

INTEGRATION OF NATIONAL ACCOUNTS WITH FLOW OF FUNDS ACCOUNTS

RECENT development in the field of social accounting to integrate national accounts with flow of funds accounts is oriented to accomplish, good many objectives, which national accounts, independently, are unable to achieve. National accounts focus on end results (i.e., consumption, saving, investment, national income, etc.) and give incomplete description of the methods of financing purchases of different sectors of an economy. By eclipsing financing transactions, national accounts ignore the methods of channeling households' and others' savings to be used as external finance. The integration with flow of funds accounts would not only remove these defects from national accounts but also reflect choices, at different levels, among various types of assets (i.e., various ways of 'using' the funds) and liabilities (i.e., sources of funds). Moreover, the integrated accounts would enable us to identify the sector origin of expansionary and contractionary forces in the economy. For instance, if the enterprise sector invests more than its capacity to finance internally, it has to resort to the method of external finance. If it is unable to tap resources from the non-financial sector in amount sufficient to cope with its requirements, the sector can fill up the gap either by decreasing its holdings of money, quasi-money or by borrowing from the financing sector

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by way of loans from and sales of claims to it. This excess of investment over saving in the enterprise sector augments income of households, which if not saved, leads to demand for commodities and, if goes unmatched by the increase in output, leads to inflationary conditions. Several monetary and fiscal policies can be devised to curb inflation and their impact reflected in the integrated accounts through their influence on saving and investment. A connected argument in favour of integrated accounts is that they give useful information of the sources of financing a development programme by providing data on saving and the form it assumes and the amount of borrowing with sector identification. This information is useful in answering the questions on how much borrowing is necessary and where should this borrowing take place to finance a development plan or project. Further, as Earl Hicks[1] points out, "Investment as measured in the income accounts is not a wholly satisfactory measure of the investment variable of income analysis; and the income accounts omit entirely data on money and other financial assets, which are variable that play roles in the income analysis as necessary as those of saving and investment. . . . The need for integrated income and financing accounts is the need to provide a single set of data that will include measurements of income, savings, investments, money and other financial assets in the form in which the effects on income and autonomous changes in any of the last four can be analyzed

METHODOLOGY

The present paper is an attempt to integrate 'A System of National Accounts' (S.N.A.) as recommended by United Nations without capital reconciliation accounts', with flow of funds accounts [2] Such an attempt can be based on either of the two approaches. First, an integrated system may be comprehensive one which, if condensed provides the national accounting aggregates, on one hand, and data on the sources and uses of funds, on the other. Secondly, it may be highly in consolidated form and may be elaborated by suitable disaggregation to obtain end results along with the 'funds' statement. We shall prepare a framework which is susceptible to deconsolidation according to the availability of data and to furnish the information for the desired va-

riables to cope with problems at hand. Any attempt at such an integration is marred by various obstacles, which we shall tackle first before we present an articulated set of integrated accounts.

PROBLEMS

PROBLEM OF SECTORING

A good discussion on the problems faced while preparing an integrated accounting structure is initiated by S.J. Sigel [3] and Graem S. Dorrance [4, 5 and 6]. Most of the problems stem from differences in orientation of the system— i.e., with respect to the general aspects of the economy on which the system focus and the general analytical purposes for which they are appropriate. [7] National accounts are designed to measure total product generated in the economy and its disbursement into saving, consumption and investment, while flow of funds accounts are oriented to measure financial transactions taking place in the economy. The first problem which is the outcome of differences in orientations, according to some authors, is that of determining the common basis of sectoring an economy. For, flow of funds accounts are based on 'institutional' sectoring while national accounts use 'functional' sectoring. Views of economist differ on the basis of sectoring, which is useful and feasible for an integrated set of accounts. A majority of economists [8, 9 and 10] strongly plead for institutional sectoring. George Jaszi [11], however, affirms the possibility of constructing integrated accounts on the functional basis. Kurabayashi [12] goes a step further and reveals his preference for functional classification over institutional one. In a recent study, B. Horvat[13] resorts to institutional sectoring and in vain tries to show similarity between the sectoring of S.N.A. (based on functional classification and that of his own integrated accounts).

We have, in our paper, adopted the functional basis of sectoring because of the following reasons: First, since we are extending S.N.A. to include financial transactions also, it is appropriate to adopt the same sectoring on which S.N.A. is based. Secondly, even if we adopt institutional sectoring the results may not be satisfactory for the analysis of economic behaviour; for, too many heterogeneous things may

be grouped together. Thirdly, in order to obtain national accounting aggregates, when we adopt institutional sectoring, we have to draw activity accounts like that of Sigel [14] and Rampersad [15]. Finally, the functional sectoring is also amenable to further extension of S.N.A. to incorporate information of inputs and outputs.

FORM OF ACCOUNTING STRUCTURE

The second problem is to determine the form of accounts. By introducing an account for financial intermediaries, which records financial transactions of all the sectors with it, we are able to make the form of accounting structure very simple. The surplus of any sector (let us say, Household) in the form of deposits is channelled to finance the excess investment (over saving) of the enterprise sector by financial intermediaries.

Seven accounts, consequently, are required for an integrated structure six of them being S.N.A. accounts namely, Domestic Product Account, National Income Account, Domestic Capital Formation Account, Households and Private Non-Profit Institutions Account, General Government Account and the Rest of the World Account; and, an additional Financial Intermediaries Account. However, we shall not make a distinction between 'current' and 'capital' reconciliation' accounts which, in fact is the distinction between current and capital transfers. First, because, the distinction between current and capital transfers is arbitrary and it is very difficult to identify them as current and capital irrespective of whether they flow from one domestic sector to another or from domestic sector to a foreign one. Secondly, transfers are, in general, treated as a charge against current revenue and are seldom, if ever brought to account, in normal practice, in a balance-sheet [16]. Lastly, the reason of simplicity also demands the treatment of all transfers as current ones. Billington voices strongly against making such distinction and hopes that in the long run, with the development of the national balance-sheet and the integration of the financial flows analysis into national accounts, it is more than likely that this purely arbitrary distinction will fall away[17].

The form of the accounting framework can be systematically represen-

ted by the following diagram:

SECTORS ACCOUNTS	ENTERPRISE	HOUSEHOLDS	GENERAL GOVERNMENT	REST OF THE WORLD
PRODUCTION	1			
APPRO- PRIATION	2	3	4	5
SAVING & INVESTMENT	6			
FINANCIAL INTERMEDIA- RIES	7			

DOUBLE VS. QUADRUPLE ENTRY SYSTEM

Flow of fund accounts which are based on quadruple entry system, some economists believe, are irreconcilable with national accounts which are based on double-entry system (or double and single entry systems respectively in Sigel's terminology). Limitations of scope of the paper do not allow us to highlight the controversy [18, 19, & 20] on the use of the terms. However, the problem, as it is, is not intractable. For, the same set of accounts are amenable to both the principles of recording transactions. For instance, the introduction of financial transactions in the domestic product account of S.N.A. would automatically result in recording each transaction twice in the same account. Payment for any purchase can be made by reducing any asset, whether money or real, and thus, causes two transactions—one on debit and another on credit side of the same account; and four transactions for the economy as a whole. However, the accounts which remain unaffected by the introduction of funds' statement would

continue to be recorded on the so called double entry system in which each transaction is recorded once in the account and twice in the accounting system as a whole. Hence for an integrated system of accounts, double entry method is used for the accounts unaffected by such integration and quadruple entry for the accounts recording financial transactions also.

ACCRUAL VS. CASH

Graem S. Dorrance casts doubt and expresses his belief that the serious bottleneck in the way of integration of national accounts with flow of funds accounts is the treatment of transactions on the accrual basis (in the former) versus cash basis (in the latter). To quote him "...national income accounts are accrual accounts. Financial accounts, and particularly those recording money holdings are records of changes in asset and liability holdings and consequently usually are records of completed payments including payment made by transfer of acceptable debt obligations"[21].

Morris Copeland, however, conceives the problem as simple conceptually. Because the distinction between recording transactions on accrual basis and recording them on cash basis is one of degree and there has been a tendency toward moving the money flows accounts further in the accrual direction. Changes of this sort do not seem to hamper money flows analysis [22].

When we come to the application of the principles of accrual and cash, we cannot stick to any particular rule. What is considered simple conceptually may prove to be more difficult in actuality. Both the national accounts and the flow of funds accounts record transactions, with varying degree, on both the bases. Generalization can, however, be done by a simple qualitative statement that all transactions should be recorded, depending on the convenience, only on either of the two bases. There is no prima facie reason for selection of one principle and rejection of the other. Since there is a tendency, now-a-days, to record transactions on the accrual basis, and since we are linking flow of funds accounts with national accounts, which largely record transactions on the accrual basis, efforts should be made to record statistics on the accrual basis. Moreover, it would also avoid the problem of treating float in the accounts to a large extent[23].

TRANSACTION COVERAGE RECORDING PROBLEMS

What would be the coverage of each sector or more precisely, the integrated accounts of these sectors? They include transactions in goods and services including imputed ones shown in national accounts together with transactions in money and credit recorded in flow of funds accounts. The different treatments of same transactions in the two accounting systems however, present some difficulties in bringing them together in one accounting structure. For example, all housing is reported to be in the business investment in the national accounts, whereas some housing appears in the consumer sector in the flow of funds accounts. The attempt to treat this transaction with household sector by Sigel[24] and Rampersad [25] is criticized by Ruggles [26], according to whom, "there is no sense in including owner-occupied housing in the consumer sector, thus separating it from other housing in the enterprise sector." We have in our integrated accounts, treated all housing in the enterprise sector. For parity of reasons domestic servants are included in the enterprise sector and not in the household sector as flow of funds accounts record.

Other problems in the treatment of transactions arise partly because of sectoring differences and partly because of cash versus accrual principle. These problems can be handled efficiently by adopting the procedure we have discussed above.

Still a minor problem remains to be tackled. The left hand side of the national accounting entries are termed as debit (S.N.A.) payable [27] or allocation [28] while the right hand side entries are termed as credit, receivable or sources. The use of these terms leads to inconsistency in the integrated accounts. In the national accounts, for example, investment, recorded on the receivable side, stands in contrast with its recording in the 'uses' of funds in the flow-of-funds accounts. Similarly, on the left hand side of the account, compensation of employees and taxes do not stand in agreement with the 'sources' of funds in the flow of funds accounts. Confusion arises when the same items e.g., indirect taxes and investment expenditure, recorded on the 'use' side in the flow of funds accounts are recorded on the debit and credit side respectively, in the national accounts. These problems of treating transactions can be side-stepped if we use the terms changes in liabilities (for the left hand side of the accounts) and changes in assets,

irrespective of whether they are financial or real, figure on the asset side (right hand side) of the accounts.

ACCOUNTS

(SEVEN ACCOUNTS)

The integration of flow of funds accounts with national accounts (S.N.A.) does not affect national income, general government and saving and investment accounts. Since national income account records reward for the factors of production for their contribution to total product generated at home or abroad, purely financial transactions do not figure in this account. Similarly, the saving and investment account records only real flows and hence, remains unaffected by integration. However, if we follow an alternative treatment by recognising financial intermediaries as a part of saving and investment account, and not a separate account, financial transactions do figure in this account. But nothing would be gained by this alternative treatment. On the contrary, real saving and investment would be difficult to derive from it.

Analogously, there are two alternative ways of treating government. One way is to include government financial transactions in the government account, and the other, to include them in the financial intermediaries' account. Adoption of the functional criteria would make it desirable to include financial activities of the government, which are performed by the government treasury or by the central bank, in the financial intermediarie's account.

The domestic product account records changes in liabilities on the left hand side and changes in assets on the right hand side. The account is divided into two parts— one records real flows, and the other, purely financial ones— in order to derive national accounting aggregates and the sources and uses of funds. However, there are two items, i.e., internal finance, which is the sum of provision for the consumption of fixed capital and saving of corporations (1.2 and 3.3 respectively), and domestic real investment, which is the sum of gross domestic fixed capital formation and increase in stocks, which are mere duplications. This duplication can be avoided by an item 'net financial deficit'. Nevertheless, this duplication is desirable on the ground of usefulness of the information that it provides. Moreover, there will not be any

statistical difficulty in getting the totals because they do not require any additional information.

The household account is shown to use its saving either by depositing with the financial institutions, purchasing of government securities and shares of corporations or by increasing the holding of money.

Financial intermediaries account, conforming to our objective of building a skeleton account which can be deconsolidated to any extent depending upon the purpose and the availability of data, is presented in highly aggregated form. The account can be deconsolidated institutionally to provide information about the impact of government financial transactions on the economy, the form in which saving is available with various institutions, the role of financial intermediaries in the production process, etc. The deconsolidation of this account in the following institutions would be useful :

- (a) Central bank and other government financial institutions.
- (c) Insurance and pensions
- (d) Saving institutions
- (e) Other financial institutions.

Transactions are also recorded in aggregated form and can be fruitfully deconsolidated according to their liquidity; e.g., into (a) money (currency and demand deposits), (b) quasi-money (deposits up to one year and reserve funds of corporations) and (c) time deposits beyond one year (also, reserve funds beyond one year.) Apart from deconsolidating transactions, many additional transactions can be recorded, as for instance, transactions in gold and treasury currency with the rest of the world, without affecting the form of the accounting structure.

CONCLUDING REMARKS

In an attempt to integrate national accounts with flow of funds accounts in this article, a more comprehensive picture of the economy that would cover also input-output tables is kept in view. The methodology which is adopted here to tackle many problems is oriented to accomplish the objective of preparing an omnibus frame of social accounts. However, in view of the scope of the paper we confined ourselves only to partial integration of flow of funds accounts and national accounts. Moreover, the articulated integrated accounts pre-

sented here leave room for further disaggregation of various items depending upon the problems at hand.

REFERENCES

- [1] Earl Hicks: The Theory and Use of Financing Accounts, Staff Paper (I.M.F.) 1959-pp. 159.
- [2] Reasons for dropping capital reconciliation accounts are discussed later.
- [3] S.J. Sigel: A Comparison of the Structures of Three Social Accounting Systems, Input-Output Analysis, National Bureau of Economic Res., Vol. 18.
- [4] Dorrance: Financial Accounts in Countries other than United States and Canada; N.B.E.R., Vol. 26.
- [5] — : The Present Status of Financial Accounts, I.A.R.I.W. Income and Wealth Series IX (Bowes & Bowes)
- [6] — : Financial Accounts; Staff Paper (I.M.F.) July 1966; pp. 198-228.
- [7] S.J. Sigel: A comparison of the Structures of Three Social Accounting Systems; *op. cit.* 256.
- [8] Copeland : Feasibility of A Standard System, N.B.E.R. Vol. 20, pp. 64.
- [9] S.J. Sigel : A Progress Report, N.B.E.R., Vol. 26
- [10] Frank B. Rampersad: Integrated System of Real and Financial Accounts; Social & Economic Studies; June 1962 pp. 128-156.
- [11] George Jaszi: Comment on Paper Written by Copeland, N.B.E.R. Vo. 20.
- [12] Kurabayashi: Some Aspects of Integrated National Economic Accounts; Hitotsubashi Journal of Economics, Oct. 1962, pp. 83-102.
- [13] B. Horvat: An Integrated System of Social Accounts of Yugoslavia; Review of Income & Wealth, Mar. 1968.
- [14] Sigel : A Progress Report N.B.E.R. Vol. 26.
- [15] Rampersad: Integrated System of Real and Financial Accounts; *op. cit.*
- [16] Billington : A Minimum System of National Accounts, African Studies in Income & Wealth, pp. 19.
- [17] Billington: A Minimum System of National Accounts, African Studies in Income & Wealth, pp. 19.
- [18] Sigel: Three Social Accounting Systems, *op. cit.* pp. 260.
- [19] Copeland : Comment on the Sigel's paper (Vol. 18).
- [20] Sigel: A Progress Report, *op. cit.* pp. 26, 27 & 29.
- [21] Dorrance: Financial Accounts in System of Economic Accounts; Staff Papers, Feb., 1955.
- [22] Copeland : Feasibility of A Standard System, N.B.E.R. Vol. 20, pp. 63.
- [23] Problems connected with the treatment of float are discussed by George Garvy; the Float in the Flow of Funds Accounts and, in The Canadian National Transactions Accounts by Handfield — Jones, N.B.E.R., Vol. 26.
- [24] Sigel : N.B.E.R. Vol. 26 *op. cit.*
- [25] Rampersad : Integrated System of Real and Financial Accounts; *op. cit.*
- [26] Ruggles: Comment on paper by Sigel, N.B.E.R., Vol. 26, pp. 94.
- [27] P. L. Arya: National Income & Social Accounting
- [28] Ruggles and Ruggles: National Income Accounts and Income Analysis.

*Account 1.***DOMESTIC PRODUCTION***Change in Liabilities**Change in Assets*

1·1 Net domestic product at factor cost (2·9)	1·7 Private consumption expenditure (4·1)
1·2 Provisions for domestic fixed capital consumption (3·6)	1·8 General government consumption expenditure (5·1)
1·3 Indirect taxes (5·8)	1·9 Gross domestic fixed capital formation (3·1)
1·4 Less subsidies (5·2)	1·10 Increase in stocks (3·2)
	1·11 Exports of goods and services (7·1)
	1·12 Less Imports of goods and services (7·4)

<i>Gross domestic product at market price</i>	<i>Expenditure on gross domestic product</i>
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1·5 Internal finance	1·13 Domestic real investment
1·6 External finance	1·14 Money (currency and demand deposits) (6·1a)
(a) Sale of securities to households (4·14)	1·15 Time deposits (6·2)
(b) Short-term bank loans (6·4)	1·16 Government securities (6·3a)
(c) Investment loans from financial institutions (6·5)	

Total sources of capital funds	Total gross capital formation
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Account 2

NATIONAL INCOME

<i>Change in Liabilities</i>	<i>Change in Assets</i>
2·1 Compensation of employees (4·7)	2·9 Net domestic product at factor cost (1·1)
2·2 Income from un-incorporated enterprises (4·8)	2·10 Net factor income from the rest of the world (7·2)
2·3 Income from property (4·9)	
2·4 Saving of corporation (3·3)	
2·5 Direct taxes on corporations (5·9)	
2·6 General government income from property and entrepreneurship (5·6)	
2·7 Less interest on public debt (5·7)	
2·8 Less interest on consumers debt (4·2)	
National income	Net national product at factor cost.

Account 3

SAVING & INVESTMENT

<i>Change in Liabilities</i>	<i>Change in Assets</i>
3·1 Gross domestic fixed capital formation (1·9)	3·3 Saving of corporations (2·4)
3·2 Increase in stocks (1·10)	3·4 Saving of government (5·5)
	3·5 Saving of households (4·6)
	3·6 Provisions for fixed capital consumption (1·2)
	3·7 Net borrowing from the rest of the world (7·6)
Gross domestic capital formation	Finance of gross domestic capital formation

*Account 4***HOUSEHOLDS & PRIVATE NON-PROFIT INSTITUTIONS**

<i>Change in Liabilities</i>	<i>Change in Assets</i>
4.1 Consumption expenditure (1.7)	4.7 Compensation of employees (2.1)
4.2 Interest on consumer's debt (2.8)	4.8 Income from un-incorporated enterprises (2.2)
4.3 Direct taxes (5.10)	4.9 Income from property (2.3)
4.4 Other transfers to general government (5.11)	4.10 Transfers from general government (5.3)
4.5 Transfers to the rest of the world (7.5)	4.11 Transfers from the rest of the world (7.3)
4.6 Saving (3.5)	
Disposal of income	Income of households and private non-profit institutions
	4.12 Deposits with financial institutions (6.2B)
	4.13 Purchase of government securities (6.3B)
	4.14 Shares of corporation (1.6a)
	4.15 Money (6.1 B)
Saving	Uses of Saving

*Account 5***GENERAL GOVERNMENT**

<i>Change in Liabilities</i>	<i>Change in Assets</i>
5.1 Consumption expenditure (1.8)	5.6 Income from property & entrepreneurship (2.6)
5.2 Subsidies (1.4)	5.7 Less interest on public debt (2.7)
5.3 Transfers to households (4.10)	5.8 Indirect taxes (1.3)
5.4 Transfers to rest of the world (7.5)	5.9 Direct taxes on corporation (2.5)
5.5 Saving (3.4)	5.10 Direct taxes on households (4.3)
	5.11 Other transfers from households (4.4)
	5.12 Transfers from the rest of the world (7.3)
Allocation of income	General government income

Account 6

FINANCIAL INTERMEDIARIES

Change in Liabilities

Change in Assets

- | | |
|---|--|
| <p>6.1 Money (currency & demand deposits)</p> <p>(a) held by enterprises (1.14)</p> <p>(b) held by households (4.15)</p> <p>6.2 Time deposits (1.15)</p> <p>(a) enterprises</p> <p>(b) households (4.12)</p> <p>6.3 Purchase of government securities
by</p> <p>(a) enterprises (1.16)</p> <p>(b) households (4.13)</p> | <p>6.4 Short term bank loans (1.6B)</p> <p>6.5 Investment loans (1.6C)</p> |
|---|--|

Change in Liabilities

Change in Assets

Account 7

REST OF THE WORLD

- | | |
|--|---|
| <p>7.1 Exports of goods and services (1.11)</p> <p>7.2 Net factor income from the rest of
the world (2.10)</p> <p>7.3 Transfers from rest of the world
(4.11+5.12)</p> | <p>7.4 Imports of goods and services (1.12)</p> <p>7.5 Transfers to the rest of the world
(4.5 + 5.4)</p> <p>7.6 Net borrowing from the rest of the world
(3.7)</p> |
|--|---|

Total Receipts

Disbursements