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Basic Considerations

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1. PURPOSE, SCOPE, AND LIMITATIONS OF REPORT

The purpose of this report is to provide a comprehensive, quantitative basis for appraising the position of, the holdings of, and transactions in corporate stock by institutional investors.[1] Such an appraisal was needed by the Securities and Exchange Commission as a background for its Institutional Investors' Study. That study concentrates on the activities of financial institutions in the stock market during the latter part of the 1960's and deals with the subject in much greater detail than was required of the background study. It is based on extensive new primary statistical data which were not available for this report.

The holdings of corporate stock by financial institutions are viewed in this report in terms of their roles: (a) as part of the assets of financial institutions and (b) as an element in the equity of corporations. These aspects can be examined most satisfactorily within the framework of a sectorized national balance sheet. Transactions are regarded as a component of the flows—new issues of and trading in—corporate shares; in that guise, they are best seen within the structure of a flow of funds account.[2] The choice of the analytic framework for holdings and transactions is explained briefly in section 4.

The first task of the study, therefore, is to establish within this framework, in as much detail and as accurately as this can be done on the basis of the available statistical data and for as long a period as is possible and relevant, the facts concerning holdings of and the trading in corporate stock by the main types of financial institutions. More specifically, it is

[1] For a list of the types of institutions included, see section 5a.

[2] A brief description will be found in section 4.

necessary to determine two sets of ratios: (1) the share of corporate stock in the total assets of, and in the acquisition of financial assets by the different types of financial institutions; and (2) the relation of the stockholdings and stock transactions of financial institutions to the total value of corporate stock outstanding or traded.

It would be desirable to determine these ratios separately for the main types of corporate stock, for instance, for common and preferred stock, and for the stock of the main groups of financial and nonfinancial corporations. Generally, however, we must be content with ratios for all corporate stock together. It is desirable to make these calculations on at least an annual basis, but this is possible only for the period beginning with the 1950's.

On the basis of these figures and ratios we must try to determine whether definite trends have existed in the institutional holdings of, and in the transactions in, corporate stock in relation to the assets of financial institutions and to the volume of corporate stock outstanding or traded; and we must study how these movements have changed since corporations and financial institutions became important features in the American economic and financial scene during the third quarter of the nineteenth century. Finally, we must try to explain such significant movements as may be found, at least to the extent of ascertaining the immediate economic and institutional determinants. It will not be possible in this report to go beyond this first stage of causal analysis since this would require an analysis of the entire process of American economic and financial development during the last century.

This report, therefore, is primarily fact-finding and descriptive in nature and proceeds on a fairly high level of aggregation. It does not deal with the desirability, from the point of view of whatever standards the analyst may want to apply, of the developments observed. Nor does it consider, except in section 2, policies that might have led to different trends from those actually observed or that might affect their continuation or modification. Because of lack of data, time, and resources, no attention is paid to the experience of individual financial institutions or of subgroups within the fairly broad categories distinguished by available statistics, or to developments during periods shorter than a single year.

Technically the core of this report is a set of sectoral annual balance sheets and sources-and-uses-of-funds statements for the years 1953 through 1968, and the equivalent but much rougher statistics for spans of seven to twenty years during earlier periods that are presented in Chapter 2. These statistics generally distinguish four nonfinancial sectors

(households, including or separating agriculture and other unincorporated business enterprises; nonfinancial corporations; state and local governments; and the federal government). The financial sector is divided into about a dozen institutional subsectors. The main contributions of the report from the statistical point of view for the postwar period are:

1. Estimates of national wealth—structures, equipment, inventories, and land—by sectors for the period 1959–68 and the revision of previous estimates for the years 1952–58.

2. The separation of personal trust funds administered by commercial banks (to be included with financial institutions) and of two groups of nonprofit institutions (foundations and universities and colleges) from the household sector, which thus becomes considerably more homogeneous.

3. A rough breakdown of the now more narrowly defined household sector into half-a-dozen subsectors classified by wealth (Appendix V).

4. The inclusion of several relatively small groups of financial institutions which formerly were omitted from the flow of funds statistics: fraternal insurance organizations, mortgage companies (formerly included with finance companies), closed-end investment companies, and common trust funds.

The main statistical limitations of this material are briefly discussed in section 5.

2. THE ROLE OF CORPORATE STOCK AND OF FINANCIAL INSTITUTIONS IN THE AMERICAN ECONOMY

There can be no doubt about the importance of either corporate stock or financial institutions for the size and character of the financial superstructure of the American economy. After all, in 1968 corporate stock having a total value of fully $1,000 billion (excluding intercorporate holdings) represented about one-fourth of the value of all financial assets outstanding in the United States, while the assets of financial institutions, including personal trust departments, came to approximately $1,600 billion, equal to another two-fifths of the total. Eliminating the duplication involved in the corporate holdings of stock by financial institutions of about $250 billion, financial institutions and corporate stock together represented more than one-half of the financial superstructure of the United States. The question, however, is to what extent and how the operations of financial institutions on the one hand and the issuance of and transactions in corporate stock on the other have contributed to the growth of the American economy in the past 100 to 120 years, a period during which both of them acquired substantial importance. The

same question, of course, can be asked for the postwar period. In what direction have these phenomena influenced the present organization and efficiency of the American economy, as well as the distribution of its ownership and control?

Answers to these questions are not as evident as it may appear. For it is not sufficient to argue that the modern American economy, as the economy of any other developed noncommunist country, could not operate without the process of indirect saving and investment through financial institutions or without the widespread ownership of large business enterprises that is made possible through marketable corporate stock. Following the method of counterfactual hypotheses dear to some contemporary economic historians, one may visualize a modern economy organized predominantly in privately owned large enterprises, without financial institutions other than a monetary system and without use of corporate stock, or at least wihout a stock market, in which case participation in the ownership of corporations would be nonmarketable and similar to equity in partnerships. In such an economy, enterprises would be financed by a combination of retained earnings and the issuance of different types of claims sold directly to savers. It is even easier to visualize a modern economy without nonmonetary financial institutions (and thus still having a banking system issuing paper currency and check deposits, though not accepting time and saving deposits), in which both corporate stock and all types of claims against nonfinancial borrowers are held directly by savers and are traded among them on organized exchanges or elsewhere. If the American economy had thus been limited to internal and external direct financing, through the sale of securities to the nonfinancial sector (excluding external indirect financing by financial institutions except in the form of money), could it have grown as it actually has and could it have reached the present level of production and consumption?

The main difference between this hypothetical economy, lacking nonmonetary financial institutions and marketable corporate stock, and the actual one that exists today in the United States lies in the structure of the portfolio of households. At the present time, fully one-tenth of household portfolios consist of direct claims aganst nonfinancial sectors; fully two-fifths consist of equities in corporate and unincorporated business enterprises, and another two-fifths are claims against and stock of financial nonmonetary intermediaries (the remaining one-tenth represents money held by individuals). In the hypothetical economy, household portfolios would be divided exclusively—apart from money—among the first two

types of financial instruments. (It may be well to recall how much closer the actual situation was to this hypothesis as late as 1900. At that time individuals' portfolios consisted of approximately one-fourth of nonmonetary claims against and stock in financial institutions, while claims against and stock in nonfinancial sectors accounted for over two-thirds of total household financial assets, money making up the remaining 5 percent).[3]

What are the preconditions regarding investors' habits, the operations of the investment banking machinery, and the level and structure of yields of financial instruments that would make it possible to operate the present American economy without nonmonetary financial institutions and without marketable corporate stock? Or, phrased differently, in what respects would an American economy, having basically the present structure of production, differ in the absence of nonmonetary financial institutions and of marketable corporate stock, assuming the existence of a monetary system in the form of a central bank that issued both currency and check money and had as assets monetary metals, foreign exchange, and claims against nonfinancial sectors, the Treasury, and business and state and local governments?

1. Almost certainly the value of household saving and investment would be lower than it actually is and was, although we cannot say by how much. This can be deduced from the fact that households have actually preferred indirect nonmonetary to direct saving for a large part of their total accumulated financial assets, and that the elasticity of substitution between direct and indirect nonmonetary financial saving of households is very unlikely to be perfect. Hence, we could not expect a reduction in indirect nonmonetary household saving to have been fully compensated for by an identical increase in their direct financial saving. As a result, reproducible tangible wealth would almost certainly be lower than it actually is today. The question is, which forms of capital formation or real assets would be more important and which less important than they actually are?

2. The absence of nonmonetary financial institutions would mean the absence of deposit claims against banks and thrift institutions and of contractual claims against insurance companies and pension and social security funds (i.e., policyholders' and beneficiaries' equity), and of

[3] See R. W. Goldsmith, R. E. Lipsey, and M. Mendelson, *Studies in the National Balance Sheet of the United States*, Vol. 2, Princeton, Princeton University Press for National Bureau of Economic Research, 1963, pp. 72–73. Personal trust funds are treated as nonmonetary claims against financial institutions while equity in unincorporated business is regarded as part of direct financial assets.

shares in investment companies and other financial institutions. The consequences are not quite as radical as it might appear. Insurance and pension organizations could operate on a pay-as-you-go principle—life insurance companies selling only short-term insurance—thus avoiding the accumulation of assets except for a small working fund in the form of money. There is little doubt, however, that the taxes or equivalent levies necessary to operate this regime of provision for retirement income would have reduced individual consumption less than the voluntary, contractual, and compulsory saving under the present system. Instead of holding claims against thrift institutions, households would have acquired short-, medium-, and long-term obligations directly from the nonfinancial sectors that certainly would have been issued in much larger amounts, and probably also in smaller denominations, than under the present system, if only because governments and business enterprises would have had to find substitutes for the funds now supplied by financial institutions. It is unlikely, though not impossible, that the additional sales would be as large as the foregone saving in the form of thrift deposits and insurance contracts.

3. If liquidity preference (including preference for not only money but also other nearly riskless claims encashable in practice on demand) had been the same as it has been, it is very likely that households or business enterprises would hold more money than they do now. This means that part of the external financing of the nonfinancial sectors now provided by nonmonetary financial institutions would have been furnished by the monetary system. This would not necessarily have led to a sharper rise in prices as the income velocity of circulation would have been lower.

4. Concentration among business enterprises probably would be considerably more pronounced, one of the important probable consequences of the absence of nonmonetary financial institutions and of marketable corporate stock. The reason is that under such a regime the need to raise a much larger proportion of external financing by sale of obligations directly to households (and to a limited extent to other business enterprises with surplus funds) would have given an advantage to enterprises widely known to the general public and able to sell large homogeneous debt issues in small denominations.

5. For the same reasons long-, medium-, and short-term obligations of business enterprises and governments would be much more extensively distributed than they are now, or have been in the past. Similarly the secondary market, on exchanges or over the counter, for these obligations would be much broader and more active. In other words, there would

have occurred a large-scale replacement of "debtor substitution," which is the essence of financial intermediation by "brokerage." Brokers' offices—dealing in obligations rather than in stocks—would functionally and physically have taken the place of the edifices of commercial banks, savings and loan associations, and credit unions, and the treasurers of large nonfinancial enterprises and government units would deal with investment banks and brokers instead of with commercial banks and thrift and insurance organizations.

6. In the absence of banks and finance companies, all consumer credit would be extended by the business enterprises producing or selling the commodity or service. These enterprises would have to raise the necessary funds by either income retention or by sale of their own obligations to the general public. This would most likely lead to a much more pronounced concentration in retail trade.

7. Trade credit (accounts receivable and payable) would almost certainly be more important because of the absence of commercial banks as suppliers of short-term funds. This would have given another advantage to large units able to sell their own obligations on a nationwide or at least a regional market. It also is possible that the difficulty of securing short-term funds would have led to earlier or more intensive economizing on inventories, with the consequence of a more restricted assortment (less choice for consumers) and longer delays in filling orders.

8. Security credit would be insignificant, if it is assumed that brokers and dealers in securities would be prevented from becoming financial institutions by accepting deposits from customers, even in the form of temporary credit balances.

9. Among the main sectors of real capital formation, the one probably most seriously affected by the absence of financial institutions would be owner-occupied homes. It obviously would be much more difficult for the prospective owners of such structures to find mortgage lenders among other individuals, or possibly among builders using their accumulated savings, than it is now where these loans are made routinely in large numbers by financial institutions. Assuming the same total demand for shelter, multifamily structures owned by large real estate corporations able to sell their bonds to the general public would probably have taken the place of a substantial fraction of present one-family owner-occupied homes and of small apartment houses owned by individuals. Thus the absence of financial institutions would have resulted in a quite different distribution of housing between owner-occupied and rented quarters.

10. For similar reasons, farmers would probably have found it more

difficult to secure long-term and even short-term funds. Hence, it is likely that large agricultural enterprises, well enough known to sell their obligations to the general public through the investment banking and brokerage machinery, though probably on a local and regional rather than on a national basis, would have grown more rapidly than they have. On the other hand, concentration among owner-operated farms probably would have made less progress, the farmers being hampered by fewer sources of funds to acquire additional acreage, with the consequence of less inequality among farmers.

11. The absence of marketable corporate stock and financial institutions, of course, would have very great influence on the financial structure of nonfinancial business enterprises. In particular, the need to rely exclusively on debt financing might have led to substantially less venturesome attitudes by entrepreneurs. That rapid economic growth is possible with a much higher debt-to-equity ratio than prevails in the United States is, however, indicated by the cases of Japan and Italy in the postwar period; and it is possible that nonfinancial enterprises would have adapted themselves fully to the need of relying much more on debt financing. The absence of substantial net worth would have made investment in the debt securities of nonfinancial enterprises more risky and thus would have acted as another incentive to greater concentration, since it may be assumed that giant enterprises would have been better able to reduce the danger of inability to meet their obligations by spreading of risk and, ultimately, by reliance on the central government.

12. Regional differences in interest rates, saving, and investment probably would be larger than observed, if the American economy had operated without nonmonetary financial institutions and without a market for corporate stock. While it is possible that a substantial degree of equalization in the availability and terms of direct external finance would have been brought about by the operation of a more highly developed net of investment banking facilities and a much broader secondary market in the obligations of governments and business enterprises, it is very unlikely that this could have been done as efficiently as is possible through the activities of financial institutions operating on a nationwide scale directly or indirectly, e.g., through a system of correspondents.

13. The probable effects of the absence of financial institutions and of a stock market on the level of interest rates, on the differentials among rates, and on the fluctuations in rates are very difficult to assess. It seems likely, however, that under such conditions the level of interest rates on obligations of nonfinancial issuers would have been somewhat higher than

it actually has been, because savers, who, as history shows, have preferred to hold claims against nonmonetary financial institutions, would have to be offered higher rates to hold claims against nonfinancial issuers. It is not certain that this differential would have been substantially larger than the interest margin inherent in the operation of nonmonetary financial institutions. Of the main rates, that for home mortgages probably would have been raised most. The yield on Treasury securities probably would have been lowered relative to other rates because they would have become, even more than in actuality, the haven of risk-averting savers. In the absence of the generally smoothing influence of financial institutions, variations in rates, both over full business cycles and for shorter periods, as well as seasonally, most likely would have been more pronounced; so would interregional differences in interest rates.

14. One important argument remains to be met. Would not the absence of commercial banks as we know them have slowed down the growth of the American economy gravely, given the crucial importance assigned to expansionary bank credit in many theories of economic development (starting with that of Joseph Schumpeter),[4] an importance backed by the concrete examples of Germany before World War I and of Japan after World War II? It is hard to deny the likelihood of some influence in this direction, but it should be realized that, in the counterfactual hypothetical situation envisaged here, the expansion of check money by the central bank would have taken the place of the expansion of the credit of commercial banks, reflecting the creation of check deposits which has been observed in the actual development of the American economy.

The question then comes down to whether the assets likely to have been acquired by the central bank in issuing check money would have differed sufficiently from those actually acquired by commercial banks to retard economic growth substantially. The answer depends on the assumption made about the methods of operation of the central bank. If it had limited itself to international assets and to Treasury securities, the growth-reducing influence of its operations, which replaced those of commercial banks, probably would have been substantial. If, on the other hand, the central bank had acquired short- and long-term obligations of business enterprises as part cover for its currency and check money issues, as is entirely compatible with the essence of the counterfactual hypothesis, the retarding effect might have been very small. One important difference

[4] *Theorie der Wirtschaftlichen Entwicklung*, Duncker and Humblot, 1912; translated by R. Opie as *The Theory of Economic Development*, Cambridge, Mass., Harvard University Press, 1934.

between the two regimes, however, would have remained: In the absence of the numerous individual commercial banks, mostly of local character, that have constituted the American banking system, concentration of the creation of money in the hands of one central bank would have provided the possibility of a much more conscious allocation of expansionary credit among industries, regions, borrowers of different size, businesses of different degree of risk, and other characteristics. This allocation might well have differed considerably from that which actually took place in a system combining competition and oligopoly and essentially guided by considerations of risk and profitability. Thus, a considerable difference in the allocation of expansionary bank credit between the two regimes is a possibility, but is not a necessity, particularly if the operations of the central bank had been decentralized to regional and possibly local levels.

We may conclude from this imaginary picture of a mid-twentieth century America without financial institutions and without marketable corporate stock (and hence without a stock market) that the rate of household and total national saving and investment would have been somewhat lower, the rate of growth of output somewhat smaller, and the stock of reproducible tangible assets somewhat smaller than they actually turned out to be. Whether the difference would have been large enough substantially to affect the standard of living of the American people is uncertain. However, it would have considerably affected the distribution of wealth—though not necessarily the distribution of earned income—by sharply reducing realized and unrealized capital gains on corporate stocks, which are the main source of modern large fortunes. This might have had great influence on the social structure of the United States in the direction of lessening inequality. Thus the absence of marketable corporate stock probably would have been more important in making the economy different from what it now is than the absence of nonmonetary financial institutions.

These speculations at the same time indicate the effect of the introduction and spread of a market in corporate stock and of nonmonetary financial institutions on the country's economic growth. In brief these two developments are likely to have slightly increased the volume of national saving and investment and hence the rate of growth of the economy and its stock of tangible assets; to have reduced the level, variability, and regional differences of interest rates; to have retarded the trend towards concentration among business enterprises; but to have accelerated the accumulation of large fortunes. Among the main nonfinancial sectors of the economy the operation of nonmonetary financial

institutions has probably been most helpful to the market for home and farm mortgages, and thus to the spread of home ownership, in the face of rapid urbanization of the country, to the maintenance of the family farm system, and even more to the concentration of farm operations in a declining number of family farms.

We may now turn to a much weaker counterfactual hypothesis, but one that may be more directly relevant to this study. This is the assumption that, in the face of the existence of nonmonetary financial institutions and of a stock market, financial institutions would have been prevented, by statute, tradition, or otherwise, from owning or administering corporate stock portfolios.

This assumption is counterfactual essentially only for the period since World War I, and in a significant sense only for the last two decades. For the half-century before World War I, the actual situation was so close to this weaker counterfactual hypothesis that its investigation is without much interest. The main exception to the hypothesis—the administration of substantial blocks of stock by personal trust departments of banks and trust companies—certainly is not a sufficient basis for a claim that anything of importance in the American economy would have been different if these blocks had been administered directly by the beneficiaries or by nonfinancial trustees.

For the period since World War I, or at least for the last twenty years, however, the absence of financial institutions as buyers of corporate stock might have had substantial influence on the character of the market for corporate stock, for stock prices, for individual portfolios, and possibly even for some more basic factors, like the levels of interest rates, saving, and investment. Until well into the 1950's, actual purchases of corporate stock by financial institutions were so small that the effects could only have been minor. It is only during the last dozen years, and particularly since 1965, that the absorption of corporate stock by financial institutions has been large enough for its absence to have possibly led to substantial differences in the market for corporate stock, and with less likelihood in the basic economic situation of the country.

It is doubtful that the funds available to thrift and insurance organizations would have been smaller if they had not bought any corporate stock. The only difference would have been the acquisition of about $50 billion of government, corporate, or foreign bonds and of mortgages in lieu of an equal amount of corporate stock. Investment companies, of course, would have been of much smaller size if they had been limited to fixed interest bearing securities, reducing the demand for stock by less than $15 billion.

This however would not have been a net reduction in the demand for stocks of all types, but only a substitution of the demand for stocks of industrial, etc., corporations for that of investment companies.

As we do not know enough about the nature of the stocks bought by financial institutions, it is difficult to say how the retention of these stocks in individual portfolios—not necessarily those owning them at the beginning of the period—would have affected any basic economic factor such as interest rates, saving, investment, and corporate financing. In view of the very low volume of net issues of corporate stock (discussed in Chapter 4) it is, however, unlikely that the absence of financial institutions as buyers would have made much difference in the total volume of stock issued by nonfinancial corporations, except in the cases of a few corporations favored much more by financial institutions than by individual holders.

There are only two aspects of the market for corporate stock in which we may be certain that the absence of financial institutions as buyers would have had a substantial effect: the price of common stock and the volume of stock trading. It is very likely that the observed rise in stock prices would have been smaller, particularly during the 1960's, if financial institutions had not bid away fully $60 billion of stock, or something like one-eighth of their total portfolios, from the previous individual holders. It is even more certain that the volume of trading on exchanges and in the over-the-counter market would have been smaller, since individual shareholders are unlikely to have indulged as much in in-and-out trading in the late 1960's as the adherents of the performance cult among financial institutions. Because of our limited information on the distribution of stock purchases by institutional investors among individual issues and groups of them it is again very difficult to say how their absence would have affected relative stock prices. Obviously, the relative prices of the favorites of financial institutions would have risen less in comparison with other stocks, but unless we know much more about the character of these favorites such a statement is not very meaningful. Since stock prices reached their peak near the end of 1968 and have been declining sharply in 1969 and the first half of 1970, it becomes even more doubtful what net effect, if any, the substitutions of about $60 billion of purchases of common stock by institutions (excluding their personal trust departments) has had in the long run on the level of stock prices in general and on relative stock prices, let alone on basic factors of the economy.

Thus, the tentative conclusion regarding the weaker counterfactual hypothesis is that it would not have made very much of a difference for

the basic factors of the American economy—though it would have substantially affected employment and profits in the securities business—if financial institutions had been prevented from acquiring corporate stock.

3. THE DETERMINANTS OF THE SHARE OF FINANCIAL INSTITUTIONS IN CORPORATE STOCK

a. The Factors Involved

An understanding of the level and the movements of the share of financial institutions in the total amount of corporate stock issued during a given period or outstanding at one point in time requires an analysis of the factors which determine the level and movements of the numerator and the denominator of the appropriate ratio, i.e., (a) the value of the net purchases and the holdings of corporate stock by financial institutions; and (b) the volume of total net issues and the market value of outstandings of corporate stock.

Beginning with the numerator of these ratios, net acquisition of corporate stock by financial institutions during a given period may be decomposed into two parts.

1. The increase or decrease in total assets of financial institutions during the period, excluding valuation changes which reflect changes in the price of corporate stock and secondarily in the price of other assets. This increase or decrease, in turn, is dependent on several important economic factors which cannot be followed and explained here, such as the degree of monetization of the economy, the share of indirect saving (i.e., saving through financial institutions) in total saving, and the degree of layering among financial institutions (i.e., the extent to which some financial institutions hold claims against or shares of other financial institutions).

2. The proportion of the net acquisition of assets by financial institutions which are allocated to corporate stock; or the statistically more easily ascertainable proportion of the change in assets other than claims against other financial institutions, which takes the form of corporate stock.

The volume of net new issues of corporate stock, the denominator of the ratio, in turn, depends on two factors:

3. The volume of securities issued by domestic corporations, which may be regarded as closely connected with the volume of capital expenditures that is financed externally, i.e., through borrowing or the issuance of equity securities.

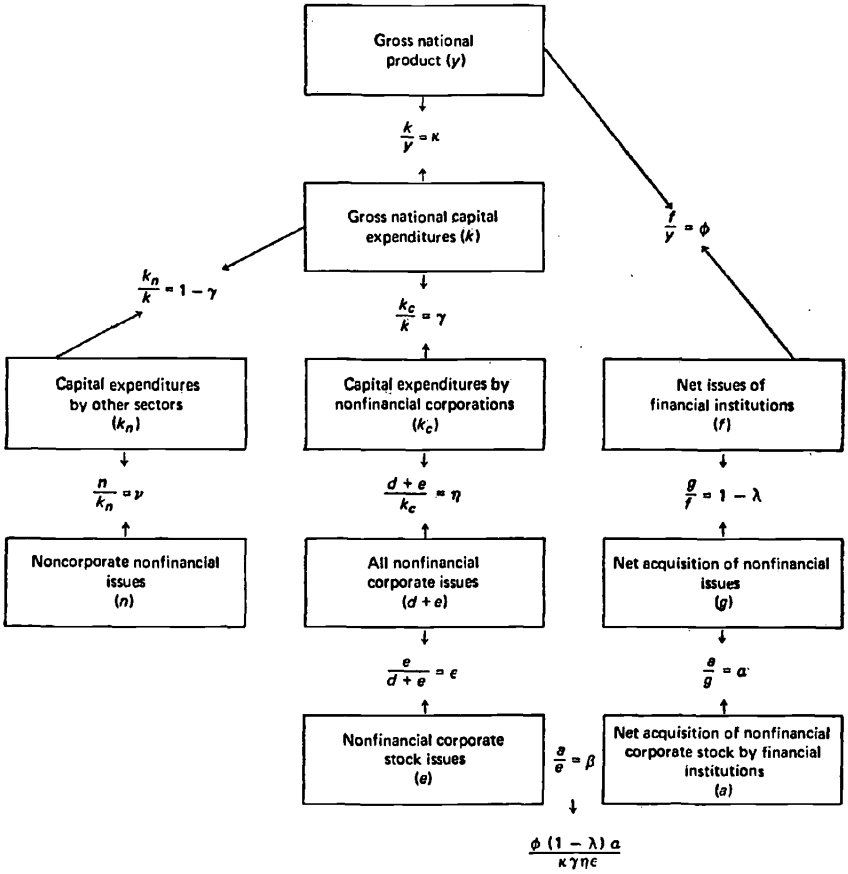
4. The proportion of total net issues by corporations that takes the form of stock. This ratio is affected by numerous factors, such as differences

among yield rates for debt and equity securities, the costs of issuing different types of securities, asset price changes, variability of issuer's income, the issuer's capital structure, tax considerations, and many other factors studied by the theory of finance.

Chart 1-1 illustrates schematically the relations between these four factors, indicates the ratios which link them, and shows a few important related relationships. According to the approach taken here, the share of financial institutions in the issues of corporate stock (β)—the figure in

CHART 1-1

The Derivation of the Ratio of Net Purchases of Nonfinancial Corporations by Financial Institutions



which this report is primarily interested—is thus seen to be the result of seven ratios:

a. The new-issue ratio of financial institutions, i.e., the ratio of total net new issues by financial institutions to gross national product (ϕ);

b. The layering ratio (λ), which measures the extent to which net issues by financial institutions consist of issues to other financial institutions and which in accounting terms can be defined as the ratio of the combined to the consolidated issues of all financial institutions;

c. The share of corporate stock in total net acquisition of assets by financial institutions other than claims against (and stock of) other financial institutions (α);

d. The national capital formation ratio, i.e., the ratio of total gross capital expenditures to gross national product (κ);

e. The share of nonfinancial corporations in total gross capital expenditures (γ);

f. The external financing ratio of nonfinancial corporations (η), i.e., the ratio of total capital expenditures of nonfinancial corporations to the net issuance of debt and equity securities by them;

g. The share of stock in total net new issues by nonfinancial corporations (ϵ).

The seven ratios then combine in the expression,

$$\beta = \frac{\phi(1 - \lambda)\alpha}{\kappa\gamma\eta\epsilon},$$

the three ratios of the numerator referring to financial institutions, the four ratios of the denominator to nonfinancial corporations.[5] The absolute value of gross national product, of course, does not influence the value of this ratio, a desirable feature since it makes the ratios for different periods of time or for different countries directly comparable.

[5] It will be seen that the expression's numerator,

$$\phi(1 - \lambda)\alpha = \frac{\text{increase in combined assets of financial institutions}}{\text{gross national product}} \times \frac{\text{increase in consolidated assets of financial institutions}}{\text{increase in combined assets}} \times \frac{\text{institutional net purchases of corporate stock}}{\text{total uses of funds of financial institutions}},$$

simplifies (approximately) to express net institutional acquisitions of stock in nonfinancial corporations as a fraction of gross national product; and its denominator,

(*continued*)

These relations may be illustrated by an example which is not too different from the figures observed for the United States during the post-war period. With a net new-issue ratio of financial institutions of $\phi = 0.10$; a layering ratio λ of 0.10, so that $1 - \lambda = 0.90$; a share of corporate stock in total net acquisition of assets by financial institutions of $\alpha = 0.05$; a national capital formation ratio (including consumer and government durables) of $\kappa = 0.25$; a share of corporations in total national capital expenditures of $\gamma = 0.30$; an external financing ratio of nonfinancial corporations of $\eta = 0.35$; and a proportion of stock in external financing of $\epsilon = 0.05$, the value of the ratio of financial institutions to total net new issues of stocks by nonfinancial corporations emerges as equal to about $3\frac{1}{2}$.[6] Thus the net acquisition of stock of nonfinancial corporations by financial institutions would on these assumptions be about three and one-half times as large as the total issuance of such stock (the excess, of course, being offset by net sales by nonfinancial sectors), a figure which is corroborated by flow of funds statistics.

Relationships equivalent to these flow magnitudes and ratios, of course, exist between the values of the holdings of corporate stock by financial institutions and the value of corporate stock outstanding at a given point of time, since these magnitudes may be regarded as the result of (1) the accumulation of net issues of corporate stock and of net asset acquisitions by financial institutions in the past, and (2) realized and

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(*Note 5, continued*)

$$\kappa\gamma\eta\epsilon = \frac{\text{total gross capital expenditures}}{\text{gross national product}} \times \frac{\text{capital expenditures by nonfinancial corporations}}{\text{total gross capital expenditures}} \times \frac{\text{external financing by nonfinancial corporations}}{\text{capital expenditures by nonfinancial corporations}} \times \frac{\text{net new issues of corporate stock by nonfinancial corporations}}{\text{external financing by nonfinancial corporations}},$$

simplifies (exactly) to express total net new issues of stock by nonfinancial corporations as a fraction of gross national product. The quotient, of course, provides the desired fraction of nonfinancial corporate stock acquired during a particular period of time by all financial institutions together.

[6] In figures:

$$\frac{(.10)\ (.90)\ (.05)}{(.25)\ (.30)\ (.35)\ (.05)} = 3.43$$

unrealized valuation changes on corporate stock and other price-sensitive assets since the time of issuance or acquisition by financial institutions. As these relationships are more complex algebraically than those existing among the flows illustrated in Chart 1-1, which disregard valuation changes during the relatively short periods to which they refer, their derivation is not given here.[7]

b. Total Resources of Financial Institutions

Before assessing the share of corporate stockholdings in the assets of financial institutions, it is necessary to identify the determinants of the growth of total assets of these institutions. From the economic point of view, the resources of financial institutions—in accounting, equal to sources of funds, i.e., liabilities and net worth—may be regarded as representing essentially five components, each of which has its own determinants and often follows its own path.

The first component is money, in the form of (a) bank notes issued in the United States primarily by commercial banks (state banks before 1864, national banks from 1864 to 1935) and by the Federal Reserve banks (since 1914); and (b) demand deposits with commercial banks.[8]

The second component consists of (a) thrift deposits of households with commercial and savings banks, saving and loan associations, and credit unions, and (b) household claims against insurance organizations, including life insurance companies and private and government pension funds. These constitute an important part of an individual's financial and total saving. For this reason this component also includes, where statistically feasible, individual holdings of investment company shares.

The third component is of a mixed nature, comprising time and savings deposits and insurance claims of nonfinancial sectors other than households, i.e., mainly those of business, government, nonprofit institutions, and foreigners.

The fourth component consists of the equity of financial institutions in corporate form. The equity in mutual financial institutions, such as most life insurance companies, saving and loan associations and mutual savings banks, may be regarded as a form of claim of the depositors or policyholders, which is held predominantly by households.

[7] For such a derivation, see R. W. Goldsmith, *Financial Structure and Development*, New Haven, Yale University Press, 1969, p. 80 ff.

[8] As is well known, some economists prefer a broader definition of money, which includes the time and savings deposits with commercial banks and sometimes even deposits with a few other financial institutions. If such a definition is accepted, the second and third components are reduced correspondingly.

The fifth and last component is made up of claims and debts among financial institutions and of equity securities of one financial institution held by another, and thus constitutes a duplication eliminated in a consolidated balance sheet of the financial sector.

The changes in these items are, of course, matched by equivalent changes in assets on the other side of the balance sheet, if capital gains and other valuation changes are excluded on both sides.

Since economic interest is not primarily directed to the absolute dollar values involved but to their relation to economic magnitudes characteristic of the size of an economy, it is preferable to express the figures as percentages of gross national product in the case of issues of financial instruments and of national wealth in the case of financial assets and liabilities. We may then express the net issues by financial institutions in a simple equation. On the left-hand side of this equation we find the magnitude we want to explain, namely, the ratio of all issues[9] of financial institutions to gross national product, a ratio which has been designated by ϕ. On the right side we encounter five components of ϕ, four of which are expressed as ratios to national product.

The first component is the ratio of net issues of money (m), i.e., the net change in the money stock, to gross national product. This ratio depends on numerous factors which have been analyzed for decades by monetary theory. Among them are the factors which determine the income and transactions velocity of money, such as the degree of division of labor in the economy; payment habits, particularly the extent to which payments are synchronized; and the propensity to use money for purposes other than as the medium of exchange, e.g., the propensity to hoard it or to hold it as a temporary investment.

The second component depends on total personal saving and on the share of claims against thrift institutions and insurance organizations (and possibly of purchases of stock of open-end investment companies) in total personal saving. Total personal saving, again, may be regarded as the product of, first, the personal saving ratio (s), i.e., the ratio of total saving to personal disposable income; and, second, the share of personal disposable income in GNP (p). The definition and the determinants of total personal saving have been subject to long debates among economists and statisticians, debates which are far from being settled. In the United States the personal saving ratio, if defined to include saving through

[9] The term "issues" it may be recalled, refers not only to stocks and bonds, but also to the net increase in all other forms of short- and long-term liabilities and equity (such as increases in earned net worth). (Issues may, of course, be negative.)

consumer durables, as well as the ratio of personal disposable income to gross national product have shown substantial cyclical variations and have suffered a few marked disturbances over short periods, for instance during the two world wars and during the Great Depression. During this century and probably since the middle of the nineteenth century, however, the ratios do not seem to have shown a continuous pronounced trend. For this investigation the personal saving ratio is defined as the share of personal saving that is in the form of household claims against thrift institutions and insurance organizations. This ratio must be compared with its competitors for individuals' saving, such as the purchases of government and corporate securities and of mortgages and saving through tangible assets, primarily homes and consumer durables, as is done in Chapter 5, and may be treated as exogenous. The latter ratio may, in turn, be regarded as the product of two other relations: the share of gross financial saving (i.e., the accumulation of financial assets excluding valuation changes) in total personal saving (c), and the share of household claims against thrift institutions and insurance organizations in total financial saving (t).

The third component (x) is a residual. Time and saving deposits of nonfinancial sectors, other than households, and business claims against property insurance companies are its largest single elements. It may be regarded here as exogenous.

While a small part of the equity of financial institutions in corporate form is held by nonfinancial business and by government, it may be justified to make the simplifying assumption that all equity securities of financial corporations are held by households except those in the hands of other financial institutions. Hence we may use the share of equity (net issues of corporate stock plus retained earnings) in total issues of financial institutions as the determining factor and may designate it by e.

Claims and holdings of equity securities among financial institutions are best measured by the layering ratio (λ), i.e., the share of the issues of financial institutions absorbed by other financial institutions.

We then have

$$\phi = [m + (s \cdot p \cdot c \cdot t) + x + (e\phi)](1 - \lambda)$$
$$= \frac{[m + (s \cdot p \cdot c \cdot t) + x](1 - \lambda)}{1 - e(1 - \lambda)}.$$

For purposes of illustration we may assume the following period averages for the components of ϕ:

$m = 2$ percent of GNP;

s = 10 percent of personal disposable income;
p = 80 percent of GNP;
c = 75 percent of total personal saving;
t = 60 percent of total personal financial saving;
x = 1 percent of GNP;
e = 5 percent of total issues by financial institutions;
λ = 10 percent.

This yields, if ϕ is expressed as a percentage of gross national product,

$$\phi = \frac{[2 + (10 \times .80 \times .75 \times .60) + 1](1.00 - .10)}{1.00 - .05(1.00 - .10)} = 6.20.$$

On these assumptions, therefore, the issues of financial institutions—and hence, in the absence of valuation changes, the change in the assets of financial institutions—equal 6.2 percent of GNP.

If this ratio had, on the average, prevailed over a very long period, and if GNP had increased, again on the average for the same long period, by g percent a year, then the ratio of the assets of financial institutions to national product (F), which in the absence of valuation changes is equal to their cumulated past net issues, to the final period's gross national product (y), would be approximately $F/y = \phi/g$. If, for instance, gross national product had been increasing at an average of 5 percent per year, and if ϕ had had the value of 6.2 percent assumed in the illustration above, then F would be equal to 6.20/.05 = 124 percent of current gross national product. Further, assuming a ratio between net national wealth and gross national product (sometimes called the capital-output ratio) of 4, F would be equal to 124/4 = 31 percent of national wealth.[10]

The formula thus shows how the components distinguished here influence the relative size of financial institutions in an economy's capital flows and wealth holdings. It shows, for instance, that (in the absence of valuation changes) the assets of financial institutions (F) are positively related to m, s, p, c, t, x, and e, but negatively related to g and k. A discussion of the factors which, in turn, affect the level and movements of these components is beyond the scope of this report, though an idea will be given, as

[10] The derivation of these relations is somewhat more difficult, if the period for which data are available is shorter, if the component ratios have during parts of the period deviated considerably from their average for the entire period, and if part of the assets of financial institutions (primarily their holdings of corporate stock) have undergone valuation changes (see Goldsmith, *Financial Structure and Development*, Chapter 2). The essential relationships are, however, not affected by such complications.

far as the data are available, of how the observed values of each have moved over the last century in the United States.

c. The Share of Corporate Stock in the Assets of Financial Institutions

There are at least half a dozen factors that must be considered in looking behind the share of corporate stock in the assets of financial institutions and the makeup of their stock portfolios. One of these, of course, is the set of regulations, by statute or less formal means, which limit or even prohibit the holding of stock for most types of financial institutions, and which, in addition, make provisions regarding the character of the stocks that may be held, thus affecting the size and composition of the institutions' portfolios. Such regulations are most rigid for banks, but they also are fairly strict for life insurance companies and public pension funds. They are more lenient, i.e., allowing a larger proportion of stocks to be held and imposing fewer conditions on the types of stock held, in the case of property insurance companies. They are almost absent for investment companies, private pension funds, common trust funds, and, apart from the provisions in individual trust instruments, for personal trust funds. On the other hand, the holding of certain stocks is required for a few types of financial institutions, such as the holdings of stock in the Federal Reserve banks by member commercial banks and the holdings of stock in the Federal Home Loan Banks by member saving and loan associations.

Traditions, partly stemming from possible adverse publicity, are an additional factor that often have kept actual stock holdings below legally permitted levels. The effect of such traditions has been particularly evident in the case of state and local pension funds and in the case of life insurance companies, from the time of the Armstrong-Hughes investigation early in this century[11] to fairly recent years.

Given regulations and traditions, relative yields, taking account not only of stipulated or expected regular income but also of the chance of capital losses or gains and of the extent of price fluctuations, probably have been a determining factor in the total size of an institution's stock portfolio and even more in its makeup. Until World War I, and probably even until World War II, expected current yields were probably the most important single factor. In the postwar period, however, chances of capital gains (and risk of capital loss) have come to play a more important role, together with tax considerations and protection against inflation, in determining the size and the structure of institutional stock portfolios.

[11] *Report of the Joint Committee of the Senate and Assembly of the State of New York Appointed to Investigate the Affairs of Life Insurance Companies*, 1906.

Liquidity, i.e., the chance of being able to sell blocks of stock rapidly and without substantially influencing their price, has been an important factor for those types of financial institutions that keep a substantial part of their total assets in corporate stock, particularly in common stock, and may have to face substantial withdrawals or other needs for funds. Thus, liquidity is likely to have played the relatively greatest role in determining the size and makeup of the stock portfolio in the case of investment companies and of non-life-insurance companies.

A minor factor accounting for a small proportion of total stock held by financial institutions is convenience. This is responsible for the relatively moderate holdings of stocks in real estate corporations that own the building in which the institution conducts its business and of service corporations, like safe-deposit corporations, owned by commercial banks.

Another minor factor is the involuntary acquisition of stock, particularly the exchange of stock for bonds or loans issued by debtors forced to reorganize their capital structure.

A final factor, which at times has been of importance, is control of either financial institutions of the same type as the holder or of other financial or nonfinancial corporations. Because such holdings usually have been prohibited by regulations, particularly during the last half century, they have constituted only a relatively small proportion of the total stock holdings of financial institutions. There are two exceptions, however: the holdings of stocks of operating non-life-insurance companies by other companies of this type, and the holdings of commercial bank stocks by life insurance companies in the two decades or so before the Armstrong-Hughes investigation.

These different types of stockholdings are rarely, if ever, specifically distinguished in the balance sheets or other accounting records of financial institutions. The character of a specific stockholding generally can only be inferred from the nature of the holding itself.

In view of the multiplicity, variety, and, in some cases, nonquantitative nature of the factors apparently influencing the share of corporate stock in the asset holdings and acquisitions of financial institutions it is not surprising that efforts at an econometric determination of the shares have so far been unsuccessful.[12]

d. The Supply of Corporate Stock

The supply of corporate stock from which the holdings of financial

[12] See Chapter 5, section 2.

institutions are drawn may be divided into three categories whose levels and movements often differ considerably.

The first, and in practice by far the most important, component consists of the stock of domestic nonfinancial corporations. Issues of such stock (net of retirements) during any given period (e_c) may be regarded as the product of (1) total issues of securities by domestic nonfinancial corporations including all forms of debt (i_c) and (2) the share of stocks in total issues (a_c). The first component, in turn, can be resolved into total gross capital expenditures by nonfinancial corporations (k_c) and their external financing ratio ($g_c = i_c/k_c$), a formulation based on the assumption that a substantial part of the stock issues of nonfinancial corporations are connected with their capital expenditures, defined more or less broadly. Total capital expenditures of nonfinancial corporations, finally, may be expressed as the product of total national capital formation (k) and the share of nonfinancial corporations in national capital formation ($b_c = k_c/k$). Again expressing the supply of corporate stock in terms of gross national product rather than as an absolute figure, we obtain the following expression for the supply of stock by nonfinancial domestic corporations:

$$\frac{e_c}{y} = \frac{k}{y} \times b_c \times g_c \times a_c,$$

where k/y is the national capital formation ratio. The left-hand ratio e_c/y may be regarded and interpreted as a weighted average of corresponding ratios for the main groups of nonfinancial corporations which differ considerably in the relevant values of b, g, and a.

To illustrate, using values not too far from those observed in the United States during the postwar period (and including consumer and government durables in capital formation), we obtain

$$\frac{e_c}{y} = 0.25 \times 0.50 \times 0.30 \times 0.10 = 0.00375.$$

Thus, the indicated volume of net new issues of stock by domestic nonfinancial corporations is slightly less than 0.4 percent of gross national product.

The value of an expression of this type, which must be regarded as reflecting definitional and functional interrelationships rather than unidirectional causal connections, is that it shows the relative contribution of four relevant economic magnitudes (the national capital formation ratio, the share of nonfinancial corporations in national capital formation, the

share of external in total financing of nonfinancial corporations, and the share of stock in these corporations' external financing) to the stock issue ratio of nonfinancial corporations. It also permits us to see whether and how the ratio and its components have changed over time. This is not the place to attempt an explanation of the factors which are responsible for the level and movements of these four magnitudes.

The value of the stock of nonfinancial corporations outstanding at any one date (E_c) of course equals (1) the sum of past issues of such stock (Σe_c) and (2) the differences between the original issue price and the market price at balance sheet valuation of all previously issued stock ($E_c - \Sigma e_c$), a figure which, of course, depends on the movements of stock prices, so that $E_c = \Sigma e_c + (E_c - \Sigma e_c)$. In practice it is usually possible to estimate E_c and Σe_c directly with a fair degree of accuracy. Aggregate capital gains ($E_c - \Sigma e_c$) must be obtained as their difference rather than directly as $\Sigma (E_c - e_c)$.

The second and third components of the holdings of corporate stock that are relevant for financial institutions—the stock of domestic financial corporations and the stock of foreign corporations—are of sufficiently small importance for this study to be regarded as exogenous.

However, domestic financial stock issues could be explained by linking them to the total issues of financial institutions or, more appropriately, to the ratio of total issues to gross national product (ϕ). Designating the share of the issues of those financial institutions that operate in corporate (rather than mutual) form by h, and the proportion of stock in total issues of corporate financial institutions by a_f, we obtain the following expression for the ratio of net new issues of stock by financial institutions to gross national product,

$$\frac{e_f}{y} = \phi h a_f,$$

an expression in which a_f may be regarded as the weighted average of the a ratio for the various groups of financial institutions that issue stock, i.e., primarily commercial banks, property insurance companies, finance companies, and investment companies.

4. THE USE OF NATIONAL BALANCE SHEETS AND FLOW OF FUNDS ACCOUNTS IN THE ANALYSIS OF INSTITUTIONAL STOCKHOLDINGS

It would be possible to analyze the level and movements of corporate stockholdings by financial institutions on a piecemeal basis, using only

such statistics as happen to be at hand and as are needed in the calculation of the two crucial ratios: the holdings of corporate stock to total assets of the different types of financial institutions, and the stockholdings by financial institutions to the total amount of stock of different types outstanding. To do so, however, while it would considerably reduce the volume of data needed, would not permit us to show the interrelationships between the holdings of stock and of other uses and sources of funds for the different types of financial institutions; between stocks held by financial institutions and those held by other sectors; and between the issuance of stock and other sources and uses of funds of corporations. In other words, such a limited scope of investigation would not provide sufficient material for a satisfactory analysis of the demand for the supply of corporate stock by important sectors of the economy.

Since the Securities and Exchange Commission felt that it needed a comprehensive and consistent picture of stocks and flows of corporate shares in the postwar American economy for its detailed study of financial institutions and the stock market in recent years, use was made of an organized body of statistical data for that period, developed as a part of a comprehensive system of national accounts. This material is known as the Flow of Funds System, although it actually has a broader scope, including integrated information on both stocks of assets and liabilities in existence at a point of time (balance sheet dates) and flows during a period between balance sheet dates (the flow of funds in a narrow sense).

The system of national accounts includes balance sheets and flow of funds statements for as many separate sectors of the economy as are important for the analysis and as can be derived on the basis of the statistical material in existence. Such a system automatically not only provides the two desired sets of ratios of stock holdings to total assets of financial institutions and of such holdings to total stock outstanding, but also permits for each sector (1) an analysis of the structure of assets held and hence of portfolio policies, and (2) of methods of financing and thus of the role of corporate stock as a source of funds. It also makes it possible—provided some additional statistical material is available—to set up a stock and a flow matrix for corporate stock, showing, respectively, interrelations between issuing and holding sectors of corporate stock at a given point of time, or the purchases and sales of stock among sectors during a period of time.

As a starting point in building up sectoral balance sheets and flow of funds accounts for the period 1952–68 on which the investigation centered, there were available the flow of funds accounts of the Federal Reserve

Board, limited to financial assets and liabilities,[13] and complete annual sectoral balance sheets for the years 1952–58 in *Studies in the National Balance Sheet of the United States*.[14]

Owing to the considerable amounts of basic statistical data that have become available during the 1960's, it became necessary to recalculate the estimates of stocks and flows of tangible assets for the entire period 1952–68, with only limited recourse to the earlier estimates for the first few years of the period. While the Federal Reserve Board estimates of stocks and flows of financial assets could be accepted with only minor changes, it was found essential for the present study to supplement these figures in several directions, mainly by breaking down the household sector into about half-a-dozen subsectors, by separately estimating the assets and transactions of personal trust departments of commercial banks and their transfer to the financial institution sector, and by including several minor types of financial institutions. The statistical problems arising in these estimates are described in the appendix and are briefly summarized in the following section.

5. STATISTICAL PROBLEMS

Information on the sources of data and the methods of estimation of the stock and flow data used in the study are provided in Appendix I. At this point it will suffice to discuss three statistical problems of general importance: first, the grouping of the more than 70 million economic units now operating in the United States (households, business enterprises, and governments) into sectors for which separate balance sheets and sources and uses of funds statements are constructed; second, the classification of the very large number of types of assets and liabilities into a few reasonably homogeneous categories; and third, the methods used in valuing assets, liabilities, and equity in balance sheets and in deriving estimates of fund flows from balance sheet data.

a. Sectorization

Sectorization should theoretically be guided by the principle that the units included in a sector are as homogeneous as possible in their economic behavior (in this study, in their portfolio and stock trading policies). Actual sectoring is a compromise between this principle and available

[13] The results obtained are published in Board of Governors of the Federal Reserve System, *Flow of Funds Accounts 1945–1968*, May 1970. The study, however, used somewhat more detailed and occasionally revised worksheets.

[14] Goldsmith, Lipsey, and Mendelson (see note 3, above).

statistical data, particularly because of the need to adapt to the existing flow of funds statistics and national balance sheet estimates.

For purposes of this study the essential separation is between financial institutions and nonfinancial sectors. Financial institutions have been defined as organizations that keep most of their assets in the form of claims against, or equity securities of, numerous issuers which they do not control through stock ownership, and that obtain most of their funds from the public rather than from a very narrow group of stockholders or creditors. The grouping of the many organizations meeting this definition follows the traditional pattern, the only one for which extensive statistics are available.[15] The sectoral balance sheets and flow of funds statements for the period 1952–68 thus distinguish the following groups of domestic financial institutions:

1. Federal Reserve banks
2. Commercial banks
3. Mutual savings banks
4. Savings and loan associations
5. Credit unions
6. Federal lending agencies
7. Mortgage companies
8. Finance companies
9. Life insurance companies
10. Fraternal insurance organizations
11. Non-life insurance companies
12. Private (noninsured) pension funds
13. State and local pension funds
14. Open-end investment companies
15. Closed-end investment companies
16. Personal trust departments of commercial banks
17. Common trust funds of commercial banks
18. Security brokers and dealers.

[15] As in practically all such classifications, not every unit belonging to each of the groups defined as financial institutions completely meets the tests laid down above. Thus, captive finance companies may receive all their funds from their parent as undoubtedly do some units in some of the other groups. On the other hand, federal pension funds, as well as the social security system, do not have a diversified portfolio of securities but are limited to obligations of the U.S. Treasury. In such borderline cases the inclusion in or exclusion from the group of financial institutions is to some extent arbitrary. In most such cases the breakdown of a group of institutions into those which belong to the class of financial institutions under strict interpretation of the definition and those that do not is not feasible statistically.

For the period before 1952 a few of the smaller groups are omitted because of lack of data. Some other groups (e.g., 6, 12–15, and 17) enter the statistics only when they become of substantial size, usually in the 1920's or 1930's.

Among the nonfinancial sectors three do not present substantial conceptual or statistical difficulties: nonfinancial corporations, state and local governments, and the rest of the world. All three sectors constitute reasonably well-defined groups for which comprehensive statistics are available—for nonfinancial corporations from the Internal Revenue Service, for state and local governments from the Bureau of the Census, and for the rest of the world from balance of payments statistics—although not in as much detail as would be desirable for the present study.

For nonfinancial corporations a problem arises due to the absence of subsectoring in previous estimates of national balance sheets in flow of funds statistics, notwithstanding very considerable differences in the economic character and in the financial behavior of such subgroups. An attempt was therefore made to break down the total figures for nonfinancial corporations into four subsectors (manufacturing and mining, transportation, communication, and the necessarily heterogeneous remainder), but the difficulties encountered in this attempt were such that no usable estimates could be produced within the confines of this study.

The state and local government sector excludes pension funds of state and local government employees, which are treated as one subgroup of financial institutions. The general funds of state and local governments, however, remain in the sector. So do the relatively small public utility and similar business-type activities of state and local governments.

The estimates for the federal government sector do not include government lending agencies (the most important are in the fields of housing, farm credit, and foreign trade), which are regarded as a subgroup (6) of the financial institutions sector. On the other hand, the funds accumulated for federal employees' pension funds, as well as for the social security system, which could well be regarded as another subgroup, have in accordance with past practice been left in the federal government sector. Occasionally, however, it is indicated how a shift of these organizations to the financial institutions sector would affect the figures.

It has been common practice, due to statistical necessity, to obtain most estimates for the "household" sector as a residual, i.e., by subtracting from the national total aggregate, figures for all other domestic sectors and for the rest of the world. As a result, the so-called household sector has

included nonprofit institutions and the assets owned by households but administered by trustees (mostly financial organizations), as well as households proper, unattached individuals, and the statistical errors inherent in this procedure. This sector, therefore, has lacked homogeneity, particularly from the point of view of the management of its financial assets.

In this study two steps have been taken to make the household sector data more homogeneous, particularly for financial analysis. Unfortunately both steps, although important, cannot in the present state of the statistical material go as far as could be desired.

The first step is the separation of funds held by the personal trust departments of commercial banks, which have been made an independent subsector (16) of the financial institutions sector. Logically trust funds administered by nonbank trustees as well as funds effectively administered, although not legally held under trustee arrangements, by investment advisers should be treated similarly. This is not yet possible. For investment advisers, however, at least the present order of magnitude of the funds managed is known.

A second step is the separation of foundations and private educational institutions, the two largest components of nonprofit institutions from the point of view of their financial assets. It also has been possible to estimate the financial assets of labor unions (see Appendix IV), but they have not been eliminated from the "household" sector because of their moderate size and the unavailability of sufficient asset breakdown for part of the period. It has not been feasible to treat other nonprofit institutions, particularly churches and hospitals, in the same way, but the fragmentary currently available information indicates that their financial assets, and particularly their stockholdings, are relatively small compared with those of foundations and private educational institutions.

The household sector so purified still is of a quite heterogeneous character. An attempt has been made, therefore, to allocate the estimated total of financial assets of the sector among half a dozen subsectors of households having different amounts of total wealth. These estimates are necessarily of a very rough character and could be made only for a few recent years. Their derivation and limitations are described in Appendix V.

b. Classification of Assets and Liabilities

Given the very large number of types of tangible assets and of financial instruments and the often vague distinction among them, an integrated system of sectoral balance sheets and flow of funds statements requires a standardized classification of assets and liabilities into a manageable

number of reasonably homogeneous types, a classification that can be implemented for all sectors that are distinguished. Such a system obviously cannot provide for separate presentation of all types of assets or of all types of liabilities that may be important for one or for a few sectors or subsectors. It must be limited to those types that are significant for most sectors; that differ substantially in their economic character; and that can be estimated without an excessive margin of error.

The standard classification adopted for this study, set forth in Table 1-1, is, like most such classifications, a result of compromise. It provides a minimum of seven types of tangible assets and five types of financial instruments (money, short-term claims, long-term claims, corporate shares, and equity in unincorporated business enterprises) while net worth is obtained as the difference between total assets and total liabilities.[16] However, the classification also permits a finer breakdown of financial instruments—the three-digit categories in Table 1-1 and the more detailed four-digit categories which may be added—for sectors where the data are available and where these classifications are sufficiently important in the sectors' portfolio structure. Actually it has been possible to implement the three-digit classification for most financial subsectors and for some nonfinancial sectors.

Because of the limitation of the basic statistical data the separation of long-term and short-term claims (categories 220, 330, 420, and 430) requires for a few sectors rather rough methods of allocation. This is unlikely to introduce errors that are significant in the over-all picture. More serious is the fact that the content of long- and particularly of short-term claims is not identical in the documents on which estimates for individual sectors are based. This applies particularly to the treatment of accrued claims and liabilities and of reserves for losses. Such discrepancies are one of the reasons why the national total of claims and liabilities are not equal. Differences in valuation of the same instrument by the holder and issuer and in timing of identical transactions in the accounts of the buyer and seller provide other reasons.

It should be noted that a few types of tangible assets (consumers' inventories of semidurable and perishable commodities; military equipment; subsoil assets; monuments; collectors' items) that are sometimes included in national wealth have been omitted, mainly because of the impossibility or extreme difficulty of obtaining estimates that are more than guesses or (in the case of military equipment and monuments) because of doubts

[16] Details about the definition of these categories and their statistical implementation will be found in Appendix I.

TABLE 1-1

Stock and Flow Categories

100 Tangible assets	300 Total assets
110 Land[a]	400 Liabilities
120 Reproducible tangible assets	410 Domestic money[b]
121 Residential structures	420 Other short-term liabilities
122 Nonresidential structures	421 Bank debt
123 Producer durable equipment	422 Trade debt
	423 Other
124 Consumer durables	430 Long-term liabilities
125 Inventories	431 Bonds
126 Monetary metals	432 Mortgages
200 Financial assets	433 Other
210 Domestic money[b]	500 Net worth (300 − 400)
220 Other short-term claims	
221 Against financial institutions[c]	
222 Treasury securities	
223 Other	
230 Long-term claims[d]	
231 Bonds	
232 Mortgages	
233 Other	
240 Corporate shares	
250 Equity in unincorporated businesses	600 Total liabilities and net worth

[a] Does not include subsoil assets.

[b] Currency and check deposits.

[c] Further breakdowns in statements of individual sectors and subsectors would be designated as 2211 and so on. Categories 221–223, 231–233, 421–423, and 431–433 may have to be omitted in some sectors.

[d] Does not include claims against financial institutions; intermediate-term claims included where possible.

about their economic significance.[17] Similarly some financial assets (such as goodwill and patents) are included only to the very incomplete and unsystematic extent to which they happen to appear in the balance sheets of nonfinancial corporations. In this case elimination of these items would be the conceptually indicated procedure.

[17] For estimates of subsoil assets, see R. W. Goldsmith in *Studies in Income and Wealth*, Vol. 14, New York, NBER, 1951, p. 48 ff.; and for those of military equipment in 1952–58, see R. W. Goldsmith, *The National Wealth of the United States in the Postwar Period*, Princeton, Princeton University Press for NBER, 1962, p. 118.

c. Valuation

In principle all items in a balance sheet should be valued at the market price, or at the nearest approximation to it, in order to obtain figures comparable among sectors and among assets and liabilities, while all entries in flow of funds statements should be made at actual transactions values. Limitations in the basic statistical data, as well as some conceptual difficulties, do not permit a consistent application of these principles in actual statistical work to all sectors and to all types of assets and liabilities.

Among tangible assets no market values exist for most categories of nonresidential structures, such as large industrial installations and government structures, and for most types of producer equipment. Here estimated replacement cost, appropriately depreciated for the age of the structure or equipment, must be used as a substitute. Figures of this type can be obtained by applying to the estimated original cost price indexes that are not always adequate and that generally do not take into account quality improvement, particularly in the case of equipment, and hence probably overstate the increase in prices. These difficulties are discussed in Appendix I. Estimates of the value of land present some conceptual and statistical problems of their own that are described in Appendix II.

Among financial assets the most important deviation from the general principle of valuation at "market" is the valuation of long-term debt at face or book value, both where the instruments are traded and where there is no actual market. This defect is not inherent in the method used in compiling sectorial balance sheets, but is due to the limitations of time and resources under which the study was conducted. In a period of generally rising interest rates such as 1952–68, particularly during the later part of the period, the use of book or face values instead of market overstates the actual or hypothetical market value of long-term debt. Insofar as the figures are intended to reflect the values that determine the behavior of holders and issuers, however, it is doubtful that an unequivocal application of market values, or their hypothetical equivalent, would be appropriate. Possibly some figures between face or book value and market value may be preferable, although actual calculation is hardly practicable.[18]

[18] Since there was no possibility to adjust the face or book value of long-term debt to market or equivalent values we did not have to face the difficult and disputed question whether the adjustment should be applied, if at all, only to holders' balance sheets while such debt should be carried in issuers' balance sheets at redemption value irrespective of its market value. The entries in the flow of funds statements are not affected by the adjustment since it reflects an unrealized capital gain or loss which, of course, is not taken into account in the flow of funds estimates.

In the case of corporate stock a specific valuation is needed only for holders, and here market value, or a value which in the case of unlisted securities approximates it, is the indicated standard. While the margin of error in such an estimate is undoubtedly substantial for unlisted stocks, they fortunately constitute only a small portion of total outstanding corporate stock so that even a substantial error would not decisively affect estimates for all corporate stock outstanding. In the case of sectors issuing corporate stock, i.e., nonfinancial corporations and most of the subsectors of the finance sector, no use is made of the market value of the stock because net worth is estimated as the difference between the market value of total assets and the value (essentially the face value) of liabilities.

Difficulties in the case of the flow of funds statements arise from the fact that virtually all estimates for claims are derived as the first difference between the values of the stock of claims at the beginning and at the end of a period. Since these are essentially face or book values, the difference between them includes realized capital gains and losses as well as other revaluations. To correct the first differences for these items detailed income statements are needed, but are not available for most of the nonfinancial sectors and for part of the subsectors of the financial sector. Even where some data of this type are available resources were lacking to carefully investigate the material and to blow up the fragmentary data to cover an entire sector or subsector. The only exceptions are realized capital gains and losses by commercial banks in their transactions in U.S. government securities, which already are allowed for in flow of funds figures published by the Federal Reserve Board. In the period covered by the study, which has been characterized by rising interest rates and falling bond prices, omission of this adjustment leads to an overstatement of net purchases, or an understatement of net sales of bonds by the trading sectors. It is unlikely, however, that the adjustment would be large enough to affect any of the major trends disclosed by the figures except for a few years, a few types of long-term claims, and a few subsectors of the finance sector.