices,¹ which have led to a greatly expanded demand for the income and price elastic services of these consumption-yielding capital goods; the increased value of time to the housewife, which has encouraged the substitution of capital for labor in home production; and the rapid development of capital markets in which the financing needed to buy household capital goods could be obtained on ever more lenient terms, resulting in a lower effective marginal cost of borrowing.²

The objective of this section is to sketch the main outlines of the way in which consumer capital markets have evolved, especially the market for relatively short-term credit. Particular note is given to the behavior

¹ The proposition that the prices of household capital assets have declined over time relative to the prices of consumption goods and services in general is partly agreed-upon fact, partly my conjecture as to what adequate price indexes would tend to show. For household appliances, it seems clear that relative prices have in fact declined markedly; the absolute price index is very little higher in 1962 than it was in 1929, and prices of other consumption goods and services have almost doubled. For the two most important components of the household capital stock—houses and automobiles—there are very wide differences of opinion over what has actually happened to prices. The standard price indexes for both assets (BLS or CPI for automobiles, Boeckh for residential structures) show an increase in relative price. But it can plausibly be argued that the standard indexes are badly biased in the direction of underestimating quality change and hence overestimating price changes. See pp. 37–45.

² See below, where this concept is discussed.

of credit terms other than interest or finance rates (i.e., down-payment requirements and contract maturities), and to the proper interpretation to be given the observed secular trend in credit terms. Finally, the degree to which the household and enterprise sectors use borrowed funds as a method of acquiring capital assets is investigated, and the extent of changes over time in the relative importance of the credit market in these two sectors is indicated.

TRENDS IN CREDIT GROWTH

The extraordinary rapid growth of consumer borrowing has been carefully documented in a number of studies.³ From the turn of the century to the end of 1960, total outstanding consumer nonmortgage credit grew from roughly half a billion dollars to just under \$60 billion.⁴ Of this, outstanding consumer instalment obligations grew from about \$0.2 billion to over \$40 billion. During the same time span, outstanding mortgage indebtedness increased from about \$1.5 billion to almost \$125 billion. The vast bulk of the growth in short-term instalment credit, interrupted only by the advent of World War II, dates from the middle of the 1930's, although a period of rapid growth also took place in the 1920's. Outstanding mortgage credit had a period of rapid growth during the 1920's, and another period of even more rapid growth after World War II. Over the same time span, consumer stocks of durables also grew rapidly, but the pace of credit growth has consistently tended to outstrip that of goods. This was clearly to be expected when the consumer credit industry was in the stage of structural expansion, i.e., when large numbers of new firms entered the industry, but it has continued to be the case even during recent years. Table 2 summarizes the estimated dollar values of household stocks of goods and amounts of credit outstanding, and their compound growth rates, for a number of subperiods between the turn of the century and the early 1960's.

The data clearly indicate that the accumulation of household capital

³ The most recent is the six-volume study sponsored by the Federal Reserve Board, *Consumer Instalment Credit*; see especially Volume I, Part I, "Growth and Import," prepared by the Federal Reserve Staff, and the article by Ervin Miller, "Consumer Credit and Economic Growth," in Part II, Volume I, *Conference on Regulation*, published by the National Bureau (1957). Many of the basic data have been developed by Raymond Goldsmith and presented in *A Study of Saving*, Princeton University Press, 1955.

⁴ Data from Table B-1, below, and *Consumer Credit Statistics*, Board of Governors of the Federal Reserve System.

TABLE 2
*Growth Trends for Consumer Outstanding Debt
 and Stocks of Goods*

End of Period	Outstanding Consumer Debt			Stocks of Consumer Goods ^a	
	Short-Term		Long-Term, Mortgage	Durable Goods	Owner- Occupied Housing
	Total	Instalment			
A. AMOUNTS IN CURRENT PRICES (\$billion)					
1897	0.4	—	1.2	1.9	8.1
1916	2.0	—	3.7	10.0	20.9
1921	3.0	0.9	6.1	18.9	36.6
1929	7.1	3.5	14.2	28.4	58.6
1934	4.2	2.0	10.8	15.2	44.9
1941	9.6	6.1	13.8	28.6	60.2
1945	5.7	2.5	15.0	25.0	88.7 ^b
1961	63.5	48.0	124.4 ^b	146.7	381.4 ^b
B. COMPOUND GROWTH RATES (per cent per year)					
1897-1916	+8.8	—	+6.1	+9.1	+5.1
1921-1929	+11.4	+18.5	+11.1	+5.2	+6.1
1929-1941	+2.4	+4.7	-0.2	+0.0	+0.2 ^b
1945-1961	+16.3	+20.3	+14.1 ^b	+11.7	+9.5 ^b
1921-1941	+6.0	+10.0	+4.2	+2.1	+2.5
1897-1934	+6.6	+8.4	+6.1	+5.8	+4.7
1935-1961	+10.6	+12.5	+9.5 ^b	+8.8	+8.2 ^b

Source: Based on Table B-1, below; E. Miller, "Consumer Credit and Economic Growth," in *Consumer Instalment Credit*, New York, NBER, Vol. I; *Consumer Credit Statistics*, Board of Governors of the Federal Reserve System, February 1963; and current issues of the *Federal Reserve Bulletin*.

^aHousing stock includes the value of both land and structures; consumer durables include the Department of Commerce categories of automobiles, appliances, furniture, and "musical instruments" (mainly television sets at the present time).

^bEnd of 1960.

assets has been financed with borrowed funds to an increasing degree over the period under review. Consumer debt obligations have consistently grown at a faster rate than have consumer stocks of tangible capital assets. It seems a reasonable inference that the growth of goods stocks has been accelerated by the development of credit markets that cater to households. And it can plausibly be argued that, along with the increased use of consumer credit resulting from development and expansion on the supply side (i.e., by the emergence of lending institutions) and from changes in the social acceptability of consumer borrowing, a major cause of the expansion in credit use has been a persistent secular relaxation in credit terms. The analysis below suggests that the secular relaxation in credit terms is best interpreted as a secular decline in the effective cost of borrowing.

The development of consumer lending institutions has been detailed elsewhere, and it is only necessary to refer briefly to such factors as the growth of sales finance companies during the 1920's, the great expansion of consumer lending departments in commercial banks after 1935,⁵ and the rapid growth of credit union instalment loans during the 1950's. Prior to World War I, roughly 80 per cent of consumer credit outstanding was held directly by retail outlets that sold consumer goods. During the 1920's, sales finance company holdings of outstanding consumer instalment debt grew at a rate of over 30 per cent per year, and by the end of the decade financial intermediaries (mainly commercial banks and sales finance companies) held fully half of the greatly expanded total of consumer instalment debt (Table 3).

Sales finance company outstandings continued to expand relative to those of retail outlets during the 1930's, although the most striking development during this depression decade was the huge expansion of commercial bank participation in the consumer instalment credit market after 1935. Legislation passed in 1935 to facilitate the financing of home improvements permitted the federal government to guarantee up to 20 per cent of the face amount for home improvement loans; such loans were defined broadly enough to permit inclusion of household durable goods.⁶ Even though subsequent legislation reduced the percentage of

⁵ For a discussion of the way in which consumer lending institutions have developed, see R. Nugent, *Consumer Credit and Economic Stability*; New York, 1938, and Duncan McC. Holthausen, Malcolm L. Merriam, and Rolf Nugent, *The Volume of Consumer Instalment Credit, 1929-38*, New York, NBER, 1940.

⁶ See Joseph D. Coppock, *Government Agencies of Consumer Instalment Credit*, New York, NBER, 1940.

TABLE 3

Consumer Instalment Credit Outstanding, by Sector

End of Year	Financial Intermediaries						Retail Outlets				Total Instalment Credit
	Com- mercial Banks	Sales Finance Companies	Credit Unions	Other Inter- mediaries	Total Inter- mediaries	Appliance Stores and Auto Dealers	Other Retail Outlets	Total Retail Outlets	Total Instalment Credit		
A. PERCENTAGE SHARE OF TOTAL											
1919	2.4	9.1	0.5	8.5	20.5	39.8	39.7	79.5	100		
1929	5.7	30.5	0.6	12.7	49.5	23.8	26.7	50.5	100		
1934	8.5	31.5	1.2	19.0	60.2	8.9	30.9	39.8	100		
1941	28.4	29.5	3.3	12.4	73.6	6.5	19.9	26.4	100		
1945	30.3	12.2	4.1	25.6	72.2	1.8	26.0	27.8	100		
1961	39.1	25.9	9.9	12.2	87.1	1.5	11.4	12.9	100		
B. ANNUAL GROWTH RATE (per cent per year)											
1919-29	+26.6	+30.8	+18.6	+20.9	+26.7	+10.2	+11.4	+10.8	+16.0		
1929-34	-3.4	-10.1	+1.8	-3.4	-7.2	-26.7	-8.1	-14.9	-10.7		
1934-41	+39.4	+16.2	+35.2	+11.4	+20.7	+12.0	+10.1	+10.5	+17.2		
1945-61	+21.6	+25.4	+26.4	+14.3	+21.1	+18.0	+13.6	+14.0	+19.7		

Source: All data from Consumer Credit Statistics, February 1963.

TABLE 4

*Outstanding Instalment Credit on Consumer Durable Goods,
by Major Financial Intermediaries*

End of Year	Automobile Paper Held by		Other Consumer Durables Paper Held by	
	Commercial Banks	Sales Finance Companies	Commercial Banks	Sales Finance Companies
A. PERCENTAGE SHARE OF TOTAL				
1924	2.1	32.1	0.6	10.0
1929	2.9	53.2	0.8	21.8
1934	8.5	77.7	1.8	13.8
1941	31.9	55.4	16.0	8.7
1945	45.9	36.0	14.0	2.9
1961	47.9	39.5	23.3	26.1
B. ANNUAL GROWTH RATE (per cent per year)				
1924-29	+23.4	+27.9	+21.1	+34.0
1929-34	+5.4	-8.3	+4.2	-18.3
1934-41	+47.4	+16.2	+52.6	+4.5
1945-61	+25.8	+26.2	+22.0	+35.5

Source: All data from *Consumer Credit Statistics*, February 1963.

the loan guaranteed against loss and restricted the coverage to exclude household durables, commercial bank participation in the market for consumer instalment credit grew at an enormous rate from 1935 on. Table 4 indicates that bank holdings of both automobile paper and other consumer durable goods paper grew at the rate of roughly 50 per cent per year from 1934 to 1941, and that bank holdings expanded to the point where they were about equal to the holdings of sales finance companies by the end of 1941.

Although the rapid growth of commercial banks in this field was doubtless stimulated by the home improvement loan guarantee legislation passed in the middle 1930's, it seems clear that the legislation served more as a catalyst than as an active ingredient in the rise.⁷ The guarantee

⁷ Other factors, some favorable to an expansion of instalment credit by commercial banks and others to an expansion of consumer credit in general, may be noted: earnings from bank loan and investment portfolios had been declining and

never applied to automobile credit, and after 1938 it did not extend to most household appliances. Yet automobile paper grew as rapidly as household appliance paper during the period when the latter was partially protected against loss while the former was not (Table 4), and both showed an extraordinarily rapid growth relative to either direct retail financing or sales finance company credit (Table 3). The explanation seems to be that the legislation acted as a spur for many banks, previously apathetic or pessimistic about the commercial feasibility of consumer lending, to set up consumer loan departments. Even after the guarantee provisions were reduced in coverage and effectiveness, these banks apparently found that in fact their consumer lending departments were profitable, given the prevailing level of rates and the risks involved, and thus continued to expand their consumer lending operations.

TREND IN RATES OF CHARGE

From the scattered data available on borrowing rates, it appears that there has been a secular decline in rates of charge to consumers. During the 1920's, rates on first mortgages varied between 6 and 7 per cent, depending on the lender and the contract terms; first-mortgage rates have rarely been above 6 per cent during the period following World War II, and dropped to as little as 4 per cent in the late 1940's.⁸ Borrowing rates on new-automobile instalment contracts were typically over 15 per cent during the 1920's and under 12 per cent during the 1950's (Table 5).⁹ Very few rate data are available for other consumer credit contracts, but there is some presumption that finance rates in other areas must have declined also, though probably to a lesser extent than did automobile rates. In addition, of course, eligibility requirements eased markedly throughout the period under review: not only did contract terms such as down payments and maturities tend to ease, but the acceptability to lend-

eligible investment opportunities were scarce; bank excess reserves were at a high level; and consumer demand was in the process of making a rapid recovery from the exceptionally depressed levels of 1933-34. See John M. Chapman and Associates, *Commercial Banks and Consumer Instalment Credit*, New York, NBER, 1940, especially Chapter 1.

⁸ See Leo Grebler, David M. Blank, and Louis Winnick, *Capital Formation in Residential Real Estate: Trends and Prospects*, Princeton for NBER, 1956, and Saul B. Klamman, *The Postwar Residential Mortgage Market*, Princeton for NBER, 1961.

⁹ See Robert P. Shay, *New-Automobile Finance Rates, 1924-62*, Occasional Paper 86, New York, NBER, 1963.

TABLE 5
Interest Rates on Borrowing in the Household Sector
 (per cent)

Year	Mortgage Rates				
	Life Insurance Companies (1)	Savings and Loan Associa- tions (2)	Commercial Banks (3)	Conventional Home Mortgages (4)	New- Automobile Finance Rates (5)
1920	6.1	7.0	6.2	6.1	13.5
1921	6.2	7.3	6.2	6.2	14.4
1922	6.1	7.0	6.2	6.1	13.8
1923	5.9	7.0	6.2	5.9	15.1
1924	5.9	7.0	6.1	5.9	15.3
1925	5.9	6.9	6.1	5.9	14.2
1926	5.8	6.9	5.9	5.8	14.2
1927	5.9	6.8	6.1	5.9	15.2
1928	5.9	6.7	6.1	5.9	15.3
1929	6.0	6.8	6.1	6.0	15.3
1930	6.0	6.9	6.2	6.0	15.3
1931	6.0	6.6	5.8	6.0	15.0
1932	6.0	7.0	6.1	6.0	17.0
1933	5.9	6.5	6.3	5.9	17.0
1934	5.8	6.4	6.1	5.8	16.6
1935	5.5	6.2	5.6	5.5	14.4
1936	5.2	6.4	5.3	5.2	11.7
1937	5.1	6.0	5.3	5.2	11.7
1938	5.1	6.0	5.1	5.1	11.6
1939	4.9	6.0	5.0	5.0	11.6
1940	4.6	5.7	4.7	4.7	11.6
1941	4.6	5.6	4.7	4.7	11.6
1942	4.5	5.5	4.6	4.6	—
1943	4.5	5.6	4.7	4.5	—
1944	4.5	5.3	4.6	4.4	—
1945	4.4	5.1	4.5	4.3	—
1946	4.2	4.7	4.3	4.3	11.3
1947	4.0	4.7	4.4	4.3	11.3
1948				4.5	12.1
1949				4.6	11.8

(continued)

TABLE 5 (concluded)

Year	Mortgage Rates				
	Life Insurance Companies (1)	Savings and Loan Associations (2)	Commercial Banks (3)	Conventional Home Mortgages (4)	New-Automobile Finance Rates (5)
1950				4.6	11.2
1951				4.6	11.0
1952				4.8	11.2
1953				4.9	11.3
1954				5.0	11.4
1955				4.9	11.4
1956				5.0	11.9
1957				5.4	12.4
1958				5.4	12.4
1959				5.6	12.4
1960				5.8	12.5
1961				5.7	12.4
1962				5.6	12.2

SOURCE NOTES

Columns 1, 2, and 3: Leo Grebler, David M. Blank, and Louis Winnick, *Capital Formation in Residential Real Estate: Trends and Prospects*, Princeton for NBER, 1956, Table 64.

Column 4: Saul B. Klamon, *The Postwar Residential Real Estate Market*, Princeton for NBER, 1961, p. 287, with last six years extrapolated from the first mortgage interest rate component of the CPI.

Column 5: 1920-23 from Robert P. Shay, "The Pricing Process in Consumer Credit," *Journal of Finance*, May 1964. 1924-62 from Shay, *New-Automobile Finance Rates, 1924-62*, New York, NBER, 1963, revised data.

ing institutions of whole classes of consumer borrowers must have changed dramatically in order for these institutions (notably banks) to have expanded their holding of consumer paper at the rate they did.

THE STRUCTURE OF CONSUMER CAPITAL MARKETS

Changes in borrowing rates on credit contracts are only one of the factors that determine the effective cost of borrowing to consumers, and it can be argued that market rates are one of the least important factors. In a purely competitive capital market, borrowers can obtain any desired amount of funds and can maintain indebtedness at any desired level, provided they are willing to pay a sufficiently high rate to cover the cost, including the lender's estimate of the risk. In the capital markets of the real world, business borrowers (especially large ones) are often able to obtain funds on approximately this basis, although expansion of external debt by a business firm sometimes requires willingness to pay very high market rates at the margin because lenders are apt to judge that substantial risks are involved. Thus many business firms face an upward-sloping supply schedule of funds, based on the amounts obtainable from different types of lenders who charge different rates and are willing to accept different degrees of risk—e.g., directly placed commercial paper, bank loans, capital loans from banks and finance companies, private bond placements with financial intermediaries such as insurance companies, public bond placements with individuals or intermediaries, long-term lease contracts, and bond placements accompanied by an equity conversion feature. The rates at which funds can be borrowed by business firms thus will range (as of 1963) all the way from the commercial paper rate at 4 or 5 per cent, applicable to short-term borrowing by well-established firms, to rates in excess of 10 or even 15 per cent—the equivalent of the payments involved in a long-term lease arrangement for a financially weak firm or the true cost of a bond flotation accompanied by some equity participation. As a rule, business borrowers can thus obtain funds from the capital markets of whatever amount and for whatever length of time they desire, provided they are willing to pay a sufficiently high rate.

In contrast, the capital market alternatives open to most households are markedly different. The majority of consumers can borrow from the market only when they simultaneously acquire a salable asset that can

serve as loan collateral. While it is true that consumers can obtain general-purpose cash loans from banks and financial intermediaries, such loans are typically limited to small amounts and moderate maturities except for two types of cases: some borrowers are able to obtain low rates and lenient terms because of their strong liquid-asset and income position or because their patronage is in some sense thought to be valuable by the lender; other borrowers can obtain low rates and lenient terms because they possess a sufficient amount of highly liquid assets that serve as collateral, e.g., a savings account or a life insurance policy with cash reserves.

The typical consumer loan negotiated for the purpose of investing in tangible assets will involve periodic repayment of principal at the rate that, on average, exceeds the rate of depreciation; that is, consumer borrowers are usually forced to acquire equity in the asset.¹⁰ Thus the typical consumer loan is accompanied by a sizable amount of what can be regarded as equity financing. The ratio of debt to equity capital depends on contract terms such as down payment and maturity, and on the service life of the asset. The smaller the down payment and the longer the contract maturity, the larger the proportion of debt capital and the smaller the proportion of equity.

Equity financing by consumers ordinarily takes the form of the periodic savings required by the schedule of debt repayments; since repayments exceed the sum of interest and depreciation, equity is built up and consumption postponed by the amount of the difference. Alternatively, equity financing may take the form of giving up liquid assets. The cost of equity financing is thus either the rate of time preference, if consumption "today" is given up to get more consumption "tomorrow," or the rate of return on liquid assets.¹¹ The latter is of course not necessarily the same as the yield on savings deposits, since liquid assets

¹⁰ Maturities on instalment contracts are almost always less than the service life of the asset. Even though contract maturities have lengthened considerably during recent decades, it is rare for house first mortgages to exceed a thirty-year maturity, for automobile loans to exceed a thirty-six-month maturity, or for loans on household durables and appliances to exceed twenty-four months. Yet houses can be presumed to provide services for a period more like sixty or seventy years than thirty, automobiles have an average life span of about twelve years, and household durables and appliances have service lives ranging from five to twenty years. See Goldsmith's estimates of average service life in *Study of Saving*.

¹¹ The analysis here is based on F. Thomas Juster and Robert P. Shay, *Consumer Sensitivity to Finance Rates: An Empirical and Analytical Investigation*, Occasional Paper 88, New York, NBER, 1964.

held as a reserve against unforeseen contingencies may be viewed as yielding a very high subjective rate of return.

The marginal cost of borrowing for most consumers is therefore not the market rate of interest applicable to debt financing but the higher nonmarket rate associated with equity borrowing. The empirical evidence clearly shows that most consumer borrowers would prefer to use less equity and more debt financing, given the cost of debt; otherwise they would not consistently seek the smallest possible down payment and the longest possible contract maturity, nor would they consistently act to reduce down payments and extend maturities whenever lenders offer the opportunity to do so.¹² As a consequence, it can be inferred that, for most consumers, using their own capital involves higher costs than market borrowing. Hence consumers are typically in disequilibrium, and the availability of credit contracts with smaller down payments or longer maturities will be tantamount to a reduction in borrowing cost.¹³

The capital market alternatives open to consumers impose constraints that can realistically be viewed as credit rationing. In contrast to business borrowers, consumers do not generally have a complete spectrum of market borrowing options that involve varying rates, maturities, and degrees of risk.¹⁴ If a household wishes to borrow \$5,000 and maintain that debt for a ten-year period in order to alter the time shape of consumption to match that of income, it will generally be unable to find a lender willing to extend such terms.¹⁵ Lenders will not make such arrangements unless the household either has a very high and stable income or marketable assets that can be pledged as collateral. The chief

¹² Experimental evidence obtained from a survey of consumer preferences suggest precisely this; for consumers classified as subject to credit rationing, the combination of a long contract maturity and a high finance (interest) rate is preferred to one of a short maturity and low finance rate. *Ibid.*

¹³ There are clearly some classes of consumers for whom this would not be true. For those possessing sizable liquid assets, market borrowing is likely to involve higher cost than simply using up part of these assets, and the availability of longer maturities or smaller down payments will be of no consequence. For those possessing moderate liquid assets and incomes or some liquid assets and large incomes, an equilibrium between debt and equity financing may be achievable on the basis of the existing terms offered by lenders. However, the large majority of consumers fit none of these categories.

¹⁴ The constraints faced by many new and small business enterprises are similar to those faced by households.

¹⁵ Generally speaking, consumer borrowers have an option to borrow large amounts on long-term credit contracts only when they have marketable assets: a house in which the borrower has built up a substantial equity, a savings account, or a life insurance policy with cash reserves.

asset of most households—the capitalized earning power of the household head—is of course not marketable. While lenders clearly consider the income-earning potential of the household in deciding whether or not to extend credit, potential earnings are not usually acceptable as the sole basis for long-term credit—presumably because proper evaluation is difficult and because the uncertainty of distant future events carries a heavy weight.

It can be argued that the basic distinction between households and business enterprises in their access to the capital market lies in the fact that the distribution of marketable net worth is quite different for households than for enterprises. Lenders are, at bottom, concerned with the borrower's ability to repay. If the borrower has marketable assets that will more than cover the amount of the loan, the lender's risk of loss is minimal, since it depends on the market value of the borrower's assets and not directly on future income or willingness to repay. For business enterprises, almost all assets are marketable and hence can serve either directly or indirectly as collateral. But for the vast majority of households, the most important single asset (and for many households, the only asset) is capitalized future earnings, which can neither be pledged as collateral nor marketed.¹⁶ As a consequence, other things equal, business firms can generally borrow with relative ease and with relatively little pressure to liquidate, because the lender's potential loss is limited by the value of the borrower's marketable assets. But households generally can obtain borrowed funds only when they simultaneously acquire a marketable asset, and they are generally required to liquidate the debt regularly as the market value of the asset declines.

Thus households are apt to be in a position where they can borrow in the capital market only for periods of time that are short relative to the service life of household capital assets, and usually only if they acquire a specified asset that can be pledged as collateral for the loan. Partly because of legal constraints and partly because of custom, the market does not contain a continuous spectrum of lenders offering credit to consumers at rates and terms associated with varying degrees of risk. Usury laws limit the rates that can be charged on straight cash loans, and custom sets the maximum contract maturity that will be available on instalment loans secured by collateral. Although laws and customs have

¹⁶ The prospective earnings of business firms are obviously a marketable asset, since this is precisely what is purchased by an investor in corporate common stock.

changed, lenders have never offered consumer borrowers the option of selecting any desired maturity and paying a rate that corresponds to the risk involved.

Capital Rationing of Consumers. The upshot is that consumer borrowers have always been subject to a rather peculiar form of capital rationing which tends to limit the amount of debt that can be maintained through time. Borrowing is easy enough provided the household wishes to purchase a new durable asset such as a house, a car, or a washing machine, but the debt must be liquidated regularly and rapidly. Since consumer borrowers are forced to build equity in their holdings of durable assets, it follows that assets cannot be purchased by simply changing the pattern of consumption. As a consequence the relevant borrowing cost for many households is not the market rate of interest on consumer loans, but a higher rate, consisting of either the marginal rate of time preference involved in reducing current consumption by enough to meet the required repayments schedule or the marginal rate of return on liquid assets.

This analysis implies that the cost of capital to many consumers will be reduced either by an extension of maturities on credit contracts or by a reduction of down-payment requirements. For those whose cost of equity capital is higher than the market cost of debt, an extension of maturities will, other things equal, reduce both average and marginal capital costs by permitting a substitution of relatively cheap debt capital for relatively expensive equity capital: longer maturities bring repayments closer to the sum of interest and depreciation, thus reducing the amount of consumption that must be forgone and also reducing the marginal rate of time preference. Similarly, a reduction of down-payment requirements will reduce the necessity for drawing down liquid assets and also reduce the rate of return that must be given up.

Contract Maturities. This analysis suggests that the cost of consumer borrowing must have declined markedly in recent decades, not only because mortgage and finance rates are lower but because the maximum available contract maturities have steadily lengthened. Down-payment requirements have tended to follow much the same pattern as contract maturities. The data summarized below in Table 6 show the movement in average contract maturities for the major categories of household durable assets. Since 1929, average maturities have roughly doubled for both automobile and household appliance credit, and average maturities

TABLE 6
Contract Maturities on Household Debt

Year	Mortgage Debt (years)					Instalment Debt (months)			
	Life Insurance Companies (1)	Savings and Loan Associations (2)	Commercial Banks (3)	FHA Loans		New Autos (6)	Used Autos (7)	Autos (8)	Other Durables (9)
				New Homes (4)	Used Homes (5)				
1920	6.0	11.3	2.9						
1921	7.9	10.6	1.8						
1922	6.6	11.5	2.9						
1923	5.9	11.2	2.9						
1924	5.7	11.1	3.5						
1925	6.0	10.9	3.1						
1926	5.9	11.2	3.6						
1927	6.7	11.4	2.5						
1928	6.6	11.4	3.2			13.0	10.9		
1929	6.8	11.2	3.7			13.1	11.3	11.7	12.1
1930	7.5	10.8	3.6			13.4	11.4	11.7	12.8
1931	7.8	10.8	3.0			13.7	11.7	11.6	13.0
1932	7.9	11.3	3.0			13.9	11.8	11.9	14.0
1933	6.3	11.1	2.1			14.2	11.8	14.0	14.6

(continued)

TABLE 6 (contd.)

Year	Mortgage Debt (years)					Instalment Debt (months)			
	Life Insurance Companies (1)	Savings and Loan Associations (2)	Commercial Banks (3)	FHA Loans		New Autos (6)	Used Autos (7)	Autos (8)	Other Durables (9)
				New Homes (4)	Used Homes (5)				
1934	7.9	11.7	2.9			14.8	12.0	13.5	13.7
1935	13.0	11.9	9.8	17.6	16.0	15.2	12.7	14.4	15.8
1936	16.2	11.4	9.7	17.7	16.2	16.7	13.5	14.4	15.7
1937	16.7	12.8	9.6	18.4	16.5	17.5	14.3	14.1	15.6
1938	17.7	13.7	13.2	21.4	16.3	17.3	13.9	14.6	15.4
1939	18.3	12.9	14.8	22.0	16.9	18.1	14.4	15.0	15.3
1940	19.9	14.6	16.0	23.0	17.5	18.8	15.1	16.0	16.4
1941	20.6	13.9	14.4	n.a.	n.a.	19.0	15.2	14.8	14.9
1942	21.1	13.5	12.8	23.5	18.1	-	-	13.0	11.7
1943	21.7	13.4	12.4	n.a.	n.a.	-	-	10.4	9.2
1944	22.1	13.6	10.0	n.a.	18.0	-	-	9.2	8.7
1945	20.1	14.3	9.3	n.a.	18.3	-	-	9.8	8.6
1946	18.8	15.0	12.7	21.0	18.9	13.5	12.8	10.9	8.7
1947	19.5	15.2	14.8	20.2	19.1	14.4	13.4	11.7	10.3
1948				20.1	19.3	16.6	15.1	13.4	12.1
1949				22.8	19.8	19.0	16.1	15.7	14.7

(continued)

TABLE 6 (contd.)

Year	Mortgage Debt (years)						Instalment Debt (months)		
	Life Insurance Companies (1)	Savings and Loan Associations (2)	Commercial Banks (3)	FHA Loans		New Autos (6)	Used Autos (7)	Autos (8)	Other Durables (9)
				New Homes (4)	Used Homes (5)				
1950				24.1	20.2	19.6	16.6	17.2	15.8
1951				23.4	21.1	15.6	15.0	14.9	14.7
1952				21.7	19.7	20.7	18.2	15.4	15.8
1953				22.2	19.9	22.6	19.0	18.4	17.0
1954				22.9	20.1	24.7	18.7	18.9	16.8
1955				25.6	22.7	27.7	19.7	20.3	16.7
1956				25.5	22.5	29.3	20.7	22.0	17.1
1957				25.5	22.5	30.6	21.7	22.0	17.1
1958				27.3	24.2	29.8	22.5	22.0	17.5
1959				28.8	25.1	30.9	23.4	22.5	18.0
1960				29.2	25.8	31.3	23.7	24.0	18.6
1961				29.5	26.7	31.2	23.7	24.4	18.7
1962						31.8	24.8	24.2	18.6

(continued)

NOTES TO TABLE 6

Source: Columns 1, 2, and 3 from Grebler, Blank and Winnick, *Capital Formation in Residential Real Estate*, Table 67.

Columns 4 and 5 from various annual reports of the Federal Housing Agency (FHA) or the Housing and Home Finance Agency (HHFA): 7th Annual Report of the FHA, Table 33, p. 68, for 1935-40 data, and 1960 Annual Report of the HHFA, Table III-35, p. 110, for postwar data. 1941-45 data from p. 254 of the 4th Annual Report of HHFA.

Columns 6 and 7 represent average duration of new contracts purchased by one large sales finance company, and were obtained directly from the company.

Columns 8 and 9 were computed from data in *Consumer Credit Statistics*, Board of Governors of the Federal Reserve System, February 1963, and current issues of the *Federal Reserve Bulletin*, using the formula $M = [24 O/R] - 1$, where M = average maturity in months, O = the average amount outstanding during the year (beginning year plus end year $\div 2$), and R = repayments during the year.

The "other consumer durable goods" series consists of total instalment credit less automobile credit during 1929-39; a narrower category (other consumer durables and appliances) is used for the period 1940-62.

for housing have lengthened even more rapidly. Except for housing, only scattered data are available on contract terms prior to 1929, and for housing the data are highly ambiguous because unamortized and presumably renewable mortgages were common then. Nonetheless, scattered pieces of evidence suggest that the trend in contract maturities for short-term instalment debt had persisted prior to the time when comprehensive and reliable maturity estimates became available, and that the secular movement toward lengthening contract maturities probably dates at least from the 1920's, when financial intermediaries became an important part of the consumer credit market. For mortgage debt, the trend probably dates from the mid-1930's, when the FHA came into existence. If so, the most important element affecting the real cost of consumer borrowing has been tending to move downward since around World War I.

GROWTH OF DEBT FINANCING

The extent of the increase in consumer use of capital markets to finance the acquisition of durable assets is strikingly illustrated by a comparison of the household and business enterprise sectors. The relevant comparison contrasts the degree to which business firms have gone to the capital markets for both debt and equity capital with the degree to

TABLE 7

*Net Change in External Liabilities for Nonfarm Business
Enterprises and Households, 1900-62*
(billions of current dollars)

Years	Nonfarm Business (1)	Households (2)	Ratio, (1) to (2) (3)
1901-12	19.8	1.6	0.08
1913-22	33.5	4.7	0.14
1923-29	42.4	9.8	0.23
1930-33	-7.7	-5.3	0.69
1934-39	0.3	4.0	13.33
1940-45	15.7	1.1	0.07
1946-49	44.0	26.7	0.61
1946-49	37.6	26.7	0.71
1950-53	52.9	39.4	0.74
1954-57	61.3	51.8	0.84
1958-62	86.4	73.9	0.86

Source: Column 1, through 1949, is the sum of changes in external liabilities, including the gross change in accounts payable, for non-financial corporations and for nonfarm unincorporated business enterprises, taken from Tables 39 and 36, pp. 248 and 239, respectively, in Simon Kuznets, *Capital in the American Economy: Its Formation and Financing*, Princeton for NBER, 1961. The data in Kuznets are in turn obtained from Raymond W. Goldsmith, *Financial Intermediaries in the American Economy since 1900*, Princeton for NBER, 1958, and *A Study of Saving in the United States*, Princeton University Press, 1955. The Goldsmith data (*Saving*, Table U-11) have been used for the nonfarm unincorporated sector in order to get changes for the years shown above. For the period 1946-62 Flow of Funds estimates, including gross change in trade debt, have been used (*Flow of Funds Accounts, 1945-62*, Board of Governors of the Federal Reserve System).

Column 2 is the sum of the first differences in mortgage credit outstanding and consumer instalment credit outstanding, respectively. Both series are from Table B-1.

which households have used the capital market for debt financing. The data indicate that changes in consumers' external indebtedness have grown rapidly relative to changes in the external liabilities of business enterprises. From not quite a tenth as large during the first decade after the turn of the century, consumer liabilities have grown during the post-World War II period to the point of being roughly the same size as those of business enterprises (Table 7). The growth of consumer borrowing relative to business was steady but unspectacular up until 1929—from 8 to 14 to 23 per cent over periods that correspond roughly to the first three decades of the twentieth century. But since 1935, the growth of external liabilities in the household sector has been explosive, relative to growth in the business sector. From 1934 to 1939, business borrowing and equity flotations hardly changed at all, but consumer borrowing grew appreciably. And between 1946 and 1962, the net increase in household borrowing was four-fifths as large as the net increase in business external liabilities; if the growth of trade debt is excluded from the figures relating to the business sector, household borrowing would show a slightly larger increase than business external liabilities.¹⁷

The secular growth of household borrowing to finance investment in capital assets has been striking not only in relation to the growth of business borrowing but also in relation to the growth of household capital assets themselves, as indicated earlier by the data on growth rates. To an increasing degree, household capital formation has been financed with debt rather than equity capital. As Table 8 shows, the ratio of changes in household external debt to changes in tangible assets has climbed steadily from less than 20 per cent in the first decade after the turn of the century to almost 50 per cent during the period after the

¹⁷ Alternative ways of comparing the use of capital markets by these two sectors would probably show somewhat different results, but the main trends would be approximately the same. The data in Table 7 represent a comparatively "net" use of capital markets by enterprises and households. That is, repayment of external obligations by some units in each sector are being offset against net new credit extended to other units. However, gross increases in trade debt by business firms are included as a capital market use because the data prior to 1946 were compiled to include it.

If estimates with a lesser degree of netness were to be used, the levels of all figures would rise considerably, and there would probably be a noticeable increase in the ratio of the household to the business sector. For example, including gross credit extensions to households rather than extensions net of repayments would increase the estimated household use of capital markets by much more than any comparable adjustment for the enterprise sector.

TABLE 8

*Trends in Household Tangible Assets and Outstanding Debt,
1901-62*

Period	Change in (\$ billion)		Ratio, Debt to Assets (3)
	Household Assets (1)	Household Debt (2)	
1901-12	12.4	1.6	.13
1913-22	28.1	4.7	.17
1923-29	33.8	9.8	.29
1930-33	-29.8	-5.3	.18
1934-39	15.9	4.0	.25
1946-62	443.0	191.9	.43

Source: Asset changes are the sum of changes in stocks of owner-occupied houses and major consumer durables, derived from columns 1 and 2 of Table B-1. Debt changes are the sum of changes in mortgage debt on owner-occupied houses and instalment debt, derived from columns 6 and 7 of Table B-1.

Second World War.¹⁸ The upward trend is still in evidence; during the latter part of the 1950's and the early 1960's, the ratio was in the neighborhood of 60 per cent.

RECENT DEVELOPMENTS

To the degree that the growing share of households in aggregate capital formation is attributable to the continued reduction in cost and the increased availability of credit to households, it is probable that the observed trends have not yet run their full course. Not only have contract maturities on instalment credit continued to ease in recent years, but new and cheaper methods of financing have begun to emerge. Two such developments are worth noting. First, the availability of mortgage rates and terms for general consumer borrowing seems to have increased

¹⁸ The estimates of tangible-asset stocks underlying the calculations in Table 8 are inclusive of capital gains or losses resulting from price changes. This factor will cause erratic and temporary movements in the ratios for annual data, but the time periods used here are long enough so that the figures can be thought of as representing an equilibrium adjustment.

considerably. Not only has the open-end mortgage (which permits durables such as appliances and even cars to be financed at mortgage interest rates and maturities) become common but renegotiation of existing mortgages seems to be undergoing a boom in popularity. During 1963 and 1964, for example, the net new-mortgage debt written on one-to-four-family houses was in excess of new housing construction by almost as much as the amount of amortization on existing mortgages. Thus consumer equity in housing has hardly increased at all during the past several years, and there is a strong presumption that the increased use of mortgage debt to finance non-housing outlays (education, cars, travel, stock market speculation, etc.) is responsible.¹⁹

It is worth noting that the existing equity in housing constitutes an immensely large source of low-cost borrowing power that has historically not been used much by consumers.²⁰ In part this is probably due to custom and habit—a typical homeowner seems to regard equity in housing as a highly illiquid asset available for use only in extreme emergencies.²¹ This attitude may be partly due to the high transaction costs of mortgage negotiation, which tend to make loans based on housing equity just as expensive as any other source of credit unless the desired loan size is quite large.²² But if consumer reluctance to use housing equity as a source of credit were to change, or if transaction costs were to

¹⁹ There are apparently no data available on the extent of mortgage renegotiation or on the amount of mortgage credit extended under open-end mortgage contracts. It is known that net new-mortgage debt has been growing at a rate that is exceptionally large relative to the construction of new housing. See *The New Dimension in Mortgage Debt*, Technical Paper 15, New York, National Industrial Conference Board, 1964. But this growth could be due simply to a greater turnover of existing housing, which would tend to increase mortgage debt because a new owner invariably takes on a larger mortgage than the previous owner had. It seems probable that this factor is only partly responsible and that there has been a good deal of increase in mortgage debt by present mortgagees on existing housing, but no hard facts seem to be available.

²⁰ In 1960, equity in owner-occupied housing amounted to over \$250 billion. See Appendix Table B-1.

²¹ A study by Philip A. Klein, *Financial Adjustments to Unemployment*, Occasional Paper 93, New York, NBER, 1965, indicates that borrowing on housing equity was comparatively rare even for households faced with prolonged unemployment. Klein's data cover the period 1954-58.

²² In form, mortgage renegotiation usually consists of paying off the existing mortgage with a new one for a larger amount, with the loan being the difference between the old and the new mortgage less the costs. But the costs are essentially the same as closing fees on any mortgage, and may amount to several hundred dollars. Unless the respective borrower wants at least several thousand dollars in credits, renegotiating an existing mortgage is not likely to be any cheaper than instalment loans at the customary rate.

become markedly lower (as they are for those with open-end mortgages), the structure of consumer capital markets might undergo a drastic revision.

The other recent development worthy of note is the emergence of the lease as an alternative to the more traditional form of credit. In essence, a lease is a no-down-payment debt contract in which the borrower has zero equity throughout the life of the contract. The most highly developed lease market—that for automobiles—is apparently quite limited at present, since consumers who find leasing preferable to ownership tend to be people with a business use for the vehicle.²³ The implicit finance cost of a vehicle lease tends to be slightly higher than the cost of instalment financing obtained from sales finance companies—say, 13–15 per cent as opposed to 12 per cent. The fact that a lease contract requires no equity investment may, however, make it a cheaper source of finance than an instalment credit contract, since the latter usually requires some beginning equity and always requires an equity buildup over the contract life. Whether leasing is cheaper or more expensive than instalment financing depends on the cost of equity capital to consumers, that is, on their cost of borrowing from themselves. In any event, the option to finance by means of a lease can only make the capital markets in which consumers borrow more, not less, perfect, and can only lead to an increased, not a decreased, use of debt to finance consumer investment.²⁴

²³ This discussion is imprecise quantitatively owing to lack of data. There are literally almost none, and the above analysis is based on a combination of casual empiricism and the judgments of firms in the leasing business.

²⁴ As a matter of form, a long-term lease appears to result in the substitution of business for consumer debt. The lessor owns the item and thus makes the financial arrangements for purchasing it. The bookkeeping is misleading, however. A long-term lease agreement is really just as much a debt obligation of the lessee as an instalment purchase contract. The lessor firm is in reality acting as an intermediary between the lender and the lessee, except to the limited extent that risk is assumed by the lessor.