

# economic review

SEPTEMBER 1965

---

## IN THIS ISSUE

Debt and the Economy . . . 3

Some Perspective on  
Foreign Exchange Rates 24

FEDERAL RESERVE BANK OF CLEVELAND

Additional copies of the ECONOMIC REVIEW may be obtained from the Research Department, Federal Reserve Bank of Cleveland, Cleveland, Ohio 44101. Permission is granted to reproduce any material in this publication.

## DEBT --

This article is concerned with an area about which nearly everyone has something to say, and usually from a fairly fixed and passionate point of view. At the same time, it is an area, unfortunately, about which economists and economic literature have provided relatively little that can be taken as authoritative and definitive. Over and above the fact that the economy needs debt to function—on this point there is virtually no disagreement—there is little in the way of benchmarks or yardsticks suggesting *how much debt* the economy *ought to have* or *can have*. Because of the lack of standards or benchmarks, there is wide disagreement as to how debt can be meaningfully measured or evaluated, for example, regarding its growth and composition. The confusion and diverse opinions that sprout whenever debt is discussed are suggested by the following quotation:

Not long ago one of our elder statesmen made a campaign speech in which he

announced with rage and shock, 'the debts of the American people today are higher than ever before in our history!' It is an effective point and he delivered it well—as he should. He has been saying it for years. It is a line that suggests evil doings in high places and has the special political advantage that it is almost always true. It is virtually an economic law and its corollary is that we are almost always upset about it.

A few years ago we were shocked by the rapid growth of farm debt, then we were dismayed by the expansion of business debt, then Congress got worried about housing debt, and the President became concerned about consumer debt.

Meanwhile, when things became slack, we all fussed about the national debt. But why? Why do we continue to accumulate debts when they cause us so much concern?<sup>1</sup>

<sup>1</sup> See Marshall A. Robinson, *Debt and the American Economy*, The Brookings Institution, Washington, D. C., 1959, p. 1.

## -- AND THE ECONOMY

### THE ECONOMICS OF DEBT

*This section attempts, perhaps heroically, to come to grips with the question posed in the foregoing quotation. The creation of debt is part of a process by which the surplus purchasing power of savers is placed in the hands of deficit spenders. In other words, the creation of debt involves a transfer of purchasing*

*power from those spending units—individuals, families, business concerns, government bodies, etc.—that save a part of their current incomes to those spending units desiring to make outlays in excess of their current incomes. Such transfers of purchasing power involve the incurrance of debt, that is, an obliga-*

## ECONOMIC REVIEW

tion on the part of a borrower to make repayment at some future time. But, simultaneously, such transfers of present purchasing power also involve the creation of a financial asset held by the lender, that is, a claim to future purchasing power. Thus, the creation of debt involves the simultaneous creation of offsetting assets and liabilities.

Debt is created (and accumulated) because it is essential to the proper functioning of an economy such as that of the U.S. Economic growth, which is one important measure of economic performance, depends to a large extent on a nation's willingness to forego the immediate consumption of part of its current output in favor of acquiring the means of producing a larger output for future consumption. Stated somewhat differently, satisfactory economic growth depends on adequate levels of savings and capital formation. Another, though less measurable, index of economic performance is the extent to which scarce resources are allocated to the most productive uses. Optimum savings and investment levels and an efficient redistribution of savings, which involves shifting control over resources to those best able to determine their use, are facilitated by the process of debt creation.

Consider, for example, an economy in which a debt process does not exist; that is, consider an economy in which no spending unit is able to spend more than the sum of its current income and financial savings. Surely, some saving and, therefore, capital accumulation will take

place. The levels of savings and investment, however, would almost certainly be less than optimum. Some spending units that foresee profitable investment opportunities would be restrained by a lack of purchasing power. Other units, having no such desirable opportunities, would have to choose between consuming all their current income, hoarding a portion of such income in the form of generalized purchasing power, or making less productive investments. In any event, a less than optimum share of scarce resources would be devoted to capital formation.

Suppose now that debt creation becomes possible. Spending units with profitable investment opportunities would compete with each other to acquire necessary purchasing power from saving units. The latter, as a general matter, might be inclined to transfer purchasing power to these units for any of several reasons. First, because they expect to share in the returns earned on the investment, such units stand ready to receive a larger amount of future purchasing power—an amount, perhaps, sufficient to cause individuals to forego some present consumption. Second, the opportunity cost of hoarding rises considerably as excess funds can earn an interest return. Finally, by lending to those perhaps more qualified to make investments, savers now have opportunities to earn better returns than the returns formerly earned on capital they themselves had acquired. In summary, then, the economy benefits by encourag-

*ing, through the process of debt creation, a separation between the function of saving and the function of investment.*

*The transfer of funds from savers to investors is facilitated by the existence of financial institutions and financial markets. The principal function of financial institutions such as commercial banks, mutual savings banks, insurance companies, and savings and loan associations, among others, is to perform as intermediaries in the transfer of purchasing power between ultimate lenders and ultimate borrowers. More specifically, the principal function of financial intermediaries is to purchase the debt instruments of ultimate borrowers and to issue their own debt instruments for the portfolios of ultimate lenders. Individual savers, therefore, have a choice of acquiring claims either on the ultimate borrower or on an intermediary institution.*

*As implied, the existence and development of financial intermediaries tend to raise the level of savings and investment and, at the same time, to increase the efficiency of resource allocation. Consider, in this connection, the following statement pertaining to intermediation:*

Financial intermediaries exploit economies of scale in lending and borrowing. On the lending side, the intermediary can invest and manage investments in primary securities (i.e., debt instruments issued by ultimate borrowers) at unit costs far below the experience of most individual lenders. The sheer size of its portfolio permits a significant reduction in risks through diversification. It can schedule maturities so chances of liquid-

ity crises are minimized. . . . On the borrowing side, the intermediary with a large number of depositors can normally rely on a predictable schedule of claims for repayment and so can get along with a portfolio that is relatively illiquid. The advantages of large-scale borrowing and lending with numerous creditors (i.e., holders of claims on the intermediary) and debtors (those whose debt instruments are held by the intermediary) can be distributed to the intermediary's debtors in the form of favorable terms of lending, to its creditors in the form of interest payments and other benefits, and to its stockholders in the form of sufficient dividends to attract additional capital funds.<sup>2</sup>

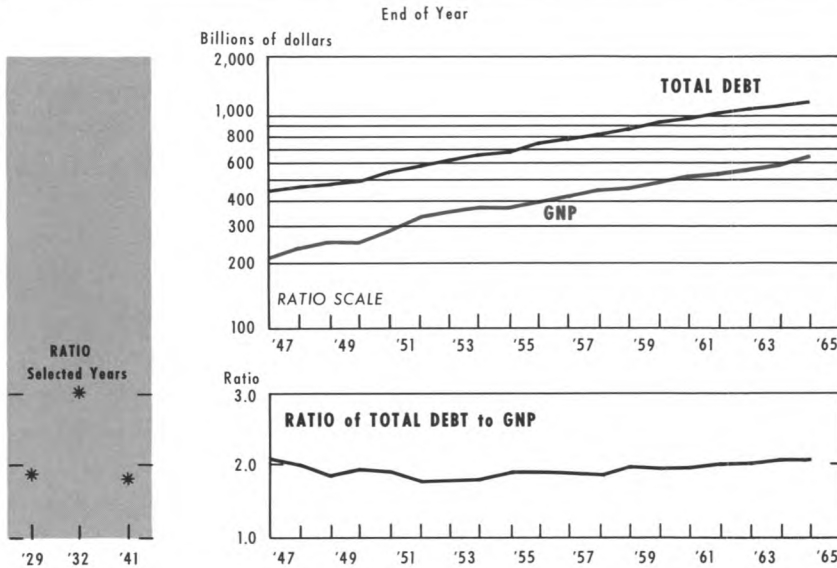
*Individual lenders and borrowers are less likely to agree easily upon terms (concerning the type of debt security, duration of loan, repayment procedure, etc.) that are suitable for both parties. This, together with the risks attached to a lack of portfolio diversification, would likely result in lower rates of saving and capital formation. Intermediation by financial institutions, however, "give(s) lenders a wide variety of financial assets particularly suited to their needs, and . . . also make(s) it less necessary for borrowers to issue these types of securities, which are ill-adapted to their own businesses."<sup>3</sup>*

*Most observers would agree, at least in principle, that debt plays a particularly important and beneficial role in our economy. In considering specific*

<sup>2</sup> See J. G. Gurley and E. S. Shaw, *Money in a Theory of Finance*, The Brookings Institution, Washington, D. C., 1960, p. 194.

<sup>3</sup> *Ibid.* p. 197.

DEBT and ECONOMIC ACTIVITY



Source of data: U.S. Department of Commerce

aspects of debt, however, all semblance of agreement vanishes. Thus, an active and continuous debate rages regarding such questions as how much debt the economy ought to have, and how this debt should be distributed among different sectors of the economy. Unfortunately, economists have yet to provide adequate answers to these important public policy questions.

To gain some perspective on the magnitudes and relationships associated with debt, the following pages are devoted to the "numbers" and some of their implications. Unfortunately, there are no answers provided—if there are "answers." The discussion centers on aggregate data—the broad or global statistics—as well as disaggregated data—the major sectors of the economy.

THE BIG PICTURE

As indicated in Chart 1, at the end of 1964, total debt in the economy had reached nearly \$1.3 trillion, which admittedly is an astronomical figure. Total debt had thus doubled since 1953, and had increased nearly three times since the end of World War II (the average annual rate of growth during 1947-1964, inclusive, amounted to 6.06 percent). In the way of historical comparison, total debt had amounted to \$228 billion in 1941, \$179 billion in 1932 (the low level during the 1930's) and \$196 billion in 1929. Admittedly, magnitudes such as these—outside of sheer size—do not mean very much by themselves; they should be compared with or contrasted to other relevant magnitudes.

A comparison often made is that with the Gross National Product in order to get an impression of the magnitude of debt in terms

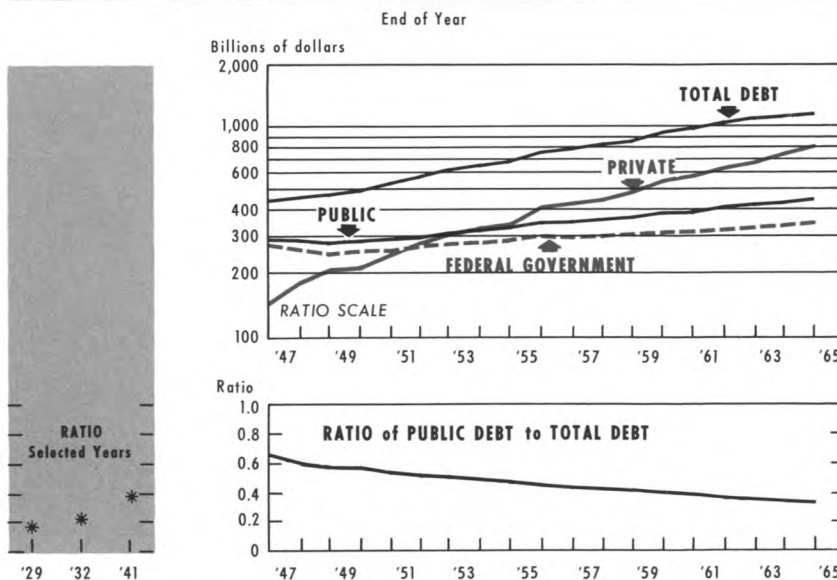
of the total value of the nation's current output as well as the nation's ability to service debt out of current production. As Chart 1 shows, the movements of total debt and GNP, although characterized by some unevenness, have been largely parallel, especially in recent years. This is confirmed by the ratio of total debt to GNP, shown in the bottom panel of the chart. In 1964, the total debt/GNP ratio was 2.04, not much higher than during most of the postwar period, and actually below 1946. (The annual growth rate of GNP, in current dollars, during 1947-1964, inclusive, was 5.92 percent.) As the ratio line indicates, the debt/GNP ratio has tended to decline, or increase less, during recession periods (1948, 1953, 1957), as debt has increased less, or has fallen more, than GNP. Again for historical interest, and as shown in the left-hand panel, the debt/GNP ratio was 1.9 in 1929, 3.1 in 1932 (when GNP had

declined drastically) and 1.8 in 1941. There is implicit in these figures an important phenomenon. As has been pointed out elsewhere, in a somewhat different context, the rapid expansion in total debt since World War II really has not represented "a breakthrough to unprecedentedly high levels relative either to GNP or to after-tax income. Rather, this expansion has represented a process of catching-up."<sup>4</sup> In other words, rising debt—and, as will be seen, this applies only to private debt—has been making up ground lost during the depression of the 1930's and the war years. (All of the net increase in total debt from 1930-1945 was accounted for by the Federal Government.)

<sup>4</sup> See C. Canby Balderston, "Borrowing Short and Lending Long," Address before the Fiftieth Annual Fall Conference of the Robert Morris Associates, Montreal, Canada, September 28, 1964, p. 5. (Mimeographed.)

2

## PUBLIC and PRIVATE DEBT



Source of data: U.S. Department of Commerce

## ECONOMIC REVIEW

### PUBLIC AND PRIVATE DEBT

One way to analyze total debt is to separate public and private debt. As Chart 2 shows, private debt clearly accounts for a larger proportion of total debt; since private debt has been increasing faster than public debt, the proportion has risen in each year of the postwar period. (Since 1947, private debt has increased at an average annual rate of 9.34 percent and public debt at 2.67 percent.) At the end of 1964, private debt amounted to \$819 billion, or about 65 percent of total debt. Private debt more than doubled from 1955 through 1964, and increased more than four times during 1947-1964, inclusive. While private debt as a ratio of total debt was 0.65 in 1964, it had been 0.50 in 1952, and about 0.40 in 1947. In connection with this increase, the catching-up of private debt referred to earlier should be recalled. As a ratio of total debt, private debt amounted to 0.60 in 1941 — which was the prewar *low* — and 0.82 in 1929. As indicated earlier, total private debt actually began to decline in 1929; there was no increase again until the very late 1930's, and private debt did not regain its 1929 level until 1947.

From Chart 2, some observations about public debt are readily apparent. First, public debt as a ratio of total debt amounted to 0.35 at the end of 1964. (See lower panel of Chart 2.) In comparison with private debt, public debt has increased moderately since World War II, becoming a much smaller proportion of total debt — and GNP. In the case of the latter, it means that public debt is presently less of a burden for the economy than earlier. Within total public debt, Federal debt has

not increased anywhere as fast as that of state and local governments (during 1947-1964, inclusive, Federal debt increased at an average annual rate of 1.65 percent and that of state and local governments at 10.56 percent). This is revealed by the widening gap between Federal debt and total public debt in Chart 2. At the end of 1964, gross Federal debt amounted to \$356 billion, and was 20 percent larger than in 1955 (private debt had doubled over the same period) and was about one-third higher than in 1947 (private debt had increased more than four times). State and local debt amounted to \$92 billion in 1964, and had more than doubled since 1955 and had increased more than five times since 1947.

### PRIVATE DEBT, LIQUIDITY, AND INCOME

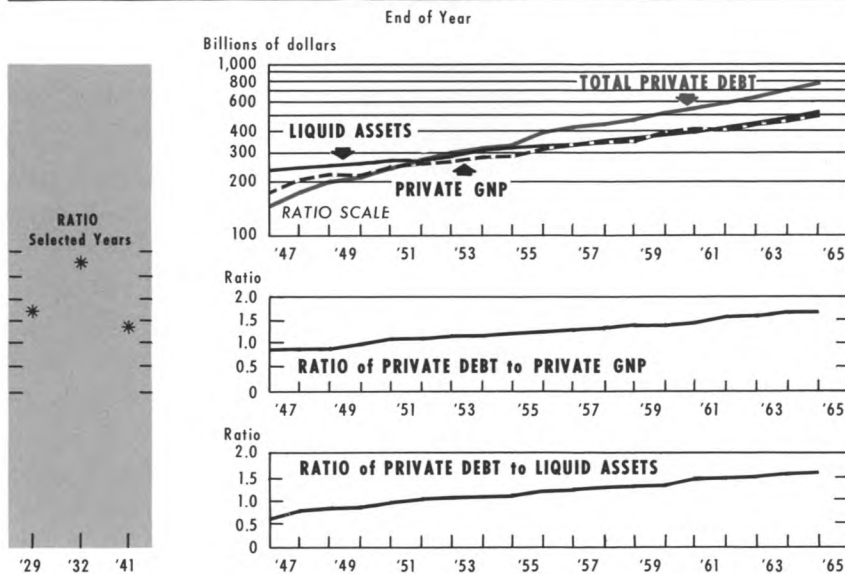
On the basis of the foregoing numbers, it would seem not unreasonable to suggest that if debt in the economy is a matter of concern — as to problems of servicing it, or as to quality or rates of growth — the area to be concerned with is private debt. In Chart 3, the following series are plotted: (1) total private debt, (2) liquid assets held by the nonbank public — money, savings deposits and shares, and the like, and (3) private GNP.<sup>5</sup>

The relationship of private debt to private GNP provides an indication of the private sector's ability to service debt out of current income. Private debt in relation to liquid assets provides some indication of the private sector's ability to adjust to an unexpected adverse turn of economic events. If income

<sup>5</sup> Total GNP less Government purchases of goods and services.



**PRIVATE DEBT, LIQUID ASSETS, and INCOME**



Sources of data: U.S. Department of Commerce and Board of Governors of the Federal Reserve System

is maintained at high and growing levels, the ability to handle debt out of current income is obviously enhanced; this ability is importantly backstopped by the accumulation of liquid assets, which by definition are readily convertible into cash.

If one looks at the numbers, some *casual* observations can be made. The word "casual" is emphasized because it is in this connection that existing knowledge is probably most deficient. For example, it is not known what relationship between income and debt is appropriate or desirable or sustainable, and what volume of liquid assets is sufficient. It is generally agreed among most observers that if income continues to advance strongly, the likelihood of problems emerging from debt is considerably reduced — or if there are

problems, they would be concealed or deferred.

With reference to the numbers, private debt, on balance, has been obviously outstripping both private GNP and liquid assets, a pattern that has pretty much characterized the postwar period. However, in recent years, increases in the ratio of private debt to liquidity have slackened, as indicated in Chart 3. This suggests that the private sector of the economy is nearly holding its own in building a cushion against its debt, which cannot help but be a favorable thing. On the other hand, the ratio of private debt to private GNP has continued to increase throughout the postwar period. As Chart 3 shows, that ratio has almost doubled in the postwar period, rising from 0.87 in 1947 to 1.66 in 1964. While the

## ECONOMIC REVIEW

ratio for 1964 was virtually the same as that for 1929, it was more than one-third lower than for 1932, which was the peak year during the 1930's. The ratio declined appreciably during World War II, reflecting sharp increases in income.

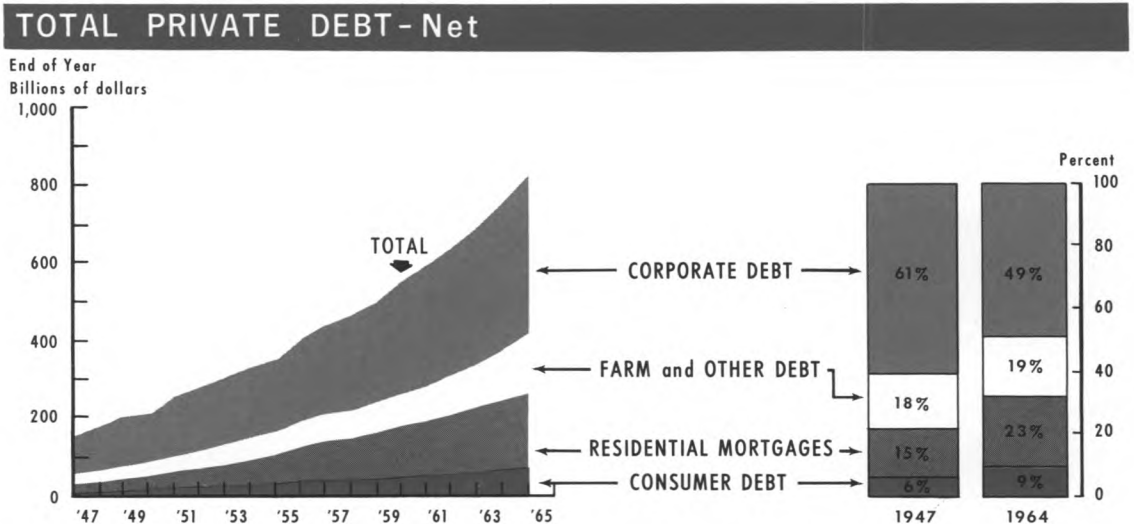
If historical comparisons mean anything — and they may not — the current ratio of private debt to private GNP is relatively low. Moreover, the transformation of the economy — the built-in correction factors and the improved institutional arrangements — would suggest that the economy can handle more debt than it could earlier. At least this would appear to be the case when considering the broad aggregates. What the case is within or behind the broad statistics on private debt may or may not be another matter. The rest of this article is concerned with the major components of private debt.

## HOUSEHOLD DEBT

Private debt is the sum of corporate debt and of individual and noncorporate debt. The latter, in turn, includes consumer debt and residential nonfarm mortgages — here referred to jointly as "household debt" — along with several categories that are not dealt with in this article, such as farm debt and other noncorporate business debt.

Currently, about one-half of total private debt is owed by corporations, while household debt — as defined here — represents one-third of the total (see Chart 4). Household debt, however, has grown faster than corporate debt during the postwar years, with an accompanying shift in the proportions of total private debt accounted for by the two major segments. A sevenfold rise in household debt to \$264 billion during 1947-1964, inclusive, contrasted to a less than fourfold advance in corporate debt to \$402 billion.

4



Sources of data: U.S. Department of Commerce and Board of Governors of the Federal Reserve System

Nonfarm residential mortgages, the long-term portion of household debt, account for about seven out of every ten dollars of household indebtedness, or about the same proportion as in 1947. The growth of residential mortgage debt during the postwar period from close to \$27 billion in 1947 to \$187 billion in 1964 has been steady and virtually uninterrupted, reflecting a fairly steady increase in private home ownership. While residential mortgage debt has contributed a large share of the growth of total household debt, its rise appears to have created less concern than has the expansion of consumer debt, except perhaps for the growing practice of refinancing mortgages for purposes other than the financing of home ownership. Anticipated acceleration in the rate of family formations over the next few years can be expected to speed up the growth in residential mortgage debt.

*Consumer Credit.* Consumer credit, which represents the short- and medium-term portion of household debt and contributes three out of every ten dollars to the total, tends to occupy a larger place in discussions

on debt than might be warranted by its size, which is less than one-tenth of total private debt. Its growth from \$11.6 billion to \$76.8 billion during 1947-1964, inclusive, was accompanied by shifts in the relative shares of its two major components, instalment and noninstalment credit, as well as among the several types of instalment credit. (See Table I.)

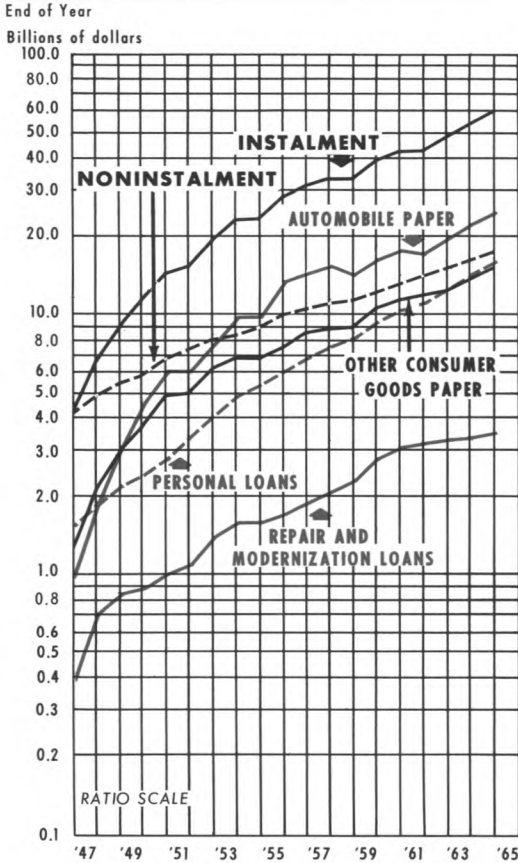
From Chart 5, it is apparent that the use of instalment credit by consumers has increased during the postwar period at a much faster rate than the use of noninstalment credit (see also Table I). In part, this reflects the catching up of instalment debt for consumer items that had been in limited supply during the war. For example, the large rise in automobile loans—a nearly thirteenfold increase between 1947 and 1964—was partly the result of a rapid recovery in automobile loans from a very low base during the early postwar years as production began to catch up with pent-up demand for cars. But even after the readjustment, automobile credit has been a major force in the continued rise in the volume of instalment credit, sharing that role with personal loans, which have expanded even

**TABLE I**  
**Consumer Credit Outstanding, 1947 and 1964 (end of year)**

	1947		1964		1964 as a Multiple of 1947
	Amount (billions)	Percent of total	Amount (billions)	Percent of total	
TOTAL . . . . .	\$11.6	100.0%	\$76.8	100.0%	6.7
NONINSTALMENT . . . . .	4.9	42.3	17.4	22.7	3.6
INSTALMENT . . . . .	6.7	57.7	59.4	77.3	8.9
Automobile paper . . . . .	1.9	16.6	24.5	31.9	12.9
Other consumer goods paper . . . . .	2.2	18.5	15.3	19.9	7.0
Repair and modernization loans . . . . .	0.7	6.2	3.5	4.6	5.0
Personal loans . . . . .	1.9	16.4	16.1	20.9	8.5

Source: Board of Governors of the Federal Reserve System

**COMPONENTS of CONSUMER CREDIT OUTSTANDING**



Source of data: Board of Governors of the Federal Reserve System

faster than automobile debt due largely to the growing variety of purposes for which personal loans have come to be used.

Instalment credit is sensitive to changes in business conditions, as the data in Chart 5 illustrate. The strength of consumer demand is closely related to the general level of economic activity; the willingness of consumers to commit a portion of expected future income for the purchase of automobiles or other high-

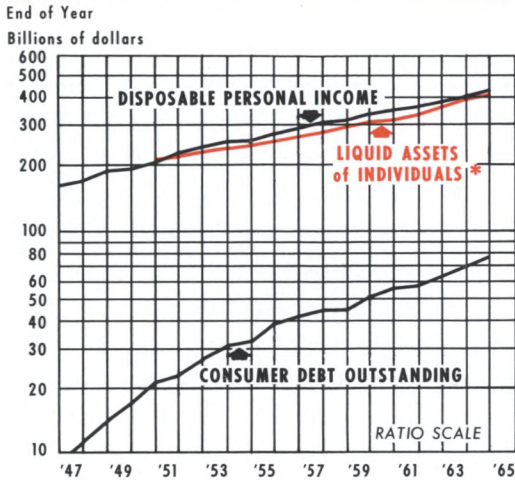
cost items, for which instalment credit is generally used, reflects consumers' confidence in current and future income levels. The slowdown or reduction in instalment credit, notably for automobile and other consumer goods, that occurs during periods of business decline—for example, 1954, 1958, 1961—can be seen in Chart 5.<sup>6</sup> Conversely, the increase, or acceleration, in the same series during recovery periods, as consumer confidence is restored, is also suggested in the chart. At the same time, it is significant that the volume of personal loans has continued to rise virtually uninterrupted even during periods of business recession.

The growing use of instalment credit has been facilitated by a generally favorable economic climate during much of the postwar period, particularly by rising consumer income and its discretionary portion, which has served to augment the debt-carrying capacity of consumers. An adequate supply of lendable funds, offered by a growing number of financial institutions on terms acceptable to consumers, has been an important contributing factor. Undoubtedly, also, the adoption of highly alluring methods designed to put consumers into a buying mood has helped to carry the "buy now, pay later" way of life into new territory, in some cases perhaps beyond limits of prudence.

On the other hand, the creation of additional consumer buying power by means of credit has tended to stimulate economic activity by increasing current demand for many types of consumer goods and services. It may well be questioned, for example,

<sup>6</sup> This relationship would, of course, be more precisely demonstrated by the use of monthly data.

## CONSUMER DEBT, INCOME, and LIQUID ASSETS



\* Data not available prior to 1950

Sources of data: U.S. Department of Commerce; Securities and Exchange Commission; Board of Governors of the Federal Reserve System

whether the production and sale of seven or eight million automobiles per year — including the beneficial effects reaching far beyond the automotive industry — would be feasible, or possible, without extensive use of consumer credit. Nevertheless, it is legitimate to ask whether consumer debt is growing too fast in relation to the general growth of the economy and whether corrective or preventive measures should be considered to forestall possible economic dislocations.

*Too Much Consumer Debt?* Due to the lack of generally accepted standards by which current levels of consumer credit could be measured, and tagged either "safe" or "dangerous," there are no clear-cut answers to those questions. However, it is perhaps helpful to consider consumer credit along with economic variables — personal income after taxes and liquid assets — that

reflect the ability of consumers to carry and/or liquidate their debts.

As Chart 6 indicates, consumer credit outstanding amounts to only a fraction of total annual disposable income. The size of that fraction, however, has grown from one-fifteenth to more than one-sixth of disposable income during the postwar period, a reminder of the rising popularity of consumer credit as a method of financing large purchases. Instalment credit, which, as previously stated, has grown faster than noninstalment credit, has accounted for the major share of the inroad of consumer credit upon disposable income. (See Table II.)

**TABLE II**  
**Consumer Credit and Components as Percentages of Disposable Personal Income**

Year	Total Consumer Credit <sup>a</sup>			Instalment Credit Repayments <sup>b</sup>
	Consumer Credit <sup>a</sup>	Instalment Credit <sup>a</sup>	Noninstalment Credit <sup>a</sup>	
1947	6.8%	3.9%	2.9%	6.0%
1948	7.6	4.8	2.9	7.0
1949	9.2	6.1	3.0	8.2
1950	10.3	7.1	3.3	8.9
1951	10.0	6.7	3.3	10.1
1952	11.5	8.1	3.4	10.7
1953	12.4	9.1	3.3	11.0
1954	12.6	9.2	3.5	11.8
1955	14.2	10.5	3.6	12.3
1956	14.5	10.8	3.6	12.7
1957	14.6	11.0	3.6	12.9
1958	14.2	10.6	3.6	12.7
1959	15.3	11.6	3.6	12.6
1960	16.0	12.2	3.8	13.1
1961	15.8	11.9	3.9	13.1
1962	16.4	12.5	3.9	13.2
1963	17.4	13.4	4.0	13.7
1964	17.8	13.8	4.0	14.0

<sup>a</sup> Outstanding at end of period.

<sup>b</sup> Annual totals.

NOTE: Due to rounding, percentages for instalment and noninstalment credit do not in all cases add up to total consumer credit.

Sources: Board of Governors of the Federal Reserve System; U. S. Department of Commerce

## ECONOMIC REVIEW

Since the terms of maturity vary for consumer credit, especially for the instalment portion, debt repayments, rather than the amount of debt outstanding, offer a better measure of the proportion of current spendable income that is required to pay for past purchases and is thus unavailable as current consumer purchasing power. As shown in Table II, the increase in repayments as a proportion of disposable income, while somewhat less than the increase in total instalment credit outstanding as related to income, has been steady. This development has been viewed with alarm by some observers at different times. No convincing reason has as yet been presented for considering the present ratio of about 14 percent—or the previous 12 percent or 13 percent—as an absolute upper limit. There is, furthermore, no assurance

that the expected rise in the number of young families, who commonly rely heavily upon instalment credit, will not cause a further increase in that ratio in the years to come.

The making of repayments causes an individual borrower to suffer an actual reduction in his personal current spending power. A proportionate restraint, however, does not necessarily apply to all spending units, taken as a whole, since not all families are using instalment credit.

In times of declining incomes, consumers can, if necessary, fall back upon their reserves to meet loan repayments. As shown in Chart 6, liquid assets held by individuals have been increasing virtually *pari passu* with income. Of special importance is the fact—shown by the data in Table III—that consumers in the aggregate have added a larger amount

**TABLE III**  
**Debts and Liquid Assets of Consumers**  
(In Billions of Dollars)  
Year-end Data

Year	Liquid Assets	Annual Increase		Net Change	
		Consumer Debt Outstanding	Household Debt Outstanding*	Liquid Assets against Consumer Debt	Liquid Assets against Household Debt
1951 . . . . .	\$ 6.5	\$1.2	\$ 7.4	\$+ 5.3	\$— 0.9
1952 . . . . .	10.6	4.8	11.3	+ 5.8	— 0.7
1953 . . . . .	9.0	4.0	11.2	+ 5.0	— 2.2
1954 . . . . .	8.6	1.1	10.2	+ 7.5	— 1.6
1955 . . . . .	10.7	6.4	18.3	+ 4.3	— 7.6
1956 . . . . .	11.2	3.6	13.9	+ 7.6	— 2.7
1957 . . . . .	11.7	2.3	10.4	+ 9.4	+ 1.3
1958 . . . . .	12.7	0.3	9.9	+12.4	+ 2.8
1959 . . . . .	19.4	6.4	18.9	+13.0	+ 0.5
1960 . . . . .	8.0	4.5	14.4	+ 3.5	— 6.4
1961 . . . . .	17.5	1.7	12.6	+15.8	+ 4.9
1962 . . . . .	28.8	5.5	17.6	+23.3	+11.2
1963 . . . . .	30.9	6.7	21.0	+24.2	+ 9.9
1964 . . . . .	33.0	6.9	22.4	+26.1	+10.6

\*Includes consumer credit and nonfarm residential mortgages.

Sources: U. S. Securities and Exchange Commission; U. S. Department of Commerce; Board of Governors of the Federal Reserve System

to their liquid assets than to their total debt in each of the 14 years since 1950 (see the "net change" column of liquid assets against consumer debt). If comparison is made between liquid assets and total household debt (mortgages plus consumer debt), the result shows that debt has outpaced liquid assets in seven of the ten years from 1951 to 1960. After 1960, however, asset accumulation accelerated to produce an excess of liquid asset growth over growth in household debt, averaging over \$10 billion annually for the last three years. This development serves to demonstrate the ability of consumers—at least during a period of sustained high income—to step up accumulation of liquid reserves despite a growing level of debt and a 14 percent toll on current incomes for instalment credit repayments.

### DETERIORATION OF QUALITY?

The increasing use and growing amount of household debt, in the opinion of some, tend by definition to lower its quality. Lengthening of terms of maturity, lower downpayments, and lower standards in the screening of applicants for loans are generally cited as evidence of deterioration that will lead to growth in delinquencies. The recent record on this point is not conclusive. While the foreclosure rate on nonfarm mortgages has doubled during the last ten years, delinquency rates on instalment credit held by banks have moved horizontally during that interval. The growing number of personal bankruptcies, on the other hand, suggests that—aside from cases of misfortune or fraud—some borrowers, as well as their lenders, may have failed to exercise prudence.

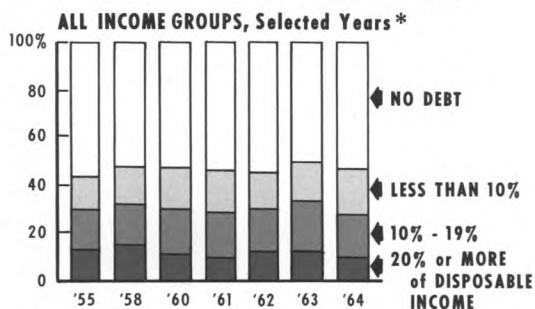
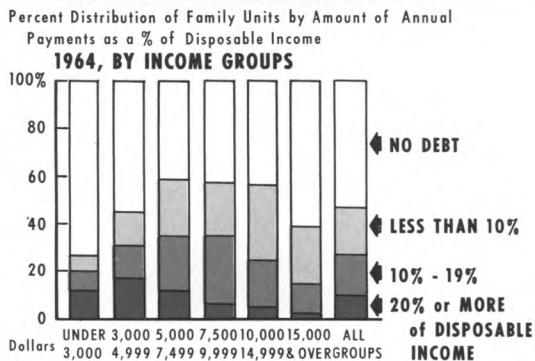
### ARE AGGREGATES MISLEADING?

The broad aggregates—debt, income, assets—do not necessarily portray potential weaknesses in the debt structure. For example, in the absence of specific knowledge as to who owes the debt and who owns the liquid assets or earns the income, it might be erroneously assumed that the sum total of liquid assets could be made to serve as a backstop for debt repayments, when in reality those assets might be owned largely by consumers without any debt at all.

The use of instalment credit is less than universal. Furthermore, as revealed in periodic polls by the University of Michigan's Survey Research Center, the proportion of all families that do use it, and the percentages of spendable income tied up in instalment debt repayments, vary considerably among different income classes. (See upper panel of Chart 7.) About 60 percent of middle-income families reported using instalment credit in early 1964, but less than 40 percent of the families in the highest income group and only about one-fourth of the lowest income families were doing so, albeit for different reasons.

As Chart 7 further indicates, families in the lower income brackets carried the heaviest debt burdens relative to income. For example, 12 percent of all families in the lowest income class and 17 percent of all families with \$3,000-\$4,999 income—representing a large proportion of the debt-carrying families in those two income brackets—were committed to annual payments equal to at least 20 percent of disposable income. The higher absolute amounts of repayment, of course, were concentrated in the higher income groups, where they represented a

## INSTALMENT DEBT



\* Data prior to 1964 are based on spending units rather than family units  
Source of data: Survey Research Center, University of Michigan

smaller percentage of income and, presumably, a lighter burden.

The general picture of the use and distribution of instalment credit does not appear to have changed appreciably over the past ten years, if results of previous surveys are compared with the most recent one. As the data in the lower panel of Chart 7 indicate, the average percentage of all spending units reporting use of instalment credit—47 percent in 1964—has remained fairly constant while the proportion of families with a debt burden of at least 20 percent of disposable income—one family in ten in 1964—is slightly lower than in most earlier surveys.

A previous survey had also shown that three out of four families in 1963 held some liquid assets, thus reinforcing their debt-carrying ability (see Table IV). As would be expected, the proportion of families with liquid assets and the size of individual holdings per family increase with the size of spendable income. From the data in Table V, it appears that both the proportion of families with assets and, to a smaller extent, the amount of liquid reserves per family (if not necessarily the rates of reserves to incomes) have tended to grow during the postwar period, which is consistent with the rise in aggregate totals discussed previously. A direct comparison of specific amounts of liquid assets with specific instalment debt burdens carried by individual families, however, is not possible on the basis of the data. Thus, the possibility that families holding assets are the ones with little or no instalment debt and those without assets carry the heaviest debt burdens relative to income, remains strong. It is further strengthened by statistical inferences indicating that a family with low financial reserves is more likely than a more affluent family to owe instalment debt and, if so, to carry a heavier relative debt burden.

While some of the individual data may appear to be cause for concern, particularly in the event of a decline in income levels, it should be remembered that important institutional changes have occurred in the economy that affect debt-income-liquid assets relationships and the debt-carrying capacity of consumers in general. Auxiliary assets (such as pension funds, unemployment compensation, including supplemental benefits under private agreements, and health and other insurance



**TABLE IV**  
**Liquid Assets of Consumers, 1963**  
**By Income Groups and by Amount of Assets**  
 (Percent Distribution of Spending Units Within Income Groups)

Liquid Assets	Under \$3,000	Spending Units with Annual Income of:				All Spending Units
		\$3,000- \$4,999	\$5,000- \$7,499	\$7,500- \$9,999	\$10,000 and Over	
None . . . . .	49%	28%	27%	7%	1%	24%
Less than \$500 . . . . .	24	33	30	29	16	29
\$500-\$1,999 . . . . .	13	17	21	34	24	21
\$2,000-\$4,999 . . . . .	8	12	12	15	23	13
\$5,000 and over . . . . .	6	10	10	15	36	13

Source: Survey Research Center, University of Michigan

**TABLE V**  
**Liquid Assets of Consumers in Selected Years**  
 (Percent Distribution of Spending Units by Size of Assets)

Liquid Assets	1947-1949	1951-1953	1955-1957	1958-1960	1963
	Average	Average	Average	Average	
None . . . . .	27%	29%	27%	25%	24%
Less than \$500 . . . . .	27	29	29	30	29
\$500-\$1,999 . . . . .	25	22	22	22	21
\$2,000-\$4,999 . . . . .	13	11	12	12	13
\$5,000 and over . . . . .	8	9	10	11	13

Source: Survey Research Center, University of Michigan

plans) have built in some protection, albeit small, for income maintenance, and have perhaps lessened the need for the same measure of liquid assets as protection in case of retirement, loss of employment, or prolonged illness. Growth of auxiliary assets helps to release liquid reserves for other purposes, including the repayment of consumer debt when necessary.

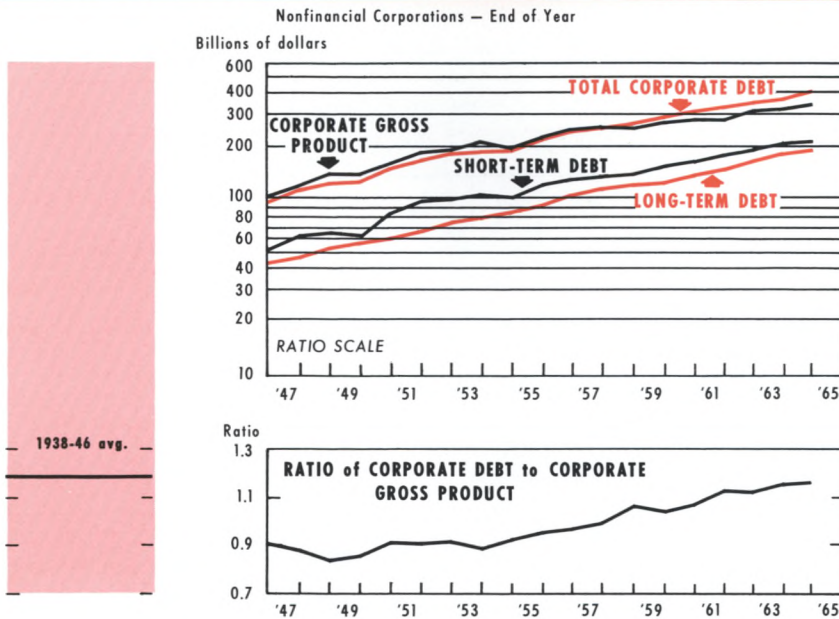
**CORPORATE DEBT**

Total debt of nonfinancial corporations has increased without interruption in every year in the postwar period, reaching a total of \$402 billion at the end of 1964. While corporate debt has accounted for an increasing

proportion of total debt, as indicated earlier, it has constituted a steadily declining share of private debt – falling from three-fifths to less than one-half of the total.

The trend of corporate debt is depicted in Chart 8, with totals for the short- and long-term components shown separately. Although the two components have represented fairly consistent shares of the total, the long-term portion has grown steadily while the short-term portion has moved upward more irregularly – a pattern largely associated with reductions in borrowing requirements during periods of business recession, for example, 1949, 1954, 1958. The recent relationship between short- and long-term corporate debt

**CORPORATE DEBT and CORPORATE GROSS PRODUCT**



Source of data: U.S. Department of Commerce

is the reverse of the pattern that prevailed in prewar years, when long-term borrowing consistently exceeded short-term debt, and reflects the changing character of corporate needs for funds.

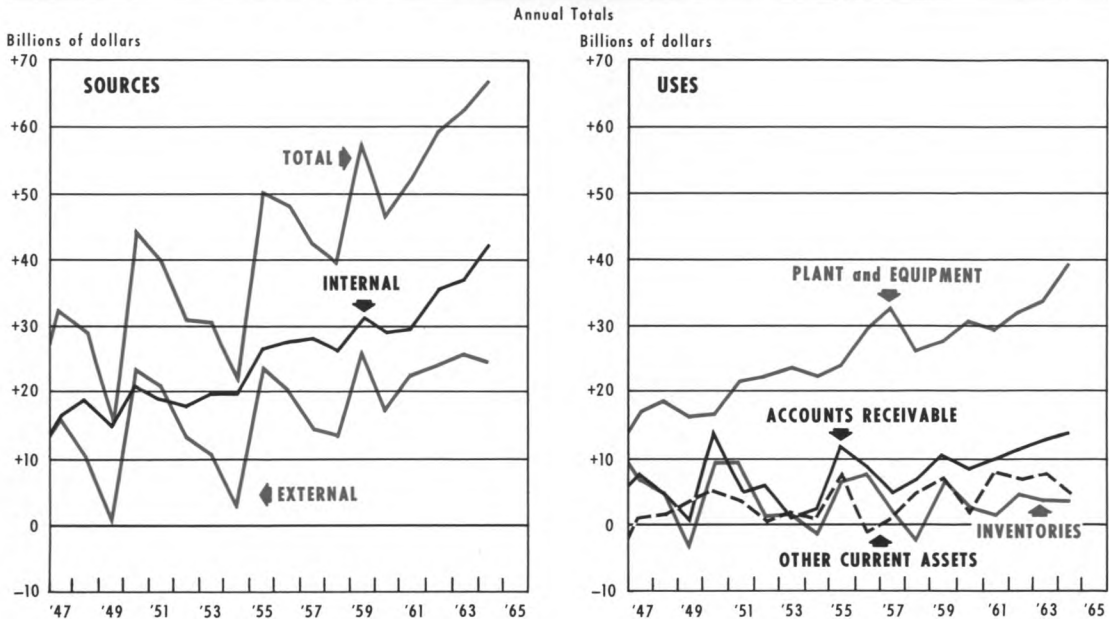
A comparison of corporate debt with Corporate Gross Product (a proxy for corporate income) shows that, during 1947-1957, the total of corporate product, although slowed twice by business recessions, was consistently larger than the volume of corporate debt, with the debt/corporate product ratio averaging about 0.9. Since 1957, however, corporate debt has risen considerably faster than corporate product, with the result that the ratio averaged 1.11 during 1958-1964, and reached a high of 1.16 in 1964. The 1964 figure, while a high for the postwar period, does not compare unfavorably with an aver-

age ratio of 1.20 in the 1938-1946 period.<sup>7</sup>

Before reviewing other corporate debt relationships, some comment should be made concerning the "catching-up process" that was mentioned earlier in connection with total private debt. As a result of a number of factors, nonfinancial corporations emerged from the war years in a hyperliquid condition, with debt levels low in relation to output, and with a need for funds to finance both the replacement of badly worn plant and equipment and the new expenditures required to gear operations to rising levels of economic activity. Increasing needs for funds, coupled with growing corporate preference for borrowed funds, have undergirded the steady rise in corporate debt since the end of the war.

<sup>7</sup> The earliest year for which Corporate Gross Product estimates are available is 1938.

**SOURCES and USES of CORPORATE FUNDS**



Source of data: U.S. Department of Commerce

**SOURCES AND USES OF FUNDS**

The postwar trend in corporate indebtedness is probably best explained by the changing composition of both sources and uses of corporate funds (see Chart 9). As is clearly evident, corporate demands for funds are strongly influenced by the business cycle, with demands increasing sharply during early stages of business expansion and contracting noticeably prior to and during recessions. Of importance is the steadily growing volume of funds generated internally. Since the end of the war, three-fifths of total corporate requirements have come from internal sources, that is, retained earnings and depreciation charges. In recent years, tax concessions, in the form of liberalized depre-

ciation allowances, investment tax credit, and reduction in corporate income taxes, have augmented the internal flow of funds. The rising flow of internally generated funds has been almost exactly matched by the need for funds to finance plant and equipment.

Periods of business expansion have been characterized by sharply enlarged demands for funds for inventory accumulation and for additions to financial assets—principally accounts receivable. These demands have usually slackened as the pace of expansion slowed, receding to low levels during recessions, as additions to inventories and financial assets are curtailed. It has been, in fact, the volatile changes in current assets (principally inventories and accounts receivable) that

## ECONOMIC REVIEW

have accounted for most of the swings in corporate demands for funds during the postwar period. Despite this volatility, however, total demands for funds have trended upward (especially after 1954), and the demand for external financing has continued to grow. While funds from external sources supplied only two-fifths of total requirements during 1947-1964, 85 percent of external funds have represented additions to corporate debt.<sup>8</sup> Furthermore, 56 percent of the addition to corporate indebtedness was accounted for by short-term obligations, with the remainder of course coming from long-term sources.

The period since 1961 has been characterized by continuous business expansion—already the longest peacetime expansion on record. With a sustained rise in levels of output, corporate demands for funds have also risen continuously, reaching a record level in 1964. The volume of internally generated funds has continued to satisfy about three-fifths of total requirements, and has almost matched the volume of funds allocated to additions to physical assets (plant, equipment, and inventories). More importantly, however, the volume of funds required for additions to financial assets has been sizable in each year, in contrast to the pattern in earlier expansions. Funds allocated to the increase in financial assets in 1961-1964 constituted slightly more than one-third of total funds used, compared

with an average of about one-fourth in the entire postwar period.

In recent years, growing need for current financing has further stimulated demands for external funds, and corporations have met these requirements almost entirely through the use of borrowed monies. Additions to corporate debt during 1961-1964 accounted for nine-tenths of the volume of funds raised externally, compared with an average of 85 percent in the entire postwar period.

Marked corporate preference for debt has reflected both the availability of large amounts of internally generated funds, part of which adds to the corporate equity base, and the lower costs associated with borrowed funds, as compared with equity financing. Moreover, a higher proportion of borrowed funds usually exerts favorable leverage on a corporation's net income, especially during periods when total income is rising steadily.

Recent growth in corporate debt, therefore, has been associated in large part with the steady, although not necessarily excessive, accumulation of inventories and an unusually large buildup in financial assets. The bulk of the increase in financial assets has been centered in accounts receivable, while holdings of cash, U. S. Government securities, and other financial assets (including an undetermined amount of other types of negotiable securities) have expanded more moderately. A major part of growing working capital requirements has been satisfied by an increase in short-term borrowing—principally notes and accounts payable and bank loans—but increasing amounts of long-term borrowing have been used in recent years.

<sup>8</sup> Since external sources of funds include the net new stock issues of investment companies (totaling about \$2 billion annually in recent years), debt as a proportion of external funds of nonfinancial corporations is understated. The total for other current assets as a use of funds is correspondingly overstated, due to the inclusion of the net new investments of these companies.

## ACCOUNTS RECEIVABLE

As a result of the increasing proportion of corporate funds allocated to investment in accounts receivable in the postwar period, the volume of accounts receivable outstanding has expanded nearly five times, accounting for nearly one-half of total current assets at the end of 1964, compared with only 31 percent in 1946. This large expansion in the volume of trade credit is reflected in the current liabilities section of the corporate balance sheet in the nearly fourfold increase in notes and accounts payable. The slower rate of growth in accounts payable would seem to indicate, however, that nonfinancial corporations have been extending larger amounts of credit to their customers than they have been receiving from their suppliers. The ratio of accounts receivable to accounts payable has risen steadily (from 102 percent in 1946 to 124 percent in 1964). The sharp expansion in trade credit is a natural consequence of the increasingly competitive business climate, with the availability of larger amounts of interim financing serving as an additional incentive to corporate customers.

The sustained rise in the volume of trade credit extended has raised questions in some quarters about possible deterioration in the quality of such credit. Data collected by the Credit Research Foundation indicate that the average collection period for the accounts receivable of manufacturing corporations has lengthened considerably during the current business expansion.<sup>9</sup> The average number of

<sup>9</sup> See *National Summary of Domestic Trade Receivables*, published quarterly by the Credit Research Foundation, Inc.

calendar days' sales outstanding has risen steadily, from about 34 days in early 1961 to nearly 38 days in March 1965. Despite this trend toward more liberal terms, however, the percentage of manufacturers' receivables that are current, that is, within terms, was actually somewhat higher during the past year (averaging 84 percent) than in earlier years of the expansion. Looking at the repayment record in another way, the proportion of accounts receivable volume that is over 90 days past due has averaged only 2.8 percent during the past year, which is slightly below the average for the entire expansion.

These comparisons bring into sharper focus the growing role of corporations in providing current financing to their customers, indicating that more liberal credit terms are becoming standard practice, and are being accepted by corporations as an added cost of doing business.

## CORPORATE DEBT AND ASSET SIZE

The growth in debt of nonfinancial corporations can be broken down by asset size of borrower.<sup>10</sup> This is done on the premise that increased use of debt by corporations would be potentially more dangerous if a disproportionate amount of the increase were accounted for by smaller firms, among which the likelihood of failure is considerably higher. The record of the 1951-1961 period indicates that the increase in debt of nonfinancial corporations was centered most heavily in small and large firms. While debt of all corporations

<sup>10</sup> Data were taken from *Statistics of Income*, Internal Revenue Service, U. S. Treasury Department. Most recent data available are for corporations with accounting periods ended July 1961-June 1962.

## ECONOMIC REVIEW

increased by 146 percent during the period, small firms (under \$1 million in assets) reported an increase in debt of 187 percent, and large firms (over \$100 million in assets) an increase of 162 percent. Corporations in the intermediate size classes added debt at a more moderate rate. As a result of the faster rates of growth in debt of corporations at the two extremes of the size range, corporate debt in 1961 was more heavily concentrated among large and small firms than in 1951.

### Percentage Distribution of Corporate Debt By Asset Size Class, 1951 and 1961

Year	Under \$1 million	\$1 million	\$10 million	Over \$100 million	Total
		to \$10 million	to \$100 million		
1951	17.8%	15.7%	19.1%	47.4%	100.0%
1961	20.8	14.3	14.5	50.4	100.0

While comparable data for recent years are not available, it is unlikely that these relationships have changed significantly.<sup>11</sup>

Growing corporate preference for debt as the principal source of external funds has brought pronounced changes in the relationships between corporate debt and other items in the corporate balance sheet. Chart 10 shows the postwar growth in corporate debt, compared with the increases in both total assets and net worth of nonfinancial corporations. The increase in corporate debt has outpaced gains in both assets and net worth, and, as the bottom panel indicates, debt has

<sup>11</sup> This assumption is supported by analysis of recent trends in the increase of debt of manufacturing corporations. Although the distribution of debt among manufacturing firms is not the same as for all nonfinancial corporations, debt increases of manufacturing companies in recent years (1961-1964) have followed the same pattern as during earlier postwar years.

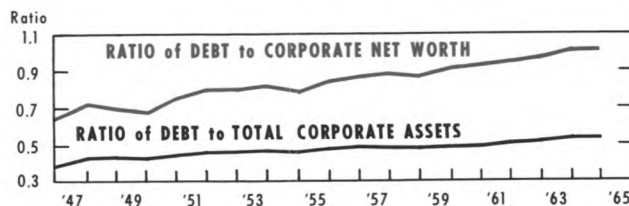
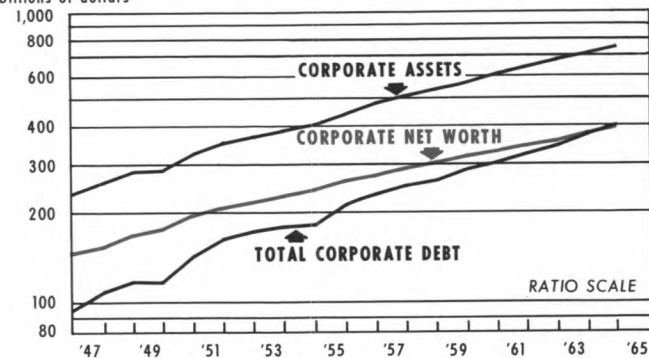
represented a steadily increasing proportion of both items. Although completely comparable historical data are not available, reasonably reliable estimates indicate that the ratios of debt to assets and net worth are currently at record levels, exceeding even those that prevailed in the 1929-1933 period.

While such comparisons serve to place the upward spiral of corporate debt in somewhat better perspective, they do not provide conclusive evidence that such debt has reached excessive or unmanageable proportions. The record of business failures during the present expansion has improved steadily, with the number of failures and the rate of failure per

10

## TOTAL CORPORATE DEBT in RELATION to TOTAL ASSETS and NET WORTH

Nonfinancial Corporations — End of Year  
Billions of dollars



Sources of data: U.S. Department of Commerce and U.S. Department of the Treasury

10,000 concerns in 1964 at the lowest levels in five years. The sustained rise of corporate profits during the current business expansion is further evidence that corporations have encountered little difficulty in servicing a growing volume of debt. In addition, a substantial increase in the volume of internally generated funds (which reached a record annual rate of \$51 billion in the first quarter of this year) is working to keep the inflow of

borrowed funds from reaching unmanageable proportions. While a protracted period of business recession would probably strain the capacity of corporations to service debt, the continued exercise of public and private initiative to promote a sustainable and sufficient rate of economic growth is good insurance against such an eventuality in the corporate sector, as well as in the household sector and in the economy at large.



# SOME PERSPECTIVE ON FOREIGN EXCHANGE RATES

In recent months, much attention has been focused on the existing international monetary system. This attention essentially involves inquiry into the adequacy of international liquidity, and the relationship of the present international payments mechanism to the role and status of the U. S. dollar and the British pound sterling.

By and large, national monetary authorities and the financial community in general have expressed confidence in the present international monetary system, which is commonly called a gold exchange system. These parties recognize imperfections in the system, but believe that a more satisfactory scheme, if one is needed, can best be built upon the existing structure. Thus, their proposals usually take the form of modifications of present arrangements. Others, including a number of academic economists and some foreign observers, believe more far-reaching changes are necessary. According to some individuals, the gold exchange standard, with its dependence on the dollar and the pound, is alleged both to be built upon an unsound foundation and to be incompatible with certain domestic goals—full employment, stable prices, and an acceptable rate of economic growth. In other words, if a different system were in effect, smoother adjustments could be made and domestic economic goals could more easily be achieved.

Though the critics of the existing international monetary mechanism are often quite

outspoken, they clearly are not united in presenting an alternative scheme. Rather, their suggestions reflect a diversity of value systems and analytical frames of reference. This article discusses one proposal, which involves the establishment of an international payments system based upon freely fluctuating rates of exchange between national monetary units.<sup>1</sup> The proposal is discussed in an attempt to improve understanding so that sound evaluation can be made by those interested in the area.

## THE MEANING, IMPORTANCE, AND DETERMINATION OF EXCHANGE RATES

Before considering an international monetary system based upon flexible exchange rates as opposed to one based upon relatively fixed rates of exchange, it might be helpful to set the stage with a general discussion of

---

<sup>1</sup> Students of international finance generally distinguish between freely fluctuating exchange rates and floating exchange rates. The first, and the one discussed in this article, refers to exchange rates arrived at entirely through the market mechanism; put otherwise, government intervention in the foreign exchange market is completely absent. The second, which is not discussed in this article, is a variant of the first with the notable exception that the financial authorities intervene in the foreign exchange market, with sales or purchases to keep fluctuations in exchange rates "orderly." The system that is discussed in this article is offered only for pedagogical reasons; this is done because a system of freely fluctuating exchange rates presents some clear-cut distinctions from the existing system and is useful for illustration.



exchange rates. What are exchange rates? Why are they important? How are they determined?

Essentially, an exchange rate is a price paid for a unit of one nation's currency in terms of the currency of another. Thus, for example, the prevailing U. S. dollar-pound sterling exchange rate may be expressed as approximately  $\text{£}1 = \$2.80$ ; that is, it costs \$2.80 to acquire one British pound. Similarly, the prevailing dollar-*Deutsche mark* exchange rate may be expressed as  $\text{DM}1 = \$0.25$ ; that is, it costs \$0.25 to acquire one German *mark*. Turning the explanation around, it follows that the price of a dollar in terms of pounds is just a trifle over seven shillings,<sup>2</sup> and four marks will exchange for one dollar.

Since exchange rates express the price of one currency unit in terms of others, they provide a direct link between the prices of goods and services in different parts of the world. Consider, for example, a men's clothing chain in the United States choosing between purchasing a line of suits from a domestic manufacturer or a similar line from a manufacturer in England. Assume, further, that the decision rests largely upon price, with delivery periods and quality being essentially the same, and tariffs nonexistent. The U. S. manufacturer obviously states his price in terms of dollars. Suppose the wholesale price of suits is set at \$52.00 each. The British manufacturer sets a price for his garments in terms of pounds. Suppose he is willing to sell the suits at  $\text{£}18$  each. Where should the U. S. clothing chain make its purchase? First the purchasing agent must determine the dollar equivalent of the price in pounds. At approximately \$2.80 per pound,

<sup>2</sup> One pound = 20 shillings.

At  $\text{£}1 = \$2.80$ , one shilling = 14 cents.

he quickly calculates that the price, in dollars, of the British-made garment is \$50.40 ( $18 \times \$2.80$ ). With transportation and other charges assumed negligible and with no tariff charges, the agent would probably make his company's purchase from the British manufacturer.

Knowledge of exchange rates thus is essential to international trade by enabling traders to compare, in terms of their own country's currency, the effective prices of foreign goods and services. Because commerce between nations is a substitute for mobility of productive factors (natural, human, and physical resources) across national boundaries, it is essential to overall economic efficiency.<sup>3</sup> And because exchange rates are essential to trade, they therefore play an important part in promoting a dynamic and expanding world economy.

In addition to the broad function of enabling international commerce, exchange rates serve two additional specific functions. First, the value and volume of a nation's imports and exports are related to the exchange rate between its currency and the currencies of other nations. Second, the composition of trade (that is, the makeup of imports and exports) is related to the exchange rate between the home currency and those of other nations.

<sup>3</sup> This statement is clarified by an understanding of the principle of comparative advantage. For a complete discussion of this, see any basic economics textbook. In essence, the principle states that, because of the diversity in resources and means of production between countries, the world would be economically better off if each country were to specialize in the production of those goods and services in which it is relatively more efficient, and were to trade with nations who are relatively less efficient. Even if one nation were *absolutely* more efficient in the production of every commodity than the others, it would still be beneficial for this nation to specialize in those fields in which it possesses a comparative advantage. In this way world resources may be utilized most efficiently.

## ECONOMIC REVIEW

Consider first the relationship between exchange rates and the value and volume of imports and exports. To make matters simple (though at the cost of introducing an element—hopefully not too large—of unreality), assume that prices of goods manufactured in the U. S. (as expressed in dollars) and goods manufactured in Britain (as expressed in pounds) remain stable despite exchange rate movements. Assume further that initially  $\text{£}1 = \$2.80$ . At this rate of exchange between the dollar and pound, traders in the U. S. will import some dollar amount of goods and services from Britain, say \$280 million worth. Also, at this rate traders in the United States will export a certain dollar amount of goods and services to Britain, say \$280 million worth.

Suppose now the exchange rate becomes  $\text{£}1 = \$5.60$ .<sup>4</sup> Everything else the same, what could happen to U. S. exports to and imports from Britain? Because the dollar price of American-made goods does not change, and because the pound can now command more dollars (\$5.60 as against \$2.80), the British would find American-made goods and services more attractive (in terms of price) than previously. For example, an American camera, which formerly sold in Britain at  $\text{£}8$  (\$22.40), would now sell for  $\text{£}4$ . Britain can thus acquire the same dollar volume of imports from the U. S. for one-half of what it formerly cost in terms of pounds. In terms of dollars, this country would receive the same amount as before. Almost certainly, however, the British would seek to acquire more

<sup>4</sup> Under present arrangements this can happen in one of two ways: Britain *could revalue the pound upward*, in terms of the dollar, or the U. S. *could devalue the dollar*, in terms of the pound.

American-made goods than before, since the absolute pound price has declined, and since the price of American goods has fallen relative to the price of alternate goods produced in Britain. Thus, the dollar value of American exports to Britain would almost certainly increase.<sup>5</sup>

What of imports from Britain? The dollar price in the U. S. of such imports will rise in proportion to the increase in the dollar price of the pound. Thus, for example, prior to the change, a purchase of an automobile selling for  $\text{£}985$  in England would have cost a U. S. importer (exclusive of transportation and other charges) \$2,758 ( $985 \times \$2.80$ ). A doubling of the dollar price of the pound now doubles the import price of the automobile to \$5,516 ( $985 \times \$5.60$ ). Because the dollar price of goods imported from Britain would increase both absolutely and in relation to prices of substitute goods produced at home, Americans would likely purchase fewer British goods. But, though possible and perhaps likely, it does not necessarily follow that the dollar value of American imports would decrease. Prior to the increase in the value of the pound, Americans were spending in total, say,  $\text{£}100$  million on British goods. Suppose now they decided to purchase fewer British goods and to spend only  $\text{£}80$  million on imports. In terms of dollars, however, the outlay increases to \$448 million ( $80 \text{ million} \times \$5.60$ ).

The preceding paragraphs have attempted to clarify the role of exchange rates in influencing the value and volume of a nation's total imports from and exports to other nations.

<sup>5</sup> The amount of increase, of course, depends on the price elasticity, or degree of responsiveness, of British demand for American-made goods.

The following brief discussion deals with the additional role played by exchange rates in influencing the product composition of a country's exports and imports. Consider, in this connection, the hypothetical table below.

### PRICES AND EXCHANGE RATES

Commodity	(1)	(2)	(3) (4) (5)		
	Cost in	In	Cost in the United Kingdom		
	U.S. in \$	Shillings and Pence	IN DOLLARS		
			@£ 1 = \$5	@£ 1 = \$4	@£ 1 = \$2.80
Margarine	\$1	4/-	\$1.00	\$0.80	\$0.56
Wool cloth	1	4/3	1.06	0.85	0.60
Cotton cloth	1	4/8	1.16	0.93	0.65
Cigarettes	1	5/-	1.25	1.00	0.70
Linoleum	1	5/6	1.38	1.10	0.77
Paper	1	6/-	1.50	1.20	0.84
Glass bottles	1	7/-	1.75	1.40	0.98
Radio tubes	1	8/-	2.00	1.60	1.12
Pig iron	1	9/-	2.25	1.80	1.26
Tin cans	1	10/-	2.50	2.00	1.40

Source: P. T. Ellsworth, *The International Economy*, Revised, The Macmillan Company, New York, 1958, p. 262

The table provides a sample of commodities produced both in the U. S. and Great Britain. The unit of each commodity is that amount costing \$1 to produce in the United States (column 1). Column 2 shows the cost in Britain, in terms of British currency units, to produce the same amount of product.<sup>6</sup> Though all commodities appearing in the table are produced in both countries, it is likely that the real costs<sup>7</sup> of some commodities are relatively less in one country than in the other. And, as explained by the law of comparative advantage, it is these commodities which will generally constitute a nation's exports.<sup>8</sup>

<sup>6</sup> The notation 4/-, for example, reads four shillings, no pence; likewise, 4/3 reads four shillings, three pence.

<sup>7</sup> Real costs refer to opportunity costs—the amount of one good that must be forfeited to produce a unit of another.

<sup>8</sup> See footnote 3.

The distribution between what a nation imports and what it exports becomes explicit only when an exchange rate is introduced. From a consideration of columns 1 and 2 above, one could hardly tell what commodities each country would export and import. Columns 3 through 5 translate costs in Britain, expressed in terms of shillings and pence, into their dollar equivalents. It can be observed that, at an exchange rate of £1 = \$5.00, the first arbitrary exchange rate level, Britain would not be able to export to the U. S. any of the commodities in the table. With the exception of margarine, U. S. buyers would be able to purchase American-made goods at lower prices than those of equivalent British-made goods. (The British may still produce these goods for domestic sale, however, because purchase in the United States would involve additional costs—transportation, tariffs, etc.—which could offset their production cost disadvantage.) As the pound becomes cheaper in terms of the dollar, British goods become more and more competitive with equivalent American-made products. Thus, at £1 = \$4.00 the British may start exporting cotton cloth, wool cloth, and cigarettes. At £1 = \$2.80 the list of exported products would extend to linoleum, paper, and glass bottles. Thus, the exchange rate markedly affects the distribution of products traded between nations.<sup>9</sup>

Having briefly explored the meaning of exchange rates and their importance, con-

<sup>9</sup> The latter effect is closely associated with the role played by exchange rates in influencing the value and volume of a country's imports and exports. Thus, it is not simply a matter where more or less of previously traded goods are purchased or sold when exchange rates vary; such changes may introduce new export and import goods into a country's trade.

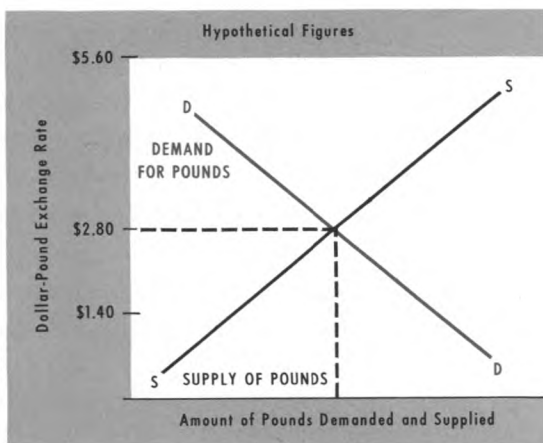
## ECONOMIC REVIEW

sideration may now be turned to how exchange rates are determined. As mentioned earlier, the discussion is limited to exchange rate determination under free market conditions.<sup>10</sup> In such a situation the prevailing exchange rate would reflect basic supply and demand conditions. Consider, by way of illustration, the exchange rate between the U. S. dollar and the British pound. In any period the rate of exchange between the two currencies would reflect the relationship between the supply of dollars made available to Britishers by Americans and the demand for dollars by Britishers. Alternatively, it could be said that the exchange rate between the two currencies would reflect the relationship between the supply of pounds made available by Britishers to Americans and the demand for pounds by Americans.

The matter can, perhaps, be made clearer and more precise with the aid of the accompanying chart. The vertical axis measures the price of the pound in terms of dollars. (The prices above and below \$2.80 were

chosen for illustrative purposes because they are multiples of the present rate of exchange.) The horizontal axis measures the amount of pounds supplied and demanded. The red line sloping downward to the right shows a hypothetical relationship between the exchange rate and the demand by Americans for pound sterling. With British prices (fixed in terms of pounds) given, it is reasonable to assume that Americans will want fewer pounds as the price of the pound increases in terms of dollars. The black line sloping upward to the right shows a hypothetical relationship between the exchange rate and the supply of pounds made available by Britishers to Americans. With American prices (set in terms of dollars) given, it is hypothesized that, as the dollar becomes cheaper in terms of pounds (or put otherwise, as the pound becomes dearer in terms of dollars), the volume of pounds made available to Americans, in the course of business dealings, will increase. It should be recalled from earlier discussion that this latter result may not always occur.

Suppose now that the exchange rate were set at £1 = \$5.60. Could this rate be long maintained, given the hypothesized supply-demand relationships? Probably not, for at this price the supply of pounds would exceed the demand for pounds; not all sellers of sterling will be able to find buyers. The price of the pound would therefore tend to fall. Suppose the exchange rate were set at £1 = \$1.40. Could this rate be long maintained in a free market? Probably not, for at this price the demand for pounds, to purchase goods and services or investments in Britain, would exceed the supply of pounds made available. The price of the pound would therefore tend

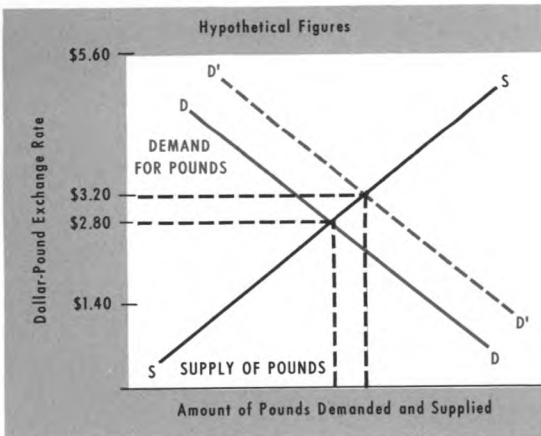


<sup>10</sup> For a summary discussion of how the present system actually works, see page 29.

to rise. Only at £1 = \$2.80 is there an exact coincidence between supply and demand. Thus, £1 = \$2.80 becomes an "equilibrium" rate of exchange.

This rate of exchange—£1 = \$2.80—would be an equilibrium rate only so long as changes do not occur in the hypothesized supply and demand relationships. Shifts in these relationships would make the existing equilibrium rate unobtainable and, hence, necessitate a new equilibrium rate.

Suppose, for some reason, Americans become more willing to spend dollars in Britain, for example, as a result of the recent popularity in this country of a British singing group known as the "Beatles." An increased willingness to acquire pounds would manifest itself in a shift of the demand curve to the right (see the accompanying chart); that is, at each dollar-pound exchange rate, Americans would seek more pounds than previously.



The existing exchange rate, £1 = \$2.80, would become unobtainable; the demand for pounds would exceed the supply of pounds. Unsatisfied demanders of the pound would drive up the pound's price in terms of dollars. Only at some new figure, perhaps at £1 = \$3.20, would a new equilibrium rate be found.

### SOME ASPECTS OF THE EXISTING INTERNATIONAL MONETARY SYSTEM

Under present international monetary arrangements, exchange rates are allowed to vary only slightly in response to temporary changes in supply and demand factors; member countries of the International Monetary Fund (IMF) are required to maintain—through buying and selling as needed in the foreign exchange market—stable rates of exchange between their internal currency units and a specified weight of gold.<sup>11</sup> This requirement effectively establishes stable rates of exchange between a member nation's currency and the currency units of other member countries. To illustrate, the U. S. exchanges dollars for gold or gold for dollars for official foreign holders at a price of \$35 an ounce; if Great Britain were to do the same, it would be at a price of £12/10s (\$35 = one ounce gold = £12/10s; and \$2.80 = £1). Similar relationships can be worked out for all other member countries, although not all countries buy and sell gold in the market.

Though member nations are required to maintain stable rates of exchange between their own currencies and those of other countries, this requirement does not apply in situations where "fundamental disequilibrium" exists. That is, when it becomes evident that the prevailing exchange rate no longer corresponds closely to a market-determined rate reflecting long-term supply

<sup>11</sup> Actual spot rates of exchange are permitted to vary by as much as one percent in either direction from the official exchange rate. Thus, while the dollar price of the pound may fluctuate between \$2.772 and \$2.828, the actual limits have been somewhat narrower.

## ECONOMIC REVIEW

and demand forces, the IMF will permit exchange rate adjustments. The IMF, however, has never made explicit, or given substance to, the term "fundamental disequilibrium," though what is *not* meant has been made quite apparent. According to one well-known economist closely associated with the IMF:

No attempt has ever been made — nor perhaps could it be — to define fundamental disequilibrium precisely. But it is clearly intended to exclude merely ephemeral balance of payments disequilibria, due to temporary factors of a seasonal, speculative, or possibly even of a short cyclical type. . . . Moreover . . . it was probably implicit in the articles that exchange rates should be adjusted only at infrequent intervals.<sup>12</sup>

Consider what it means for a nation to guarantee to maintain a fixed rate of exchange between its own currency and a specified amount of gold or, what comes to the same thing, another country's currency, such as the U. S. dollar. The situation facing a hypothetical country like South Morango can be used as an example. Assume that that country has declared that 60.0 units of its currency, the *morang* will exchange for one U. S. dollar, or, put otherwise, that the *morang* is equivalent to 1.667 cents. South Morango has also established fixed rates of exchange between the *morang* and the currency units of all other member countries. To maintain these exchange rates, the monetary authorities in South Morango should stand ready to buy and sell *unlimited* amounts of gold and/

or dollars. For example, suppose South Morango was suffering a deficit in its international balance of payments. That is, the demand for foreign currencies to make desired purchases and investments abroad exceeds the supply of such currencies made available as a result of sales (of either goods, services, or long-term debt instruments) by South Morangoans to foreigners. In this type of situation, there would be a *natural tendency*, all things being equal, for the *morang* to fall in value. To prevent this, and thus maintain the established rate, the authorities must make either gold or dollars available at the official price.<sup>13</sup>

The problem, obviously, is that South Morango can neither print dollars (and for that matter any currency other than the *morang*) nor manufacture gold. Because its reserves of foreign currencies and gold — as those of any nation — are limited, there are constraints as to the magnitude and duration of balance of payments deficits that South Morango could withstand without lowering the value of the *morang* to make purchases in South Morango relatively more attractive. Sufficient monetary reserves (or adequate international liquidity) are essential to any system of fixed exchange rates.

Establishment of the IMF, in 1946, in effect provided additional international liquidity; member countries could now borrow foreign

<sup>12</sup> See Marcus J. Fleming, *The International Monetary Fund: Its Forms and Functions*, International Monetary Fund, Washington, D. C., 1964, p. 8.

<sup>13</sup> As a general matter, operations to stabilize exchange rates are carried out through the use of gold and U. S. dollars. Gold, of course, is an internationally acceptable medium of exchange. The dollar, because it is fully convertible into gold at \$35 an ounce, is also, therefore, a means of international payment. To a somewhat lesser extent the same applies to sterling and, in some cases, to other strong European currencies such as the *Deutsche mark*.

exchange from the Fund to meet temporary deficits. Thus, for example, South Morango would be allowed to borrow up to a specified amount from the IMF to cover a temporary disequilibrium in her payments position. The foregoing points up the fact that international liquidity presently consists not only of gold and foreign exchange, particularly dollars and pounds sterling, but also of borrowing rights on the IMF. Insofar as a system of fixed exchange rates rests upon the existence of adequate international liquidity, the Fund has clearly made such a system more viable than it would otherwise be.

### **FIXED VS. FREELY FLUCTUATING EXCHANGE RATES**

Defenders of fixed exchange rates—and therefore of some variant of the present international monetary system—offer a number of arguments in support of their position. Two seemingly strong economic arguments are discussed here. The first is that fixed exchange rates are an important element in promoting maximum trade between nations. The second, which is actually related to the first, is that private capital movements (especially of a long-term nature) across national frontiers—which are essential if capital is to be most efficiently utilized—require stable rates of exchange between national currency units.

Commerce between nations is a complex affair. Yet, it is necessary if the full benefits of specialization and division of labor are to be realized. Fluctuating exchange rates, which would mirror temporary changes in supply and demand conditions, would add further to the complexities of international trade. Consider, for example, the situation

facing the clothing chain referred to earlier (page 25). The reader will recall that the question was whether the purchase of a particular style of men's suit should be made in this country or in Great Britain. With assured stability of exchange rates, the decision could be made quite simply; all things being equal, all the purchasing agent had to do was convert the price of the British-made garment into dollars and compare this price with that asked by the American manufacturer. But suppose the exchange rate varies monthly, weekly, and perhaps daily. By the time payment is made to the British manufacturer the dollar price of the pound may have risen sufficiently to wipe out any price advantage originally received, that is, it would cost the purchaser more dollars than originally anticipated. To be sure, traders can hedge (cover) against adverse exchange rate fluctuations, but such protection must be paid for and thereby increases the costs of engaging in international commerce. Further, there are well-developed and efficient forward cover markets in only a few currencies. Finally, many types of transactions call for long-term financing; here hedging possibilities are almost entirely absent.

Similar problems confront individuals and enterprises considering investing money capital abroad. Such investments usually involve elements of risk not generally found at home. However, under normal circumstances, capital will usually go abroad when the expected interest return exceeds the return desired by the investor after considering domestic rates of return and his own risk expectations. Risks are compounded when exchange rates are left free to fluctuate. Suppose a U. S. investor has a choice between making an

## ECONOMIC REVIEW

investment of \$280,000 at home yielding 5 percent and an investment of equal size in Britain yielding 10 percent. At the end of one year the investment at home would be worth \$294,000 ( $\$280,000 \times 1.05$ ). What the investor would actually receive had he invested in Britain depends upon the prevailing exchange rate at the time the funds (investment plus interest) are repatriated. If originally the exchange rate was \$2.80, the investor acquired £100,000 when converting dollars to invest in Britain. On this he would earn £10,000 as interest. With a stable rate of exchange between the dollar and pound he would bring home \$308,000 ( $110,000 \times \$2.80$ ), or a "net profit" of \$14,000 over what could have been earned at home. But what if the value of the pound at the time of repatriation, in terms of dollars, had fallen to £1 = \$2.00? The investor now would bring home only \$220,000 ( $110,000 \times \$2.00$ ), a net loss of \$74,000 when considered against the alternative investment in the U. S. and a net loss of \$88,000 when considered against what he had originally expected to earn on his British investment. Thus, the potential investor of funds abroad must speculate—sometimes far into the future—about the probable course of exchange rate movements. (This is also true under a relatively fixed-rate system, but not to the same extent.) To be sure, exchange rates can fluctuate to the investor's advantage, but insofar as investors try to avert risks of loss there is a real danger that the international flow of capital will be lessened.<sup>14</sup>

Opponents of fixed exchange rates also present an imposing set of arguments. Probably the major source of opposition is a belief,

growing out of the theoretical developments in economic thinking during the past 30 years, that the maintenance of fixed rates of exchange may not, at all times and in all cases, be compatible with prevailing domestic goals of full-employment, price stability, and high rates of economic growth. In other words, it is argued that countries often find themselves in situations where their commitment to maintain the value of their currency in terms of gold or other currencies is at variance with internal objectives.

The argument can be more completely presented by considering a hypothetical situation in which a country, say Greece, may find itself. Suppose, in some initial period, the Greek economy can boast of having no serious unemployment problem, no significant price inflation, a socially and politically acceptable rate of economic growth, and basic balance in its balance of payments (ignoring equilibrating capital flows). Suppose for some reason—say a reduced desire on the part of foreigners for grapes produced in Greece—that exports were to decline markedly.<sup>15</sup> The Greek balance of payments

---

<sup>14</sup> The danger is particularly acute in the case of capital flows to underdeveloped nations. Most of these countries are presently limited in their exports to one or two primary products, the demand for which varies greatly in response to conditions in the industrial economies. Thus, the external value of their currencies will tend to fluctuate considerably, which they have even under existing arrangements. This has added to the already numerous risks attached to the investment of funds in these areas.

<sup>15</sup> It is assumed that the loss of employment and Gross National Product resulting from the decline in exports is offset by various domestic factors—for example, a fortuitous construction spurt at home. Thus, it is also assumed that the previous import level is maintained.



would therefore move into deficit position. The financial authorities must now (if Greece were under a fixed-rate system) gear themselves to the defense of the *drachma* (the currency unit of Greece). That is, the country's limited international reserves (\$264 million in the first quarter of 1965) would have to be made available in support of the official international value of the *drachma*.<sup>16</sup> If the Greek deficit were only transitory the problem would not be serious; Greece would lose some of her international reserves, but in time these losses would probably be offset. What, however, if the disequilibrium were more long lasting? What if the Greek authorities have insufficient international liquidity to maintain the international value of the *drachma*? (It will be remembered that borrowing rights on the IMF are included in the total of Greece's international reserves.) In such a case the authorities must take remedial action or else the value of the *drachma* will decline by default.

What would the authorities be likely to do? First, it should be apparent that there is no simple solution. Clearly, they would attempt to stimulate exports and curtail imports.<sup>17</sup> As one alternative, although not always the most propitious, both objectives may be attainable

<sup>16</sup> Thirty *drachma* = \$1; 1,050 *drachma* = one ounce gold.

<sup>17</sup> Were Greece to have a relatively well-developed money market, the monetary authorities would also seek, by raising short-term interest rates, to attract funds from foreign money markets. At present, outside of the U. S., only several major European nations, Canada, and Japan, have even reasonably mature money markets to the extent they could conceivably rely upon short-term capital flows to offset a part of balance of payments deficits.

by exerting a depressing influence on the domestic economy.<sup>18</sup> In the way of illustration, consider first the effects on the home sector. By the pursuit of restrictive monetary and fiscal policies, domestic price and income levels would most probably decline. This course would, therefore, manifest itself in growing unemployment among workers, a falling price level causing hardship to the business and agricultural sectors, and a less than satisfactory domestic rate of growth. But, a restrictive monetary and fiscal policy may be an effective means of combatting Greece's balance of payments deficit. Thus, the authorities are confronted with the decision to trade off in part domestic objectives against international objectives. A lowering of prices in Greece relative to prices abroad makes purchases in Greece more attractive: Greeks may now find it desirable to buy at home goods that were formerly imported; similarly foreigners may now find it desirable to do more of their shopping in Greece. Thus, price effects would most likely lead to some improvement in Greece's exports and some curtailment of her imports. Further support would come about as a result of reductions in money incomes (following from declines in money wage rates and the level of employment). Reduced money incomes would likely lead to a decline in imports since individuals have less purchasing power and therefore would spend less on most goods and services, imports included.

Critics of fixed exchange rates argue that it is unnecessary for a nation to compromise

<sup>18</sup> Another alternative, which is not considered here, would be to have a once-and-for-all devaluation of the *drachma*.

## ECONOMIC REVIEW

—or trade off—on its domestic goals because of balance of payments considerations. To these critics, disequilibrium in a country's international payments position can and should be rectified by permitting the exchange rate to fluctuate freely in response to changing supply and demand conditions. After all, they argue, since a private enterprise economy relies upon the price mechanism to eliminate disparities between supply and demand in most domestic markets, why not let the price mechanism bring about balance in the foreign exchange market? If, at the prevailing exchange rate, Greeks wish to spend more foreign exchange abroad than is received from abroad why not, the critics of fixed exchange rates ask, let the price of foreign exchange rise in terms of the *drachma*? This would make foreign purchases more costly, thus tending to reduce imports; and because the *drachma* could be more cheaply obtained in terms of foreign currencies, Greek exports would be stimulated. Putting the matter most simply, the critics argue that balance of payments disequilibrium should be eliminated not by reductions in domestic price (and income) levels, but by automatic reductions in the external value of the home currency. If this prescription is followed, the critics see no reason for the domestic economy having to bear the burden of deficits in a country's external transactions.

The controversy between advocates of fixed exchange rates—the existing system—and those of freely flexible exchange rates is not likely to be resolved on the basis of the arguments presented above. Both sides bring to the debate a number of additional argu-

ments—some of a quasi-moral or ethical nature, some of a political or “practical” nature, and still others of a highly theoretical or technical nature. For example, some oppose flexible exchange rates on the grounds that governments may become “irresponsible” in their financial affairs once they can safely ignore the “discipline” imposed by the balance of payments. On the other hand, some oppose fixed exchange rates on the grounds that such a system is incompatible with a free market economy. Both of these arguments appear to have moral or ethical implications. On a totally different level, the debate focuses on such highly theoretical matters as the value of freely fluctuating exchange rates in mitigating the effects of externally generated business cycles and whether flexible rates are really able to eliminate balance of payments disequilibria.<sup>19</sup>

## CONCLUDING COMMENTS

A system of flexible exchange rates has not been widely advocated by government officials here and abroad. But the fact that such a system is being discussed in economic literature does suggest a growing interest in balance of payments problems throughout the world, and indicates the willingness of many analysts to consider various alternatives, even those with limitations, to handling the major economic issues that confront the world economy.

---

<sup>19</sup> To give the reader some insight into the debate centered around this last-mentioned issue, reconsider carefully the discussion contained in paragraph 3, page 26. Would flexible rates bring about an equilibrium under all demand and supply conditions?

## RECENTLY PUBLISHED

**BOARD OF GOVERNORS OF THE  
FEDERAL RESERVE SYSTEM,  
WASHINGTON, D. C.**  
20551

**RECENT CREDIT AND MONETARY DEVELOPMENTS**  
*Federal Reserve Bulletin, July 1965*

**INTEREST RATES ON CAPITAL MARKETS**  
*Federal Reserve Bulletin, August 1965*

**FEDERAL RESERVE BANK OF  
CHICAGO, ILLINOIS**  
60690

**WHERE'S ALL THE CURRENCY?**  
*Business Conditions, August 1965*

**FEDERAL RESERVE BANK OF  
KANSAS CITY, MISSOURI**  
64106

**MORE ON CORRESPONDENT BANKING**  
*Monthly Review, July and August 1965*

**FEDERAL RESERVE BANK OF  
MINNEAPOLIS, MINNESOTA**  
55440

**U. S. BALANCE OF PAYMENTS: ALTERNATE  
METHODS OF MEASUREMENT**  
*Monthly Review, August 1965*

**FEDERAL RESERVE BANK OF  
NEW YORK, NEW YORK**  
10045

**INTERREGIONAL INTEREST RATE DIFFERENTIALS**  
*Monthly Review, August 1965*

