to finance the maintenance and improvement of their homes. Such credit may be used for the purchase and installation of equipment, such as heating and air-conditioning systems, hot water heaters, storm windows, and kitchen equipment, as well as for major alterations and additions.

Personal loans include all instalment loans not covered in the previous categories that are made by financial institutions to individuals for consumer purposes. Many of these loans are obtained for the consolidation of consumer debts, for the payment of medical, educational, or travel expenses, and for the payment of taxes or insurance premiums. Some loans used for the purchase of automobiles or other consumer goods may be classified as personal loans because the lender cannot identify them with purchases of specific goods.

Each of these types of instalment credit is subdivided according to the type of retail outlet or financial institution holding the credit. This method of classification does not necessarily indicate the originator of the credit. Credit held by financial institutions thus is classified according to its current holder, whether the institution made the loans directly to consumers or purchased the paper from the retail outlet that originated the credit. Only the paper retained by retail outlets is attributed to them in the breakdown of consumer instalment credit by holder.

Noninstalment credit. Noninstalment credit consists of those forms of consumer credit that are scheduled to be repaid in a lump sum. There are three major components: single-payment loans, charge accounts, and service credit.

Single-payment loans are noninstalment loans made directly to individuals for consumer purposes. Some credit of this type is used for the purchase of goods, but most is for meeting short-term needs such as for the payment of personal taxes or life insurance premiums.

Charge accounts represent noninstalment balances owed to retail outlets for purchases made by consumers. These are open accounts ordinarily payable in full within 30 days of billing. The charge-account segment also includes the amounts consumers owe on accounts at gasoline service stations or on miscellaneous credit-card accounts and on home-heating-oil accounts. Such indebtedness differs from other charge-account credit in that it does not take the form of outstanding balances on the books of retail outlets.

Service credit consists of the amounts owed by consumers to professional practitioners and service establishments. The largest element in service credit is the amount owed to doctors, hospitals, and other suppliers of medical services. Amounts owed to public utilities, less deposits and prepayments, are also substantial. The remainder of service credit represents amounts owed for a wide variety of services, including education, recreation, and such personal services as laundry, cleaning, and dyeing.

INSTALMENT CREDIT EXTENSIONS AND REPAYMENTS

Estimates of instalment credit extended, repaid, and outstanding represent summaries of accounting records. Conceptually, the amount of credit extended covers substantially all debit entries to the instalment receivable accounts of financial institutions and retail outlets for any given period and credit repaid covers substantially all of the credit entries. The amount of outstanding credit represents the sum of the balances in the accounts. Thus the difference between credit extended and credit repaid during any given period is equal to the change in the outstanding balance during the period, after allowance is made for losses and charge-offs.[2]

[2] In principle, charge-offs of bad debts should be excluded from repayments, and sale or transfer of existing paper among creditors excluded both from repayments and from extensions. In practice these rules cannot be fully implemented. In particular, information is not available to make separate estimates of the amount of charge-offs. Since the amounts involved under most circumstances are relatively small, charge-offs are

The amount of credit outstanding is constantly being altered as new credit is extended and as payments are made to retire credit previously extended. It is through this continuous process that economic events are reflected in the outstanding amount of credit. Credit extensions are much more dynamic and volatile than repayments, and they reflect more directly the impact of changing market conditions. The volume of each type of instalment credit extended is related in one way or another to the general level of income and consumption expenditures. It also reflects certain types of seasonal outlays—for example, tax payments on purchases of such seasonal equipment as air conditioners or home heating units. Repayments are governed by the amount and terms of past contracts and are affected by current economic developments only to the extent that these result in delinquencies or prepayments.

In addition to their usefulness in the analysis of instalment credit developments, data on extensions and repayments are valuable in interpreting other economic events. Because of the importance of instalment credit in consumer purchases of automobiles and other consumer durable items, information on the amount of instalment credit extended is often fundamental to the interpretation of developments in the markets for these products. And because of the contractual nature of repayments, information on their volume provides an indication of the current and prospective burden of instalment credit on consumers and may provide some insight into future expenditures by consumers.

Instalment credit may serve as an alternative to the use of accumulated savings, or it may provide the only way in which the consumer can finance his purchases. The amount of such credit that is used reflects to some extent the demand for the goods involved, the willingness of individual buyers to commit their future incomes, and the availability of credit on acceptable terms.

The terms on which credit is available vary somewhat from one type of credit to another. Downpayments may range from zero in the case of clothing or small items to one-third or more for automobiles. Maturities may range from a few months for some nondurable and small durable items to more than 3 years for repair and modernization loans and mobile homes. Contract terms are an important factor in the ability and willingness of consumers to use instalment credit to facilitate current purchases. Large downpayment requirements or large monthly instalments may make it impossible for some potential buyers to make purchases, particularly of the larger and more expensive items.

The relationship of repayments to the outstanding amount of credit differs for each type of credit because of differences in the rate of credit extension and variations in contract terms. Personal loans and "other consumer goods paper" normally have the shortest maturities, and the volume of repayments on such loans during any period of time is correspondingly large compared with the outstanding amount. Maturities on automobile paper are somewhat longer, with the result that repayments are not so large relative to amounts outstanding. In the case of repair and modernization loans, where contracts for 5 years or more are common, repayments are comparatively small in relation to the amount of credit outstanding.

Between credit extensions and repayments there is a direct relationship that stems from the nature of the instalment contract. Each instalment contract sets forth the schedule of repayments to be followed. Repayments are

included as repayments in most of the components of the Federal Reserve series. In that segment of the total where estimates of repayments are developed from data on collections, the effect of not knowing the volume of charge-offs is to reduce moderately the derived estimates of credit extended.

For a mathematical description of the relationship of credit extended and outstanding credit, see Appendix B by Paul A. Samuelson in Gottfried Haberler, *Consumer Instalment Credit and Economic Fluctuations* (National Bureau of Economic Research, New York, 1942).

to be made over a given number of months, and the payment in each month is to be only a fraction of the amount originally extended. Each month repayments originating from contracts written in the previous month add to the volume of repayments. At the same time, payments on earlier contracts that have expired drop out of the flow of repayments.[3] The relationship between extensions and repayments results in the varying lag that is observable in repayments as credit extensions expand or contract. The length of this lag depends upon the maturities of the contracts involved and varies with changes in maturities.

Wholesale transactions can affect the usual relationship of extensions to repayments for particular lender groups without affecting total consumer credit outstanding. When one type of lender sells consumer paper on its books to another lending institution, the transaction is customarily recorded in the Federal Reserve series as a rise in repayments to the seller and a decline in his consumer accounts receivable, and as a corresponding increase in the extensions and outstandings of the purchasing institution.

Generally, however, adjustments are called for if such shifts in ownership of consumer paper are sizable. These adjustments are most frequent in nonautomotive consumer goods paper, and most of them involve a transfer between the retail parent and its finance subsidiary. Such transactions, although necessarily reflected in the outstanding balances of both seller and purchaser, often have little or no economic significance, and they have no effect on the debt position of consumers. Therefore, an effort is made to exclude such shifts from the estimates of extensions and repayments for both holder groups. This procedure also tends to prevent distortion of seasonal behavior in the extensions and repayments series. It should be noted, however, that when such adjustments are made, the net balance of extensions over repayments for each of these two holder groups differs from the change in their holdings during that month.

The ratio of repayments to the amount of instalment credit outstanding at the beginning of the month is sometimes used to estimate the average duration of such indebtedness. Letting R equal the ratio of repayments to the outstanding amount at the beginning of the period, the average maturity in months is

$$\frac{2}{R} - 1.$$ [4]

This formula assumes that the level of credit extensions is stable, whereas in practice credit extensions are rarely stable over periods of more than a few months. The formula thus tends to understate or overstate the average maturity according to whether the volume of extensions is expanding or contracting.

This formula sometimes is used to measure the average maturity of contracts currently being written. But in this use the limitations of the formula are even greater, because repayments on contracts currently being written are such a small proportion of each month's total repayments.

RELATION TO OTHER STATISTICS

Several features of the extensions and repayments data need to be borne in mind. Like the estimates of the amount outstanding, estimates of instalment credit extended include any financing and insurance charges that are part of the instalment contract. Similarly, instalment credit repayments include the payments on these charges. The inclusion of financing charges is general for most types of instalment contracts, because these charges

[3] This pattern is interrupted only when delinquencies or prepayments occur. Some prepayments are the result of refinancing, when a new loan is made for the purpose of retiring an existing loan. In such cases, the transaction takes the form of equal increases in both extensions and repayments during the period.

[4] For a more detailed description of this formula, see Milan V. Ayres, *Instalment Mathematics Handbook* (Ronald Press, 1946), pp. 100-03.