

Chapter 2

Flow of Funds Analysis - A Review

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2.0 The need to develop the Flow of Funds account arose due to the recognition by economists of the limitations of the social accounts. As B.J. Moore points out that "the Financial dimension of economic activity is totally eclipsed" in national product accounts, "economies are described as though they operated through barter."⁽¹⁾

2.1 John P. Powelson also asserts that "National Income data are not complete without a complimentary set of accounts to show the manner in which one sector's saving is used to finance investment of another sector and impact of Financial transaction on income and product."⁽²⁾

2.2 The various definitions of Flow of Funds differ in their focus of emphasis, for instance, in the RBI Bulletin 1967, it is stated that "In broad terms the Flow of Funds system of accounts depict the transactions among the nations economic decision makers who are grouped into institutionally homogeneous sectors functioning on broadly similar lines."⁽³⁾ In RBI Bulletin 1980, it is stated that "Flow of Funds Accounts are essentially designed to describe changes in the Financial Activity in the economy."⁽⁴⁾ While B.K. Madan and N.S.R. Sastry point out that "The focus of Financial accounts is on transactions involving the use of money or credit and the inter-

relationships between the different sectors in this respect."⁽⁵⁾
According to A.D.Bain," the Flow of Funds Accounts is designed to provide a framework which gives a systematic, comprehensive and consistent description and analysis of the facts. It brings the various financial activities of an economy into explicit statistical relationship with one another and with data on the non-financial activities that generate income and production."⁽⁶⁾

2.3 It may be noted that in the first RBI definition emphasis is on transactions between homogeneous decision making units in the economy, whereas in their second definition stress is on the change in the level of financial activity. Madan and Sastry explicitly introduce the use of money and credit as the links between the sectors of the economy. A.D. Bain's definition focuses on the inter-relationship in the financial activity as well as on the relationship of financial and non-financial activity in the economy.

2.4 National Income and Product accounts deal with real variables, income, consumption, investment and savings. The Flow of Funds account provides the link between saving and investment through lending and borrowing in the economy. The Keynesian ex-post equality of Investment and Saving is valid at the aggregate level of the economy. In a disaggregated view of the economy, as in Flow of Funds Accounts, where

the economy is divided into various sectors, this equality does not hold at the sectoral level. In some sectors Investment exceeds own saving of the sector ($I-S > 0$), while in others, Savings exceed Investments ($S-I > 0$), sectors which have Investment greater than Saving are known as deficit sectors, these borrow from surplus sectors ($S-I > 0$) which are lending sectors in the economy. Further, it should be noted that some of the units in the surplus sectors may borrow from the units of the deficit sectors and vice versa, giving rise to cross flows. Generally, intra-sectoral lending and borrowing is netted out in the Flow of Funds Accounts.

2.5 The lending and borrowing activities result in the generation of financial flows through various financial instruments, institutions and markets. The significance of Flow of Funds analysis is that it captures the essence of Financial activity by highlighting how real resources get transferred from surplus sectors to the deficit sectors of the economy. In this process the surplus sectors acquire financial assets (or claims) on the deficit sectors of the economy. The increase in assets of the surplus sectors at the aggregate level will be equal to the increase in the liabilities of the deficit sectors. Hence, in the case of a closed economy* total financial assets are equal to total

* In the case of an open economy the assets and liabilities of the Rest of the World Sector need not be equal.

financial liabilities. Nevertheless, it does not detract from the analytical importance of Flow of Funds analysis as the equality of saving and investment in social accounts does not reduce the value of social accounts.

2.6 Deficit sectors convert the Financial saving of the surplus sectors into real assets through Investment in physical assets. As an economy develops, the degree of specialization increases and the act of saving and investment gets separated,⁽⁷⁾ which necessitates the growth of financial structure. The quantum of surpluses and deficits of sectors increases, the preferences of the surplus sectors for holding the liabilities of the deficit sectors in forms and on conditions in which the deficit sectors offer their liabilities do not synchronize with the preference pattern of surplus sectors. This calls for the growth of financial intermediaries, institutions which offer their liabilities to the surplus sectors in the forms, denominations and ^{on} terms that are most suitable to the lending sectors, and purchase themselves, the liabilities of the borrowing (deficit) sectors. In this process, the financial structure comes to acquire a significant role in the economy. An efficient financial system thus, becomes a necessary though not a sufficient condition for economic growth. The flow of funds approach brings into relief that dimension of financial activity which the system of social accounts fail to capture.⁽⁸⁾

2.7 Flow of Funds Analysis is of recent origin. In U.S.A. it is traced to the programme of research in finance and capital market of National Bureau of Economic Research.⁽⁹⁾

2.8 G.S. Dorrance attributes the origin of the Flow of Funds Analysis to an unpublished memorandum prepared by Wesley Mitchel in 1944.⁽¹⁰⁾

2.9 A.D. Bain⁽¹¹⁾ regards the publication of M. Copeland's monumental work "A Study of Money Flows in the United States" (1952), as the first significant contribution to the Flow of Funds analysis. One could trace the origin of Copeland's study in his earlier paper presented to the American Economic Association in 1947, "Tracing Money Flows in Capital Markets in U.S.A.", The efforts of Copeland in this field culminated in his "extraordinary inquiry."⁽¹²⁾

2.10 After the publication of Copeland's work Federal Reserve System undertook the preparation of Flow of Funds Accounts for the American economy. The Flow of Fund Accounts evolved in two main stages in U.S.A. There were changes in details of presentation and in the framework of Flow of Funds in the United States.⁽¹³⁾

2.11 In U.K., the origin of the Flow of Funds is attributed to the publication of a White Paper in April, 1941, which was followed by another White Paper which elaborated a system of National Accounts. According to L.S. Burman this system could

have been called Flow of Funds Accounts as well, "since emphasis was placed on transactions between the different sectors of the Economy."⁽¹⁴⁾

2.12 The National Income Blue Book (September 1964) presented four types of accounts, namely, Income & Expenditure accounts (or appropriation accounts), Production accounts (operating accounts), Capital account and Financial account. The Financial account is essentially a Flow of Funds Accounts.⁽¹⁵⁾ Thus, in a formal sense this could be treated as the beginning of Flow of Funds Accounts in England.

2.13 In India, on the suggestion of C.D.Deshmukh, the work on Flow of Funds was started in 1955. CSO and Reserve Bank of India initiated this work. Some studies were made on the basis of available data by RBI on Banking and Corporate Sectors. Prof. H.W.Arndt on the invitation of the Government of India, prepared a memorandum on Financial Flows in the Indian Economy 1951-52 to 1957-58. On 16th February, 1959 the memorandum was discussed by the representatives of RBI, Ministry of Finance, Indian Statistical Institute and Planning Commission under the sponsorship of Central Statistical Organization. In this meeting a "Working Group" was appointed to look into the issues involved in the preparation of such accounts, and the methods of improving the same. Since then, RBI has been preparing the Flow of Funds Accounts from time to time.⁽¹⁶⁾

2.14 Issues in the Flow of Funds Accounts: The Flow of Funds accounts presentation differs in various respects from country to country unlike the National Income accounts. G.S. Dorance points out that the National Income and Balance of Payments accounts in non-socialist countries have basic similarities not merely because in these countries the format of presentation of IMF manual of balance of payment and UN system of social accounts are followed, but because these 'reflect the general agreement on important theoretical concepts'.⁽¹⁷⁾

2.15 The format of presentation of Flow of Funds Accounts not only depends on the availability of data but is also influenced by the implicit slant with which these accounts are prepared. No doubt it is claimed in the case of Federal Reserve System that it presents these accounts in a 'Neutral manner', and it is for the users to organize the data in a meaningful manner, for the purpose of the type of economic analysis which they are interested to undertake. Professor J.C. Dawson disagrees with this view and insists that the form of presentation cannot be "analytically neutral".⁽¹⁸⁾

2.16 Goldsmith classifies the issues in the preparation of Flow of Funds Accounts under the following categories.⁽¹⁹⁾

- A. Scope of Flows and Stocks
- B. The Classification of assets
- C. Valuation
- D. The coverage of economic units
- E. Sectoring
- F. The degree of netness

Adhering to Goldsmith's categorisation the views of various writers on these issues are presented below.

2.17 (A) The Scope of Flows and Stocks: Though it may be desirable to include all the transactions through different instruments amongst different sectors in the Flow of Funds Accounts, in practice it is not feasible. For instance, even in a developed country like U.K., lack of data on trade credit is a serious omission in the Financial Accounts of that country.⁽²⁰⁾ Goldsmith points out that all assets whose value can be expressed in monetary units that can be acquired in the legal system besides assets on the basis of imputed values must be included.⁽²¹⁾

2.18 (B) The Classification of Assets: The problem of classification of assets is a difficult one. Various bases for the classification have been suggested by different writers. The basis on which assets are classified would be related to the type of analysis which one undertakes. L.S.Burman suggested the classification of assets on the following criteria:⁽²²⁾ (a) Liquidity, (b) Institutional Basis.

2.19 The classification of Financial assets on the basis of liquidity will help in the effective management of public debt. In spite of the importance of classification of assets on the basis of liquidity it is not feasible.

2.20 Another basis of classification is that the financial claims on different sectors and sub-sectors can be distinguished. For instance, Government debt and claims on Financial Institutions can be differentiated. The impact of policy variables on the structure of Financial assets held by different sectors in their portfolio can be analysed.

2.21 A.D. Bain⁽²³⁾ suggests homogeneity, importance, sector of issue, and nature of liability to form the bases of classification. Financial assets can be divided on the basis of claims or equities.^(*) As for the Financial instruments which play an insignificant role, he suggests that these can be made to form a single group.

2.22 (C) Valuation: The proper basis of valuation of Financial assets is another area of disagreement. As the market values of financial instruments may differ from their nominal values, Valuation differences is one of the important sources of discrepancy in the financial accounts.

2.23 (D&E) Coverage of Economic Units and Sectoring: The coverage of economic units and the problem of sectoring is closely interlinked. In the National Income Account System sectoring is based on homogeneity. In production accounts the

(*) R.W.Goldsmith also regards this as the "main primary" classification of assets. See The Flow of Capital Funds in the Post-war Economy, (NBER, 1965), p. 46.

basis of sectoring is industrial. A.D. Bain points out that for the Financial account the basis of dividing the economy into different sectors should be the institutional differences in the relationship of sectors with the Financial market.⁽²⁴⁾

A.C. Wallich is of the view that sectoring for the financial analysis should be based on the behaviour of sectors in their portfolio choices.⁽²⁵⁾ Sectors can be classified as non-financial business sector, household sector and financial intermediary sector as their portfolio choices will be guided by different sets of considerations. Nevertheless, he is aware of the difficulty of separating household and non-financial business sectors.

2.24 (F) The Degree of Netness: The Flow of Funds Accounts differ in the degree of netness. In India the sectors' Sources and Uses are presented separately. Decreases in financial assets (Uses) are treated as negative uses and reduction in liabilities are shown as negative Sources. In the case of U.K., the degree of grossness is much less as Sources and Uses are netted out and are shown with the relevant sign. Mandleson is of the view that the degree of optimum grossness in the Flow of Funds Accounts will depend on the nature of the enquiry undertaken. He further points out that the problem of grossness is also related with the problem of disaggregation. Greater the degree of disaggregation greater will be the degree of grossness. However, Mandleson remarks that at this stage of

development of the accounts it is premature to determine the optimum grossness in the Flow of Funds Accounts.⁽²⁶⁾

2.25 Uses of Flow of Funds Accounts: The Flow of Funds Accounts provide a very rich harvest of Financial data "creating a feeling of bafflement"⁽²⁷⁾ about its possible uses. The failure to use the Flow of Funds data effectively is attributed to "the lack of an accepted theoretical framework possessing explanatory and predictive value with which to analyze the interaction of financial and non-financial variables."⁽²⁸⁾ At one time it was believed that this type of financial analysis would be of great relevance for applied and theoretical work in economics.⁽²⁹⁾ It was believed that the Flow of Funds accounts would be as important to the next generation of economists as National Income Accounts were for the present generation.⁽³⁰⁾

2.26 A.D. Bain discusses the various approaches that have been developed to analyse, interpret and apply the Flow of Funds data under the following categories:⁽³¹⁾

- A. Flow of Funds as a data source
- B. Sector Balance and Liquidity analysis
- C. Fixed technical coefficients, i.e., input/output approach
- D. Short term Flow of Funds Projections
- E. The Financial Econometric models.

2.27 G.S. Dorrance looks at the problem from a different angle and points out that there are five different paths on which

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financial statistics have developed.

1. The Balance sheet approach stemming from Hick's Social Framework 1942;
2. The Flow of Funds approach which can be traced to an unpublished memorandum by Wesley Mitchell 1944;
3. Monetary Survey approach by Triffen 1946;
4. The Liquidity approach, Holtrop 1953; and
5. Financial Surpluses and Deficits of individual sectors' approach Moonet Plan 1954.

2.27 It is significant that while A.D.Bain regards liquidity analysis and financial surpluses and deficits of individual sectors as an approach of the application of Flow of Funds analysis, G.S. Dorrance regards the same as independent developments of the application of financial statistics and not the offshoots of the Flow of Funds Accounts.

2.28 Following A.D. Bain's approach to the Flow of Funds analysis, the important developments in the application of the analysis is commented upon in the following paras. This will enable us to appreciate the extent and direction in which the present study differs from the work that has already been done.

2.29 (A) Flow of Funds as a Data Source: In this approach it is maintained that the main function of Flow of Funds Accounts is to supply data on financial transactions in a neutral manner which will be used by the analyst alongwith data from other sources.

2.30 In the Keynesian analysis rate of interest provides the link between the real and financial variables. But Jacob Cohen feels that the "linkage variable" should be credit Flows rather than interest rate.⁽³³⁾ In this type of analysis the inter-relationships between financial and non-financial variables are highlighted.

2.31 The Flow of Funds Accounts have also been used at the descriptive and analytical levels. For instance, the changes in the composition of Uses and Sources of funds and in Financial Instruments are analysed. In this thesis an attempt is made to study the structural changes in the Flow of Capital funds over a period of ten years which enables us to ascertain the changes in the structure of Flow of Capital Funds, as distinct from Financial Institutional Structure.

2.32 Goldsmith looks at the Financial Flows relationships in terms of various types of ratios and measures the development of financial structure in terms of these ratios. He relates the changes in these ratios to the level of economic development. For instance, the Financial Interrelations Ratio is used as an indicator of the relationship between economic and financial development.⁽³⁴⁾

2.33 Copeland's 1952 study⁽³⁵⁾ is an example of the use of money flows data for the study of general development of U.S. Economy 1936-42. With the help of Flow of Funds data cyclical

changes are also analysed. Another significant application of Flow of Funds analysis is to be found in bringing out the implications of monetary policy.

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2.34 Mitchell 1967 analysed the effects of regulation Q ceilings in the American Economy. He points out that from 1947 to 1956 the growth of financial intermediaries was four times greater than the banks. The deposits and shares of non-bank institutions increased in the portfolios of the Households. The increase in regulation Q in 1957 helped the banks. Between 1962 to 1965 there were upward revisions in regulation Q four times. Time and Saving deposits of Banks increased and the credit flows to the banking system went up. Banks' position vis-a-vis the non-bank financial intermediaries improved.

2.35 Deena R. Khatkhate brings out the significance of Flow of Funds analysis for accommodating the views on the role of monetary policy in the Keynesian and the Neo-classical analyses and the policy prescriptions flowing from this analysis for underdeveloped economies.⁽³⁷⁾ The development problem analysed from the neo-classical angle attaches great importance to the existence of prior saving in the development process and uses higher rate of interest as an important tool for generating more savings in the economy. While the Keynesian "Investment oriented" approach recommends a reduction in the rates of interest for stimulating investments, the Flow of Funds approach provides a new perspective for looking at the problem of

conciliation of Savings and Investments approaches as crucial to the process of development. The Flow of Funds analysis also brings out the role of financial institutions in the development process. The contribution of flow of funds analysis lies in disaggregating the economy into different sectors which results in the break up of Saving Investment identity. The analysis identifies the surplus and deficit sectors in the economy. The role of monetary policy emerges as providing the mechanism for the most efficient allocation of resources through creating the appropriate financial infrastructure which not only ensures an efficient allocation but increases the Flow from the surplus sectors (in India, Household sector) by providing opportunities for productive Investment which are lacking due to institutional deficiencies. The role of interest rate in this type of analysis is not to generate savings but to reflect the opportunity cost of holding different types of assets. It induces the Household saving to flow to desired sectors. The institutionalisation of savings reduces the cost of loanable funds. Thus, the conflict between the Neo-classical and Keynesian prescriptions is removed.

2.36 (B) Sector Balances: Flow of funds has been used to identify inflation-generating and deflation-inducing-sectors. It is argued that sectors whose investments exceed their own saving exert an expansionary pressure and the sectors whose savings exceed Investment have a contractionary impact on the economy. In fact, it is difficult to distinguish between induced and autonomous changes. Whether to attribute the inflationary impulse to changes in deficits/surpluses or

changes in liquidity position of sectors is highly complex. Copeland tried to tackle this difficulty by dividing the economy in bulls, bears and sheep.⁽³⁸⁾

2.37 Liquidity: In this approach, which is traced to Holtrop, who as the Governor of Netherlands Central Bank, commented on the plan of that country that it was not consistent with the price assumptions and suggested that changes would be required in bank credit and the structure of liquidity of the economy for the implementation of the plan⁽³⁹⁾ (1954).

2.38 The essence of this approach is that those sectors whose liquidity is reduced by short term borrowing or sale of their liquid assets generate inflationary pressures. The opposite is true for sectors that increase their liquidity. This approach is also fraught with various difficulties. The availability of data is a serious problem. Wallich points out that the complete information on rates of interest on all financial assets and the maturity breakdown of all these financial assets must be available for this type of analysis, which is not available even in developed countries. Another problem related to the liquidity approach is whether changes in liquidity are permanent or of temporary nature and their relation to expenditures on goods and services are not easy to establish.⁽⁴⁰⁾

2.39 Mention may be made that after the publication of Radcliffe Committee report the importance of the liquidity approach has enhanced, as it is suggested that Central Bank should try to control the total liquidity rather than the money supply.

2.40 (C) Fixed Technical Coefficient Model: One of the important uses to which the Flow of Funds analysis has been put is the construction of models. These models have been classified as follows: ⁽⁴¹⁾

1. Simple self-contained models in which number of identities are equal to unknowns.
2. Complex self-contained models where the number of unknowns exceeds the number of independent identities. In this case, the additional equation will consist of relationship between accounting flows.
3. Mixed models. In these the flow of funds variables are explained in terms of variables not included in the accounts. The mixed model can further be subdivided into
 - (a) partial models
 - (b) complete models

These explain the relationship between real and financial markets.

2.41 Stone's Financial Input-Output model is of Keynesian type in which Investment is exogeneously given. ⁽⁴²⁾

2.42 Jacob Cohen who applied Stone's model to the American Economy with certain modifications comes to the conclusion that Financial Flows are 'volatile' and therefore, ⁽⁴³⁾ the assumption of fixed coefficients of lending/borrowing is of doubtful validity.

2.43 A.D. Baine points out that the fixed coefficients approach is based on the assumption that the relation between particular Uses and Sources is stable. Baine also questions the validity of the assumption of stable coefficients.

2.44 Bain concludes that fixed technical coefficients approach is not suitable for financially developed economies. It may have a limited degree of usefulness for medium term financial planning under two conditions: (1) when the financial system is not highly developed, and (2) where extent of the regulation of the economy is significant.*

2.45 (D) Short Term Flow of Funds Projections: The short term flow of funds forecasts are prepared as an adjunct to short term National Income Forecasts. In the case of forecast of rates of interest the assumption made is that the monetary policy is given, whereas, in the case of short term financial forecasts the object is to help the monetary authorities to

* Note: In spite of the fact that the two conditions for the stability of coefficients of lending and borrowing mentioned above are satisfied to a large extent in the Indian case, the present study brings out that the coefficients are not stable.

formulate policy in the light of the other dimension of macro economic policy. In UK., and USA the financial forecasts are derived from the official forecasts of real variables in the economy. This highlights that the financial forecasts cannot be independent of forecasts of real macro variables of the economy. In Italy and Yugoslavia, the financial and the real forecasts are relatively well integrated.⁽⁴⁵⁾ In England, the feedback from financial forecasts to real spending flows is also taken into account.

2.46 (E) Financial Econometric Models: The use of flow of funds data is also made in the construction of financial econometric models. One such important model is presented by Hendershot.⁽⁴⁶⁾

2.47 In spite of the fact, that at one time the Flow of Funds analysis generated great enthusiasm and was considered as significant as the Keynesian theory, with the passage of time the enthusiasm was dampened as it proved to be of much limited value. The fundamental problem of the flow of funds analysis has been the lack of consistent core financial theory, with explanatory and predictive powers. "As yet there has not been a Taussigian synthesis or a Keynesian revolution in financial theory",⁽⁴⁷⁾ to provide a theoretical framework for the Flow of Funds analysis.

2.48 Nevertheless, the development of Flow of Funds has made available consistent data in financial transactions in a

number of countries which opens the possibilities of linking or integrating the financial and real economic analysis.

An advantage of the development of Flow of Funds has been the integration of National Income and Interest rate forecasting. The development of Input-Output type of technique has been of great value in the medium term financial planning. It brings out the financial constraints that arrest the development process and hinder the implementation of economic plans and accounts for failure to achieve plan targets. The Flow of Funds Analysis also focuses attention on the significance of financial flows as determinants of real spending. For example, the Flow of consumer credit and mortgage finance influence real expenditures in the economy.⁽⁴⁸⁾

2.49 Interest in the Flow of Funds analysis in recent years has been revived in U.K., due to the large deficits in the public sector. "The new Cambridge School" hypothesised that changes in the public sector's deficits are eventually reflected in equal changes in the current account of balance of payment.⁽⁴⁹⁾ Wallich is of the opinion⁽⁵⁰⁾ that the autonomous changes of financial surpluses and deficits are reflected only partially in the balance of payments.*

2.50 Applications of Flow of Funds Analysis in India: As already pointed out, the Flow of Funds Analysis is of recent

* In this thesis, in Chapter 4, it is argued that the deficits of the Government Sector are shared between the Rest of the World as well as the Banking Sector of the Indian Economy. There is a trade off relationship in sharing of deficits between Banking and the Rest of the World sectors.

origin especially in India. The data on Flow of Funds provided by RBI has been utilised for analysis by a few economists. The contribution of R.J. Modi, B.K. Madan and N.S.R.Sastry, A.C. Minocha, E.S. Srinivasan, V.V. Bhatt and V.V. Divitia and Venkatachalam are of interest.

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2.51 R.J. Modi in his paper attempts to identify the inflation generating sectors in the Indian Economy on the lines of Copeland's work for the American Economy. He points out that the two sectors whose investments persistently exceed their own saving are the Corporate and the Government sectors in India. He concludes that the deficits of the corporate sector were fairly stable while the deficits of Government sector were increasing at a fast rate in 1960's. He, therefore, attributes the inflationary pressures in this period to emanate from the Government sector. It is noted earlier that Copeland divided the economy into three ~~kinds of~~ sectors as Bulls, Bears and Sheep where Bulls were identified as creating inflationary impulses in the economy. This kind of analysis has been criticised on the ground that a Bullishness of a sector may be result of sheepishness of another sector.

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2.52 Madan and Sastry trace the development of Flow of Funds accounts in India. ⁽⁵³⁾ They analyse the accounts for two sectors — Banking and Corporate Business sectors. Apart from pointing out the problem of computation of accounts of these sectors they draw some inferences about the behaviour of these sectors for the period 1953-54 to 1958-59. The Banking Sector's main source in the first Five-Year Plan is the Household Sector,

while the main borrower was the Government Sector. There was a substantial reduction during the Second Plan period in the foreign assets of the Banking Sector. The credit extended to the Government Sector was the result of the larger deficit financing by the Government in the Second Plan period. The time deposits of the Banking Sector increased substantially in the years 1957-58 and 1958-59. Half the increase in the deposits is attributed to PL 480 funds which were held with RBI in time deposits in the name of the American Embassy. The deficit financing of the Government is reflected in the continuous yearly increase in the Banking Sector's claims on the Government Sector. The paper also highlights the problems of estimation of flow of funds of the Corporate Sector, such as the difficulty in eliminating transactions amongst the various units of the Sector.*

2.53 The object of A.C. Minocha's paper⁽⁵⁴⁾ is to bring out the policy implications of intersectoral Flow of Funds analysis by an examination of the Indian data for the period 1951-52 to 1962-63.

* V.K.RV. Rao and K. Ohkawa's observation on the paper that "the use and application of such accounts is rather limited for a country like India in the present stage of its economic development" is pertinent. See Introduction, Asian Studies In Income and Wealth, (Asia Publishing House, 1965), p.XIII.

2.54 It is stated that the pattern of savings in an economy influences the rate of capital formation as well as the inter-sectoral flow of funds. In India, the Household Sector was the most important source of savings and the role of Corporate and Government Sectors were secondary in this respect. **

2.55 As the Corporate Sector could not generate sufficient internal resources for investment over the three plan periods its dependence on external sources increased from 28.7 per cent to 35 per cent.

2.56 Minocha examines the pattern of financing envisaged for the Fourth Plan and concludes that the share of Household Sector in total domestic savings would decline. For the 12 years of the study, 75 per cent of investment in Government and Corporate Sectors was financed by net borrowing, and 25 per cent by the own savings of the Sectors. The rate of growth of borrowing of the two sectors, namely the Government and the Corporate, was higher than the rate of growth of their savings. This fact points to the increasing importance of borrowing in the investment of these sectors and highlights the role of financial intermediaries as channels for the transfer of resources from the surplus to the deficit sectors of the economy.

** According to Minocha, it was in sharp contrast to the situation prevailing in U.S.A. where the Corporate Sector played a predominant role in the generation of resources for investment.

2.57 In this perspective Minocha looks at the 'Demand following' and 'Supply leading' types of financial development and emphasizes the adoption of the latter approach which is more appropriate in the context of underdeveloped economies.

2. 58 In developing economies the asset preferences of the Household Sector are to be changed through proper monetary policies. Interest rate should be used to mobilise resources rather than as a tool to stimulate investment. It is feared that the low rate of interest policy will divert resources to the unorganised markets.

2.59 Minocha brings out the importance of price stability in the context of financial flows as inflation changes the direction of flows towards relatively unproductive activities and encourages zero-sum-games.

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2.60 V.V. Bhatt observes that generally, on theoretical plane as well as in practice there is lack of proper integration between physical and financial planning. Emphasis is placed on the derivation of Investment pattern of a plan on the assumption of a given marginal propensity to save^{of} the economy. A further implied assumption in plans is that there would be no inconsistency between the financial and physical implications of the plan. In fact, the neglect of financial implications generate inflationary pressures. The sectoral- break-up of Investment is influenced by the sectoral savings and the pattern of growth of the saving of the surplus sectors (in India the Household Sector).

2.61 The Household Sector's financial saving is transferred directly to the deficit sectors or through financial institutions; thus the structure of the Household Sector's saving and the Flow of Funds in the base year will have an impact on the availability of funds for the deficit sectors. The patterns of the Flow of Funds will have to be modified through policy tools to achieve the desired rate and pattern of Investment.

2. 62 The focus of the paper is to present a "Formalised technique of financial planning"⁽⁵⁶⁾. With this object in view, Bhatt constructs for illustrative purposes the matrix of Saving and Financial Flow for 1965-66. For this purpose, the Indian economy is divided into three major sectors: (a) Domestic non-financial, (b) Domestic Financial sector; (c) External sector. These are further sub-divided and the share of Savings and Flow of Funds matrix is presented with nine sub-matrices. These sub-matrices capture the Flow of Funds amongst the sub-sectors of the economy. The construction of Flow of Funds matrix for the year 1965-66 made available an analytical frame for the generation of Financial Flows and Saving which is the basis of the financial plan. Bhatt argues that if the financial plan that emerges on the basis of sectoral savings and their flows is not consistent with the envisaged investment plans, then policy measures will have to be instituted to bring the financial implication in alignment with the break-up of physical targets of investment of various sectors so that

imbalance may not develop even when the total quantum of overall saving is consistent with plan expenditures.

2.63 The Saving and Financial Flow matrix is constructed on the following important assumptions:

- a) Household Sector is the only surplus sector
- b) Net saving of all the Sectors is known
- c) Coefficients of lending of the Household Sector as well as all other Sectors are assumed to be fixed or changes in the same, are predictable.

2.64 He is aware of the fact that such extreme assumptions would not be valid for underdeveloped economies. It may be noted that we have already pointed out that the assumption of fixed coefficients is not valid for developed economies. (57)

2.65 It may be worth noting that one of the assumptions made by Bhatt, namely, that the external sector's flows are exogeneously given, though valid, does not help in any way, as in the case of the Indian economy, its interaction is predominantly with the Government Sector. Changes in Sources and Uses of the Government Sector result in a chain reaction in all the other Sectors' flows.

2.66 V.V. Devtla and Venkatachalam trace the development of Financial accounts and summarise the uses of Flow of Funds analysis. (58) It is pointed out that in the process of Financial growth in the economy the variety of financial assets increase and the composition of these assets/liabilities undergoes a

change indicating development of financial intermediation. This results in increasing the distance that savings travel to reach the investors.

2.67 Following Goldsmith's methodology they have calculated eight financial ratios to measure the development and changes in the financial superstructure for India for the First, Second, Third Five-Year Plans and for the period 1966-67 to 1968-69, 1969-70 to 1971-72.

2.68 The main thrust of the paper is to use the Flow of Funds analysis for the purpose of financial planning. The methodology discussed in the paper is similar to that of V.V. Bhatt's article 1971.⁽⁵⁹⁾ The purpose is to examine whether the Financial Flows that would be generated during the Fourth Plan period would be consistent with the projected sectoral Investments, from the Flow of Funds of the Third Five-Year Plan the coefficients of lending of different sectors were calculated. Assuming the coefficients of the Third Plan period to be stable and applicable for the Fourth Plan period and on the basis of estimated savings financial flows could be generated for the Fourth Plan. They argue that the corresponding pattern of Investment that would emerge would be different from the one that has been visualised for the Fourth Plan. They point out that the estimated sectoral investments differ substantially from the visualised investment in the Fourth Plan document. This would necessitate a diversion of Funds from the Corporate

to the Government Sector. Further, they assert that the financing pattern of the Fourth Plan investment targets would change the structure of Financial Flows. For instance, the private Corporate Sector's reliance on the Household, Banking and Government Sectors will be relatively reduced, on Other Financial Institutions and the Rest of the World Sectors would increase. The article brings out the importance of matrix of financial transactions for planning purposes. The coefficients of lending cannot be assumed to be constant; these will have to change in accordance with the financing pattern of the Plan.

2.69 E.S. Srinivasan⁽⁶⁰⁾ has contributed two papers and a book. In his first paper he discusses trends in sources of funds of non-financial companies in India.

2.70 The theme of the second paper⁽⁶¹⁾ is the role of financial institutions in the Indian Economy during 1951-56. He makes distinction between monetary financial institutions and non-monetary financial institutions. He points out that the assets of the financial sector in India increased more than ten times from 1951 to 1966. A major part of this increase is to be attributed to the growth of the Banking Sector. He points out that the financial intermediation ratio had increased in this period substantially. The role of the Banking Sector had become significant. An important conclusion of his study is that the Flow of Funds of the Banking Sector to non-financial sectors

has increased significantly, whereas the non-bank financial intermediaries' funds flowed into the financial sector itself.

(62)
2.71 E.S.Srinivasan's main theme in the book is the analysis of the financial structure for the period 1951-52 to 1959-60. As during this period the RBI data was not available in the form of inter-sectoral flows he has constructed the tables of inter-sectoral flows from the data on instrument-wise flows which is available in the RBI Bulletins. The methodology that he uses for the study of the structural changes is to work out the percentage shares of each sector in sources and uses. As the coefficients of borrowing and lending of the sectors fluctuate from year to year, it is difficult to establish the extent and nature of changes in the structure of Flow of Funds in the Indian Economy with this methodology.*

2.72 Reserve Bank of India Bulletins: The origin of Flow of Funds in India has been already discussed. It may be recalled that CSO appointed a working group in 1959 to initiate the work on Flow of Funds. Model accounts were prepared for 1957-58. RBI broadly follows the methodology presented in the report of the working group. RBI Bulletin of March 1967 presents the Flow of Funds accounts for the period 1951-52 to 1962-63.

2.73 An article explaining the various issues was prepared by Dr. P.K.Pani of RBI. Instrument-wise Financial Flows for the Indian Economy are made available from 1951-52 to 1962-63.

* In this work the methodology used to identify structural changes is the measurement of distance between vectors and cluster analysis which were found to be more suitable tools for the analysis of the structure of Flow of Capital Fund.

The Tables of Instrument-wise sectoral Flows for Banking Sector, Other Financial Institutions Sector, Private Corporate Sector, Government Sector, Rest of the World Sector and Household Sector are provided. The Banking Sector is sub-divided into RBI, Commercial Banks and Cooperative Banks and Credit Societies. The Other Financial Institutions Sector is sub-divided into two sub-sectors, namely, financial corporations and Investment companies and Insurance. Private corporate sector is split up into companies and co-operative non-credit societies. Government Sector's Flows are presented in the consolidated statement of Government Sector, which comprises of Central Government, State Governments and Local authorities. This format of presentation has been adhered to, by and large, for the subsequent years in the presentation of the data.

2.74 The sectorization scheme of dividing the Indian Economy into six sectors has been retained till date. The Instruments are classified under seven categories: (1) Currency and Deposits, (2) Investments. (Investments are sub-divided into (a) Government securities; (b) Corporate securities; (c) Bank securities; (d) Other Financial Institutions' securities; (e) foreign securities, (f) others; (3) Loans and Advances, (4) Small Savings, (5) Life Fund, (6) Provident Fund, (7) Trade Debt or Credit.

2.75 In the Instrument-wise Flow of Funds table two more items appear: Foreign claims not elsewhere classified and other claims not elsewhere classified.

2.76 In India, the Flow of Funds Accounts are confined to those Financial Flows that have a link with the capital account of the National Income Accounts.

2.77 The factors that account for the limitations of data and for the discrepancies are: (1) data is drawn from various sources, (2) different estimation procedures have been adopted, (3) information is collected from various surveys that differed in scope, coverage and objectives, (4) the definitions of various items in the sources from which they are drawn may not be always consistent with the definitions of the same items used in the Flow of Funds presentation, (5) the values of the same items reported by borrower and lender differ for the following reasons: (a) valuation differences, (b) the lag in recording, (c) differences in concept and classification, (d) accounting period differences, (e) basic deficiency and inadequacy of statistical information.

2.78 The above mentioned factors result in the discrepancy between a Sector's use in another Sector which is the Source of the latter from the former Sector. This paper gives the detailed procedures, methodology of compilation of sources and uses of Sectors as well as the Flow of Funds table for the economy. It is further pointed out that the discrepancies in the earlier data are large, one would hope that in future these would be reduced but the past data cannot be improved upon.

2.79 For the period covered in this article, the deficit sectors were Government and Private Corporate business and the Surplus sectors were the Household and the Rest of the World. The surpluses of Banking and other Financial Institutions were not substantial. For the Banking Sector the surplus was contributed mainly by RBI through the operation of Funds like National Agricultural Credit Long Term Operations Fund and National Agricultural Credit Stabilization Fund. The profits of the Bank and lending out of these funds to State Governments is mainly responsible for the surplus of this sub-sector which is reflected in the surplus of the Banking Sector.

2.80 RBI Bulletin July 1969 presents the Flow of Funds Accounts for 1961-62 to 1965-66. It is stated in the article that the methodology used in March 1967 Bulletin was broadly followed for the compilation of Flow of Funds data covered in this issue. Slight modifications in the compilation of Financial Flows are mentioned in the appendix on pages 959 and 960.

2.81 In RBI Bulletin, September 1969, there are two important articles applying the Flow of Funds analysis for the preparation of financial plan, one by V.V. Bhatt and the other by V.V. Divatia. V.V. Bhatt's article is already discussed. Divatia in his article "An operational technique for Financial Planning" derives the formula for arriving at "consistent sectoral investment given savings and vice-versa." He prepares the coefficient matrix of the Third Plan period.

On the assumption that the coefficient matrix derived from the Third Plan transactions will remain valid for the Fourth Plan period as well, he works out the Flow of Funds and projected pattern of savings flows for the Fourth Plan period.

2.82 Divitia clearly spells out the main assumptions and limitation of the technique of financial planning. The basic assumption of the financial projection is that the coefficient of lending/borrowing are assumed to be stable and would be the basis for projecting the disposition of savings of sectors.

2.83 The inter-industry input/output matrix generates the technical coefficients while the Financial Flow matrix provides "behaviouristic" coefficients. With the help of the analysis of the impact of exogeneous variables on the coefficients it may be possible, according to him, to predict "behaviouristic changes" for long run projections. Another implied important assumption in financial planning models is that the coefficients are assumed to be unaffected by the level of flows and savings. This assumption is similar to the constant returns to scale assumption of Leontief's Static input/output matrix. Divitia's analysis also brings out the variations in the coefficients of financial transactions matrix. To minimise the variations in coefficients he suggests certain methods, such as the calculation of coefficients on the basis of the average figures of 5 years, instead of annual flow figures. It may be noted that Divitia uses the net flow figures in his analysis and points out that gross flows can also be used.

2.84 In RBI Bulletin, February 1972, the paper on Financial Flows in the Indian Economy 1966-67 and 1967-68 is presented; section III of this paper is based on the paper by T.R.Venkatachalam and S.T.V.Chari. Section III of this paper deals with the application of the technique of financial planning to the Saving Investment pattern envisaged in the Fourth Five-Year Plan 1969-74. The basic difference in the approach of this paper from the paper of V.V. Divitita "an operational technique of Financial Planning" is, while Divitita uses a 6 x 6 matrix of net flows, in this paper a 11 x 11 matrix of gross flows is used for analysis.

2.85 The 11 x 11 matrix splits up the Banking Sector into three components, namely, RBI, Commercial Banks, Cooperative Banks and Credit Societies; the Other Financial Institutions Sector into LIC and General Insurance, Provident Fund, Financial and Investment Companies and Financial Corporations. Private Corporate Business Sector is split up into companies and non-credit societies.

2.86 In Divitita's paper Flows are calculated on a net basis, for instance if sector "A" lends Rs.400 to another "B" and borrows Rs. 200 from "B", Rs.200 will be shown as (net) lending of "A" to "B".

2.87. Disaggregation of the sectors naturally results in increasing the volume of Financial Flows. Further, as gross

flows are presented, the volume of total flows is large compared to the 6 x 6 matrix of net flows computed by Divitia. However, the estimates of saving and Investment are not affected by gross flows approach.

2.88 The advantage of the presentation of gross flows in a more disaggregated form results in the identification of cross financing and in capturing in a more detailed way the level and composition of Financial Flows.

2.89 RBI Bulletin, May 1977 presents Financial Flows for 1967-68 and 1968-69. The paper points out that funds that pass through financial Institutions increased to 40 per cent compared to 30 per cent for 1967-68. The financial deficit of the Government Sector, as well as for the Corporate Sector were reduced in 1968-69. These deficits were financed by the Rest of the World Sector and the Household Sector in 1968-69 in the ratio of 1:2 compared to 1:1 in the year 1967-68, from which it is inferred that the dependence on foreign funds is reduced.

2.90 The main source of funds for Banking and Financial Institutions has continued to be Household Sector.

2.91 The paper in RBI Bulletin, August 1975, is important as it states the modifications in the compilation of Capital Flow accounts of the various sectors. The following important

modifications were introduced.

2.92 Banking Sector: Until 1967-68, the sectoral advances of the Banking Sector were estimated from the sources: (1) purpose-wise survey of commercial bank advances; (2) From the liabilities reported by the individual sectors, except the Household Sector. In 1968-69 the purpose-wise survey on Bank advances was discontinued. Since 1968-69, the Commercial Bank Credit is being estimated from the latter sources. So, the figures after 1967-68 are not strictly comparable with figures of later years. From 1966-67, Household Sector's contribution to non-Government Provident Fund was revised.

2.93 Government Sector: There have been some changes in the estimates of the Government Sector in regard to advances of Government to Household Sector. For compilation of Flows of non-departmental undertakings, the report of the Bureau of Public Sector Enterprises and the RBI's study of Government companies are combined. Electricity undertakings of Corporations and Boards are included. Local authorities' financial flow information has improved.

2.94 Rest of the World: Financial Flow accounts for 1966-67 are revised as a result of the revision of Balance of Payment account.

Household Sector's Flow estimates got revised due to (a) availability of greater details of dues to State Electricity Boards, and (b) the revision of estimates of other sectors.

2.95 Besides the presentation of Financial Flows, sector-wise and Instrument-wise, the Savings and Investment of various sectors are obtained and a more comprehensive Flow of Funds is presented from the year 1966-67 to 1971-72 (See Table-1 on pages 548-553). It is possible to identify the surplus and deficit sectors and the pattern of financing their Investment from the comprehensive Table-1. Further, the Table brings out the intermediation role of Banking and Other Financial Institutions as their own investments are negligible, whereas the Flow of Funds through them is of a large magnitude.

2.96 This paper also presents different financial ratios for the period 1966-67 to 1971-72.

2.97 Section III contains comments on the behaviour of the Economy.

2.98 Reserve Bank of India Bulletin, March 1980: This Bulletin presents the data on Flow of Funds for the period 1970-71 to 1976-77. The paper describes the structure of Flow of Funds Accounts and its relationship with the system of National Accounts and makes a distinction between Financial and Non-Financial Flows.

2.99 Annexure-I gives the details of the sectoral classification of the Indian Economy. Annexure-II gives the details of sources of data of various sub-sectors, such as RBI, Commercial Banks, Cooperative Banks and Cooperative Societies, Financial Corporations and Companies, Insurance, Non-Government

Provident Fund, Private non-financial companies, Cooperative non-credit societies, Government, Rest of the World.

2.100 Annexure-III points out the modification in the procedure of compilation followed in the earlier period. For instance, it has been pointed out that the coverage of financial corporations and companies was widened by including Industrial Reconstruction Corporation of India and Credit Guarantee Corporation of India. Credit Guarantee Corporation of India was included earlier in non-departmental non-financial undertakings of Government.

2.101 "The Trade debt of ARDC (Agricultural Refinance and Development Corporation) is shown against unidentified instead of Household".

2.102 The central themes in the discussion of Flow of Funds in India are recapitulated here.

2.103 Flow of Funds analysis is applied for the identification of inflation generating sectors in the Indian economy.

2.104 The analysis of Sources and Uses of Banking and Corporate Sectors has been undertaken. It is found that the continuous increase in the claims of the Banking Sector on the Government Sector is the reflection of the volume of deficit financing undertaken by the Government. It is pointed out that the role of Banking Sector increased significantly in the Indian Economy in recent decades.

2.105 The policy implications of Flow of Funds analysis are also examined and it has been brought out that the "supply leading" type of financial development is suitable for under-developed economies. The role of Financial intermediaries is looked at in the frame of Flow of Funds, as channels for the transfer of resources from the surplus to deficit sectors of the economy in an efficient manner.

2.106 One of the problems of development planning is the lack of proper integration between physical and financial planning, both at the theoretical and practical planes. To remove this shortcoming techniques of financial planning are developed. One of the exercises that has been undertaken is to examine whether, on the basis of estimated savings, the Flow of Funds that will be generated based on the coefficients of lending of a Plan period, would be consistent with the pattern of Investment envisaged in the subsequent Plan period.

2.107 The structure of Flow of Funds was examined by working out the percentages of shares of sectors in total Sources and Uses.

2.108 RBI prepares the Flow of Capital Funds data for the Indian economy. The data have been published in RBI Bulletins from 1967 to 1980. Generally, the articles that appear along with the data concentrate mainly on the technicalities of preparation of the accounts, such as the sources of data and

changes therein. if any, limitations and other problems of compilation of data. The format of presentation and sectorization have remained consistent from 1967 to 1980.

2.109 The object of the present study is the analysis of the structure of Flow of Capital Funds in India. The analysis of the structure is undertaken from the angle of Instrument-wise Flows and the structure of inter-sectoral Flow of Capital Funds.

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