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SECTION E
SOURCE NOTES

Ratios of Consumer Instalment Debt and Repayments to Income and Assets

Series included in this compendium		Frequency and Period
HI1	Ratio of consumer instalment debt outstanding to disposable personal income.	A 1919 on Q 1939 on
*HI5	Ratio of repayments on consumer instalment debt to disposable personal income.	A 1929 on Q 1940 on
HI6	Ratio of consumer instalment debt service to disposable personal income.	A 1946 on
HI31	Ratio of consumer instalment debt outstanding to the value of the stock of major consumer durables.	A 1897-1962
HI32	Ratio of automobile instalment debt outstanding to the value of the stock of automobiles in the household sector.	A 1922-61
HI33	Ratio of consumer instalment debt outstanding to liquid assets of households.	A 1922 . . . 39, 1945 on
HI35	Ratio of consumer instalment debt repayments to liquid assets of households.	A 1929 . . . 39, 1945 on
Other series available from the source		
HI2	Ratio of consumer noninstalment, nonmortgage debt outstanding to disposable personal income.	A 1925 on Q 1940 on
HI34	Ratio of consumer noninstalment, nonmortgage debt outstanding to liquid assets of households.	A 1929 . . . 39, 1945 on
HI36	Ratio of debt service on consumer instalment debt to liquid assets of households.	A 1946 on

Source: These series are obtained or calculated from *Survey of Consumer Finances*, published annually by the Survey Research Center, University of Michigan, Ann Arbor, 48106. From 1947-59 the survey was conducted by the Board of Governors of the Federal Reserve System in cooperation with the Survey Research Center of the University of Michigan, and findings were published in *Feder-*

al Reserve Bulletins. Prewar data are from Blanche Bernstein, *Patterns of Consumer Debt, 1935-36*; and Reavis Cox, *Installment Buying by City Consumers in 1941*, Bureau of Labor Statistics Bulletin No. 773.

Disposable personal income is obtained from the *Survey of Current Business*, published monthly by the Office of Business Economics, U.S. Department of Commerce. 1929-65 data are from *National Income and Product Accounts of the United States, 1929-65*; estimates for 1919-28 were made by the NBER based on "personal income" (Barger estimates) less "personal tax and nontax payments" (Kendrick estimates).

"Debt service" on consumer instalment debt for series HI6 and HI36 are unpublished estimates, available on request from John A. Gorman, Associate Chief, National Income Division, Office of Business Economics, U.S. Department of Commerce, Washington, D.C. 20425.

The ratios of outstanding debt to the value of stocks of major durables, series HI31 and HI32, were calculated from F. Thomas Juster, *Household Capital Formation and Financing, 1897-1962*, New York, NBER, 1966, Appendix Table B-1, and from his unpublished worksheets; for a description of Juster's estimates and his sources, see *Household Capital Formation*, p. 132 ff.

Liquid assets of households for series HI33, HI-34, HI35 and HI36 are obtained from *Flow of Funds, Assets and Liabilities, F/F Levels*, October 20, 1966, Table 8(A) and *Federal Reserve Bulletins*, Board of Governors of the Federal Reserve System; data prior to 1945 came from Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet*, Vol. II, Princeton for NBER, 1963, Table III-1d.

Description of Series: For a description of the Federal Reserve series on consumer instalment and noninstalment debt outstanding and repayments on consumer instalment debt, see "Consumer Credit" in *Supplement to Banking and Monetary Statistics*, September 1965, Board of Governors of the Federal Reserve System.

The debt-to-income ratios are calculated as end-of-year or end-of-quarter debt outstanding as a per cent of income for the year or quarter. In addition to what would generally be considered income of households, the disposable income series includes income of unincorporated businesses, imputed rent on owner-occupied dwellings and some forms of "income in kind." Liquid assets of households include the demand deposits and currency, savings accounts, and U.S. government securities of consumers and nonprofit organizations.

The estimates of debt service on consumer instalment debt made by John Gorman at the Office of Business Economics include debt repayments and interest, and vary slightly from the Federal Reserve figures in that Gorman makes somewhat different assumptions about the interest charges on instalment debt written by commercial banks, credit unions and retail outlets.

Seasonal Variation: Quarterly series HI1 and *HI5 are presented in this compendium on a seasonally adjusted basis. Instalment debt outstanding (the numerator of series HI1) was adjusted from 1939-54 by the NBER and thereafter was compiled by accumulating the seasonally adjusted (by the FRB) net changes (extensions less repayments) in outstanding debt. Repayments on instalment debt (for series *HI5) are available on a seasonally adjusted basis from the Federal Reserve. The denominator of these two ratios is disposable personal income, which is published by the Department of Commerce as a seasonally adjusted annual rate.

Incidence of Consumer Instalment Debt and Ratios of Debt and Repayments to Income (SCF)

Series included in this compendium		Frequency and Period
HI3	Proportion of families with consumer instalment debt.	A 1935 . . . 52, 1954 on

HI4	Ratio of instalment debt outstanding to personal income, estimated average for instalment debtor families.	A 1935 . . . 41, 1952 on
HI10	Ratio of instalment debt repayments to personal income, estimated average for instalment debtor families.	A 1935 . . . 41, 1952 on
*HI7	Median ratio of instalment debt repayments to disposable income, instalment debtor families.	A 1954 on
*HI8	Proportion of all families with instalment debt repayments equal to 20 per cent or more of disposable income.	A 1954 on
HI9	Proportion of all families with instalment debt repayments equal to 10 per cent or more of disposable income.	A 1954 on

Source: These series are obtained or calculated from *Survey of Consumer Finances*, published annually by the Survey Research Center, University of Michigan, Ann Arbor, 48106. From 1947-59 the survey was conducted by the Board of Governors of the Federal Reserve System in cooperation with the Survey Research Center of the University of Michigan, and findings were published in *Federal Reserve Bulletins*. Prewar data are from Blanche Bernstein, *Patterns of Consumer Debt, 1935-36*; and Reavis Cox, *Installment Buying by City Consumers in 1941*, Bureau of Labor Statistics Bulletin No. 773.

Description of Series: Series HI3, *HI8 and HI9 are taken directly from the *Survey of Consumer Finances* (in the 1967 *SCF*, Tables 2-1, 2-4 and 2-4 respectively). The median ratio of instalment debt repayments to disposable income, series *HI7, has on some occasions been included in a Survey table or been cited in the text; otherwise it must be calculated by interpolation from the distribution of families by this ratio (1967 *SCF*, Table 2-1).

Note that these surveys are conducted in January and February of each year, and that the debt position reported is as of that point in time, while the reported income is that earned in the previous year. Thus, these repayments-to-income ratios reported in the *SCF* relate the January-February rate of repayments to the previous-year income.

The estimated average ratios for instalment debtor families of outstanding debt and repayments to personal income (series HI4 and HI10) are calculated from the *SCF* and other data as follows:

Step		1966 Value
1.	Calculate the ratio of the median income of families with instalment debt to the median income of all families (1967 *SCF* Table 2-2).	$7,890 ÷ 6,925 = 1.14
2.	Obtain the proportion of families with instalment debt early in the year (series HI3; 1967 *SCF*, Table 2-1 column headed 1966).	49 per cent
3.	Obtain total U.S. personal income from *Survey of Current Business*. (Note that this is income before taxes, and includes income of unincorporated business, plus certain items of "imputed" income and "income in kind.")	$586.8 billion
4.	Estimate personal income of families with instalment debt (1 x 2 x 3).	$327.8 billion
5.	Obtain aggregate instalment debt outstanding (at year end) from *Federal Reserve Bulletin*, December 1968.	$77.5 billion

6.	Calculate series HI4, the ratio of instalment debt outstanding to personal income, estimated average for instalment debtor families (5 ÷ 4).	23.6 per cent
7.	Obtain aggregate instalment debt repayments from *Federal Reserve Bulletin* December 1968.	$76.1 billion
8.	Calculate series HI10, the ratio of instalment debt repayments to personal income, estimated average for instalment debtor families (7 ÷ 4).	23.2 per cent

Because many of the estimates used in the calculations are inherently imprecise, these two series must be considered rough approximations (especially the prewar figures, which should be used very cautiously). Nevertheless, we have included them in the compendium because series HI4 the estimated average ratio of debt to personal income for instalment debtor families is the only debt-to-income ratio available that is limited to instalment debtor families (unlike HI1, which relates total outstanding instalment debt to total U.S. disposable personal income – i.e., the income of debtors and nondebtors alike); and because series HI10 the estimated average ratio of repayments to personal income for instalment debtor families provides a useful check on series *HI7. These two are the only available repayments-to-income ratios (other than the very limited Household Finance Company series, HI11) for instalment debtor families.

Although the over-all *trends* of series *HI7 (from the *SCF*) and series HI10 (estimated from *SCF* and personal income data) are similar, they are quite divergent as to *level*. The estimated ratio suggests that repayments absorbed about 21 per cent of the aggregate income of borrowers in recent years, while the *SCF* figure is much lower, around 12-13 per cent. There are several reasons for this. First and perhaps most important, the Federal Reserve repayments figures used in the estimated average ratio include repayments of debt that is refinanced, whereas the *SCF* repayments do not include such "repayments." Ernst Dauer has estimated that "The resulting overstatement (of repayments) can run as high as 1/3 of the published estimates in any one month." (See his "Consumer Credit Outlook – Basic Factors," presented to Columbia University Consumer Credit Management Program, Harriman, New York, June 12, 1967, mimeograph, p. 3.) A second reason for the difference in level is that the estimated ratio is based on personal income (before taxes) while the *SCF* ratio is based on disposable income. Third, the estimated ratio is, in effect, a mean, while the *SCF* series is a median. Fourth, any response errors that enter the surveys probably tend toward an underreporting of debt. All factors considered, the levels of these two series appear to be irreconcilable. For a discussion of these and related series, see Geoffrey H. Moore and Philip A. Klein, *The Quality of Consumer Instalment Credit*, New York, NBER, 1967, pp. 19-27.

The continuity of all six of these series was broken by the change in the survey procedure in 1964 (see the 1964 *SCF*, pp. vi-vii). Prior to that year, the basic sampling unit of the surveys was the consumer spending unit, defined as all related persons living together who pooled their incomes. From 1964 on the sampling unit has been the family unit, defined as all related persons living in the same dwelling unit; a single person who is unrelated to the other occupants of the dwelling or who lives alone is a family unit by himself. Because of this change, all six of these time series are discontinuous between 1963 and 1964.

Sample: Data for the *Survey of Consumer Finances* are obtained from a probability sample of the population living in private households in the continental United States. The sample size for data on instalment debt is about 1,350 families; for income data, about 3,500 families. The response rate is about 85 per cent. A complete description of the survey methods, including sampling errors, is provided in each *Survey of Consumer Finances*. For a description of the surveys from which the prewar data were obtained, see Blanche Bernstein, *Pattern of Consumer Debt, 1935-36*, and Reavis Cox, *Installment Buying by City Consumers in 1941*, BLS Bulletin No. 773.

Repayments-to-Income Ratio on Personal Loans (HFC)

Series available from the source		Frequency and Period
HI11	Ratio of repayments to income on personal loans, HFC.	A 1949 on

Source: This series is published in the annual reports of the Household Finance Corporation, Prudential Plaza, Chicago, Illinois 60601. Earlier data are available on request from the NBER.

Description of Series: This series is based on loan contracts written by the Household Finance Corporation. It is calculated as the average monthly payment as a per cent of the average monthly income reported by the customer when the loan contract is written.

Dealer-Cost Ratios and Maturities on Automobile Instalment Loans, Sales Finance Companies (FRB)

Series included in this compendium		Frequency and Period
*HI12	Proportion of new car loans made with dealer-cost ratio over 100 per cent and maturing in over 30 months (or on a balloon basis), major sales finance companies.	M 1966 on
*HI13	Proportion of used car loans made with loan-to-wholesale-value ratio over 100 per cent and maturing in over 24 months (or on a balloon basis), major sales finance companies.	M 1966 on
HI16	Proportion of new car loans made with dealer-cost ratio over 110 per cent, major sales finance companies.	M 1960 on
HI22	Proportion of used car loans made with loan-to-wholesale-value ratio over 120 per cent, major sales finance companies.	M 1960 on
HI67	Proportion of new car loans made with maturity over 36 months, major sales finance companies.	M 1960 on
HI74	Proportion of used car loans made with maturity over 30 months, major sales finance companies.	M 1960 on

Source: These series are obtained from Statistical Release G.25, "Automobile Loans by Major Sales Finance Companies," published monthly by Board of Governors of the Federal Reserve System; tables for 1960-66, monthly, showing the complete distributions of maturities and dealer cost ratios, are published in G.25 Statistical Supplement #1, revised March 1967 and G.25 Statistical Supplement #2B, revised March 1968. Further revised data for 1966-68 were published in the G.25 release of March 19, 1969.

Description of Series: The Board's monthly release is unusually complete and valuable in that, in addition to the series listed above, it provides detailed frequency distributions for both of these quality characteristics, separately and in combination, as follows:

A. Dealer-Cost Ratios

New Car Contracts (loan as per cent of dealer cost)	Used Car Contracts (loan as per cent of wholesale value)
90 per cent or less	90 per cent or less
91-100 per cent	91-100 per cent
101-105 per cent	101-110 per cent
106-110 per cent	111-120 per cent
Over 110 per cent	Over 120 per cent

B. Maturities

New Car Contracts	Used Car Contracts
24 months or less	18 months or less
25-30 months	19-24 months
31-36 months	25-30 months
Over 36 months	Over 30 months
Balloon paper	Balloon paper

C. Dealer-Cost Ratios and Maturities, Cross Classified

Tables showing frequency distributions for both characteristics simultaneously, using the same class intervals for each that are used above.

These last distributions, the cross-classification tables showing both characteristics simultaneously, are particularly useful (and particularly rare). Information on the proportion of contracts in which *both* the dealer-cost ratio and the maturity reach out toward the risky end of the spectrum is more meaningful than data on each of the two characteristics individually.

The dealer-cost ratio measures the relationship between the amount of the loan and the value of the car being financed. For new cars, it is the loan amount as a per cent of the dealer's cost for the car. For used cars, it is the loan amount as a per cent of the wholesale value as listed in used car guides. Only contracts written on late-model used cars are reported in the survey.

Although the distributions of maturities are classified into broad groups, actual contracts written tend to cluster around such standard lengths as 12, 18, 24, 30 and 36 months. Very few contracts are written for other maturities. "Balloon contracts," which are classified separately, are those contracts that provide for a large final payment.

Sample: These series are based on monthly reports received from eleven large sales finance companies, accounting for about 90 per cent of all new car contracts acquired by sales finance companies. Data from large sales finance companies are not necessarily representative of small companies, but because the larger firms account for the dominant share of the business and because changes in terms granted by smaller companies tend to parallel those of large companies, these series are believed to be good approximations of contract terms for the industry as a whole.

For a complete description of these series, their history, their quality, how the data are collected, and a discussion of their behavior, see "Auto Loan Characteristics of Major Sales Finance Companies," *Federal Reserve Bulletin*, February 1967, pp. 204-208.

Seasonal Variation: All of these series, except *HI12 and *HI13 which have been compiled only for the past couple of years, are published in seasonally adjusted form by the Federal Reserve.

Characteristics of Instalment Loans of Commercial Banks (ABA)

Series included in this compendium		Frequency and Period
HI14	Average dealer-cost ratio on new car loans, commercial banks.	A 1956 on
HI15	Average loan-to-price ratio on new cars, commercial banks.	A 1963 on
HI26	Most common downpayment ratio on loans for appliances and household equipment, commercial banks.	A 1956 on
HI49	Most commonly reported maximum maturity on direct loans for new cars, commercial banks.	A 1956 on
HI50	– indirect loans for new autos.	A 1956 on
HI84	– household appliances.	A 1956 on
Other series available from the source		
HI27	Most common downpayment ratio on loans for new pleasure boats, commercial banks.	A 1957 on
HI28	– used pleasure boats	A 1957 on
HI29	– new mobile homes.	A 1958 on
HI30	– used mobile homes.	A 1958 on
HI51	Most commonly reported maximum maturity on direct loans for used cars less than a year old, commercial banks.	A 1956 on
HI52	– indirect loans for used cars less than a year old.	A 1956 on
HI53	– direct loans for used cars a year old.	A 1956 on
HI54	– indirect loans for used cars a year old.	A 1956 on
HI55	– direct loans for used cars 2 years old.	A 1956 on
HI56	– indirect loans for used cars 2 years old.	A 1956 on
HI57	– direct loans for used cars 3 years old.	A 1956 on
HI58	– indirect loans for used cars 3 years old.	A 1956 on
HI59	– direct loans for used cars 4 years old.	A 1956 on
HI60	– indirect loans for used cars 4 years old.	A 1956 on

HI61	– direct loans for used cars 5 years old.	A 1956 on
HI62	– indirect loans for used cars 5 years old.	A 1956 on
HI85	– new pleasure boats.	A 1957 on
HI86	– used pleasure boats.	A 1957 on
HI87	– new mobile homes.	A 1958 on
HI88	– used mobile homes.	A 1958 on
HI90	– FHA Title I property improvement loans.	A 1956 on
HI91	– repair and modernization (own plan) loans.	A 1956 on

Source: These series are available in the annual *Instalment Credit Survey,* published by the Instalment Credit Committee, American Bankers Association, 90 Park Avenue, New York, N.Y. 10016.

Description of Series: The survey is made at the end of each year; thus, the series report terms of credit on loans made at that time. The dealer cost ratio (series HI14) is the amount of the auto loan (excluding finance charges) as a per cent of the car's cost to the dealer. The automobile loan-to-price ratio (HI15) is similar except that it is calculated as the amount of the loan as a per cent of the retail (sticker) price of the car. The downpayment ratios, which are for loans other than automobiles, relate the buyer's downpayment to the price of the item being financed.

All of the maturity series are compiled from responses to questions on what *maximum* maturity the banks offer on a given type of loan. These time series are the maximum maturity most often reported by banks in the survey, i.e., the modal maximum maturity. On auto loans, *direct* loans are instalment loan contracts written by the banks themselves; *indirect* loans are instalment loan contracts purchased by the banks from automobile dealers or others.

Sample: These data are derived from responses to a questionnaire sent to a large sample of commercial banks throughout the United States. The sample banks are chosen by the ABA to provide a broad representation by size of bank and by geographic region. The sample size has been increased substantially over the years. In 1966, questionnaires were sent to 2,000 banks, of which some 900 responded – although not all questions were answered by every bank. Of the 900 banks in the tabulation, 267 of them have deposits of $100 million or more (80 with $500 million or more), thus assuring that the sample provides substantial coverage of all bank-held consumer instalment debt.

Characteristics of Automobile Instalment Loans (NASFCo)

Series available from the source		Frequency and Period
HI20	Proportion of paper on new cars with downpayment less than 1/3, sales finance companies.	A 1934-39
HI21	– new and used cars.	A 1925-39
HI25	– used cars.	A 1934-39
HI71	Proportion of new car paper maturing in more than 12 months, sales finance companies.	A 1934-39

HI72	New and used car paper with contract length over 12 months.	A 1925-39
HI80	– used car paper maturing in over 24 months.	A 1936-39
HI81	– used car paper maturing in over 18 months.	A 1936-39

Source: These data were taken from "Composite Experience of Sales Finance Companies and Automobile Dealers – 1939," a mimeographed release published by the National Association of Sales Finance Companies; copy available from the NBER on request.

Description of Series: The data were compiled from questionnaires returned to the NASFCo from finance companies.

Computed Maturity of Instalment Credit Outstanding (FRB)

Series included in this compendium		Frequency and Period
HI37	Computed average duration of consumer instalment credit outstanding, all holders.	A 1940 on
HI45	– automobile loans, all holders.	A 1929 on
HI46	– loans on consumer durables other than automobiles, all holders.	A 1929 on
HI47	– personal loans, all holders.	A 1940 on
HI48	– repair and modernization loans, all holders.	A 1940 on
Other series available from the source		
HI38	Computed average duration of consumer instalment credit held by commercial banks.	A 1940 on
HI39	– sales finance companies.	A 1940 on
HI42	– other financial institutions.	A 1940 on
HI44	– retail outlets.	A 1940 on

Source: The data from which these series are computed are published monthly in the *Federal Reserve Bulletin*. Historical data through 1962 are available in "Consumer Credit," Section 16 (New) of *Supplement to Banking and Monetary Statistics*, September 1965, Board of Governors of the Federal Reserve System.

In addition to the series listed above, average loan duration can be computed from data on outstandings and repayments for several types of instalment credit *within* each of several groups of lenders (e.g., automobile instalment loans held by commercial banks, repair and modernization loans held by sales finance companies). For these data, see Federal Reserve statistical releases G.18 "Consumer Instalment Credit at Commercial Banks," G.20 "Sales Finance Companies," G.22 "Consumer Finance Companies," and Supplement to *Banking and Monetary Statistics*, Section 16 (New) "Consumer Credit."

Description of Series: The computation of these series is based on the fixed relationship that

exists among the outstanding balance, repayments, and maturity of an instalment loan. Given the debt outstanding and repayment figures, the average duration of instalment debt can be calculated (as were these series) by the following formula:

$$\text{Average duration in months} = \text{four quarter average of } \frac{\text{Average outstanding at end of preceding and current quarter} \times 2}{\text{Repayments during quarter} \div 3} - 1 .$$

When new loan extensions decline sharply, these estimates of duration are biased downward; when extensions rise sharply, they are biased upward. Monthly or quarterly data can be calculated for these series, but in view of the occasional bias mentioned above, and because they tend to change fairly slowly, we concluded that annual data were sufficient for these series. In addition, note that, because the debt repayments figures include refinancing, these calculated durations are necessarily shorter than the average maturities of the original observations.

The series are useful measures of the duration of consumer instalment debt for two reasons. First, they provide measures that show the duration for all types of instalment debt (on autos, other durables, personal loans, etc.) *combined*. Series HI37 is based on all the instalment debt of all holders; Series HI45, HI46, HI47 and HI48 show the loan duration for all holders of each major type of instalment debt; and series HI38 through HI44 show the loan duration of all instalment debt held by each of the major classes of lenders. All other available measures of loan maturity are limited to one type of debt for one class of lender. These series, therefore, provide the most comprehensive measures of instalment loan duration.

The second reason that these are useful series is that they, along with HI43, are the only measures of loan duration applicable to instalment debt *outstanding*; all other series are measures of the maturity of new loans made in the period.

For a full description of the outstandings and repayments data, and the method by which they are estimated, see *Supplement to Banking and Monetary Statistics*.

Characteristics of Instalment Loans of Sales Finance and Consumer Finance Companies (The First National Bank of Chicago)

Series included in this compendium		Frequency and Period
HI40	Proportion of new car paper with dealer-cost ratio over 110 per cent, sales finance companies.	A 1935-41, 1947 on SA 1955 on
HI43	Computed average duration of net outstandings, consumer finance companies.	A 1948 on SA 1955 on
Other series available from the source		
HI17	Proportion of new car paper with dealer-cost ratio over 110 per cent, sales finance companies.	SA 1958 on
HI18	Proportion of new car paper with dealer-cost ratio over 100 per cent, sales finance companies.	SA 1957 on

HI19	Proportion of new car paper with downpayment less than 33 per cent, sales finance companies.	A 1935-41, 1953-57 SA 1953-57
HI23	Proportion of used car paper with loan-to-wholesale-value ratio over 110 per cent, sales finance companies.	SA 1958 on
HI24	Proportion of used car paper with loan-to-wholesale-value ratio over 100 per cent, sales finance companies.	SA 1958 on
HI41	Proportion of instalment receivables maturing in over 6 months, sales finance companies.	A 1935–41, 1947–59 SA 1955–60
HI68	Proportion of new car paper maturing in over 30 months, sales finance companies.	SA 1957 on
HI69	– proportion maturing in over 24 months.	A 1936-39, 1955-59, SA 1958-60
HI70	– proportion maturing in over 18 months.	A 1935-41, 1947-57 SA 1955-60
HI73	Proportion of new car paper (excluding demonstrator) with balloon payment, sales finance companies.	A 1935-41, 1947 on SA 1953 on
HI75	– proportion of paper on used cars 0-2 years old, maturing in over 24 months.	SA 1957 on
HI76	– proportion of paper on used cars 0-2 years old, maturing in over 18 months.	A 1955-59 SA 1958-60
HI77	– proportion of paper on used cars 3 years and older maturing in over 18 months.	SA 1957 on
HI78	– proportion of paper on used cars 3 years and older maturing in over 12 months.	A 1955-59 SA 1958-60
HI79	– proportion of all used car paper maturing in over 12 months.	A 1935-41, 1953-57 SA 1953-57
HI82	Proportion of used car paper with balloon payment, sales finance companies.	A 1935-41, 1953 on SA 1953 on.

Source: These series are obtained from "Instalment Sales Finance Company Ratios" and "Consumer Finance (Small Loan) Company Ratios," semiannual releases published by The First National Bank of Chicago, Chicago, Illinois 60690. The annual data for these series are published also in Robert Morris Associates, *Annual Statement Studies*, Philadelphia National Bank Building, Philadelphia, Pa. 19107. In addition, similar sets of data on sales finance and small loan companies compiled by The Bank of New York and by The Continental Illinois National Bank and Trust Company of Chicago are published in the *Annual Statement Studies*.

Description of Series: These series are calculated by averaging the ratios of the individual companies in the sample; no weight is given to the size of the companies. The sales finance company sample consists of a group of companies engaged primarily in the financing of automobiles. They represent a cross-section of the industry, including national, regional and local firms. In the aggregate, they have a very large proportion of the automobile finance paper handled by sales finance companies in the United States. The consumer finance sample also consists of national, regional and local companies broadly representative of the industry.

The computed average duration of net outstandings of consumer finance companies, series HI43, is calculated by the NBER as:

$$\frac{2 \times \text{average monthly outstandings of loan receivables}}{\text{average monthly cash principal collections}} - 1$$

Prior to 1960 this computation was based on average *gross* (rather than *net*) outstandings and gross collections; thus, between 1959 and 1960 there is a break in the continuity of the series. This series, and series HI40, are especially interesting, because they measure a characteristic of a portfolio of loans outstanding, whereas most other available data on maturities relate to new loans being made.

For a complete description of these series, see Ray H. Matson, *Ratios of the Instalment Sales Finance and Consumer Finance Companies*, The First National Bank of Chicago, February 1961.

Maturity of Automobile Instalment Loans (Juster)

Series included in this compendium		Frequency and Period
HI63	Average maturity of instalment loans on new cars, contracts purchased by one large sales finance company.	A 1928-41, 1946-62.
HI64	Average maturity of instalment loans on used cars, contracts purchased by one large sales finance company.	A 1928-41, 1946-62.

Source: These series were published in F. Thomas Juster, *Household Capital Formation and Financing, 1897-1962*, New York, NBER, 1966, Table 6. Juster obtained them directly from the company.

Description of Series: The series represent the average duration of new contracts purchased by one large sales finance company, which remains unidentified. For a brief discussion of the trend in maturities of household debt, see *Household Capital Formation*, pp. 64-68.

Maturities on Automobile Instalment Loans of Sales Finance Companies (NBER)

Series available from the source		Frequency and Period
HI65	Average maturity on new car contracts, sales finance companies.	A 1948-55

HI66 — used car contracts. A 1948-55

Source: These series were obtained for the NBER Consumer Credit Quality Study as reported by Geoffrey H. Moore, Thomas R. Atkinson and Philip A. Klein, in "Changes in the Quality of Consumer Instalment Credit," in Board of Governors of the Federal Reserve System, *Consumer Instalment Credit*, Part II, Volume 1, Table 19, p. 120.

Description of Series: The data for 1950-55 are based on reports from six large sales finance companies; for 1948 and 1949, three companies. In 1955, the six companies in this sample accounted for 57.6 per cent of the dollar volume of automobile paper extended by all sales finance companies as estimated by the Federal Reserve Board.

Maturity of Automobile Instalment Loans (Holthausen)

Series available from the source		Frequency and Period
HI83	Average maturity on new and used automobile instalment contracts written by auto dealers.	A 1928-38

Source: This series is reported in Duncan Holthausen, *The Volume of Consumer Credit, 1929-38,* NBER, 1940, Appendix Table A-4.

Description of Series: This series was derived from data on the actual length of contracts granted by three large sales finance companies.

Maturity on FHA Title I Property Improvement Loans (FHA)

Series included in this compendium		Frequency and Period
HI89	Average maturity on FHA Title I property improvement loans.	A 1938 . . . 43, 1946 on

Source: This series is published in *Statistical Yearbook* of the U.S. Department of Housing and Urban Development, available from the Superintendent of Documents, Washington, D.C. 20402, (1966 *Yearbook*, FHA Table 63); also available, and more promptly, in the FHA *Annual Statistical Summary*, Washington, D.C. 20410. In earlier years, this series was reported in *Annual Reports* of the Department and of its predecessor, the Housing and Home Finance Agency.

Description of Series: This series is the average term of the loans, in months, weighted by the net proceeds of the loan, of property improvement loans insured by the FHA under Title I of the National Housing Act. Also available is the median maturity based on the number of loans.

Delinquency and Repossession Rates on Consumer Instalment Loans of Commercial Banks (ABA)

Series included in this compendium		Frequency and Period
*HI92	Delinquency rate on six types of consumer instalment loans, past due 30 days or more, commercial banks.	M 1947-64 BiM 1965 on
HI123	Repossession rate on direct automobile loans, commercial banks.	BiM 1966 on
HI124	— indirect automobile loans.	BiM 1966 on

Other series available from the source

HI93	Delinquency rate on direct automobile loans, delinquent 30 days or more, commercial banks.	M 1948-64 BiM 1965 on
HI94	– direct automobile loans, delinquent 30-59 days.	M 1948-64 BiM 1965 on
HI95	– direct automobile loans, delinquent 60-89 days.	M1948-64 BiM 1965 on
HI96	– direct automobile loans, delinquent 90 days or more.	M1948-64 BiM 1965 on
HI97	– indirect automobile loans, delinquent 30 days or more.	M 1948-64 BiM 1965 on
HI98	– indirect automobile loans, delinquent 30-59 days.	M 1948-64 BiM 1965 on
HI99	– indirect automobile loans, delinquent 60-89 days.	M 1948-64 BiM 1965 on
HI100	– indirect automobile loans, delinquent 90 days or more.	M 1948-64 BiM 1965 on
HI104	– home appliance loans, delinquent 30 days or more.	M 1948-64 BiM 1965 on
HI105	– home appliance loans, delinquent 30-59 days.	M 1948-64 BiM 1965 on
HI106	– home appliance loans, delinquent 60-89 days.	M 1948-64 BiM 1965 on
HI107	– home appliance loans, delinquent 90 days or more.	M 1948-64 BiM 1965 on
HI108	– personal loans, delinquent 30 days or more.	M 1942-64 BiM 1965 on
HI109	– personal loans, delinquent 30-59 days.	M 1942-64 BiM 1965 on
HI110	– personal loans, delinquent 60-89 days.	M 1942-64 BiM 1965 on

HI111	– personal loans, delinquent 90 days or more.	M 1942-64 BiM 1965 on
HI115	– FHA Title I loans, delinquent 30 days or more.	M 1948-64 BiM 1965 on
HI116	– FHA Title I loans, delinquent 30-59 days.	M 1948-64 BiM 1965 on
HI117	– FHA Title I loans, delinquent 60-89 days.	M 1948-64 BiM 1965 on
HI118	– FHA Title I loans, delinquent 90 days or more.	M 1948-64 BiM 1965 on
HI119	– property improvement loans (own plan), delinquent 30 days or more.	M 1948-64 BiM 1965 on
HI120	– property improvement loans (own plan), delinquent 30-59 days.	M 1948-64 BiM 1965 on
HI121	– property improvement loans (own plan), delinquent 60-89 days.	M 1948-64 BiM 1965 on
HI122	– property improvement loans (own plan), delinquent 90 days or more.	M 1948-64 BiM 1965 on

Source: These series are obtained from "Delinquency Rates on Bank Instalment Loans," a bimonthly (formerly monthly) report published by the American Bankers Association, 90 Park Avenue, New York, N.Y. 10016. The composite delinquency rate, series *HI92, is also published, seasonally adjusted, as series 39 in *Business Conditions Digest*, U.S. Bureau of the Census.

Description of Series: A delinquent loan is one having an instalment past due for 30 days or more. The delinquency rates are calculated as the number of delinquent loans as a per cent of the total number of loans outstanding at the end of the month. The repossession rates are calculated as the number of repossessions during the two month period per 1,000 loans outstanding at the end of the period.

Except for personal loans, all of the delinquency rates are in three segments, with breaks in the continuity of the series at the end of 1954 and August 1963. The personal loan delinquency rates start in 1942, with an additional break at November 1947.

During the Korean Conflict, Federal Reserve Regulation W set minimum downpayments and maximum maturities on consumer instalment credit. This regulation was in effect from September 1950 to May 1952 and undoubtedly had an impact on delinquencies – though to what extent is unknown.

Regulation W does not appear to account for the sharp drop in delinquencies seen in some of the auto loan series (HI93, HI95, HI96, HI100) between December 1951 and January 1952. These movements are sufficiently marked that they suggest a special statistical or definitional or other exogenous cause, rather than simply a change in the level of delinquencies. There is, however, no known or readily apparent explanation for these sharp declines.

Sample: Currently the ABA receives reports from about 500 banks, and the sample is still being

expanded; prior to 1965 the sample consisted of about 300 banks. These banks were selected to provide broad geographic coverage, since the ABA reports delinquency rates for each state plus the District of Columbia (formerly by region). For the most part, the reporting banks are the larger banks in major metropolitan centers.

Seasonal Adjustment: Seasonal adjustment factors for the composite delinquency rate, series *HI92, are those used in *Business Conditions Digest* (series 39). Note that the expanded sample size, beginning in 1965, may influence the seasonal patterns.

Credit Experience of Instalment Loans of Sales Finance and Consumer Finance Companies (The First National Bank of Chicago)

		Frequency and Period
Series included in this compendium		
HI103	Proportion of instalment receivables (excluding personal loan receivables) delinquent over 60 days, sales finance companies.	A 1935-41, 1947 on SA 1955 on
HI112	Proportion of accounts delinquent 90 days or more, consumer finance companies.	A 1949 on SA 1955 on
HI136	Net loss rate on instalment receivables liquidated, sales finance companies.	A 1935-41, 1947 on SA 1955 on
HI151	Gross loss rate (charge offs) on average net outstandings, consumer finance companies.	A 1948 on SA 1955 on
HI152	– net loss rate, consumer finance companies.	A 1955 on SA 1961 on
Other series available from the source		
HI113	Proportion of accounts delinquent 60-89 days, consumer finance companies.	A 1949 on SA 1955 on
HI114	Proportion of accounts on which only interest and charges were received in the last 60 days of the period, consumer finance companies.	A 1949 on SA 1955 on

Source: These Series are obtained from "Instalment Sales Finance Company Ratios" and "Consumer Finance (Small Loan) Company Ratios," semiannual releases published by The First National Bank of Chicago, Chicago, Illinois 60690. The annual data for these series are published also in Robert Morris Associates *Annual Statement Studies*, Philadelphia National Bank Building, Philadelphia, Pa., 19107. In addition, similar sets of data on sales finance and small loan companies compiled by the Bank of New York and by the Continental Illinois National Bank and Trust Company of Chicago are published in the *Annual Statement Studies*.

Description of Series: These series are calculated by averaging the ratios of the individual companies in the sample; no weight is given to the size of the companies. The sales finance company sample consists of a group of companies engaged primarily in the financing of automobiles. They represent a cross-section of the industry, including national, regional and local firms. In the aggregate,

they have a very large proportion of the automobile finance paper handled by sales finance companies in the United States. The consumer finance sample also consists of national, regional and local companies broadly representative of the industry.

The gross and net loss rates for consumer finance companies, series HI151 and HI152, are available semiannually but the figures reported as of June 30 represent the first half of the year and thus are not entirely comparable with the figures reported as of December 31 which represent the full year. Multiplying the first-half figures by two is necessary to put them on an annual rate. Prior to 1960, the gross and net loss rates for consumer finance companies, series HI151 and HI152, were computed on the basis of average *gross* (rather than *net*) outstandings; thus, between 1959 and 1960 there is a break in the continuity of this series.

For a complete description of these series, see Ray H. Matson, *Ratios of the Instalment Sales Finance and Consumer Finance Companies*, The First National Bank of Chicago, Illinois, February 1961.

Credit Experience on Automobile Loans of Sales Finance Companies (NBER)

Series available from the source		Frequency and Period
HI125	Repossession rate on automobile loans, sales finance companies.	A 1948-55
HI137	Net loss rate on automobile loans, sales finance companies.	A 1948-55

Source: These series were obtained for the NBER Consumer Credit Quality Study as reported by Geoffrey H. Moore, Thomas R. Atkinson and Philip A. Klein, in "Changes in the Quality of Consumer Instalment Credit," in Board of Governors of the Federal Reserve System, *Consumer Instalment Credit*, Part II, Vol. 1; series HI137 is plotted in Chart 6, p. 96 (data available on request from the NBER); data for the repossession rate, series HI125, are in Table 29, p. 141.

Description of Series: The data were obtained from five large sales finance companies. Both series include instalment contracts for new and used cars, combined. The net loss rate is calculated as losses during the year, net of recoveries, as a per cent of average loans outstanding at the beginning and end of the year. The repossession rate is calculated as the number of automobiles repossessed during the year as a per cent of the number of contracts purchased during the year.

Estimated Risk of Credit Difficulties on Automobile Instalment Loans (Moore-Klein)

Series available from the source		Frequency and Period
HI101	Estimated delinquency risk on direct new car loans, commercial banks.	A 1954-65 M 1957-66
HI102	Estimated delinquency risk on purchased new car loans, commercial banks.	A 1954-65 M 1957-66
HI126	Estimated repossession risk on new car contracts, sales finance companies.	A 1948-65

Source: These series are reported in Geoffrey H. Moore and Philip A. Klein, *The Quality of Consumer Instalment Credit*, New York, NBER, 1967, Chapter 7, Tables 47 and 48, and Appendix H and Table H-6.

Description of Series: These series represent an experimental attempt to produce a time series of anticipated or estimated credit difficulties based on a known cross-sectional relationship between the repayment difficulties and certain credit terms. Moore and Klein start with the knowledge, obtained from a Federal Reserve survey of the experience of new auto loans in 1954-55, that longer maturity loans and low downpayment loans are associated with higher rates of loan delinquency and repossession. They then apply these established cross-sectional relationships to time series of the changing maturity and downpayment distributions of auto loans, in order to derive estimated delinquency and repossession risks on new cars over a period of years. As long as the original relationships between credit terms and repayment difficulties hold constant, and as long as other relevant factors do not change, the estimated delinquency and repossession risks should provide an accurate indication of these credit difficulties.

Other relevant factors, such as borrower characteristics and business conditions, do change, of course, but despite this fact the estimated repossession rate of sales finance company loans, series HI126, does trace a similar pattern to the actual repossession rate over the years 1948-56, as Moore and Klein show. The series for estimated delinquencies on commercial bank auto loans is not so successful, however. For a full description of these series, see Moore and Klein, Chapter 7 and Appendix H.

This experiment clearly suggests that further research efforts on this approach are warranted, and might provide an effective means of directly translating changes in credit terms – and presumably borrower characteristics as well – into valid estimates of repayment difficulties.

For similar indexes of risk on home mortgages, see series HM157, HM168, HM178, HM183, HM206 and HM211.

Loss Rates on Instalment Loans of Commercial Banks (ABA)

Series included in this compendium		Frequency and Period
HI127	Gross loss rate on instalment loans, all types, commercial banks.	A 1965 on
HI128	– net loss rate, all types of loans.	A 1966 on
*HI145	Gross losses on personal loans as a per cent of loans made during the year, commercial banks.	A 1955 on
HI146	Net losses on personal loans as a per cent of loans made during the year, commercial banks.	A 1955 on
Other series available from the source		
HI130	Gross loss rate on direct automobile instalment loans, commercial banks.	A 1963 on
HI131	– net loss rate on direct automobile loans.	A 1963, 1966 on

HI132	– gross loss rate on indirect automobile loans.	A 1963 on
HI133	– net loss rate on indirect automobile loans.	A 1963, 1966 on
HI139	– gross loss rate on appliance and household equipment loans.	A 1963 on
HI140	– net loss rate on appliance and household equipment loans.	A 1963, 1966 on
HI143	– gross loss rate on loans for mobile homes.	A 1964 on
HI144	– net loss rate on loans for mobile homes.	A 1966 on
HI147	– gross loss rate on personal loans.	A 1963 on
HI148	– net loss rate on personal loans.	A 1963, 1966 on
HI159	– gross loss rate on home modernization loans (own plan).	A 1963 on
HI160	– net loss rate on home modernization loans (own plan).	A 1963, 1966 on
HI161	– gross loss rate on all other instalment loans.	A 1963 on
HI162	– net loss rate on all other instalment loans.	A 1963, 1966 on

Source: These series are obtained from the annual *Instalment Credit Surveys*, published by the American Bankers Association, Instalment Credit Committee, 90 Park Avenue, New York, N.Y. 10016.

Description of Series: The loss rates listed here, except for *HI145 and HI146, are calculated as charge-offs, gross or net of recoveries, as a per cent of the dollar amount of instalment loans outstanding at year-end. Series *HI145 and HI146 are calculated as charge-offs as a per cent of the dollar amount of loans made ("volume") during the year; these two series are included in the compendium because they are available back to 1955 whereas the conventionally calculated loss rates are not available until 1963.

Starting in 1965, these series are computed from accumulated loss and loan volume of all banks in the sample, i.e., as a weighted average of all reporting banks. Prior to 1965, the loss rates were calculated as unweighted averages of the loss rates of each bank, giving each bank equal weight irrespective of its size. Due to an error in survey procedures, the net loss rates are not available for the years 1964 and 1965.

In addition to the above series, the *Instalment Credit Surveys* also provide loss rates for these types of instalment loans (1) based on the number of loans (rather than the dollar amount) and (2) using as the denominator of the loss ratios (a) the volume of loans made during the year and (b) liquidations during the year.

On the automobile loans, *direct* loans are instal-

ment loan contracts written by the banks themselves; *indirect* loans are those instalment loan contracts purchased by the banks from auto dealers or others.

Both the gross and net loss rates are useful measures of credit experience. The net loss rates are better measures of the cost of defaulted instalment loans, but since recoveries sometimes take place in a subsequent year from that in which the losses are charged off, the gross loss rates may be better indicators of the time pattern of losses. However, the timing of charge-offs are probably affected by the income tax laws, which provide an incentive for the commercial banker to concentrate losses in particular calendar years; the importance of this tax consideration is uncertain.

Sample: These data are derived from responses to a questionnaire sent to a large sample of commercial banks throughout the United States. The sample banks are chosen by the ABA to provide a broad representation by size of bank and geographic region. The sample has been increased considerably over the years. In 1966, questionnaires were sent to 2,000 banks, of which some 900 responded – although not all questions were answered by every bank. Of the 900 banks in the tabulation, 267 of them have deposits of $100 million or more (80 with $500 million or more), thus assuring that the sample provides substantial coverage of all bank-held consumer instalment debt.

Loss Rates on Consumer Credit (Smith)

Series available from the source		Frequency and Period
HI129	Net loss rate on consumer credit, commercial banks.	A 1955-59
HI150	– sales finance companies.	A 1929 . . . 36, 1949-59
HI153	– consumer finance companies.	A 1929 . . . 36, 1949-59
HI155	– federal credit unions.	A 1949-59

Source: These series are obtained from Paul F. Smith, *Consumer Credit Costs, 1949-59*, Princeton for NBER, 1964, pp. 12 and 105.

Description of Series: These loss rates are calculated as actual losses charged off, net of recoveries, as a per cent of average outstanding credit. The samples from which these data were compiled included ten sales finance companies accounting, in 1955, for 76 per cent of the automobile paper and 45 per cent of the personal loans of all sales finance companies; nine consumer finance companies accounting, in 1959, for 70 per cent of the loans held by all consumer finance companies; nine large commercial banks accounting, in 1959, for 7 per cent of the consumer loans of all commercial banks; and all federal credit unions, based on tabulations published by the Bureau of Federal Credit Unions. Smith obtained the 1929, 1933 and 1936 data for consumer finance companies from tabulations of 153 companies in Ernst Dauer, *Comparative Operating Experience of Consumer Instalment Financing Agencies and Commercial Banks, 1929-41*, New York, NBER, 1944, Table B-10, p. 205.

Loss Rates on Instalment Loans (Winchester)

Series available from the source		Frequency and Period
HI134	Net loss rate on direct automobile loans, commercial banks.	A 1938-52

HI135	– indirect automobile loans, commercial banks.	A 1929-52
HI138	– automobile loans, sales finance companies.	A 1929-51
HI141	– appliance loans, commercial banks.	A 1937-52
HI142	– appliance loans, sales finance companies.	A 1929-51
HI149	– personal loans, commercial banks.	A 1935-52
HI154	– personal loans, personal loan companies.	A 1929-51

Source: These series are obtained from James P. Winchester, *Consumer Installment Loan Losses and Valuation Reserves*, Bankers Publishing Company, Cambridge, Mass., 1955, Tables 7, 9, 10, 11, 12, 14, 15.

Description of Series: These series were calculated from data received from small samples (four or five) of instalment lenders. For each series, net loss rates are presented as a per cent of total instalment loan volume (including outstandings) and as a per cent of year-end outstandings. Winchester's tables also show separate net loss rates for each lender in the sample, providing an indication of the variation in loss experience among the individual lenders. On the two series on auto loans of commercial banks, HI134 and HI135, direct loans are instalment loan contracts written by the banks themselves; indirect loans are instalment loan contracts purchased by the banks from auto dealers. For a complete description of these series, see the source pamphlet.

Loss Rates on Personal Loans (HFC)

Series available from the source		Frequency and Period
HI156	Gross loss rate on personal loans, HFC.	A 1929 on
HI157	Net loss rate on personal loans, HFC.	A 1929 on

Source: These series are published in the annual reports of the Household Finance Corporation, Prudential Plaza, Chicago, Illinois, 60601. Data for earlier years were published in the prospectus of October 17, 1967 for Household Finance Corporation, $100,000,000 6 3/8 per cent debentures due 1988, p. 14, and are also available from the NBER on request.

Description of Series: These loss rates are calculated as write-offs during the year as a per cent of average customer notes outstanding during the year. Net losses are gross write-offs less recoveries from customers' notes written off in prior years.

Claims Paid on FHA Title I Property Improvement Loans (FHA)

Series included in this compendium		Frequency and Period
HI158	Claims paid as a per cent of FHA Title I property improvement loans outstanding.	A 1935 on

Source: This series is published in *Statistical Yearbook* of the U.S. Department of Housing and Urban Development, available from the Superintendent of Documents, Washington, D.C. 20402 (1966 *Yearbook*, FHA Table 60); also available, and more promptly, in the FHA *Annual Statistical Summary*, Washington, D.C. 20410. In earlier years, this series was reported in *Annual Reports* of the Department and of its predecessor, the Housing and Home Finance Agency.

Description of Series: This series is calculated as the annual amount of claims paid on property improvement loans insured by the FHA under Title I of the National Housing Act as a per cent of the average net proceeds of outstanding loans during the year.

Ratios of Home Mortgage Debt and Repayments to Income and Assets

Series included in this compendium		Frequency and Period
HM1	Ratio of 1- to 4-family home mortgage debt outstanding to disposable personal income.	A 1925 on Q 1950 on
*HM10	Ratio of debt service on 1- to 4-family home mortgage debt to disposable personal income.	A 1946 on
HM80	Ratio of owner-occupied home mortgage debt outstanding to value of housing, including land.	A 1897-1960
HM81	Ratio of 1- to 4-family home mortgage debt outstanding to liquid assets of households.	A 1929 . . . 39, 1945 on
HM82	Ratio of debt service on 1- to 4-family home mortgage debt to liquid assets of households.	A 1946 on
Other series available from the source		
HM11	Ratio of repayments on owner-occupied home mortgage debt to disposable personal income.	A 1939-64 Q 1946-64
HM83	Ratio of repayments on owner-occupied home mortgage debt to liquid assets of households.	A 1939, 1945-64

Source: One- to four-family home mortgage debt outstanding (for series HM1, *HM10, HM11, HM81, HM82, HM83) is obtained from the *Federal Reserve Bulletin*, published monthly by the Board of Governors of the Federal Reserve System.

Disposable personal income (for series HM1, *HM10, HM11) is obtained from the *Survey of Current Business* and *The National Income and Product Accounts of the United States, 1929-65*, Office of Business Economics, U.S. Department of Commerce; estimates for 1925-28 made by the NBER were based on "personal income" (Barger estimates) less "personal tax and nontax payments" (Kendrick estimates).

Liquid assets of households (for series HM81, HM82, HM83) for 1929, 1933 and 1939 come from Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet of the United States*, Vol. II, Princeton for NBER, 1963, Table III-1d; from 1945 on, this series is obtained from *Flow of Funds, Assets and Liabilities, 1945-65, F/F Levels*, October 20, 1966, Table 8(A) and *Federal Reserve Bulletins*, Board of Governors of the Federal Reserve System.

The ratio of outstanding debt to housing, series HM80, was calculated from F. Thomas Juster, *Household Capital Formation and Financing, 1897-1962*, New York, NBER, 1966, Appendix Table B-1; for a description of Juster's estimates and his sources, see pp. 132ff of his book.

Debt service on one- to four-family home mortgage debt (for series HM10, HM82) is obtained from unpublished estimates, available on request from John A. Gorman, Associate Chief, National Income Division, Office of Business Economics, U.S. Department of Commerce.

Estimates of repayments on mortgage debt on owner-occupied homes were made (discontinued after 1964) by the National Industrial Conference Board and are available on request from the NBER.

Description of Series: The debt outstanding and debt repayments figures used in series HM1, *HM10, HM81 and HM82 include all nonfarm one- to four-family properties; the other three series, HM11, HM80 and HM83, are limited to owner-occupied nonfarm dwellings. The debt-to-income ratios are calculated as end-of-year or end-of-quarter debt outstanding as a per cent of income during the period. The estimates of debt service made by John Gorman at the Office of Business Economics include debt retirement and interest payments. The repayments estimates were based through 1961 on a detailed study made by the Federal Home Loan Bank Board; since 1961 they are estimated by the OBE based on the series on total home mortgage debt outstanding. The NICB series (HM11 and HM83) were estimated in a similar manner, but differ from the series put together by John Gorman in that the former are limited to owner-occupied dwellings. In addition to what would generally be considered income of households, the disposable personal income series includes income of unincorporated businesses, imputed rent on owner-occupied homes and some forms of "income in kind." Liquid assets of households include the demand deposits and currency, savings accounts and U.S. government securities of consumers and nonprofit organizations.

For each of these ratios, the population covered by the numerator and denominator is not identical. The numerator represents the debt or debt repayments owed by mortgage debtors on nonfarm housing. The denominator, however, includes the income or liquid assets or value of homes of *all* households, those with mortgage debt and those with homes free of debt. Therefore these ratios vary over time because (1) home mortgage debtors, on average, carry a larger or smaller burden of home mortgage debt relative to their income or liquid assets or home value; and (2) the proportion of homes with mortgage debt grows or declines. On occasion, interpretations of these ratios ignore the second reason and imply that any change in these ratios is a result solely of a change in the relative burden of debt on home mortgage debtors. For estimated ratios of debt repayments to income for (i.e., limited to) home mortgage debtors, see series HM12.

Seasonal Variation: The quarterly data on home mortgage debt outstanding used in series HM1 showed too little evidence of recurrent seasonal movements to warrant adjustment. The disposable income figures used as the denominator are seasonally adjusted by the source agency.

Incidence of Home Mortgage Debt and Ratio of Payments to Income (SCF)

Series included in this compendium		Frequency and Period
HM2	Proportion of all nonfarm families with home mortgage debt.	A 1948 on
HM12	Estimated average for mortgage debtor families, ratio of home mortgage payments to personal income.	A 1948-65

Other series available from the source

HM3	Proportion of nonfarm families owning homes.	A 1948 on
HM4	Proportion of nonfarm homeowning families with home mortgage debt.	A 1948 on

Source: These series are obtained or calculated from the *Survey of Consumer Finances*, published annually by the Survey Research Center, Institute for Social Research, The University of Michigan, Ann Arbor, Mich. 48106.

Description of Series: Series HM3, the proportion of nonfarm families owning homes, and series HM4, the proportion of homeowning families with mortgage debt, are taken directly from the *Survey of Consumer Finances* (1967, Table 3-1, p. 48). The proportion of all nonfarm families with home mortgage debt, series HM2, is calculated by the NBER as the product of the above two series. The estimated payments-to-income ratio for home mortgage debtor families, series HM12, is calculated from the *SCF* and other data as follows:

Step		1965 Value (from 1966 *SCF*)
1.	Estimate the median income of homeowning families with mortgage debt from income and mortgage debt distributions in *SCF*: Multiply the proportion of homeowning nonfarm families in each income class by the proportion with mortgage debt (both series from 1966 *SCF* Table 3-6, p. 67, columns headed 1966) to produce a "proxy" (i.e., not adding to 100 per cent) distribution of mortgage debtor families by income class. Calculate the median value of that "proxy" distribution.	$8,460
2.	Obtain the median income of all nonfarm families from the *SCF* (1966 *SCF*, Table 1-1, p. 15, column headed 1965).	$6,670
3.	Calculate the ratio of 1 to 2.	1.27
4.	Obtain the per cent of all nonfarm families with mortgage debt early in the year (series HM2 – see above).	36.5 per cent
5.	Obtain total U.S. personal income from *Survey of Current Business.* (Note that this is income before taxes, and includes income of unincorporated business, and certain items of "imputed" income and "income in kind.")	$538.9 billion
6.	Estimate personal income of families with mortgage debt (3 X 4 X 5).	$249.8 billion
7.	Obtain aggregate mortgage debt repayments on owner-occupied homes: For 1948-65, we obtained unpublished estimates from the National Industrial Conference Board (since discontinued).	$16.0 billion
8.	Calculate mortgage debt repayments as a per cent of mortgage debtors' personal income (7 ÷ 6).	6.4 per cent

Because many of the estimates used in this calculation are inherently imprecise, the series must be considered a rough approximation, and thus it must be interpreted cautiously. Despite this, and despite the fact that mortgage repayments on owner-occupied homes are no longer available, we have chosen to include this series in our compendium because it is the only repayments-to-income ratio (a) that covers all mortgaged owner-occupied homes outstanding (not just mortgages issued during the period – see series HM14 and HM17) and (b) where the income figure is limited to mortgage debtors (unlike, e.g., series *HM10, in which repayments are related to the U.S. disposable personal income).

Sample: Data for the *Survey of Consumer Finances* are obtained from a probability sample of the population living in private households in the continental United States. The sample size for data on income and housing is about 3,500 families. The response rate is about 85 per cent. A complete description of the survey methods, including sampling errors, is provided in each *Survey of Consumer Finances*.

Characteristics of FHA-Insured Home Mortgages

Series included in this compendium		Frequency and Period
HM5	Ratio of average mortgage amount to average net effective income, FHA-insured home mortgages, existing homes.	A 1936 on Q 1959 on
*HM13	Ratio of average housing expense to average net effective income, FHA-insured home mortgages, existing homes.	A 1942 on Q 1959 on
*HM15	Proportion of FHA-insured home mortgages made with ratio of average housing expense to average total effective income amounting to 25 per cent or more, existing homes.	Q 1959 on
*HM27	Proportion of FHA-insured home mortgages insured at or within 2 per cent of the maximum permissible amount and with maturity of 30 years, existing homes.	Q 1965 on
HM65	Average loan-to-value ratio on FHA-insured home mortgages, existing homes.	A 1935 on Q 1959 on
HM66	Proportion of FHA-insured home mortgages made with loan-to-value ratio over 95 per cent, existing homes.	A 1957 on Q 1959 on
HM67	– over 90 per cent, existing homes.	A 1949 on
HM68	– over 85 per cent, existing homes.	A 1941-54
*HM121	Average maturity on FHA-insured home mortgages, existing homes.	Q 1961 on
*HM122	Proportion of FHA-insured home mortgages made with maturity over 35 years, existing homes.	Q 1959 on
HM123	– over 25 years, existing homes.	A 1955 on Q 1959 on
Other series available from the source		
HM6	Ratio of average mortgage amount to average net effective income, FHA-insured home mortgages, proposed homes.	A 1936 on Q 1959 on

HM14	Ratio of average housing expense to average net effective income, FHA-insured home mortgages, proposed homes.	A 1942 on Q 1959 on
HM16	Proportion of FHA-insured home mortgages made with ratio of average housing expense to average total effective income amounting to 25 per cent or more, proposed homes.	Q 1959 on
HM28	Proportion of FHA-insured, home mortgages insured at or within 2 per cent of the maximum permissible amount and with maturity of 30 years, proposed homes.	Q 1966 on
HM69	Average loan-to-value ratio on FHA-insured home mortgages, proposed homes.	A 1935 on Q 1959 on
HM70	Proportion of FHA-insured home mortgages made with loan-to-value ratio over 95 per cent, proposed homes.	A 1957 on Q 1959 on
HM71	– over 90 per cent, proposed homes.	A 1949 on
HM72	– over 85 per cent, proposed homes.	A 1940-54
HM124	Average maturity on FHA-insured home mortgages, proposed homes.	A 1935 on Q 1959 on
HM125	Proportion of FHA-insured home mortgages made with maturity over 35 years, proposed homes.	Q 1961 on
HM126	–over 25 years, proposed homes.	A 1955 on Q 1959 on

Source: The above series are taken or calculated from *FHA Trends of Home Mortgage Characteristics*, published quarterly by the Federal Housing Administration, U.S. Department of Housing and Urban Development, Washington, D.C. 20410. Annual data prior to 1959 are from *Annual Reports* of the Federal Housing Administration.

Description of Series: All of these series are published by the FHA for proposed homes and existing homes (separately). Only the data on existing homes, which represented 75 per cent of the home mortgages insured by the FHA under Section 203b of the National Housing Act during 1966, are presented in this compendium. Section 203b authorizes the insurance of mortgages on one- to four-family dwellings. The principal activity of the FHA has been carried on under this section. Statistical analyses are confined to single-family homes since two-, three- and four-family units comprise only a small fraction of the total; 96 per cent of existing homes and over 99 per cent of proposed homes were single-family in 1966.

The ratios of mortgage amount to income, HM5 and HM6, were computed by the NBER from FHA data on the average mortgage amount and net effective income (multiplied by 12 to put it on an annual basis), which is the FHA-estimated amount of the mortgagor's annual earning capacity (often including wife's income – acceptance of which was liberalized in 1962) likely to prevail during the first third of the mortgage term, after deducting federal income taxes. Prior to 1959 only total effective income (effective income before deducting income taxes) is available, and it is used for computation of the earlier annual ratios. The

mortgage amount and income data are not identical in coverage. The mortgage amount figures are based on all single-family homes, while the income statistics are necessarily limited to owner-occupied properties. Studies by the FHA indicate that little if any bias is introduced into the ratio by the fact that non-owner-occupied properties are included in the mortgage amount data.

The housing-expense-to-income ratios and distributions of these ratios, *HM13 through *HM15, are computed and published by the FHA. Housing expense is the FHA estimate of the prospective cost of occupying the property and is comprised of total monthly mortgage payments, including principal, interest, insurance premiums and property taxes, plus estimates of the cost of maintenance, repairs, heating and utilities. Current data for the average ratios, *HM13 and HM14 are based on net (after tax) effective income. Data for these series prior to 1959 and for series *HM15 and HM16 (the proportion of mortgages with high housing-expense-to-income ratios), are available only on the basis of total (pretax) effective income.

The loan-to-value ratios, HM65 through HM72, are computed and published by the FHA. "Value" represents the FHA-estimated price that typical buyers would be warranted in paying for the property, including the house, all other physical improvements, and the land, for long-term use or investment. 1951 and 1952 data are affected by special government controls over maximum loan-to-value ratios.

Series HM27 and HM28 are among the few available series that combine information on two characteristics, in this case mortgages insured at or within 2 per cent of the maximum permissible amount and with the maximum maturity. These series, therefore, show the proportion of mortgages at the riskiest end of the scale on both of these characteristics. The series are calculated by multiplying the proportion of mortgages with 30-year maturities times the proportion of 30-year mortgages insured at or within 2 per cent of the maximum permissible amount.

The series on average maturity and the proportion of mortgages with long maturities, HM121 through HM126, are compiled and published by the FHA. FHA-insured mortgages under Section 203b are granted currently for 10, 15, 20, 25, 30 or 35 years. From 1951-60 the maximum maturity was 30 years, from 1941-50 it was 25 years. Prior to 1941 it was 20 years for existing home mortgages, but in 1938 the maximum permissible term was increased from 20 to 25 years for new home mortgages.

For more complete definitions of these series, see *FHA Trends of Home Mortgage Characteristics*, third quarter 1966, p. 8.

Sample: These characteristics of mortgages insured by the FHA and of the mortgagors are taken, since 1959, from a national multi-stage probability sample selected from a universe of all acceptable one-family homes processed under Section 203b of the National Housing Act.

In 1966 the sample size for existing homes was 43,324 representing 19.6 per cent of the universe; for proposed construction the sample consisted of 23,767 homes, 32.9 per cent of the universe. For details of the sampling procedure see the "Sample Design and Data Coverage" section in the fourth quarter 1966 *FHA Trends of Home Mortgage Characteristics.*

Seasonal Variation: All quarterly series described in this section were examined for recurring seasonal movements and only series HM66 exhibited seasonal movements of sufficient magnitude to warrant correction.

Characteristics of VA-Guaranteed Home Mortgages (VA)

Series included in this compendium		Frequency and Period
HM7	Ratio of average mortgage amount to average disposable income, VA-guaranteed prior approval home mortgages.	A 1956 on Q 1957 on

HM17	Ratio of average housing expense to average disposable income, VA-guaranteed prior approval home mortgages.	A 1956 on Q 1957 on
*HM29	Proportion of VA-guaranteed primary home mortgages made with no downpayment and maximum (30-year) maturity.	M 1963 on
HM74	Average loan-to-purchase-price ratio, VA-guaranteed primary home mortgages.	A 1944-45 on M 1949 on
HM75	Proportion of VA-guaranteed primary home mortgages made with no downpayment.	A 1944 on M 1949 on
HM84	Ratio of average mortgage amount to average liquid assets, VA-guaranteed prior approval home mortgages.	A 1956 on Q 1957 on
HM87	Ratio of average annual housing expense to average liquid assets, VA-guaranteed prior approval home mortgages.	A 1956 on Q 1957 on
HM128	Average maturity on VA-guaranteed primary home mortgages.	A 1945 on M 1952 on
HM129	Proportion of VA-guaranteed primary home mortgages made with maturity of 30 years.	A 1950 on M 1955 on

Other series available from the source

HM8	Ratio of average mortgage amount to average disposable income, VA-guaranteed prior approval home mortgages, existing homes.	Q 1960 on
HM9	– new homes.	Q 1960 on
HM18	Ratio of average housing expense to average disposable income, VA-guaranteed prior approval home mortgages, monthly income less than $300.	A 1956 on
HM19	– monthly income $300-399.	A 1956 on
HM20	– monthly income $400-499.	A 1956 on
HM21	– monthly income $500-599.	A 1956 on
HM22	– monthly income $600-699.	A 1956 on
HM23	– monthly income $700-799.	A 1956 on
HM24	– monthly income $800 and over.	A 1956 on

HM25	Ratio of average housing expense to average disposable income, VA-guaranteed prior approval home mortgages, existing homes.	Q 1960 on
HM26	– new homes.	Q 1960 on
HM30	Proportion of VA-guaranteed primary home mortgages made with no downpayment and maximum (30-year) maturity, existing homes.	M 1963 on
HM31	– new and proposed homes.	M 1963 on
HM76	Average loan-to-purchase-price ratio on VA-guaranteed primary home mortgages, existing homes.	A 1946 on M 1949 on
HM78	– new and proposed homes.	A 1946 on M 1949 on
HM77	Proportion of VA-guaranteed primary home mortgages made with no downpayment, existing homes.	A 1944 on M 1955 on
HM79	– new and proposed homes.	A 1944 on M 1955 on
HM85	Ratio of average mortgage amount to average liquid assets, VA-guaranteed prior approval home mortgages, existing homes.	Q 1960 on
HM86	– new homes.	Q 1960 on
HM88	Ratio of average annual housing expense to average liquid assets, VA-guaranteed prior approval home mortgages, existing homes.	Q 1960 on
HM89	– new homes.	Q 1960 on
HM130	Proportion of VA-guaranteed primary home mortgages made with maturity over 25 years.	A 1950 on M 1952 on
HM131	Average maturity on VA-guaranteed primary home mortgages, existing homes.	A 1945 on M 1955 on
HM134	– new and proposed homes.	A 1945 on M 1955 on
HM133	Proportion of VA-guaranteed primary home mortgages made with maturity over 25 years, existing homes.	A 1950 on M 1955 on
HM136	– new and proposed homes.	A 1950 on M 1955 on

HM132	Proportion of VA-guaranteed primary home mortgages made with maturity of 30 years, existing homes.	A 1950 on M 1955 on
HM135	– new and proposed homes.	A 1950 on M 1955 on

Source: With the exceptions listed below, these series are taken or calculated from *Loan Guaranty Highlights*, a monthly publication of the Veterans Administration, Office of the Controller, Reports and Statistics Service, Washington, D.C. 20420. Annual data for series HM74-HM79 and HM128-HM136 were obtained through 1964 by the NBER from unpublished tables supplied by the VA, but thereafter they can be calculated from monthly data reported in *Loan Guaranty Highlights*. The annual data for series HM7, HM17-HM24, HM84 and HM87 are published in the December issue of *Loan Guaranty Highlights*; the other annual series and the quarterly data for these series are from mimeographed tables entitled "Financial Characteristics of Prior Approval Home Loans Guaranteed by the Veterans Administration" available on request to the Director, Loan Guarantee Service, Veterans Administration. These mimeographed tables are also the source of annual and quarterly data for HM8, HM9, HM25, HM26, HM85, HM86, HM88 and HM89.

Description of Series: The ratios of mortgage amount to income are calculated by the NBER. The mortgage amount is computed as the average purchase price minus the average downpayment. Income is the average monthly income (including, where appropriate, the take-home pay of the spouse) after income taxes, social security and retirement deductions, and in many cases obligations for long-term debts reported at the time of the loan examination, as reported to the VA, multiplied by twelve to raise it to an annual level.

The ratios of housing expense to income are as published by the VA. Housing expenses is comprised of the mortgage payment, including principal, interest, taxes and hazard insurance, plus property maintenance and utilities.

The ratios of mortgage amount to liquid assets are computed by the NBER. Liquid assets include cash on hand plus cash value of bonds and securities held by veterans at the time the loan applications were filed.

The ratios of housing expense to liquid assets are calculated by the NBER. The monthly housing expense figures reported by the VA are multiplied by twelve to raise them to an annual level.

The series showing proportions of VA-guaranteed mortgages made with no downpayment and the maximum maturity are calculated from the table in *Loan Guaranty Highlights* entitled "Maturity and Downpayment Characteristics of Primary Home Loans Closed" as the number of 100 per cent loans with a maturity of 30 years as a per cent of the total number of loans closed.

The average loan-to-purchase price ratios are taken from the table entitled "Home Loans Closed by Type and Purpose of Loan"; the figures come from the section of this table called "Primary (Sec. 1810) Loans." The ratio for total loans, series HM74, includes an insignificant number (forty-six loans in January 1967, .4 per cent of the total) of loans made for alteration and repair. The three series showing the proportion of loans made with no downpayment are calculated by the NBER from the table entitled "Maturity and Downpayment Characteristics of Primary Home Loans Closed" as the number of 100 per cent loans as a per cent of the total number of loans closed.

The series on maturities are calculated by the NBER from this same (last mentioned) table. The average maturities are computed from the published frequency distribution, using the following values:

Maturity class as published	Maturity value assigned to the class
15 years or less	15.0 years
16-19 years	17.5 years
20 years	20.0 years
21-24 years	22.5 years
25 years	25.0 years
26-29 years	27.5 years
30 years	30.0 years

The maximum maturity stipulated by law for VA-guaranteed home mortgages has been changed

through the postwar years as follows:

Dates	Maturity limitation
June 22, 1944-Dec. 27, 1945	20 years
Dec. 28, 1945-April 19, 1950	25 years
April 20, 1950-Oct. 12, 1950	30 years
Oct. 13, 1950-April 22, 1953	20-25 years
April 23, 1953-July 29, 1955	30 years
July 30, 1955-Jan. 19, 1956	25 years, 32 days
Jan. 20, 1956 to present	30 years

Coverage: The ratios of mortgage amount to income, housing expense to income, mortgage amount to liquid assets, and housing expense to liquid assets are based on data for loans submitted to the Veterans Administration for prior approval, which constitute the bulk of all primary home loans guaranteed. From 1957 through the second quarter of 1961, these figures were obtained from a 10 per cent random sample. From the third quarter of 1961 to the present, the figures were obtained from a 20 per cent sample.

The loan-to-purchase-price ratios and the series on maturities are based on tabulations of all primary home loans closed under Section 1810 of Chapter 37, Title 38 of the United States Code (formerly Sections 501(a),(b), and (c)), except alteration and repair loans.

Seasonal Variation: All of the monthly and quarterly series shown here as included in this volume were examined for recurrent seasonal movements. For many of the series the seasonal patterns were not large enough to warrant correction. Seasonal factors for series *HM29, HM84 and HM87 were computed by the NBER based on data from the beginning of the series through 1968.

Loan-to-Price Ratios and Maturities of Conventional Home Mortgages (FHLBB)

Series included in this compendium		Frequency and Period
*HM32	Average loan-to-price ratio on conventional home mortgages, existing homes, five types of lenders.	M 1963 on
*HM90	– average maturity.	M 1963 on
Other series available from the source		
HM33	Proportion of conventional home mortgages made with loan-to-price ratio over 75 per cent, existing homes, five types of lenders.	M 1963-66
HM35	– new homes.	M 1963-66
HM34	Average loan-to-price ratio on conventional home mortgages, new homes, five types of lenders.	M 1963 on
HM36	Average loan-to-price ratio on conventional home mortgages; existing homes, savings and loan associations.	M 1963 on
HM38	– new homes.	M 1963 on
HM37	Proportion of conventional home mortgages made with loan-to-price ratio over 75 per cent, existing homes, savings and loan associations.	M 1963-66

HM39	– new homes.	M 1963-66
HM45	Average loan-to-price ratio on conventional home mortgages, existing homes, mutual savings banks.	M 1963 on
HM47	– new homes.	M1963 on
HM46	Proportion of conventional home mortgages made with loan-to-price ratio over 75 per cent, existing homes, mutual savings banks.	M 1963-66
HM48	– new homes.	M 1963-66
HM49	Average loan-to-price ratio on conventional home mortgages, existing homes, mortgage companies.	M 1963 on
HM51	– new homes.	M 1963 on
HM50	Proportion of conventional home mortgages made with loan-to-price ratio over 75 per cent, existing homes, mortgage companies.	M 1963-66
HM52	– new homes	M 1963-66
HM53	Average loan-to-price ratio on conventional home mortgages, existing home, life insurance companies.	M 1963 on
HM55	– new homes.	M 1963 on
HM54	Proportion of conventional home mortgages made with loan-to-price ratio over 75 per cent, existing homes, life insurance companies.	M 1963-66

Other series available from the source

HM56	– new homes.	M1963-66
HM60	Average loan-to-price ratio on conventional home mortgages, existing homes, commercial banks.	M 1963 on
HM62	– new homes.	M 1963 on
HM61	Proportion of conventional home mortgages made with loan-to-price ratio over 75 per cent, existing homes, commercial banks.	M 1963-66
HM63	– new homes.	M 1963-66
HM91	Proportion of conventional home mortgages made with maturity over 25 years, existing homes, five types of lenders.	M 1963-66

HM93	– new homes.	M 1963-66
HM92	Average maturity on conventional home mortgages, new homes, five types of lenders.	M 1963 on
HM94	Average maturity on conventional home mortgages, existing homes, savings and loan associations.	M 1963 on
HM96	– new homes.	M 1963 on
HM95	Proportion of conventional home mortgages made with maturity over 25 years, existing homes, savings and loan associations.	M 1963-66
HM97	– new homes.	M 1963-66
HM101	Average maturity on conventional home mortgages, existing homes, mutual savings banks.	M 1963 on
HM103	– new homes.	M 1963 on
HM102	Proportion of conventional home mortgages made with maturity over 25 years, existing homes, mutual savings banks.	M 1963-66
HM104	– new homes.	M 1963-66
HM105	Average maturity on conventional home mortgages, existing homes, mortgage companies.	M 1963 on
HM107	– new homes.	M 1963 on
HM106	Proportion of conventional home mortgages made with maturity over 25 years, existing homes, mortgage companies.	M 1963-66
HM108	– new homes.	M 1963-66
HM109	Average maturity on conventional home mortgages, existing homes, life insurance companies.	M 1963 on
HM111	– new homes.	M 1963 on
HM110	Proportion of conventional home mortgages made with maturity over 25 years, existing homes, life insurance companies.	M 1963-66
HM112	– new homes.	M 1963-66
HM116	Average maturity on conventional home mortgages, existing homes, commercial banks.	M 1963 on

HM118	– new homes.	M 1963 on
HM117	Proportion of conventional home mortgages made with maturity over 25 years, existing homes, commercial banks.	M 1963-66
HM119	– new homes.	M 1963-66

Current Source: These series are obtained from "Conventional Mortgage Rates and Terms," a monthly news release on interest rates and other characteristics of conventional first mortgage loans originated by major types of lenders on single-family homes, published by the Office of Public Affairs, Federal Home Loan Bank Board, Washington, D.C. 20552.

Description of Series: These series on mortgage terms cover conventional first mortgage loans for the purchase of single-family homes. They are confined to loans originated directly (rather than through correspondents) by the five major types of mortgage lending institutions, with information reported monthly as of the date of loan approval. The data cover two types of loans: for purchase of a new (never occupied) home, and for purchase of an existing (previously occupied) home.

The five types of mortgage lenders included in the sample are: savings and loan associations insured by the FSLIC, and cooperative banks insured by the Massachusetts Fund; "legal reserve" life insurance companies; mortgage companies which are members of the Mortgage Bankers Association or qualify for FHA insurance; commercial banks insured by the FDIC; and mutual savings banks. It is estimated that these institutions originate over 85 per cent of all conventional loans made on homes by all lenders in the United States.

Mortgages not covered by this survey include those with extremely short or extremely long maturities, those insured or guaranteed by a government agency, those for purchase of very expensive homes, those acquired by purchase, those representing junior liens, those which are unamortized, and those for interim financing of new construction.

All of the series begin in 1963. The frequency distributions, from which the series on proportions with high loan-to-price ratios and long maturities were taken, were discontinued as of March 1966. The data were revised to introduce a new weighting procedure and more accurate adjustments for differences in reporting periods, and were revised back to 1965. Thus, there is a break in the continuity of these series as of December 1964/January 1965. For a complete description of the revised statistical procedure, see the "technical note" in the March 24, 1967, release, and "statistical procedure" note in the March 12, 1968, release.

This report also publishes the loan-to-price ratio and maturity of mortgages made by the five types of lenders combined for eighteen selected Standard Metropolitan Statistical Areas.

Sample: These series are derived from monthly reports received from a probability sample of mortgage lenders, stratified by size of institution. The monthly sample in 1965 averaged about 7,400 loans on existing homes and 2,700 loans on new homes, divided as follows:

	Number of loans	
	existing homes	new homes
Savings and loan associations	4,920	1,815
Life insurance companies	126	219
Mortgage companies	732	257
Commercial banks	1,442	236
Mutual savings banks	150	207

Seasonal Variation: The period for which these characteristics are available is too short to permit an accurate calculation of seasonal adjustment factors. Inspection of the data suggests some moderate seasonal variation for the average loan-to-price ratios and the average maturities.

Loan-to-Purchase-Price Ratios of Savings and Loan Associations (FHLBB)

Series included in this compendium		Frequency and Period
HM40	Average loan-to-purchase-price ratio on conventional home mortgages made by savings and loan associations.	SA 1946-65

Other series available from the source

HM41	Proportion of conventional home mortgages made with loan-to-purchase-price ratio of 75 per cent or more, savings and loan associations.	SA 1946-65

Source: These series were reported in a semiannual memorandum to the Members of the Federal Home Loan Bank Board from its Office of Examinations and Supervision, 101 Indiana Avenue NW, Washington, D.C. 20552.

Description of Series: These series were compiled from data collected in the FHLBB's regular examinations of insured savings and loan associations. The data cover noninsured and nonguaranteed mortgages made to finance the purchase of single-family dwellings during the ninety day period immediately preceding the date of examination. In each of the half-year periods since 1960, the compilations were based on somewhat more than 2,000 examination reports and about 50,000 mortgages. The ratio is calculated as the average amount of loan as a per cent of the average purchase price. Data are also provided in the memoranda for each of the twelve FHLB Districts. These series were discontinued at the end of 1965 after the new and more comprehensive FHLBB loan-to-price ratios (and other series) were instituted (HM32, *et al.*).

Characteristics of Home Mortgages, Savings and Loan Associations (USSLL)

Series available from the source		Frequency and Period
HM42	Median loan-to-purchase-price ratio on conventional home mortgages, existing homes, savings and loan associations.	A 1950-64
HM43	– new homes	A 1950-64
HM98	Median maturity on conventional home mortgages, existing homes, savings and loan associations.	A 1950-64
HM99	–new homes.	A 1950-64

Source: United States Savings and Loan League, 221 North La Salle Street, Chicago, Illinois 60601; published in James S. Earley, "The Quality of Credit in the United States: A Summary Volume," NBER, in preparation.

Description of Series: These series are unweighted averages of replies from an annual spring survey of a large number of savings and loan associations, who were asked to report their most common loan-to-purchase-price ratio and term to maturity on mortgages made on homes in the following price ranges: 1950, unspecified; 1951, $9,000 to $15,000; 1952-54, $10,000 to $15,000; 1955-64, under $15,000. These series were discontinued after the FHLBB series, HM36, HM38, HM94 and HM98, were instituted.

Characteristics of Home Mortgages of Four Life Insurance Companies (Guttentag)

Series included in this compendium		Frequency and Period
HM57	Average loan-to-value ratio on home mortgages, life insurance companies.	M 1951-63
HM113	– average maturity.	M 1951-63
Other series available from the source		
HM58	Average loan-to-value ratio on conventional home mortgages, life insurance companies.	M 1951-63
HM73	– on FHA-insured home mortgages.	M 1951-63
HM114	Average maturity on conventional home mortgages, life insurance companies.	M 1951-63
HM127	– on FHA-insured home mortgages.	M 1951-63

Source: These series are obtained from Jack M. Guttentag and Morris Beck, *New Series on Home Mortgage Yields Since 1951*, New York, NBER, 1970.

Description of Series: These loan-to-value ratios and maturies were derived from a sample of first mortgages made by four large life insurance companies. The "value" used for the loan-to-value ratio was normally the purchase price of the property, though in a few cases (e.g., refinancing) it was an appraised value. The averages were weighted by the volume of a given type of loan for each company, these weights having been derived from the company records independently of the sample. The series for all home mortgages, HM57 and HM113, include VA-guaranteed mortgages (not shown separately) as well as the conventional and FHA-insured mortgages. For a more complete description, see the Guttentag-Beck book.

Sample: These series were derived from a probability sample of the records of four large life insurance companies. Although it varied slightly from month to month, the sample size for the four companies combined averaged about 800 mortgages per month, about 300 of which were conventional mortgages and about 300 FHA-insured.

Seasonal Variation: Seasonal adjustment factors for series HM57 and HM113 were calculated by NBER based on data for the entire 1951-63 period.

Characteristics of Home Mortgages (Morton)

Series included in this compendium		Frequency and Period
HM59	Average loan-to-value ratio on home mortgages made by life insurance companies.	A1950-47
HM115	Average maturity on home mortgages made by life insurance companies.	A 1920-47
Other series available from the source		
HM44	Average loan-to-value ratio on home mortgages made by savings and loan associations.	A 1920-47

HM64	– commercial banks.	A 1920-47
HM100	Average maturity on home mortgages made by savings and loan associations.	A 1920-47
HM120	– commercial banks.	A 1920-47

Source: These series were obtained from an NBER survey of urban mortgage lending, as reported in J.E. Morton, *Urban Mortgage Lending: Comparative Markets and Experience*, Princeton for NBER, 1956, Appendix Tables C-6 and C-7.

Description of Series: The data refer to straight loans (i.e., exclusive of purchase money mortgages and real estate sales contracts) that were secured by one- to four-family homes, the great majority of which were single-family homes. Averages were weighted by the original amounts of the included loans.

Sample: These series were compiled from probability samples of the mortgage portfolios of the lending institutions. The samples included 24 of the largest life insurance companies, accounting for roughly two-thirds of the entire urban mortgage debt held by all life insurance companies at the end of 1944; 170 commercial banks, representing about one-third of the commercial banks' total nonfarm mortgage portfolio as of mid-1945; and 202 savings and loan associations, holding an estimated one-fourth or more of the mortgage debt held by all savings and loan associations. For these series, the number of loans in the samples per year ranged from 14 to 611 (averaging about 250) for the life insurance companies; from 31 to 380 (averaging about 150) for the commercial banks; and from 17 to 265 (averaging about 100) for the savings and loan associations.

For a full discussion of these series and the survey from which they were compiled, see *Urban Mortgage Lending*, Chapter 4 and Appendix A.

FHA Home Mortgage Quality Ratings (FHA)

Series available from the source		Frequency and Period
HM137	Proportion of FHA ratings on newly insured home mortgages recorded in the lowest acceptable rating class, 30-year maturities.	A 1950-60
HM138	– 25-year maturities.	A 1950-60
HM139	– 20-year maturities.	A 1950-60

Source: These data were compiled by The Federal Housing Administration, and were published in *Study of Mortgage Credit*, Subcommittee on Housing, Committee on Banking and Currency, U.S. Senate, 87th Cong., 1st Sess., March 28, 1961, Table 12, p. 204. They are not published on a current and continuing basis.

Description of Series: These series are based on the risk ratings that the FHA calculated for all mortgage loans offered to the FHA for insurance under Section 203 of the National Housing Act. The ratings are calculated from a combination of mortgage, property and borrower characteristics, including maturity, loan-to-value ratio, ratios of the mortgage payment and housing expense to the mortgagor's income, measures of the borrower's credit standing, etc. To be accepted for insurance, a mortgage must have a rating of at least 50 points out of a possible 100. Ratings from 50 to 59 are considered marginal but acceptable. These three series represent the proportion of all mortgages accepted for FHA insurance which have ratings in the lowest acceptable class (50 to 59).

For a more detailed discussion of these ratings, see *Study of Mortgage Credit*; Federal Housing Administration, *FHA Experience with Mortgage*

Foreclosures and Property Acquisitions, Washington, D.C., January 1963, p. 49ff.; and James S. Earley, "The Quality of Credit in the United States: A Summary Volume," NBER in preparation.

Delinquencies on Home Mortgages, Savings and Loan Associations (USSLL)

Series included in this compendium		Frequency and Period
*HM140	Delinquency rate, home mortgages in arrears 2 months or more, savings and loan associations.	M 1953 on

Source: This series is obtained from the "Loan Arrearage Ratio" report published monthly by the Research Department of the United States Savings and Loan League, 221 North La Salle Street, Chicago, Illinois 60601.

Description of Series: The loan arrearage ratio is calculated as number of mortgages in arrears as a per cent of the total number of loans in the portfolios of the responding associations. A mortgage is "in arrears" when payment has not been made within 60 days from the payment date stipulated in the mortgage.

The ratio is based on reports received from approximately 900 representative savings and loan associations selected by the USSLL. Each has assets of $20 million or more; collectively they account for about 43 per cent of the assets of all savings and loan associations.

At the end of 1963, there was a change in the method used by the USSLL to calculate the ratio. This break in the series is not believed to be a significant one, however, and the ratio may generally be treated as a continuous series.

Seasonal Variation: The ratio was seasonally adjusted by the NBER based on data for 1954 through 1968.

Delinquencies on Mortgage Loans of Savings and Loan Associations (FHLBB)

Series available from the source		Frequency and Period
HM141	Delinquency rate on home mortgages, savings and loan associations.	A 1952-64 Q 1958-65
HM142	– all (other than VA-guaranteed) mortgages.	A 1952-64 Q 1958-65
HM171	– VA-guaranteed mortgages.	A 1952-64 Q 1958-65

Source: These series were reported in a quarterly memorandum to the Members of the Federal Home Loan Bank Board from its Office of Examinations and Supervision, 101 Indiana Avenue, N.W., Washington, D.C. 20552. The series were discontinued after the third quarter of 1965.

Description of Series: These series are compiled from data collected in the FHLBB's regular examinations of insured savings and loan associations. The data report the delinquency status of mortgages held by the associations on the date of examination. Loans are regarded as delinquent when any delinquency has occurred in the last twelve months if such delinquency plus all accumulated prior delinquency equals three monthly payments; and if any delinquent loans are modi-

fied or refinanced they are regarded as still delinquent until twelve consecutive contractually required payments have been made under the new or modified contract. This definition of delinquency is new as of 1964. Previously, the definition was slightly different: loans on which at least ten of the last twelve required payments were made were not classified as delinquent; and loans which were modified or refinanced were classified on the same performance basis under the new terms unless the modification or refinancing was subject to material question on the grounds of soundness.

The reports cover all mortgages held by the savings and loan associations being examined; the great bulk of these are on single-family homes. Each quarterly report during 1965 was based on over 1000 examinations. The memoranda also contain delinquency data for the twelve FHLB Districts.

Delinquencies on Home Mortgages of Mutual Savings Banks (NAMSB)

Series included in this compendium		Frequency and Period
HM143	Delinquency rate on home mortgages, past due three months or more, including loans in process of foreclosure, mutual savings banks.	Q 1948 on
Other series available from the source		
HM144	– conventional home mortgages.	Q 1948 on
HM161	– FHA-insured home mortgages.	Q 1948 on
HM172	– VA-guaranteed home mortgages.	Q 1948 on

Current Source: These series are obtained from the "Quarterly Mortgage Delinquency Reports" of the National Association of Mutual Savings Banks, 200 Park Avenue, New York, N. Y. 10017.

Description of Series: The delinquency rates are calculated as the number of loans delinquent as a per cent of the total number of loans against one- to four-family properties that are held or serviced. Delinquent loans include those which are three or more payments overdue on a monthly program and one or more payments overdue on a quarterly program, and include all loans in process of foreclosure on the date of the report.

These series date historically from the fourth quarter of 1948, but there are three breaks due to changes in the survey. Prior to 1956, loans in process of foreclosure were not included as delinquencies. In 1960, the classification of loans reported was changed from total mortgages to one- to four-family home mortgages, and the sample was changed by adding a substantial number of savings-bank reporters including the addition of several states to the survey. Beginning in 1965, the coverage of the survey was limited to mutual savings banks whereas the earlier survey included the experience of selected mortgage servicing contractors in non-savings-bank areas. Also, the revised survey covers a greater number of home mortgages, over four-fifths of the total held by savings banks compared to about three-fifths in the earlier survey. For additional detail on these revisions and other small changes in coverage, see the footnotes to the reports. Delinquency rates for selected states are also published in the reports.

Seasonal Variation: These series were examined for recurring seasonal movements after rough estimates of the impact of the revisions in the series at year-end 1955, 1959 and 1964 had been made by the NBER. No significant seasonal variation was found.

Delinquencies on Home Mortgages (Mortgage Bankers Associations)

Series available from the source		Frequency and Period
HM145	Delinquency rate on home mortgages, 1 month delinquent, Mortgage Bankers Association.	Q 1953 on
HM146	– 2 months delinquent.	Q 1953 on
HM147	– 3 months or more delinquent, including loans in process of foreclosure.	Q 1953 on
HM148	– all delinquencies, including loans in process of foreclosure.	Q 1953 on
HM149	Delinquency rate on conventional home mortgages, 1 month delinquent, Mortgage Bankers Association.	Q 1953 on
HM150	– 2 months delinquent.	Q 1953 on
HM151	– 3 months or more delinquent, including loans in process of foreclosure.	Q 1953 on
HM152	– all delinquencies, including loans in process of foreclosure.	Q 1953 on
HM162	Delinquency rate on FHA-insured home mortgages, 1 month delinquent, Mortgage Bankers Association.	Q 1953 on
HM163	– 2 months delinquent.	Q 1953 on
HM164	– 3 months or more delinquent, including loans in process of foreclosure.	Q 1953 on
HM165	– all delinquencies, including loans in process of foreclosure.	Q 1953 on
HM173	Delinquency rate on VA-guaranteed home mortgages, 1 month delinquent, Mortgage Bankers Association.	Q 1953 on
HM174	– 2 months delinquent.	Q 1953 on
HM175	– 3 months or more delinquent, including loans in process of foreclosure.	Q 1953 on
HM176	– all delinquencies, including loans in process of foreclosure.	Q 1953 on
HM 188	Rate of foreclosures in process on home mortgages, Mortgage Bankers Association.	Q 1962 on
HM 189	– conventional home mortgages.	Q 1962 on

HM 201	– FHA-insured home mortgages.	Q 1962 on
HM 208	– VA-guaranteed home mortgages.	Q 1962 on

Current Source: These series are obtained from a quarterly report "MBA's National Delinquency Survey," by the Mortgage Bankers Association of America, 1707 H Street, N.W., Washington, D.C. 20006.

Description of Series: These delinquency rates are calculated as the number of delinquent mortgages as a per cent of all mortgages held or serviced. A mortgage is considered one month delinquent if the instalment due on the first of the month is not paid by the end of the month. The reports also include delinquency rates for mortgages with instalments two months past due and with instalments three months or more past due, and the percentage of mortgages in process of foreclosure. The survey covers almost 4 million mortgages on one- to four-family residential properties that are held or serviced by more than 400 member respondents, including mortgage bankers, commercial banks and savings banks. The survey also includes delinquency rates for each of twelve MBA regions.

Seasonal Variation: Examination of these series indicates that they are subject to recurrent seasonal movements.

Delinquencies and Foreclosures on Home Mortgages of Life Insurance Companies (LIAA)

Series included in this compendium		Frequency and Period
HM153	Delinquency rate on home mortgages, past due 2 months or more, life insurance companies.	Q 1964 on
HM155	Delinquency rate on nonfarm mortgages, past due 2 months or more, life insurance companies.	Q 1954 on
Other series available from the source		
HM154	Delinquency rate on conventional home mortgages, past due 2 months or more, life insurance companies.	Q 1964 on
HM156	– conventional nonfarm mortgages.	Q 1954 on
HM166	– FHA-insured home mortgages.	Q 1964 on
HM167	– FHA-insured nonfarm mortgages.	Q 1954 on
HM177	– VA-guaranteed home mortgages.	Q 1954 on
HM190	Rate of foreclosures in process on home mortgages, life insurance companies.	Q 1964 on
HM191	– nonfarm mortgages.	Q 1954 on
HM193	– conventional home mortgages.	Q 1964 on

HM194	– conventional nonfarm mortgages.	Q 1954 on
HM202	– FHA-insured home mortgages.	Q 1964 on
HM203	– FHA-insured nonfarm mortgages.	Q 1954 on
HM209	– VA-guaranteed home mortgages.	Q 1954 on
HM192	Foreclosure rate on nonfarm mortgages, life insurance companies.	A 1954 on
HM195	– conventional home mortgages.	A 1964 on
HM196	– conventional nonfarm mortgages.	A 1954 on
HM204	– FHA-insured home mortgages.	A 1964 on
HM205	– FHA-insured nonfarm mortgages.	A 1954 on
HM210	– VA-guaranteed home mortgages.	A 1954 on

Current Source: These series are obtained from the Life Insurance Association of America, 277 Park Avenue, New York, N.Y. 10017. Current data are available from the Association on request.

Description of Series: These series are based on the experience of some 78 companies accounting for about 85 per cent of total mortgages held by all United States life insurance companies. From 1954 through 1964 the survey covered all nonfarm (city) mortgages, i.e., including mortgages on multifamily and commercial properties. Since 1964, these series on all nonfarm mortgages have been continued, but the survey was revised to include greater detail by type of property, so that data limited to one- to four-family homes are available separately. Note, however, that not all reporting companies in the survey provide the detail by type of property; thus the latter series are not entirely consistent with the broader series. Note also that the number of companies reporting the detailed information by type of property has changed over time, so that these data do not comprise consistent time series.

Delinquency rates are calculated as the number and dollar amount (series are published on both bases in the source document, but in this compendium we use only the series based on dollar amounts) of delinquent mortgages as a per cent of the number and dollar amount of outstandings at the end of the quarter. Delinquent mortgages are those with two or more monthly payments past due, and include loans in process of foreclosure.

Rates of foreclosures in process are calculated as the number and dollar amount of mortgages on which foreclosure action has been started but not completed as a per cent of outstandings at the end of the quarter.

Annual foreclosure rates as computed by the LIAA are the number and dollar amount of mortgages foreclosed during the year as a per cent of outstandings at the beginning of the year. Mortgages foreclosed include those where title to the property or entitling certificate has been acquired during the year. Mortgages subject to redemption are included, as are mortgages awaiting transfer to the FHA or VA, as are also VA 505 mortgages when the guaranty has been paid.

The Life Insurance Association has also begun to collect and report data on nonfarm conventional mortgages foreclosed by life insurance companies, classified by year of authorization and by detailed property type. In time, these series will provide useful data – i.e., by year of authorization – for tracing the effect of changing quality characteristics on subsequent credit experience, data which are now rarely available.

Seasonal Variation: Seasonal adjustment factors for series HM155 were computed by the NBER based on data from 1954 through 1968. Series HM153 is not of sufficient duration to permit seasonal adjustment; inspection of the series shows a pronounced seasonal pattern, similar to series HM155. Examination of the foreclosure and foreclosure-in-process data also indicates recurrent seasonal swings in these series.

Credit experience data are also available from this source on multifamily and commercial mortgages and farm mortgages; see the "Business Mortgages" and "Agricultural" sections of these source notes.

Calculated Indexes of the Risk of Credit Difficulties on Home Mortgages (Herzog-Earley)

Series available from the source		Frequency and Period
HM157	Calculated deliquency risk index on conventional home mortgages.	A 1950-63
HM168	– on FHA-insured home mortgages.	A 1946-63
HM178	– on VA-guaranteed home mortgages.	A 1946-63
HM184	Calculated foreclosure risk index on conventional home mortgages.	A 1950-63
HM183	Calculated conditional foreclosure risk index on conventional home mortgages.	A 1950-63
HM206	– on FHA-insured home mortgages.	A 1946-63
HM211	– on VA-guaranteed home mortgages.	A 1946-63

Source: These series are reported in John P. Herzog and James S. Earley, *Home Mortgage Delinquency and Foreclosure*, New York, NBER, 1970, Table 15.

Default and Foreclosure Rates on FHA-Insured Home Mortgages (FHA)

Series included in this compendium		Frequency and Period
HM158	Default rate (current series) on FHA-insured home mortgages.	M 1964 on
HM159	Default rate on FHA-insured home mortgages.	A 1938 on M 1939-66
HM199	Foreclosure rate on FHA-insured home mortgages.	A 1939 on M 1956 on
Other series available from the source		
HM160	Rate of serious defaults on FHA-insured home mortgages.	M 1964 on

Source: These series are obtained from *Housing and Urban Development Trends*, Tables D-3 and D-5 (formerly *Housing Statistics*), published monthly by the Department of Housing and Urban Development, Washington, D.C. 20410. Annual data are from annual issues of *Housing and Urban Development Trends*, published each May (Tables A-66 and A-68 in 1967 issue). Annual figures for the foreclosure rate prior to 1950 were computed by the NBER from unpublished data supplied by the Federal Housing Administration.

Description of Series: The default rates, HM158 and HM159, are the number of FHA-insured home mortgages in default as a per cent of home mortgages in force. For series HM158, mortgages in default are those with one or more payments overdue for 90 days or more and those on which foreclosure proceedings have been started as a per cent of mortgages in force at the end of the month. Monthly publication of this series was stopped as of March 1966, but the annual series (December 31 figures) is being continued in the annual issues of *Housing and Urban Development Trends*. The revised monthly series, HM158, is based on a new definition of mortgages in default (those on which a payment is overdue 30 days or more, excluding loans in forebearance or under modification agreements) and also on a revised statistical reporting system. It is available from January 1964 forward and is computed as of the beginning of the month.

The rate of serious defaults, series HM160, also based on the new reporting system and available since January 1964, is the number of mortgages on which foreclosure action has been started or on which three or more payments have been missed as a per cent of mortgages in force at the beginning of the month.

The foreclosure rate, series HM199, is the number of foreclosures during the period per 1000 FHA-insured home mortgages outstanding. The annual data, published in the annual issues of *Housing and Urban Development Trends*, are based on the number of home mortgages outstanding at the beginning of the year. The monthly rate, as computed by the NBER, is the number of foreclosures during the month, multiplied by 12 to raise it to an annual rate, per 1000 FHA-insured home mortgages outstanding at the end of the month. These series are based on data for all FHA-insured home mortgages in force.

Seasonal Variation: The monthly default rate for 1939-66, series HM159, was seasonally adjusted by the NBER based on data for January 1939 through March 1966. The default rate as currently published, HM158, was seasonally adjusted by the NBER based on data for January 1964 through 1968.

The foreclosure rate, series HM199, was seasonally adjusted by the NBER based on data for January 1959 through 1968. The years 1956-58 were not used in the seasonal computation because of a number of erratic fluctuations; the 1956-58 data were adjusted using the seasonal factors for 1959.

Default and Foreclosure Rates on VA-Guaranteed Home Mortgages

Series included in this compendium		Frequency and Period
HM 169	Default rate on VA-guaranteed home mortgages.	M 1946 on
HM 207	Foreclosure rate on VA-guaranteed home mortgages.	M 1948 on
Other series available from the source		
HM170	Rate of serious defaults on VA-guaranteed home mortgages.	A 1949-60 M 1964 on

Source: These series are obtained from *Housing and Urban Development Trends*, Tables D-4 and D-5 (formerly *Housing Statistics*), published monthly by the U.S. Department of Housing and Urban Development, Washington, D.C. 20410. Annual data for the foreclosure rate are taken from annual issues of *Housing and Urban Development Trends* published each May. The rate of serious defaults for 1949-60 was obtained from the 1961 annual issue of that publication.

Description of Series: The default rate is the number of loans in default as a per cent of VA-guaranteed home mortgages outstanding at the end of the month. VA lenders are required to report any default to the VA within 105 days, although they may report it any time after the initial default. Once reported, the loan is counted in default until the delinquency is completely cured or until a claim is paid. Serious defaults include loans on which claims are pending and loans on which the filing of claims is imminent.

The foreclosure rate is computed by the NBER as the number of claims paid during the month, multiplied by twelve to raise it to an annual level, per 1,000 VA-guaranteed home mortgages outstanding at the end of the month. The annual rate is the number of claims paid during the year per 1,000 mortgages outstanding at the beginning of the year. These three series are based on data for all VA-guaranteed home mortgages in force.

Seasonal Variation: The default rate and the foreclosure rate were seasonally adjusted by the NBER based on data from the beginning of the series through 1968.

Real Estate Foreclosures (FHLBB)

Series included in this compendium		Frequency and Period
*HM179	Real estate foreclosure rate.	Q 1967 on
HM180	Foreclosure rate on nonfarm real estate.	A 1950-68 Q 1965-68
HM181	Number of real estate foreclosures.	M 1967 on
HM182	Number of nonfarm real estate foreclosures.	A 1926-68 M 1934-68

Current Source: Series HM179 and HM181 are obtained from the "Real Estate Foreclosure Report," published quarterly by the Federal Home Loan Bank Board, Washington, D.C. 20552. This report, first published in June 1969, replaces "Nonfarm Real Estate Foreclosure Report," which was the source of HM180 and HM182.

Description of Series: The number of foreclosures in the United States, as estimated by the FHLBB, is based on data reported from approximately 1900 counties, cities, townships, or other government divisions, and measures the number of properties of all types (single-family homes, apartments, business structures, farms and other properties) acquired through foreclosure proceedings. Reporting areas include approximately three-fifths of all one-family dwelling units. With few exceptions, voluntary deeds of sale in lieu of foreclosure are not included. The foreclosure rate is calculated as the number of foreclosures per 1000 mortgaged structures.

HM179 and HM181 differ from the discontinued series, HM180 and HM182, in that the new series are based on a 1967 benchmark which provides more complete and more accurate estimates; also the new series cover farm as well as nonfarm properties, and encompass Alaska and Hawaii which the old series did not. For additional detail, see the Report for the first quarter of 1969, dated June 4, 1969. Note especially their comment,

"The fact that the level of the new series is higher than the old series does not indicate that the trend in the old nonfarm foreclosure series was also in error. The rise in nonfarm foreclosures in the post-World War II period until early 1966 and the subsequent decline probably still represent a reasonably accurate portrayal of changes over this period."

For information on series HM180, see the "Nonfarm Real Estate Foreclosure Report" for the year 1965, which contains a revised series on the number of mortgaged *nonfarm* structures annually from 1950 forward. The quarterly data for HM180 were also instituted at that time. A description of the method used in estimating these series is contained in a memorandum dated March 30, 1966, entitled "Ratio of Foreclosures to Number of Residential Mortgaged Structures – Estimating Procedures," available from the FHLBB.

Seasonal Variation: The monthly series on the number of foreclosures, HM182, was seasonally adjusted by the NBER based on data from 1936 through 1968. The 1934 and 1935 data were adjusted using the 1936 seasonal factors. The other series are not yet of sufficient duration to permit calculation of seasonal factors, but the general seasonal pattern can be inferred from series HM182.

Foreclosure Rates on Home Mortgages of Savings and Loan Associations (FHLBB)

Series available from the source		Frequency and Period
HM185	Foreclosure rate on home mortgages held by savings and loan associations.	Q 1962 on
HM186	– conventional home mortgages.	Q 1962 on
HM200	– FHA-insured and VA-guaranteed home mortgages.	Q 1962 on

Current Source: These series are obtained from a quarterly news release on foreclosures on mortgage loans held by FSLIC-insured savings and loan associations, published by the Office of Public Affairs, Federal Home Loan Bank Board, Washington, D.C. 20552.

Description of Series: These rates are calculated as the number of mortgages foreclosed during the quarter, including voluntary deeds in lieu of foreclosure, per 1,000 mortgages held. The number of mortgages is an average of the number of loans held at the beginning and end of each quarter. These foreclosure rates are also published in the reports for the twelve FHLB Districts and by states.

Coverage: These series are based on reports from all savings and loan associations insured by the Federal Savings and Loan Insurance Corporation. The data cover all mortgages in force; at year-end 1966, 96.7 per cent of these were on one- to four-family homes, 1.4 per cent on residential structures with five or more dwelling units, and 1.9 per cent on nonresidential properties.

Credit Experience of Home Mortgages (Morton)

Series included in this compendium		Frequency and Period
HM197	Foreclosure rate on home mortgages made by life insurance companies.	A 1920-47

HM212	Loss rate on home mortgages made by life insurance companies.	Five-year periods, 1920-24 through 1935-39 and 1940-47
HM213	– commercial banks.	

Other series available from the source

HM187	Foreclosure rate on home mortgages made by savings and loan associations.	A 1920-47
HM198	– commercial banks.	A 1920-47

Source: These series were obtained from an NBER survey of urban mortgage lending, as reported in J. E. Morton, *Urban Mortgage Lending: Comparative Markets and Experience*, Princeton for NBER, 1956, Tables 44 and 39.

Description of Series: The data refer to loans secured by one- to four-family homes, the great majority of which were single-family homes. The loss rates exclude loans and properties still on the books in 1947, and were weighted by the original amounts of the included loans. The loss rates were calculated as the difference between the expected yield (that promised in the original contract) and the realized yield (taking account of modifications to the original contract interest rate and of the lender's estimated net return to his investment on the disposition of foreclosed loans).

The foreclosure rates were calculated as the original amount of loans made in a given year and foreclosed by 1947 as a per cent of all loans made in that year.

Sample: These series were compiled from probability samples of the mortgage portfolios of the lending institutions. The data were tabulated from responses from 24 life insurance companies, 116 commercial banks and 92 savings and loan associations. Morton emphasizes the limitations of the sample, and specifically points out that "A good many small lending institutions had been wiped out as a consequence of the depression; it is not improbable that their mortgage lending experience was worse than average and that their exclusion from the sample has introduced some bias. Since the extent of the bias is unknown, no correction for it can be offered." (*Ibid.*, p. 89.)

For a full discussion of these series and the survey from which they were compiled, see *Urban Mortgage Lending*, Chapter 5 and Appendix A.

Loss Rate on FHA-Insured Home Mortgages

Series included in this compendium		Frequency and Period
HM214	Loss rate on sale of acquired properties, FHA-insured home mortgages.	A 1954 on

Source: This series is calculated from the "Statement of profit and loss on sale of acquired properties and assigned mortgage notes, Mutual Mortgage Insurance Fund" published each year in *Statistical Yearbook* of the U.S. Department of Housing and Urban Development, available from the Superintendent of Documents, Washington, D.C. 20402, (1966 *Statistical Yearbook*, FHA Table 85); also available, and more promptly (the following January) by writing to the Assistant Commissioner-Comptroller, Federal Housing Administration, Washington, D.C. 20412. In earlier years this series was reported in *Annual Reports* of the Department and of its predecessor, the Housing and Home Finance Agency.

Description of Series: The loss rate, as calculated by the NBER, is the net loss during the fiscal year to the Mutual Mortgage Insurance Fund on one- to four-family properties acquired under Section 203 of the National Housing Act as a per cent of the net expenses of the Fund. The data presented in each table are cumulative, representing the total experience to date of the Mutual Mortgage Insurance Fund since its inception. Thus, to calculate the annual loss ratio, the figures in each table must be subtracted from those of the previous year. The net expenses (denominator) represent the sum of the following items from each table: "total expenses" plus "commission and other selling expenses" plus "distribution of liquidation profits" less "total income." However, the net expenses figure can be calculated more simply by adding "sales price" to "loss to Mutual Mortgage Insurance Fund." The calculation for 1967 is as follows (in thousands of dollars):

	Cumulative through June 30, 1967	June 30, 1966	Difference
Sales Price	$2,001,775	$1,520,157	
Loss to Mutual Mortgage Insurance Fund	473,021	363,483	109,538
Net expenses	2,474,796	1,883,640	591,156

Loss rate = $109,538 ÷ 591,156 = 18.5 per cent.

Currently, this series covers the fiscal year ending June 30; prior to 1961, the data are for calendar years.

Loss Rate on Properties Foreclosed and Sold by the Veterans Administration

Series available from the source		Frequency and Period
HM215	Loss rate on properties foreclosed and sold by the VA.	A 1961 on

Source: This series is calculated from data available on request to the Director, Loan Guaranty Service, Veterans Administration, Washington, D.C. 20420.

Description of Series: This loss rate is calculated as the loss on properties foreclosed and sold by the VA (guaranteed loan properties plus direct loan properties) during the fiscal year as a per cent of the total cost to the VA. The loss to the VA is the total cost minus the total selling price. The total cost includes amount of claim payment, additional cost to acquire the property, expenditures capitalized to the property, property expenses (taxes, maintenance and repair, management and brokers fees, etc.) less income from rent, plus selling expenses. The data cover about 98 per cent of all properties foreclosed and sold by the VA.

Ratios of Debt and Repayments to Income and Assets, All Household Credit Combined

Series included in this compendium		Frequency and Period
HC1	Ratio of all consumer debt outstanding to disposable personal income.	A 1925 on Q 1951 on

*HC2	Ratio of debt service on consumer instalment and 1- to 4-family home mortgage debt to disposable personal income.	A 1946 on
HC4	Ratio of consumer instalment and home mortgage debt outstanding to the value of major consumer durables plus nonfarm owner-occupied housing, including land.	A 1897-1960
HC6	Ratio of all consumer debt outstanding to liquid assets of households.	A 1929 . . . 39, 1945 on
HC7	Ratio of debt service on consumer instalment and 1- to 4-family home mortgage debt to liquid assets of households.	A 1946 on

Other series available from the source

HC3	Ratio of repayments on consumer instalment and owner-occupied home mortgage debt to disposable personal income.	A 1939-64 Q 1946-64
HC5	Ratio of total liabilities to equities, nonfarm households.	A 1900 . . . 39, 1945-58
HC8	Ratio of repayments on consumer instalment and owner-occupied home mortgage debt to liquid assets of households.	A 1939, 1945-64

These series, except HC5, represent combinations of series from the consumer instalment credit and home mortgage sectors:

HC series	HI and HM series
HC1	HI1, HI2 and HM1
*HC2	HI6 and *HM10
HC4	HI31 and HM80
HC6	HI33, HI34 and HM81
HC7	HI36 and HM82
HC3	*HI5 and HM11
HC8	HI35 and HM83

Source: Total household debt is of three types: consumer instalment debt, consumer noninstalment nonmortgage debt, and one- to four-family home mortgage debt. Data on outstanding debt for each of these types and on repayments of consumer instalment debt are obtained from the *Federal Reserve Bulletin* published monthly by the Board of Governors of the Federal Reserve System. Historical data for consumer instalment and consumer noninstalment nonmortgage debt are available in "Consumer Credit," Section 16 (New) of *Supplement to Banking and Monetary Statistics*, Board of Governors of the Federal Reserve System, 1965. Estimates of repayments on owner-occupied home mortgage debt (for HC3 and HC8) were made through 1964 (but discontinued thereafter) by the National Industrial Conference Board, and are available on request from the NBER.

Disposable personal income is obtained from the *Survey of Current Business*, published monthly by the Office of Business Economics, U.S. Department of Commerce. 1929-65 data are from *National Income and Product Accounts of the United States, 1929-65*; estimates for 1919-28 were made by the NBER based on "personal income" (Barger estimates) less "personal tax and nontax payments" (Kendrick estimates).

"Debt service" on consumer instalment debt and on one- to four-family home mortgage debt (for series *HC2 and HC7) are unpublished estimates, available on request from John A. Gorman, Associate Chief, National Income Division, Office of Business Economics, U.S. Department of Commerce, Washington, D.C. 20425.

The ratio of outstanding debt to the value of

stocks of major durables and housing, series HC4, was calculated from F. Thomas Juster, *Household Capital Formation and Financing, 1897-1962*, New York, NBER, 1966, Appendix Table B-1, and from his unpublished worksheets; for a description of Juster's estimates and his sources, see *Household Capital Formation*, p. 132 ff.

Liquid assets of households (for series HC6, HC7 and HC8) are obtained from *Flow of Funds, Assets and Liabilities, 1945-65, F/F Levels*, October 20, 1966 Table 8(A) and *Federal Reserve Bulletins*, Board of Governors of the Federal Reserve System; data prior to 1945 came from Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet*, Vol. II, Princeton for NBER, 1963, Table III-1d.

The ratio of total liabilities to equities, series HC5, was computed by the NBER from *Studies in the National Balance Sheet*, Vol. II, Tables III-1 and III-1d.

Description of Series: The consumer instalment and consumer noninstalment nonmortgage debt figures used in the series listed above are described in the Source Note, "Ratios of Consumer Instalment Debt and Repayments to Income and Assets," in the consumer instalment section. The home-mortgage debt data are described in the Source Note, "Ratios of Home Mortgage Debt and Repayments to Income and Assets," in the home mortgage section.

The debt-to-income ratios are calculated as end-of-year or end-of-quarter debt outstanding as a per cent of income for the year or quarter. In addition to what would generally be considered income of households, the disposable income series includes income of unincorporated businesses, imputed rent on owner-occupied dwellings and some forms of "income in kind." Liquid assets of households include the demand deposits and currency, savings accounts, and U.S. Government securities of consumers and nonprofit organizations.

Seasonal Variation: The numerator of HC1, all consumer debt outstanding, shows slight recurrent seasonal movements, but they are not of sufficient magnitude to warrant adjustment. The denominator, disposable personal income, is seasonally adjusted by the Commerce Department.

Personal Bankruptcies (U.S. Courts)

Series included in this compendium		Frequency and Period
HC9	Total nonbusiness bankruptcies filed.	A 1940 on
Other series available from the source		
HC10	Employee bankruptcies filed.	A 1940 on
HC11	Employee bankruptcies filed under the wage-earners relief chapter (XIII) of the Act.	A 1939 on
HC12	Bankruptcies filed by others (than employees) not in business.	A 1940 on

Source: These data are obtained from *Tables of Bankruptcy Statistics*, published annually for fiscal years ending June 30 by the Administrative Office of the United States Courts, Table F 3. Historical data are available on request from the Division of Bankruptcy, Supreme Court Building, Washington, D.C. 20544.

Description of Series: Nonbusiness bankruptcies filed are comprised of all petitions filed under some provision of the Bankruptcy Act by employees, unemployed or retired persons, housewives and others not in business at the time of filing, as interpreted and classified by the court clerks.

George Allen Brunner, in his book *Personal Bankruptcies: Trends and Characteristics*, Bureau of Business Research, Ohio State University, 1965, points out a number of inadequacies in the bankruptcy statistics. First, the series on total nonbusiness bankruptcies includes filings under relief chapters of the Act, such as Chapter XIII, and these are not true "bankruptcy" cases. Second, classification of cases as business or nonbusiness by individual clerks in the divisional offices of the Bankruptcy Courts is not always accurate, and many business or presumptively business cases are included in the nonbusiness category. Third, the official statistics take no note of companion case filings in which both the husband and wife have filed separate petitions covering essentially the same debts, and thus duplication results. In his study of the 1956-61 bankruptcy statistics for Ohio, Brunner estimated that these statistical problems led to an exaggeration of the true number of personal bankruptcies by about 10 per cent.

Despite these deficiencies, we have included the bankruptcy statistics in our list of credit quality series because, while the level of personal bankruptcies may well be overstated, as Brunner persuasively points out, changes over time may nevertheless provide a reasonably accurate picture of the trend of nonbusiness bankruptcies, and because these are among the few available series which provide an over-all indication of personal credit difficulties for the consumer sector as a whole. The rising number of bankruptcy cases must of course be interpreted in the light of the growing population and the increasing use of personal credit.

Series on total, business, and farm bankruptcies are presented in other sections of this compendium.

Financial Ratios and Debt Composition of Nonfinancial Corporations (Statistics of Income)

Series available from the source		*Frequency* and Period
BG1	Ratio of cash flow to total debt, nonfinancial corporations.	A 1926 on
BG3	Times-charges-earned ratio, nonfinancial corporations.	A 1917 on
BG5	Ratio of net worth to total debt, nonfinancial corporations.	A 1927 on
BG8	Ratio of net working capital to total assets, nonfinancial corporations.	A 1927 on
BG17	Proportion of total debt in long-term form, nonfinancial corporations.	A 1927 on
BG20	Proportion of total debt in manufacturing.	A 1924 on
BG21	– in mining.	A 1924 on
BG22	– in wholesaling.	A 1938 on
BG23	– in retailing.	A 1938 on
BG24	– in construction.	A 1924 on

BG25	– in services.	A 1938 on
BG28	Ratio of receivables outstanding to average daily sales, nonfinancial corporations.	A 1931 on
BG32	Ratio of payables outstanding to annual sales, nonfinancial corporations.	A 1937 on

Source: These ratios are calculated from *Statistics of Income, Corporation Income Tax Returns*, published annually (but with about a three-year publication lag) by the U.S. Treasury Department, Internal Revenue Service, (obtainable from Superintendent of Documents, Washington, D.C. 20402). (A preliminary version is published earlier, but does not contain the detail necessary for the calculation of these series.)

Description of Series: *Statistics of Income* is based on a probability sample of corporation income tax returns. The sample returns are used to represent the business activities of all domestic and resident foreign corporations filing returns with accounting periods ending from July of one year through June of the following year. For a complete discussion of the sample, limitations of the data, changes in laws and an explanation of terms, see the descriptive materials included in each *Statistics of Income*. It is important to note that the comparability of these data over time is affected by changes in tax laws, accounting procedures and types of statistical presentations. The ratios listed above for "nonfinancial corporations" cover all industrial groups less finance, insurance and real estate.

Cash flow, for series BG1, is defined as net income (less deficit) after taxes plus depreciation and depletion. Total debt, for BG1, BG5, BG17, and BG20 through BG25, is equal to total liabilities less capital stock, paid-in or capital surplus, surplus reserves, and earned surplus plus undivided profits. The times-charges-earned ratio, BG3, is calculated as net income plus interest paid plus rent divided by interest paid plus rent. (For times-charges-earned ratio limited to bond-issuing corporations, see the Corporate Bond section of these source notes. See also Thomas R. Atkinson, *Trends in Corporate Bond Quality*, New York, NBER, 1967, Chapter V, and especially Chart 9, p. 59.) Net working capital, for series BG8, is defined as the excess of current assets over current liabilities. The receivables-to-sales ratio, series BG28, is calculated on an average-daily-sales basis; i.e., the receivables are expressed in terms of the number of days sales outstanding. Thus, a value of 30 for this ratio indicates that the volume of outstanding receivables is equivalent to 30 days' sales.

Financial Ratios and Debt Composition Ratios of Manufacturing Corporations (FTC-SEC)

Series included in this compendium		Frequency and Period
BG2	Ratio of cash flow to total liabilities, manufacturing corporations.	Q 1948 on
*BG4	Ratio of cash flow to required debt repayments, manufacturing corporations.	Q 1954 on
*BG7	Ratio of net worth to debt, manufacturing corporations.	Q 1947 on
*BG10	Ratio of net working capital to total assets, manufacturing corporations.	Q 1947 on

BG29	Ratio of receivables outstanding to average daily sales, manufacturing corporations.	Q 1947 on
BG33	Ratio of payables outstanding to quarterly sales, manufacturing corporations.	Q 1947 on

Other series available from the source

BG13	Current ratio, manufacturing corporations.	Q 1947 on
BG16	Quick ratio, manufacturing corporations.	Q 1947 on
BG19	Proportion of debt in long-term form, manufacturing corporations.	A 1947 on
BG27	Ratio of trade accounts and notes payable to total liabilities, manufacturing corporations.	A 1947 on

Source: These series are taken or calculated from the *Quarterly Financial Report for Manufacturing Corporations*, published quarterly by the Federal Trade Commission and the Securities and Exchange Commission, Washington, D.C. 20580.

Description of Series: All of these series except the receivables-to-sales ratio are calculated as percentages. Cash flow (for series BG2 and *BG4) is defined as the sum of profits after taxes plus depreciation and depletion, and each quarterly figure is multiplied by four in order to put the ratios on an annual basis. Required debt repayments, for series *BG4, are defined as the sum of short-term bank loans and instalments due within one year on all long-term debt. The net-worth-to-debt ratio, series *BG7, is calculated as stockholders' equity as a per cent of total liabilities. The working capital ratio, series *BG10, is calculated as the excess of current assets over current liabilities taken as a per cent of total assets. The receivables-to-sales ratio, series BG29, is calculated on an average-daily-sales basis; i.e., the receivables outstanding are divided by the average daily sales in order to express the ratio in terms of the number of days sales outstanding. The current ratio, series BG13, is calculated as current assets as a per cent of current liabilities. The quick ratio, series BG16, is calculated as cash and U.S. government securities as a per cent of current liabilities. Long-term debt, for series BG19, includes bank loans and other long-term debt due in more than one year plus other noncurrent liabilities.

The FTC-SEC data cover all manufacturing corporations except newspapers, and are derived from a probability sample of enterprises classified as manufacturers which filed a U.S. Corporate Income Tax Form 1120 or applied for a Federal Social Security Employer's Identification Number. The sample is designed so that one standard deviation of the estimate for the item "net profit before Federal income taxes" for all manufacturing corporations amounts to less than 1 per cent of that estimated aggregate. The composition of the sample changes each quarter in order to reflect the effect of all corporate births, deaths, mergers, etc. In addition, part of the sample is replaced each quarter. In 1967, the sample accounted for approximately 6 per cent of the number and 88 per cent of the assets of all manufacturing corporations except newspapers. For a complete description of the sample and the data obtained from the survey, see the "Explanatory Notes" included in each quarterly report.

There are three breaks in the continuity of these ratios: after the second quarter of 1951, the fourth quarter of 1955, and the first quarter of 1960. The first two reflected changes in the sampling method. The third reflected a change in classification when about $800 million of deferred Federal income taxes was shifted from "reserves not

elsewhere classified" (a stockholders' equity account) to "other current liabilities." In each case, overlapping data for the old and new bases were published, and in order to provide continuous series for seasonal adjustment, the earlier segments of the ratios published in this compendium were adjusted by the NBER to a level consistent with the current segment.

One other break in the data was reported: in 1958 when industry classifications were changed to reflect the *1957 Standard Industrial Classification Manual* (available from Superintendent of Documents, Washington, D.C. 20402) in place of the *1945 SIC Manual*. Comparisons of the 1958 overlap for the ratios listed above showed no significant differences between the old and new bases. Thus, the series were treated as continuous across this break in the data.

Seasonal Variation: Seasonal adjustment factors for these series were computed by the NBER based on data through 1968. The working capital and net-worth-to-debt ratios, series *BG7 and *BG10, showed seasonal movements that were too small to warrant adjustment.

Financial Ratios of Nonfinancial Corporations (National Balance Sheet)

Series available from the source		Frequency and Period
BG6	Ratio of net worth to debt, nonfinancial corporations.	A 1900 . . . 39, 1945-58
BG9	Ratio of net working capital to total assets, nonfinancial corporations.	A 1900 . . . 39, 1945-58
BG12	Current ratio, nonfinancial corporations.	A 1900 . . . 39, 1945-58
BG15	Quick ratio, nonfinancial corporations.	A 1900 . . . 39, 1945-58
BG18	Proportion of debt in long-term form, nonfinancial corporations.	A 1900 . . . 39, 1945-58
BG26	Ratio of trade debt to total liabilities, nonfinancial corporations.	A 1900 . . . 39, 1945-58

Source: These ratios are calculated from Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet of the United States*, Vol. II, Princeton for NBER, 1963; Tables III-4 and III-4b.

Description of Series: The worth-to-debt ratio, BG6, is calculated as the net worth (total assets minus total liabilities) as a per cent of total liabilities. The net working capital ratio, BG9, is calculated as the excess of current assets over current liabilities as a per cent of total assets. The current ratio, BG12, is calculated as current assets as a per cent of current liabilities. The quick ratio, BG15, is calculated as currency and demand deposits, other bank deposits and shares, U.S. government securities and state and local government securities, as a per cent of total current liabilities. (This definition is different from the quick ratio calculated from FTC-SEC or SEC data in that state and local government securities are included among the quick assets. State and local securities are not available, separately, in the other sources.) Long-term debt, for series BG18, includes all liabilities with a maturity of one year or longer. Nonfinancial corporations, in the *National Balance Sheet* data, include real estate and exclude agricultural

corporations (unlike the nonfinancial corporation figures from *Statistics of Income*, which include agriculture and exclude real estate).

A distinctive feature of the *National Balance Sheet* data is that all items of assets and liabilities were valued at current or market prices, or their nearest feasible approximation. For most types of tangible assets, replacement cost (original cost adjusted for price changes and for capital consumption) was used. Claims and liabilities were entered in the balance sheet at face value. As it effects the ratios listed above, this represents an important difference from data based on book values (e.g., ratios calculated from *Statistics of Income* or the FTC-SEC reports on manufacturing corporations). After a period of rising prices, the worth-to-debt ratio, for instance, will look considerably weaker if based on book values than if based on market values, since inflation adds to the value of assets but not to debt that has already been incurred. Thus, financial ratios computed from *National Balance Sheet* data are very useful series. Unfortunately, they are now a decade out of date, and are not easily brought forward; despite their value, therefore, we have chosen not to publish them in this compendium.

Financial Ratios of Nonfinancial Corporations (SEC)

Series included in this compendium		Frequency and Period
BG11	Current ratio, nonfinancial corporations.	Q 1946 on
BG14	Quick ratio, nonfinancial corporations.	Q 1946 on

Source: These series are calculated from "Working Capital of U.S. Corporations," published quarterly by the United States Securities and Exchange Commission, Washington, D.C. 20549.

Description of Series: The current ratio is calculated as current assets as a per cent of current liabilities. The quick ratio is calculated as cash on hand and in banks plus U.S. government securities as a per cent of current liabilities.

The SEC data are estimates for all U.S. corporations excluding banks, savings and loan associations, and insurance and investment companies. Year-end data through 1963 are based on *Statistics of Income*, covering virtually all corporations in the United States. *Statistics of Income* data may not be strictly comparable from year to year because of changes in the tax laws, basis for filing returns, and processing the data for compilation purposes. All interim quarterly data and all year-end estimates after 1963 are based on data compiled from many different sources, including data on corporations registered with the SEC.

There is a break in the continuity of these series at the end of 1961, due to a revised method of estimating current assets and current liabilities. Overlapping data were published for the old and new estimates for year-end 1961, and to provide continuous seasonally adjusted series, the earlier segment (March 31, 1946 - September 30, 1961) was adjusted by the NBER to a level consistent with the current segment.

Seasonal Variation: Seasonal adjustment factors for series BG14, the quick ratio, were computed by the NBER based on data for March 31, 1946 through 1968. The current ratio, BG11, exhibits little evidence of recurrent seasonal movements, too little to warrant adjustment.

Trade Credit Ratios (CRF)

Series available from the source		Frequency and Period
BG30	Ratio of receivables outstanding to average daily sales, manufacturers.	Q 1959 on

BG31	Ratio of receivables outstanding to average daily sales, wholesalers.	Q 1960 on

Source: These ratios are obtained from "National Summary of Domestic Trade Receivables," a quarterly release of the Credit Research Foundation, Inc., 44 East 23 Street, New York, N.Y. 10010. Historical data are available from a booklet published by the Foundation, *National Summary of Domestic Trade Receivables, April 1, 1959 - July 1, 1964.*

Description of Series: These series are median ratios of trade receivables outstanding related to daily sales and are obtained from a survey of manufacturing and wholesaling companies. The sample for September 30, 1967 consisted of 310 manufacturers and 52 wholesalers. The ratio is computed as "days sales outstanding," i.e., average accounts receivable at the end of the quarter divided by average daily sales for the quarter. Accounts receivable represent domestic open accounts and notes, including taxes and containers, due from credit sales. The ratios show some evidence of recurrent seasonal movements.

Credit Ratings of Business Firms

Series included in this compendium		Frequency and Period
*BG34	Proportion of all rated business firms with "high" or "good" credit rating.	BiM 1950 on
BG35	Proportion of all rated business firms with "high" credit rating.	BiM 1950 on
BG36	Proportion of all rated business firms with "good" credit rating.	BiM 1950 on
BG37	Proportion of all rated business firms with "fair" credit rating.	BiM 1950 on
BG38	Proportion of all rated business firms with "limited" credit rating.	BiM 1950 on
BG39	Proportion of all listed business firms which are unrated.	BiM 1950 on

Other series available from the source

BG40	Proportion of all rated business firms with net worth $20,000 or less with "high" or "good" credit rating.	BiM 1950 on
BG41	Proportion of all rated business firms with net worth more than $20,000 with "high" or "good" credit rating.	BiM 1950 on
BG42	Proportion of all rated business firms in business for 5 1/2 years or less with "high" or "good" credit rating.	BiM 1950 on
BG43	Proportion of all rated business firms in business more than 5 1/2 years with "high" or "good" credit rating.	BiM 1950 on

BG44	Proportion of all rated business firms with net worth $20,000 or less and in business for 5 1/2 years or less with "high" or "good" credit rating.	BiM 1950 on
BG45	Proportion of all rated business firms with net worth $20,000 or less and in business for more than 5 1/2 years with "high" or "good" credit rating.	BiM 1950 on
BG46	Proportion of all rated business firms with net worth more than $20,000 and in business for 5 1/2 years or less with "high" or "good" credit rating.	BiM 1950 on
BG47	Proportion of all rated business firms with net worth more than $20,000 and in business for more than 5 1/2 years with "high" or "good" credit rating.	BiM 1950 on
BG48	Proportion of all rated manufacturing firms with "high" or "good" credit rating.	BiM 1952 on
BG49	Proportion of all rated wholesalers with "high" or "good" credit rating.	BiM 1952 on
BG50	Proportion of all rated retailers with "high" or "good" credit rating.	BiM 1952 on
BG51	Proportion of all rated construction firms with "high" or "good" credit rating.	BiM 1952 on
BG52	Proportion of all rated service firms with "high" or "good" credit rating.	BiM 1952 on

Source: Data for 1950-65 were tabulated by the National Bureau of Economic Research, bimonthly for 1953-57, and three times a year for 1950-52, and 1958-65. Data for 1966 on are tabulated bimonthly by Dun & Bradstreet, 99 Church Street, New York, N.Y. 10007. Historical data for those series not included in this compendium are available from the NBER on request. Dun & Bradstreet contemplates that releases of these or similar data will become a part of the *Business Economics* data that they regularly publish.

Description of Series: Dun & Bradstreet maintains credit ratings on approximately three million business firms. These ratings are based on the history and experience of management, on the firm's financial position and accomplishments, on the record of credit payments, and on other characteristics of the firm. Information is obtained from financial and operating data supplied by the firm and others, from interviews of a substantial proportion of the firms at least once each year, from the firm's suppliers of merchandise and services and finance, if any, and from public records. To obtain these data, Dun & Bradstreet has a staff of 2,000 reporters and 10,000 correspondents.

The *Dun & Bradstreet Reference Books* list most nonagricultural and nonfinancial firms other than certain service enterprises, the professions and nonprofit institutions. The "absence of rating" or "blank" classification indicates firms for which a composite credit rating was not feasible because of (1) insufficient information, (2) a weakness of hazardous proportions (generally of a financial nature), (3) an undue moral risk, (4) liti-

gation critical to the business, or (5) other circumstances of similar import. The "limited" rating is applicable more frequently to small firms with substantial or chronic deficiencies. "High" indicates a minimum credit risk. "Good" and "fair" ratings lie between the "high" and "limited" categories. Thus, a rise in the proportion of firms in the lower composite-rating categories ("fair" or "limited"), and possibly in the unrated category, indicates a deterioration in the quality of credit.

These ratings series are based on samples of 1200 listings taken from eight bimonthly volumes of the *Reference Books* for 1950 through 1952 and for all thirty-four volumes from 1953 through July 1958. The 1958-65 data are based on samples of about 3600 listings taken from every other *Reference Book* (i.e., three volumes per year). Bimonthly data currently compiled by Dun & Bradstreet are based on a sample of about 3900 listings from each volume.

The validity of the Dun & Bradstreet ratings as indicators of credit risk has been clearly established in several studies. For a discussion of this evidence, see Chapter 5; see also Victor Zarnowitz, "Credit Ratings of Business Concerns" in *The Study of Economic Growth*, Thirty-Ninth Annual Report of the National Bureau of Economic Research, New York, 1959, pp. 59-62; Martin Seiden, *The Quality of Trade Credit*, Occasional Paper 87, New York, NBER, 1964, Chapter 6; R.J. Saulnier, H.G. Halcrow and N.H. Jacoby, *Federal Lending and Loan Insurance*, Princeton for NBER, 1958, pp. 449, 458, 464, 471; G.H. Moore, T.R. Atkinson and E.J. Kilberg, "Risks and Returns in Small Business Financing," in *Financing Small Business*, Report to the Committees on Banking and Currency and the Select Committees on Small Business, United States Congress, by the Federal Reserve System, April 11, 1958, pp. 59-61; Albert M. Wojnilower, *The Quality of Bank Loans, A Study of Bank Examination Records*, Occasional Paper 82, New York, NBER, 1962, pp. 32-38; and James S. Earley, "The Quality of Credit in the United States: A Summary Volume," NBER, in preparation.

Trade Credit Delinquency Rates (CRF)

Series included in this compendium		Frequency and Period
*BG53	Trade credit delinquency rate, manufacturers.	Q 1959 on
BG57	Trade credit delinquency rate, wholesalers.	Q 1960 on

Other series available from the source

BG54	Trade credit delinquency rate, manufacturers' receivables past due 90 days or more.	Q 1959 on
BG58	Trade credit delinquency rate, wholesalers' receivables past due 90 days or more.	Q 1960 on

Source: These ratios are obtained from "National Summary of Domestic Trade Receivables," a quarterly release of the Credit Research Foundation, Inc., 44 East 23 Street, New York, N.Y. 10010. Historical data are available from a booklet published by the Foundation, *National Summary of Domestic Trade Receivables, April 1, 1959 - July 1, 1964*.

Description of Series: These series represent the proportion of trade receivables outstanding that are past due at the end of each quarter. Rates published by the Foundation for series BG53 and

BG57 are the "per cent current (within terms)"; for this compendium the NBER has taken the complement of these rates (i.e., subtracted them from 100) in order to convert the series to "per cent delinquent."

These series are medians of the delinquency rates on trade credit extended by manufacturing and wholesaling companies. The sample for September 30, 1967, consisted of 310 manufacturers and 52 wholesalers. Accounts receivable represent domestic open accounts and notes, including taxes and containers, due from credit sales. For a discussion of these series, plus earlier delinquency rates by type of debtor (rather than creditor) see Martin H. Seiden, *The Quality of Trade Credit*, Occasional Paper 87, New York, NBER, 1964, pp. 28 ff.

Seasonal Variation: Seasonal adjustment factors for these series were calculated by the NBER based on data from the beginning of the series through 1968.

Trade Credit Delinquency Indexes (American Credit Indemnity Company)

Series available from the source		Frequency and Period
BG55	Index of trade credit delinquency, manufacturers' receivables past due.	A 1947-52, 1959-60 Q 1960-64 M 1966 on
BG56	Index of trade credit delinquency, manufacturers' receivables past due 60 days or more.	A 1947-52, 1959-60 Q 1960-64 M 1966 on
BG59	Index of trade credit delinquency, wholesalers' receivables past due.	Q 1960-64 M 1966 on
BG60	Index of trade credit delinquency, wholesalers' receivables past due 60 days or more.	Q 1960-64 M 1966 on

Source: These indexes are compiled by the American Credit Indemnity Company (a subsidiary of Commercial Credit Company), Baltimore, Md., and are reported in *Credit and Financial Management*, in the column titled "Keeping Informed," published monthly by the National Association of Credit Management, 44 East 23 Street, New York, N.Y. 10010. These figures are also available directly from the Commercial Credit Company, Baltimore, Md. The 1960-64 data were reported in John C. Sawhill, "Measuring Changes in the Quality of Trade Credit," in American Statistical Association (c/o Harold F. Williamson, Secretary, 629 Noyes Street, Evanston, Illinois 60201), *Proceedings of the Business and Economics Statistics Section*, 1965; annual data for earlier years are available in Martin H. Seiden, *The Quality of Trade Credit*, Occasional Paper 87, New York, NBER, 1964, Table 16.

Description of Series: These data are compiled from the records of customers of the American Credit Indemnity Company whose trade credit it insures. At the end of 1965, these 2,000 companies had sales of $8.74 billion and insured receivables outstanding of $1.05 billion. The indexes represent end-of-month data and are based on the average delinquency experience of 1960-61; at that time, 13.34 per cent of insured manufacturers' receivables were past due, with 4.04 per cent 60 days past due, and 16.51 per cent of insured

wholesalers' receivables were past due, with 5.09 per cent 60 days past due. The indexes reflect changes in delinquency; thus a rise in the indexes indicates an increase in the proportion of receivables past due, i.e., a decline in the quality of trade credit.

The monthly indexes are not available on a seasonally adjusted basis. The quarterly figures in Sawhill's paper were adjusted for seasonal movements, however, suggesting that the monthly indexes should be adjusted when sufficient data became available.

Business Failures (D & B)

Series included in this compendium		Frequency and Period
*BG61	Ratio of liabilities of business failures to current liabilities of all nonfinancial corporations.	Q 1946 on
BG62	Ratio of liabilities of business failures to current liabilities of all businesses.	A 1900 . . . 39, 1945-58
BG63	Liabilities of business failures.	Q 1875-93 M 1894 on
BG64	Number of business failures per 10,000 business firms listed by Dun & Bradstreet.	M 1900 on
BG65	Number of business failures per 10,000 business firms in operation.	A 1929-64

Source: Failure statistics for these series are obtained from "Monthly Failures," statistical release "K," published monthly by Dun & Bradstreet, Inc., 99 Church Street, New York, N.Y. 10007. Liabilities of business failures, BG 63, is available, in *Business Conditions Digest* (series 14), published monthly by the Bureau of the Census, U.S. Department of Commerce. The denominator of series BG62 is from Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet of the United States*, Vol. II, Princeton for NBER, 1963. The denominator for series *BG61 is obtained from "Working Capital of U.S. Corporations," published quarterly by the United States Securities and Exchange Commission, Washington, D.C. 20549. The business population used as the denominator of BG65 was estimated by the Office of Business Economics of the Department of Commerce and published in *Survey of Current Business*. Unfortunately, this series is not available after 1964; nevertheless, we include BG65 here because it provides a useful check on BG64, the denominator of which is not entirely representative of the trend of the business population.

Description of Series: Business failures include those businesses that ceased operation following assignment or bankruptcy: ceased operation with loss to creditors after such actions as execution, foreclosure, or attachment; voluntarily withdrew leaving unpaid obligations; were involved in court actions such as receivership, reorganization, or arrangement; or voluntarily compromised with creditors out of court.

There are breaks in the continuity of the failure liability data in 1933, 1934, and 1939. Real estate and financial businesses are included prior to 1933, but are excluded thereafter. Beginning June 1934, certain corporate reorganization cases are included; beginning with 1939, voluntary discontinuances with loss to creditors and small concerns with insufficient assets to cover all claims are in-

cluded. Overlapping data are provided for these years.

The *National Balance Sheet* data for series BG62 include nonfinancial corporations and nonfarm unincorporated businesses. There is a break in the continuity of this series in 1945 when the estimating method was revised; overlapping data are provided for 1945.

For series BG61, the quarterly (sum of three months) failure liabilities are multiplied by four to put this series on an annual rate. The Securities and Exchange Commission data used as the denominator of this series is limited to nonfinancial corporations; i.e., the numerator of this ratio includes unincorporated businesses, but the denominator does not. There is a break in the denominator at the end of 1961, when a new method of estimating current liabilities was introduced. To provide a continuous seasonally adjusted series, the earlier segment of the ratio was adjusted by the NBER to a level consistent with the current segment based on overlapping year-end 1961 data. The annual data for this series published in Section C are calculated as the total failure liabilities for the year divided by the current liabilities of all nonfinancial corporations at the end of the year.

The monthly failure rate, series BG64, is published by Dun & Bradstreet as an annual rate; the annual data are calculated by averaging the monthly (before seasonal adjustment) rates. The annual series, BG65, based on Commerce Department estimates of the business population, is calculated as the number of failures during the year per 10,000 firms in operation at June 30.

Seasonal Variation: Series *BG61 was seasonally adjusted by the NBER based on data for 1946 through 1968. Series BG64 is published by Dun & Bradstreet in seasonally adjusted form. Series BG63 is no longer seasonally adjusted by the Bureau of the Census; see *Business Condition Digest*, February 1969, p. iii.

Business Bankruptcies (U.S. Courts)

Series included in this compendium		Frequency and Period
BG66	Business bankruptcies filed.	A 1940 on
Other series available from the source		
BG67	Business bankruptcies filed by merchants.	A 1940 on
BG68	– by manufacturers.	A 1940 on
BG69	– by professionals.	A 1940 on
BG70	– by others in business.	A 1940 on

Source: These series are obtained from *Tables of Bankruptcy Statistics*, published annually for fiscal years ending June 30 by the Administrative Office of the United States Courts, Supreme Court Building, Washington, D.C. 20544. Historical data are available on request from the Division of Bankruptcy.

Description of Series: Business bankruptcies filed include all petitions filed under some provision of the Bankruptcy Act by persons in business, including farmers, as interpreted and classified by the court clerks.

George Allen Brunner, in his book *Personal Bankruptcies: Trends and Characteristics*, Bureau of Business Research, Ohio State University, 1965, points out that the classification of cases as business or nonbusiness by individual clerks in the Divisional offices of the Bankruptcy Courts is not always accurate, and many business or presumptively business cases are erroneously included in the nonbusiness category. Despite this alleged understatement of the number of business bankruptcies, we have included these series in our compendium because changes over time in these series

may nevertheless provide a reasonably accurate picture of the trend of business bankruptcies.

Series on total and personal bankruptcies are shown in other sections of this list; farm bankruptcies, which are included in BG66, are also shown separately in the agricultural section.

Trade Credit Loss Rate *(Statistics of Income)*

Series included in this compendium		Frequency and Period
BG71	Trade credit loss rate, four major business sectors, bad debts relative to receivables.	A 1927 on
BG72	bad debts relative to sales.	A 1927 on

Source: These series are calculated from *Statistics of Income, Corporation Income Tax Returns*, published annually (but with a three-year publication lag) by the U.S. Treasury Department, Internal Revenue Service (available from Superintendent of Documents, Washington, D.C. 20402). (A preliminary version is published earlier, but does not contain the necessary data for these series.)

Description of Series: Statistics of Income is based on a probability sample of corporation income tax returns. The sample returns are used to represent the business activities of all domestic and resident foreign corporations filing returns with accounting period ending from July of one year through June of the following year. For a complete discussion of the sample, limitations of the data, changes in laws, and an explanation of terms, see the descriptive materials included in each *Statistics of Income*. It is important to note that the comparability of these data over time is affected by changes in tax laws, accounting procedures and types of statistical presentations. These loss rates are calculated as bad debts as a per cent of annual sales ("business receipts") and of receivables outstanding at end of year. They are based on data for the manufacturing, mining, wholesale trade and construction; i.e., those four sectors combined. The retail trade and services sectors are excluded because their bad debts are mainly on credit to households. There is a break in the continuity of the series between 1937 and 1938; trade was not classified between wholesale and retail before 1938, hence 1927-37 ratios include retail trade.

Proportion of Bank Loans Maturing in More than One Year (FTC-SEC)

Series available from the source		Frequency and Period
BL1	Bank loans to manufacturers, proportion with maturity of more than 1 year.	A 1948 on

Source: This series is obtained from the "Quarterly Financial Report for Manufacturing Corporations," of the Federal Trade Commission and the Securities and Exchange Commission, Washington, D.C. 20580.

Description of Series: This proportion is calculated as loans from banks due in more than one year as a per cent of total bank loans, which is the sum of the loans due in more than one year plus short-term loans from banks (original maturity of 1 year or less) plus instalments due in 1 year or less on long-term bank loans. Prior to 1954, instalments due in one year or less on long-term bank loans were not available separately (they were included with "other current liabilities"); thus for the years 1948-53, this series is calculated as long-

term loans as a per cent of total bank loans (which is the sum of short-term plus long-term loans). Although the FTC-SEC reports are published quarterly, we have listed this as an annual series; the proportion does not change rapidly and we suggest that it is perhaps not necessary to follow this series more frequently than annually.

There are two other breaks in the continuity of this series: after the second quarter of 1951 and the fourth quarter of 1955, both of which reflected changes in the sampling method.

One other break in the data was reported in 1958 when industry classifications were changed to reflect the *1957 Standard Industrial Classification Manual* (available from Superintendent of Documents, Washington, D.C. 20402) in place of the *1945 SIC Manual.* Comparisons of the 1958 overlap for the series listed above showed no significant differences between the old and new bases. Thus, the series was treated as continuous across this break in the data.

The FTC-SEC data cover all manufacturing corporations except newspapers, and are derived from a probability sample of enterprises classified as manufacturers which filed a U.S. Corporate Income Tax Form 1120 or applied for a Federal Social Security Employer's Identification Number. The sample is designed so that one standard deviation of the estimate for the item "net profit before Federal income taxes" for all manufacturing corporations amounts to less than 1 per cent of that estimated aggregate. The composition of the sample changes each quarter in order to reflect the effect of all corporate births, deaths, mergers, etc. In addition, part of the sample is replaced each quarter. In 1967, the sample accounted for approximately 6 per cent of the number and 88 per cent of the assets of all manufacturing corporations except newspapers. For a complete description of the sample and the data obtained from the survey, see the "Explanatory Notes" included in each quarterly report.

Debt Composition: Bank Loans by Industry (FRB)

Series available from the source		Frequency and Period
BL2	Industrial composition of commercial bank business loans, proportion to manufacturers.	A 1946 . . . 57, 1961 on
BL3	– proportion to durables manufacturers.	A 1946 . . . 57 1961 on
BL4	– proportion to nondurables manufacturers.	A 1946 . . . 57, 1961 on
BL5	– proportion to mining companies.	A 1961 on
BL6	– proportion to wholesalers.	A 1946 . . . 57, 1961 on
BL7	– proportion to retailers.	A 1946 . . . 57, 1961 on
BL8	– proportion to construction firms.	A 1946 . . . 57, 1961 on

BL9	– proportion to transportation, communications and public utilities.	A 1946 . . . 57, 1961 on
BL10	– proportion to service industries.	A 1946 . . . 57, 1961 on

Source: These series are calculated from the table entitled "Commercial and Industrial Loans of Large Commercial Banks" in the *Federal Reserve Bulletin*, published monthly by the Board of Governors of the Federal Reserve System. Data for 1946, 1955 and 1957 are from Federal Reserve Loan Surveys and are published in James S. Earley, "The Quality of Credit in the United States: A Summary Volume," NBER, in preparation, Table 5-2.

Description of Series: These proportions are calculated as the loans outstanding in each category as a per cent of total classified loans. Since 1961 the data are published weekly and these proportions could, therefore, be calculated that frequently. We suggest, however, that because week-to-week changes in these proportions are typically very small – and often dominated by normal seasonal swings – an annual tabulation of these proportions may be sufficient to trace changes in credit risk arising from movements in bank loan composition by industry.

These data are based on reports from about 161 weekly reporting banks, which account for about 70 per cent of commercial and industrial loans held by all commercial banks. Beginning with data for December 28, 1966, these data were revised in format and coverage; for a description of the changes, see the *Federal Reserve Bulletin*, February 1967, p. 209. Note also that the manufacturers data for 1946, 1955 and 1957 include mining, which has been tabulated separately since 1961. In addition there may have been other revisions in the classification of industries, e.g., the retail sales proportion drops sharply from the 1957 figure to 1961 and the services sector increases sharply.

For a discussion of the relative credit riskiness of these industries, see Part I, Chapter 5. See also Earley, "The Quality of Credit in the United States: A Summary Volume."

Examiner Criticism Rates on Bank Loans (FDIC)

Series included in this compendium		Frequency and Period
BL11	Examiner criticism rate: ratio of substandard loans to total loans, sample of 60 banks (Wojnilower).	A 1947-57
BL12	Examiner criticism rate: ratio of substandard loans to total loans, all FDIC-insured banks (FDIC).	A 1939-51
BL13	Examiner criticism rate: ratio of substandard loans to total loans, all FDIC-insured banks (FRB Boston).	A 1952-65

Source: The 1952-65 data from Federal Reserve Bank of Boston, Series BL13, were charted and discussed in Paul S. Anderson and Robert E. Knight, "Bank Loan Losses, Past and Present," *New England Business Review*, May 1966, Federal Reserve Bank of Boston, Boston, Mass. 02106. The Wojnilower series, BL11, is from Albert M. Wojnilower, *The Quality of Bank Loans*, Occasional Paper 82, NBER, 1962, Table 1, page 8. The FDIC series, BL12, is from *Annual Reports* of the Federal Deposit Insurance Corporation.

Description of Series: These data are calculated from annual evaluations of the loan portfolios of commercial banks made by examiners of the

Federal Reserve Banks, the Federal Deposit Insurance Corporation and the Comptroller of the Currency. All loans that exceed a specified "cut-off" point are reviewed individually. Loans are rated of "substandard" quality if they "involve more than a normal risk due to the financial condition or unfavorable record of the obligor, insufficiency of security, or other factors noted in the examiner's comments." (*Monetary Policy and the Management of the Public Debt*, Part 1, 82nd Congress, 2nd Session, Hearings before Joint Committee on the Economic Report, Washington, 1952, Reply by the Chairman of the Board of Governors of the Federal Reserve System, p. 614.) The criticism rates are calculated as the proportion of total loans that are classified as substandard.

The FRB Boston data, BL13, are estimates for all FDIC-insured commercial banks based on Wojnilower's data, on National Bank figures for 1959-62 presented in *Increased Flexibility for Financial Institutions* (88th Cong., 1st Sess., Hearings before the House Committee on Banking and Currency, Washington, 1963, p. 10), and on unpublished research of the Board of Governors of the Federal Reserve System. The Wojnilower data are based on a sample of sixty state member banks in three Federal Reserve Districts. The FDIC series, BL12, is based on reports for all FDIC-insured commercial banks in the United States.

Losses on Bank Loans (FRB)

Series included in this compendium		Frequency and Period
*BL14	Gross loss rate on loans of Federal Reserve member banks.	A 1919 on
BL15	Net loss rate on loans of Federal Reserve member banks.	A 1927 on

Source: These series are calculated from data on losses and loans included in the table "Income, Expenses and Dividends, by Class of Bank" published annually in the *Federal Reserve Bulletin* (generally the May or June issue), Board of Governors of the Federal Reserve System. Historical data are available in *Banking and Monetary Statistics*, and *Supplement to Banking and Monetary Statistics*, Section 6, "Bank Income," Board of Governors of the Federal Reserve System, 1966.

Description of Series: These loss rates are calculated as gross and net losses as a per cent of loans outstanding at all member banks of the Federal Reserve System. Gross losses include all losses and charge-offs on loans, written off against current income and against valuation reserves; transfers to valuation reserves are excluded. Net losses are gross losses less recoveries credited to current income and to valuation reserves; transfers from valuation reserves are excluded. For a discussion of these series, see "Bank Loan Losses, Past and Present," *New England Business Review*, May 1966.

Prior to 1948, data on transfers into and out of valuation reserves are not reported separately, and are included in the figures on losses and recoveries. However, since the number of banks using the reserve method of accounting for bad debt losses on loans was quite small prior to 1948, the comparability of these loss rates before and after 1948 is not significantly compromised and it is reasonable to use them as continuous series. For a discussion of the 1948 change to the reserve method of accounting, see *Supplement to Banking and Monetary Statistics,* Section 6, "Bank Income," pp. 3-4.

Both the gross and net loss rates are useful measures of credit experience. The net loss rate is the better measure of the over-all cost of defaulted loans, but since recoveries sometimes take place in a subsequent year from that in which the losses are charged off, the gross loss rate may be the better indicator of the time pattern of losses. However, the timing of charge-offs is probably affected by the income tax laws, which provide an incentive for the commercial banks to concentrate losses in particular calendar years; the importance of this tax consideration is uncertain.

Loss Rates on Commercial Bank Instalment Loans to Small Businesses (ABA)

Series available from the source		Frequency and Period
BL16	Gross loss rate on commercial bank instalment loans to small businesses.	A 1964 on
BL17	Net loss rate on commercial bank instalment loans to small businesses.	A 1966 on

Source: These series are obtained from the annual *Instalment Credit Survey*, published by the Instalment Credit Committee, American Bankers Association, 90 Park Avenue, New York, N.Y. 10016.

Description of Series: These loss rates are calculated as charge-offs, gross or net of recoveries, as a per cent of the dollar amount of instalment loans outstanding at year-end. Starting in 1965, these series are computed from accumulated loss and loan volume of all banks in the sample, that is, as a weighted average of all reporting banks; previously the loss rates were unweighted averages.

In addition to the above series, the *Instalment Credit Surveys* also provide loss rates (1) based on the number of loans (rather than the dollar amount) and (2) using as the denominator of the loss ratios (a) the dollar volume of instalment loans made during the year and (b) the liquidations or repayments made during the year.

Both the gross and net loss rates are useful measures of credit experience. The net loss rate is a better measure of the cost of defaulted loans, but since recoveries sometimes take place in a subsequent year from that in which the losses are charged off, the gross loss rate may be a better indicator of the time pattern of losses. However, the timing of charge-offs is probably affected by the income tax laws, which provide an incentive for the commercial banks to concentrate losses in particular years; the importance of this tax consideration is uncertain.

Sample: These data are derived from responses to a questionnaire sent to a large sample of commercial banks throughout the United States. The sample banks are chosen by the ABA to provide a broad representation by size of bank and by geographic region. The sample has been increased considerably over the years. In 1966, questionnaires were sent to 2,000 banks, of which some 900 responded – although not all questions were answered by every bank. Of the 900 banks in the tabulation, 267 of them have deposits of $100 million or more (80 with $500 million or more), thus assuring that the sample provides substantial coverage of all bank-held consumer instalment debt.

Earnings Coverage on Corporate Bonds (Atkinson)

Series included in this compendium		Frequency and Period
BB1	Median times-charges-earned ratio, corporate bonds (public and direct offerings).	A 1900-43, 1951-61
BB2	Median times-charges-earned ratio, publicly offered corporate bonds.	A 1944-65
BB3	Proportion of publicly offered corporate bonds with times-charges-earned ratio less than 2.0.	A 1944-65

BB4	Median times-charges-earned ratio, publicly offered bonds of industrials.	A 1944-65
BB5	Median times-charges-earned ratio, publicly offered bonds of public utilities.	A 1944-65

Source: These series are all taken or calculated from Thomas R. Atkinson, *Trends in Corporate Bond Quality*, New York, NBER, 1967. Series BB1 is plotted in Atkinson, Chart 1, p. 5; the 1900-43 data are computed from W. Braddock Hickman, *Statistical Measures of Corporate Bond Financing since 1900*, Princeton for NBER, 1960, Table 79; the 1951-61 data are figures compiled by Atkinson, combining series BB2 with unpublished data of Avery B. Cohan for direct placements. Series BB2 is from Atkinson, Table 24, p. 61. Series BB4 and BB5 are unpublished figures compiled by Atkinson, plotted in Chart 10, p. 62. Series BB3 is computed from Atkinson, Table C-1, pp. 100 ff.

Description of Series: Times-charges-earned ratios are calculated as the ratio of earnings to fixed charges, and are designed to measure the ability of the issuing firm to pay interest charges on the debt out of income produced. To reduce the effects of business cycles, the ratios are averaged over a period of five years prior to the date of issue.

Hickman's estimates were obtained by dividing the average earnings of the issuing corporation for the five years preceding offering by the fixed charges in the year following offering. Because of inadequate data in the early manuals, Hickman's ratios are based on after-tax earnings; Atkinson converted them to a before-tax basis by a series of factors derived from *Statistics of Income* data for nonfinancial corporations. Fixed charges are comprised of all interest on funded and unfunded debt, rentals and amortization of debt discount, and preferred dividends of subsidiaries.

Atkinson's figures on public offerings are derived from Moody's *Bond Surveys*, which contain single-year before-tax ratios for years preceding offering based on *pro-forma* charges at offering. The denominator usually includes only interest on debt with one year or longer to maturity; but when rents or other fixed charges are larger, a ratio is also shown for interest and other charges. The latter ratios were used when available. Inclusion of fixed charges other than interest is particularly important in the postwar period when many corporations found it advantageous from a tax viewpoint to lease facilities; in effect they exchanged a rent charge for an interest charge. Atkinson averaged the annual ratios for the five years preceding offering.

Characteristics of Direct Placements (Cohan)

Series included in this compendium		Frequency and Period
BB6	Arithmetic means of times-charges-earned ratio, direct placements of industrials.	Q 1951-61
BB7	– public utilities.	Q 1951-61
Other series available from the source		
BB8	Arithmetic means of ratio of long-term debt to total capital, direct placements of industrials.	Q 1951-61
BB9	– public utilities.	Q 1951-61

BB10	Arithmetic means of average term, direct placements of industrials.	Q 1951-61
BB12	– public utilities.	Q 1951-61
BB11	Arithmetic means of maturity, direct placements of industrials.	Q 1951-61
BB13	– public utilities.	Q 1951-61

Source: These series are published in Avery B. Cohan, *Yields on Corporate Debt Directly Placed*, New York, NBER, 1967, Tables B-8 and B-12, variables X_4 (times *pro-forma* interest earned), X_{15} (ratio of *pro-forma* long-term debt to *pro-forma* total capitalization), X_3 (average term), and X_{13} (maturity).

Description of Series: The times-charges-earned ratios (BB6 and BB7) are calculated as earnings before interest and taxes, averaged over the immediately preceding five years, divided by *pro-forma* total interest. These ratios tell the lender how many dollars of earnings before interest and taxes will be available to pay each dollar of expected charges, on the assumption that earnings in the future will be no worse than they have been in the immediate past. (See Cohan, pp. 30-31.)

The ratios of long-term debt to total capitalization (BB8 and BB9) are calculated as *pro-forma* long-term debt divided by total assets (net worth plus *pro-forma* long-term debt). These ratios are designed as an index of the "cushion" which would be available to the company's creditors in the event of liquidation. For example, if the ratio is .50, total assets could be sold at 50 per cent of book value and still leave sufficient funds to pay off all debt in full. (See Cohan, p. 33.)

The average term (BB10 and BB12) is the weighted average length of the loan. Any loan that is amortized is treated as a series of loans; e.g., a $10,000 loan for ten years to be repaid at the rate of $1,000 each year is really ten separate loans of $1,000 each for periods of from one to ten years. The maturity (BB11 and BB13), on the other hand, is the expected number of years to final maturity; i.e., the year in which the last payment on principal is to be made minus the year the loan was extended. (See Cohan, p. 29.)

Cohan's data were obtained from some 2400 pure debt direct placements bought by twenty-three insurance companies and one large pension fund during the years 1951-61. This sample represented about 44 per cent by value of all direct placements negotiated during this period.

Cohan also includes standard deviations of these series; see Tables B-9 and B-13. Less extensive data are available on direct placements of finance companies; see Table B-5.

Credit Ratings on Corporate Bonds (Atkinson)

Series included in this compendium		Frequency and Period
BB14	Proportion of all rated corporate bond offerings classified below investment grade.	A 1908-65

Other series available from the source

BB15	Proportion of all rated corporate bonds, publicly offered, classified below investment grade.	A 1944-65

BB16	Proportion of convertible corporate bonds, publicly offered, classified below investment grade.	By decades 1910-39, A 1944-65
BB17	Proportion of nonconvertible corporate bonds, publicly offered, classified below investment grade.	By decades 1910-39, A 1944-65
BB18	Proportion of all rated corporate bonds, direct placements, classified below investment grade.	A 1944-65
BB19	Average Cohan rating on corporate bonds, direct placements.	A 1951-61
BB20	Proportion of corporate bonds, direct placements, classified in highest 3 Cohan quality classes.	A 1951-61
BB21	Proportion of corporate bonds, direct placements, classified in middle 2 Cohan quality classes.	A 1951-61
BB22	Proportion of corporate bonds, direct placements, classified in lowest 4 Cohan quality classes.	A 1951-61

Source: Except as noted below, these series are taken from Thomas R. Atkinson, *Trends in Corporate Bond Quality*, New York, NBER, 1967. Series BB14 is plotted in Atkinson, Chart 1, p. 5; the 1908-43 data are computed from W. Braddock Hickman, *Statistical Measures of Corporate Bond Financing since 1900*, Princeton for NBER, 1960, Table 52; the 1944-65 figures are derived from Atkinson, Tables B1, B2, and B3, and represent a weighted average of data on publicly offered bonds from Moody's *Bond Survey* (see series BB15) and data on direct placements from *Investment Dealers' Digest* and annual handbooks of the National Association of Insurance Commissioners (see series BB18).

Series BB15 was compiled from Moody's *Bond Survey* and is from Atkinson, Table 15. Series BB16 and BB17 are from Atkinson, Tables 34 and 39; 1910-39 data from unpublished data of Hickman; 1944-65 figures complied from Moody's *Bond Survey*. Series BB18 is from Atkinson, Table 15; compiled from *Investment Dealers' Digest* and N.A.I.C. annual handbooks.

Series BB19 is calculated from Table 13 in Atkinson, p. 30 and plotted in Chart 3, p. 31. Series BB20 through BB22 are from Atkinson Table 13. Atkinson computed these series from data compiled by Avery B. Cohan for his study *Yields on Corporate Debt Directly Placed,* New York, NBER, 1967.

Description of Series: Although they do not specifically state their intentions this way, the agency ratings of corporate bonds seem to represent essentially attempts to rank issues according to risk of default (see Atkinson, p. 50). Bonds are rated into nine different grades, but perhaps the most meaningful distinction for analytical purposes is the split between the investment (top four) grades and the subinvestment (lowest five) grades. Except for the Cohan data which provide the full distribution of his ratings on direct placements, the series listed above are calculated as the proportion of all rated bonds that were classified below investment grade.

As currently rated, the top two grades (Moody's Aaa and Aa or Standard & Poor's AAA and AA) are considered to have neither present default risk nor foreseeable susceptibility to default risk in the future. The next two grades (A and Baa or A and BBB) are considered to have some possible future lack of earnings protection, but for the present to be secure in interest and principal payments. Bonds in the fifth grade (Ba or BB) are those with little future assurance and only minor investment characteristics. Bonds below

these five grades are speculative in that there is no assurance of payment of interest and principal.

Hickman's ratings were based on a composite of the individual ratings assigned by Fitch, Moody's, Standard Statistics, and Poor's (see his *Corporate Bond Quality and Investor Experience*, Princeton for NBER, 1958, Chapter 3). Atkinson used Moody's ratings for public offerings in his study of the postwar period.

Series BB18 is based on ratings of direct placements made by the N.A.I.C. Placements are of investment grade if they are rated "yes" by the N.A.I.C.; of subinvestment grade if "no." The designation of "yes" indicates the security is eligible for valuation at cost adjusted by amortization of premium or discount at a rate sufficient to establish a 1 per cent security valuation reserve. Those designated "no" must be amortized on a 20 per cent basis, and in addition are usually valued at a figure specified by the N.A.I.C. (For a complete discussion of the N.A.I.C. ratings, see Atkinson, pp. 34-39.)

The Cohan quality classes (series BB19-BB22) were developed by Avery B. Cohan in his research for *Yields on Corporate Debt Directly Placed*, New York, NBER, 1967. He found two variables, earnings coverage and size of company, to be of notable significance in accounting for yield differences between direct placement issues, and he classified his offerings by a combination of these two characteristics to obtain quality classes. Thus, Class 1 (best quality) were issues of firms with *pro-forma* capitalization of more than $135 million and *pro-forma* times-charges-earned ratios of more than fifteen times for industrials and six times or more for utilities; Class 2 consisted of issues of firms with either (a) capitalization of more than $135 million and coverage for industrials of 5.1-15.0 times earnings and for utilities of 4.0-5.9, or (b) capitalization of $45.1-135.0 million and coverage of more than 15.0 for industrials and 6.0 and over for utilities; etc. For a more complete discussion of Cohan's research, see Cohan, Chapters 3 and 4, and Atkinson, pp. 28-34.

Default Rates on Corporate Bonds (Atkinson)

Series included in this compendium		Frequency and Period
BB23	Default rate on corporate bonds.	A 1900-65
BB24	Default rate by year of offering, corporate bonds.	A 1900-43
Other series available from the source		
BB25	Default rate by year of offering, convertible corporate bonds.	A 1900-42
BB26	Default rate by year of offering, nonconvertible corporate bonds.	A 1900-43

Source: Series BB23 is plotted in Thomas R. Atkinson, *Trends in Corporate Bond Quality*, New York, NBER, 1967, Chart 1, p. 5; data for 1900-43 are from W. Braddock Hickman, *The Volume of Corporate Bond Financing since 1900*, Princeton for NBER, 1953, Table A-19 divided by Table A-21; data for 1944-65 are from Atkinson, Table 21. Series BB24 is from Hickman, *Corporate Bond Quality and Investor Experience*, Princeton for NBER, 1958, Table 17, pp. 101-102. Series BB25 and BB26 are published in Atkinson, Table 33, and were based on unpublished data of Hickman.

Description of Series: Series BB23 is divided into two parts: Hickman's data for 1900-43 and Atkinson's postwar data. The default rate for 1900-43 is calculated as the par amount of defaults during the year as a per cent of the par amount outstanding of bonds in good standing at the beginning of the year. This rate covered "straight" corporate bonds (i.e., issues with a fixed coupon and single maturity) only. Hickman de-

fined a default as "(1) a failure to pay interest or principal in the full contractual amount when due, or (2) an exchange or contract modification (of an issue otherwise in good standing) in which the new security received or the modified issue is worth less than par" (*The Volume of Corporate Bond Financing since 1900*, p. 182).

Atkinson modified this definition for his post-war data because of the large volume of direct placements and lack of information on them. All types of bond issues were included and defaults were defined as failure to pay principal or interest, substantial contract modifications, and noncontractual exchanges. Atkinson calculated default rates for 1944-51 for "straight" bonds only and found the figures to be similar to his rates for all bonds. For a complete discussion of this series, see Atkinson, Chapter III.

Series BB24 is calculated as the per cent of par amount of offerings during each year that went into default by 1944; this is a default rate by year of offering rather than by year of default.

The default rates for nonconvertible and convertible bonds, series BB25 and BB26, were calculated by Atkinson from Hickman's data also as the per cent of par amount of offerings during each year that went into default by 1944 (see Atkinson, Table 33 and pp. 76-86).

Characteristics of FHA-Insured Mortgages on Multifamily Housing (FHA)

Series included in this compendium		Frequency and Period
BM1	Ratio of mortgage amount to annual rental, FHA-insured mortgages on multifamily housing.	A 1950 on
BM6	Median loan-to-value ratio on FHA-insured mortgages on multifamily housing.	A 1950 on

Source: These series are obtained or calculated from *Statistical Yearbook* of the U.S. Department of Housing and Urban Development, available from the Superintendent of Documents, Washington, D.C. 20402 (1966 *Yearbook*, FHA Table 43); also available and more promptly in the FHA *Annual Statistical Summary*, Washington, D.C. 20410. In earlier years, these series were reported in *Annual Reports* of HUD and its predecessor, the Federal Housing and Home Finance Agency.

Description of Series: These series cover mortgages on multifamily housing insured by the FHA under Section 207 of the National Housing Act. Series BM1 is calculated as the median mortgage amount per unit divided by the median rental per unit (multiplied by 12 to transform it to an annual rate). Series BM6 is the median ratio of the mortgage amount as percentage of value.

Characteristics of Business Mortgages, Life Insurance Companies (LIAA)

Series included in this compendium		Frequency and Period
*BM2	Average debt-coverage ratio on multifamily and nonresidential mortgages made by 15 life insurance companies.	M 1951 on
*BM3	Average loan-to-value ratio on multifamily and nonresidential mortgages made by 15 life insurance companies.	M 1951 on

BM7	Average maturity on multifamily and nonresidential mortgages made by 15 life insurance companies.	M 1951-65 Q 1966 on

Source: These series are obtained from the Life Insurance Association of America, 277 Park Avenue, New York, N.Y. 10017. Current data are available from the Association on request. The 1951-65 data are part of an NBER study, in preparation, by Robert Fisher, Barbara Opper and Royal Shipp. For an early report on this research, see "The Structure of the Market for Multifamily and Nonresidential Mortgages," a paper presented at a joint meeting of the American Real Estate and Urban Economics Association and the American Finance Association on December 27, 1966, by Royal Shipp, then on the staff of the Board of Governors of the Federal Reserve System.

Description of Series: These data are based on a survey of mortgage commitments in excess of $100,000 (all loans for the 1951-65 data) on multifamily, commercial, industrial and institutional properties made by fifteen life insurance companies. These include smaller companies as well as most of the large companies very active in mortgage investments and account for 55 per cent of mortgages on urban property held by all U.S. life insurance companies. The series are averages computed on a loan-by-loan basis, i.e., they are not weighted by the size of the mortgage. The debt-coverage ratio is calculated as the "net stabilized earnings" of the mortgaged property (earnings after vacancy allowance, operating expenses and property taxes, but before income taxes, depreciation and debt service) divided by the annual amount of debt service. The loan-to-value ratio is the loan amount as a per cent of the value of the property as appraised by the life insurance company.

Seasonal Variation: These series showed very little evidence of recurrent seasonal movements, not enough to warrant seasonal adjustment.

Characteristics of Mortgages on Nonfarm Income-Producing Properties (Morton)

Series included in this compendium		Frequency and Period
BM4	Average loan-to-value ratio on nonfarm income-producing properties, life insurance companies.	A 1920-47
BM5	– commercial banks.	A 1920-47
BM8	Average maturity on nonfarm income-producing properties, life insurance companies.	A 1920-47
BM9	– commercial banks.	A 1920-47

Source: These series were obtained from an NBER survey of urban mortgage lending, as reported in J. E. Morton, *Urban Mortgage Lending: Comparative Markets and Experience*, Princeton for NBER, 1956, Appendix Tables C-9 and C-10.

Description of Series: The data refer to straight loans (i.e., exclusive of purchase money mortgages and real estate sales contracts) that were secured by urban properties other than one- to four-family homes. The averages were weighted by the original amounts of the included loans.

Sample: These series were compiled from probability samples of the mortgage portfolios of the lending institutions. The samples included twenty-four of the largest life insurance companies, accounting for roughly two-thirds of the entire urban mortgage debt held by all life insurance companies at the end of 1944; and 170 commercial banks, representing about one-third of the commercial banks' total nonfarm mortgage portfolio as of mid-1945. For these series on income-producing properties, the number of loans in the

samples per year ranged from none to fifty-six (averaging about twenty-two) for the life insurance companies, and from five to fifty-two (averaging about twenty) for the commercial banks.

For a full discussion of these series and the survey from which they were compiled, see *Urban Mortgage Lending* Chapter 4 and Appendix A.

Foreclosure and Delinquency Rates on Business Mortgages, Life Insurance Companies (LIAA)

Series included in this compendium		Frequency and Period
*BM10	Delinquency rate on multifamily mortgages, past due 2 months or more, life insurance companies.	Q 1964 on
*BM17	Rate of foreclosures in process on multifamily mortgages, life insurance companies.	Q 1964 on
Other series available from the source		
BM11	Delinquency rate on conventional multifamily mortgages, past due 2 months or more, life insurance companies.	Q 1965 on
BM12	– conventional commercial mortgages.	Q 1965 on
BM14	– FHA-insured multifamily mortgages.	Q 1965 on
BM18	Rate of foreclosures in process on conventional multifamily mortgages, life insurance companies.	Q 1965 on
BM20	– conventional commercial mortgages.	Q 1965 on
BM23	– FHA-insured multifamily mortgages.	Q 1965 on
BM19	Foreclosure rate on conventional multifamily mortgages, life insurance companies.	A 1965 on
BM21	– conventional commercial mortgages.	A 1965 on
BM24	– FHA-insured multifamily mortgages.	A 1965 on

Source: These series are obtained from the Life Insurance Association of America, 277 Park Avenue, New York, N.Y. 10017. Current data are available from the Association on request.

Description of Series: The delinquency rates and rates of foreclosures in process are based on reports from sixty-five companies accounting for about 80 per cent of total multifamily mortgages held by all U.S. life insurance companies. The foreclosure rates are based on reports from fourteen to sixteen large life insurance companies. The survey has been conducted since 1954 for all nonfarm ("city") mortgages, residential and nonresidential combined, but only since 1965 have the data been separated by type of property. In some cases, the number of companies reporting by type of pro-

perty has changed over time, so that these data do not comprise consistent time series.

Delinquency rates are calculated as the number and dollar amount of delinquent mortgages as a per cent of outstandings at the end of the quarter. Delinquent mortgages are those with two or more monthly payments past due, and include loans in process of foreclosure.

Rates of foreclosures in process are computed as the number and dollar amount of mortgages on which foreclosure action has been started but not completed as a per cent of outstandings at the end of the quarter.

The annual foreclosure rates reported by the LIAA are the number and dollar amounts of foreclosures during the year as a per cent of the number and dollar amount of mortgages outstanding at the beginning of the year. Mortgages foreclosed include those where title to the property or entitling certificate has been acquired during the year. Mortgages subject to redemption are included, as are mortgages awaiting transfer to the FHA.

The LIAA has also begun to collect and report data on nonfarm conventional mortgages foreclosed by life insurance companies, classified by year of authorization and by detailed property type. In time, these series will provide useful data (by year of authorization) for tracing the effect of changing quality characteristics on subsequent credit experience, data which are now rarely available.

Default and Foreclosure Rates on FHA-Insured Mortgages on Multifamily Housing (FHA)

Series included in this compendium		Frequency and Period
BM13	Default rate on FHA-insured mortgages on multifamily housing.	A 1949 on
BM22	Foreclosure and assigned mortgage rate on FHA-insured mortgages on multifamily housing.	A 1950 on

Source: These series are obtained or calculated from *Statistical Yearbook* of the U.S. Department of Housing and Urban Development, available from the Superintendent of Documents, Washington, D.C. 20402 (1966 *Yearbook*, FHA Tables 24 and 26); also available and more promptly in the FHA *Annual Statistical Summary*, Washington, D.C. 20410. In earlier years, these series were reported in *Annual Reports* of the Department and of its predecessor, the Federal Housing and Home Finance Agency.

Description of Series: These series cover mortgages on multifamily housing which are insured under all sections of the National Housing Act. Series BM22, as calculated by the NBER, is the number of dwelling units covered by terminations resulting from foreclosures and mortgage assignments made during the year as a per cent of the number of dwelling units on which FHA insurance was in force at the beginning of the year. These terminations include mortgage notes and property titles transferred to the FHA; they also include foreclosed projects retained by mortgagees with terminations of FHA insurance contracts.

The default rate, series BM13, as reported by the FHA, is the number of dwelling units covered by mortgages in default at year end as a per cent of the number of dwelling units on which FHA insurance was in force at year end.

Loss and Foreclosure Rates on Mortgages on Nonfarm Income-Producing Properties (Morton)

Series included in this compendium		Frequency and Period
BM15	Foreclosure rate by period loan made for mortgages on nonfarm income-producing properties, life insurance companies.	Five-year periods, 1920-24 through 1935-39, and 1940-47
BM16	– commercial banks.	
BM25	Loss rate by period loan made for mortgages on nonfarm income-producing properties, life insurance companies.	Five-year periods, 1920-24 through 1935-39, and 1940-47
BM26	– commercial banks.	

Source: These series were obtained from an NBER survey of urban mortgage lending, as reported in J. E. Morton, *Urban Mortgage Lending: Comparative Markets and Experience*, Princeton for NBER, 1956, Tables 40 and 45.

Description of Series: The data refer to loans secured by urban properties other than one- to four-family homes. The loss rates exclude loans and properties still on the books in 1947, and were weighted by the original amounts of the included loans. The loss rates were calculated as the difference between the expected yield (that promised in the original contract) and the realized yield (which takes account of modifications to the original contract interest rate and of the lender's estimated net return to his investment on the disposition of foreclosed loans). Negative loss rates indicate gains.

The foreclosure rates were calculated as the original amount of loans made in a given year and foreclosed by 1947 as a per cent of all loans made in that year.

Sample: These series were compiled from probability samples of the mortgage portfolios of the lending institutions. The data were tabulated from responses from 24 life insurance companies and 116 commercial banks. Morton emphasizes the limitations of the sample, and specifically pointed out that "A good many small lending institutions had been wiped out as a consequence of the depression; it is not improbable that their mortgage lending experience was worse than average and that their exclusion from the sample has introduced some bias. Since the extent of the bias is unknown, no correction for it can be offered." (*Ibid.*, p. 39.)

For a full discussion of these series and the survey from which they were compiled, see *Urban Mortgage Lending*, Chapter 5 and Appendix A.

Ratio, Interest Charges to Income, Agriculture (USDA)

Series included in this compendium		Frequency and Period
*A1	Ratio of interest charges on farm mortgage debt to realized net income of farm operators.	A 1910 on

Source: This ratio is calculated from data in *Agricultural Statistics* (1968 issue, Table 684, p. 481, and Table 679, p. 477), published annually by the U.S. Department of Agriculture, available from Superintendent of Documents, Washington, D.C. 20402. Realized net income of farm operators includes government payments and nonmoney income other than inventory change. Historical da-

ta for interest charges (1910-49 are published in *Historical Statistics of the United States, Colonial Times to 1957,* U.S. Department of Commerce, Bureau of the Census, Series K 172, p. 286 (available from Superintendent of Documents).

Debt-to-Value Ratios, Farmland (USDA)

Series included in this compendium		Frequency and Period
*A2	Ratio of debt to purchase price, credit-financed sales of farmland	A 1940 on
A3	Proportion of all sales of farmland that are credit financed.	A 1944 on
A5	Ratio of farm mortgage debt outstanding to value of farmland.	A 1910 on

Source: The ratio of debt outstanding to the value of farmland, series A5, is calculated from data in *Agricultural Statistics* (1968 issue, Table 621, p. 430 and Table 628, p. 435), published annually by the U.S. Department of Agriculture, Economic Research Service. (Available from Superintendent of Documents, Washington, D.C. 20402.) These data are also published in the *Economic Report of the President* (in 1969, Table B-83). The proportion of purchases on credit (A3) and the debt-to-purchase-price ratio (*A2) are obtained from *Farm Real Estate Market Developments*, published by the USDA, Economic Research Service, Washington, D.C. 20250.

Description of Series: All three series are expressed as percentages and cover the continental United States, i.e., excluding Alaska and Hawaii. Outstanding mortgage debt figures for series A5 are for January 1. The denominator of that series is for March 1 (for January 1 from 1910-28), and includes the value of both land and buildings. For census years (1965, 1960, 1955, etc.) these data are based on Census of Agriculture estimates; for intercensal years, they are based on interpolated estimates of land in farms and yearly index numbers of land values per acre.

The proportion of sales on credit (A3) and the debt-to-purchase-price ratio (*A2) are based upon from 10,000 to 15,000 sales of farmlands reported in annual mail surveys directed to farm real estate brokers and other local reporters each March. Most of the sales reported probably occur in the six months preceding the survey dates.

The Department of Agriculture feels the loan-to-purchase-price ratio (A2) has some significant limitations. "There are numerous . . . complications in obtaining a clear-cut debt-to-value ratio for farm real estate that are less likely to arise with residential properties where lending practices appear to be much more standardized. We have found in field interviews of farmland buyers that untangling the financing is often a difficult, if not impossible, job. Farmland buyers often use short-term loans to raise the downpayments, for example, or even for interim financing of a purchase until permanent financing can be arranged. Typically, they own additional property which can be pledged as security if needed. Also, short-term (production) credit, intermediate-term and long-term credit may be combined in a single credit arrangement." (Correspondence to the author from the U.S. Department of Agriculture, Economic Research Service, Farm Production Economics Division, January 3, 1967.)

Loan-to-Value Ratios on Farm Mortgage Loans

Series available from the source		Frequency and Period
A4	Average loan-to-value ratio on farm mortgages made in New York State by the Federal Land Bank of Springfield, Mass.	Av. 1921-30 1933-36 1937-40 A 1946-58

Source: This series is obtained from James S. Earley, "The Quality of Credit in the United States: A Summary Volume," NBER, in preparation. The ratios were calculated by George K. Brinegar, based on data supplied by the Federal Land Bank of Springfield, Massachusetts. The ratios are calculated as the mortgage amount as a per cent of the estimated "normal agricultural value" of the property.

Ratios of Liabilities to Equities, Agricultural Sector

Series included in this compendium		Frequency and Period
A6	Ratio of total liabilities to proprietors' equities, agricultural sector.	A 1930, 1940 on

Other series available from the source

A7	Ratio of total liabilities to equities, agricultural sector.	A 1900 . . . 39, 1945-58

Source: The ratio of total liabilities to proprietors' equities, series A6, is calculated from *The Balance Sheet of Agriculture*, published annually by the Economic Research Service, U.S. Department of Agriculture (available from Superintendent of Documents, Washington, D.C. 20402); 1967 issue (Agriculture Information Bulletin No. 329), Table 1, p. 2. These data are also published in the *Economic Report of the President* (in 1969, Table B-83). Series A7 is calculated from data in Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet of the United States*, Vol. II, Princeton for NBER, 1963, Tables III-3 and III-3b, pp. 130, 131 and 138. For discussions of the data from which these ratios are calculated, see the source documents.

Maturities on Farm Mortgages (USDA)

Series included in this compendium		Frequency and Period
A8	Average maturity on farm mortgages recorded, all lenders.	BiA 1949 on

Other series available from the source

A9	Average maturity on farm mortgages recorded, Federal land banks.	BiA 1949 on
A10	– insurance companies.	BiA 1949 on
A11	– banks and trust companies.	BiA 1949 on
A12	– individuals.	BiA 1949 on
A13	– Farmers Home Administration.	BiA 1961 on
A14	– production credit associations.	BiA 1961 on
A15	– miscellaneous lenders.	BiA 1949 on

Source: These series are obtained from publications of the Economic Research Service, U.S. Department of Agriculture, Washington, D.C. 20250: 1967 data in preparation; 1965 data from *Agricultural Finance Review* Vol. 28, November 1967, p. 39ff; 1949-53 and 1959-63 data from *Characteristics of Farm Mortgages Recorded*, USDA publications numbers ERS-61 of April 1962, ERS-136 of September 1963, and ERS-218 of February 1965; 1957 data from *Agricultural Finance Review*, Vol. 25, August 1964, Table 3, p. 33; data for 1955 not available.

Description of Series: These data are obtained from a survey by the Farm Credit Administration in cooperation with the federal land banks and from managers of federal land bank associations, county recorders, major life insurance companies and others. The 1963 data are based on about 53,000 farm mortgages recorded in approximately 1,600 counties in the United States. The data for 1949-53 are for the month of March; since 1957 they are for January, February and March. The figures for 1949-59 represent simple averages of the term of all loans; since 1961, the maturities are weighted by the amount of each loan. The miscellaneous lender category, series A15, includes mortgage and investment companies, savings and loan associations, state and local governmental agencies, merchants and dealers and unidentified lenders; for 1949-59 this category also includes the Farmers Home Administration and production credit associations (reported separately since 1961); in 1965 savings and loan associations are reported separately.

Examiner Ratings on Farm Loans

Series available from the source		Frequency and Period
A16	Examiner ratings on farm mortgages made in New York State by the Federal Land Bank of Springfield, Mass.; proportion graded "low" as to area and property.	A 1933-58
A17	Examiner ratings on Production Credit Association loans, proportion in Grade D ("deemed uncollectible in whole or in part").	A 1945-65
A18	Examiner ratings on Production Credit Association loans, proportion in Grade C ("serious weakness").	A 1945-65

Source: These series are published in George K. Brinegar and Lyle P. Fettig, *Some Measures of the Quality of Agricultural Credit*, Technical Paper 19, New York, NBER, 1968, Tables 23 and 27.

Description of Series: These series are based on data supplied to the authors by the Farm Credit Administration and the Federal Land Bank of Springfield, Massachusetts. They measure the quality of farm credit by showing the changing composition of loans between the proportion rated as high quality and the proportion graded as lower quality. For example, a decline in the proportion of loans in the weaker categories indicates an improvement in credit quality. For a complete discussion of the grading systems and their efficacy in distinguishing between good and bad loans, see the source paper.

Credit Experience on Farm Mortgages, Life Insurance Companies (LIAA)

Series included in this compendium		Frequency and Period
*A19	Delinquency rate on farm mortgages, past due 3 months or more, life insurance companies.	Q 1954 on
A23	Rate of foreclosures in process on farm mortgages, life insurance companies.	Q 1954 on
A24	Foreclosure rate on farm mortgages, life insurance companies.	A 1954 on

Source: These series are obtained from the Life Insurance Association of America, 277 Park Avenue, New York, N.Y. 10017. Current data are available from the Association on request.

Description of Series: The annual foreclosure rates are based on the experience of seventeen large life insurance companies (twelve companies prior to 1965, but the expansion of the sample did not change the rate significantly), which together account for 90 per cent of all farm mortgages held by all U.S. life insurance companies. The foreclosure rate is calculated by dividing the total of completed foreclosure actions by holdings at the beginning of the year. The source provides rates based on both amounts and number of mortgages; the series included in this compendium is based on amounts.

The rate of foreclosures in process and the delinquency rate are based on the experience of some seventy-eight companies accounting for about 85 per cent of total mortgages held by all United States life insurance companies. Rates based on both number and dollar amount of mortgages are presented in the source, and are calculated as of the end of the quarter. Delinquent farm mortgages are those on which interest payments are in arrears more than 90 days, and include mortgages in process of foreclosure. Seasonal adjustment factors for these two series were calculated by the NBER based on data from 1954 through 1968.

Credit experience data are also available from this source on residential mortgages and on multifamily and commercial mortgages; see the "Home Mortgage" and "Business Mortgage" sections of this listing.

Credit Experience of Farm Mortgage Loans

Series included in this compendium		Frequency and Period
A20	Delinquency rate on farm mortgages, life insurance companies.	A 1954 on

A21	– Federal land banks.	A 1940 on
A25	Rate of foreclosures in process on farm mortgages, life insurance companies.	A 1957 on
A26	Foreclosure rate on farm mortgages, life insurance companies.	A 1957 on
A27	Farm mortgages called for foreclosure as a per cent of loans outstanding, federal land banks.	A 1957 on
A28	Foreclosure rate on farm mortgages, Federal land banks.	A 1957 on

Source: The Federal land bank delinquency rate, series A21, is obtained from *Annual Reports* of the Farm Credit Administration, available from the Superintendent of Documents, Washington, D.C. 20402 (1966-67 issue, Table 9). The other series are all calculated from data in *Farm Mortgage Lending*, Economic Research Service, U.S. Department of Agriculture, Washington, D.C. 20250.

Description of Series: The FLB delinquency rate, A21, is defined as the number of loans with extensions or delinquent instalments as a per cent of the number of loans outstanding. Loans are classified as delinquent if payments are one day or more overdue. The series is reported as of the end of the fiscal year, June 30.

The other series are all based on dollar amounts and reported as of the end of the calendar year. The foreclosure rates, series A26 and A28, are calculated as the principal indebtedness on mortgages on properties acquired by foreclosure and voluntary conveyance during the year as a per cent of the principal indebtedness of mortgages outstanding at the beginning of the year. The rates of foreclosures in process are calculated as follows: the numerator for life insurance companies, series A25, is the principal indebtedness on foreclosures in process, and the numerator for the Federal land banks, series A27, is the principal indebtedness on mortgages called for foreclosure; the denominator for both series is the principal indebtedness of mortgages outstanding at the end of the year; both rates are then expressed as percentages. The delinquency rate from life insurance company data, A20, is calculated as the principal indebtedness on mortgages with interest overdue more than three months as a per cent of the principal indebtedness of loans outstanding at the end of the year.

The life insurance company data are based on reports from sixteen to twenty-two companies. All of the series cover forty-eight states except A21 which includes Alaska from 1960 and Hawaii from 1964.

Delinquency and Loss Rates on Farm Machinery Loans (USDA)

Series included in this compendium		Frequency and Period
A22	Delinquency rate on farm machinery loans.	A 1963 on
A36	Loss rate on farm machinery loans.	A 1964 on

Source: These series are obtained from articles in the *Agricultural Finance Review* (see Vol. 29, February 1969, p. 34), U.S. Department of Agriculture, Economic Research Service, Washington, D.C. 20250.

Description of Series: These series represent the experience of seven large farm machinery manufacturers in financing farm machinery and equipment purchases by farmers. The year usually ends October 31. The loss rate is defined as loans writ-

ten off as a per cent of loans outstanding at the beginning of the year. The delinquency rate represents loans overdue 60 days or more (six manufacturers) or 90 days or more (one manufacturer) as a per cent of loans outstanding at the end of the year.

Foreclosure Rates on Federal Land Bank Loans Made in New York State

Series available from the source		Frequency and Period
A29	Foreclosure rate on federal land bank loans made in New York State; foreclosures completed by April 30, 1958 on loans closed during the year as a per cent of all loans closed during the year which were disposed of by April 30, 1958.	A 1917-58
A30	Foreclosure rate on federal land bank loans made in New York State; current year's foreclosures as a per cent of loans outstanding.	A 1917-58

Source: These series were calculated from data of the Federal Land Bank of Springfield, Massachusetts by George K. Brinegar and Lyle P. Fettig, *Some Measures of the Quality of Agricultural Credit*, Technical Paper 19, New York, NBER, 1968; series A29 is published in Table 26, column 5; series A30, based on unpublished worksheets, is available from the NBER on request.

Description of Series: Series A30 is calculated in the conventional manner as foreclosures recorded during the year as a per cent of loans outstanding at the end of the year. Series A29 is one of the few available foreclosure rates that are calculated by the year the loan was made; i.e., the foreclosures are associated with the year the loan was closed (irrespective of the year in which the foreclosures were actually made) and the rate is calculated as those foreclosures as a per cent of all loans closed during that year, excluding loans still on the books as of April 30, 1958. It should be noted that since the data end with April 30, 1958, the loans made toward the end of the period have not been on the books long enough to generate meaningful experience data.

Bankruptcies Filed by Farmers

Series available from the source		Frequency and Period
A31	Bankruptcies filed by farmers.	A 1899 on

Source: This series is obtained from *Tables of Bankruptcy Statistics*, published annually for fiscal years ending June 30 by the Administrative Office of the United States Courts, Supreme Court Building, Washington, D.C. 20544. Historical data are published in *Historical Statistics of the United States, 1789-1945*, a Supplement to the *Statistical Abstract*, U.S. Department of Commerce, Bureau of the Census, 1949, available from Superintendent of Documents, Washington, D.C. 20402, Series E 256; historical data from 1945 on are available from the Division of Bankruptcy on request.

This series includes all petitions filed under some provision of the Bankruptcy Act by farmers, as interpreted and classified by the court clerks. Series on total, business and personal bankruptcies are presented in other sections of this compendium.

Loss Rates on Federal Land Bank Farm Mortgage Loans

Series available from the source		Frequency and Period
A32	Net loss rate on farm mortgage loans of Federal land banks.	A 1929-40
A33	Loss rate on Federal land bank loans made in New York State; losses realized by April 30, 1958 on loans closed during the year as a per cent of all loans closed during the year which were disposed of by April 30, 1958.	A 1917-58
A34	Loss rate on Federal land bank loans made in New York State; current year losses as a per cent of loans outstanding.	A 1917-58

Source: The net loss rate for all Federal land banks, series A32, was calculated by R. J. Saulnier, Harold G. Halcrow and Neil H. Jacoby in *Federal Lending and Loan Insurance*, Princeton for NBER, 1958, Table 29, p. 172. The loss rates on loans made in New York State were calculated from data of the Federal Land Bank of Springfield, Massachusetts by George K. Brinegar and Lyle P. Fettig, *Some Measures of the Quality of Agricultural Credit*, Technical Paper 19, New York, NBER, 1968; series A33 is published in Table 25, column 4; series A34, from unpublished worksheets of Brinegar and Fettig, is available from the NBER on request.

Description of Series: Series A32 covers all Federal land banks and is calculated as losses during the year, net of recoveries from national farm loan associations resulting from their endorsement of loans, as a per cent of year-end outstandings. Losses also include: throughout, charge-offs of principal and interest on mortgage loans; from 1935-37, net increases in valuation reserves maintained against farms owned outright or in process of acquirement; and from 1938 on, net increases in valuation reserves covering both loans and real estate transactions.

Series A34 is calculated in the conventional manner (as is A32) as losses realized during the year as a per cent of loans outstanding at the end of the year. Series A33 is one of the few available loss rates that are calculated by the year the loan was made; i.e., the losses are associated with the year the loan was closed (irrespective of the year in which those losses were actually realized), and the rate is calculated as those losses as a per cent of all loans closed during that year, excluding loans still on the books as of April 30, 1958. It should be noted that since the data end with April 30, 1958, the loans made toward the end of the period have not been on the books long enough to generate meaningful experience data.

Loss Rate on Production Credit Association Loans

Series available from the source		Frequency and Period
A35	Net loss rate on Production Credit Association loans.	A 1936-62

Source: This series is in two segments. The earlier segment (1936-50) is from *Risk Problems of Production Credit Associations*, Farm Credit Administration, Bulletin CR-5, January 1952, Table 4, p. 8, reprinted in R. J. Saulnier, Harold G. Halcrow and Neil H. Jacoby, *Federal Lending and Loan Insurance*, Princeton for NBER, 1958, Table 38, p. 189. The later segment (1945-62) was com-

puted from data provided by the Farm Credit Administration to George K. Brinegar and Lyle P. Fettig, and is published in *Some Measures of the Quality of Agricultural Credit*, Technical Paper 19, New York, NBER, 1968, Table 24.

Description of Series: The two segments are not completely consistent. The earlier segment was computed as actual plus estimated net losses for the calendar year as a percentage of average month-end balances, with 1949 and 1950 losses of taxable PCA's adjusted for the "general provision for undetermined losses." The later segment was computed as net losses during the calendar year for all PCA districts as a per cent of loans outstanding at the beginning of the year.

Debt-Payment-to-Income Ratios, State and Local Governments (Hempel)

Series included in this compendium		Frequency and Period
*S3	Ratio of state and local debt interest to general revenues.	A 1902 . . . 42, 1944 on
Other series available from the source		
S1	Ratio of state and local debt service charges to general revenues.	A 1922 . . . 46, 1948-67
S2	Ratio of state and local debt interest plus net retirements to general revenues.	A 1922 . . . 46, 1948-67

Source: For these series the interest and general revenues are obtained from U.S. Bureau of the Census, Governments Division, *Historical Statistics on Governmental Finances* (Vol. VI, No. 4 of 1962 Census of Governments) and *Governmental Finances in 1965-66*, GF No. 13, and subsequent issues (both sources available from Superintendent of Documents, Washington, D.C. 20402). Other figures (long-term principal charges and short-term debt) were compiled from records of *The Daily Bond Buyer* by George H. Hempel in *The Postwar Quality of State and Local Debt*, New York, NBER, 1971, Table 9 and data underlying Chart 7.

Description of Series: All of these series are calculated as percentages. The interest and general revenue data are for fiscal years ending June 30; other data are for calendar years. State and local general revenues include all revenues except utility, liquor and insurance-trust revenues. Net retirements are long-term debt retired less long-term debt refunded. Debt service charges include interest, net retirements and all short-term debt issued.

For a discussion of these series, see Hempel, Chapter 5.

Debt-to-Asset Ratios, State and Local Governments (Hempel)

Series included in this compendium		Frequency and Period
S5	Ratio of debt outstanding to property valuation, 200 largest U.S. cities.	A 1935-67

Other series available from the source

S4	Ratio of total liabilities to equities, state and local governments.	A 1900 . . . 39, 1945-58

Source; Series S5 is calculated as the median overall-all tax-supported debt outstanding as a per cent of the estimated true property valuation of the 200 largest cities in the United States (190 prior to 1940), and was obtained from unpublished data of Dun & Bradstreet by George Hempel; see his *The Postwar Quality of State and Local Debt*, New York, NBER, 1970, Chart 9. Series S4 is from Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet of the United States*, Vol.II, Princeton for NBER, 1963, Tables III-6 and III-6a. It is calculated as total liabilities of state and local governments as a per cent of their equities or net worth. Total liabilities are bonds and notes plus a small amount of trade credit. Equities are total assets less total liabilities.

Maturities of State and Local Government Bonds (Hempel)

Series available from the source		Frequency and Period
S6	Average maturity of state and local bonds issued.	A 1957-66
S9	Average maturity of state and local general-obligation bonds issued.	A 1957-66
S12	Average maturity of state and local revenue bonds issued.	A 1957-66
S7	Proportion of state and local bonds issued with maturity of 30 years or more.	A 1957-66
S8	Proportion of state and local bonds issued with maturity of 20 years or more.	A 1957-66
S10	Proportion of state and local general-obligation bonds issued with maturity of 30 years or more.	A 1957-66
S11	Proportion of state and local general-obligation bonds issued with maturity of 20 years or more.	A 1957-66
S13	Proportion of state and local revenue bonds issued with maturity of 30 years or more.	A 1957-66
S14	Proportion of state and local revenue bonds issued with maturity of 20 years or more.	A 1957-66

Source: These series were compiled by George H. Hempel from unpublished data obtained from the Investment Bankers Association, Washington, D.C. Series S7 and S8 are included in Chart 5 of Hempel's *The Postwar Quality of State and Local Debt*, New York, NBER, 1971. The data are on file at the NBER.

Debt Composition of State and Local Government Bonds (Hempel)

Series included in this compendium		Frequency and Period
S15	Nonguaranteed debt as a per cent of all state and local debt outstanding.	A 1946-67
S16	Revenue bonds as a per cent of long-term state and local bonds issued.	A 1926-67

Source: These series are calculated from George H. Hempel, *The Postwar Qaulity of State and Local Debt*, New York, NBER, 1971, Appendix Tables 1 and 2. Hempel's postwar data came from the Public Housing Administration (for Public Housing Authority debt) and from the Bond Buyer's *Municipal Finance Statistics*, Vol.IV, New York, 1966 (for bonds issued), and from the Governments Division, U.S. Bureau of the Census (for outstandings).

Description of Series: Unlike general-obligation bonds which are backed by the full faith, credit standing and taxing power of the issuing governments, the interest and principal on revenue bonds are repaid only from the earnings of the facility (e.g., toll road) for which the funds are borrowed. As Hempel points out, revenue bonds have been much more prone to default than have general-obligation bonds. These two series, therefore, show the proportion of state and local government debt that is in the riskier category.

Both series are based on dollar amounts. Data for series S16 on bonds issued are for calendar years. Data for series S15 are for fiscal years ending June 30, except prior to 1964 some local governments reported on different fiscal year bases. The numerator of series S16 on bonds issued is limited to revenue bonds, but the numerator of S15 on outstandings includes both revenue bonds and a relatively small amount of nonguaranteed special assessment bonds. In the latter series from 1948-51 the ratio is slightly understated because some nonguaranteed special assessment bonds were incorrectly classified as general obligations.

For a discussion of the relative trend of revenue bonds vs. general-obligation debt, see Hempel, Chapter 5.

Credit Ratings on State and Local Government Bonds (Hempel)

Series included in this compendium		Frequency and Period
S17	Proportion of all rated state and local bonds outstanding rated Ba and below.	A 1938 . . . 66
S18	Proportion of rated general-obligation state and local bonds outstanding rated Ba and below.	A 1943 . . . 66
S19	Proportion of rated state and local revenue bonds outstanding rated Ba and below.	A 1943 . . . 66
*S20	Proportion of all rated state and local bonds issued rated Ba and below.	A 1951 on

S21	Proportion of rated general-obligation state and local bonds issued rated Ba and below.	A 1957 on
S22	Proportion of rated state and local revenue bonds issued rated Ba and below.	A 1957 on

Source: These series are taken from George H. Hempel, *The Postwar Quality of State and Local Debt*, 1971, NBER, Chapter 7. He obtained the data from Moody's Investors Service and the Investment Bankers Association. The ratings on bonds issued can be maintained on a current basis from the *IBA Municipal Statistical Bulletin*, published quarterly by the Investment Bankers Association, 425 Thirteenth Street, N.W., Washington, D.C. 20004.

Other Data Available: In addition to the six series published in this compendium, Hempel's study also includes complete distributions of bonds issued and outstanding by rating class, Aaa through Baa, based on both dollar amounts and numbers. He also has series showing the proportion of the dollar value of unrated bonds to all bonds issued and outstanding.

Description of Series: All series included in this compendium are based on dollar amounts of bonds issued or outstanding. Public Housing Authority bonds are not included.

Although they do not specifically state their intentions this way, the agency ratings of state and local government bonds seem to represent essentially attempts to rank issues according to risk of default. Bonds are rated into nine different grades, but perhaps the most meaningful distinction for analytical purposes is the split between the investment (top four) grades and the subinvestment (lowest five) grades. The investment grades range from Aaa, the top rating, to Baa, which are lower medium grade bonds, neither highly protected nor poorly secured. Subinvestment grades include Ba-rated bonds, whose future cannot be considered well assured since the protection of interest and principal may be very moderate, down to grade C, the lowest rating (probably in default). The series included in this compendium show the proportion of all rated bonds that are classified in the subinvestment grades.

For a complete discussion of these series, see Hempel, Chapter 7.

Property Tax Delinquency Rate (Hempel)

Series included in this compendium		Frequency and Period
S23	Property tax delinquency rate, 200 largest U.S. cities.	A 1928-67

Source: This series is taken from George H. Hempel, *The Postwar Quality of State and Local Debt*, New York, NBER, 1971, Chart 16, and is based on unpublished data compiled by Dun & Bradstreet. It shows the per cent of current property taxes that are uncollected in the 200 largest cities in the United States; prior to 1946, data cover 197 cities with populations of 50,000 or more. While this series does not measure a specific characteristic of state and local government debt, it is nevertheless a useful indicator of quality in that it relates directly to a major source of funds from which that debt is repaid.

Municipal Bankruptcies (U.S. Courts)

Series included in this compendium		Frequency and Period
S24	Municipal bankruptcy cases filed.	A 1938 on

Other series available from the source

S25	Municipal bankruptcy cases concluded.	A 1938 on
S26	Admitted losses on municipal bankruptcy cases concluded.	A 1938 on

Source: These series are available on request from the Administrative Office of the United States Courts, Supreme Court Building, Washington, D.C. 20544. Historical data through 1966 are tabulated in George H. Hempel, *The Postwar Quality of State and Local Debt*, New York, NBER, 1971, in Table 3. The series are based on bankruptcy cases filed by state and local government units under the Federal Municipal Bankruptcy Act of 1937. The data are for fiscal years ending June 30.

In addition to these bankruptcy series, Hempel provides some information on defaults of state and local government bonds; see his Charts 1 and 2 for number of defaults annually prior to World War II and his Chart 3 for the dollar amount in default from 1948-68.

Characteristics of Margin Debt on Common Stocks (NYSE)

Series available from the source		Frequency and Period
M1	Ratio of value of collateral to common stock margin debt.	M 1965 on
M2	Proportion of customers having under 40 per cent equity in common stock margin accounts.	M 1965 on

Source: These series are obtained from "Stock Market Credit," a monthly research report published by the New York Stock Exchange, 11 Wall Street, New York, N.Y. 10005.

Description of Series: The ratio of collateral to debt, series M1, is the number of times that total margin debt owed to NYSE member firms by customers is covered by the listed stocks (and in a few cases bonds) held by NYSE member firms as collateral to secure the debt in common stock margin accounts.

The proportion of customers with less than 40 per cent equity, series M2, measures the prevalence of common stock margin accounts with relatively low equity – i.e., at the riskier end of the distribution. The per cent equity is calculated as the collateral value less debt, divided by collateral value.

These series are based on data collected by the New York and Midwest Stock Exchanges from over 330,000 margin accounts. The data cover almost 50 per cent of all customer common stock margin debt carried by NYSE member organizations. The sample includes all of the very largest and a representative selection of the medium-sized and smaller firms.

Ratios of Liabilities to Equities (National Balance Sheet)

Series available from the source		Frequency and Period
M3	Ratio of total liabilities to equities, all nonfinancial sectors.	A 1900 . . . 39, 1945-58
M4	Ratio of total liabilities to equities, all nonfinancial sectors.	A 1900 . . . 39

Source: These ratios are calculated from Raymond W. Goldsmith, Robert E. Lipsey and Morris Mendelson, *Studies in the National Balance Sheet of the United States*, Vol. II, Princeton for NBER, 1963, Tables I and Ia.

Description of Series: All nonfinancial sectors (series M3) include nonfinancial corporations, nonfarm unincorporated business, agriculture, nonfarm households, state and local governments, and the federal government. Private nonfinancial sectors (series M4) include all of the above less federal, state and local governments.

A distinctive feature of the *National Balance Sheet* data is that all items of assets and liabilities were valued at current or market prices, or their nearest feasible approximation. For most types of tangible assets, replacement cost (original cost adjusted for price changes and for capital consumption) was used. Claims and liabilities were entered in the balance sheet at face value. This represents an important difference from data based on book values. After a period of rising prices, a ratio of liabilities to equities will look considerably weaker if based on book values than if based on market values, since inflation adds to the value of assets but not to debt that has already been incurred. Thus, financial ratios computed from *National Balance Sheet* data are very useful series. Unfortunately, they are now a decade out of date, and are not easily brought forward; therefore, despite their value, we have chosen not to publish them in this compendium.

Default Rates on Foreign Bonds (Mintz)

Series available from the source		Frequency and Period
M5	Default index, at the close of 1937 of foreign government bonds issued in the United States.	Q 1920-30
M6	Default index, at the close of 1937 of foreign government bonds excluding Canadian bonds, issued in the United States.	Q 1920-30

Source: These series are published in Ilse Mintz, *Deterioration in the Quality of Foreign Bonds Issued in the United States, 1920-1930*, New York, NBER, 1951, Table 14, p. 90.

Description of Series: Mintz' data include government and government guaranteed or controlled bonds with terms of two years or more, publicly offered in the United States during 1920-30. There were 800 issues with a par value of a little over $7 billion, from forty-three borrowing countries in Europe, Latin America, the Far East, and (in M5 but not M6) Canada. For greater detail on the source of these data, see *ibid.*, pp. 9-10.

These default indexes are based on the nominal dollar amounts of the bonds, not the number of issues. The series are four-quarter moving averages, centered (thus, no seasonal adjustment is required).

A special feature of these series is the manner in which the bonds are classified as in default or not. One of the major questions in Mintz' study is the progressive deterioration of the quality of bonds issued through the 1920's. A default rate as of year-end 1937 based on the usual criteria of whether or not a bond was in default would show a bias of higher quality for those bonds issued in the early 1920's because of the longer period of prosperity available to those borrowers to repay all or part of their bonds and to use the borrowed funds to strengthen their economic position. To avoid this bias, Mintz classified all bonds as in default or not according to the status of the borrower at the end of 1937 rather than according to the date of the particular issue, i.e., if the borrower had an issue in default at that time, Mintz classified all issues of that borrower as defaulted (even

though some had in fact been fully repaid before year-end 1937). Mintz' default indexes, calculated in this manner, show a clear deterioration in quality through the 1920's.

Bankruptcies (U.S. Courts)

Series available from the source		Frequency and Period
M7	Total bankruptcies filed.	A 1900 on
M8	Total straight bankruptcies filed.	A 1940 on
M9	Total bankruptcies filed under special relief chapters of the Act.	A 1940 on

Source: These series are obtained from *Tables of Bankruptcy Statistics*, published annually for fiscal years ending June 30 by the Administrative Office of the United States Courts. Historical data are available on request from the Division of Bankruptcy, Supreme Court Building, Washington, D.C. 20544.

Description of Series: Total bankruptcies filed are comprised of all petitions filed under some provision of the Bankruptcy Act by employees, unemployed or retired persons, housewives and others not in business at the time of filing, persons in business and farmers, as interpreted and classified by the court clerks. Straight bankruptcies are all bankruptcies other than those filed under special relief chapters of the Act.

George Allen Brunner, in his book *Personal Bankruptcies: Trends and Characteristics*, Bureau of Business Research, Ohio State University, 1965, points out a number of inadequacies in the bankruptcy statistics. The series on total bankruptcies includes filings under relief chapters of the Act, such as Chapter XIII, and these are not true "bankruptcy" cases. Also, the official statistics take no note of companion case filings in which both the husband and wife have filed separate petitions covering essentially the same debts, and thus duplication results.

Despite these deficiencies, we have included the bankruptcy statistics in our list of credit quality series because, while the level of bankruptcies may well be overstated, as Brunner persuasively points out, changes over time may nevertheless provide a reasonably accurate picture of the trend of bankruptcies; and because these are among the few available series which provide an over-all indication of credit difficulties for the economy as a whole. The rising number of bankruptcy cases must of course be interpreted in the light of the growing population and the increasing use of credit, especially personal credit.

Series on personal, business and farm bankruptcies are presented in other sections of this compendium.