The Development of Financial Institutions During the Post-War Period[1]

I. Approach

After a generation in which economic analysis was unduly influenced by the famous simile of the " veil of money ", it has become clear since the 1950's that money, and not only money but also other financial instruments, " matter " in the sense that the course of real economic development may be considerably influenced, even if it is not basically determined, by a country's financial structure and activities.

It is possible to envisage economic and financial development in the absence of financial institutions other than a rudimentary monetary system, a situation in which the overwhelming majority of financing is direct, i.e., takes place between ultimate savers, (mainly households) and prospective users of funds, mainly business enterprises and governments. Indeed, this is a not entirely unrealistic description of financial structure even in many now developed countries up to the mid-19th century. In the 20th century, however,

indirect financing in which financial institutions interpose themselves between ultimate savers and ultimate investors, has come to account for an increasing proportion of total external financing and now is of considerably greater importance than direct financing, particularly in developed countries. There is thus reason to study the development of financial institutions in the postwar period in both developed and underdeveloped countries and in observing their relationship to national product and to capital formation.

An adequate analysis of this important development on an international comparative basis requires much more and more comparable data, particularly for non-banking financial institutions, than are now being published, and calls for much larger resources than were available for this preliminary survey. It was therefore necessary to base the analysis, as in *Financial Structure and Development*, on only one characteristic of each type of financial institution in one country, viz, total assets either in the stock dimension (their value at the end of the year, usually the calendar year but occasionally the fiscal year), or in the flow dimension (the change in assets during the year).

Some limitations of such an approach for economic analysis are obvious. Total assets include claims and liabilities among financial institutions. They are therefore duplicative when all types of financial intermediaries in a country are totalled. This is serious for some country comparisons as the extent of duplication varies from country to country and changes, though generally but slowly, from year to year. With the material at hand only the duplication resulting from the existence of financial intermediaries of the second degree (i.e., financial institutions that turn over all or most of their assets to other financial institutions) such as the French Caisse des Dépôts and similar institutions in Italy and Japan, can be identified and are separated in some tabulations.

The limitation to aggregate assets of the different types of financial institutions precludes, and this is a much more serious handicap, an international and intertemporal comparison of the distribution of the uses of funds among borrowers and of the sources of funds among classes of creditors and shareholders.[2]

---

2 Among the few ratios characterizing the structure of the assets of commercial banks for which international comparisons can be made fairly easily because of the availability of the basic data in the International Monetary Fund's *International Financial*

The use of the book or market value of assets also has the consequence that the annual first differences of their values used here as the measure of the net issues of the different groups of financial institutions include an unknown, though for most countries, institutions (except investment companies) and dates indoubtedly minor, amount of realized and unrealized capital gains and losses and also include the retained earnings of financial institutions. For these reasons the first differences of recorded assets used here are in most cases slightly higher than the conceptually correct, but in the present state of the material unascertainable, figures for net issues would be.

Another set of problems arises from the need of grouping the variety of financial institutions found all over the world into a limited number of major types. While questions of classification are not too serious in four of the nine groups distinguished here (central banks; credit cooperatives; insurance and pension organizations), the allocation to some of the other groups, particularly mortgage and development banks and finance and investment companies, is sometimes difficult to make and to some degree arbitrary. More serious is the fact that the boundary between deposit banks and thrift institutions (mainly savings banks) is not the same in different countries, with the result that the combined total of deposit banks and thrift institutions is more nearly comparable internationally than is either of the two components.

Any research in this field done on the basis of the statistical material now available and of its interpretation by specialists — particularly once one goes beyond central and deposit banks — cannot be but provisional and incomplete. It is only when monographs combining economic and statistical analysis, that uses standardized

---

Statistics is the share of the claims on the private sector in the total assets of commercial banks, an item which includes both the loans to the private sector and the ownership of securities, particularly bonds, of private enterprises. The figures show that both in 1957 and in 1967 about two-thirds of the total assets of commercial banks (in some countries unfortunately savings banks are included in the statistics) consisted of claims against the private sector; and that there was no significant difference in this ratio between the 17 developed countries and the 21 less developed countries (out of the up to 20 and 26 countries in the two groups covered in this article) for which the figures are available. The average moved up fractionally (by two percentage points) for the developed countries but remained unchanged for the less developed ones, and it is doubtful whether much economic significance can be attributed to this movement. The range of the ratio among countries was fairly wide depending mainly on the role of holdings of reserves with the central bank, of foreign assets or of securities or of claims against the home government in the different commercial banking systems.

data and procedures, with thorough familiarity with individual countries' historical and institutional characteristics, will be available for several dozen countries, representative of the different types of structure of financial intermediaries, that a really adequate comparison of financial development on a world-wide basis will become possible. We are obviously very far from that stage. Unless a substantial cooperative effort is made in the future we may never reach it.

II. Main Trends in the Development of Financial Institutions During Post-War Period

The first two post-war decades have been a period of rapid growth of financial institutions throughout the world. This is true whether growth is measured by the nominal value of the assets of financial institutions; whether the assets are adjusted for increases in the price level; and whether, which is the most relevant comparison, the assets are related to the expansion of the country's national product. What are the main characteristics of this development, and which are the factors that may explain it?

1. The rate of growth of the assets of financial institutions in forty countries, about evenly divided among developed and less developed countries, during the period 1949-1967 averaged fully 12 per cent a year. In real terms (using the gross national product deflator) the average was close to eight per cent. The increase in deflated assets per head averaged more than five per cent per year.

2. The rate of growth of the assets of financial institutions measured in current prices was considerably more rapid for less developed countries with 14 per cent than in developed countries for which it averaged 10 per cent. The difference is considerably smaller when the figures are adjusted for price changes. The average then is nearly nine per cent for less developed compared to six-and-one-half per cent for developed countries. The difference is further reduced if allowance is made for increases in population. In that case the average rate of increase is fully six per cent for less developed compared to fully five per cent for developed countries.

3. For economic analysis the relationship of the rate of increase of the assets of financial institutions to the growth of national product is more relevant than the expansion of the absolute figures. It is then found that the ratio of the increase in the assets of financial

institutions to gross national product (the φ ratio shown in the chart) in the two post-war decades averaged slightly over ten per cent, and that the ratio for developed countries with nearly 13 per cent was well above that for less developed countries for which it averaged about eight per cent.

4. All these rates are high in historical perspective, although a fully satisfactory comparison is not possible because of the much more limited amount of data available for earlier periods. For a group of twenty countries, including fifteen developed countries, the average (median) annual rate of increase on the assets of financial institutions was slightly below seven per cent for the period 1901-13 [3] compared to the 12 per cent for the larger group of

THE ISSUE RATIO [1] OF FINANCIAL INSTITUTIONS, 1949-1967
Percent of gross national product
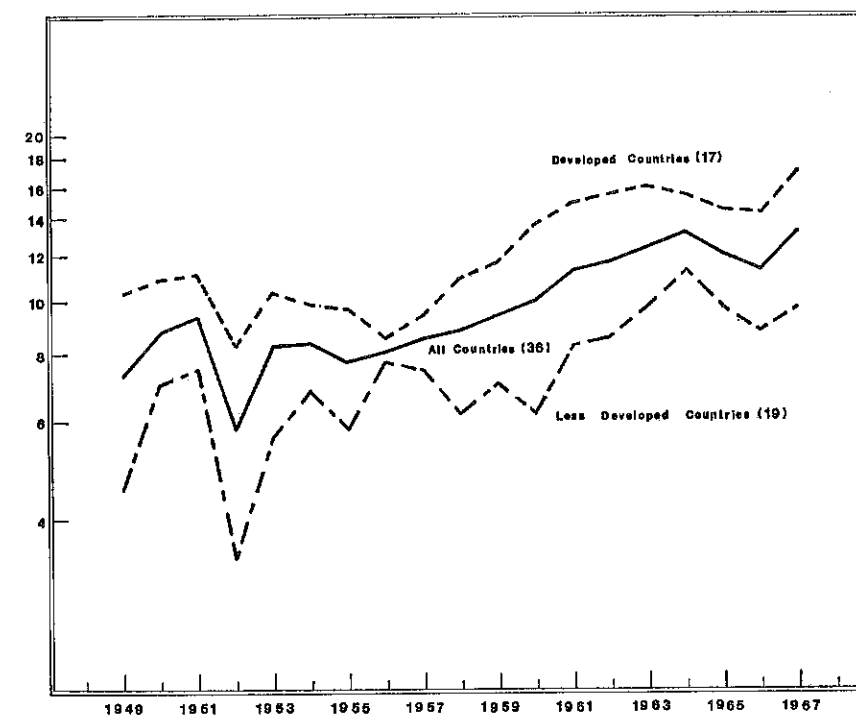
1 Changes in assets of financial institutions divided by gross national product; unweighted averages of country values.

3 See R. W. GOLDSMITH, *Financial Structure and Development*, pp. 186 ff.

countries in the post-war period. The difference is partly due to the more rapid rise in the price level in the post-war period. In constant prices the assets of financial institutions on the average increased at a rate of five and one-half per cent a year in the period before World War I, compared to the rate of seven and one-half per cent observed in the post-World War II period. Most importantly, the ratio of the increase of assets of financial institutions to gross national product averaged less than six per cent in 1901-13 compared to the level, for the larger group of countries, of ten per cent of 1949-67. In the 20 countries for which data are available for both periods the assets of financial institutions expanded, on the average, twice as rapidly in the post-World War II period than in the pre-World War I period.

5. Of the main sources of funds of financial institutions the issuance of money (currency and check deposits) contributed during the 1958-1967 decade one-eighth in developed but over one-fifth in less developed countries, equivalent in both cases to about two per cent of gross national product. Household saving in the form of saving deposits with commercial banks and other thrift institutions and of contributions to the reserves of insurance organizations were responsible for nearly one-half of the total increase in the assets of financial institutions, this time for a slightly higher proportion in developed and a considerably smaller proportion for less developed countries. The remainder was accounted for by non-monetary deposits of business, government and foreigners; by the sale of securities such as mortgage bonds and investment company stock; by claims and debt among financial institutions; and by a multitude of minor sources. It was the larger contribution of households to thrift and insurance organizations that constituted the main difference in size and growth of financial institutions in the two groups of countries — over seven per cent of GNP in developed countries against only three and one-half per cent in less developed countries.

6. The growth of financial institutions generally substantially accelerated during the post-war period, both in absolute figures and in relation to national product. Thus the rate of growth in the φ ratio averaged three and one-half per cent per year. The rate of increase of this ratio — which measures the extent to which the assets of financial institutions expand more or less rapidly than national product — was almost twice as fast in less developed

countries (moving, of course, on a much lower level) with about four and one-half per cent a year than in developed countries for which it averaged two and one-half per cent. The average value of the φ ratio was fairly stable in the 1950's (7.8 per cent in 1949/52 and 8.3 in 1963/57) but advanced sharply in the 1960's (10.3 per cent in 1958/62 and 12.7 in 1693/67).

7. As a result the ratio of the assets of financial institutions to gross national product — and if no change occurred in the capital-output ratio also the ratio of financial institutions' assets to national wealth — was one-fifth higher in 1967 than it had been in 1948. The absolute value of the ratio, however, was still much higher in developed countries with 18 month's national product than in less developed countries where it averaged only slightly more than nine months.

8. The short term fluctuations in the φ ratio showed only a moderate degree of agreement among countries and thus seem to respond mainly to development specific to individual countries. There were only eight years in the two decades in which the ratio either rose or fell for a substantial majority (60 per cent or more) of individual countries — moving upward in 1954, 1959, 1961, 1963, 1964 and 1967 and down in 1952 and 1967. This is another reflection of the fact that most of the increase in the ratio of the net issues by financial institutions to national product occurred in the first half of the 1960's.

9. The main types of financial institutions increased at quite different rates during the two postwar decades and the differences were not the same though similar in developed and less developed countries. Generally central banks assets, that had expanded in many countries to an extraordinary extent during the war years, grew relatively slowly during the postwar period. The expansion of commercial banks corresponded to that of all financial institutions while thrift organizations, insurance organizations, mortgage banks, development banks and investment companies grew more rapidly than the total for all financial institutions. As a result the share of commercial banks remained virtually unchanged at slightly below two-fifths for the average of the 36 countries; the share of insurance organizations increased from 13 to 16 per cent, chiefly as a result of rapid expansion of public and private pension organizations; the

share of mortgage and development banks rose from less than eight to over 12 per cent, while the share of central banks in the assets of all financial institutions declined sharply from 27 to 18 per cent. Most of these movements were fairly similar in both decades.

10. The shifts in the relative importance of the main types of financial institutions, as measured by their total assets, differed not only among individual countries, but also as between developed and less developed countries. Thus the decline in the share of central banks in the assets of all financial institutions was more precipitous in developed than in less developed countries. The share of commercial banks slightly increased, on the average, among less developed countries, but declined fractionally among developed countries, and thrift organizations failed to increase their share among less developed countries. The share of mortgage and development banks and of insurance organizations, on the other hand, increased more rapidly in less developed than in developed countries. As a result of these divergent movements the distribution of the assets of all financial institutions among their main representatives was slightly more dissimilar in 1967 than it had been twenty years earlier.

III. Some Determinants of Trends

To understand the trends in Φ and φ (the ratios of the assets of financial institutions and of the annual changes in them to gross national product) it is necessary to recall the two main functions of financial institutions: first, to provide the bulk of the economy's money supply in the form of bank notes and check deposits; and secondly to furnish an outlet for household saving, particularly savings intended to be kept in liquid form, through the three basic instruments of saving deposits, insurance contracts, and "pooled" securities, primarily mortgage bonds and investment company shares.

The size of the money issuing financial institutions in relation to national product depends on the degree of monetization of the economy; on the share of metallic money, currency and check deposits in the circulating medium; and on the level of income and transactions velocity and of transactions costs. The relative size of the main other financial institutions (including the savings departments of commercial banks) is determined by (a) the saving ratio of households; (b) the share of saving through financial insti-

tutions in individuals' total saving, a share which in turn is the product of the ratio of net acquisition of financial assets by individuals to total personal saving and of the ratio of saving through financial institutions to total net acquisition of financial assets by individuals; (c) the use made by other domestic sectors — as well as the rest of the world — of non-monetary financial institutions; and (d) the extent of claims and equity holdings among domestic financial institutions.

The statistics necessary to decompose the ratio of the issues of financial institutions to national product in this way [4] are not generally available even for the post-war period, being particularly deficient in less developed countries. In that situation conclusions regarding the determinants of the new issue ratio of financial institutions must be drawn, in a less satisfactory way, from the generally available monetary statistics and the changes in assets of the different types of financial institutions.[5] The results of the calculations

---

[4] The formula is

$$[1] \qquad \varphi = \frac{e_f}{y} = \frac{\Delta M}{y} + \left(\frac{p}{y} \times \frac{s}{p} \times \frac{f}{s} \times \frac{g}{f} \right) + \frac{z}{y}$$

where: $y =$ gross national product

$e_f =$ net issues of financial instruments by financial institutions

$\Delta M =$ change in money in circulation

$p =$ personal disposable income

$s =$ personal saving

$f =$ net acquisition of financial assets by persons

$g =$ net acquisition by persons of non-monetary claims against and of shares of financial institutions

$z =$ residual, consisting of issues among financial institutions and non-monetary claims of other domestic sectors and rest of the world against financial institutions

[5] This means that instead of formula [1] one must use

$$[2] \qquad \varphi = \frac{\Delta A_f}{y} = \frac{\Delta M}{y} + \left(\frac{\Delta TD}{y} + \frac{\Delta A_s}{y} + \frac{\Delta A_i}{y} \right) + \frac{z'}{y}$$

where: $A_f =$ assets of all financial institutions

$A_i =$ assets of insurance and pension organizations

$A_s =$ assets of thrift institutions, including credit cooperatives

$TD =$ time and savings deposits with commercial banks

$z' =$ residual $= \Delta A_f - (\Delta M + \Delta TD + \Delta A_s + \Delta A_i)$

It should be noted that z' (in contrast to z) also includes the effects of valuation changes on the assets of financial institutions as well as their retained earnings, and also includes the change in assets of financial institutions other than banks, thrift institutions and insurance organizations.

are shown in Table 1 for groups of countries and in Table 2 for individual countries using the period 1958-67 as an example.

Limiting attention to the group average, the information may be briefly summarized. For all 40 countries taken together money accounts for about one-sixth, time deposits in commercial banks for about one-eighth and saving through thrift and insurance organizations for one-third of the total new issue ratio of financial insti-

TABLE 1

DECOMPOSITION OF FINANCIAL INSTITUTIONS' NEW ISSUE RATIO (φ)
FOR GROUPS OF COUNTRIES, 1958-1967

Percent of gross national product

	Assets of financial institutions (1)	Money (2)	Bank time deposits (3)	Assets of thrift and insurance organizations (4)	Remainder (5)
I. Developed countries (20) . . .	14.7	1.9	1.7	5.9	5.2
1. European (14)	15.1	2.1	1.6	5.5	5.9
2. Non-European (6)	13.7	1.5	2.0	6.7	3.5
II. Less developed countries (20) .	9.1	2.0	1.5	2.0	3.6
1. Mediterranean (6)	14.3	2.7	2.2	3.1	6.3
2. American (7)	9.7	2.1	0.9	1.3	5.4
3. Asian (7)	7.4	1.4	1.6	1.8	2.6
III. All countries (40)	12.0	2.0	1.6	4.0	4.4

tutions of 12 per cent of national product. This leaves the last third to the heterogeneous combination of (1) claims among financial institutions; (2) claims against (and equity securities of) banks, thrift institutions and insurance organizations held by domestic non-financial sectors and by foreigners; (3) the issues of other financial institutions; (4) the retained earnings of banks and other financial institutions; and (5) valuation changes in the assets and in the liabilities of financial institutions. Considering that most of the issuance of money and part of the issues of financial institutions other than banks, thrift institutions and insurance and pension organizations — particularly the issues of mortgage banks and investment companies — constitute elements of household saving, it appears that the household sector absorbs on the average between

TABLE 2

DECOMPOSITION OF FINANCIAL INSTITUTIONS' NEW ISSUE RATIO (φ) [1]
FOR 40 COUNTRIES, 1958-1967

Percent of gross national product

	Changes in				Remainder (1) — (2) — (3) — (4)
Country	Assets of financial instit. (1)	Money (2)	Time deposits in commercial banks (3)	Assets of thrift & insurance organizations (4)	(5)
I. Developed Countries					
1. Australia	8.6	0.6	1.0	5.5	1.5
2. Austria	10.6	1.6	0.8	6.3	1.9
3. Belgium	13.9	2.1	1.3	4.3	6.2
4. Canada	11.6	1.4	1.3	4.9	4.0
5. Denmark	17.8	2.4	1.4	3.8	10.2
6. Finland	9.6	0.5	1.5	5.6	2.0
7. France	12.8	3.4	1.0	3.8	4.6
8. Germany	14.1	1.3	0.8	8.2	3.8
9. Great Britain	12.4	1.7	0.7	6.0	4.0
10. Iceland	21.5	1.5	3.6	4.3	12.1
11. Ireland	9.0	1.7	2.0	1.8	3.5
12. Italy	23.3	4.8	7.8	6.3	4.4
13. Japan	29.7	4.4	5.0	10.7	9.6
14. Netherlands	16.9	2.0	1.4	7.3	6.2
15. New Zealand	9.2	0.6	0.2	6.5	1.9
16. Norway	10.1	1.3	0.9	4.8	3.1
17. South Africa	11.5	1.1	2.0	7.3	1.1
18. Sweden	13.9	1.2	1.8	6.6	4.3
19. Switzerland	25.9	3.9	2.4	7.7	11.9
20. U.S.A.	11.6	0.8	2.2	5.7	2.9
Average	14.7	1.9	1.9	5.9	5.0
II. Less Developed Countries					
1. Argentina	12.0	4.4	1.7	1.8	4.1
2. Brazil	21.3	4.3	0.6	2.7	13.7
3. Ceylon	5.6	1.0	0.6	1.6	2.4
4. Colombia	10.3	2.4	0.3	1.0	6.6
5. Greece	8.1	2.3	1.9	0.8	3.1
6. India	5.6	1.4	0.7	2.6	0.9
7. Israel	25.2	2.7	2.4	4.8	15.3
8. Jamaica	5.1	0.6	1.8	1.4	1.3
9. Korea	10.0	1.8	2.1	2.5	3.6
10. Mexico	6.9	1.2	0.4	1.1	4.2
11. Pakistan	4.6	1.2	0.9	0.5	2.0
12. Peru	7.9	1.4	0.9	0.5	5.1
13. Philippines	9.2	1.2	1.9	2.5	3.6
14. Portugal	14.1	4.4	3.1	3.2	3.4
15. Spain	18.2	3.9	3.2	4.3	6.8
16. Taiwan	11.2	1.9	3.1	2.2	4.0
17. Thailand	5.3	1.3	1.5	0.6	1.9
18. Turkey	8.9	1.2	1.7	1.5	4.5
19. U.A.R.	11.2	1.6	0.8	4.2	4.6
20. Venezuela	4.2	0.6	0.6	0.5	2.5
Average	9.1	2.0	1.5	2.0	3.6
III. All Countries					
Average	11.9	2.0	1.7	4.0	4.3

[1] Change in assets of financial institutions divided by gross national product.

70 and 80 per cent of the new issues of financial institutions and a slightly higher proportion if claims among financial institutions are excluded from issues.

Substantial differences, of course, appear in the origin of the new issues of financial institutions not only among individual countries but also, what is more important, among groups of countries. Thus in the 1958-67 period money contributed on the average only one-eighth of the total net issues ratio of financial institutions of almost 15 per cent of national product in 20 developed countries compared to a contribution of over one-fifth to the average new issue ratio of 9 per cent for 20 less developed countries, although the absolute value of the money issue ratio — two per cent of national product — was the same in both groups of countries. On the other hand, household saving through thrift and insurance organizations (including time and savings deposits with commercial banks) accounted for fully one-half of the total new issues ratio in developed countries, but for less than two-fifths in less developed countries. As a result, the share of the heterogeneous remainder amounted to about two-fifths of the total new issue ratio in less developed countries against fully one-third in developed countries.

Differences were relatively small between the averages for European and non-European developed countries, the higher values of Col. 5 for the European countries reflecting the greater importance of mortgage banks and duplicative financial institutions of the second degree. Among less developed countries, on the other hand, the six Mediterranean countries (Greece, Israel, Portugal, Spain, Turkey and U.A.R.) show a level and a pattern of φ that is closer to European developed countries, except for the lower share of thrift and insurance organizations, than to the group of American or Asian less developed countries. (The heterogeneous group of Mediterranean countries occupies this intermediate position with respect to several other features discussed in this article). The main differences in the average for the American and Asian under-developed countries — the small number of countries in each group counsel great caution in interpretation — is the higher level and share of the banking system and of thrift and insurance organizations and the lesser importance of development banks (included in Col. 5) in the Asian countries.

These relationships reflect, of course, differences in basic features of the financial structure of these groups of countries, as well as of

individual members of the group, for which comparable data are shown in Table 2, viz. the higher saving ratios of households in developed countries and the higher share of their total saving they devote to non-monetary saving through financial institutions, particularly through thrift and insurance organizations.[6]

IV. The Growth of Financial Institutions in the Post-War Period

A. In Absolute Terms.

For the period 1949-67 as a whole and for the forty countries for which the figures are available for the entire period the un-weighted average rate of growth, determined by fitting a logarithmic trend to the annual value of assets in national currencies, is slightly in excess of 12 per cent. This figure, however, is considerably affected by a few very high values for countries undergoing rapid inflation. The median rate of growth, which may be regarded as more representative, is approximately 10 per cent.

The average rate of growth is considerably higher for less developed than for developed countries irrespective of whether arithmetic averages or medians are used. For the averages, which are strongly influenced by the very high values for the few countries experiencing rapid inflation during most of the period (e.g., Argentina and Brazil) or for part of it (Greece, Israel), the difference is between 10 per cent for developed and more than 14 per cent for less developed countries. Using medians, where extreme cases exercise less influence, the difference is even more pronounced, viz. about

---

6 The statistics of personal saving are notoriously scarce, erratic and unreliable and internationally difficult to compare, particularly for less developed countries. According to the data assembled by the United Nations (*Yearbook of National Accounts Statistics, 1968*, Vol. II, Table 9) for selected years between 1950 and 1967 the personal saving ratio (excluding saving in the form of consumer durables) rose for 17 developed countries (all those included in this article except Iceland, Italy and Norway) from about 8 per cent in the 1950's to about 13 per cent in the 1960's. This compares with averages for eight less developed countries — all for which the information is given for these dates, but unfortunately not including any of the large South Asian, African and Latin American countries — of about six per cent in the 1950's and nine per cent in the 1960's. For a substantially larger group of 26 less developed countries for which data are available in the same source for the mid-1960's only (1965-66 or 1965-67) the average personal saving rate is only 6-½ per cent. Not enough reliable data are available to calculate an average or typical figure for the share of non-monetary claims against financial institutions in total personal saving for the two groups of countries.

nine per cent for developed and again 14 per cent for less developed countries.

No difference between the two decades is observable for developed countries if average values are used and only a modest increase is shown for less developed countries. Medians, however, show an increase from 8-½ to 10 per cent for developed countries in the face of a decline from 16 to 14 per cent for less developed countries. The differences in the average are again due to the influence of a few inflationary countries, such countries being predominantly to be found among the less developed group. Hence the movements of the medians may be regarded as more accurately reflecting prevailing tendencies.

The rates of growth of assets adjusted for changes in the price level which are shown in Table 3 are more relevant for economic analysis. Here too rapid growth is observed if all forty countries are combined for the entire period 1949-67. The rate of increase then is nearly eight per cent on the basis of unweighted arithmetic averages and somewhat in excess of seven per cent if medians are used. The rate is somewhat higher for less developed than for developed countries irrespective of whether based on averages or medians — eight and one-half per cent for less developed against six-and-one-half per cent for developed countries in both cases. If a further adjustment were made for increases in population the average growth rate of deflated assets per head would be reduced to fully six per cent for less developed countries against fully five per cent for developed countries, narrowing but by no means eliminating the difference between these two groups. A substantial acceleration in the rate of growth of deflated assets between the two decades is observed for developed countries (on the basis of averages from 5.8 per cent to 7.0 per cent) compared to a slighter acceleration (from 8.0 per cent to 8.8 per cent) for less developed countries.

For the period as a whole the highest rates, adjusted for changes in the general price level, are shown by Japan and Israel with approximately 17 per cent per year. Seven more countries have rates in excess of 10 per cent. These include two developed countries (Germany and Italy) and five less developed countries (Greece, Nigeria, Philippines, Spain and Venezuela). Most of these seven countries are characterized, in addition to a fairly rapid rate of growth, by either a sharp shrinkage in the size of the assets of

GROWTH RATES OF ASSETS OF FINANCIAL INSTITUTIONS   TABLE 3
(fitted trend averages)

Country	Current Prices			Constant Prices		
	1948-1967 (1)	1948-1957 (2)	1957-1967 (3)	1948-1967 (4)	1948-1957 (5)	1957-1967 (6)
I. *Developed Countries*						
1. Australia	7.21	7.19	8.19	2.95	− 0.56	5.37
2. Austria	.	.	12.50	.	.	8.32
3. Belgium	8.57	7.05	10.21	6.42	5.20	7.32
4. Canada	8.20	7.52	9.10	5.45	4.08	6.58
5. Denmark	8.48	4.08	12.61	4.22	0.20	6.92
6. Finland	13.04	15.80	12.78	7.77	8.72	8.16
7. France	14.92	16.36	13.98	9.24	9.61	9.58
8. Germany[1]	15.32	20.20	12.44	12.14	17.35	9.06
9. Great Britain	6.24	4.24	8.41	2.80	− 0.12	5.37
10. Iceland	.	.	16.02	.	.	3.74
11. Ireland	4.64	2.75	7.16	0.95	− 1.30	3.14
12. Italy	15.26	16.57	15.33	11.79	13.64	10.63
13. Japan	21.98	28.13	19.64	17.15	20.74	14.75
14. Netherlands	9.84	7.81	11.24	5.75	3.63	6.37
15. New Zealand	6.70	6.31	7.67	5.01	5.84	5.05
16. Norway	6.52	5.43	7.66	2.86	0.48	4.15
17. South Africa	8.56	7.86	9.84	6.06	4.26	7.46
18. Sweden	8.32	7.40	9.73	4.22	2.70	5.48
19. Switzerland	8.57	6.81	9.98	5.83	5.92	5.59
20. U.S.A.	6.80	6.52	7.52	4.61	4.01	5.66
Average (18)	9.95	9.89	10.75	6.40	5.80	7.04
II. *Less Developed Countries*						
1. Argentina	20.46	17.65	23.83	− 4.26	− 0.94	− 2.93
2. Brazil	35.23	21.27	52.89	4.65	5.49	4.46
3. Ceylon	7.61	5.52	9.44	6.77	3.76	9.47
4. Colombia	19.95	19.81	20.73	9.25	11.35	8.13
5. Cyprus	.	.	13.48	.	.	12.55
6. Greece	15.28	20.38	13.50	10.57	11.49	10.79
7. India	9.98	6.21	11.49	8.52	7.02	8.47
8. Israel[1]	26.88	32.28	25.22	16.84	15.25	17.14
9. Jamaica	12.04	10.79	12.19	8.69	4.75	10.34
10. Korea	.	.	25.97	.	.	7.46
11. Malta	.	.	4.31	.	.	3.73
12. Mexico	15.0	15.31	15.75	8.79	6.39	11.55
13. Morocco	.	.	7.14 (2)	.	.	3.77 (2)
14. Nigeria	15.74	19.34	13.24	13.51	15.31	11.99
15. Pakistan	10.04	6.79	12.80	6.00	3.61	8.52
16. Peru	16.81	17.39	18.78	7.86	9.07	8.54
17. Philippines	13.09	7.81	16.63	10.48	8.33	11.12
18. Portugal	8.81	8.58	10.33	7.25	7.90	7.91
19. Puerto Rico	11.54	6.74	15.82	8.59	4.28	12.42
20. Spain	16.41	16.85	16.11	10.36	11.68	9.37
21. Taiwan	.	.	24.52	.	.	19.80
22. Thailand	12.45	16.92	12.04	9.27	10.01	10.84
23. Trinidad	8.42	9.33	6.87	5.29	3.30	5.52
24. Turkey[3]	16.68	23.65	12.40	7.43	13.06	6.35
25. U.A.R.	8.43	2.04	13.21	5.96	0.25	9.06
26. Venezuela	12.50	16.98	7.27	11.32	16.19	5.77
Average (21)	14.92	14.36	16.20	8.24	7.98	8.80
III. *All Countries*						
Average (39)	12.63	12.30	13.70	7.39	6.95	7.98

[1] 1950 to 1967 or 1957.   (2) 1958-1967.   [3] 1949 to 1967 or 1957.

financial institutions in real terms before the period started (Germany, Greece, Italy); by the very small size of financial institutions at the beginning of the period (Nigeria, Philippines, Venezuela); or by a combination of the factors.

In historical perspective the growth rates for the post-war period are high both for nominal and for deflated values, although more so in the former case, to judge by the experience of the dozen countries for which information is available back to the turn of the century. For the more relevant deflated values shown in Table 4

TABLE 4

COMPARISON OF RATE OF GROWTH OF DEFLATED ASSETS OF
FINANCIAL INSTITUTIONS POST-WAR AND FIVE EARLIER PERIODS

Annual average percentage rate of growth [1]

Country	1881-1900 (1)	1901-1913 (2)	1914-1929 (3)	1930-1939 (4)	1940-1948 (5)	1949-1967 (6)
1. Canada	7.9	5.3	3.5	4.8	3.5	5.2
2. France	5.4	3.3	1.1	4.5	− 8.1	9.1
3. Germany	5.4	5.5	−3.6	6.0	− 10.2	12.3
4. Great Britain	3.1	2.2	1.9	3.8	2.9	3.2
5. India	3.4	5.6	4.7	12.2	4.1	7.1
6. Italy	3.7	6.3	1.9	5.2	− 6.9	12.4
7. Japan	12.9	4.4	9.3	4.9	−15.4	17.1
8. Mexico	.	15.0	−5.5	9.0	9.1	9.2
9. Spain	.	0.8	7.2	− 0.9	0.8	10.0
10. Sweden	4.6	4.5	3.2	2.6	0.8	4.3
11. Switzerland	4.5	7.4	0.6	3.5	− 0.2	5.7
12. United States	7.3	4.5	5.4	3.9	2.4	4.6
Average	5.8	5.5	2.5	5.0	− 1.4	8.4
Median	5.0	4.9	2.6	4.7	0.8	8.1

1 Geometric rate of increase between final years of period (for col. 1: 1880 and 1900).
Source for cols. (1) to (4): *Financial Structure and Development*, p. 188.

the post-war average of fully eight per cent compares with average of 5-½ to 6 per cent for 1881 to 1900 and for 1901-1913, almost the last normal earlier periods. The contrast is even greater with the following periods of 1914-1929 and 1939-1948 which were strongly affected by the inflations accompanying the two World

Wars.[7] The relatively high level of growth of deflated assets of financial institutions in the post-war period is evident in the case of both developed and less developed countries.

Table 4 also provides an indication of the wide variations among individual countries, variations that must be explained by differences in the rate of real economic growth, price movements, the effects of wars and other factors. For four of the nine developed countries the rate of growth of 1949-67 is higher than that for any of the five previous periods; in two other countries it is higher than the rate in four out of the five periods. Among the three less developed countries included in Table 4 the post-war rate of growth is the highest for Spain, the second highest for India, but is only equal to the average of previous period rates for Mexico. This relationship — a post-war rate of growth which is very high in historical comparison for developed countries, but is less so for less developed countries — also holds true for a larger number of countries in both groups.[8]

B. *In Relation to National Product.*

i. *Assets of Financial Institutions.* In the absence of data for national wealth or for total financial assets for a large number of countries and for several dates in the post-was period probably the most relevant indicator of the importance of financial institutions, in the stock rather than in the flow dimension that will be discussed later, is the trend in the ratio of the assets of financial institutions to gross national product (Φ) shown in Table 5. A rise in this ratio indicates that the assets of financial institutions have grown more rapidly than the broadest measure of economic activity that gross national product provides. To the extent that the capital-output ratio remains unchanged an upward movement in Φ also indicates a more rapid growth in the assets of financial institutions than in national wealth.[9]

---

7 See, *Financial Structure and Development*, p. 185 and ff.
8 See, *Financial Structure and Development*, p. 188.
9 The ratio is obtained by dividing the value of assets at end of year by gross national product during the year. Hence the ratio is generally slightly lower — usually only by a few per cent — than it would be if either average assets had been used as numerator or the rate of GNP at year end as denominator.

This measure of the size of financial institutions shows a substantial increase during the post-war period if we look at all countries together and at the entire period 1948-67. In that case the average rate of increase in Φ is slightly above two per cent per year, indicating that if the trend prevailing during the first two decades of the post-war period continued the ratio would double in thirty-three years. This average, however, is much less relevant for an understanding of the development of financial institutions in the post-war period than are the trends for shorter periods and for more homogeneous groups of countries.

We then find that the average of growth of Φ in the first post-war decade is much lower — indeed hardly half as large — than the rate of somewhat over 1-½ per cent for the second decade 1958-67. However, the number of countries showing an increase in Φ is only slightly higher than those for which a decline appears.

The tendencies become more regular if more homogeneous groups of countries are considered. For developed countries the average rate of growth in Φ rises from 0.4 in 1949/57 to 2.2 per cent a year in 1958/67, and the trend toward an acceleration of the movement is shared by 13 of the 18 developed countries. In fact the direction of the movement changed from a negative value in the 1949-57 period to a positive rate in 1958-67 in no less than eight countries which can be identified in Table 5, while the downward trend was almost eliminated in two countries and the upward trend accelerated in three countries. It is significant that of the four countries in which the rate of increase of Φ slowed down, three (Germany, Italy and Japan) had shown an extraordinarily high rate of expansion of financial institutions' assets during the first post-war decade as they emerged from inflation or currency reform which had reduced the assets of financial institutions to an abnormally low proportion of national product. The result is a sharp reduction in the differences in the growth rates of φ among developed countries. While these rates varied from — 4 per cent to + 9 per cent during the first pre-war decade the range in the following decade of 1958-67 was only from — ½ per cent to less than + 5 per cent, the absolute width of the range thus having been reduced by three-fifths; and 14 of the 18 values were concentrated in the range from 0 to 4 per cent in face of a much wider dispersion during the 1948-57 decade.

RATIO OF ASSETS OF FINANCIAL INSTITUTIONS TO GROSS NATIONAL PRODUCT (Φ), (1948-1967)

TABLE 5

Percent

Country	1948 (1)	1952 (2)	1957 (3)	1962 (4)	1967 (5)	1967/1948 (6)
I. *Developed Countries*						
1. Australia	154.3	117.3	110.5	114.7	115.8	.75
2. Austria	.	.	.	90.6	110.7	—
3. Belgium	100.4	105.3	112.8	149.6	153.1	1.52
4. Canada	127.3	106.1	117.1	132.5	140.3	1.10
5. Denmark	180.3	143.8	139.6	147.8	169.5	.94
6. Finland	55.7	64.7	69.9	82.1	90.7	1.63
7. France	60.4	62.7	80.8	101.2	121.1	2.00
8. Germany	.	66.6	103.4	120.4	147.3	—
9. Great Britain	177.9	150.0	138.4	149.4	172.1	.97
10. Iceland	.	.	.	150.1	139.8	—
11. Ireland	155.9	133.5	130.5	130.6	127.9	.82
12. Italy	71.0	98.6	126.8	167.7	209.2	2.95
13. Japan	58.7	98.6	139.0	171.9	191.9	3.27
14. Netherlands	154.7	132.5	132.6	163.3	161.3	1.04
15. New Zealand	156.3	127.2	126.6	129.9	138.8	.89
16. Norway	192.9	143.5	139.3	139.2	132.5	.69
17. South Africa	134.5	109.2	117.1	128.5	135.8	1.01
18. Sweden	152.8	136.5	138.7	141.6	162.7	1.06
19. Switzerland	235.3	247.5	263.0	282.4	291.4	1.24
20. U.S.A.	147.8	138.5	147.1	158.2	164.5	1.11
Average, all	136.2	121.2	129.6	142.6	153.8	1.13
Average, 17	136.2	124.4	131.1	146.5	158.1	1.16
II. *Less Developed Countries*						
1. Argentina	144.7	115.2	93.7	48.5	49.6	.34
2. Brazil	61.5	65.1	61.4	50.6	59.2	.96
3. Ceylon	44.0	43.0	47.0	57.6	71.4	1.62
4. Colombia	35.0	35.8	51.5	65.7	64.7	1.85
5. Cyprus	.	.	44.3	59.5	89.4	—
6. Greece	28.5	49.8	47.4	64.4	74.1	2.60
7. India	33.5	30.7	42.3	54.6	52.8	1.58
8. Israel	.	54.3	78.5	127.7	170.3	—
9. Jamaica	42.4	33.5	34.3	46.0	57.7	1.36
10. Korea	.	—	33.3	44.9	53.5	—
11. Malta	.	—	181.6	180.2	169.8	—
12. Mexico	38.1	38.6	36.3	47.5	59.4	1.56
13. Morocco	.	—	.	44.8	48.4	—
14. Nigeria	4.1	7.4	11.6	18.3	23.5	5.73
15. Pakistan	31.0	28.8	36.4	36.6	44.5	1.44
16. Peru	35.0	38.1	43.2	46.3	55.1	1.57
17. Philippines	38.5	35.5	43.4	61.1	80.1	2.08
18. Portugal	116.3	118.6	141.2	143.4	158.2	1.36
19. Puerto Rico	63.4	49.9	57.0	65.3	86.8	1.37
20. Spain	84.8	83.1	98.1	121.5	140.5	1.66
21. Taiwan	.	22.3	31.5	51.5	73.0	—
22. Thailand	24.0	37.3	42.8	44.4	53.2	2.22
23. Trinidad	40.1	40.9	39.6	33.6	34.3	.86
24. Turkey	.	54.7	71.7	68.5	76.2	—
25. U.A.R.	90.6	80.1	78.2	92.9	119.1	1.31
26. Venezuela	36.6	38.1	63.8	60.0	68.2	1.86
Average, all	52.2	50.0	60.4	66.7	78.2	1.50
Average, 19	52.2	51.0	56.3	61.4	71.2	1.36
III. *All Countries*						
Average, all	91.9	82.1	89.4	99.7	111.0	1.21
Average, 36	91.9	85.6	95.2	101.5	112.2	1.22

Turning to the less developed countries we find both a lower absolute level of Φ in both decades and a much smaller acceleration from the first to the second post-war decade, although both values (2.4 and 3.0 per cent) are well above those for developed countries. Here too, the range has been reduced from over 17 percentage points to 14 per cent, but the narrowing is much less pronounced than among developed countries. As a consequence the number of countries in the two to six per cent range has increased only from eight to twelve.

There are substantial and significant differences in the value of Φ and in its rate of growth among less developed countries. The only African country south of the Sahara — Nigeria — has the extremely high growth ratio of Φ of 10.6 per cent for the two decades, starting from a very low absolute value of the ratio. Both for the five Mediterranean countries (Spain, Portugal, Greece, Turkey and Israel) and for the five Asiatic countries (India, Pakistan, Ceylon, Philippines and Thailand) the rate of growth of Φ averages about 3-½ per cent with little difference between the two decades. The lowest average rate of growth in Φ is shown for the six Latin-American countries (Argentina, Brazil, Colombia, Mexico, Peru and Venezuela) for which the average rate of growth in Φ for the two decades together is only slightly above one per cent and even declines from 1.7 per cent to 1.2 per cent from the first to the second decade. (If the three Caribbean countries — Jamaica, Puerto Rico, and Trinidad — are included, the average for the whole period is hardly affected, but now the value for the second decade with 1.5 per cent is considerably above that for the first decade of 0.4 per cent). The slow rate of growth of Φ is due largely to the failure of the expansion of the assets of financial institutions in Argentina and Brazil to keep up with the rapid inflation prevailing in these countries with the result of a sharp reduction in the value of Φ over the the last two decades. For the remaining four Latin-American countries the value of the rate of growth of Φ of 3.2 per cent a year for the period as a whole and for the two decades separately, is similar to that for other groups of less developed countries.

In view of the considerably more rapid increase in Φ in less developed than in developed countries it is well to recall that the absolute level of Φ in 1967 in less developed countries was still well under one-half than what is was in developed countries. If Φ for the two groups of countries continued to grow at the average rate

of 1949-67, i.e., at 2.6 per cent a year for less developed and at 1.5 per cent for developed countries, it would take fully 25 years for the less developed countries to reach the present level of developed countries and a little over 60 years to catch up with them at the level of about 3.6 for Φ, which is well above the present highest value registered by Switzerland.

While the rate of growth of the assets of financial institutions, both in current and in constant prices, was substantially higher in the post-war period than it had been before, and this relation held both for developed and less developed countries, the picture is much more mixed for Φ. Using the same twelve major countries of Table 4 the rate of growth of Φ in the post-war period is above that of the much longer period 1881-1948 in five countries (France, Germany, Italy, Japan and Switzerland), but below that rate for another five countries (Canada, Great Britain, India, Sweden and the United States). The reason for this difference is that φ has as its denominator gross national product and the rate of growth of national product in the post-war period was in most countries above that experienced during the seventy years before 1948.

ii. *New Issues of Financial Institutions.* The movements in Φ over time are rather slow and changes in the differences in Φ among countries are rather sluggish because the average rate of change in Φ usually amounts to only a few per cent of its value per year. In the short run, at least up to about ten years, a much more sensitive measure is provided by the ratio of the change in the assets of financial institutions to gross national product (φ). This ratio can be taken as closely approximating, though not identical with, the net new issue ratio of financial institutions strictly speaking, i.e., the ratio of new issues of claims and equity securities to gross national product.[10] The ratio φ is also more satisfactory than Φ because both the numerator and the denominator represent flows during the same time period.

Starting again with the ratio for all types of financial institutions in a country it is seen in Table 6 and 7 that φ has shown a general upward trend over the post-war period as a whole, as was observed for Φ and is almost an algebraic necessity if Φ increases. The rate of increase of φ (average annual percentage point increase

---

10 Cf. above pp. 130, 136.

Table 6

CHARACTERISTICS OF FINANCIAL INSTITUTIONS' NEW ISSUE RATIO (φ)

Country	Period (1)	Average value of φ (p.c.) (2)	Average Rate of Increase		Coefficient of variation (5)
			Arithmetic (p.c. points) (3)	Geometric (p.c.) (4)	
I. *Developed Countries*					
1. Australia	1949-67	9.17	— 0.24	1	0.63
2. Austria	1959-67	10.72	0.37	3.72	0.14
3. Belgium	1949-67	10.27	0.55	5.67	0.41
4. Canada	1949-67	9.97	0.37	3.92	0.29
5. Denmark	1949-67	12.21	1.10	11.15	0.54
6 Finland	1949-67	9.37	— 0.05	— 0.09	0.29
7. France	1949-67	11.67	0.22	1.92	0.15
8. Germany	1951-67	14.12	0.02	0.22	0.11
9. Great Britain	1949-67	9.47	0.61	1	0.61
10. Iceland	1959-67	20.98	— 1.58	— 7.26	0.27
11. Ireland	1949-67	6.79	0.38	1	0.68
12. Italy	1949-67	19.47	0.68	3.50	0.25
13. Japan	1949-67	26.30	0.64	2.66	0.23
14. Netherlands	1949-67	13.47	0.58	5.32	0.35
15. New Zealand	1949-67	8.70	0.06	5.42	0.47
16. Norway	1949-67	8.78	0.30	5.60	0.31
17. South Africa	1949-67	9.92	0.40	6.68	0.40
18. Sweden	1949-67	12.05	0.42	3.40	0.33
19. Switzerland	1949-67	21.40	0.73	3.58	0.28
20. U.S.A.	1949-67	10.15	0.29	2.87	0.27
Average	—	12.75	0.32	3.38 [2]	0.35
II. *Less Developed Countries*					
1. Argentina	1949-67	15.79	— 0.79	— 4.90	0.36
2. Brazil	1949-67	16.88	0.89	5.50	0.37
3. Ceylon	1949-67	4.13	0.30	1	0.81
4. Colombia	1949-67	8.76	0.41	4.94	0.51
5. Cyprus	1958-67	8.25	1.10	15.53	0.59
6. Greece	1949-67	8.44	— 0.21	1	0.55
7. India	1949-67	3.97	0.36	1	0.59
8. Israel	1951-67	22.05	0.82	3.82	0.40
9. Jamaica	1949-67	4.40	0.21	4.50	0.52
10. Korea	1958-67	9.86	1.24	13.83	0.57
11. Malta	1958-67	7.50	1.35	25.86	0.62
12. Mexico	1949-67	6.22	0.15	2.56	0.30
13. Morocco	1959-67	2.98	0.09	13.15	0.65
14. Nigeria	1949-67	1.57	0.04	1	0.98
15. Pakistan	1949-67	3.50	0.29	1	0.78
16. Peru	1949-67	7.00	0.20	2.62	0.28
17. Philippines	1949-67	6.24	0.66	1	0.76
18. Portugal	1949-67	11.49	0.69	1	0.57
19. Puerto Rico	1949-67	6.68	0.72	1	0.66
20. Spain	1949-67	15.95	0.55	3.53	0.24
21. Taiwan	1953-67	9.37	0.60	7.24	0.43
22. Thailand	1949-67	5.15	0.04	0.38	0.39
23. Trinidad	1949-67	3.15	— 0.14	1	0.71
24. Turkey	1950-67	10.58	— 0.30	— 2.64	0.35
25. U.A.R.	1949-67	7.11	0.80	1	0.90
26. Venezuela	1949-67	5.74	— 0.00	1	0.71
Average	—	8.18	0.39	6.39 [2]	0.56
III. *All Countries* (3)					
Average	1949-67	10.20	0.36	4.85 (4)	0.47

1 Not calculable because at least one value negative.   2 Average for 17 and 16 countries respectively.   3 Average for 36 countries for which data are available for entire period 1949-1967.   4 Average for 33 countries.

Table 7

FINANCIAL INSTITUTIONS' NET ISSUE RATIO (φ), 1949-1967

Percent of Gross National Product

Country	1949/52 (1)	1953/57 (2)	1958/62 (3)	1963/67 (4)
I. *Developed Countries*				
1. Australia	13.5	6.9	7.6	9.7
2. Austria	.	.	9.5	11.7
3. Belgium	7.3	6.6	14.1	12.5
4. Canada	7.6	8.6	9.7	13.6
5. Denmark	4.8	6.9	14.8	20.8
6. Finland	11.4	7.3	9.3	9.9
7. France	10.4	10.4	12.9	12.8
8. Germany	.	15.1	14.4	13.8
9. Great Britain	5.2	7.0	10.2	14.7
10. Iceland	.	.	26.2	16.8
11. Ireland	5.2	3.8	7.2	10.7
12. Italy	15.8	14.8	22.4	24.2
13. Japan	25.1	20.5	28.0	31.4
14. Netherlands	7.7	11.3	17.0	16.8
15. New Zealand	7.9	8.4	8.7	9.7
16. Norway	6.2	8.3	9.0	11.1
17. South Africa	7.3	8.8	9.9	13.2
18. Sweden	10.9	9.4	11.3	16.4
19. Switzerland	15.2	17.3	28.0	23.8
20. U.S.A.	9.1	8.2	10.2	13.0
Average (17 countries) .	10.0	9.7	13.5	15.6
II. *Less Developed Countries*				
1. Argentina	21.9	18.6	11.6	12.4
2. Brazil	11.5	12.4	19.2	23.4
3. Ceylon	2.4	2.7	4.4	6.8
4. Colombia	5.0	8.6	10.3	10.4
5. Cyprus	.	.	5.1	11.5
6. Greece	12.4	6.0	7.8	8.4
7. India	0.4	3.7	5.6	5.6
8. Israel	.	18.3	25.1	25.3
9. Jamaica	2.8	4.2	4.4	5.9
10. Korea	.	.	8.5	11.3
11. Malta	.	.	5.1	9.9
12. Mexico	5.9	5.1	5.7	8.1
13. Morocco	.	.	3.3	2.8
14. Nigeria	1.1	1.1	2.5	1.5
15. Pakistan	0.5	3.7	3.2	5.9
16. Peru	6.8	5.5	6.5	9.2
17. Philippines	1.4	3.8	8.6	10.2
18. Portugal	5.8	10.9	10.1	18.0
19. Puerto Rico	1.9	4.2	7.5	12.2
20. Spain	12.4	14.3	15.8	20.6
21. Taiwan	.	5.8	9.9	12.4
22. Thailand	5.7	5.4	3.6	6.7
23. Trinidad	3.9	4.2	1.9	2.7
24. Turkey	.	15.4	8.0	9.1
25. U.A.R.	1.3	3.5	9.2	13.2
26. Venezuela	4.3	10.0	2.1	6.3
Average (19 countries) .	5.6	6.7	7.4	9.9
III. *All Countries*				
Average (36 countries) .	7.8	8.3	10.3	12.7

divided by average value of ratio for period) is about three-and-one-half per cent for all countries and the entire period. The increase is considerably higher for the less developed countries with nearly five per cent than for the 20 developed countries for which it averages only two-and-one-half per cent. The more rapid growth in φ for the underdeveloped countries is accompanied by greater variability in annual movements. This is evidenced by the high value of the coefficient of variation which averages 0.56 for the less developed countries compared to 0.35 for the developed countries. Nevertheless the proportion of reversal of direction of movement over the 19 year period is slightly lower for less developed countries with fully 11 compared to fully 12 for developed countries and the average duration of run is slightly longer — 1.6 years for less developed against 1.5 years for developed countries.

In the long range perspective both post-war decades are characterized by a very high level of the ratio of the issues of financial institutions to gross national product (φ). For the twenty countries for which the figures are available back to 1900 (Table 8) the values of φ for the first and second post-war decades of 11 and 14 per cent shown in Table 7 are more than twice as high as the averages of five to six per cent which prevailed without definite trend from the turn of the century to 1938. It is only in comparison with the average for the decade 1939-1948 that no substantial advance is registered, but the value for that decade is strongly influenced by the abnormally high figures for World War II years. There are naturally considerable differences among the individual countries and the movements for virtually all individual countries are more erratic than those of the averages. With one minor exception, however, the values of φ for the two post-war decades are substantially above those for the first four decades of the century.

C. *Trends and Short-term Movements in* φ.

Although the average value of φ is upward for all countries and for the two postwar decades together, for the two groups of developed and underdeveloped and for most individual countries as can be seen from columns 3 and 4 of Table 6, the pattern of these curves is far from regular.

The generally upward and fairly smooth movement of the average of φ for all countries, amounting to nearly 0.4 percentage

TABLE 8

FINANCIAL INSTITUTIONS' NEW ISSUE RATIO PRE-WAR (1901-1948) AND POST-WAR (1949-1967)

Percent of Gross National Product

Country	1901 to 1913 (1)	1914 to 1929 (2)	1930 to 1938 (3)	1939 to 1948 (4)	1949 to 1967 (5)
	I. Developed Countries				
1. Australia	4.0	5.2	4.7	15.1	9.2
2. Belgium	5.4	6.5	3.7	9.8	10.3
3. Canada	7.3	5.2	4.3	10.4	10.0
4. Denmark	9.9	7.4	6.7	13.7	12.2
5. France	3.6	8.5	5.5	6.6	11.7
6. Germany	8.5	− 2.9	4.2	− 5.3	14.1 [1]
7. Great Britain	2.8	5.2	5.6	13.6	9.5
8. Italy	6.2	7.2	6.0	23.1	19.5
9. Japan	6.5	14.0	18.4	31.8	26.3
10. Netherlands	4.2	5.9	5.9	12.6	13.5
11. New Zealand	5.3	6.7	9.3	12.2	8.7
12. Norway	9.4	9.8	1.3	19.8	8.8
13. Sweden	7.0	6.0	7.5	9.2	12.1
14. Switzerland	15.1	12.2	3.4	9.9	21.4
15. United States	5.3	7.8	4.4	12.6	10.2
Average	6.7	7.0	6.1	13.0	13.2
	II. Less Developed Countries				
1. Argentina	5.6	2.9	3.1	14.1	15.8
2. Egypt - U.A.R.	3.2	1.7	− 1.4	9.6	7.1
3. India	0.4	0.5	1.7	4.2	4.0
4. Mexico	4.9	− 0.1	3.0	6.4	6.2
5. Spain	0.6	4.3	1.1	10.5	16.0
Average	2.9	1.9	1.5	9.0	9.8
	III. All Countries				
Average	5.8	5.7	4.9	12.0	12.3

[1] 1957-1967.

Source for cols. (1) through (4): *Financial Structure and Development*, p. 191.

points or three per cent of the average value of φ for the 1949/67 period, was interrupted, as is evident from the chart, in 1952, in 1955 and in 1965-66. The upward movement, again using the average for all countries for which data are available since at least 1951, was slightly more pronounced for less developed than for developed countries.

The one year interruption in the upward trend in 1952 is found in both the averages for developed and less developed countries. The halt in the middle 1950's was more pronounced in developed countries where a fairly sharp decline in the average value of φ is shown for 1954 through 1956. In less developed countries the decline occurred two years later, falling in 1955 and again in 1957 and 1958, but the reduction was more moderate. The interruption in the mid-1960's (1965 and 1966) was more pronounced in less developed countries.

If attention is turned to the annual movements of φ in each individual country we are faced with considerable variations in pattern. In the absence, because of limitations of space, of annual data in tabular or chart form an attempt has been made in Table 9 to provide a brief verbal description of the pattern of φ of each of the forty countries for which data are available at least since 1951, a description which is supplemented by the statistical information for all countries on the average value of φ during the period, the fitted arithmetic of geometric trend and the coefficient of variation in Table 6, and to the mean and one the years of lowest and highest values of φ and on its range and relation to the mean in Table 10.

D. The Variability of φ.

Next to the basic trend of the assets of financial institutions during the post-war period and of their net issues, in absolute terms or in relation to national product, interest centers on the variability of these figures. Annual variations in assets and issues may reflect, apart from the underlying trend, regular cyclical fluctuations or irregular movements, which in turn may be erratic or due to specific economic, institutional or political events that substantially affect financial institutions. Possibly the most general measure of variability is the coefficient of variation, the ratio of the standard deviation

TABLE 9

SHAPE OF φ CURVE, 1949-1967

Country	Trend 1 per cent	Shape of Curve
		I. Developed Countries
1. Australia	— 2.6	Irregular oscillations from 1953 on after sharp fall from 1949-51 level.
2. Belgium	+ 3.5	Irregularly upward with sharp peak 1961-62.
3. Canada	+ 5.4	Irregularly upward.
4. Denmark	+ 9.0	Flat 1949-57; sharply upward 1957-63.
5. Finland	— 0.5	U shaped with trough in 1957.
6. France	+ 1.9	Flat 1949-58 and at slightly higher level 1959-67.
7. Germany 2	+ 0.1	Irregular downward movement 1955-66.
8. Great Britain	+ 6.4	Very irregularly upward with sharp one-year troughs in 1956 and 1961.
9. Ireland	+ 5.6	Irregular U pattern with trough in 1955.
10. Italy	+ 3.5	Flat through 1957, sharply but irregularly upward 1958-67.
11. Japan	+ 2.4	Very irregularly upward to 1963 with sharp troughs in 1954 and 1958.
12. Netherlands	+ 4.3	Flat from 1958 on after sharp fluctuations 1953-58.
13. New Zealand	+ 0.7	Sharp fluctuations to 1954, irregularly upward from 1955.
14. Norway	+ 3.4	Fairly regularly upward from 1953 on.
15. South Africa	+ 4.0	Sharply upward, fairly regularly from 1955 on.
16. Sweden	+ 3.5	Wide fluctuations to 1959, sharply upward 1961-67.
17. Switzerland	+ 3.4	Irregularly upward with sharp temporary peaks 1960-62.
18. United States	+ 2.9	Flat to 1960, sharply upward 1961-67.
Average	+ 3.2	Irregularly upward with interruptions in 1955-58 1963-66.

1 Ratio of average change in percentage points in fitted arithmetic trend to average value of φ for period.

2 1951-1967.

Continued: TABLE 9

SHAPE OF φ CURVE, 1949-1967

Country	Trend 1 per cent	Shape of Curve
		II. *Less Developed Countries*
1. Argentina	− 5.0	Irregularly sharply downward to 1962; sharply upward 1962-64.
2. Brazil	+ 5.3	Irregularly sharply upward to 1965.
3. Ceylon	+ 7.3	Very irregular with sharp troughs in 1952-53 and 1957.
4. Colombia	+ 4.7	Irregularly upward with sharp one-year peaks in 1962 and 1964.
5. Greece	− 2.5	Irregularly U-shaped with trough in 1955.
6. India	+ 9.6	Sharply upward, particularly 1953-56.
7. Israel	+ 3.7	Very erratic with sharp peaks in 1954, 1962 and 1967.
8. Jamaica	+ 4.8	Very irregularly but substantially upward
9. Mexico	+ 2.4	U-shaped with trough 1955-59.
10. Nigeria	+ 2.6	Flat 1950-58, then very irregular.
11. Pakistan	+ 8.3	Sharply but very irregularly upward.
12. Peru	+ 6.9	U-shaped with trough in 1958.
13. Philippines	+ 10.6	Sharply but very irregularly upward.
14. Portugal	+ 6.0	Very irregularly upward with trough in 1957.
15. Puerto Rico	+ 10.7	Sharply upward since 1954.
16. Spain	+ 3.5	Irregularly upward with sharp trough in 1954.
17. Taiwan	+ 6.4	Irregularly upward with peak in 1961.
18. Thailand	+ 0.8	U-shaped with trough in 1960.
19. Trinidad	− 4.4	Very irregularly downward, particularly since 1958.
20. Turkey	− 2.8	Irregularly downward after 1953.
21. U.A.R.	+ 11.3	Sharply but irregularly upward from 1953 on.
22. Venezuela	—	Extremely irregular with sharp peak in 1956-57 and trough in 1958-60.
Average	+ 4.1	Irregularly upward with trough in 1957-59.

TABLE 10

CHARACTERISTICS OF MOVEMENTS OF φ

Country	Low year (1)	High year (2)	Distance top-bottom years (3)	Range percentage points (4)	Range Mean percent (5)
		I. *Developed Countries*			
1. Australia	1952	1950	− 2	25.2	275
2. Belgium	1957	1962	5	14.0	136
3. Canada	1951	1967	16	9.2	92
4. Denmark	1950	1963	13	21.9	179
5. Finland	1957	1949	− 8	13.1	140
6. France	1952	1967	15	6.5	56
7. Germany 1	1951	1954	3	5.0	35
8. Great Britain	1956	1967	11	24.8	262
9. Ireland	1955	1967	12	17.0	250
10. Italy	1957	1962	5	16.5	85
11. Japan	1954	1963	9	22.3	85
12. Netherlands	1956	1953	− 3	14.8	110
13. New Zealand	1952	1953	1	19.1	220
14. Norway	1950	1963	13	12.2	139
15. South Africa	1949	1964	15	16.3	165
16. Sweden	1952	1967	11	14.5	120
17. Switzerland	1950	1961	18	22.7	106
18. U.S.A.	1949	1967	11	10.5	103
Median	1952	1963	11	15.4	115
		II. *Less Developed Countries*			
1. Argentina	1962	1949	−13	20.9	132
2. Brazil	1949	1964	15	20.5	121
3. Ceylon	1952	1967	15	15.8	383
4. Colombia	1949	1962	13	18.8	217
5. Greece	1949	1955	− 6	17.7	210
6. India	1949	1962	13	9.4	237
7. Israel	1955	1962	7	36.1	164
8. Jamaica	1958	1961	3	8.3	189
9. Mexico	1952	1967	15	6.7	108
10. Nigeria	1967	1964	− 3	6.5	415
11. Pakistan	1952	1964	12	12.6	360
12. Peru	1958	1966	8	8.1	116
13. Philippines	1949	1967	18	17.2	276
14. Portugal	1949	1964	15	29.5	256
15. Puerto Rico	1949	1964	15	17.6	263
16. Spain	1959	1965	6	12.5	78
17. Thailand	1960	1966	6	8.7	172
18. Trinidad	1952	1951	− 1	6.7	212
19. Turkey 2	1961	1953	− 8	13.8	131
20. U.A.R.	1952	1964	12	26.9	378
21. Venezuela	1960	1957	− 3	19.2	334
Median	1952	1964	12	15.8	212

1 Data start 1951. 2 Data start 1950.

of the elements of a series from its mean value to the mean. The lower the coefficient the more regular the movements.

The study of variability will be limited here again to the coefficients of variation for the new issue ratio (φ) as probably the most useful single measure of the development of financial institutions. Only three of the many possible aspects of the coefficient will be considered: first, differences in the variability of the new issue ratio of different countries for the period 1949-1967; secondly, changes in variability between the two halves of the period, i.e., 1949-57 and 1958-67; and thirdly, differences in the variability of the new issue ratio of the main types of financial institutions in the two decades 1949-67.

The main results of these three aspects are summarized in Table 11 in terms of the median values for the coefficient of variation for the up to 20 developed and up to 26 less developed

TABLE 11

VARIABILITY OF NEW ISSUE RATIO OF FINANCIAL INSTITUTIONS (φ), 1949-1967

	Median Value of Coefficient of Variation		
	1949-1957 (1)	1958-1967 (2)	1949-1967 (3)
I. Developed Countries			
1. Central bank	1.44	0.94	1.35
2. Deposit banks	0.72	0.38	0.64
3. Thrift institutions	0.27	0.27	0.40
4. Mortgage and development banks .	0.41	0.29	0.50
5. Insurance organizations	0.15	0.18	0.22
6. Pension organizations	0.41	0.32	0.43
7. All financial institutions	0.32	0.23	0.32
II. Less Developed Countries			
1. Central bank	0.90	0.85	1.09
2. Deposit banks	0.70	0.41	0.75
3. Thrift institutions	0.69	0.46	0.68
4. Mortgage and development banks .	0.61	0.58	0.79
5. Insurance organizations	0.32	0.40	0.44
6. Pension organizations	0.27	0.44	0.61
7. All financial institutions	0.49	0.42	0.59

countries covered by the statistics.[11] Three conclusions can be drawn from these figures.

First, the variability of the new issue ratio for all financial institutions together is considerably higher for less developed than for developed countries. This is true for the entire period as well as for the two halves. It is also true for five of the six main types of financial institutions, although the difference is very small for deposit banks. The exception is, interestingly, provided by the new issues of central banks for which the variability is lower for less developed than for developed countries.

Secondly, variability declined from the first to the second decade of the post-war period. The decline was more pronounced for developed countries. All but three of the 12 coefficients for individual types of institutions participated in this decline, the exception being insurance organizations in both groups of countries and pension organizations in less developed countries.

Thirdly, variability differed greatly among the main types of financial institutions. It was by far the highest for central banks, for developed as well as for less developed countries and for all three periods. Insurance and pension organizations and thrift institutions showed, as might be expected, the lowest degree of variability in both groups of countries. Differences in variability among the main groups of institutions were considerably lower in developed than in less developed countries.

It will be observed that the coefficient of variation for the new issue ratio of all financial institutions together is smaller than that for most of the constituent types of institutions. This indicates a substantial degree of substitutions. Judging from the relation among the coefficients for the total and the components the degree of substitution seems to have increased from the first to the second half of the period.

A satisfactory explanation of the differences in the variability of the new issue ratios of the main types of financial institutions in the post-war period shown in these tables would require a study of its own, if it could be provided at all. It may, therefore, be as well to limit discussion here to two comments.

---

[11] The number of countries in each cell varies and usually is slightly less than 20 or 26 because figures are unavailable for some countries for 1949-57, and some types of institutions are not represented in a few countries.

First, scatter diagrams point to the existence of a negative relation between the variability of the new issue ratio of all financial institutions and the ratio of growth of real national product, at least among developed countires. This hypothesis is open to statistical testing, but limitation of resources prevented such a test from being undertaken on this occasion. The list of the developed and less developed countries showing highest and lowest variability of φ given in Table 12 seems, however, suggestive in this direction. Pending closer study of this relation it may be better to forego speculations on the direction of cause and effect and on the possible mechanism involved.

TABLE 12

COUNTRIES WITH LOWEST AND HIGHEST VARIABILITY OF NEW ISSUE RATIO
OF FINANCIAL INSTITUTIONS (φ), 1949-67

	Developed	Less Developed
	Countries (1)	
	Lowest Variability	
First	Germany . . . . . . (.11)	Spain . . . . (.24)
Second	France . . . . (.15)	Peru . . . . (.28)
Third	Japan . . . . (.23)	Mexico . . . . . . (.30)
	Highest Variability	
First	Ireland . . . . . . (.70)	Nigeria . . . . . . (.98)
Second	Australia . . . . . . (.64)	U.A.R. . . . . . . (.90)
Third	Great Britain . . . . (.62)	Ceylon . . . . . . (.81)

1 Figures in brackets are coefficient of variation.

Secondly, the much greater variability in the new issue ratio of central banks relative to that of deposit banks, particularly in developed countries, seems worth notice. It probably would be less pronounced if it had been possible to separate issues of saving deposits from those of demand deposits and other obligations of deposit banks. The high degree of variability is evidence of the fact that the central bank issue multiplier is far from stable, on an annual level at least.

V. Changes in the Relative Importance of the Main Types of Financial Institutions

Changes in the relative importance of the issues of different types of financial institutions, and the consequent changes in their relative size are one of the most important features of the process of financial development. The first of these two aspects, relative importance of the issues of the main types of financial institutions, can be studied for the decade 1958-1967 in Tables 13 and 14. The first of these tables shows the relation of the issues to gross national product, while the second indicates the shares of the issues of individual groups of financial institutions in those of all financial institutions. This period is long enough to even out short term fluctuations and thus to give a picture representative of the situation during the 1960's.

The absolute level of the φ ratios is higher for the average of developed than for less developed countries for all main types of financial institutions except, and this is a very important difference, for central banks. For these the average for less developed countries with a ratio of issues of slightly over 2 per cent of gross national product per year is twice as high as the comparable average for developed countries. The difference is relatively small for the new issue ratio of commercial banks, that of developed countries with 5.0 per cent comparing with a 3.9 per cent average for less developed countries. The difference becomes larger for mortgage and development banks, the average for developed countries of 2.1 per cent being well in excess of the 1.3 per cent for less developed countries. However, this group contains quite different institutions in the two groups of countries. In developed countries the group is dominated by mortgage banks, predominantly those lending on urban real estate, which are to a substantial extent privately owned. In less developed countries, on the other hand, the group consists mainly of government owned and operated development banks which concentrate their investments in industry and agriculture.

The decisive difference between the two groups of countries appears in the thrift and insurance organizations. For thrift organizations the average ratio for developed countries with 2.9 per cent is four times as high as the underdeveloped countries' ratio of 0.7 per cent. While both figures would be higher if the time and saving deposits in commercial banks were included, the relation

TABLE 13

THE NEW RATIO (φ) OF MAIN TYPES OF FINANCIAL INSTITUTIONS, 1958-1967
Percent of Gross National Product

Country	Central bank (1)	Deposit banks (2)	Thrift institutions (3)	Insurance Organizations (4)	Mortgage & development banks (5)	Finance & investment companies (6)	All financial institutions [2] (7)
I. Developed Countries							
1. Australia	0.27	1.51	2.52	2.99	0.15	1.23	8.62
2. Austria	1.33	1.95	5.00	1.18	0.95	0.14	10.60
3. Belgium	1.71	4.86	2.36	1.88	2.22	0.21	13.34
4. Canada	0.39	4.87	1.08	3.77	0.01	1.36	11.63
5. Denmark	0.88	6.84	1.81	2.02	6.24	0.00	17.83
6. Finland	1.03	2.96	3.29	2.27	0.48	0.09	9.60
7. France	0.99	4.45	2.95	0.88	1.63	0.10	12.84
8. Germany	0.64	2.47	6.09	2.13	2.53	0.24	14.11
9. Great Britain	0.47	4.37	1.92	4.12	0.08	1.48	12.44
10. Iceland [1]	3.58	7.40	1.34	2.99	6.18	—	21.50
11. Ireland	0.88	6.16	1.05	0.76	—	.–	8.95
12. Italy	1.88	6.83	4.84	1.41	6.69	—	23.29
13. Japan	1.18	12.12	8.71	1.96	2.65	0.55	29.67
14. Netherlands	0.93	3.70	1.56	5.76	4.21	0.73	16.90
15. New Zealand	0.60	0.43	2.77	3.71	1.56	0.13	9.22
16. Norway	0.84	2.86	2.41	2.43	1.51	.–	10.10
17. South Africa	0.59	3.02	2.84	4.49	0.59	—	11.54
18. Sweden	0.49	5.36	2.60	3.89	1.51	—	13.86
19. Switzerland	1.68	13.57	1.02	6.71	1.29	1.60	25.92
20. U.S.A.	0.28	3.68	2.28	3.43	0.66	1.26	11.59
Average	1.03	4.97	2.92	2.94	2.06	0.46	14.68
II. Less Developed Countries							
1. Argentina	3.39	5.54	0.57	1.22	1.23	—	11.96
2. Brazil	7.32	8.25	0.72	1.95	3.02	—	21.27
3. Ceylon	2.40	1.38	0.26	1.38	.09	—	5.58
4. Colombia	3.01	3.55	0.30	0.70	2.28	0.49	10.34
5. Cyprus	2.40	4.34	0.65	—	0.86	.–	8.26
6. Greece	2.65	2.98	0.73	0.08	1.45	.–	8.11
7. India	1.06	1.37	1.13	1.44	0.48	0.08	5.57
8. Israel	4.83	9.71	0.39	4.37	5.11	0.80	25.22
9. Jamaica	0.93	2.78	0.74	0.69	—	—	5.13
10. Korea	3.10	2.57	2.25	0.26	1.66	—	9.86
11. Malta	2.70	4.53	—	0.26	—	—	7.50
12. Mexico	0.77	0.95	0.44	0.64	4.10	—	6.93
13. Morocco [1]	0.62	1.06	0.24	0.34	0.23	—	3.01
14. Nigeria	0.80	1.23	0.02	—	—	—	2.00
15. Pakistan	1.00	2.44	0.11	0.42	0.59	—	4.59
16. Peru	1.79	3.73	0.20	0.33	1.83	—	7.88
17. Philippines	1.68	4.23	0.40	2.06	0.71	0.34	9.43
18. Portugal	2.74	7.23	1.45	1.72	0.91	—	14.06
19. Puerto Rico	—	5.34	1.20	2.30	0.66	0.31	9.82
20. Spain	1.63	9.03	3.13	1.12	3.09	0.20	18.20
21. Taiwan [1]	2.99	5.81	2.02	0.16	0.17	—	11.15
22. Thailand	1.42	3.07	0.57	0.06	0.03	—	5.15
23. Trinidad	0.18	1.39	0.12	0.60	0.02	—	2.31
24. Turkey	1.55	1.81	—	1.54	3.65	—	8.56
25. U.A.R.	2.47	4.42	0.98	3.27	0.08	—	11.23
26. Venezuela	−0.38	1.58	0.21	0.25	2.30	0.17	4.22
Average	2.06	3.86	0.72	1.14	1.33	0.09	9.13
III. All Countries							
Average	1.61	4.36	1.68	1.93	1.65	0.25	11.48

[1] 1959-67.   [2] Includes small amounts for nonclassified institutions.

TABLE 14

DISTRIBUTION OF NEW ISSUES OF FINANCIAL INSTITUTIONS AMONG MAIN TYPES OF INSTITUTIONS, 1958-1967 [1]

Country	Central banks (1)	Deposit banks (2)	Thrift institutions (3)	Insurance organizations (4)	Mortgage and development banks (5)	Finance and investment companies (6)
I. Developed Countries						
1. Australia	3	17	29	35	2	14
2. Austria	13	19	47	11	9	1
3. Belgium	13	36	18	14	17	2
4. Canada	3	42	9	32	0	12
5. Denmark	5	38	10	11	35	0
6. Finland	6	31	34	23	5	1
7. France	8	35	23	7	13	1
8. Germany	5	17	43	15	18	2
9. Great Britain	4	35	15	33	1	12
10. Iceland	17	34	6	14	29	0
11. Ireland	10	69	12	9	0	0
12. Italy	8	29	21	6	29	0
13. Japan	4	41	29	7	9	2
14. Netherlands	6	22	9	34	25	4
15. New Zealand	7	5	30	40	17	1
16. Norway	8	28	24	24	15	0
17. South Africa	5	26	25	39	5	0
18. Sweden	4	38	19	28	11	0
19. Switzerland	7	52	4	26	5	6
20. U.S.A.	2	32	20	29	6	11
Average	7	31	21	22	12	3
II. Less Developed Countries						
1. Argentina	28	46	5	10	10	0
2. Brazil	34	39	3	9	14	0
3. Ceylon	43	25	5	25	2	0
4. Colombia	29	34	3	7	22	5
5. Cyprus	29	53	8	0	10	0
6. Greece	33	37	9	1	18	0
7. India	19	25	20	26	9	1
8. Israel	19	39	2	17	20	3
9. Jamaica	18	54	14	14	0	0
10. Korea	31	26	23	3	17	0
11. Malta	30	60	0	4	0	0
12. Mexico	11	14	6	9	59	0
13. Morocco	21	35	8	11	8	0
14. Nigeria	39	60	1	0	0	0
15. Pakistan	22	53	2	9	13	0
16. Peru	23	47	3	4	23	0
17. Philippines	18	45	4	22	7	4
18. Portugal	20	51	10	12	6	0
19. Puerto Rico	0	54	12	23	7	3
20. Spain	9	50	17	6	17	1
21. Taiwan	27	52	18	1	2	0
22. Thailand	27	60	11	1	1	0
23. Trinidad	8	60	5	26	1	0
24. Turkey	18	21	0	18	43	0
25. U.A.R.	22	39	9	29	1	0
26. Venezuela	9	37	5	6	56	4
Average	22	43	8	11	14	1
III. All Countries						
Average	16	38	14	16	13	2

[1] The difference between the sum of cols. (1) through (6) and 100 is accounted for, except for the effect of rounding, by the share of financial intermediaries of the second degree.

between the two groups of countries would not be substantially changed. For insurance and pension organizations the average ratio of developed countries with 2.9 per cent is about two and a half times as high as that for less developed countries. The difference is more pronounced for privately owned life and property insurance and for private pension funds than it is for government operated pension funds and social security organizations.

Very considerable differences exist within both large groups of countries. The range of the ratios is wider for developed than for less developed countries except for central banks. This may be explained by the generally lower level of the φ ratios for all other groups for less developed countries and the practical absence of negative ratios for this decade.

Turning to the relative importance of the main groups of financial institutions among these groups, four main differences stand out which separate developed from less developed countries.

The first of these is the considerably higher share, on the average for the two groups of countries, of the banking system. Net issues by the banking system account for approximately two-fifths of all issues of financial institutions in the case of developed countries but represent almost two-thirds of all such issues in less developed countries.

Secondly, within the banking system the share of issues of central banks is one-sixth in developed countries but is as high as one-third in less developed countries. This is one of the many indicators of the much larger relative importance of the central banks in the financial structure of the less developed compared to developed countries.

Thirdly, the share of the issues by thrift and insurance organizations averages two-fifths in developed countries, practically the same as that share of the issues of the banking system. In contrast their share in less developed countries is only one-fifth of the issues of all financial institutions and less than one-third of the issues of the banking system. Within this broad group the share of the two sub-groups is approximately equal in the case of developed countries. In less developed countries, on the other hand, thrift institutions account for only two-fifths and insurance and pension organizations — mostly governmentally operated social security funds — for three-fifths, of the total net issues of thrift and insurance organizations.

Fourthly, mortgage and devolpment banks represent about one-seventh of the issues of all financial institutions both in devoloped and less developed countries. However, as already indicated, the character of the institutions included in this group is quite different, mortgage banks dominating in developed countries and government development banks in less developed countries.

Here again considerable differences in the distribution of the issues of all financial institutions among the main groups can be found within the groups of developed and less developed countries. partly because the share of the issues of commercial banks in the country's total time and saving deposit business varies, a result of historical and institutional differences. Among developed countries the share of the banking system is highest in Switzerland with more than 60 per cent of the issues of all financial institutions (this is partly the result of including the Cantonal banks which, although doing a demand deposit business, raise most of their funds through saving deposits) and in Ireland with about 80 per cent. The share is lowest in Germany with only a little over 20 per cent, reflecting the intensive development of savings and mortgage banks. It is even lower in New Zealand with only slightly over one-tenth of the total issues of financial institutions. There are only few less developed countries in which the banking system is responsible for less than one-half of the issues of all financial institutions, for instance in Mexico (due to the classification of the Financieras as devolpment banks), in Venezuela and in Turkey. On the other hand, there is quite a number of less developed countries in which the issues of the banking system account for three-fourths or more of the issues of all financial institutions. This group includes Argentina, Pakistan, Taiwan, Cyprus, Thailand, Malta and Nigeria, in ascending order of the share of the banking system. These high ratios are a reflection of the fact, evident from any analysis of comparative financial structure, of the crucial and entirely dominating role of the banking system in many less developed countries, particularly those at the bottom of the scale of development.

The results of these differences in the new issue ratios of the main types of financial institutions appear in the changes in the distribution of the assets of all financial institutions shown in Table 15 for the years 1948, 1957 and 1967 for the broad groups of developed and less developed countries and in Table 16 for individual countries as of the end of 1967.

TABLE 15

DISTRIBUTION OF TOTAL ASSETS OF FINANCIAL INSTITUTIONS AMONG MAIN
TYPES OF INSTITUTIONS AND GROUPS OF COUNTRIES, 1948, 1957 AND 1967

Percent

	1948	1957	1967
I. *All Countries* (36)			
1. Central bank	27.4	21.5	17.6
2. Deposit banks	37.6	37.2	38.5
3. Thrift organizations	12.1	13.1	13.5
4. Insurance organizations	13.0	16.7	15.6
5. Mortgage & development banks	7.5	9.4	12.4
6. Other	1.6	2.1	2.5
II. *Developed Countries* (17)			
1. Central bank	19.1	12.5	8.5
2. Deposit banks	34.9	32.1	33.4
3. Thrift organizations	17.5	18.8	19.3
4. Insurance organizations	18.6	23.7	23.3
5. Mortgage & development banks	6.9	8.8	10.6
6. Other	2.8	4.1	5.0
III. *Less Developed Countries* (19)			
1. Central bank	35.0	29.5	23.6
2. Deposit banks	40.2	41.9	43.3
3. Thrift organizations	8.2	8.0	8.0
4. Insurance organizations	8.1	10.4	11.1
5. Mortgage & development banks	8.1	9.9	13.0
6. Other	0.4	0.4	1.0

While the share of the central bank declined sharply in both
decades and both in developed and less developed countries, that
of deposit banks showed only small changes, declining slowly and
irregularly in developed countries and increasing moderately in less
developed countries. Mortgage and development banks increased
their share considerably in both decades and in both groups of
countries, the first group primarily in developed and the second in
less developed countries. Insurance organizations also increased their
share substantially in both groups of countries, but this increment,
mostly reflecting the expansion of private and public pension organ-
izations, was considerably more pronounced in the 1950's than in

the 1960's. While the share of thrift organizations stagnated in
less developed countries it increased moderately in developed
countries.

Taking the long view and comparing developments in the
post-war period with the changes in the distribution of the assets of
financial institutions among their main types in 1913 and 1948
which can be followed in Table 17 (the values for 1948 in Tables 15
and 17 are not identical because there is some difference in the
countries included in the two tables), it is seen that some of the
postwar developments represent continuation of trends observed
during the preceding 35 year interval while others can be explained
as reactions to extraordinary changes during World War II and the
Great Depression. The latter interpretation applies primarily to the
sharp reduction in the share of central banks during the post-war
period, or at least its first decade, and secondarily to the recovery of
the share of miscellaneous financial institutions, at least in the case
of developed countries. The increase in the share of insurance
organizations, on the other hand, may be regarded as a continuation
of a long term trend.

VI. An Overview for 1967

The result of the development of financial institutions in the
post-war as well as earlier periods is visible in the overview of the
relation of the assets of the main types of financial institutions to
gross national product in 20 developed and 26 less developed coun-
tries at the end of 1967 provided in Table 18. At that date the
assets of financial institutions in all the 46 countries were on the
average slightly in excess of one year's gross national product.
Assuming an average capital-output ratio (including land) of four,
one obtains an average relationship between the assets of financial
institutions and national wealth of slightly above one-fourth.

By far the largest component of the ratio is the assets of the
banking system which average nearly 60 per cent of gross national
product, fully one-fourth being accounted for by the central banks
and the remainder by the commercial (deposit) banks which in
many countries also hold considerable amounts of saving deposits.
Thrift institutions' assets (including credit cooperatives) on the
average were equal to about one-sixth of gross national product.

TABLE 16

DISTRIBUTION OF TOTAL ASSETS OF FINANCIAL INSTITUTIONS
AMONG MAIN TYPES OF INSTITUTIONS, 1967

Percent

Country	Central bank (1)	Deposit banks (2)	Thrift institutions (3	Insurance organizations	Mortgage & development banks (5)	Other (6)
I. Developed Countries						
1. Australia	9.3	22.9	26.7	29.9	1.2	10.0
2. Austria	15.7	21.9	42.2	10.7	8.3	1.2
3. Belgium	16.5	32.8	17.7	15.0	15.5	2.6
4. Canada	4.9	41.7	7.5	35.6	0.4	10.0
5. Denmark	7.2	33.7	11.8	14.2	32.5	0.7
6. Finland	9.1	29.6	33.7	23.3	3.8	0.5
7. France	11.5	33.4	22.2	6.4	11.6	15.0
8. Germany	7.2	18.3	40.1	15.2	17.9	1.3
9. Great Britain	5.8	34.9	16.7	33.8	0.5	8.3
10. Iceland	14.8	37.7	6.6	15.2	25.9	0.0
11. Ireland	11.8	67.3	12.4	7.7	0.0	0.9
12. Italy	9.2	28.9	21.0	6.4	27.1	7.4
13. Japan	4.6	40.7	28.8	6.4	9.4	10.2
14. Netherlands	7.0	21.6	9.7	35.3	23.2	3.2
15. New Zealand	9.5	12.4	30.5	32.2	14.6	0.8
16. Norway	13.4	25.7	23.6	23.2	14.2	0.0
17. South Africa	5.9	25.5	25.1	37.6	5.9	0.0
18. Sweden	6.4	35.2	20.3	28.5	9.7	0.0
19. Switzerland	8.0	48.7	4.6	28.7	5.5	4.5
20. U.S.A.	5.3	33.5	16.4	31.2	5.1	8.5
Average	9.1	32.3	20.9	21.8	11.6	4.3
II. Less Developed Countries						
1. Argentina	28.7	46.0	5.3	10.2	9.8	0.0
2. Brazil	29.6	39.8	4.1	6.0	20.6	0.0
3. Ceylon	36.5	30.7	8.4	19.7	3.2	1.4
4. Colombia	29.4	34.7	3.4	6.4	22.1	4.1
5. Cyprus	21.8	62.8	7.9	0.0	7.6	0.0
6. Greece	36.6	33.2	7.4	0.7	19.7	2.4
7. India	24.1	25.9	17.3	24.1	7.1	1.6
8. Israel	19.5	38.7	1.9	17.3	19.5	3.2
9. Jamaica	16.2	56.1	14.5	13.3	0.0	0.0
10. Korea	39.5	26.0	18.6	2.6	13.3	0.0
11. Malta	28.9	69.2	0.0	1.9	0.	0.0
12. Mexico	13.6	15.8	6.7	9.4	54.2	0.2
13. Morocco	29.1	43.7	5.3	7.2	7.4	7.3
14. Nigeria	35.3	62.5	0.7	0.0	1.6	0.0
15. Pakistan	30.8	44.9	5.5	7.8	10.6	0.4
16. Peru	21.8	46.3	2.5	3.7	25.6	0.0
17. Philippines	19.3	45.8	4.2	18.7	9.2	2.7
18. Portugal	24.6	46.8	13.6	11.8	3.2	0.0
19. Puerto Rico	0.0	54.8	11.0	23.7	8.0	2.6
20. Spain	10.0	52.1	16.8	6.1	13.8	1.2
21. Taiwan	24.4	55.7	17.3	1.5	1.3	0.0
22. Thailand	39.7	47.9	10.2	1.8	0.4	0.0
23. Trinidad	8.7	65.4	7.7	17.3	1.0	0.0
24. Turkey	20.5	20.5	0.0	15.5	43.6	0.0
25. U.A.R.	29.4	37.1	8.2	23.9	1 5	0.0
26. Venezuela	14.8	36.5	3.6	6.4	35.9	2.8
Average	24.3	43.8	7.8	9.9	13.1	1.2
III. All Countries						
Average	17.6	38.5	13.5	15.6	12.4	2.5

TABLE 17

DISTRIBUTION OF ASSETS OF FINANCIAL INSTITUTIONS
AMONG MAJOR GROUPS 1913 AND 1948

Percent

	All Countries		Developed Countries		Less Developed Countries	
	1913 (1)	1948 (2)	1913 (3)	1948 (4)	1913 (5)	1948 (6)
1. Central banks	12	27	7	18	22	36
2. Deposit banks	49	37	43	35	59	40
3. Thrift institutions	14	13	19	18	4	7
4. Insurance organizations	11	13	14	17	4	8
5. Other financial institutions	15	10	18	12	11	9

Source: Financial Structure and Development, p. 267.

However, if all time deposits in commercial banks are shifted then thrift institutions' assets averaged nearly one-third of national product. The ratio for insurance and pension organizations averages one-fifth. This leaves about one-sixth of national product to be represented by the assets of mortgage banks, development banks, finance companies, investment companies and a few other financial institutions.

These averages are less significant than the differences among individual countries and groups of them. The most pronounced difference, one often observed throughout this article, is that between developed and less developed countries. The ratio of the assets of financial institutions to national product is almost twice as high for developed countries with slightly more than 1-½ year's gross national product than it is for less developed countries. This difference is almost entirely due to the much higher ratio of assets of thrift and insurance organizations to national product, — and also to national wealth — where the average of somewhat more than 60 per cent of national product for developed countries is more than four times as high as the 14 per cent average ratio observed for less developed countries. There is, on the other hand, relatively little difference in the ratio of the assets of the banking system to national product between developed and less developed countries

ASSETS OF MAIN TYPES OF FINANCIAL INSTITUTIONS, 1967
Percent of Gross National Product

TABLE 18

Country	Central bank (1)	Deposit banks (2)	Thrift institutions (3)	Credit cooperatives (4)	Mortgage & development banks (5)	Finance & investment companies (6)	Insurance organizations (7)	Pension organizations (8)	Other (9)	Total (10)
I. Developed Countries										
1. Australia	10.7	26.6	30.7	0.2	1.4	11.5	21.8	12.8	0.1	115.8
2. Austria	17.4	24.3	28.2	18.5	9.2	1.3	6.4	5.5	—	110.7
3. Belgium	25.3	50.1	27.0	—	23.7	2.8	12.1	10.8	1.3	153.1
4. Canada	6.8	58.5	5.4	5.1	0.5	14.0	32.0	17.9	—	140.3
5. Denmark	12.2	57.1	17.1	2.9	55.0	—	18.7	5.4	1.1	169.5
6. Finland	8.3	26.9	15.4	15.2	3.4	0.4	15.0	6.2	—	90.7
7. France	13.9	40.4	14.1	12.8	14.0	0.9	7.4	0.3	17.3	121.1
8. Germany	10.6	27.0	46.1	13.0	26.4	1.9	10.6	11.7	—	147.3
9. Great Britain	10.0	60.0	28.3	0.4	0.9	14.3	38.8	19.4	—	172.1
10. Iceland	20.6	52.6	6.7	2.4	36.2	—	5.7	15.4	—	139.8
11. Ireland	15.1	86.0	15.9	—	—	1.1	8.6	1.2	—	127.9
12. Italy	19.2	60.5	33.6	10.3	56.8	—	6.1	7.3	15.5	209.2
13. Japan	8.8	78.0	20.5	34.8	18.1	2.4	12.2	—	17.1	191.9
14. Netherlands	11.3	34.8	15.6	—	37.4	5.2	23.7	33.3	—	161.3
15. New Zealand	13.1	17.2	42.4	—	20.3	1.2	34.9	9.7	—	138.8
16. Norway	17.7	34.0	31.3	—	18.7	—	19.8	10.9	—	132.5
17. South Africa	8.0	34.7	34.1	—	8.1	—	21.6	29.4	—	135.8
18. Sweden	10.4	57.3	29.8	3.2	15.7	—	21.6	24.8	—	162.7
19. Switzerland	23.3	142.0	8.2	5.2	16.1	13.0	41.5	42.3	—	291.4
20. U.S.A.	8.7	55.1	25.5	1.6	8.4	14.0	27.5	23.8	—	164.5
Average	13.6	51.2	23.8	6.3	18.5	4.2	19.3	14.4	2.6	153.8
II. Less Developed Countries										
1. Argentina	14.3	23.0	1.5	1.0	4.8	—	1.4	3.6	—	49.6
2. Brazil	17.1	23.6	2.5	—	12.6	—	0.7	2.7	—	59.2
3. Ceylon	26.1	21.9	5.5	0.5	2.3	—	5.4	8.7	1.0	71.4
4. Colombia	19.0	22.4	—	2.2	14.4	2.6	2.5	1.6	—	64.7
5. Cyprus	19.6	56.0	2.8	4.3	6.8	—	—	—	—	89.4
6. Greece	27.2	24.5	5.5	—	14.6	—	0.6	—	1.8	74.1
7. India	12.7	13.7	2.3	6.8	3.8	0.9	4.7	8.0	—	52.8
8. Israel	33.2	65.9	—	3.2	33.2	5.4	3.8	25.6	—	170.3
9. Jamaica	9.3	32.3	6.5	1.9	—	—	5.5	2.2	—	57.7
10. Korea	21.1	13.9	0.4	9.6	7.1	—	1.4	—	—	53.5
11. Malta	49.1	117.5	—	—	—	—	—	3.2	—	169.8
12. Mexico	8.1	9.4	2.9	1.1	32.2	—	2.0	3.7	0.1	59.4
13. Morocco	14.1	21.1	0.7	1.8	3.6	—	1.5	2.0	.3.5	48.4
14. Nigeria	8.3	14.7	0.2	—	0.4	—	—	—	—	23.5
15. Pakistan	13.7	20.0	0.9	1.5	4.7	0.2	1.7	1.8	—	44.5
16. Peru	12.1	25.4	1.4	—	14.2	—	2.0	—	—	55.1
17. Philippines	15.5	36.7	1.9	1.5	7.3	2.2	11.9	3.1	—	80.1
18. Portugal	39.0	74.0	20.6	0.9	5.1	—	4.2	14.5	—	158.2
19. Puerto Rico	—	47.5	6.7	2.9	6.9	2.3	9.6	11.0	—	86.8
20. Spain	14.0	73.2	22.4	1.2	19.4	1.7	3.2	5.5	—	140.5
21. Taiwan	17.8	40.6	5.2	7.4	0.9	—	1.1	—	—	73.0
22. Thailand	21.1	25.5	4.6	0.8	0.2	—	1.0	—	—	53.2
23. Trinidad	3.0	22.4	1.3	1.3	0.3	—	5.9	—	—	34.3
24. Turkey	15.6	15.6	—	—	33.1	—	0.7	11.1	—	76.2
25. U.A.R.	35.0	44.2	3.2	6.6	1.7	—	5.5	22.9	—	119.1
26. Venezuela	10.1	24.9	2.5	—	24.5	1.9	3.2	1.2	—	68.2
Average	18.3	35.0	3.9	2.2	9.8	.7	3.1	5.1	.3	78.2
III. All Countries										
Average	16.3	42.0	12.6	4.0	13.6	2.2	10.1	9.1	1.3	111.1

(64 and 53 per cent). The value for central banks alone is even slightly higher for less developed than for developed countries.

Considerable variations exist among individual countries and they are much more pronounced among less developed than among developed countries. In fact the range of the ratio for less developed countries is such that the ratio of the assets of financial institutions to national product is higher in three less developed countries (Israel, Malta and Portugal) than the average for the twenty developed countries and is very close to that average for one more less developed country (Spain). These, interestingly enough, all are Mediterranean countries that are close to the top of the group of less-developed countries on the basis of real national product per head or other characteristics. On the other hand, the value of the ratio for two developed countries (Finland and Austria) is lower than the average for the less developed countries, and a few other developed countries are within twenty percentage points of that average (Australia, France and Ireland).

The relative size of the superstructure of financial institutions and of the main types of them evidently is not clearly related to the level of real national product per head, to the capital formation ratio or to other simple macroeconomic magnitudes. This will be confirmed by attempts to estimate some of these relationships econometrically that will be reported in section IX. There is, however, evidence of the effect of one broad factor, namely the extent of inflation in the one or two decades preceding 1967. This helps to explain the relatively low value of the ratio of the assets of financial institutions to national product in Finland and France among the developed countries and in Argentina among the less developed ones.

It is thus obvious that institutional factors and historical accidents play a considerable role in determining both the level of the ratio of financial institutions to national product, and still more so in the distribution of the total assets of financial institutions among the main types of them. In some developed countries, for example, thrift institutions (including credit cooperatives) have been much more intensively developed than in others and thus show a high value of the ratio of their assets to national product, e.g. in Austria, Germany, Italy and Japan. Others have developed insurance and pension organizations earlier or more intensively, for instance among the developed countries, Canada, Great Britain, the Netherlands, South Africa, Switzerland and the United States, in all of which

the ratio exceeds 50 per cent of national product. The influence of institutional or accidentatl factors appears to be even more pronounced among less developed countries and it would require a country-by-country investigation of their financial development to be able to explain the differences in the values of the ratios shown in Table 18 with a fair degree of confidence.

The ratio of financial institutions' assets to gross national product has, of course, considerably increased during the post-war

TABLE 19

CHANGES IN Φ BETWEEN 1952 AND 1967

(Ratios of Assets of Main Types of Financial Institutions to Gross National Product)

	Developed Countries (18)	Less Developed Countries (22)	All Countries (40)
	(1)	(2)	(3)
	I. *Change in Percent of Gross National Product*		
1. Central bank	− 4.5	+ 3.0	− 0.3
2. Deposit banks	+ 9.4	+15.4	+12.4
3. Thrift institutions	+ 5.4	+ 0.6	+ 2.5
4. Credit cooperatives	+ 3.9	+ 1.2	+ 2.3
5. Mortgage & development banks .	+ 8.4	+ 4.5	+ 6.2
6. Finance & investment companies .	+ 2.5	+ 0.7	+ 1.4
7. Insurance organizations	+ 2.6	+ 1.0	+ 1.9
8. Pension organizations	+ 4.1	+ 1.8	+ 2.7
9. Other financial institutions . . .	+ 0.8	+ 0.2	+ 0.5
10. All financial institutions	+32.6	+28.2	+29.0
	II. *Change in Percent of 1952 Level*		
1. Central bank	− 25	+ 20	− 2
2. Deposit banks	+ 22	+ 79	+ 63
3. Thrift institutions	+ 29	+ 18	+ 25
4. Credit cooperatives	+163	+120	+135
5. Mortgage & development banks .	+ 83	+ 85	+ 85
6. Finance & investment companies .	+144	1	+175
7. Insurance organizations	+ 16	+ 48	+ 22
8. Pension organizations	+ 40	+ 55	+ 42
9. Other financial institutions . . .	+ 44	+200	+ 63
10. All financial institutions	+ 27	+ 56	+ 35

1 1952 value zero.

period, rising from less than four-fifths of a year's national product at the end of 1952 to 110 per cent of it fifteen years later. The increase in the ratio, however, is quite different as between developed and less developed countries and within both groups as between the main types of financial institutions as can be seen in Table 19. In terms of percentages of national product the increase in the ratio was about the same in developed and less developed countries — in the order of 30 per cent of national product — but this means an increase in these 15 years by more than one-half for less developed countries, but a rise by only one-fourth for the developed countries. As a result the ratio in developed countries was only twice as high in 1967 whereas it had exceeded that for less developed countries in 1952 by 140 per cent.

As between types of institutions, starting with the average of all forty countries, the ratio for central banks has remained practically unchanged, and relatively large increases have been registered for the smaller types of financial institutions such as credit cooperatives and finance and investment companies, while the increases have been relatively small for thrift and insurance organizations. Significant differences, however, again appear between developed and less developed countries. Among these are the actual decline in the ratio for central banks and the small increase for commercial banks in the case of developed countries, which may be interpreted as a reaction to the extremely rapid expansion connected with World War II; and the rapid rise in the ratio for deposit banks, still the dominating financial institution, in the case of less developed countries.

VII. International Similarities in Movement of New Issue Ratio of Financial Institutions

The movements in important basic economic series, such as real national product, foreign trade, prices and interest rates show, it is often asserted, a substantial degree of similarity among countries, at least among developed non-socialist countries, a similarity which has been attributed either to some underlying world-wide movements or to the influence of a few leading countries, in the post-war period particularly the United States. It is therefore interesting to see whether such a similarity exists in the financial development of non-socialist countries, here measured by the new issue ratio of financial

institutions, a measure which renders uniform such movements by relating them to national product. For simplicity's sake "similarity" is measured by (1) the similarity of the direction of annual movements of φ indicated by the number of countries in which φ either rose or fell in each of the years 1950 to 1967; and (2) by the coefficient of correlation (r) between the value of φ for the period 1949 to 1967 for the countries being compared, which measures similarity and dissimilarity not only in the direction of annual changes but also in the extent of the movements.

a. Direction of Annual Movements.

Notwithstanding very considerable differences in annual or cyclical movements among individual countries the movements of the averages reflect for some of the years a definite preponderance of countries in which φ either increased or decreased. This is evident from Table 20. If the line is drawn at a ratio of either increases or decreases of 60 percent of the number of countries covered a definite international tendency for φ to move in one direction is observed in 10 of the 18 years. In the years 1954, 1959, 1961-64 and 1967 increases were common (64 per cent of all cases), while decreases prevailed in 1952, 1957 and 1965 (61 per cent). But even in the years of most pronounced predominance in one direction (1961 up; 1962 down) nearly one-third of all countries moved in the opposite direction. Predominance, however, is somewhat more pronounced if developed and less developed countries are separated. In that case predominance to the extent of two-thirds of the number of countries is observed in both groups in three years (1954, 1961, 1967) in which φ rose; among less developed countries φ rose in one of the three years (1964), but declined in two years (1952 and 1957).

b. Correlations Among Countries.

Attempts to find groups of countries that show high values of the correlation coefficient for φ were not very successful. Thus, for example, the nine Latin American and Caribbean countries, the twelve present or past members of the British Commonwealth, the five members of the European Economic Community, the six EFTA members or the four Scandinavian countries fail to show

TABLE 20

DIRECTION OF ANNUAL MOVEMENTS OF NEW ISSUE RATIO
OF FINANCIAL INSTITUTIONS (φ)

Number of countries

	All Countries		Developed Countries		Less Developed Countries	
	Up (1)	Down (2)	Up (3)	Down (4)	Up (5)	Down (6)
1950	17	19	10	7	7	12
1951	21	16	8	9	13	7
1952	13	26	9	9	4	17
1953	21	18	10	8	11	10
1954	25	15	12	6	13	9
1955	18	22	9	9	9	13
1956	19	21	8	10	11	11
1957	15	25	9	9	6	16
1958	19	21	11	7	8	14
1959	26	17	11	7	15	10
1960	23	23	11	9	12	14
1961	32	14	15	5	17	9
1962	26	20	11	9	15	11
1963	30	16	13	7	17	9
1964	30	16	12	8	18	8
1965	20	26	9	11	11	15
1966	21	25	8	12	13	13
1967	30	16	16	4	14	12
Total	406	356	192	146	214	210

particularly high coefficients of correlation that would indicate a more than average similarity in the movements of their new issue ratios of financial institutions. The only group of countries showing high ratios — the value of r averaging 0.74 — consists of France, Italy, Belgium and Switzerland, — the key countries of the old Latin monetary union (Figures are for 1951-67 period).

	Belgium	Switzerland	Italy
France	0.83	0.75	0.68
Belgium	—	0.76	0.73
Switzerland	—	—	0.68

Correlations of this type can also be used to see to what extent the movements of an individual country resemble to or diverge from the average ratio for all 36 countries. This comparison presented in Table 21 permits the identification of " conforming" and " non-conforming" countries. Although a country-by-country study would be necessary to explain the reasons, it may be assumed that a marked degree of " non-conformity" indicates that the country has been willing and able — or possibly forced — to pursue an endogenously determined pattern in the growth of its financial institutions, at least with respect to annual movements.

Following this approach the most " non-conforming" countries appear to be, among developed countries, Australia, Finland and Germany (the latter not included in the table because the record starts only in 1951); and among less developed countries Greece, Nigeria and Venezuela. It is hard to detect common traits among these six countries. It may, however, be significant that the least

TABLE 21

CORRELATION (r) BETWEEN NEW ISSUE RATIO OF FINANCIAL
INSTITUTIONS OF INDIVIDUAL COUNTRIES AND AVERAGE OF
RATIOS FOR ALL 36 COUNTRIES, 1949-1967

	Developed Countries		Less Developed Countries	
1	Denmark	0.76	Puerto Rico	0.85
2	Sweden	0.68	U.A.R.	0.84
3	Switzerland	0.67	Brazil	0.75
4	France	0.67	Spain	0.72
5	U.S.A.	0.66	Philippines	0.70
6	South Africa	0.64	Pakistan	0.65
7	Japan	0.62	Portugal	0.62
8	Norway	0.58	Peru	0.59
9	Netherlands	0.58	Mexico	0.48
10	Italy	0.57	India	0.45
11	Canada	0.52	Ceylon	0.38
12	Belgium	0.48	Argentina	0.36
13	Ireland	0.42	Jamaica	0.29
14	Great Britain	0.35	Colombia	0.26
15	New Zealand	0.35	Thailand	0.23
16	Australia	0.04	Trinidad	0.16
17	Finland	0.01	Venezuela	0.11
18			Nigeria	0.02
19			Greece	0.00

conforming developed countries include Great Britain and three (present or past) commonwealth countries of European settlement (Australia, New Zealand and Ireland). Developed and non-developed countries do not seem to differ significantly in the degree of conformity, the average values of the coefficient being 0.51 and 0.44 respectively. The similarity in this respect between the two groups of countries is also indicated by the fact that the coefficient of correlation between their average new issue ratio of financial institutions and that for all 36 countries is 0.96 for developed and 0.93 for less developed countries. Nor does there seem to exist a systematic difference between large and small or relatively open (high ratio of foreign trade to national product) and relatively closed countries.

The hypothesis finally, that movements in the issue ratio of the financial institutions in the United States have a strong influence over that ratio in many other countries does not receive much support from the correlations shown in Table 22. For the 35

TABLE 22

CORRELATION COEFFICIENT (r) BETWEEN NEW ISSUE RATIO OF FINANCIAL INSTITUTIONS OF U.S.A. AND SELECTED FOREIGN COUNTRIES, 1949-1967

	Developed Countries		Less Developed Countries	
1	Canada	0.85	Taiwan	0.79
2	Denmark	0.54	Philippines	0.68
3	Belgium	0.54	Brazil	0.68
4	Japan	0.50	Spain	0.68
5	Italy	0.49	Puerto Rico	0.62
6	Switzerland	0.49	Mexico	0.57
7	South Africa	0.47	Ceylon	0.51
8	Great Britain	0.45	U.A.R.	0.47
9	France	0.43	Jamaica	0.43
10	Sweden	0.37	Portugal	0.41
11	Netherlands	0.36	Peru	0.39
12	Ireland	0.34	India	0.34
13	Norway	0.32	Pakistan	0.25
14	Finland	0.18	Colombia	0.21
15	New Zealand	−0.02	Thailand	0.16
16	Australia	−0.10	Nigeria	−0.05
17			Venezuela	−0.17
18			Greece	−0.27
19			Argentina	−0.32

countries the coefficient has an average value of 0.36. The differences in the coefficient for different countries, however, are not incompatible with some tendency in this direction. Thus the coefficient has the highest value for Canada (0.85), a country which is well known to be strongly influenced in its cyclical movements by the U.S. economy. Of the six next highest values four relate to countries that have been characterized in the postwar period by close economic and financial connection with the U.S.: Taiwan (0.79), the Philippines (0.68), Puerto Rico (0.62) and Mexico (0.57). In the case of the two other countries, Brazil and Spain (both 0.68) the connection is less evident. Interestingly enough there is no substantial difference in the average value of the coefficient for the 16 developed and the 19 less developed countries (0.38 against 0.33).

VIII. Recent Developments

The information on the balance sheets of each of the numerous types of financial institutions in more than 40 countries on which the bulk of this article is based was not available for the period after 1967 when the data were collected — indeed, even for 1967 the figures for some types of institutions in a few countries had to be estimated — so that we cannot be certain whether the tendencies observed up to 1967 have continued during the following three years or have been modified.

We are in a better position only for the banking system (central and deposit banks) which, on the average, accounts for about one-half of the assets and issues of all financial institutions, and in some countries, particularly less developed ones, for a considerably higher proportion. For these institutions, we may take advantage of the statistics published on a uniform basis in *International Financial Statistics*. While these are not completely comparable with the figures used in this study (*International Financial Statistics* for instance in some countries combines the figures for commercial banks with those for savings banks) they permit us to extend the estimates of the new issue ratio of the banking system for the two additional years 1968 and 1969.

These data indicate that the new issue ratio of central banks increased substantially in 1968, but declined in 1969 sufficiently to reduce it slightly below the 1967 level. The pattern was the same

in developed and less developed countries, although the movement was relatively sharper in the first group of countries. In the case of deposit banks, the new issue ratio advanced fairly sharply in 1968 and remained at approximately the higher level in 1969. The movement again was similar for developed and less developed countries. As a result of these tendencies the new issue ratio of the entire banking system appears to have advanced from about 7-½ per cent in 1967 to fully 9 per cent in 1968 and to have declined to about 8-½ per cent in 1969.

While not enough data are available on the other types of financial institutions, their movement in the 1960's has been fairly regular in both groups of countries so that a continuation of the trend in 1968 and 1969 may be assumed. This would mean a slow advance in the new issue ratio for this type of institutions in both years and for both groups of countries.

Combination of the estimates of the new issue ratios of the banking system, which are based on primary data, with the extrapolated values for the new issue ratio of the other types of financial institutions suggests that the aggregate new issue ratio of financial institutions advanced substantially — by approximately two percentage points — in 1968 while it declined fractionally, or remained practically unchanged, in 1969. The movement would be somewhat more pronounced for the less developed than for the developed countries. For both groups, however, the value of the aggregate new issue ratio of financial institutions in 1969 would be definitely above the 1967 value and at the highest level for the entire post-war period.[12]

In view of the failure of the ratio to advance in 1969, and the possibility that it may have slightly declined, one will have to wait for one or two more years before being certain whether the decline in the new ratio of financial institutions observed in 1965 and 1966

---

12 In the United States for which fairly complete and methodologically preferable figures (based on net issues rather than on change in value of total assets of financial institutions) are available, the aggregate new issue ratios of financial institutions showed a fractional increase in 1968, but a sharp decline — by about one-fourth of its value — in 1969 while the ratio for 1970 is not likely to show a considerable increase over the preceding year. This decline in φ in 1969 and probably in 1970 in comparison to 1967 and 1968 is primarily attributable to a sharp reduction of the net issues of the banking system which more than outweighed the continued slow rise in the new issue ratio of non-bank financial institutions.

was a temporary phenomenon and the upward trend prevailing from the late 1950's to the middle 1960's has now been definitely resumed, and whether the gap in the ratio between developed and less developed countries will continue to narrow.

IX. A Few Econometric Exercises [13]

The primary data on which this article is based (the 6,000 odd annual figures for the assets of different financial institutions in 46 countries for all or most of the 1948-1967 period) and the much more numerous figures derived from them (the basic data translated into value of assets in constant prices and in dollars; the absolute and percentage changes of assets in current and constant and in U.S. dollar prices; and the φ and Φ ratios) provide a wide field for econometric analysis. So far only a few attempts have been made to utilize this material, and as often is the case in studies of this type the results are as yet far from conclusive. It has nevertheless seemed helpful and possibly suggestive for other students in this field to report on a few of these preliminary results. The discussion will be limited to the φ and Φ ratios as the features possibly most interesting for economists. It is well to repeat the limitation that the annual changes in reported assets, which underly the φ ratios, do not exactly correspond to the desired measure of net issues by financial institutions, because they include some valuation changes and are affected by some inconsistencies in accounting; and that when used for all financial institutions together they involve some duplication as they do not eliminate claims and liabilities among financial institutions.

Two approaches have been tried: first a cross-section analysis of the 30 odd countries for a few selected years (1957 and 1967); secondly, time series analysis, on the basis of annual data, generally for 1948-1967, for about the same countries.

The discussion of cross-section equations is limited to the results obtained from an analysis of 18 developed countries (Australia, Belgium, Canada, Denmark, Finland, France, Germany, Great Britain, Ireland, Italy, Japan, Netherlands, New Zealand, Norway,

---

13 I am very much indebted for assistance to Mr. John Zerbinis in preparing the calculations on which this section is based, but absolve him from any misinterpretation of the material that I may have committed.

South Africa, Sweden, Switzerland and the United States) for the years 1957 and 1967, because the number of less developed countries for which the necessary data are available is very small, and also because it appears that the group of developed countries is somewhat more homogeneous than the less developed countries for which figures are available. The regression equation is formulated once using seven variables (gross national product in the aggregate and per head, the rate of change of national product, the gross national product deflator and population and the ratios of gross fixed capital formation and of change in inventories to gross national product) and again using only four variables dropping the aggregate national product and the two capital formation ratios. These variables were regarded as the factors most likely to influence the level of φ and Φ for which data could be assembled without additional primary research.

The four equations for φ each for 1957 and 1967 are listed in Table 23. It is obvious that the share of the variance among the eighteen countries explained by the four to seven variables is modest, although it exceeds 0.50 for the fuller equation. Unfortunately, however, few of the variables are individually significant. In general the values of the R^2 and the t ratios for individual variables are higher for the 1957 than for the 1967 cross section. All four regression equations have a positive constant lying between 4.8 and 7.9 per cent indicative of the level of φ in the absence of changes in gross national product, prices and population and disregarding the effect of the level of gross national product per head and of the two capital formation ratios. All four equations also show a positive correlation between the rate of growth of gross national product in current prices and φ, but the F ratios are low in the 1967 equation. Three of the four equations (excepting the four variables set for 1967) show a negative correlation between the change in the gross national product deflator and φ, and three again (this time excluding the 1967 six variable set) indicate a negative relation between φ and the rate of growth of population. From these data one may possibly infer a slight positive influence of the rate of growth of national product in current prices during the preceding decade on the level of φ and a slight negative influence of price level changes and the rate of growth of population in the preceding decade.

The regression equations for Φ presented in Table 24 show similar relationships, but the values of R^2 and F are considerably

TABLE 23

RELATION OF φ (RATIO OF CHANGE IN ASSETS OF FINANCIAL INSTITUTIONS TO GROSS NATIONAL PRODUCT) TO FOUR TO SEVEN VARIABLES; 18 DEVELOPED COUNTRIES; 1957 AND 1967

1. 1957 $\varphi_1 = 0.79 + .17 \times 10^{-4} \dfrac{y}{N} + .0099 \dfrac{\dot{y}}{y} - 0.0194 \dfrac{\dot{p}}{p} - .203\, k_1$

    $(1.29)\quad (0.746)\qquad\qquad (1.573)\qquad (-1.349)\qquad (-.703)$

    $+ 1.696\, k_2 - .014 \dfrac{\dot{N}}{N} - \alpha y$,

    $(2.551)\quad (-.859)\quad (-465)$

    $R^2 = .66;\ F = 2.88\ (6,10\ d.f.)$

2. 1957 $\varphi_2 = .048 + 0.11 \times 10^{-4} \dfrac{y}{N} + .0154 \dfrac{\dot{y}}{y} - .0244 \dfrac{\dot{p}}{p} - .0236 \dfrac{\dot{N}}{N} - \alpha y$

    $(.874)\quad (.428)\qquad\qquad (2.71)\qquad (-1.642)\qquad (-1.254)\qquad (-.283)$

    $R^2 = .42;\ F = 1.77\ (4,12\ d.f.)$

3. 1967 $\varphi_3 = 0.050 + 0.338 \dfrac{\dot{y}}{y} - 0.0088 \dfrac{\dot{p}}{p} - .657\, k_1 - 1.245\, k_2$

    $(.487)\quad (2.062)\qquad (-.326)\qquad (1.194)\quad (-1.133)$

    $+ .0160 \dfrac{\dot{N}}{N}\, \alpha y - \beta \dfrac{y}{N}$

    $(.493)\qquad (.101)\ (-.003)$

    $R^2 = .57;\ F = 1.88\ (6,10\ d.f.)$

4. 1967 $\varphi_4 = .0073 - .03 \times 10^{-4} \dfrac{y}{N} + .0116 \dfrac{\dot{y}}{y} + 0.164 \dfrac{\dot{p}}{p} - .0024 \dfrac{\dot{N}}{N} + \alpha y$

    $(.084)\qquad\qquad (1.318)\qquad (.748)\qquad (-.102)\qquad (1.11)$

    $R^2 = .45;\ F = 2.00\ (4,12\ d.f.)$

where: y : total gross national product

$\dfrac{y}{N}$: gross national product per head ($)

$\dfrac{\dot{y}}{y}$: rate of change of gross national product

$\dfrac{\dot{p}}{p}$: rate of change of gross national product deflator

$\dfrac{\dot{N}}{N}$: rate of growth of population

k_1, k_2 : ratio of fixed gross capital formation and change in inventories to gross national product

α : $0 < \alpha < 0.5 \times 10^{-6}$

β : $0 < \beta < 0.5 \times 10^{-6}$

TABLE 24

RELATION OF Φ (RATIO OF ASSETS OF FINANCIAL INSTITUTIONS
TO GROSS NATIONAL PRODUCT) TO FOUR TO SEVEN VARIABLES,
18 DEVELOPED COUNTRIES

1. 1957 $\Phi_1 = 1.76 + \alpha y + .92 \times 10^{-4} \frac{y}{N} - .128 \frac{\dot{y}}{y} + .0078 \frac{\dot{p}}{p} + 1.136 \, k_1$

   (3.46) (1.36) (.463) (−1.94) (.112) (.414)

   $+ 17.478 \, k_2 - .036 \frac{\dot{N}}{N}$

   (2.66) (−.25)

   $R^2 = .57; \; F = 1.92 \; (6,92 \; \text{d.f.})$

2. 1957 $\Phi_2 = 1.69 - \alpha y + .98 \times 10^{-4} \frac{y}{N} \quad .023 \frac{\dot{y}}{y} - .074 \frac{\dot{p}}{p} - .02 \frac{\dot{N}}{N}$

   (3.38) (−284) (.432) (−.441) (−1.144) (−.142)

   $R^2 = 27; \; F = .89 \; (4,12 \; \text{d.f.})$

3. 1967 $\Phi_3 = .177 + .01 \times 10^{-4} \, y - .74 \times 10^{-4} \frac{y}{N} + .126 \frac{\dot{y}}{y} + .137 \frac{\dot{p}}{p}$

   (.177) (.534) (−.348) (.767) (.534)

   $- 1.866 \, k_1 - 15.171 k_2 + .454 \frac{\dot{N}}{N}$

   (−.377) (−1.42) (1.726)

   $R^2 = .35; \; F = .78 \; (6,10 \; \text{d.f.})$

4. 1967 $\Phi_4 = .324 + .01 \times 10^{-4} \, y - .05 \times 10^{-4} \frac{y}{N} - .012 \frac{\dot{y}}{y} + .275 \frac{\dot{p}}{p} + .250 \frac{\dot{N}}{N}$

   (.387) (.969) (−.03) (−.149) (1.352) (1.121)

   $R^2 = .22; \; F = .67 \; (4,12 \; \text{d.f.})$

lower than for φ, indeed so low, except for the six variable regression for 1957, as to provide not much of an explanation of the variance of the observed Φ ratios of the 18 countries. Other factors, possibly factors not amenable to quantification, obviously are more important for the explanation of these differences, particularly in 1967.

Another approach to the exploration of the determinants of φ and Φ is the use of the time series for individual countries for the seventeen years 1949-1967 or a slightly shorter period. Because of the often strong trends in the variables and the autocorrelation among them annual first differences have been used for both φ and

Φ and the variables. The time series use the same six variables that were employed in the cross sections. This equation could be fitted for 18 developed and 13 less developed countries. Tables 25 and 26 list the resulting equations for φ and Φ respectively for the ten developed and the five less developed countries for which the value of R^2 was 0.50 or higher, while Table 27 summarizes the sign of each variable in the equations for φ and Φ for all 31 countries.

This possibly unduly naive way of looking at the regression equations for φ shows that among all 31 countries the value of the constant term was positive in 25 and negative in 6 countries; that gross national product in current prices had a positive sign in 22 and a negative one in nine countries, while the sign of the change in gross national deflator term was positive in 10 but negative in 21 countries. These are the only three variables for which more than two-thirds of all countries have the same sign. Slight differences exist as between developed and less developed countries. For the 18 developed countries there was a marked preponderance (to the extent of two-thirds or more of all such countries) in the case of the negative sign of the change in gross national product deflator term. No such preponderance appeared in the 13 less developed countries. On that test therefore the developed countries are slightly more homogeneous than the less developed countries. If we limit attention to the 14 countries whose R^2 was larger than 0.50, approximately the same picture emerges except that the change in the gross national deflator term is less preponderantly negative. It is interesting and perhaps unexpected that the preponderance of the sign of real gross national product per head is not much different from one-half and that the sign of the two capital formation terms is about as often negative as positive. The relationships may possibly strengthen one's faith in the existence of a positive correlation between φ and the short term movements of gross national product in current prices and at best for developed countries in the negative correlation between Φ and movements in the price level.

The picture is similar for the Φ ratios in the lower part of Table 27. The only parameters for which the sign is the same for at least two thirds of the countries is the constant term (positive) and the changes in the price level (negative) — both as for φ —, while the rate of change in gross national product (positive) drops out of this category. All in all, homogeneity with respect to sign of parameters appears slightly less marked for Φ than for φ.

REGRESSION EQUATIONS OF φ FOR 14 COUNTRIES, 1949-1967   TABLE 25

Country	Constant term	Real gross national product per head	First Difference of Rate of growth of			Gross fixed capital formation	Change in inventories	R²	D-W	F	d.f.
			Gross national product	Gross national product deflator	Population						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
I. Developed Countries											
1. Australia	− .0046 (− .480)	+ .00013 (.441)	+ .88817 (4.077)	− .39185 (−2.207)	+ 1.49382 (1.346)	− .77601 (−1.284)	−1.42845 (−5.113)	.946	1.69	32.19	6.11
2. Finland	.0150 (1.451)	− .00007 (−1.068)	+ .57910 (3.278)	− .43320 (−2.845)	+10.22524 (2.654)	+ .027540 (.470)	− .61877 (−1.968)	.678	1.73	3.16	6.9
3. Germany (1)	.0014 (.092)	+ .03187 (.605)	+ .21569 (.698)	− .48424 (−1.589)	+ .85016 (1.444)	−1.36988 (1.683)	+ .79927 (1.051)	.526	2.29	1.48	6.8
4. Great Britain	.0169 (.403)	− .00099 (− .260)	−3.55904 (−2.150)	− .95574 (−1.076)	− .60670 (− .076)	.19715 (.042)	2.82912 (1.773)	.519	2.55	1.98	6.11
5. Netherlands	.0395 (2.105)	− .25197 (−1.573)	+ .93847 (2.870)	−1.54414 (−3.640)	+ 4.96643 (.974)	−1.02731 (−1.288)	+ .49553 (.762)	.676	2.58	3.82	6.11
6. Norway	.0206 (1.118)	− .04999 (− .879)	+ .46013 (.829)	− .12936 (− .242)	+ 9.49409 (1.683)	+ .44817 (.620)	+ .58916 (1.881)	.622	2.65	3.03	6.11
7. South Africa	− .0159 (− .787)	− .00295 (1.510)	+ .13893 (.323)	+ .42812 (.821)	+ .87328 (.316)	−1.16226 (−1.559)	−1.39764 (−2.540)	.615	3.12	2.93	6.11
8. Sweden	.04183 (2.352)	− .08500 (−1.440)	+1.75953 (3.481)	− .71953 (−1.772)	+ 2.56115 (3.032)	−3.23693 (−2.227)	−2.52835 (−4.521)	.828	1.77	8.84	6.11
II. Less Developed Countries											
1. Argentina	.0070 (.578)	− .01117 (− .567)	+ .46301 (1.480)	− .38748 (−1.600)	+15.16331 (2.604)	− .74368 (− .966)	− .26565 (− .209)	.520	2.14	1.62	6.9
2. Brazil	− .0010 (− .050)	+ .00360 (.168)	+ .10328 (.344)	+ .09124 (.352)	− 1.0656 (− 1.417)	−1.26077 (−1.753)	+1.14761 (2.782)	.613	2.14	2.90	6.11
3. Greece	− .0281 (− .644)	.03352 (.644)	+ .21803 (.519)	+ .18208 (.328)	− 1.20506 (− .627)	+ .33813 (.486)	+ .50902 (.422)	.579	1.91	2.06	6.9
4. Mexico	.0196 (2.859)	− .15285 (−2.440)	+ .27044 (1.973)	− .06081 (− .295)	+ .07749 (.140)	+ .14101 (.327)	− .12916 (− .347)	.600	1.35	2.00	6.8
5. Trinidad	.0088 (1.980)	− .00029 (−2.349)	+ .22838 (.159)	− .11445 (.846)	− .25576 (− 3.340)	− .00642 (1.418)	+ .50070 (.120)	.712	1.94	3.29	6.8
6. Venezuela	.0150 (.625)	− .10662 (− .517)	+1.59321 (2.444)	− .72155 (−1.819)	− 2.26037 (− .898)	+ .13065 (.160)	−1.27187 (− .901)	.714	2.44	2.50	6.6

(1) 1951-1967.

REGRESSION EQUATIONS OF Φ | FOR 16 COUNTRIES, 1948-1967   TABLE 26

Country	Constant term	First Difference of — Real gross national product per head	First Difference of — Rate of growth of — Gross national product	Rate of growth of — Gross national product deflator	Rate of growth of — Population	Gross fixed capital formation	Change in inventories	R2	D-W	F	d.f.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
I. Developed Countries											
1. Australia	− .0257 (− 1.608)	+ .00054 (1.304)	− .13890 (− .403)	− .38038 (− .680)	− 1.75491 (− .730)	−2.17710 (−2.480)	− .53726 (− .1163)	.666	1.00	3.65	6.11
2. Canada	.0113 (.973)	+ .03716 (− .172)	− .25276 (− .604)	− .10110 (− .096)	− 3.36832 (− 2.074)	− .14899 (− .134)	−1.47379 (−1.876)	.614	1.25	2.92	6.11
3. Denmark	− .0327 (− 1.963)	+ .20796 (3.449)	+ .27530 (.529)	− 1.39773 (−2.736)	+10.21185 (1.722)	−4.82503 (−4.434)	−1.53760 (−2.374)	.724	2.14	4.81	6.11
4. Finland	.0131 (1.793)	+ .00007 (1.665)	+ .09005 (.573)	− .42852 (−2.622)	+ 5.89663 (1.771)	+ .56740 (1.209)	− .48149 (−1.855)	.749	1.42	4.48	6.9
5. France	.0258 (1.768)	+ .04672 (.719)	+1.44988 (3.484)	− 1.68288 (−4.336)	+ .11638 (.074)	+ .00294 (.009)	− .14758 (− .336)	.661	1.52	3.57	6.11
6. Italy	.0308 (1.263)	+ .00233 (1.924)	+2.41798 (2.625)	− 2.06925 (−2.290)	9.16713 (1.249)	−1.08746 (−1.769)	−2.29775 (−2.440)	.640	1.94	2.67	6.9
7. Japan	.0955 (4.170)	− .00210 (− 1.435)	−1.04823 (−1.951)	+ .22699 (.283)	− 2.64009 (− 1.057)	− .12110 (− .202)	+ .10143 (.158)	.559	1.59	2.33	6.11
8. Norway	− .0058 (− .274)	− .04119 (− .656)	+ .55902 (.731)	− .62939 (− .770)	− 6.85759 (− 1.103)	2.29413 (3.974)	2.07280 (5.006)	.807	1.79	7.68	6.11
9. Switzerland	.0620 (3.189)	− .18549 (− 1.796)	+ .07365 (.133)	− .18607 (− .162)	+ 2.33316 (1.350)	+ .33549 (.359)	− .03407 (− .041)	.571	3.04	2.00	6.9
10. U.S.A.	.0156 (2.100)	− .01229 (− .131)	+ .50200 (1.497)	− .50864 (− .789)	+ 4.16682 (.805)	− .12262 (− .118)	−2.07987 (−2.294)	.751	2.13	5.18	6.11
II. Less Developed Countries											
1. Brazil	− .0123 (− 1.343)	+ .01162 (1.148)	− .31790 (−2.382)	+ .04744 (.364)	− .29527 (− .682)	− .96515 (−2.447)	+1.04007 (3.281)	.842	1.17	9.77	6.11
2. Ceylon	.0310 (5.667)	− .00046 (− 1.622)	− .68552 (−3.778)	+1.07190 (3.049)	− 1.25275 (− 2.669)	− .03620 (− .144)	− .371453 (− .968)	.766	.96	3.31	6.7
3. Greece	.0260 (.938)	− .01770 (− .560)	− .64039 (−2.079)	+1.43352 (2.645)	− .90955 (− .577)	+ .21557 (.473)	+ .42874 (.811)	.973	1.75	54.61	6.9
4. Peru	.0080 (.360)	+ .03074 (− .117)	− .28560 (.234)	− .02272 (− .657)	+ .01417 (− .593)	+ .25159 (.303)	+ .24297 (2.461)	.649	1.82	2.77	6.9
5. Trinidad	.0088 (1.323)	− .00029 (− 2.205)	+ .22838 (1.035)	− .11445 (− .853)	− .25776 (− 2.524)	− .00642 (− .039)	+ .40070 (.926)	.712	1.94	3.29	6.8
6. Venezuela	.0150 (− .863)	− .10662 (2.826)	+1.59321 (1.142)	− .72155 (−1.050)	− 2.26037 (− .243)	+ .13065 (− .884)	−1.27189 (.215)	.714	2.44	2.50	6.6

( ) = t statistic.

TABLE 27

PROPORTION OF PARAMETERS WITH POSITIVE SIGN IN COUNTRY
REGRESSION EQUATIONS FOR φ AND Φ RATIOS

| | Constant term | Real GNP per head | Ratio of Change of | | | Ratio to GNP of | |
			GNP	GNP Deflator	Population	Fixed cap. form.	Change in inventories
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. φ Ratio							
I. *All Countries*							
1. Developed (18)	.83	.39	.72	.22	.67	.39	.33
2. Less developed (13) . . .	.77	.38	.69	.46	.38	.46	.62
3. All countries (31)	.81	.39	.71	.32	.55	.42	.45
II. *Countries with R² ⩾ .50*							
1. Developed (9)	.78	.44	.78	.22	.88	.44	.44
2. Less developed (5) . . .	.60	.40	1.00	.60	.20	.60	.60
3. All countries (14)	.72	.43	.86	.38	.84	.50	.50
B. Φ Ratio							
I. *All Countries*							
1. Developed (18)	.67	.44	.67	.17	.56	.39	.28
2. Less developed (13) . . .	.71	.57	.43	.29	.43	.64	.36
3. All countries (31)	.69	.50	.56	.22	.50	.50	.31
II. *Countries with R² ⩾ .50*							
1. Developed (10)	.70	.50	.70	.00	.60	.40	.20
2. Less developed (6) . . .	.83	.33	.33	.50	.17	.50	.67
3. All countries (16)	.75	.44	.56	.19	.44	.44	.38

The main impression obtained from a study of the country equations, however, is that of great variety among countries and the need for more, or different, variables and stronger methods of analysis if level and movements of the ratios are to be satisfactorily explained econometrically — provided such an explanation is indeed possible at all though it has eluded us so far.

Table 28, finally, summarizes some of the econometric characteristics of the 80-odd country equations, the values of R², D-W and F. If somewhat arbitrarily, values of .40 for R², 1.00 for D-W and 2.00 for F are regarded as the lower boundaries of acceptability, only 27 equations, or one in three, meet the test. Of these 12 refer to φ,

TABLE 28

CHARACTERISTICS OF COUNTRY REGRESSION EQUATIONS
FOR φ AND Φ, 1949-1967 [1]

| Country | R² | | D - W | | F | | d. f. |
	φ	Φ	φ	Φ	φ	Φ	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
I. *Developed Countries*							
1. Australia . .	.946	.666	1.70	1.00	32.19	3.65	6.11
2. Belgium . . .	.131	.361	2.78	1.73	0.28	1.04	6.11
3. Canada . . .	.395	.614	2.15	1.25	1.20	2.02	6.11
4. Denmark . .	.497	.724	1.65	2.14	1.81	4.81	6.11
5. Finland . . .	.678	.749	1.73	1.42	3.16	4.48	6.9
6. France . . .	.345	.661	2.14	1.52	0.97	3.57	6.11
7. Germany . .	.526	.483	2.30	1.09	1.48	1.25	6.8
8. Great Britain .	.519	.142	2.55	1.81	1.98	0.30	6.11
9. Ireland . . .	.345	.475	2.08	0.95	0.97	1.66	6.11
10. Italy	.224	.640	1.91	1.94	0.43	2.67	6.9
11. Japan	.393	.559	2.22	1.59	1.19	2.33	6.11
12. Netherlands .	.676	.373	2.58	1.21	3.82	1.09	6.11
13. New Zealand .	.457	.492	2.85	2.43	1.55	1.77	6.11
14. Norway . . .	.623	.807	2.65	1.79	3.03	7.68	6.11
15. South Africa .	.615	.184	3.12	1.86	2.93	0.41	6.11
16. Sweden . . .	.828	.417	1.77	1.13	8.84	1.31	6.11
17. Switzerland .	.212	.571	3.07	3.04	0.04	2.00	6.9
18. U.S.A. . . .	.226	.751	2.10	2.13	0.53	5.52	
II. *Less Developed Countries*							
1. Argentina . .	.520	.400	2.14	0.86	1.62	1.04	6.9
2. Brazil . . .	.613	.842	2.21	1.17	2.90	9.77	6.11
3. Ceylon . . .	.349	.766	1.62	0.96	0.63	3.81	6.7
4. Colombia . .	.150	.105	3.02	2.92	0.27	0.18	6.9
5. Greece . . .	.579	.973	1.91	1.75	2.06	54.61	6.9
6. Israel	.338	.453	2.81	1.98	0.60	0.96	6.7
7. Mexico . . .	.600	.076	1.35	0.53	2.00	0.11	6.8
8. Peru	.456	.649	2.52	1.82	1.26	2.77	6.9
9. Philippines . .	.476	.228	2.77	2.54	1.06	0.34	6.7
10. Puerto Rico .	.403	.460	1.51	1.28	1.24	1.56	6.11
11. Taiwan . . .	.385	.452	3.00	2.58	0.73	0.96	6.7
12. Thailand . .	.395	.456	2.37	2.36	0.76	0.98	6.7
13. Trinidad . .	.839	.712	2.26	1.94	6.93	3.29	6.8
14. Venezuela . .	.714	.726	2.44	2.16	2.50	2.65	6.6

[1] Data start slightly later (1950 or 1951) in a few countries.

15 to Φ. There are only eight countries, four developed and four less developed, for which both equations are included, viz Australia, Denmark, Finland, Norway, Brazil, Greece, Trinidad and Venezuela. On the more stringent tests of .60 for R^2, 1.50 for D-W and 3.00 for F only 14 equations, or not much more than one in six, remain (10 for φ, 4 for Φ), and the number of countries for which both equations survive is reduced to but three (Finland, Norway and Trinidad).

New Haven

RAYMOND W. GOLDSMITH