THE USES OF NATIONAL BALANCE SHEETS

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The now urgent problem in the field is to translate into practice the theoretical agreement, slowly reached over the past two decades, on the need for and feasibility of sectorized national balance sheets.

The paper discusses the five main uses of national balance sheets, viz. (1) the study of the relations among assets and liabilities at one point of time in one country, particularly the position of financial institutions; (2) the analysis of changes in one country's financial structure between several balance sheet dates; (3) the comparison of balance sheet structure at one date among two or more countries; (4) the comparison of the financial development of several countries for at least two but usually more numerous balance sheet dates; and (5) the use of selected balance sheet items, e.g., reproducible tangible assets or liquid financial assets, in econometric models.

Examples are presented of the first three uses, viz. for (1) an eleven sector balance sheet matrix for the U.S. as of the end of 1962; for (2) an unsectored national balance sheet of the U.S. in 1900, 1912, 1929, 1939, 1945 and 1958; and for (3) a comparison of condensed unsectored national balance sheets for a dozen countries (USA, UK, France, Germany, Belgium, Norway, Italy, Japan, Israel, Mexico, India and the USSR) for a date in the neighborhood of 1960.

After considerable hesitation by many of our traditionally inclined and appropriately cautious colleagues, the desirability and feasibility of an integrated comprehensive system of national accounts, which includes a balance sheet as a necessary component, seems now to be generally accepted. The International Association for Research in Income and Wealth may claim some credit for having accelerated and broadened the acceptance of stock accounting on a par with flow accounting.[1]

The problem now is to translate this slowly gained theoretical agreement into practice. So far the official statistical agencies have done relatively little in this field. No country as yet prepares regularly full national or sectoral balance sheets. All or most of the data required for the intangible part of the balance sheets, however, are forthcoming from those countries which are developing a regular full flow-of-funds system. The list now includes, but is not

1. Thus, when the Association sponsored a study of long-term trends in the United States (*Income and Wealth*, Series II, 1959) it included estimates of national wealth as well as an analysis of national income and production data; it devoted an entire volume (*Income and Wealth*, Series VIII) resulting from the Arnheim conference in 1957, to national wealth; and it published one of the earliest, if not the earliest, actual estimate of a reasonably detailed national balance sheet as part of the proceedings of the Castel Grandólfo meeting in 1953 (*Income and Wealth*, Series IV).

limited to, the United States, France, the Netherlands, Belgium, Norway, Australia, New Zealand, Japan, India, and Venezuela. Unofficial estimates of complete national balance sheets likewise are still very scarce. The only countries for which sectorized national balance sheets have been published are the United States, where they are available for six benchmark dates between 1900 and 1939,[2] and annually for 1945 through 1958;[3] and the United Kingdom, for which they exist for 1953–55[4] and for 1957–61.[5] A few unpublished rough estimates have been leading an underground existence and are utilized here, some possibly against the wishes of the authors. A small number of additional estimates have been made for this paper. These, needless to say, are very rough too. They are included, first, because nothing else exists and I prefer not to discuss the matter *in vacuo*. These rough estimates are included, secondly, with a little malice aforethought to goad statisticians of the countries involved into producing better, or at least less outrageous, national balance sheets for their fatherlands.

There are at least five main uses for national balance sheets regarded as statements of all real (tangible) and financial (intangible) stocks, i.e., assets, liabilities, and net worth, of all the economic units within a country or an area.

The first of these uses is the study of the relations among assets and liabilities at one point of time in one country. Of particular importance in this approach is the analysis of the position of financial institutions in the economy which indicates the creditor and debtor relationships existing between the financial institutions on the one side and the main nonfinancial sectors of the economy on the other.

The second main use is the analysis of financial development, i.e., of changes in financial structure in one country between two or more balance sheet dates, which may be continuous (usually annual) or limited to selected benchmark year dates. Such comparisons can be made with or without adjustment for changes in the purchasing power of the monetary unit.

The third use is the comparison of the balance sheet structure of two or more countries at one date, which may either be the same (or a neighboring) date, or may be so selected that the dates reflect a similar phase in the economic development of the countries being compared. Here again the comparisons can be made with or without consideration of differences in the purchasing power of the currencies of the countries involved.

A combination of the analysis of changes in financial structure of individual countries and of the comparison of financial structure of several countries at one date yields the fourth use, the comparison of financial development of several countries for at least two but usually more numerous balance sheet dates.

The fifth use of national balance sheets may be regarded as accidental or extraneous, but it may in practice be one of the most common and most

2. R. W. Goldsmith, *A Study of Saving in the United States*, Vol. III (1956), part I.
3. R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the United States*, 1963.
4. E. V. Morgan, *The Structure of Property Ownership in Great Britain*, 1960.
5. J. Revell, "The National Balance Sheet of the United Kingdom," to be published in a later issue of this *Review*.

valuable purposes served by national balance sheets. This is the use of selected national balance sheet items as variables in econometric models. Reproducible assets, possibly limited to those used in business, and liquid assets held by the public are two examples of this subsidiary use of national balance sheet data, one taken from among the real and the other from among the financial assets.

The first question we must ask for each of these five uses concerns the characteristics required of national balance sheet data if they are to serve their purposes. These requirements in turn will concern at least five important characteristics of national balance sheet data: the scope of assets and liabilities included in the balance sheets; the number and character of separate assets and liabilities being distinguished; the number and delimitation of sectors for which separate balance sheet estimates are made; the valuation to be applied to the different items in the national balance sheets; and the form of presentation of the statements. Once the specific requirements under the different uses have been clarified we must examine how far they are met by the existing estimates of national balance sheets. We must then proceed to consider how far the requirements not satisfied by the data now available can realistically be met by future statistical work in this field.

This paper, also, is far from carrying out this ambitious program. All it does, besides offering some comments on a few general problems, is to present and discuss one numerical example of each of the first three uses. These examples are an eleven sector balance sheet matrix for the United States at the end of 1962 presented to illustrate the use of one-place-one-date balance sheets; the national (unsectorized) balance sheets of the United States in 1900, 1929, 1945 and 1958 as an example of the comparison of the balance sheet of one country over a long period of time; and the national balance sheets, again unsectorized because of lack of more detailed material and of space, of about a dozen countries for a date close to 1960 as a basis of discussion of inter-country comparisons. We do not yet dispose of a sufficient number of sets of national balance sheets for individual countries to present an example of the fourth use, the international and intertemporal comparison of the structure or other characteristics of national balance sheets. I trust, however, that when the subject reappears on the agenda of the Income Conference in a decade, or possibly earlier, my successor will have ample material for his analysis.

I. Balance Sheets for One Date and One Country

The basic material here is the balance sheet for one date and one area, usually a country within its political boundaries comprising either all economic units within the area, in which case we may speak of a national balance sheet; or one or more groups of units, combined into functional or institutional sectors. The sectoral balance sheets may or may not include all units within the area, but they should be non-over-lapping.

In this situation intertemporal and international (or interregional) comparisons are obviously excluded. If only one undivided national balance sheet is available little analysis can be done on the basis of the figures. We may of course calculate some ratios, such as the financial interrelations ratio (financial

assets: tangible assets); the ratio of non-reproducible to reproducible tangible assets; the distribution of tangible and financial assets among the different components; the relationship between financial assets and financial liabilities of various types; and the relationships between certain tangible assets and associated financial liabilities (e.g., residential real estate and residential mortgage debt). Unless we are able to compare these ratios, at least implicitly, with values in other situations there is, however, not much that we can do with these figures.

The possibilities are much larger once the national balance sheet is broken down into sectoral statements. In that case the primary use that can be made of these one-date-one-area balance sheets is the analysis of financial interrelations, the comparisons of sectoral structure ratios probably ranking second in interest.

Since the analysis of financial interrelationships is the primary objective, the balance sheets are of little value until they distinguish at the very least the financial system from the rest of the economy. To be of real use, however, the non-financial sector must be broken down into at least three subsectors that differ greatly in the size and character of their customary relationship with the financial system: business enterprises, households, and government; and the rest of the world will have to be treated as a separate sector. Because of the different character of the operations and particularly the methods of financing, it is very desirable to subdivide business enterprises into corporate and noncorporate units, or into large publicly financed corporations and all other business enterprises; and to have a separate balance sheet for government owned enterprises so they can be combined with the business sectors when such treatment is wanted. Similarly, we need at least two subsectors of the financial system, the monetary system and nonmonetary financial institutions. For closer analysis each of these should be further subdivided into two components, the monetary system into the central bank and the check-money issuing banks; and the nonmonetary institutions into those that are financed by saving-type deposits (savings banks, savings and loan associations, credit unions, etc.) and insurance organizations. We thus end up with about a dozen sectors that are required, or at least desirable, in most cases:[1]

1. Non-agricultural households	Non-financial
2. Agriculture	
3. Nonprofit institutions	
4. Nonfinancial private business enterprises	
5. Nonfinancial government enterprises	
6. Central government	
7. Local government	

6. This list may be compared with the "minimum list of sectors for financial accounts" agreed upon by the Working Group on Statistics of Financial Assets and Liabilities (Confer. Eur. Stats/WG.ii/45; April 1964). Both lists distinguish about one dozen sectors. The main differences consist in (1) the distinction of agriculture and non-profit institutions in the list above, two sectors combined with non-agricultural households in one sector by the Working Group; the separation of depository (saving) from other financial institutions; the inclusion of social security funds in the insurance sector rather than, as the Working Group suggests, treating them as a separate Government sector; and the omission of a separate sector for producers' cooperatives provided for by the Working Group.

8. Monetary authorities
9. Check-issuing (commercial) banks
10. Depository (saving) institutions
11. Insurance organizations
12. Other financial institutions
13. Rest of the world

} Financial

These dozen sectors are probably sufficient in most cases. For more detailed analysis, particularly in the case of financially developed countries, a few additional subdivisions are desirable, both in the nonfinancial sectors, particularly for private business enterprises, and in the financial sectors, particularly for sectors 10–12. For closer analysis it is also very desirable to subdivide the nonagricultural household sector into several more homogeneous subsectors determined by income and wealth levels, occupation, or other characteristics called for by the specific purposes of the analysis. In less developed countries the distinction within the agriculture and other enterprise sector of modern and traditional or predominantly pecuniary and predominantly subsistence units is of particular importance. The objective of this distinction obviously is not primarily to disclose the financial relations of the subsistence sectors which are by definition tenuous if not nonexistent, but to relate the information on financial assets to the real assets, as well as the income, of the pecuniary sector. The statistical difficulties of such breakdowns are obviously very great. In one case, however, these difficulties should not stand in the way of even very rough estimates, the separation of entrepreneurial from other nonagricultural households.

Given the dominating importance of the analysis of financial interrelationships among the purposes of one-date-one-place balance sheets, the desired form is a set of square matrices, one for each type of assets, identifying the creditor and debtor sectors in the case of claims and the holder and issuer sectors in the case of equity securities. (For tangible assets the matrix, of course, shrinks to one row or column.) We thus end up with a three-dimensional matrix with n^2m cells, where n is the number of sectors and m the number of financial instruments distinguished. With, say, 10 sectors and 5 instruments—about the minimum for closer analysis—the result is a 500-cell matrix, a considerable proportion of the cells being empty or of negligible importance. The similar more aggregative matrices for all claims, all equity securities or ultimately all financial assets are of less use in analysis, but they are certainly preferable to the usual sectoral balance sheets that do not identify the other party's sector.

The compilation of matrices of this type presents great statistical difficulties, not the least of which is the difference in the amount at which the same item, e.g., the claims of households against savings banks—are reported by or derivable from the records of the two sectors involved. It is therefore fortunate that for many types of financial assets, including some of the most important types such as money, there is only one debtor (issuer) sector. The information contained in a full set of matrices can then be approximated in a balance sheet by judicious selection of the financial assets being distinguished. It should thus be possible in most cases to preserve all matrix cells that contain a substantial proportion of

total national financial assets—say 1 per cent or more—by distinguishing no more than about a dozen types of financial assets. The exceptions are miscellaneous claims and liabilities, particularly accruals and similar items. The economic significance of these items, however, is anyhow doubtful and their statistical estimation is necessarily of the roughest.

The primacy of the analysis of financial interrelations also provides a guide to the solution of the difficult problem of classifying units the activities of which belong to more than one sector. To the extent that financially relevant decisions are made centrally a unit can belong to only one sector, even if some of its activities would be allocated to other sectors if they were performed by independent units. In this matter the judgment of Solomon is anathema, nor is it possible to escape through the dummy sectors of input-output tables where technical relations are determining. If there is too much overlap between sectors, the only way out is to set up additional sectors for units which are active in more than one sector, but this procedure is tolerable only if no more than two well-defined sectors are involved.

How important this problem is depends, of course, on the fineness of sectoring. The fewer sectors are distinguished, and hence the less relevant information that is provided, the smaller will be the number of cases of units having a significant amount of financial activities in more than one sector. In practice the main problem is presented by the very numerous units, the more important the less advanced the economy, which combine household with entrepreneurial activities within or outside of agriculture. If only one private domestic non-financial sector is established the problem disappears, but in that case the sectorized balance sheet, or for that matter the sectorized flow of funds statement, is of little value for financial or economic analysis. Otherwise there are two possibilities, the separation of business from household activities, or the combination in two separate sectors of agricultural and nonagricultural unincorporated households and enterprises, which then would require setting up sectors for non-entrepreneurial households, corporate nonfinancial business, government, finance, and rest of the world. The second alternative is generally preferable since it permits the combination of assets directly connected with household activities, primarily residences and consumer durables and the debts connected with them, with those of entrepreneurial character thus restoring the decision-making unit.

A similar problem is raised by government-owned enterprises. The test here is the extent to which separate accounts are kept for these enterprises, and how independent they are in the management of their financial affairs. If these enterprises are independent in their borrowing and in the management of their financial assets, although they may enjoy a government guarantee of their debts, there is little doubt that they should be separated from the government sector. By that test most government enterprises should be allocated to a separate sector. Indeed in the case of government-owned central banks and other financial institutions it is common practice in national accounting to include these enterprises in the financial rather than the government sector. The same practice should be followed in combining enterprises in manufacturing, trade, transporta-

tion and power if they meet the test of financial independence. On the other hand, government-operated educational and health facilities should be kept in the government sector even though similar units exist in the nongovernment, usually the nonprofit, sector. To permit a combination of government and nongovernment enterprises in the same industry the government enterprises should be subdivided as finely as the rest of the economy.

In accordance again with the primacy of financial interrelations among the purposes of one-country-one-date balance sheets these should in principle be set up on a gross basis, i.e., all financial relations within the sector should be included wherever they are financially relevant. This will generally be the case unless the same two units (not just any two units in the same sector) are involved. In accordance with this principle, and contrary for example to the practice of the Federal Reserve Board's flow-of-funds statistics, the balance sheet of the banking system should be on a combined rather than a consolidated basis; intercorporate stockholdings should be shown except where they involve parents and subsidiaries, the accounts of which are consolidated in business practice; and trade credit should be on a gross rather than a net basis (receivables less payables). The fact that one group of banks (for instance private deposit banks) or certain groups of them (such as country banks) keep deposits with other groups of banks (central banks or private banks in financial centers), or that certain nonfinancial corporations extend credit to other nonfinancial corporations should not be obscured by consolidation. The level and the movement of these intra-sectoral liabilities are often of great importance for financial analysis. (Whoever prefers the consolidated basis is free to use it if the information is given in full matrix form.)

The case is more doubtful where relations between the same two units are involved, e.g., the holdings of the issuers' own securities in his sinking fund; deposits kept with commercial banks as required balances against loans; government securities held against taxes due the same governmental unit, particularly when they have the form of specific tax anticipation certificates; and loans made by an insurance company against its own policies.

Even here it is preferable to provide information both on the claims and the liabilities involved, but to identify these relations so that they can be eliminated by netting. The test of whether or not to maintain these claims and liabilities in the balance sheet probably is the extent to which they can be regarded as separable and to which they yield different rates of interest. Consequently, most of these claims and liabilities should be included in national balance sheets even if this can be done only by rough approximation. (Because of the character of these items any error of estimation does not involve the net worth of the units concerned.) The exceptions are claims and liabilities for which the decision whether or not to offset the one against the other rests entirely with one party and where there is no difference in maturity and yield between claim and liability, e.g., in the case of sinking fund holdings of callable securities.

There is a fair degree of agreement that the chief criterion of the classification of financial instruments should be their liquidity, i.e., from the holders' point of view the chance of converting the asset promptly and without loss into cash,

and from the issuers' point of view the chance of terminating his obligation at his pleasure and without penalty. For short-term claims there will practically be no difference in the holders' and issuers' evaluation of liquidity. For other financial instruments the position may, however, differ. Long term noncallable Treasury bonds, for instance, are fairly liquid for the holders since they are easily saleable, but they are a quite illiquid liability for the Treasury. The difference is even more pronounced for common stock which is in principle noncallable (except in the case of winding up the company) and can only be retired by repurchase in the market. The points of view of holders and issuers are again reconciled at the other end of the liquidity spectrum for nontransferable noncallable claims without maturity date which are entirely illiquid for both parties. This classification by degree of liquidity is, of course, supplemented by the difference between financial instruments having a face value at which they will be repaid at some future date barring default (claims) and of equities which have indefinite life, in principle at least, and often are without face value. These considerations lead to a five-fold classification of financial instruments:[1]

1. Demand claims. Custom, not legal provisions, is decisive in the classification. Thus in most countries time deposits of financial institutions are actually repayable on demand irrespective of what the contract says.
2. Short-term claims. The cut-off for this class is arbitrary and may be somewhere between one to three years' maturity. The chief representatives are accounts receivable and payable, including bank and consumer credit. Most accruals also belong in this category.
3. Medium and long-term claims with fixed maturity.
4. Perpetual claims, practically including any claims with a maturity of more than, say, 50 years. This type is now rare, but formerly was represented by some government securities without fixed maturity and by some corporate bonds with a life of one hundred or more years.
5. Equities, primarily corporate stock.

This five-fold classification will generally suffice although there always remain a few doubtful borderline cases such as certain classes of preferred stock and convertible debentures. One may therefore want to establish a sixth class of miscellaneous financial instruments.

The additional distinction between transferable and nontransferable instruments serves some analytic purposes although it remains more uncertain than the first one which is essentially based on maturity. This distinction, however, is not applicable to demand claims and is of little importance for short-term claims, perpetual claims, and equities, only very few of the last two categories not being transferable. Consideration of transferability thus leads to the addition of only one new classification which is created by the separation of medium and long-term claims into those which are transferable (primarily government and

7. The Working Group of the Conference of European Statisticians proposed a much more detailed "minimum list of financial assets and liabilities," distinguishing no less than twenty categories arranged under nine main headings. This list, however, is drawn up in a way to substitute, at least to some extent, for a complete matrix which is not proposed or discussed

corporate bonds) and those which are not (insurance claims and mortgages).

This distinction of about half a dozen types of financial instruments is entirely sufficient if the national balance sheet is drawn up in matrix form. If it is not, most of these classes must be split in order to produce the information needed for financial analysis. Demand or short-term claims, for example, need to be split into claims against financial institutions, further separating money, and claims against other debtors, separating Treasury bills within the latter category. Long-term claims need to be subdivided even more finely by debtor, distinguishing at least claims against insurance organizations, other financial institutions, corporate bonds, foreign bonds and government securities.

Valuation is undoubtedly the most debated point in the construction of national balance sheets. Two schools have emerged that may be distinguished as the subjectivist and the objectivist approach.

The subjectivists, represented mainly and most ably by Graeme Dorrance,[8] want to use the value that the instrument has in the mind of either the holder or the issuer. Hence the valuation of the same financial asset will not always, or even commonly, be the same in the balance sheet of the holder and that of the issuer. This approach has the attraction of fitting neatly into the framework of utility theory. However, if it is consistently adhered to it either becomes nonoperational —it is impossible to ascertain subjective valuations of millions of holders and issuers—or it becomes conventionalized, leading for the holders to the use of market value for marketable and of book value for all other assets, and for the issuer to the use of face value for claims and book value for equities.

The basic objectivist position is that each instrument has one value which is applied to the balance sheet of the holder as well as the issuer; and that this is the market value or the nearest approximation to it, which in the case of reproducible tangible assets usually will be replacement cost and in the case of nonmarketable equities capitalization of earnings and dividends.

In practice both approaches use face value for short-term claims and for nonmarketable long-term claims. The differences are, therefore, concentrated on reproducible tangible assets, to which the objectivists apply replacement cost while the subjectivists use book value; and to equities, where objectivists rely on market value or analogous valuations, while subjectivists use a different basis for marketable stock in holders' balance sheets (market value) and for nonmarketable stock as well as for marketable stock in issuers' balance sheets (book value).

A reconciliation of these differences is by no means impossible. It can be achieved most expeditiously by showing for those items where the difference is significant both market value (or its nearest approximation) to satisfy the objectivists, and book or face value to give the subjectivists what they want, or rather what they have to use when they implement their approach statistically. In the case of equities one may even go one step further and show adjusted

8. See, e.g., his "Balance Sheets in a System of Economic Accounts" (*IMF Staff Papers*, 1959); "The Entries in Financial Transactions and Balance Sheet Accounts" (*J.R. Statistical Society*, 1963) and "Financial Accounting: Its Present State and Prospects" (*IMF Staff Papers*, July 1966).

book value (the market value or replacement cost of assets less liabilities) as a third basis. This solution has the advantage that every user can choose the basis which he regards as most appropriate for his purpose. The disadvantage is a certain clumsiness in presentation, and, more importantly, the difficulty of systematically ascertaining two or three alternative valuations. This approach may nevertheless be worth trying for a few major items in the balance sheet where the three bases are liable to differ significantly, namely marketable long-term debt, corporate stock, the equities in unincorporated business enterprises and reproducible tangible assets.

As an example, a bird's eye view of the financial structure of the United States at the end of 1962, based on data taken with some adjustments (described in the notes) from the Federal Reserve Board's flow-of-funds statistics, is given in Tables I through VIII.[9] The absolute figures for all financial instruments, short-term claims, long-term claims and equity securities are shown in Tables I, III, V, and VII, while Tables II, IV, VI and VIII provide percentage distributions on the basis of the total outstanding for the relevant asset class. Since all financial instruments are combined into only three classes and the over 60 million economic units in the United States are combined into but ten sectors, only the broad features of the much more complex underlying net of financial relations appear; these, however, are sufficient to provide a preliminary answer to one basic question: who finances whom, and through which instruments?

The tables identify, first, the main financial surplus and deficit sectors. The large deficit sectors, i.e., the net users of funds are, first, non-financial corporations;[10] and, secondly, the Government. Their deficits reflected in their liabilities are offset by the large financial surplus, represented by its net creditor position, of the household sector. Financial institutions have only a small balance, as might be expected from the nature of their operation as intermediaries. Still smaller is the balance of the rest of the world.

The net debtor position of business enterprises and Government and the net creditor position of households are not peculiar to the present situation in the United States. They may be regarded as characteristics of the financial structure of any country at any period of its history. What differentiates countries and phases of financial development are the relations between the net debtor positions of business and of Government; the relations between financial assets and liabilities of the sectors; the relations among total sectoral creditor and debtor positions which have a decisive influence on the changes in the volume of financial assets; and the relations between the financial superstructure and characteristics of the real infrastructure such as national wealth and product. The absence of a substantial foreign balance, on the other hand, is a peculiarity

9. These tables were put together as best as possible from figures published in the *Federal Reserve Bulletin*. Since then the staff of the Flow-of-Funds Division of the Federal Reserves Board has been good enough to comment on them and to suggest a few improvements. These unfortunately could not be taken into account in this version, but would not significantly change the picture.

10. It should be kept in mind that the debtor position of non-financial corporations (and of financial institutions) includes not only shareholders' investment, but also retained earnings which may be regarded as an indirect contribution of shareholders.

of the place and time of the table. In other countries, and at other times in the financial development of the United States, the rest of the world shows a substantial net creditor or debtor position, and thereby indicates that it has acted as supplier or user of funds to an extent that may be quite significant in relation to domestic sources or uses of funds.

Tables I through VIII, secondly, identify the main suppliers and users of each sector's funds. They thus bring out the crucial importance of financial institutions, which is overlooked when attention is centered on the ultimate suppliers and users as they are reflected in the main sectors' net creditor and debtor positions. These relations are shown in Table I to VIII in columns 7 to 7d and lines 7 to 7d which together form what may be called the "finance cross."[11]

Financial institutions are then found to account for approximately four-fifths of the total external financing of households; nearly three-fifths of that of government; and nearly one-third of that of nonfinancial corporations.[12] Most of the financial assets of households are the result of their supplying funds to financial institutions and to nonfinancial corporations (in the latter case to a large extent in the form of their share in corporate undistributed earnings), government absorbing less than one-tenth of the total.

The importance of financial institutions within the financial structure is probably best indicated by the share of the instruments in which financial institutions act as issuer or holder—the items enclosed in the cross bordered by a double line in Table I—in the total of financial assets outstanding. This share is shown to be equal to 63 per cent for the United States in 1962. If the matrix is disaggregated for the main types of financial instruments it shows the finance sector's share to be relatively low for equities—less than one-fifth—but dominating for both short-term claims (about three-fourths) and particularly for long-term claims other than insurance reserves (over four-fifths).

Here again the main features of the picture—the position of the different sectors as suppliers and users of funds of other sectors—are not extraordinary. However, the differences that corresponding tables for other countries or for other periods of the financial history of the United States would show are undoubtedly greater than in the case in which only an identification of net creditor and debtor sectors is wanted. Considerable differences may also be expected in the share of financial institutions in total financial instruments outstanding. Some evidence on this score will be presented in subsequent sections for earlier phases of United States financial development and for the present situation in a number of other countries.

11. An example of a graphic presentation of these relationships (referring to 1958 rather than 1962, but very similar in all essentials) may be found in R. W. Goldsmith, *Bulletin d'Information et de Documentation de la Banque Nationale de Belgique*, September, 1960.

12. The relatively low level of this ratio is due to the treatment of retained earnings as external financing indirectly contributed by the shareholders, i.e., predominantly the household sector. If these were disregarded as not involving new financing, the share of financial institutions as suppliers of funds to nonfinancial corporations would rise to about one half in the aggregate and to over three-fifths for debt financing alone.

TABLE I

FINANCIAL INTERRELATIONS MATRIX[1]; U.S.A., END OF 1962
($ billion)

Debtor \ Creditor	H (1)	A (2)	U (3)	C (4)	T (5)	L (6)	F (7)	B (7a)	S (7b)	I (7c)	M (7d)	W (8)	T (9)
1. Households	13		6	12	8		206	50	99	30	27	1	246
2. Agriculture	7		1	2	6		11	8		3			27
3. Unincorporated business	109		2	10	7		42	19	12	10	1	1	171
4. Non-financial corporations	409		10	76	5	7	209	45	17	126	21	19	735
5. U.S. Government	70		1	41		12	167	101	13	47	6	12	303
6. Local governments	31			5	2	1	48	25	1	21	1		87
7. Finance	532	8	16	44	15	19	83	57	6	12	8	9	726
a. Banking	177	6	13	38	10	19	61	41	5	8	7	8	332
b. Savings institutions	127				4		1		1				132
c. Insurance	218	2	3	6			1			1			230
d. Miscellaneous finance	10				1		20	16		3	1	1	32
8. Rest of world				36	14		6	4			2		56
9. All sectors	1171	8	36	226	57	39	772	309	148	249	66	42	2351[2]

[1]Sum of Tables III, V and VII.
[2]Excludes unallocated assets (43) of Table III, line 10.

TABLE II

FINANCIAL INTERRELATIONS MATRIX; U.S.A., END OF 1962
Percentages of total financial assets

Debtor \ Creditor	H (1)	A (2)	U (3)	C (4)	T (5)	L (6)	F (7)	B (7a)	S (7b)	I (7c)	M (7d)	W (8)	T (9)
1. Households	.6		.3	.5	.3		8.9	2.1	4.2	1.3	1.1	0.0	10.5
2. Agriculture	.3		0.0	.1	.3		.5	.3		.1			1.1
3. Unincorporated business	4.6		.1	.4	.3		1.8	.8	.5	.4	0.0	0.0	7.3
4. Non-financial corporations	17.4		.4	3.2	.2	.3	8.9	1.9	.7	5.4	.9	.8	31.3
5. U.S. Government	3.0		0.0	1.7		.5	7.1	4.3	.6	2.0	.3	.5	12.7
6. Local governments	1.3			.2	.1	0.0	2.0	1.1	0.0	.9	0.0		3.7
7. Finance	22.6	.3	.7	1.9	.6	.8	3.5	2.4	.3	.5	.3	.4	30.9
a. Banking	7.5	.3	.6	1.6	.4	.8	2.6	1.7	.2	.3	.3	.3	14.1
b. Savings institutions	5.4				.2		0.0		0.0				5.6
c. Insurance	9.2	.1	.1	.3			0.0			0.0			9.7
d. Miscellaneous finance	.4				0.0		.9	.7		.1	0.0	0.0	1.4
8. Rest of world				1.5	.6		.3	.2			.1		2.4
9. All sectors	49.8	.3	1.5	9.6	2.4	1.7	32.8	13.1	6.3	10.6	2.8	1.8	100.0

TABLE III

SHORT-TERM CLAIMS MATRIX; U.S.A., END OF 1962[1]
($ billion)

Debtor \ Creditor	H (1)	A (2)	U (3)	C (4)	T (5)	L (6)	F (7)	B (7a)	S (7b)	I (7c)	M (7d)	W (8)	T (9)
1. Households[3]			6	12	1		62	29	8	1	24	1	82
2. Agriculture			1	2			6	6					9
3. Unincorporated business[2,3]			2	10	1		16	13	1	1	1	1	30
4. Non-financial corporations[3]			10	76	3		43	39	2	1	1		132
5. U.S. Government	4		1	22		5	49	42	2	2	3	11	92
6. Local governments				3									3
7. Finance	287	8	16	44	11	19	78	57	6	8	7	8	471
a. Banking[4]	153	6	13	38	10	19	58	41	5	6	6	7	304
b. Savings institutions	127						1		1				128
c. Insurance	6	2	3	6									17
d. Miscellaneous finance[5]	1				1		19	16		2	1	1	22
8. Rest of world							6	4			2		6
9. All sectors	291	8	36	169	16	24	260	190	19	13	38	21	825
10. Unallocated							17[6]	17[6]				26[7]	43
11. Total including 10	291	8	36	169	16	24	277	107	19	13	38	47	868

II. *Intertemporal Comparison for One Country*

Comparisons of the national balance sheets of one country for two or more points of time have two main objectives. The first is the analysis of changes in the structure in the national balance sheet, the second the study of the effect of asset price changes on the national balance sheet and its structure.

1. *Structural Changes*

The possibilities of structural comparisons are numerous and their detail depends on the purposes of the inquiry. Formally one may distinguish three main applications.

The first is the comparison of the size of the financial super-structure in relation to the real infra-structure. This is expressed by the financial interrelations ratio, defined as the quotient of the value of all financial assets to that of all real assets (national wealth). Calculation of the financial interrelations ratio is probably the first, and possibly the most important, single use that can be made of national balance sheets for intertemporal and international comparisons. The ratio fortunately requires only an unsectorized national balance sheet. It can, therefore, be calculated in many cases where the study of other structural changes is precluded because of the lack of sector balance sheets.

Changes in the financial interrelations ratio reflect several factors each of which is of substantial importance. The first is the degree to which the activities of saving and capital formation are separated among independent units; the second, the changing importance of internal finance (retention of income) and of external financing (borrowing and issuance of equity securities); the third, the change in the shares of direct external financing (borrowing etc. from households and other non-financial sectors) and indirect external financing by financial institutions; the fourth, the change in the average number of layers in the

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[1]Includes all items in Federal Reserve Board's *Flow of Funds Accounts, 1945–1962*, Table 6, other than equities (see Table VII) and long-term claims (Table V), i.e., lines 13–18, 28–32, and 34 of Table 6 plus short-term Treasury securities from line 22. Figures based on "uses" columns of Table 6. Allocation of some minor assets among debtors arbitrary.

[2]Trade credit extended by noncorporate business which is given in Table 6 only on a net basis (2) has been grossed (14 and 12 respectively) guided by estimates for 1958 in R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance of the U.S.*, Volume II.

[3]Total of home and other mortgages of three debtor sectors (households, unincorporated business and nonfinancial corporations) distributed among holding sectors in proportion to total home mortgage debt of the three sectors. Agricultural mortgages allocated on basis of Department of Agriculture, *The Balance Sheet of Agriculture 1964*, p. 17. Allocation of trade credit handled similarly.

[4]Since original data of Table 6 are on a consolidated basis, for the banking system interbank deposits have been added (17 each for member bank deposits with FRB and for deposits among commercial banks).

[5]All security loans to brokers and dealers debited to line 7d.

[6]Gold held by U.S. monetary authorities.

[7]Gold holdings of foreign central banks and international organizations credited in Table 6 to rest-of-world sector.

TABLE IV

SHORT-TERM CLAIMS MATRIX; U.S.A., END OF 1962
(Percentages)

Debtor \ Creditor	H (1)	A (2)	U (3)	C (4)	T (5)	L (6)	F (7)	B (7a)	S (7b)	I (7c)	M (7d)	W (8)	T (9)
1. Households			.7	1.5	.1		7.5	3.5	1.0	.1	2.9	.1	9.9
2. Agriculture			.1	.2			.7	.7					1.1
3. Unincorporated business			.2	1.2	.1		1.9	1.6	.1	.1	.1	.1	3.6
4. Non-financial corporations			1.2	9.2	.4		5.2	4.7	.2	.1	.1	.1	16.0
5. U.S. Government	.5		.1	2.7		.6	5.9	5.1	.2	.2	.4	1.3	11.1
6. Local governments				.4									.4
7. Finance	34.8	1.0	1.9	5.3	1.3	2.3	9.5	6.9	.7	1.0	.8	1.0	57.1
a. Banking	18.5	.7	1.6	4.6	1.2	2.3	7.0	5.0	.6	.7	.7	.8	36.8
b. Savings institutions	15.4						.1		.1				15.5
c. Insurance	.7	.2	.4	.7									2.1
d. Miscellaneous finance	.1				.1		2.3	1.9		.2	.1	.1	2.7
8. Rest of world							.7	.5			.2		.7
9. All sectors	35.3	1.0	4.4	20.5	1.9	2.9	31.5	23.0	2.3	1.6	4.6	2.5	100.0

TABLE V

LONG-TERM CLAIMS MATRIX; U.S.A., END OF 1962[1,2]
($ billion)

Debtor \ Creditor	H (1)	A (2)	U (3)	C (4)	T (5)	L (6)	F (7)	B (7a)	S (7b)	I (7c)	M (7d)	W (8)	T (9)
1. Households	13				7		144	21	91	29	3		164
2. Agriculture	7				6		5	2		3			18
3. Unincorporated business	9				6		26	6	11	9			41
4. Non-financial corporations	15				2	6	113	6	14	91	2	1	137
5. U.S. Government	66			19		7	118	59	11	45	3	1	211
6. Local governments	31			2	2	1	48	25	1	21	1		84
7. Finance	203				4								207
a. Banking													0
b. Savings institutions					4								4
c. Insurance	203												203
d. Miscellaneous finance													0
8. Rest of world					14								14
9. All sectors	344	—	—	21	41	14	454	119	128	198	9	2	876

[1]Includes all mortgages, insurance reserves, government securities (except short term Treasury securities), Federal loans, and corporate and foreign bonds. The allocation of holdings of short term Treasury securities among columns 1, 4, and 6 (292) and among columns 7b to 7d (5) is fairly arbitrary, only aggregates for these groups of sectors being given in *Flow of Funds Accounts* . . . p. 33. Does not include term loans of commercial banks (about 15) which should be distributed among column 7a, lines 3 and (mostly) 4.

[2]The social insurance and pension funds have been transferred from the Federal and state and local governments to the finance sector. This involves shifting a source of funds (liabilities) of 48 (insurance reserves) from the government to the finance sector, and shifting of uses of funds (assets) of an equivalent total (viz. 1 cash; 30 U.S. government securities; 6 state and local government securities; 8 corporate and foreign bonds; 1 corporate stock; and 2 home mortgages) from the two government sectors to the finance sector. These figures are based on the distribution of the assets of state and local funds (25) in accordance with their actual 1960 percentage distribution and the assumption that all Federal funds (23) are invested in U.S. government securities. Since the U.S. government securities held by the Federal pension funds are not included among Treasury liabilities, they have been added to the U.S. government securities shown in line 22 (256) thus offsetting the previous elimination of Treasury liabilities (23) on lines 19 and 20 of Table 6.

TABLE VI

LONG-TERM CLAIMS MATRIX; U.S.A., END OF 1962
(Percentages)

Debtor \ Creditor	H (1)	A (2)	U (3)	C (4)	T (5)	L (6)	F (7)	B (7a)	S (7b)	I (7c)	M (7d)	W (8)	T (9)
1. Households	1.5				.8		16.4	2.4	10.4	3.3	.3		18.7
2. Agriculture	.8				.7		.6	.2	.3				2.1
3. Unincorporated business	1.0				.7		3.0	.7	1.3	1.0			4.7
4. Non-financial corporations	1.7				.2	.7	12.9	.7	1.6	10.4	.2	.1	15.6
5. U.S. Government	7.5			2.2		.8	13.5	6.7	1.3	5.1	.3	.1	24.1
6. Local governments	3.5			.2	.2	.2	.1	5.5	2.9	.1			9.6
7. Finance	23.2				.5								23.6
a. Banking													
b. Savings institutions					.5								.5
c. Insurance	23.2												23.2
d. Miscellaneous finance													
8. Rest of world					1.6								1.6
9. All sectors	39.3			2.4	4.7	1.6	51.8	13.6	14.6	22.6	1.0	.2	100.0

TABLE VII

EQUITIES MATRIX; U.S.A., END OF 1962[1]
($ billion)

Creditor (Holder) / Debtor (Issuer)	H (1)	A (2)	U (3)	C (4)	T (5)	L[2] (6)	F[2] (7)	B (7a)	S (7b)	I[2] (7c)	M (7d)	W (8)	T (9)
1. Households	—												—
2. Agriculture	—												—
3. Unincorporated business	100[4]												100
4. Non-financial corporations	394					1	53		1	34	18	18[6]	466
5. U.S. Government	—												—
6. Local governments	—												—
7. Finance	42						5			4	1	1	48
a. Banking[3]	24						3			2	1	1	28
b. Savings institutions													
c. Insurance[3]	9						1			1			10
d. Miscellaneous finance[3]	9						1			1			10
8. Rest of world				36[5]									36
9. All sectors	536			36		1	58		1	38	19	19	650

[1]From Federal Reserve Board, *Flow of Funds Accounts, 1945–1962*, Table 6, unless otherwise indicated.
[2]As a result of shift of government pension funds from col. 6 to col. 7c holdings of I accordingly transferred.
[3]Total value of corporate stock given in Table 6 (505) distributed among lines 7a, 7b and 7d in accordance with book value of net worth as reported in U.S. Treasury Department, *Statistics of Income*.
[4]Rough estimate, based on 1958 estimates in R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the U.S.*, Vol. II, p. 60.
[5]Direct foreign investment.
[6]Including direct foreign investment (8); assumed to be attributable entirely to line 4.

TABLE VIII

EQUITIES MATRIX; U.S.A., END OF 1962
(Percentages)

Debtor \ Creditor	H (1)	A (2)	U (3)	C (4)	T (5)	L (6)	F (7)	B (7a)	S (7b)	I (7c)	M (7d)	W (8)	T (9)
1. Households													
2. Agriculture													
3. Unincorporated business	15.4												15.4
4. Non-financial corporations	60.0					.2	8.2		.2	5.2	2.8	2.8	71.7
5. U.S. Government													
6. Local governments													
7. Finance	6.5						.8			.6	.2	.2	7.4
a. Banking	3.7						.5			.3	.2	.2	4.3
b. Savings institutions													
c. Insurance	1.4						.2			.2			1.5
d. Miscellaneous finance	1.4						.2			.2			1.5
8. Rest of world				5.5									5.5
9. All sectors	82.5			5.5		.2	8.9		.2	5.8	2.9	2.9	100.0

financial sector reflected in creditor-debtor relations among financial institutions; the fifth, and very important one, differences in the trend in the prices of tangible and financial assets which are closely related to the intensity and character of inflation.

As all such ratios do, the financial interrelations ratio and the components into which it can be factored raise questions rather than providing answers. It is, therefore, necessary to develop a theoretical explanation of the movements in the financial interrelations ratio and its components. Some progress in this direction has been made in the last decade,[13] but much more remains to be done.

It is entirely beyond the compass of this brief review to enter into the substantive problems raised by the calculation and interpretation of financial interrelations ratios. Table IX showing the movement of the financial interrelations

TABLE IX

CHANGES IN FINANCIAL STRUCTURE OF U.S., 1850–1961

	Financial Interrelations Ratio (1)	Share in Total Financial Assets					
		By Sector			By Type		
		All Financial Institutions (2)	Banking System (3)	Other Sectors (4)	Money (5)	Other Claims (6)	Corporate Stock (7)
1850	.51	.19	.14	.81	.09	.75	.16
1880	.68	.18	.10	.82	.07	.72	.21
1900	.72	.25	.16	.75	.10	.68	.22
1912	.80	.26	.17	.74	.08	.64	.28
1929	1.20	.25	.13	.75	.05	.61	.34
1939	1.15	.36	.19	.64	.08	.71	.21
1945	1.57	.39	.25	.61	.11	.74	.15
1961	1.27	.36	.16	.64	.06	.70	.24

[1]Excluding trust departments of banks.

SOURCE: R. W. Goldsmith, *La Estructura Financiera y el Crecimiento Economico* (CEMLA, 1963), Table IV.

ratio for the United States and some of its components for almost a century is offered simply as an example. It may be added, however, that some of the movements observed here (such as the generally upward trend of the ratio, the slowing down of the rise in the ratio during the last generation, the temporary sharp rise during war periods, and the increasing contribution made to the ratio by financial instruments owned or issued by financial institutions) seem to be encountered in most countries and, therefore, call for explanation by a general theory of the financial aspects of economic growth.

13. See J. G. Gurley and E. S. Shaw "Financial Aspects of Economic Development," (*American Economic Review*, 1955); "The Growth of Debt and Money in the U.S., 1800–1950: A Suggested Interpretation," (*Review of Economics and Statistics*, 1957); and *Money in a Theory of Finance*, 1960; and R. W. Goldsmith, "Financial Structure and Economic Growth in Advanced Countries" (National Bureau of Economic Research, *Capital Formation and Economic Growth*, 1956), *La Estructura Financiera y el Crecimiento Economico*, 1963, and *The Determinants of Financial Structure* (O.E.C.D. Development Centre, 1966).

Another structural relationship which deserves estimation and analysis is the distribution of total national assets first by type of instrument and then by holding and issuing sectors and smaller groups of economic units.

Changes in the distribution by type of asset are of interest both for monetary analysis (financial assets and liabilities) and in the analysis of production (tangible assets). If done adequately such a comparison requires considerable detail of statistical data and substantial depth of analysis. Here we are limiting ourselves to a very condensed non-sectoralized balance sheet for the United

TABLE X

MAIN COMPONENTS OF NATIONAL BALANCE SHEET OF U.S.A., 1900–1958 CURRENT (MARKET OR REPLACEMENT) VALUES

	Amount ($ billion)				Distribution (percent)			
	1900	1929	1945	1958	1900	1929	1945	1958
I. *Tangible Assets*	*90*	*427*	*579*	*1678*	*57*	*44*	*38*	*45*
1. Land (incl. farm & forest)	31	105	121	311	20	11	8	8
2. Residential struct.	17	96	152	411	11	10	10	11
3. Non-res. struct.	18	94	133	422	11	10	9	11
4. Producer durables	7	38	49	200	4	4	3	5
5. Inventories	10	38	53	130	6	4	3	3
6. Consumer durables	6	42	46	179	4	4	3	5
7. Monetary metals	2	5	24	25	1	1	2	1
II. *Claims*	*46*	*328*	*763*	*1486*	*29*	*34*	*50*	*40*
1. Claims ag. govt.	3	35	309	361	2	4	20	10
2. Claims ag. fin. inst.	14	111	331	632	9	11	22	17
3. Claims ag. consumers	5	56	38	197	3	6	2	5
4. Other claims	24	126	85	296	15	13	6	8
III. *Business Equities.*	*21*	*218*	*191*	*571*	*13*	*22*	*12*	*15*
1. Corporate stock	14	188	147	473	9	19	10	13
2. Net worth uninc. bus.	7	30	44	98	4	3	3	3
IV. *National Assets* (I+ II + III)	*157*	*973*	*1533*	*3735*	*100*	*100*	*100*	*100*
V. *Liabilities*[1]	*44*	*316*	*779*	*1489*	*28*	*32*	*51*	*40*
1. Government debt.	3	35	309	361	2	4	20	10
2. Liab. of fin. inst.	14	111	331	632	9	11	22	17
3. Consumer debt	5	56	38	197	3	6	2	5
4. Other liabilities	22	114	101	289	14	12	7	8
VI. *Business Equities*	*30*	*180*	*225*	*677*	*19*	*19*	*15*	*18*
1. Corporations	23	153	184	580	15	16	12	16
2. Uninc. business	7	27	41	97	4	3	3	3
VII. *Net Worth*	*83*	*477*	*529*	*1569*	*53*	*49*	*35*	*42*
1. Households	79	462	689	1612	50	47	45	43
2. Government	4	15	—160	—42	3	2	—10	—1
VIII. *Liabilities and Net Worth* (V + VI + VII)	*157*	*973*	*1533*	*3735*	*100*	*100*	*100*	*100*

SOURCE: R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the U.S.*, Vol. II, pp. 42–43, 68–69, 72–73, 78–79.

[1]Items V 1–3 entered with values of II 1–3 respectively. Item V 4 therefore includes all discrepancies in amounts reported in creditors' and debtors' balance sheets.

States for 1900, 1929, 1945 and 1958, again presented purely as an example. The emphasis, of course, is on the right-hand side of Table X which shows the distribution by main types of tangible and financial assets. Structural changes over this sixty-year period are considerable, but they are probably less pronounced, particularly in the case of tangible assets, than one might expect in view of the far reaching structural changes which have taken place in many aspects of the American economy since the turn of the century.

TABLE XI

CHANGES IN DISTRIBUTION OF TOTAL ASSETS AND NET WORTH BY SECTOR, U.S.A. 1900–1958
PERCENTAGES

	1900 (1)	*1912* (2)	*1929* (3)	*1939* (4)	*1945* (5)	*1958* (6)
	I. TOTAL ASSETS					
1. Nonfarm households	39	40	46	53	41	43
2. Nonfarm unincorporated business	7	5	5	4	3	4
3. Agriculture	17	17	7	6	7	6
4. Nonfinancial corporations	22	22	23	18	16	21
5. State and local governments	3	4	4	6	5	5
6. Federal government[1]	1	1	1	3	5	3
7. Finance	11	12	14	20	23	19
8. All sectors	100	100	100	100	100	100
	II. NET WORTH					
1. Nonfarm households	51	52	62	67	78	63
2. Nonfarm unincorporated business	5	4	3	4	5	4
3. Agriculture	20	21	9	8	13	8
4. Nonfinancial corporations	18	15	20	17	22	23
5. State & local governments	3	4	4	6	6	6
6. Federal government[1]	0	0	—2	—6	—28	—8
7. Finance	3	3	3	4	3	3
8. All sectors	100	100	100	100	100	100

SOURCES: R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the U.S.*, Vol. I, pp. 43, 45.

[1]Excluding military assets.

The distribution of total assets by sectors and within sectors is of particular interest for sociology and political science. We need to refer only to the extensive literature on changes in the size distribution of personal wealth which constitutes an important part of the analysis of changes in the distribution of ownership and management of tangible and intangible wealth among and within sectors.[14] Existing studies in this field fortunately generally use market values and hence fit into the framework established for national balance sheets.

If the figures are limited to broad sectors, as they are in Table XI, and attention is concentrated on trends throughout the period of more than half a century, the three outstanding changes are the doubling of the shares of the government and finance sectors (from 4 and 11 to 8 and 19 per cent of total assets) and the even larger decline in the share of agriculture (from 17 to 6

14. See e.g., R. J. Lampman, *The Share of Top Wealth Holders in National Wealth*, 1962.

per cent). These movements, all of which occurred after World War I, reflect well known structural changes in the American economy.

In comparisons of this type, great care must be taken, even more than in other aspects of national balance sheet analysis, to preserve comparability in the scope of sectors. Take as one example the trend of incorporation of business enterprises formerly organized in the form of partnerships or sole proprietorships. This trend will be reflected, other things being equal, in an increase in the share of corporations in national assets and in a decrease of the share of unincorporated business and of households, sole proprietorships generally being included in the latter. This is indeed a significant development from the point of view of business organization, but if it involves only a shift from unincorporated enterprises to corporations closely held by the same persons, it must not be taken as indicating a significant change in personal wealth distribution. The distinction of government-owned enterprises is particularly important to avoid a similar misinterpretation of changes in the shares of private enterprises and of the government.

Of particular interest for financial analysis is the share of financial institutions in, first, all financial assets; and then in important individual financial instruments. This set of ratios provides an indication of the share of financial institutions in the external financing of other sectors. It does so quite satisfactorily for claims where valuation changes generally may be disregarded; and here particularly for claims that are nontransferable or that do not change hands as a matter of practice, because for these instruments holder of record and original creditor are identical. In the case of equities, however, the proportion of stock held by financial institutions (or any other sector) and the change in this proportion provide only the roughest of indications of the share of financial institutions in equity financing, even if the market value figures of the national balance sheet are analysed in conjunction with information on stock price movements. To be attacked successfully, this problem must be pursued beyond the national balance sheet to flow-of-funds statements which provide data on total new issues of equity securities and on net purchases by financial institutions which can be combined for shorter or larger periods. Even these figures measure the role of financial institutions in equity financing only indirectly, but not in the more immediate sense of the purchase of new equity securities from their issuers. Information on this level, however, is hardly ever available.

Using the U.S. again as an example because it is the only country for which the necessary data are available, Table XII shows the trend in the share of financial institutions in all financial assets outstanding and for a few important individual financial instruments for half a dozen benchmark dates during this century. The figures clearly indicate the increasing importance of financial institutions in the external financing of other sectors. This increase is particularly pronounced in the case of home mortgages and corporate bonds, most of which are under present practices non-transferable (or more correctly held-until-maturity) long-term claims. The share of financial institutions in equity financing is still rather small notwithstanding the considerable increase

TABLE XII

SHARE OF FINANCIAL INSTITUTIONS[1] IN MAIN FINANCIAL INSTRUMENTS,[2] U.S.A. 1900–1958
(Percentages)

	All Financial Assets[2] (1)	All Claims (2)	Consumer Credit (3)	Residential Mortgages (4)	Other Mortgages (5)	U.S. Government Securities (6)	State and Local Government Securities (7)	Corporate and Foreign Bonds (8)	Corporate Stock (9)
1900	27	34	23	46	30	54	44	35	3
1912	26	36	16	62	45	67	39	35	2
1929	25	37	39	66	50	47	29	35	3
1939	36	45	47	61	48	71	41	45	4
1945	37	44	44	69	44	66	33	64	5
1958	35	43	72	85	56	64	51	84	9

[1]Excluding trust departments of banks.
[2]Excluding equity in unincorporated enterprises.
SOURCE: R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the U.S.*, Vol. II, pp. 42, 68, 72, 74, 78, 82.

since World War II in the holdings of corporate stock by investment companies and pension funds. These increases, moreover, represent mostly the acquisition of outstanding seasoned securities from other holders, primarily households, and thus cannot be regarded as direct equity financing. However, to the extent that these purchases free seller's funds for the acquisition of newly issued equity securities they may be viewed as indirect equity financing by financial institutions.

There are obviously many other structural ratios that can be derived from national balance sheets, ratios whose development over time is important for economic and financial analysis. Examples are changes in the share of various financial instruments in total financial assets; changes in the ratio of specific financial instruments to national wealth or national product; and sectoral debt-asset ratios. There is no space here for their presentation or discussion.[15]

2. *Effects of Asset Price Changes*

The second main use made of the comparison of national balance sheets over time is the breakdown of the differences in total assets and in individual assets between two balance sheet dates into the components relevant to economic and financial analysis. This approach is based on the basic equation relating the balance sheet values at two dates, namely:

> Market value at later date = Market value at earlier date + Acquisitions (net cash flow basis) + Valuation changes between the two balance sheet dates.

The third component must be further broken down into (a) capital consumption allowances; (b) allowances for destruction, damage, theft, etc.; (c) realized capital gains and losses; (d) write-ups and write-downs; and (e) changes in market value between balance sheet dates, which in turn are composed of the changes in the market value of assets held throughout the period and the change in market value of assets acquired during the period. Some of these items, such as allowances for capital consumption and physical damage are applicable only to reproducible tangible assets. In an economy without price change, or where price changes can be ignored, only the first two components of the basic equation and the first three items of the third component need to be taken into account, the other items resulting from price change.

This analysis obviously requires data beyond the balance sheets for the two dates. The situation then is different for tangible and for financial assets. In the case of tangible assets we generally have from the national accounts estimates of the net acquisition of tangible assets in the form of data on gross capital formation, since inter-sectoral or international sales of physical assets can usually be disregarded. We also have information from the same source on allowances

15. Some information on the trends of these ratios in the U.S. may be found in R. W. Goldsmith, *Financial Intermediaries in the U.S.*; R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the U.S.* (1964), Vol. I; and R. W. Goldsmith, *The Flow of Capital Funds in the Postwar Economy* (1965), Chapter IV.

for capital consumption and other physical impairment. By subtracting these elements from the difference in market value we then obtain an undifferentiated total for net realized capital gains, write-ups or write-downs and the direct effects of price changes on the market value at the second balance sheet date. Since net realized capital gains and write-ups are for many sectors and many types of tangible assets of relatively minor importance the combination of these figures provides a reasonable approximation to the effect of price changes on differences in market value, a figure which can finally be compared with that part of the change in market value which results from net capital formation.

In the case of tangible assets it is also possible to proceed along the familiar path of deflating market values in order to separate the effects of quantity changes from those of price changes. The conceptual and statistical difficulties of deflating national accounting magnitudes are well known, but the approach is feasible for tangible assets if we have indices of prices of the main types of tangible assets, distinguishing at least structures, machinery, inventories and land, but preferably using value and price data for narrower types of tangible assets. As a matter of fact, when the estimates of tangible wealth are derived by the perpetual inventory method, all basic elements relevant for calculating the effect of price changes are available and the calculation of the stock of tangible assets in constant prices is a necessary part of the procedure. It is therefore possible to obtain in addition to figures on changes in the market value of tangible assets estimates for changes in the quantity of these assets which have some meaning, although the reservations that must be made regarding the usually insufficient allowance for quality changes in price indices used as deflators are particularly serious here. Differences between the change in current and in deflated values then yield a measure of the effect of asset price changes.

Financial assets present greater difficulties on both counts. While two of the seven terms of the basic equation can be disregarded—allowances for capital consumption and for physical damage—the difficulty of separating net acquisitions and the hazards of lumping together all the valuation changes into one item are greater. Of course, if flow-of-funds accounts for the period between balance sheets dates exist, we have figures for the net acquisition of the different types of instruments for sectors and for the nation—in the latter case they are equal to net issues (i.e., issues less retirements) plus net foreign balance. When these figures are subtracted from the change in market value of the respective assets we are left with a combination of net realized capital gains and losses and of changes in the value of the retained assets. The separation between these two items is in many cases not crucial for the analysis, particularly for claims where valuation changes are relatively minor.

The differences with tangible assets are particularly pronounced in the case of deflation understood as a reduction of the market value figures to a quantitative basis, viz. that represented by the quantities at the two balance sheet dates at the price of either of them or of a third date. Formally, of course, we can apply indices of financial asset prices to their market value and thus reduce them to base period prices. But the resulting figures have very little

meaning. For short-term claims the price index is practically always equal to unity, and even in the case of long-term claims the deviations from unity are usually small and are applicable only to the marketable part of such claims. In the case of equities it is very doubtful whether the division of market values by a stock price index can be given any reasonable interpretation as a measure of the "quantity" of equities. Moreover, deflation by financial asset price indices yields estimates, particularly for claims, expressed in current monetary units only, and thus completely fails to take account of the changes of this unit in terms of purchasing power over commodities and services, however the bundle they constitute may be defined. We may, of course deflate the market value of financial assets by some index of the general price level, such as the national product deflator or the cost of living, and thus obtain the basis for a formal comparison with deflated market value of tangible assets, but such a procedure is of very limited usefulness, partly because it must apply the same deflator to all types of financial assets.

Analyses of changes in the market value of total national assets and of the main items in the national balance sheet do not seem to have been systematically undertaken for any country. Some relevant data can, however, be assembled for the United States, and this is done in Table XIII. It then appears that for the period from 1900–1958 taken as a whole about two-fifths of the aggregate increase in the market value of national assets was the result of changes in prices, particularly of prices of tangible assets and equities, rather than reflecting capital formation or the net issuance of new financial instruments. While the absolute amounts of valuation changes vary greatly from period to period the proportions of valuation change effects to total change in

TABLE XIII

THE EFFECT OF VALUATION CHANGES ON THE NATIONAL BALANCE SHEET; U.S.A. 1900–1958

	Change in total national assets	Change in net worth	Saving plus stock issues	Residual Change		
				Amount (2)–(3)	Shares of	
					Change in assets	Net worth change
	$ billion	$ billion	$ billion	$ billion	Percent of (1)	Percent of (2)
	(1)	(2)	(3)	(4)	(5)	(6)
1. 1900–1912	146	103	49	54	37	53
2. 1913–1922	327	213	71	142	43	67
3. 1923–1929	321	229	118	111	35	48
4. 1930–1933	—241	—208	—14	—194	80	93
5. 1934–1939	132	68	13	54	41	80
6. 1940–1945	638	245	14	231	36	94
7. 1946–1958	2148	1492	511	981	46	66
8. 1900–1958	3471	2142	763	1379	40	64

SOURCE: R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the U.S.*, Vol. I, Tables 26, 34, 35; Vol. II, Tables I and IA.

market value of assets are not too different for the various sub-periods—ranging only between 36 and 46 per cent—except for the Great Depression.

For economic analysis, particularly of the effects of price changes on wealth distribution, it is more important to ascertain the level and proportion of changes in net worth which is due to asset price changes. As shown in Column 6 of Table XIII for the United States, again for the period 1900–1958, this share was close to two-thirds, indicating that valuation changes reflecting increases in the prices of tangible assets and of equity securities contributed twice as much to the increase in national wealth in current prices as did saving at the prices at which it was originally made.[16]

TABLE XIV

SHARE OF RESIDUAL NET WORTH CHANGES,[1] U.S.A., 1900-1958, BY SECTORS (CURRENT VALUES)
(Percent)

	Non-farm households (1)	Agriculture (2)	Unincorporated business (3)	Corporate business and finance (4)	State and local govts. (5)	Federal Government (6)	All sectors (7)
1. 1900–1912	44	101	87	5	69	−80	53
2. 1913–1922	52	128	86	54	103	−10	67
3. 1923–1929	57	144	102	32	5	7	48
4. 1930–1933	102	100	86	75	*2/*	2	93
5. 1934–1939	67	71	52	*2/*	13	27	80
6. 1940–1945	44	71	58	71	44	−5	94
7. 1946–1958	60	84	89	68	69	97	66
8. 1900–1958	52	82	80	62	60	−17	64

[1]Mainly attributable to changes in asset prices.
[2]Denominator close to zero.
SOURCE: R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the U.S.*, Vol. I, Table 35.

This ratio acquires significance only if it is available for sectors and for homogeneous groups of units within sectors. It then provides the basis for an analysis of the differential effects of asset price changes on nominal and real (constant purchasing power) net worth of different groups in the community, effects which apparently differed considerably among groups and varied from period to period in the case of the United States.[17] This is evident from Table XIV even though only six very broad sectors are distinguished. The contribution of

16. Since all net worth (except for the amounts raised by corporations through the sale of stock) is accumulated as a result of previous net saving, the ratio of saving to change in net worth is necessarily close to 100 per cent when previous saving is credited with all later valuation changes on these accumulations.

17. For details see R. W. Goldsmith and R. E. Lipsey, *Studies in the National Balance Sheet of the United States*, Part II.

asset price changes (generally upwards) to changes (generally increases) in net worth is considerably higher, and in almost all periods, for agriculture and unincorporated business enterprises among whose assets tangibles predominate, than for nonagricultural households and, rather astonishingly, than for corporate business enterprises. The erratic movements of the share of the Federal government are due to prevalence of dissaving and relatively small holdings of tangible assets.

III. International Comparisons of National Balance Sheets

Possibly the most interesting use that can be made of national balance sheets is the comparison among countries, particularly countries at differing stages of economic development and countries having different types of financial organization. This use of national balance sheets presupposes the existence of balance sheets, preferably in sectorized form, for a number of countries sufficiently large to provide adequate representation of different stages of economic development and of different types of financial structure. We are not yet in possession of the material necessary for a serious comparative study along these lines. What is presented here is only a first attempt, limited by the small number of countries included; restricted to aggregative rather than sectorized balance sheets; and hampered by considerable differences in the scope, method of estimation, basis of valuation, asset detail and reliability of the figures which had to be used. Any determination of the characteristics of the balance sheets of individual countries or groups of them and any interpretation of differences among them must therefore proceed with the greatest caution even if we limit ourselves, as will be done in this paper, to comparisons of the structure of national balance sheets in aggregative form and do not attempt comparisons involving absolute aggregate or per head values which presuppose the availability of exchange ratios between national currencies in which the balance sheets are originally drawn up; and do not try to investigate sectoral differences within the national balance sheet.

The need for caution is evident, first, in the matter of valuation. Unless the balance sheets of the countries to be compared use essentially the same principles of valuation and apply them consistently to all types of assets, rigorous comparisons of balance sheet structure are impossible, as we do not know to what extent observed differences are the result of fortuitous inconsistencies and anomalies in the valuation methods used rather than of real differences. Even if the balance sheets consistently use market values, or the nearest approximation to them, as the basis of valuation it is not possible to decide in the case of tangible assets which of the observed structural differences reflect differences in asset price relations and which do so for the underlying quantity relations. Among financial assets, but not only among them, we cannot easily separate the effects of differences in yield rate structures.

To make valid comparisons the scope of the items included in national balance sheets must, of course, be the same; or sufficient detail must be given so that comparability can be restored by appropriate rearrangements of items.

Items for whose treatment we must watch out are, for instance, among tangible assets consumer durables, military assets and sub-soil assets; and among financial assets, equity in unincorporated business enterprises and accruals.

Comparability is even more important when balance sheets are sectorized. This is particularly true of the analysis of the public sector. We must make sure that assets and liabilities that are associated with certain activities which in some countries belong to the public sector while they are discharged by the private sector in others are clearly identified so that they can be regrouped by the analyst if his purposes so require. Examples are provided by as important sectors as railroads, telephones, and electric power. Indeed this situation is so common that for international comparisons it may be advisable to adopt a two-level sectoring of all nonconsumption units, first by industry (such as manufacturing, electric power, etc.) and secondly on the basis of private or public ownership and management.[18]

An example where a seemingly minor difference in sectoring may make a large difference in the interpretation of the national balance sheet, and even more in the analysis of flow-of-funds and sectoral financial surpluses and deficits, is provided by the treatment of owner-occupied residential structures.[19] There are two basic possibilities. Homes (one family and multi-family structures owned by occupiers either directly or cooperatively) may be regarded as part of household assets, or as constituting separate unincorporated business enterprises. In either case consistency demands that the structures and the mortgage debt on them be included in the same sector. Strangely enough, several systems of national accounts fail to observe this requirement, treating the capital expenditures on homes as part of business investment, but home mortgages as a component of household debt. In international comparisons it is therefore important to make sure that owner-occupied housing and the attached debt are treated in the same way in all countries and at all dates that are being compared.

Another unsettled problem affecting the comparability of national balance sheets is the treatment of foreign assets and liabilities.

The standard definition of national wealth includes net foreign assets, i.e. the difference between foreign tangible and financial assets owned by nationals of the country and domestic tangible and financial assets owned by foreigners. Monetary metals may be included among foreign assets or better treated as a component of reproducible tangible wealth. In analysing the relations between the financial superstructure and the real infrastructure, however, the problem, presents itself in a different light.

Gross foreign assets and gross foreign liabilities are, of course, included in the balance sheets of the holders or the issuers of the relevant instruments. From the point of view of the significance for economic and financial behaviour they are on a par with domestic assets and liabilities. The solution would be simple if

18. Such a double breakdown is provided e.g. in the Norwegian *Kreditmarkedstatistikk*.

19. Consistent treatment is even more important in flow-of-funds statistics because the financial surplus and deficit (saving less investment) of the household sector is entirely different in size, and often in direction, depending on whether or not expenditures on housing and home mortgage debt are included in the household sector.

foreign assets equalled foreign liabilities. In that case one could use gross foreign assets and liabilities as part of the numerator of the financial interrelations ratio or of the denominator in calculating distribution of assets and liabilities by form. Actually, of course, foreign assets and liabilities are not equal so that a residual remains if they are treated on a gross basis, a residual that will be found on the left or the right hand side of the national balance sheet depending on whether foreign assets are larger or smaller than foreign liabilities. In this situation it seems preferable, following the principle of not netting economically significant assets against liabilities, to include foreign assets and liabilities on a gross basis, but also to show a separate balancing item for net foreign assets or liabilities.

There are also strong statistical arguments for this treatment. The basic statistics of the various domestic sectors, particularly if they are derived from actual balance sheets, usually do not distinguish between domestic and foreign assets and liabilities. The figures for gross and net foreign assets and liabilities are as a rule taken from other sources, most commonly data collected in connection with the preparation of the balance of payments. These figures often do not fit the categories of the national balance sheet, and in many cases are not available in sufficient completeness or detail. We then abandon the distinction between domestic and foreign assets and liabilities of each type, an omission which is regretable for analysis, but does not vitiate the calculation either of the financial interrelations ratio or of most other important breakdowns of the assets and liabilities in the national balance sheet.

The United States is almost the only important country for which foreign assets and liabilities are estimated in sufficient detail and on a basis comparable with domestic assets so that one could adopt any one of the conceptually desired approaches. (The exception is direct foreign investments which in the official statistics are still carried at book rather than market values.) In most countries we have no choice and cannot consistently separate foreign assets and liabilities. Hence, in Table XV total financial assets are used as the numerator, but where possible an indication is given of gross or net foreign assets and liabilities so that users can shift the calculation to the net basis if they prefer.[20]

The definition and estimation of national wealth becomes a problem only in the calculation of the financial interrelations ratio. It appears preferable, both for conceptual and statistical reasons, to depart from the standard definition of national wealth and to use as the denominator instead total domestic tangible assets irrespective of the extent to which they may be owned by foreigners. This, of course, implies the inclusion of the financial instruments which represent foreign owned domestic tangible assets included in F_{td} of Formulae I to III (debt or equity as the case may be) in the numerator of the ratio. If for conceptual or statistical reasons these instruments are not included in the numerator the domestic tangible assets which they represent must obviously be excluded from the denominator (Formula IV).

20. In the estimates of Table XV financial assets probably do not include all foreign claims and equities held by nationals. In particular it is often uncertain to what extent direct foreign investments which take the form of the stocks of foreign subsidiaries are covered. This omission may, however, be defended on conceptual grounds since the stocks of at least the wholly owned subsidiaries may be regarded as tangible assets situated abroad (the plant, equipment and inventories of the subsidiaries) rather than as financial assets.

These relationships are clarified in the brief algebraic note below.[21] It is evident that the value of, e.g., the financial interrelations ratio is considerably influenced by the method of calculation in cases where foreign assets and liabilities are fairly large compared to the respective domestic magnitudes.

The remarks that follow are based on the material brought together in Table XV which summarizes a dozen national balance sheets that have been published or that could be put together from fragmentary data, and in Table XVI which expresses all items as percentages of total financial assets.[22] These balance sheets are obviously of different reliability and are based on original estimates which differ considerably in coverage, in asset and sector detail, and to some extent also in methods of valuation. In interpreting these balance sheets use, of course, has also been made of such supplementary material as was available. Because this presentation is primarily intended as an example and it would otherwise have acquired excessive proportions, no detailed information is supplied on sources, adjustments and methods of estimation.

Since we are limiting these remarks to structural ratios derivable from the national balance sheet we may start with what is probably the most important single measure, the financial interrelations ratio.

21. The four definitions of the financial interrelations ratio are as follows, I being the alternative recommended:

I Gross Basis: $$\frac{F_{dd} + F_{df} + T_{df}}{T_{dd} + T_{fd}}$$

II Net Basis: $$\frac{F_{dd} + (T_{df} + F_{df} - T_{fd} - F_{fd})}{T_{dd} + (T_{df} + F_{df} - T_{fd} - F_{fd})}$$

III Hybrid Basis: $$\frac{F_{dd} + (T_{df} + F_{df} - T_{fd} - F_{fd})}{T_{dd} + T_{fd}}$$

IV Domestic Basis: $$\frac{F_{dd}}{T_{dd}}$$

where T_{dd}: Domestic tangible assets owned by domestic units
T_{fd}: Domestic tangible assets owned by foreign units
T_{df}: Foreign tangible assets owned by domestic units
F_{dd}: Domestic financial assets owned by domestic units
F_{fd}: Domestic financial assets owned by foreign units
F_{df}: Foreign financial assets owned by domestic units

22. The statistical material now available and the time disposable for preparing this paper did not make it possible to avoid inconsistencies in adapting the original figures to a standard concept or in rearranging them into a standard form. In many cases, for instance, it is impossible or difficult to exclude the relatively small non-financial assets of financial institutions (other than gold which can easily be eliminated). The definition of money and of the banking system are not uniform. An attempt has been made to limit the banking system to the Central Bank and to deposit (commercial) banks, but for some countries commercial banks also fulfill the functions which in other countries are discharged by separate savings banks here excluded from the definition of the banking system. The figures for all financial institutions therefore are more nearly comparable than those of the components. The liabilities of financial institutions include in some countries equity at book value, but it is the market value of the stock of banks and other financial institutions which is deducted from line B 1 in order to avoid double counting.

All these inconsistencies concern the numerator of the financial interrelations ratio. The main difficulties in the case of the denominator arise in connection with consumer durables which are in principle included and consumer semidurables which are in principle excluded. There is little doubt that sub-soil and military assets are excluded from all estimates.

TABLE XV

NATIONAL BALANCE SHEETS
(Billions of national currency)

	U.S.A. 1958 (1)	U.K. 1961 (2)	France 1960 (3)	Germany 1960 (4)	Belgium 1960 (5)	Norway 1962 (6)	Italy[1] 1961 (7)	Japan[1] 1961 (8)	Israel 1962 (9)	Mexico 1960 (10)	India 1959 (11)	Russia 1913 (12)	Russia 1959 (13)
I. *National Wealth*													
1. Reproducible assets	1367	83.9	920	852	1840	170.0	50.5	48.9	15.8	440	354[9]	57.4	335
2. Non-reproducible assets	311		237	180	758	30.0	16.9		4.0	150	202	91.6	120
3. Net foreign assets	24	4.3		30					0.5	−40		−5.1	
II. *Financial Assets*	1958	144.4	743	782	1826[7]	135.2	71.1	68.4	18.0	245	196	60.0	160
A. By Holder													
1. Banking system	292	14.7	100	93	322	19.3	15.2	15.0	4.2	29	43	9.2	59
2. Other financial institutions	376	23.0	146	219	422	36.6	7.0	18.0	4.3	36	12	9.7	
3. Other sectors[2]	1290	106.7	497	467	1082	79.3	48.9	35.4	9.5	180	141	41.1	101
B. By type													
1. Claims against financial institutions[3]	547	39.4	250	310	682	51.8	20.0	32.2	8.0	65	50	17.0	59
a. Money	197	16.9	96	72	220	8.8	8.5	5.3	0.9	17	25	..	..
b. Insurance	200	14.0	8	40	145	9.5	0.8	1.5	7.1[4]	6	6	0.3	1
c. Other	150	8.5	146	198	317	33.5[4]	10.7[4]	25.4[4]		42	19	..	..
2. Mortgages	172	4.9	24	70	219					10	23	5.1	1
3. Trade and consumer credit	100	10.0	36	80	[5]	[5]	7.0	10.5[5]	1.0[5]	40	7[5]	[5]	[5]
4. Bank credit	54	5.3	67	80	[5]	14.3	12.0			34		[5]	40
5. Govt. securities	335	47.0	62	47	435	18.9	5.3	1.5	[5]	31	79	8.8	39
6. Corporate bonds	89	1.3	29	5	22	1.1	1.4	1.1	[5]	2	8	0.5	—
7. Corporate stock	465	28.8	180	110	187	5.3	20.4	6.9	0.5	50	19	4.0	—
8. Other	150	7.7	95	77[6]	280	43.8	5.0	16.2	8.5	13	10	24.6	21

[1]Trillion (10^{12}) lire and yen respectively.
[2]Obtained by subtracting A1 + 2 from sum of B1 to 8.
[3]Includes in some countries equity in these institutions.
[4]Home mortgages only.
[5]Included in other assets.
[6]Includes 27 mortgage bonds.
[7]Omits most foreign assets, particularly foreign shares.
[8]Includes capital of public enterprises (15.7).
[9]Neither monetary metals nor hoards included.

The range of the financial interrelations ratio is, as Table XVII indicates, rather wide. The lowest ratios are in the order of one-third and occur in underdeveloped countries on the one hand, and in centrally planned economies on the other. The highest value is close to one-and-three-fourths, but for developed countries most of the ratios lie within a range of three-fourths and one-and-one-fourth.

As the comparison between the financial interrelations ratio and real national product per head shows, there exists a positive relationship so that in general high (low) values of the financial interrelations ratio are associated with high (low) values of real national income per head. Examination of the figures, however, also indicates that the relationship is not a very close one, even if both values are expressed in logarithmic terms. The financial interrelations ratio, therefore, requires other variables to be satisfactorily explained. The task of such an explanation has not yet been satisfactorily accomplished, but at least a few suggestions may be made, that give an indication of why the values of the financial interrelations ratio of some of the countries listed in Table XVII

Notes to Table XV

The figures are based on the sources listed below; in most cases some rearrangements and adjustments have been required to render the figures more nearly comparable.

U.S.A.—R. W. Goldsmith & R. Lipsey, *Studies in the National Balance Sheet of the U.S.*, Vol. II, p. 68.

U.K.—E. V. Morgan, *The Structure of Property Ownership in Great Britain*, Table 64. A number of adjustments have been made, particularly in I and B II 7.

France—Yale seminar paper (I. Gouzerh) except for reproducible fixed assets other than consumer durables (based on an unpublished estimate made by OECD Working Party 2 in 1961), and corporate stock.

Germany—Estimate of Institut für Wirtschaftsforschung (*Schriften des Vereins für Sozialpolitik N.F. 62*, pp. 136, 140) for tangible assets, shifted from 1954 to 1960 prices on basis of GNP deflator. Lines B 1, 4, 5 and 6 from *Statistisches Jahrbuch*, Line B 7 band on average price of listed stock of 600% of par and of 200% for unlisted stock. Lines B 2, 3 and 8 are rough estimates.

Belgium—Unpublished OECD estimate (CP/WP2(61)5) for reproducible tangible assets other than consumer durables; G. Labeau (*Cahiers Economiques de Bruxelles*, 1965, pp. 10 ff.) for inventories and monetary metals; *Bulletin d'Information . . . Banque Nationale de Belgique*, Feb. 1963, p. 80, for financial assets.

Norway—For finanical assets Central Statistical Office, *Kreditmarkedstatistikk, 1962*; for tangible fixed assets extrapolation of estimates of Aukrust and Bjerve (*Income and Wealth*, Series IX); rough estimates for non-reproducible assets.

Italy—For tangible assets Giannone, *Quarterly Review*, Banca Nazionale del Lavoro, Dec. 1963, p. 427, reflated on basis of capital formation deflator in national accounts; financial assets mostly from *Annual Report for 1963* of Banca d'Italia (Line II 3 and II 8 are very rough estimates).

Japan—Economic Planning Agency (*Report of the National Economic Accounting Research Committee*, Dec. 1962) for tangible assets; Bank of Japan, Economic Research Department, *Special Paper No. 8*, Aug. 1962, for financial assets.

Israel—Author's rough estimates except for reproducible tangible assets (Gaathon).

Mexico—Author's rough estimates. (For source see forthcoming *Development Centre Study No. 5.*)

India—Yale seminar paper (S. M. Naseem) except tangible assets (Reserve Bank of India, *Bulletin*, Jan. 1963).

Russia—R. W. Goldsmith, "The National Balance Sheet of the Soviet Union", in *Essays on Econometrics and Planning presented to Prof. P. C. Mahalanobis . . .*, Vol. II, p. 96.

TABLE XVI

NATIONAL BALANCE SHEETS
(Percent of total financial assets)

	U.S.A. 1958 (1)	U.K. 1961 (2)	France 1960 (3)	Germany 1960 (4)	Belgium 1960 (5)	Norway 1962 (6)	Italy 1961 (7)	Japan 1961 (8)	Israel 1962 (9)	Mexico 1960 (10)	India 1959 (11)	Russia 1913 (12)	Russia 1959 (13)
I. *National Wealth*													
1. Reproducible assets	70	58	124	109	101	126	71	71	88	180	181	96	209
2. Non-reproducible assets	16		32	23	41	22	24		22	61	103	153	75
3. Net foreign assets	1	4							3	−11		−9	
I. *Financial Assets*	100	100	100	100	100	100	100	100	100	100	100	100	100
A. By Holder													
1. Banking system	15	10	13	12	18	14	21	22	23	12	22	15	
2. Other financial institutions	19	16	20	28	23	27	10	26	24	15	6	16	37
3. Other sectors	66	74	67	60	59	59	69	52	53	73	72	69	63
B. By Type													
1. Claims against financial institutions	28	27	34	40	37	38	28	47	44	27	26	28	37
a. Money	10	12	13	9	12	7	12	8	5	7	13		
b. Insurance	10	10	1	5	8	7	1	2	39	2	3	1	1
c. Other	8	5	20	25	17	25	15	37		17	10		
2. Mortgages	9	3	3	9	12					4	12	9	1
3. Trade and consumer credit	7	7	5	10			10	15	6	16	4		
4. Bank credit	3	4	9	10		11	17			14			25
5. Govt. securities	17	33	8	6	24	14	7	2		13	40	15	24
6. Corporate bonds	5	1	4	1	1	1	2	2		1	4	1	
7. Corporate stock	24	20	24	14	10	4	29	10	3	20	10	7	
8. Other	8	5	13	10	16	32	7	24	47	5	5	41	13

deviate substantially from the position that might be expected on the basis of their real national income per head alone.

There are two countries for which the financial interrelations ratio is definitely above almost any regression line that could be fitted to the data in Table XVII, Japan and Great Britain. Part of the explanation in the case of Great Britain is the accumulation of a heavy public debt resulting from war expenditures combined with the failure to eliminate this debt by rapid inflation in the way it was

XVII

FINANCIAL INTERRELATIONS RATIO, SELECTED COUNTRIES
(Financial Assets : Tangible Assets)

Country	Year (1)	Value (2)	Gross National Product per head 1960 $000 (3)
1. U.S.A.	1958	1.17	2.80
2. Great Britain	1961	1.72	1.63
3. France	1960	.64	1.69
4. Germany	1960	.76	1.61
5. Belgium	1960	.70	1.56
6. Netherlands	1948	1.16	.98
7. Norway	1962	.68	1.57
8. Japan	1961	1.40	.67
9. Israel	1962	.96	1.08
10. Italy	1961	1.06	.89
11. Mexico	1960	.42	.48
12. Venezuela	1959	.40[1]	.96
13. Guatemala	1960	.31	.25
14. India	1961	.35	.15
15. U.S.S.R.	1959	.35	1.10
16. Yugoslavia	1960	.40	.40

SOURCE: Col. 2: Table XV, adding rough estimates for lines 6, 12, 13 and 16. Col. 3: Figures adjusted for differences in purchasing power of currencies using estimates of P. Rosenstein-Rodan, in *Review of Economics and Statistics*, 1960. Estimates for U.S.S.R. based on figures by S. H. Cohn in Joint Economic Committee, *Dimensions of Soviet Power*, p. 76; for Yugoslavia rough estimates based on translation of material product at official exchange rates. Very rough estimates for Ethiopia.

[1]Foreign owned sub-soil assets and securities based on them excluded from both denominator and numerator.

done in most other European countries that encountered the same situation at the end of World War II. However, this factor alone does not suffice to explain the very high level of the financial interrelations ratio of the United Kingdom. The fact that Great Britain acts to a substantial extent as an international financial intermediary undoubtedly also has played a role, but still is not sufficient for complete explanation. A satisfactory explanation of the excess in the British financial interrelations ratio does not yet seem to have been found.

The case of Japan is particularly interesting. Here, the very high level of the financial interrelations ratio is apparently due to a characteristic of the method of financing postwar economic growth in Japan, namely the unusually pronounced reliance on external financing and here again on bank loans. This

heavy reliance, in turn, is not astonishing because even in an economy in which business operations are very profitable it is rather difficult to generate internal funds sufficient to finance expansion at the extraordinarily high rate of growth of nearly 10 per cent per year which the Japanese economy has experienced since World War II. Similar circumstances may contribute to the relatively high FIR of Italy (unless national wealth is seriously underestimated).[23]

There is no case among capitalist countries in which the financial interrelations ratio is as far below the apparent regression line as those for Japan and Great Britain are above it. Indeed the close clustering of four of these countries (France, Germany, Belgium and Norway) around one point—a financial interrelations ratio of about .70 and a national product per head of about $1,600—is remarkable, although it may represent a temporary constellation.

The second important ratio that can be derived from the national balance sheet—omitting national wealth structure ratios because they have been discussed in Volume VIII of *Income and Wealth* and are being dealt with again in other papers prepared for this meeting—is the share of financial institutions in all financial assets, or better in all financial assets other than claims against financial institutions. This ratio provides a broad measure of the importance of financial institutions in a country's financial structure. Its value, however, is impaired by the importance of valuation changes on equity securities. Since financial institutions usually hold relatively little corporate stock the share of financial institutions in financial assets understates the role of financial institutions in the process of finance as the ratios are based on the market value of holdings. This difficulty is essentially avoided if the comparison is limited to claims, but in that case the share of financial institutions in all claims, or in all claims other than those against financial institutions, tends to overestimate the position of financial institutions in the financing process because financial institutions generally provide only a small proportion of equity funds.

Table XVI indicates that in one-half of the countries for which the necessary data are available financial institutions own between 30 and 40 per cent of all financial assets, and hence between two-fifths and two-thirds of all financial assets other than claims against financial institutions. Differences in the ratios, however, are substantial—the range extends from less than one-fourth to nearly one-half—and, contrary to what has been observed in the case of the financial interrelations ratio, the differences do not seem to be associated closely with the phase of economic development reflected in real national product per head. Thus, the two lowest ratios in Table XVI occur in the cases of the United Kingdom and Mexico, while the highest values are observed in Israel and Japan, the U.S. and several Western European countries occupying an intermediate position. The explanation of this ratio therefore is rather difficult and probably requires more variables than that of the financial interrelations ratio.

There are also considerable differences among the main types of claims against financial institutions. The variation is smallest in the case of money, although it is far from negligible even here. On the average money in non-

23. The high ratio of the Netherlands may be explained by the early date of the estimate (1948) when the repressed inflation of World War II still had a strong influence on financial structure.

Communist countries represents about one-tenth of all financial assets and the deviations from the average are not clearly related to the level of income. On the other hand, the wide differences in the ratio of insurance claims are evidently related to the level of national product per head, but the relationship is not rigid. The ratio is relatively high in the United States and Europe, low in Russia, Japan, Latin America, and India. The low ratio for France is an exception which is partly explained by the almost continuous inflation since World War I.

It is tempting to try to explain the differences shown in Table XVI in the share of several other important financial instruments, such as mortgages, bank credit, government securities, corporate bonds, and corporate stocks. This, however, requires more detailed investigation and discussion than is possible here. It also presupposes in most cases a reduction of the size of the category of miscellaneous financial assets (line 9). For those who want to try their hand at such an explanation the warning may not be amiss that some apparent anomalies are due to weaknesses of the underlying estimates. This seems to be the case, for example, for the low share of corporate stock in Norway (apparently book rather than market value) and the high share in France.

These limitations do not apply to government securities for which the basic data are generally reliable. Here differences are very great and, of course, reflect to a great extent the existence or absence of a heavy war debt and the methods used to liquidate it. The very high ratio of the United Kingdom has already been commented upon. (The similarly high ratio for India reflects the low level of other financial instruments rather than a large war debt.) The importance of government securities is lowest in Japan, and also very low in Germany, reflecting the wiping out of the previous large war debt through inflation or repudiation. The relatively high value shown in Table XVI for the U.S.S.R. is doubtful as it disregards the fact that most of the existing government debt has been frozen for an indefinite period and may more realistically be regarded as written off.

Le problème le plus urgent dans ce domaine est de mettre en œuvre l'accord théorique progressivement établi au cours des vingt dernières années sur la necessité et la possibilité de dresser des bilans nationaux et sectoriaux.

Cette étude traite des cinq usages principaux des bilans nationaux: (1) l'étude des relations existantes entre les composantes du bilan national pour un pays et un moment donnés; (2) l'analyse des changements survenus dans la structure financière d'un pays à travers le temps; (3) la comparaison de la structure financière de plusieurs pays à un moment donné; (4) l'étude comparative du développement des bilans de plusiers pays; et (5) l'usage fait dans les modèles macro-économiques de certains éléments du bilan national, par exemple le capital tangible et les avoirs liquides.

On presente un exemple pour chacun des trois premiers usages: (1) le bilan national des E. U. en 1962 en forme de matrice comportant onze secteurs; (2) le bilan national agrégatif des E. U. pour les années 1900, 1912, 1929, 1939, 1945, et 1958; et (3) la comparaison des bilans nationaux agrégatifs aux environs de 1960 pour une douzaine de pays (E.U., Grande Bretagne, France, Allemagne, Belgique, Norvège, Italie, Japan, Israël, Mexique, Inde et URSS).