ISSN 1677-4205

BANCO CENTRAL DO BRASIL

Banco Central do Brasil Technical Notes

Number 4

November 2001

Flows-of-Funds Table (FFT): Definition and Conciliation of Financial Account

Samuel Bracarense Costa

ISSN 1677-4205
CGC 00.038.166/0001-05

Banco Central do Brasil Technical Notes	Brasília	no. 4	Nov	2001	P. 1 - 30

Banco Central do Brasil Technical Notes

The views expressed in this work are the author(s) opinions only and do not reflect the ones of the Banco Central do Brasil, except in what relates to methodological notes.

Coordination:

Economic Department (Depec)
E-mail: depec@bcb.gov.br

General Control of Subscriptions

Banco Central do Brasil
Demap/Disud/Subip
SBS - Quadra 3 - Bloco B - Edifício-Sede - 2° Subsolo
Caixa Postal 8670
70074-900 - Brasília (DF)
Telephone (5561) 414-3165
Fax (5561) 414-1359

Statistical conventions:

... Data unknown.
- Null data or an indication that the corresponding item does not exist.
0 ou **0,0** figure smaller than half the value of the last digit to the right.
* preliminary data.

An hyphen (-) between years (1970-1975) indicates the total of years, including the first and the last. A slash (/) between years indicates the yearly average of such years, including the first and the last, or harvest-year or agreement-year, according to the text.

Any discrepancy between data and totals or percentage variations are due to rounding.

The sources for tables and graphs prepared by the Banco Central itself are not mentioned.

Banco Central do Brasil Information Center

Address: Secre/Surel/Dinfo
Edifício-Sede, 2º subsolo
SBS - Quadra 3, Zona Central
70074-900 - Brasília (DF)
Internet: http://www.bcb.gov.br
E-mail: cap.secre@bcb.gov.br

Telephones: (5561) 414 (....) 2401, 2402, 2403, 2404, 2405, 2406
Toll-free: 0800 992345 (just in the country)
Fax: (5561) 321 9453

Foreword

The institutionalization of the Banco Central do Brasil Technical Notes, conducted by the Economic Department, promotes the dissemination of works featuring economic content, attracting both theoretical and methodological interest, giving a view of the short-term developments of the economy and reflecting the work of the Bank's employees in all areas of action. Besides, other works, though external to the Banco Central, may be included in this series provided the Bank has afforded institutional support to their preparation.

Flow-of-Funds Table (FFT): Definition and Conciliation of Financial Accounts

MÁRCIO SILVA DE ARAÚJO

Abstract: the building of financial accounts as a database for economic analysis started developing differently from traditional national accounts. The improvement of the system of accounts enabled to couple this statistic tool to the so-called Integrated Economic Accounts. This incorporation provides a clearer view of the ties between the real and the financial sectors of the economy. Thus, the definition of what is understood by Flow-of-Funds Table, in the System of National Accounts, enables us to incorporate into one single and more comprehensive accounting system financial and non-financial analyses of the economy. The United Nations (UN) and others completed the process of methodological conciliation of different accounting systems with the publication of the System of National Accounts (SNA), in 1993. This attempt to conciliate with other international statistic systems was more significant than those of previous versions, indicating a path or attunement of aims by different statistics-producing agents. In this direction, one identifies issues of methodological nature when dealing with the case of financial accounts. In the Brazilian case, one can see that we are still working to incorporate financial accounting to the system advocated by the United Nations.

Summary

Flow-of-Funds Table (FFT): Definition and Conciliation of Financial Accounts[1]

MÁRCIO SILVA DE ARAÚJO[2]

1. Introduction

The use of national accounting by economic researchers is generally associated to Keynes and his most known text The General Theory of Employment, Interest and Money[3]. However, it was in his book How to Pay for the War that Keynes explains more clearly a structure that would be developed in the period before the first version of the United Nations System of National Accounts[4]. The Keynesian view of the economy operation was a strong influence on the subsequent development of accounting systems.

The structure of national economies changed in the period of twenty-five years following the publication of the penultimate version of the SNA, in 1968. Together with this change, new problems became incorporated to the economic policy of different countries. As examples, one may take inflation becoming a central policy issue; and the change of the governments' role, particularly in countries that underwent a transition to a market economy. Simultaneously, activities in the service sector became increasingly important, mainly those related to the areas of communication and data processing. Financial institutions and markets also became more sophisticated, with the increase of financial instruments in number and complexity.

The idea of accounting in the form of Flow-of-Funds Table (FFT) is rooted in the concern with monetary policy and credit mechanisms after the World War II. A system of flow of funds was necessary to complete the information of the real sector of the United States economy. In this context, the pioneer work by Copeland (1947) showed the development of the funding standard for the U.S. economy in the period from 1936 to 1942, and served as a basis for the Table that would be subsequently used in that country[5].

Though, from a historical point of view, accounting of the flow of funds had an origin different from the calculations of national income and product, this distinction became blurred with time. The SNA stressed the treatment of financial operations in the economy, weakly consistent at the beginning, as in its first official version, in 1953, and later in a more explicit way, as in its subsequent versions and revisions[6].

1/ I extend my thanks to Professor Fernando Carlos Greenhalgh de Cerqueira Leite for his comments and suggestions, indispensable for the development of this work. Naturally, the author remains fully responsible for any errors that may remain in this paper. Besides, the issues addressed along the text do not reflect necessarily the viewpoints of the Central Bank of Brazil.

2/ Economist of the Central Bank Research Department (Depep).

3/ The General Theory of Employment, Interest and Money (KEYNES, J.M., 1936).

4/ The reference "How to Pay for the War" (KEYNES, J.M., 1940) is widely discussed in NUNES, E.P. (1998), who shows as the use by Keynes of the double entry bookkeeping was more effective than the traditional national income calculations. Meade and Stone subsequently develop this bookkeeping system in 1941.

5/ Another reference to be mentioned is COPELAND, M.A. (1952).

6/ The 1968 and 1993 versions came to represent the institutions' financial accounts, so that the treatment of the accounting systems ceased to be just a double-entry system and changed into a of foursome-entry system (NUNES, E.P., 1998).

The development of financial accounting in SNA, with the definition of the FFT in the new system, is associated to the methodological discussion on the building of the system. On the background, one has a path of conciliation that seeks to bring into line the different methodologies for calculating social and economic data.

Along this process of building the SNA, one can see a convergence of three distinct paths of statistic systems: systems associated to national accounting; accounting prepared under the recommendations of the International Monetary Fund (IMF); and Flow of Funds and Input-Output Tables (IOT). In general, one notices that national accounts of more advanced countries, and regional systems, converge towards one single system: the 1993 SNA. The FFT comes to be a part of the Integrated Economic Accounts, which include the Real accounts, while the IOM is brought to the context of Sources and Uses Accounts[7].

In the Brazilian case, an attempt was made to follow the methodological developments that took place in high-end countries. We can anticipate, in the case of financial accounts, that room will be made for their integration to what is proposed by the 1993 SNA.

In order to introduce this discussion, this article was divided into five topics, including this introduction and the final considerations.

Item 2 seeks to define the FFT in the context of the accounting system suggested by the United Nations, providing support for future analyses based on this sort of information. The background of this process is initially described, giving the inception of FFT in the 1968 SNA. Although that version of SNA incorporated the main elements in the definition of what is currently understood as FFT, it has its final version in the 1993 SNA. This last version introduces other forms of arranging the system, with suggestions for the definition of instruments and sectors, and a range of alternatives that is likely to meet any sort of theoretical framing of the data exhibited. Understanding the possible uses of the instrument becomes clearer when one introduces an example of the financial account.

Item 3 describes methodological considerations incorporated to the FFT, resulting from some points of the discussion. Though such points of discussion were restricted to financial accounts, we may identify questions that are common to other parts of the accounting system. The avenue to arrive to the model proposed in the 1993 SNA reached those questions, which may not be forgotten when analyzing the information given. By analyzing the path for harmonizing the different systems of national accounting, we manage to understand the difficulty in integrating them. Emphasis is given to financial accounts, with the idea that we are treading the ground towards an internationally standardized system, enabling compatibility with information published and disseminated all over the world.

Item 4 pursues to disclose the Brazilian situation in the process of systems' development and conciliation, with emphasis to the role played by the main actors when one deals with financial accounts: the Central Bank of Brazil (Bacen) and the Brazilian Institute of Geography and Statistics (IBGE).

Under final considerations the main topics discussed in the text are reviewed.

7/ Other accounts also compose the so-called General Framework of the SNA, but those are the main ones.

2. Definition of the accounting instrument

The financial account has the specific function of showing by which financial instruments the ability to fund is employed or how the need for funds is satisfied. These values are identical in the final balance of non-financial accounts, in the capital account. The contraposition of the financial account balance is therefore made by the capital account.

The capital account is where the expenditures in gross formation of capital (investment) are set against domestic savings of each institutional sector, resulting in the identification of its funding ability (savings exceed investment) or borrowing requirements (otherwise). The block composed by the capital account, representing excess or not of expenditures in the formation of capital, and by the financial account, translating financial allocation of real funds through different instruments, define the flow-of-funds table[8]. This way one can explain the relation among savings, investments and financial flows for each institutional sector and, in an integrated fashion, for the whole economy.

2.1 – Background

The first version that is more similar to the current SNA appeared in 1939, under the auspices of the League of Nations. However, it was only in the 1953 SNA that one was able to identify the first hints of financial accounting records. In this system, financial accounts are not consolidated in one single table. One way of perceiving, at least in part, a process of flow-of-funds in the 1953 SNA was by seeing the system exhibiting sectoral surpluses that finance real investment. However, one fails to gather any information on the flow of financial assets and liabilities by which savings move along the financial system to identify with investment. That is to say that the monetary flows are not made available by a corresponding financial instrument, and do not exhibit a clear view of the financial side.

Besides, the 1953 SNA fails to identify financial instruments at the interface savings-investment. The account that at first sight seems to be an account of capital formation for the whole economy –displaying the domestic formation of capital with its methods of gathering funds – only assumes this characteristic once consolidated with the three reconciliation accounts (households, government, and rest-of-the-world). Since the reconciliation accounts had not been developed, the 1953 SNA is insufficient in terms of flow-of-fund analysis, since the flows, seen as financial assets and liabilities, are not identified (Dawson, 1991).

Two versions of this system were later published (1960 and 1964), both attempting to build a more comprehensive system.

In general, the 1968[9] SNA incorporated significant advancements, compared to the third edition of the 1953 SNA (UN, 1953). Such advancements include the possibility of:

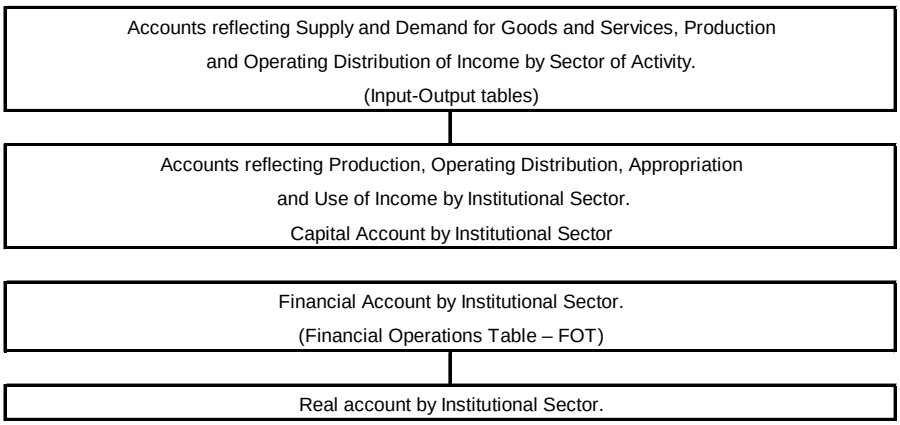
a) breaking down the production account in inflow and outflow accounts;
b) breaking down net loans or credits in flows by financial sectors;

8/ The Accumulation Accounts, that in general record acquisition and disposal of financial and non-financial assets and liabilities by institutional units, through operations or as a result of other events (UN, 1993).
9/ The reference for the first version is UN (1968).

c) breaking down income and expense accounts and capital accounts by institutional sectors;
d) considering the real accounts for sectors and for the nation as a whole.

In the 1968 SNA there is a central table formed by four blocks of accounts, linked among them. Within this table, a Financial Operation Table (FOT) is introduced, represented in the third group, that of financial accounts as shown in Figure 1. As we shall see, the accounts have the specific purpose of showing how ability to finance is employed or borrowing requirements are met.

Figure 1. 1968 SNA: full system.



The links among blocks of accounts in the 1968 SNA tales place differently from what happens in the 1953 version. In the 1968 SNA, the links shall be understood as an accounting matrix, the balance being made by totals (total funds and uses for each type of transaction and account). Under the financial viewpoint, the 1968 system exhibits two advancements when compared with that of 1953: first, the opening of the financial and capital account enabled to show funds and uses by institutional sector. This means that these accounts contained the details of net sectoral change in liabilities and net acquisition of financial assets, as well as savings (income and expenditure), and capital formation by sector. Besides, these financial flows were defined and classified for the first time, leaving behind their previous residual character. Such data enabled a more useful and direct analysis on how a sector was funded and how it contributed to the funding of other sectors.

The second advancement resided in the separation of the financial from other domestic sectors. This became necessary for a pertinent analysis of financial flows, given the relevance of transactions performed by financial intermediaries (central bank, commercial banks, among others) in both developed and developing countries.

The 1993 SNA maintains the FOT as it was in the 1968 SNA. Table 2, later on described, introduces an example of FOT applied to the Brazilian case. One may notice that columns keep representing the different institutional sectors: non-financial corporations, credit and loan-granting institution, insurance corporations, public administrations, households and the rest of the world. The different financial instruments, represented in the lines, correspond to the domestic and foreign money supply, non-monetary deposits, fixed income securities, variable income securities, loans and credits, commercial credits and technical provisions of insurances.

2.2 – Links between FFT and remaining accounts

As we have already seen, the main purpose of the flow-of-fund accounts is to facilitate an analysis on how the financial system operates, offering an interpretation of transactions performed in financial markets by different sectors of the economy, relating them to the behavior of agents on the real side of the economy.

Table 1 shows, under the form of a balance sheet, how the system introduced in Figure 1 unfolds. This table may be built for each institutional sector[10]. It is clear that each sector may be a creditor or a debtor according to its balance in the capital account, with the counterpart in the financial account. The latter enables to follow how the funds of surplus agents are transferred, by means of different financial instruments, to deficit agents. However, it fails to show the different creditors of one specific debtor and different debtors of a specific creditor. This will only be possible when introducing *qui-à-qui* (from whom and to whom)[11] tables, as we shall see.

Table 1. SNA: Sequence of institutional sectors' flow accounts.

	USES	FUNDS
	PRODUCTION ACCOUNT Intermediate consumption **Gross Value Added (GDP)**	Production
	INCOME ACCOUNT Final Consumption **Gross Savings**	**Gross Value Added (GDP)** (-Net Income Received from Abroad - net Unrequited Transfers = Available Gross National Income)
F L O W - O F - F U N D S T A B L E	CAPITAL ACCOUNT Gross Formation of Fixed Capital Inventory Changes **Ability to Grant Credit (+) Net Borrowing Requirements (-)**	**Gross Savings** (+ Current Transactions Balance [Foreign Savings] = Chances in Net Assets resulting from savings and capital transfers)
	FINANCIAL ACCOUNT (FOT) Asset Changes Foreign Money Supply Domestic money Supply Non-monetary Deposits Fixed Income Securities Variable Income Securities Loans and Credits Commercial Credits Insurance Technical Provisions	Liability Changes Foreign Money Supply Domestic money Supply Non-monetary Deposits Fixed Income Securities Variable Income Securities Loans and Credits Commercial Credits Insurance Technical Provisions **Ability to Grant Credit (+) Net Borrowing Requirements (-)**
	ASSETS CHANGE ACCOUNT Change in Non-Financial Assets . Produced Assets . Non-Produced Assets Change in Financial Assets	Change in Liabilities Changes in Net Assets . Changes in Net Assets resulting from savings and capital Transfers . Changes in Net Assets resulting from monetary restatement . Other

Source: Araújo (1998).

The financial flows shown in the FOT could be more openly displayed through three-dimensional FOT tables, also named *qui-à-qui* tables. In these tables, one spells out who is financing whom and by means of which financial instrument. This means that for each financial instrument one identifies the flows among creditor and debtor institutional sectors. One example of the *qui-à-qui* table is shown in Table 3.

10/ The format of Table 1 follows that one suggested by the 1993 SNA in its Central Structure, through the Integrated Economic Accounts comprising the Current Accounts (Production and Income), Accumulation Accounts (Financial and Capital) and Real Accounts.

11/ This a term used in France and later disseminated among the Brazilian financial accounts group at the technical visits following a cooperation agreement entered into between the two countries in 1987.

Totals of each *qui-à-qui* table correspond to lines of the FOT, both for credit and debit operations. The three-dimensional chart of financial operations comprises a certain number of sectoral relation tables, one for each type of financial instrument. As this arrangement is not necessarily useful for an effective representation of the picture, other forms may be preferable.

For example, a detailed classification of financial instruments coupled with a classification of sectors may be crossed twice with the classification of sectors in order to evidence, on the one hand, changes in debt positions of debtor sectors and, on the other, changes in credit position of creditor sectors.

Summarizing, when contrasted to the financial accounts shown in the Integrated Economic Accounts, this means introducing a distinction by sector in the classification position of financial instruments, whenever relevant.

The display in tables of financial asset and liability stocks is very useful to the financial analysis. As in the case for operations on financial instruments, these tables may simply evidence the position of assets and liabilities of different sectors without an indication of what is the creditor or debtor sector before the remaining sectors. Besides, in order to enable a better analysis, three-dimensional tables may be prepared showing the "from whom to whom" relation for each type of financial instrument. The appearance of such tables is exactly the same of that of financial flow operations, except that assets/liabilities replace the changes in assets/liabilities and the net financial position of each sector figures in place of its net ability to lending/borrowing requirements.

2.3 – An example with Brazilian institutional sectors[12]

In order to get a better grasp on the relationships of financial information among themselves and with the real side of the economy, an example is shown based on Tables 2 and 3. The figures are fictitious, though the methodological basis and the division in institutional sectors follow the procedures conducted in the Central Bank[13]. To make the table easier to understand, institutional sectors and financial instruments are recorded in an aggregate form.

First, one may notice that total borrowing requirements of households (NFF), insurance corporations (NFS) and financial institutions (NFIF), added to that of non-financial corporation (NFE), public administrations (NFG) and the rest of the world (NFRM), sum zero: NF = NFE + NFIF + NFS + NFG + NFF + NFRM = 0.

For the figures of the example: NFE= -2,030, NFIF= -175, NFS= 4,225, NFG= 7,130, NFF= -5.670, NFRM= -3,480, where the negative figures indicate different sectoral abilities to fund, one obtains, for the whole national economy, a borrowing requirement of $3,480, equal to the ability to fund the rest of the world. The $3,480 represent in net terms an increase in assets of the foreign sector, basically represented by the instrument F6 – Loans and Funding, that exhibited a net change of $4,650 (4,700-50).

12/ This section is based on the text by GOLDENSTEIN, S. (1997).

13/ The Central Bank is responsible for compiling the financial and foreign sectors data. In ARAÚJO, M.S. (1998) one finds a more detailed breakdown of the financial sectors and instruments for the Brazilian case.

Table 2. Table of Financial Operations: an example.

CHANGES IN FINANCIAL ASSETS							FINANCIAL	CHANGES IN FINANCIAL LIABILITIES						
S10	S20	S30	S40	S50	S60	Total	INSTRUMENTS	S10	S20	S30	S40	S50	S60	Total
0	750	0	0	0	-200	**550**	F1 – Foreign Money Supply	0	60	0	0	0	490	**550**
1.005	900	-10	150	5.000	80	**7.125**	F2– Domestic Money Supply	0	7.125	0	0	0	0	**7.125**
1.800	-235	25	-30	2.755	570	**4.885**	F3– Non-Monetary Deposits	1.500	3.155	0	260	0	-30	**4.885**
700	2.400	0	150	1.600	-500	**4.350**	F4– Fixed Income Securities	1.235	2.350	0	950	0	-185	**4.350**
4.500	1.800	40	0	2.430	1.300	**10.070**	F5 – Variable Income Securities	2.050	5.500	0	0	0	2.520	**10.070**
-200	14.500	60	40	0	4.700	**19.100**	F6– Loans and Funding	2.540	2.900	2.350	4.560	6.700	50	**19.100**
1.250	7.000	0	30	-15	600	**8.865**	F7– Trade Credits	-300	4.250	90	1.700	2.900	225	**8.865**
0	0	0	0	3.500	0	**3.500**	F8 – Insurance Technical Provisions	0	1.600	1.900	0	0	0	**3.500**
9.055	**27.115**	**115**	**340**	**15.270**	**6.550**	**58.445**	**Total**	**7.025**	**26.940**	**4.340**	**7.470**	**9.600**	**3.070**	**58.445**
					-3.480	**-3.480**	Ability to lend(+) Borrowing Requirements (-)	**2.030**	**175**	**-4.225**	**-7.130**	**5.670**		**-3.480**

Source: Goldenstein (1997).

Note: S10 – Non-Financial Corporations; S20 – Credit and Lending Institutions; S30 - Insurance Corporations; S40 – Public Administrations; S50 - Households; S60 - Rest-of–the-World.

One may see, besides, that the total of Domestic Money Supply (F2) increased $7,125, basically as a result of an increase of currency in circulation outside monetary sectors, where Households (S50) increased $5,000 and Non-Financial Corporations (S10) grew $1,005. One may see, besides, significant expansion in Loans and Funding (F6), by Loan and Credit Institutions (S20), of $14,500. Public Administrations (S40) experienced an increase in their liabilities of $7,470, mainly as a result of a $4,560 positive change in Loans and Funding (F6).

By using a more detailed FOT one would be able to monitor changes in the monetary base. Changes in monetary liabilities of the Central Bank and other monetary institutions correspond to changes in the money supply.

To illustrate the FOT as *qui-à-qui*, Table 3 displays, for the financial instrument Loans and Funding (F6), the flows between creditor and debtor sectors. The figures are compatible with those shown in Table 2. This way we may compare data of both tables and see that the totals of each column in Table 3 correspond to the figures shown in the line of instrument F6, on the left of Table 2. Symmetrically, the totals of each line of Table 3 are repeated in the line of the debtor position (change in liabilities) of the FOT related to the same instrument.

Table 3. *Qui-à-qui*: an example.
Financial Instrument F6 – Loans and Funding

	Creditor Sectors						
Debtor Sectors	S10 – Non-financial Corporations	S20 – Loan and Credit Institutions	S30 – Insurance Corporations	S40 - Public Administrations	S50 – Households	S60 – Rest of the World	Total
S10	0	2.510	30	0	0	0	2.540
S20	-200	0	0	40	0	3.060	2.900
S30	0	2.350	0	0	0	0	2.350
S40	0	4.560	0	0	0	0	4.560
S50	0	5.060	0	0	0	1.640	6.700
S60	0	20	30	0	0	0	50
Total	-200	14.500	60	40	0	4.700	

Based on Table 3, one has that the total flow of credits of the instrument Loans and Funding, performed by Sector S20 – Financial Institutions, is $14,500, of which $5,060 are channeled to sector S50 – Households. On the other hand, one may see that the same sector S20 received $3,060 from sector S60 – Rest of the World.

A FOT that takes into consideration the institutional configuration of the Brazilian Financial System may display the sector Credit and Lending Institutions (S20) as comprising the following sub-sectors: Central Bank, Banco do Brasil, Short-Term Financial System (Multiple Banks, Commercial Banks, Credit Cooperatives), Housing Financing System (Federal Savings Bank, State Savings Banks, and Real Estate Credit Societies), Development System (Development Banks, BNDES and Finame), Investment Banks, Credit, Financing and Investment Societies, Leasing Societies, Securities and Stocks Administration and Intermediation Systems (Brokers, Dealers, Investment Funds and Financial Ancillary Services) and Special Regime Corporations.

The procedure to build this sort of statistics takes as primary sources data from Cosif, the Accounting Plan of National Financial System Institutions, and the Central Bank General Accounting Plan (PGC). From balance sheets consolidated by sub-sectors of financial institutions, each accounting item of assets and liabilities shall be classified by financial instrument and sector of counterpart (the sector where the financial operation was performed). After a series of statistic treatments and crossing of information with the real side of the economy, the balance sheet data are transformed into national accounts, arriving to the FOT.

2.4 – Potential uses of FFT

The set of financial operations represented in the FOT is associated to accounts that, in the real side of the economy, reflect the production of goods and services and the distribution and use of income, through the balance of the capital account, for each institutional sector. The coherence that is established with this integration makes the FFT a statistical source superior to other known sources. Through it, it is possible to analyze the way in which the creation of money is channeled through the financial system and how money supply meets the demand for capitals.

Besides the basic purpose of supplying information for preparing the national accounting system, the following uses deserve mention among the set of possible applications:

a) source of data;
b) gathering of fixed technical coefficients;
c) short-term forecasts for financial flows;
d) source of middle and long-term economic planning;
e) analytical instrument for the monetary authority.

As a source of data, the table enables better visibility of the financial market structure and its relations with the remaining sectors of the economy. Besides, its construction, for needing greatly detailed basic information on financial transactions that occur throughout the economic system, requires a refined and qualified method of data collection, therefore contributing towards improving basic statistics in general and, especially, financial ones.

A second application is given by the possibility of establishing links between specific uses and certain sources of funding. Such links, obtained by calculating fixed technical coefficients, enable one to assess the degree of stability in the behavior of a certain institution or sector in the search for funds, that is to say, the relatively stable proportion that each source of funding represents in total credit sought.

Another application is the possibility of building short-term forecasts for financial flows. The idea of the FOT enables an articulation between the results obtained in the real side of the economy, involving product, income and expense, and those coming from the financial system activities, in particular its intermediation pattern. Here, short-term forecasts enable assessing the most probable implications of the main forecasts of monetary expansion, changes in liquidity and in interest rate levels. Naturally, a database more adequate for such type of forecast shall feature a smaller quarterly periodicity, for instance, which entails working with not-yet-consolidated data on the real side.

A fourth use is that of source of economic middle and long-term planning, such as a perception, for investments sought, of likely bottlenecks in funding sources.

Finally, in the area of the monetary authority, the FOT offers a wide picture of operations by enabling observation of main monetary and financial flows, being, therefore, a powerful tool in the formulation, management and assessment of monetary, credit and foreign exchange policies. The knowledge of the economic agents financial behavior and the distribution of financial assets among them permits better assessment of each of them in a context of changes in economic policy. As an example, an analysis of changes in portfolios of different financial institutions may work as an indicator not only of the direction that the interest rate may take, but also show in which way net remunerations of investments are affecting the distribution of funds among economic agents. Similarly, one may assess possible implications of monetary expansion, perform liquidity and sectoral equilibria analyses, and study the form in which the supply of capitals meets its demand.

The identification of monetary aggregates (M1, M2, M3, etc.) is not directly given by the FOT. An intermediate table is necessary, a *Tableau des Financements et des Placements* (TFP), to arrive to such aggregates. Even so, the FOT, depending on the details and quality of the information given, may represent, mainly to Government authorities, a powerful instrument of monetary and financial programming of great value for researchers and economic agents.

3. Methodological issues and conciliation of systems

The building of an accounting system incorporating financial flows arises, *per se*, different difficulties and questions. One may infer from that the difficulty of making compatible different accounting systems that carry such type of information. The case of financial accounts, with explicit methodological considerations, shall enable us to assess this avenue and the possible gains of following it.

On the other hand, if the SNA offers a common methodology making compatible the statistics of different countries, this does not imply that such countries are

able to supply the complete set of information encompassed by the system. Besides, the specificities of each economy may make the emphasis on the form of introducing the different flows to occur in different ways.

When assessing the questions involved in the development of financial accounting, one may have an idea of the difficulty found in assembling a system incorporating not only financial accounts, but also other components of the system, particularly considering the need for conciliation. The process of revising the 1968 SNA operates as a case study that helps explain such process.

The incorporation of a system such as that of the IMF into a more general system is present in this discussion, and the main characteristics of such integration will be analyzed. It becomes clear that this type of dilemma is also present in Brazil, with IBGE seeking to follow the SNA standard, while the Central Bank adopts the methodology proposed in the IMF accounting framework.

3.1 – Identifying issues

Referring to the methodological development of the FFT, one may list some of the issues that affect this process. One must bear in mind that the option for one approach or another implies greater or smaller construction costs of the statistics base. Among the issues in doubt, one may mention:

a) whether or not to adopt a priori theoretical model in preparing the financial account;
b) issues associated to the valuation of financial assets;
c) whether to treat the flows as net or gross;
d) choice of sectors made;
e) types of financial instruments considered.

The form of treatment and display of financial data is not conditioned solely to the optimal form for its use, no matter what is the theoretical approach used. The practical feasibility in obtaining the FFT shall also be taken into account, especially when one wishes the system to be highly detailed. This is a background question that is always present in all points mentioned above.

Focusing on the first question raised, Neuhaus (1977) noticed, from a survey on financial account studies in various countries, the existence of two types of matrices: "open" matrices, in which a link with any other financial model or theory is not used, where data are grouped into two categories; and "pre-conditioned" matrices, where the financial accounting is either made based on explicit theoretical assumptions or channeled towards analyzing specific economic issues.

Another question focus on the valuation of financial assets. This results from the fact that certain assets may be recorded in different ways, considering the viewpoint of either the holding or the issuing sector. Discrepancies are thus generated in the accounting records of such flows measured based on stocks[14].

14/ There are no main problems for flows directly observable in the market – they shall be recorded at the value in which they were transacted.

The timing in which a transaction is recorded is an element prone to generate discrepancies in the recording among sectors issuing and holding of assets. This category includes: (i) float elements, that is to say, synchronic differences in the launching of an operation that, in principle, will be recorded by the same value by both, creditor and debtor; (ii) differences in approach among transactions pertinent to national accounts, recorded on an accrual basis, and financial transactions recorded on a cash basis.

Another point of controversy relates to the treatment of flows as either gross or net. Transactions in financial assets and liabilities over an accounting period may be recorded in different shades of "netness". One may favor gross flows where acquisitions and disposals of each financial assets, and issues and redemptions of each obligation, by economic unit, are shown.

The choice of sectors in which to break down is another issue for doubts. The homogeneity of transactions that integrate each sector is, in general, the main criterion. However, one intends to preserve the greater degree of compatibility between the breaking down in sectors of the FFT and the national accounts, enabling an integration between real and financial flows.

Another fundamental principle of breaking down by sectors is that the assets under a single control shall not be separated among two or more sectors. This is the case, for instance, of family corporations and agricultural entities, in which such principle conflicts with that of homogeneity. The problem is overcome by the use of conventions such as, for instance, including family corporations in the household sector, though sacrificing conceptual accuracy. In the 1993 SNA, for instance, a division is made of the so-called Financial Societies into six groups (UN, 1993):

a) Central Bank;
b) other deposit societies;
   b.1) monetary deposit;
   b.2) others;
c) other inter-financial intermediaries;
d) financial assistance entities;
e) insurance societies and pension funds.

The classification of financial instruments included in the FFT shall also obey the general criteria, especially regarding homogeneity and importance of transactions included in each item. Under the homogeneity criterion, one uses to place together assets that are similar in liquidity, maturity term, issuing sector, object of financing, listing in stock exchange or otherwise, voluntary or mandatory subscription, etc. In practice, the classification of instruments is somewhat arbitrary to the extent that some of the criteria mentioned above are loose, and that a certain asset may be a potential candidate for inclusion in more than one table line.

The degree of openness of the table and how it is displayed may be subject to a wide range of points of discordance, from those that advocate a greater degree of details to those that, pragmatically, may prefer to make the table gradually feasible. A theoretical approach that requires a compatible methodological treatment shall show a strong appeal in order to justify the associated costs.

Even with different criteria and approaches, associated to the form of treatment dispensed to certain points analyzed above, the statistic systems possess a path of conciliation, as we shall see below.

3.2 – The revision of the 1968 SNA: anticipating new requirements

National accounts have played a major role in economic statistics because data coming from more specialized systems, such as balance of payments and manpower statistics, have to be used jointly with the national accounting data. The consistency among different systems increase the analytical usefulness of all statistics involved. The conciliation of SNA and related statistic systems, such as financial statistics and balance of payment statistics, was one of the forces to induce a revision of the System.

The publication of the Enlarged French National Accounting System[15] in 1976 is an important reference in the process of revising the 1968 SNA, anticipating what would be proposed in the 1993 SNA. The focus on uses and sources of agents (institutional sectors) in each of the system accounts, by type of operation, gives a rich and comprehensive vision of the whole economic system. This way, an account may be defined as the crossing of a nomenclature of operations or types of assets and another of groups of units. The *Tableau Economique d'Ensemble* (TEE) shown in SECN is an important contribution to the accounting system, being the Integrated Economic Accounts its corresponding in the SNA. Indeed, the dimensional approach operations versus units is well explored by the SNA.

Following the development of Systems such as the SECN and the SEC, the United Nations Statistics Commission started, at the beginning of 1981, a work with the purpose of clarifying and updating goals for a meeting that would take place in 1983. In March 1982, another group of specialists was invited to revise the development of the SNA. Issues related to clarity and updating of the SNA as well as to conciliation with connected statistic systems – such as Balance of Payments and classification of activities – were identified. Then, in 1983, the establishment of a permanent group to further such studies was proposed. The group was eventually created in 1986, but the changes were not adopted in the 1968 SNA.

Vanoli (1991) gives several reasons for this delay in the process of revision, from its *de-facto* beginning in 1983 to its publishing in 1993. First, the size and complexity of issues to be considered were impressive. An anticipation of a revision was also not the case since several countries, especially those located in developing regions, at the beginning of the eighties, had not even adopted the 1968 SNA. The changes could perturb the adoption of a still current system. The appearance of new questions also made new discussions necessary.

The issues for debate were: (i) high inflation rates in numerous countries; (ii) foreign debt crises in Least Developed Countries (LDC); (iii) establishment of a multiple

15/ The *Système Élargi de Comptabilitè Nationale Français* – SECN (INSEE, 1987) represents a milestone for French National Accounting, since it introduced the country to the International System, with the integration of Real accounts. Curiously, the passage from the previous French accounting system to the SECN was interpreted by some as a triumph of socialist statization influences, and by others as an evidence of international liberalism (VANOLI, A., 1991). Other European countries advocated the idea of a regional system, the ESIEA – European System of Integrated Economic Accounts.

exchange rates system; (iv) increased subsidy to consumption in LDC and Centrally Planned Countries (CPE); (v) changes in financial systems and multiple innovations in this area; (vi) environmental concerns; and, finally, (vii) problems related to the passage of CPE to the market economy system[16].

The United Nations financial crisis and the weakening of its statistics group made also necessary a collaboration among the main interested international organizations with the establishment of a group of the UN secretariat, Organization for Economic Co-operation and Development (OECD), European Economic Community (EEC), IMF and the International Bank for Reconstruction and Development (IBRD). This new arrangement enabled not only denser discussions but also a greater convergence in statistical recommendations.

In this context, Vanoli (1991) identifies four main objectives in the process of preparing the 1993 SNA: (i) enabling comparisons among national statistics; (ii) flexibility, enabling it to adapt to any country; (iii) operating as a coordination framework among the different sources of statistics; and (iv) enabling the different statistic systems to converge.

Regarding international comparisons, the SNA is the system used to communicate to international and supranational organizations the data of national account that respect an internationally accepted standard of concepts, definitions and classifications. The data gathered are widely used for international comparisons of main aggregates, such as GDP and GDP per capita, and also for comparisons on structural statistics, such as investment, tax and public expenditure as a share of GDP.

Although international organizations use the SNA to be able to gather data on internationally comparable national accounts, this was not the purpose of the SNA. It became a standard or universal system used with small or no changes by most of the world countries to assist in their own national aims.

National statistic institutes and public administration services, given their strong and funded interest in securing that the SNA satisfies their own interests in policy analysis and formulation, have played an active role in the development of the System.

Regarding the flexibility of development and use, the SNA was conceived to be complete enough so that each country, notwithstanding its economic structure, institutional system and development level, may select parts of the System that are believed to be relevant and useful to be developed in the light of their own needs and skills. The SNA assumes a development in which accounts and tables, classifications and divisions into sectors are not taken as fixed. A flexible use of classifications does not change the elementary concepts and definitions of the System. However, flexibility may be taken a step further by the development of satellite accounts, intimately linked to the main System but not restricted to the use of exactly the same concepts or to data denominated in monetary terms. Satellite accounts are meant to meet specific goals, such as the monitoring community health and environmental concerns. They may also be used to explore new methodologies and test new accounting procedures that, once fully developed and accepted, may be integrated to the main System in due time, in much the same way as it was, for instance, the inflow and outflow analysis.

16/ Nothing less than fourteen meetings of the expert group were necessary for revising the SNA (July/1986 to October/1992).

Another direction towards which the System may be flexibly developed is through the disposition of accounting data in the form of a social accounting table, with the aim of better meeting the requirements posed by specific analyses and political needs. Such matrices shall not be built as if they were different systems, but as alternative forms of representing the bulk of information contained in the System, which many users and analysts deem to be more informative and potent both for monitoring and modernizing the economic and social development.

The System has also an important statistic function, operating as a coordinating framework for economic statistics in two different directions: first, as a conceptual framework to ensure consistency of definitions and classifications used in different, though related, areas of statistics and, second, as an accounting reference framework to ensure numerical consistency of data coming from different sources, such as industrial and household censuses, and statistics from commerce and other administrative sources.

Finally, regarding conciliation among different statistic systems, there is the need for the relationship among such systems to be as consistent as possible, in what regards their respective elementary concepts, definitions and classifications. The revisions of other statistic systems were conducted simultaneously and in close articulation with the SNA revision in order to hammer out conceptual differences among them, except for small dissimilarities that may be specifically explained in terms of special characteristics of different types of data and of specific requirements of different types of users. This conciliation between SNA and other main systems has been successful and attained through changes both to the SNA and other systems.

Due to the IMF involvement in the SNA revision, the process of conciliation was particularly efficient in what relates to statistics of balance of payments, public finance statistics and monetary and financial statistics, for which the IMF is responsible. The revisions of each of these three systems are conducted by the IMF under a perspective not only of updating the systems but also of making them as consistent with the SNA as possible.

In the process of systems integration, the search for conciliating the IMF system with the SNA reflects the joint participation in the development of the 1993 SNA, as mentioned above. To better understand this process, it turns interesting to briefly describe the main characteristics of the IMF accounting.

3.3 – The IMF system of accounts

The IMF Account System comprises three non-integrated "subsystems" that encompass the macroeconomic accounting that more closely affects the IMF mission and are deemed relevant for the Fund's policy goals and theoretical approach used[17]. The areas are related to the balance of payments (Balance of Payments Statistics – BOPS), government accounts (Government Finance Statistics – GFS), and financial accounts (Money and Banking Statistics – MBS). Despite methodological differences

17/ Regarding this issue, KUMAH, E.O. (1991) argues that "The monetary approach of the balance of payments is the base of the IMF financial programming structure, and has been applied to operating works of the Fund in several countries."

among these systems and the SNA, they form a system of statistics very well disseminated and used by many countries throughout the world[18].

The already mentioned participation of the IMF Department of Statistic members in the assessment and revision meetings of the 1968 SNA had special emphasis in methodological improvements associated to the issue of conciliation. This was specially important for the fact that the main IMF statistic systems cover in detail three large macroeconomic sectors of the SNA[19].

The IMF balance of payment manual (Balance of Payments Manual, BPM) was first edited in 1948, and its penultimate version was that of 1977[20]. While the relation between the two systems, the 1968 SNA and the BOPS, seems to be clear, Appendix C of the BPM pointed out, then, the existence of multiple practical problems that discouraged from the task of conciliation. However, the development of statistic treatment enabled these two systems to become interrelated. With the publication of the last BPM version (IMF, 1993)[21] one significantly improved the conciliation of the two systems.

The Manual on Government Finance Statistics (GFSM) discusses in detail the relations between the GFS and the SNA[22], including complete tables for the transition between the two systems[23]. The main differences between the two systems relate to: (i) accounting principles; (ii) existence or not of links among accounts; and (iii) classification of applicable taxes and subsidies. In turn, the manual of financial transactions (A Guide to Money and Banking Statistics in International Financial Statistics – MBS Guide) contains a separate section to identify the relations between the MBS and the SNA (IMF, 1984)[24].

Galbis (1991) points out that the basic interrelations among the main IMF and SNA statistical systems are easily noticed by the perspective of the Flow-of-Funds Accounts (FOFA), that may be seen as a larger component of the SNA. These accounts contain a closed system of financial flows among agents and by type or financial transactions, which also connects financial flows with surpluses (net savings) and deficits (net loans), a result of the SNA production (non financial), income and distribution accounts. In this wider sense of the SNA, the FOFA appears as a closed system of accounts, since it may, in the aggregate, be specified as a complete set of equations.

Furthermore, within the wide scope provided by the FOFA approach, it may be shown that the three IMF systems correspond to three sectors of the SNA (Rest of the World, Government and Financial). The benefits of harmonizing the IMF System of Accounts with the SNA reside in the elimination of both methodological differences and duplicated efforts in compiling statistical data.

18/ Considering the MBS, in its concept of currency, one focus the relation between the domestic and foreign positions of banking institutions. By supplying a set of analytical aggregates, one facilitates the integration of analyses regarding money, credit and balance of payments, which enables interconnection among the sectors being monitored; and this is true for over 150 countries (DUBLIN, K.G., 1991).

19/ Data corresponding to the three systems are part of the main IMF statistical publication, the International Financial Statistics (IFS).

20/ Corresponding to the fourth edition (IMF, 1977).

21/ This last version expanded and restructured the coverage of financial flows and stocks and international transactions in services. Complementing the Manual, the Fund published two additional documents that provide support to the gathering of data (IMF, 1995 and 1996).

22/ IMF (1986), Chapter 5.

23/ Also present in United Nations (1988).

24/ This refers to a then unpublished version and mentioned as a reference in GALBIS, V. (1991). The proposal for a manual of financial statistics is in IMF (1993b).

For Dawson, the approach of integrating the three IMF systems of account should lead to the building of a table. To the extent that the IMF standard systems are not harmonized, the articulation of such accounts between different countries becomes more difficult. As a horizon, perhaps with the passage of time, "the analytical advantages of an accounting approach may be a persuasive argument in moving towards conciliation: all matters considered, the problems tackled by the IMF are in general associated to the interrelations among these three sectors." (Dawson, 1991, p. 396).

4. Financial accounts: the Brazilian case

The treatment of accounts in Brazil followed the international experience. Regarding the distribution of tasks, while the Central Bank is in charge of the accounting of financial accounts, IBGE is responsible for information related to the real side of the economy, securing continuity to the work previously conducted by the Getúlio Vargas Foundation (FGV)[25].

The majority of countries adopting the Integrated Economic Accounts system assigned to their central banks the duty of preparing or contributing to the preparation of the financial accounts. In the Brazilian case, the interest of Bacen comes since the '70s, yet acting more formally after 1987.

The first attempt to prepare an FFT in Brazil was made under the management of Bacen[26]. This first version (Bacen, 1973) had an exploratory character of the possibilities of this new instrument. The emphasis was given to the methodology of aggregating the economy data under sectors and financial instruments, separated by degree of liquidity. However, the link of operations through which savings are transferred to savings and capital formation accounts was not made. Despite the poor results obtained, the exercise enabled the preparation of indicators and analysis of financial relations among sectors concerned for a period of eleven years[27].

A working group[28] was created at the Central Bank in 1976 to assess the methodological problems encountered with the assembling of the table. Several studies and notes on the issue were prepared within this scope (Bacen, 1977). However, the group stopped meeting before a pilot table – which was an initial goal – could be completed.

It was only in 1985, already with the French advisory, that the issue was again dealt with by Bacen. IBGE was starting talks with Bacen in order to assume the responsibility for preparing yearly series of financial accounts for credit institutions and

25/ A more detailed description of the work in national accounts in Brazil, since the second half of the forties, may be found in ARAÚJO, M.S. (1998), Chapter 4.

26/ It is worth mentioning the work developed by *Superintendência da Moeda e do Crédito* – Sumoc (Currency and Credit Authority) that, already in 1955, had proposed that national accounting incorporate the flow of funds system, covering monetary statistics (GOMES Jr., E.S., 1955).

27/ Period from 1959 to 1969. Even analytical indices were obtained among which the ones of relation between financial flows and GDP. As an illustration, this value changed from 0.19, in 1960, to 0.25, in 1963; 0.17 in 1966; and 0.24 in 1969. The oscillations seemed to "reflect the anomaly itself of the period under observation" (BACEN, 1973, p. 18).

28/ The so-called Matrix Group was initially coordinated by Mr. Affonso Celso Pastore, replaced, in April 1976, by Mr. Carlos Antônio Rocca. This team included economists from the Ministry of Finance, the Getúlio Vargas Foundation (FGV-EPGE), the Economic Research Institute Foundation (Fipe) and the Central Bank.

foreign transactions, as well as for organizing institutional sectors financial accounts through the construction and publication of yearly FOT.

In November 1987, an agreement was executed defining tasks and responsibilities, regarding IBGE and Bacen, for the production of economic information and systematic preparation of financial accounts of institutional sectors integrated to the SNA. The purpose was to enable Brazilian technicians to produce a modern Integrated Economic Account system. This passage deserves mention. For the first time, one pursued to incorporate a methodology used by other countries, possessing official character (sponsored by the United Nations). Besides, the meeting with the real accounts had to take place in an integrated form, so that consistency of the national accounts could be maintained. The pattern of studies related to the table came to have two focuses: foreign, enabling comparisons with information from other countries; and domestic, conciliating financial accounts, prepared by Bacen, with the real accounts, prepared by IBGE.

The difficulty in gathering a complete set of data related to previous years, coupled with the ease provided by existence of the 1985 industrial census, made 1985 to be taken as the initial year to build the FFT. The table was the base for learning the methodology used in France, the focus of which was unknown in Brazil. The different accounting systems then used (multiple charts of accounts), jointly with the incipient use of computers in the treatment of data, caused the task to be painstakingly tackled almost completely by hand.

Along the period prior to the agreement with IBGE, FOTs were prepared for some years. However, the figures were provisional, since a final consolidation with IBGE – officially in charge of publishing the data of national accounts – had not been made. The building of financial accounts inside the 1993 SNA pursued, therefore, a compilation of data from financial institutions and the foreign sector with the aim of integrating such information to the form of the FOT.

More recently, in January of the current year, the Central Bank adopted a change in the methodology for calculating the balance of payments. The document *Notas Explicativas ao Balanço de Pagamentos Compilado de Acordo com as Normas Estabelecidas na Quinta Edição do Manual de Balanço de Pagamentos do FMI* (Explanatory Notes to the Balance of Payments Compiled According to the Rules Set by the Fifth Edition of the IMF Balance of Payments Manual) describes the updating incorporated to this new version. As mentioned above, the methodology already incorporates recommendations made in the 1993 SNA, since the IMF was an important partner in the revision of the system of national accounts.

5. Final considerations

The continuous integration of the FFT to the model recommended by the United Nations exhibited, in its 1993 version, its last characterization and definition. The understanding of this accounting instrument, represented by the financial accounts, is today strongly linked to the SNA. Indeed, financial accounting has gained room in the evolution of national accounting systems in their different versions. From an incomplete display in terms of analysis of the flow of funds, such as the 1953 version of the SNA – though exhibiting successive improvements in following editions –, to its more well defined design in the 1968 SNA, we are concerned with the goal of increasing the scope of the SNA.

The opening of the Capital Account enabled significant advancements regarding what the 1953 SNA could provide, especially with the exhibition of its financial mirror and separation of the financial sector among other domestic sectors. When discussing the 1993 version of the SNA, we defined what is to be understood as the FFT within such system. The types of forms available, such as FOT and *qui-à-qui* tables, enable a variety of analysis in the macro-financial area.

I shall be clear that the construction of this type of statistics requires effort and allocation of funds, but the potential uses of the FFT are likely to justify such investment. As a source of data, and even as a basis for the preparation of econometric models, the FFT offers a vast range of possibilities to economic researchers.

The recently revised manual of the United Nations National Accounts (UN, 1993) extends a new proposal in its preface: introducing a system of accounts that, though maintaining the foundations of previous systems, is updated, flexible and harmonic. The system was updated to follow the pace of economies where inflation, changes in the role played by the government, development of communications and data processing, greater complexity of institutions and financial markets and growing concern with the environment, steer adaptation of concepts and methodological changes. It is flexible to make feasible its use both in economies that are becoming more complex and in those experiencing other types of changes, such as the passage to a market economy. And it is harmonic, with the incorporation of other accounting systems.

The debate on methodological issues enabled identification of conciliation avenues for systems previously isolated. Besides, it makes clear the need for adaptability to specific needs of each country, without loosing the propriety of compatibility.

The conciliation of the SNA and related statistical systems, such as financial statistics or balance of payment statistics, with other international statistical systems, was one of the forces behind the SNA revision. This conciliation, exemplified by the IMF Balance of Payments System Manual, was much more significant than in previous systems.

Analyses based on financial flows need consolidated data on such bases. Despite its initial performance, with different paths of the traditional national accounting, countries such as the United States and France managed to maintain a permanent follow-up of their financial statistics, understood within an integrated accounting system.

In the Brazilian case, one pursued to maintain the accounting of the country close to the state-of-the-art. Despite the paths of flow-of-funds system and the income and production accounts systems being also convergent in Brazil, it is clear that at this moment there is no integration with other information of economic nature produced in the country.

When the 1993 SNA was adopted, IBGE brought the country *pari passu* with the advancements of accounting in national accounts as used by the most advanced countries, making use of a central reference for its system of accounts. The Central Bank, by disseminating its foreign accounts in the new system, came to a position closer to the state-of-the-art. It would be interesting for the conciliation of the systems of account that the different methodologies could be made compatible with what is proposed by the 1993 SNA, especially if one thinks in comparability with information coming from other countries.

One may foresee, at some moment, that this path of harmonization and conciliation of systems may lead our statistics-generating institutions to the use of methodologies of assessment that are universally accepted. One may even imagine the SNA as a wide framework of statistical coordination for Brazil, according to the general purpose of the 1993 SNA.

References

ARAÚJO, M. S. (1998). *Matriz de Fluxo de Fundos: Uma proposta de leitura dos fluxos financeiros,* Rio de Janeiro, D.Sc. Thesis IE/UFRJ, September.

BACEN (1973). *Fluxo de Fundos na Economia Brasileira – 1959/1969 – estudo preliminar*, Banco Central do Brasil, Monthly Bulletin, Special Annex, Volume 9, Number 1.

_____ (1977). *Projeto Matriz de Fluxo de Fundos*, Ministério da Fazenda, Banco Central do Brasil, Fundação Getúlio Vargas – EPGE, Fundação Instituto de Pesquisas Econômicas – Fipe, Rio de Janeiro, 4 volumes.

COPELAND, M. A. (1947). Tracing Money Flows through the United States Economy. *American Economic Review* (Supplement), Volume 37, May.

_____ (1952). *A Study of Money Flows in the United States*, National Bureau of Economic Research, New York.

DAWSON, J.C. (1991). "Flow-of-Funds Accounts, *A System of National Accounts,* and Developing Countries", *The IMF's Statistical Systems in the Context of Revision of the United Nations. A System of National Accounts*, IMF Statistics Department, Ed. by Vincent Galbis, p. 375-412.

DUBLIN, K.G. (1991). "Principles of Valuation and Reconciliation Items in the IMF's Money and Banking Statistics and a System of National Accounts." *The IMF's Statistical System in the Context of Revision of the United Nations. A System of National Accounts,* IMF Statistics Department, Ed. by Vincent Galbis, p. 505-519.

IMF (1977). *Balance of Payments Manual, IMF Bureau of Statistics,* Fourth Edition, Washington.

_____ (1984). *A Guide to Money and Banking Statistics in International Financial Statistics*, IMF Bureau of Statistics, unpublished, Washington.

_____ (1986). *A Manual on Government Finance Statistics,* IMF Statistics Department, Washington.

_____ (1993). *Balance of Payments Manual,* IMF Department of Statistics, Fifth Edition, Washington.

_____ (1993b). *Manual on Monetary and Financial Statistics – Annotated Outline*, IMF Department of Statistics, August, 57p.

_____ (1995). *Balance of Payments Compilation Guide*, IMF Statistics Department, Washington.

_____ (1996). *Balance of Payments Textbook*, IMF Statistics Department, Washington.

GALBIS, V. (1991). "Introduction", *The IMF's Statistical Systems in the Context of Revision of the United Nations – A System of National Accounts,* IMF Statistics Department, Ed. by Vincent Galbis, p. xii-xxvii.

GOLDENSTEIN, S. (1997). "A Tabela de Operações Financeiras e o Novo Systema de Contas Nacionais", *Jornal dos Economistas,* Rio de Janeiro, outubro.

GOMES JR., E.S. (1955). "Estrutura Estatística para Análise Monetária", *Boletim da Sumoc*, Vol. I, nº 3, November.

INSEE (1987). *Système élargi de comptabilité nationale – base 1980 – methodes*, Institut National de la Statistique e des Études Economiques, les collections de l'insee, no. 549-550, Series C, 140-141, June, 426 p.

KEYNES, J. M. (1936). *The General Theory of Employment, Interest and Money,* 2nd Ed. London, MacMillan, 1973; Portuguese translation: A Teoria Geral do Emprego, do Juro e da Moeda. Collection "Os Economistas", 2nd Ed., São Paulo, Abril Cultural, 1985.

_____ (1940). *How to Pay for the War – A Radical Plan for the Chancellor of the Exchequer*, New York, Harcourt.

KUMAH, E.O. (1991). "Monetary Concepts and Definitions", *The IMF's Statistical Systems in the Context of Revision of the United Nations. A System of National Accounts,* IMF Statistics Department, Ed. By Vincent Galbis, p.427-441.

NEUHAUS, P. (1977). "Matriz de Fluxo de Fundos – a experiência internacional", *Projeto Matriz de Fluxo de Fundos,* Vol. 1, Ministério da Fazenda, Banco Central do Brasil, FGV-EPGE and FIPE.

NUNES, E.P. (1998). *Sistema de Contas Nationais, a gênese das contas nacionais modernas e a evolução das contas nacionais no Brasil,* Campinas, D.Sc. Thesis, Unicamp/IE, May.

UN (1953). *A System of National Accounts and Supporting Tables,* Series F, no. 2, New York (SNA 1953).

_____ (1968). *A System of National Accounts. Studies and Methods,* Series F, no. 2, Rev. 3, New York (SNA 1968).

_____ (1988). *Handbook of National Accounting, Public Sector Accounts. Studies and Methods,* Series F, no. 50, New York.

_____ (1993). *System of National Accounts,* EU, IMF, OECD, UN, IBRD (SNA 1993).

VANOLI, A. (1991). "La revision du Systéme de Comptabilité Nationale des Nations-Unies (SCN), *Supllément au Courrier des Statistiques*, no. 58-59, Octobre.