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EMERGING ISSUES IN FLOWS OF FUND ANALYSIS
FOR LDC FINANCIAL SECTORS

Roberto Ramirez

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Flow of Funds Accounts in the Caribbean:
Its Uses and Some Issues

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FLOW OF FUNDS ACCOUNTS IN THE CARIBBEAN: ITS USES AND SOME ISSUES

ROBERTO RAMIREZ

The paper attempts to highlight the usefulness of a flow of funds accounting system to financial analysts and those involved in monitoring the development of the financial sector. It also addresses some important issues involved in the production of this matrix. A brief outline of the format of a flow of funds system is attempted, with as much detail as possible on the disaggregation of the financial sector, while focusing emphasis on making full use of existing databases in LDCs.

INTRODUCTION

Flow of Funds accounting is an attempt to identify both the role of finance in the generation of income, savings and expenditure, and the influence of economic activity on financial markets. It was the importance of finance which led to the development of Flow of Funds Accounts. The accounting framework was designed to show that uses of funds of decision-making sectors were constrained by financial sources of funds in addition to real sources (income), and secondly that financial uses of funds of one sector were linked to the financial sources of funds of a second sector. Many of the loose ends in monetary theory can be explained by the failure to theorize within such a framework of constraints.

Flow of funds accounts are designed to provide a framework which gives a systematic, comprehensive and consistent depiction of the facts. It brings the various financial activities of an economy into statistical relationship with one another and with data on the non financial activities that generate income and production. These accounts divide the economy along behavioral and institutional lines into broadly homogenous groupings or sectors. Each sector account identifies and measures the main sources and uses if its funds in terms of different financial instruments and so encompasses net borrowing and lending. The flow of funds matrix should always balance horizontally and vertically, since one sector's assets are another's

liability. It therefore follows that for an economy as a whole the total assets must equal total liabilities.

An ideal System of National Accounts consist of National Income and Product Account. Input/Output tables. Flow of Funds Accounts. National Balance Sheets and Balance of Payments. It must be understood that they are all complementary ways of accounting for the total transactions or activities in the economy. National Income and Product Accounts measure output, income and expenditure depending on the approach used. Input/Output tables measure the technological relations between industries in terms of expenditure (inputs) and receipts (outputs). Flow of Funds Accounts and National Balance Sheets show the holdings of assets and liabilities of each sector corresponding to the flows.

LEVEL OF DEVELOPMENT OF FLOW OF FUNDS IN THE CARIBBEAN

There has been little work on Flow of Funds accounting in the Caribbean. At present there are no countries in the Caribbean that produces Flow of Funds accounts on a systematic basis. The only countries in the region where Flow of Funds were ever produced are Jamaica and Trinidad and Tobago. Jamaica produced a four sector system in an attempt to put the three economic management accounts (Public Sector. Balance of Payments and Banking System) into a consistent accounting framework. A more detailed system consisting of eight deconsolidated sectors was also produced. These accounts were used as an analytical tool to supplement other data in monitoring various IMF performance criteria.

In Trinidad and Tobago attempts were made at producing the system of accounts. This arose from the recognition of the increasingly important role financial intermediation must play in the mobilisation of domestic financial resources in order to serve the major objectives of economic growth and structual transformation.

Trinidad and Tobago's first attempt at Flow of Funds was in July 1975 and this publication spanned the period 1966-1974. Some time later another set of accounts were published, covering the period 1669-1978. Unfortunately due to lack of resources this was the final publication of Flow of Funds put out in Trinidad and Tobago.

THE FUNDAMENTALS OF A FLOW OF FUNDS ACCOUNTING SYSTEM

There is scarcely ever a period where savings equals investment for an individual sector in an economy. Each sector would therefore have a financial deficit which it has to finance, or a financial surplus which it has to dispose. The Flow of Funds shows how each sector finances it deficit or disposes its surplus, giving details of the sectors and instruments involved.

To fully understand the workings of the Flow of Funds Accounts, the concept of the economic process and the formal elements of the National Income Accounting scheme are introduced.

The supply of goods and services in a given year may be viewed as the sum of domestically produced output and imports. The disposition of this supply consists of aggregate expenditures by domestic residents and consumption and investment, plus exports purchased by foreigners. We therefore have :

$$Y+M=C+I+X$$

where Y = a measure of domestic output

C = consumption expenditure of the private sector and government

I = investment expenditure of the private sector and government (including inventory changes).

X = exports

M = imports

The basic accounting identity of Keynes' process of income determination may be expressed as:

$$Y=C+I+X-M$$

This is equivalent to saying incomes earned by the factors of production (Y) are equal to the summation of all income-generating expenditures, i.e. consumption (C), physical investment (I) and exports (X) less imports (M). The identity can be arranged to yield:

$$Y-C-I-X+M=0$$

Each element in the identity can be further broken down and allocated to different sectors of the economy. For example, we can simply divide the economy into three domestic sectors and an overseas sector, for instance [1] Household, [2] Corporate, [3] Public and [4] Rest of World.

By dividing each element in the identity and allocating it to different sectors we get Y being divided into:

Yh : the factor incomes earned by households (wages and salaries, rent, etc.).

Yc : company profits plus rent and

Yp : profits of public enterprises and rents.

Expenditures (C) can similarly be broken down into:

Ch : consumer's expenditure and

Cp : current expenditure on goods and services by public authorities, while:

Ih, Ic and Ip would represent investment on goods and services by household, companies and government, respectively.

Transfer payments among sectors also take place in the economy. Such transfers are made up of grants and interest payments. For all sectors taken together the transfers would cancel out each other (including those paid and received by the overseas sector). Hence total transfers in the economy would sum to zero.

Putting the identity down by sectors into a table we get :

TABLE 1

NATIONAL INCOME ACCOUNTING
IDENTITY BY SECTOR

	Income	Net Transfers	Consumption	Investment	Balance of Goods and Services	Financial Balance
Households	Yh	−Th	−Ch	−Ih		=Fh
Companies	Yc	−Tc		−Ic		=Fc
Public	Yp	−Tp	−Cp	−Ip		=Fp
Rest of World		−Trow			−X+M	=Frow
	Y	−0	−C	−I	−X+M	=0

Reproduced from Bank of England, An Introduction to Flow of Funds Accounting: 1952-1970, August 1972

By reading across each row it would be apparent that each domestic sector's factor income (Y) plus net transfers (T) less current expenditure (C) and capital expenditure on goods and services (I) yields a financial surplus or deficit. If a particular sector has a financial surplus this indicates the total amount the sector has available to add to financial assets or to reduce financial liabilities. A financial deficit on the other hand indicates the net amount needed to be borrowed or raised by selling financial assets.

As Table I shows, when the financial surplus or deficit for all the sectors (both domestic and overseas) are summed there is a balance of zero. What this is in fact saying is that a change in one sector's financial liabilities is matched by an equal change in the other sectors' financial assets. Flow of Funds therefore set out the particular routes along which funds pass between the sectors' capital accounts in a given period. They show each sector's net transactions in each particular financial transaction or market, be it government bonds, notes and coins, etc. Conventionally, the acquisition of an asset or the reduction of a liability is considered to be a

negative flow or source of funds. The flows in each market must then add to zero, while the
sum of the flows for each sector yields that sector's financial surplus or deficit.

USES OF THE FLOW OF FUNDS SYSTEM

To understand the modus operandi of an economy in general and the financial sector in
particular. There needs to be a framework that gives a consistent description and analysis of the
facts. For there to be an efficient financial sector in the Caribbean. it is imperative that there
exist tools to analyse the structure and behaviour of the financial system as a whole. as well as
the interactions among the different sub-sectors in the system.

Of all the tools and frameworks available the flow of funds accounts are ideal for such analysis.
Goldsmith (1967) claims.

> "the flow of funds account makes best use of the available data. embodies the
> maximum of internal checks against errors and omissions. and is flexible enough
> to permit multiple analytical uses. These set of accounts can easily be adapted
> to testing various economic theories of the subject without being indissolubly
> imbedded to any one of them. "

According to A.D Bain (1973)

> "Many practitioners in the field have regarded the main function of the Flow of
> Funds Accounts as the provision of data on transactions in financial markets in
> as neutral a form as possible. from which commentators and analysts can select
> the particular information which is relevant for the purpose at hand and employ
> it in conjunction with data from other sources".

Flow of funds accounts have the potential for many policy uses. stemming from their overall
view of the operations of the financial system as well as its integration into the National
Accounts. In fact the European System of Accounts (ESA) has emphasised the introduction of

flow of funds accounts in member countries of the European Union for analytical and policy uses. If the governments of the Caribbean are serious about integration and monetary union. Flow of Funds may very likely find its place within these countries System of National Accounts.

The main purpose of the Flow of Funds accounts is to allow for analysis of the operation of the financial system. The ability of this system of accounts to be analytically useful stems from its interlocking character. i.e. the cross and down totals balance for every period. This is brought about by the quadruple entry nature of the framework where a flow change in any matrix cell is accompanied by corresponding changes in at least three other cells. With the use of this quadruple entry feature. it is possible to trace the effect of each sector's financial behavior on the other sectors in the framework and eventually on the non financial economy or vice versa.

Setting up a Flow of Funds system is useful in that it describes the financing of the various sectors of the economy and the categories of market instruments used in financial transactions. The Flow of Funds is explicitly able to highlight important macroeconomic accounting identities which may aid in the design and control of development plans as well as in checking the consistency of short run financial programs.

Examining the Savings-Investment Process

One of the most prominent uses of Flow of Funds Accounts is the analysis of the savings-investment process. The savings-investment process shows how savings are transformed into ultimate lending by working its way through the different channels in the system. This process facilitates the portrayal of financial institutions in their role as financial intermediaries.

There are several different portrayals of the way in which the details of the process are worked into the scheme. Figure 1 below.[1] is an example of a scheme intended to show the domestic financing process.

FIGURE 1
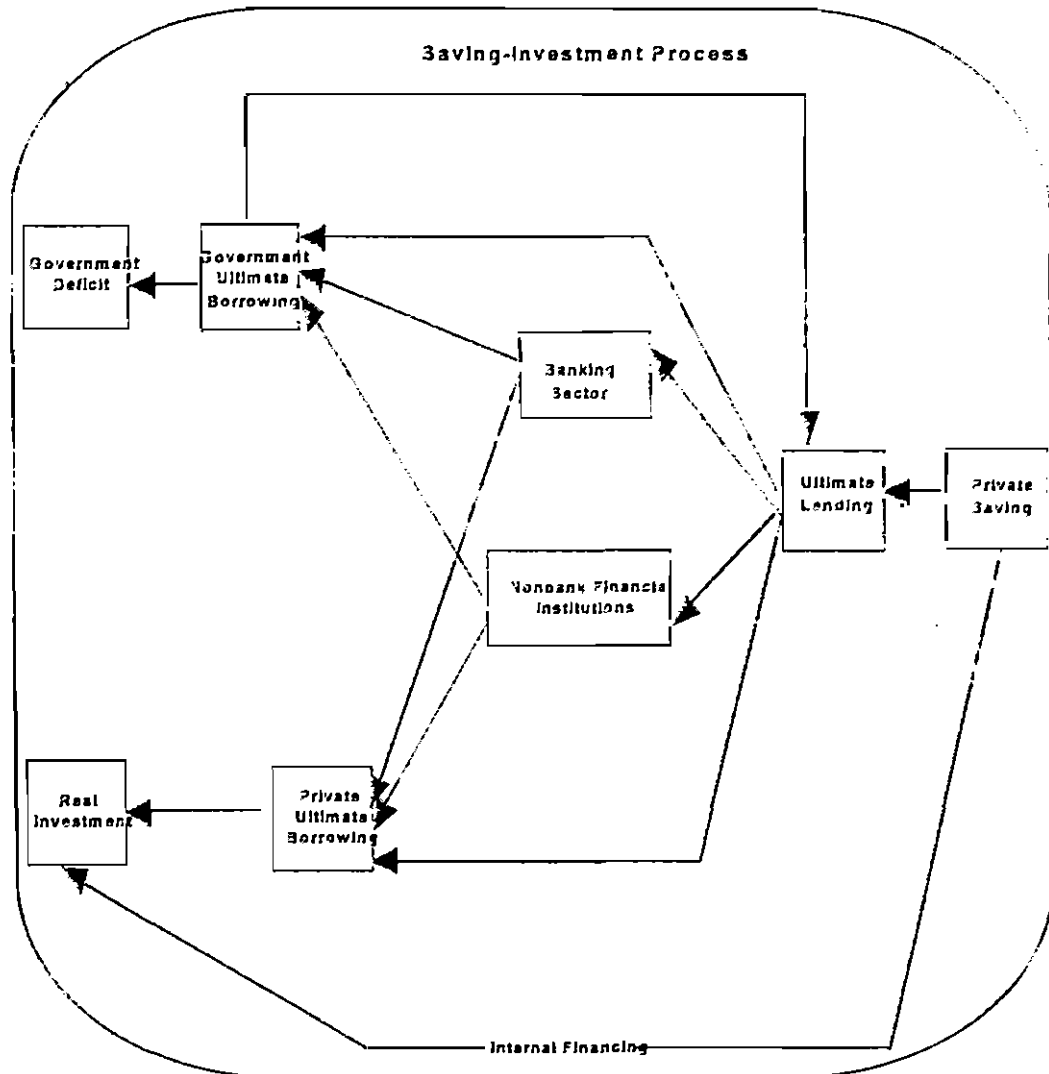
Source: John Dawson. "Flow of Funds Accounting, a System of National Accounts
and Developing Countries"

[1] Taken from John C. Dawson "Flow of Funds Accounts. A System of National Accounts and Developing Countries", A background paper for the expert group meeting of Financial Flows and Balances, September 6-15. 1988; Washington, D.C., 14a.

By examining the savings-investment process in the diagram, what is seen in effect is the savings-investment account being split down the centre between ultimate lending and ultimate borrowing and the insertion of financial institution so that their roles as financial intermediaries are highlighted.

In describing this scheme we start at the extreme right of the diagram with private savings. The savings of the private sector is shown to be placed either into ultimate lending or internally as a means of financing real investment. The portion of savings that goes into ultimate lending can acquire any of three major forms of claims:

(1)   By placing funds in financial institutions, they acquire claims against these institutions.

(2)   Acquisition of private credit instruments by means of placing funds directly to finance private ultimate borrowing; and

(3)   Finally claims can also take the form of government securities by directing funds directly to government ultimate borrowing.

Similarly the funds that pass through ultimate lending to financial institutions, i.e. the banking sector or non bank financial institutions can be used to acquire government securities or private claims.   Private ultimate borrowing accumulates funds that pass through the financial institutions as well as those that come directly from ultimate lending and are used together with funds that private savers supply (directly through internal financing) to finance real investment. On the other side the government deficit is financed through government ultimate borrowing. The government ultimate borrowing accumulates its funds either directly through ultimate lending or through funds that pass through the financial institutions.

In the savings-investment process diagram it should be noticed that there is a feed-back arrow which attempts to show that the government does not borrow merely to finance its deficit but in many cases it borrows so that it may be able to on-lend to government enterprises. Here the

government is seen in a role of financial intermediary. Such practices are quite common in developing countries.

Financial Programming And Projections

Another important use of Flow of Funds especially to the Monetary Authority is financial programming and preparation of forecast of financial activity as well as the forecast of demand for specific financial instruments. As a result it may be used to forecast interest rates or the term structure of interest rates. The projections of a Flow of Funds matrix is often made with the intention of testing the consistency of sector market forecasts that may have been prepared separately at some previous time. These projections would ensure that each separately prepared sector forecast fits in with each other when it comes to bringing all the micro forecasts of the economy together and analysing the macro function of the economy. The merit of this system is that each element can be tested by the plausibility of its counterparts in other areas of the matrix. The whole is reasonable only if the parts are.

Long Run Development of Financial Institutions

The Flow of Funds projections can be used for long run development of financial institutions. The projections can take into account various institutional developments in the financial system. If there is a change in the needs of any player in the system. this will put pressure for changes in the financial institutions and the markets through which their instruments are channeled. The financial system could only be considered efficient when they are able to comfortably absorb the variety of instruments offered to it by lenders and in return can offer the necessary diversity of instruments to meet the needs of borrowers.

Tracing Policy Implications

The projected Flow of Funds matrix could also be used to obtain a consistent view of what may be the implication if certain assumptions are made about a future event. The matrix allows any

financial flow implications to be seen and traced through the system. If the implications are implausible this may suggest adjustment to the policy.

Due to the interlocking nature of a Flow of Funds system, it can be seen that, as the income of one sector changes, not only would its overall position change, but other related sectors' positions would change correspondingly. Linkages between sectors can also be traced if a change originates in the holding of a particular financing instrument in a sector. For example, if there is an increase in government investment which is financed by the banking system, this may have the effect of decreasing the supply of bank loans which would have otherwise gone to private corporations. This decrease in the availability of bank loans to private firms could lead to a reduction in business investment.

Problem Analysis

A very important use of the Flow of Funds to developing countries is to assist the central bank and other agencies with the responsibility for financial planning and for laying the route to economic development, in examining the implications of certain details of a broader economic plan. It can pinpoint specific sectors where intervention is appropriate as well as the forms of intervention that may be best suited, bearing in mind the resultant effect it will have on other sectors and eventually the economy as a whole.

Take for instance, a country that may have certain key projected economic constructs on hand. If the country wants to identify any problem that may arise with domestic finance, given the current economic climate with deteriorating Balance of Payments, it would be quite simple to impose a realistic constraining Balance of Payments estimate and to project the Flow of Funds matrix. Such a projection may highlight certain types of credit shortages or point to the need for monetary expansion thus bringing to the fore any implications for financing the projected capital formation.

Another use to developing countries of the Flow of Funds is to help determine how the government deficit will be financed. If the deficit is to be financed through the issue of government securities, we will need to know which sectors would be capable of buying these securities. This would require moving horizontally across the Flow of Funds matrix through the different sectors and analysing their capacities to absorb the issues. Similarly state owned enterprises also have to be financed. There are several ways this can be done. Immediately what comes to mind is the enterprises own savings. Any need for funds in addition to this would have to be sought from government loans, external loans (i.e. foreign borrowing) and borrowing locally from commercial banks and other financial institutions. An analysis of this issue concerning state owned enterprises' financing can be done by taking each possible instrument and looking at the possibility of the different sectors to absorb such issues. The interesting aspect of examining this policy is that it allows the possible crowding out of private borrowers to be seen more easily.

ISSUES

In the production of any Flow of Funds system there are several preliminary considerations and issues which should be addressed. These issues are dealt with below.

Primary Audience

An important issue that should be considered in the preparation of a Flow of Funds system is the primary audience for which it is being constructed. The audience determines the type and degree of detail, and in no way affects the underling concepts upon which the Flow of Funds is based. A Flow of Funds system prepared by a central bank, solely for internal policy and programming will concentrate more on detail of the financial sector. This will necessarily differ in emphasis to one prepared for publication to be used by the wider community, which needs to divulge more information on the financial activities of the non-financial sectors.

Degree Of Detail

The degree of sector and instrument detail is another issue to be deliberated. This is closely linked and affected by the previous issue. In most developed countries, where there exist sophisticated statistical frameworks, the amount of rows and columns in the matrix may merely be a trade off between the detail required and the compactness which will allow a significant picture to emerge clearly.

> "The more sectors an economy can be subdivided into, the more detailed and accurate the analysis of behaviour can be, but the more difficult it becomes to piece the jigsaw together again into a coherent picture."[2]

In the Caribbean, however, the availability of data will most likely be the single greatest influence on the extent to which the sectors and instruments in the matrix can be disaggregated. This seems to be a delima since in developing countries, greater detail is needed in order to monitor complex patterns of financial flows.

Frequency of Production

The periodicity of production of the accounts is an issue which is related to the degree of disaggregation of sectors. The compilation of a Flow of Funds report on a quarterly basis may be the ideal option, since they will be used for current monetary policy analysis. Quarterly data is available for the central government, central bank and commercial banks. However, there are numerous items and sector reports that are available only on an annual basis.

Valuation

In general the valuation of flows does not present any conceptual problems, even though in practice efforts may be hampered by insufficient data. All transactions recorded in the flow of funds framework are entered at the valuation at which the transactions actually take place or the

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[2] Christopher Johnson, Anatomy of UK Finance 1970-1975, Page 3. Longman New York and London 1977.

best possible approximations to them. This may give rise to some statistical problems, especially where the estimates are derived from changes in balance sheet values, since these may be at book, nominal or market value, and some revaluation may be required.

Degree Of "Netness"

Flow of Funds statements can be drawn up at different degrees of "netness" and "grossness". Goldsmith (1967) states three aspects of the difference in "netness".

- The use of net sales and purchase balances in lieu of separate figures for purchases and sales of flows.

- The offsetting of liabilities against the assets with which they are connected.

- The degree to which units are consolidated rather than combined in constructing flow of funds statements for sectors and subsectors.

The first significant contribution to Flow of Funds analysis was undertaken by Morris Copeland in 1952. He attempted to measure gross money flows showing receipts and payments between economic units classified by sector without any offsetting either within sectors or between sectors. This was described as "to-whom-from-whom".

Goldsmith (1967) argues that the "to-whom-from-whom" approach where there is separation of a sector's purchase and sales flow is preferred to the use of only the undivided net purchase or sales balance. He argues the use of the net basis washes out many relevant transactions and makes it much more difficult to explain movements of net balances as well as of interest rates. However separate figures on purchase and sales flows are not usually available for many instruments, hence presenting the data in its net format becomes the only possible alternative.

In subsequent years concerns with the compactness and with displaying the information in a form suitable for analysis has led to a considerable degree of netting. It is not uncommon to find

the purchase of a particular category of security by a company being netted against the sales of that security by the same company, and within any sector the net purchases of the security by some companies are netted against the net sales of others. Even in many statistical publications it is not uncommon to find, for reasons of simplicity and compactness, the data presented in its net form.

In reality the degree of "netness" employed in the flow of funds is solely dependent on the use to which it will be put (barring data constraints). For example, gross credit extended by financial institutions is likely to be important in studies of demand for consumer durables or real estate, while for macroeconomic analysis, net credit will suffice. In the Caribbean, however, we may not have the luxury to choose the degree of "netness" due to data limitations, but may have to employ the degree of "netness" which the data allows.

Unit of Currency

In order to have a consistent and balancing Flow of Funds matrix, it is important that the Balance of Payment account be denominated in the local currency. The rationale behind this is that moving from a dollar or SDR to the local currency with a single exchange rate can sometimes give unsatisfactory results. There are countries in the Caribbean which produce Balance of Payments denominated in US dollars. Once the exchange rate remains stable converting to a local currency should not pose a problem. In cases where conversion yields unsatisfactory results, the Flow of Funds effort should not be deferred since the most critical data from the Balance of Payments are the current account balance and items above it. Since local currency figures here are necessary for the income and product accounts, it is possible that a local currency Balance of Payments can be made available.

Time Reference

Time reference must be standard for all sectors. It is possible to find that local data sources deal with Central Government on a fiscal year basis while the banking data and the Balance of

Payments are on a calendar years basis. There would be need for conversion if uniformity is to exist.among sectors in the matrix. This is a necessary consideration since financial flows are far too volatile for the average of a calendar year to be representative of a fiscal year or vice versa.

Lag In Data Preparation

Another issue concerns how neoteric the data is. It is not uncommon in several Caribbean countries to have data being produced with extensive lags. A matrix produced too long after the event has occured will not be effective in current policy making, since the scenario may change, especially in times of rapid financial innovation. To overcome this problem the matrix should be disaggregated in such a way as to make use of the data that are used in current public policy decision making.

Discrepancies in Data

It is quite likely that there will be diesrepancies in the data obtained from different sources. Since the asset of one sector is the liability of another sector, it is expected that the two sectors would show the same totals for the item in question. It should not come as a total surprise however, if these two figures do not correspond due to errors of timing rounding or classification errors. An example of this is the descrepancy in foreign borrowing between the central bank and the Ministry of Finance in Trinidad and Tobago. This is due to several reasons:

(1) **Classification of Loans:** One agency may classify a certain class of loan as a liability of the Central Government while the other may classify the same loan as a liability of the State Owned Enterprises. This type of error does not affect the value for total external borrowing, but distorts the share of the different sectors.

(2) **"Float":** This is the term used to refer to the difference in timing when recording the debt. The Ministry of Finance records a transaction at the date the transaction cheque is issued. The central bank on the other hand, acting as the government's bank, must eventually receive any cheque issued by or issued to the government, hence the central bank records the transactions when the cheques are processed.

STEPS TOWARDS THE PRODUCTION OF FLOW OF FUNDS ACCOUNTS IN THE CARIBBEAN

It is believed that one reason why many developing countries do not have a Flow of Funds system is because there is insufficient data to construct an elaborate and comprehensive system. In many countries there is no data on private savings and investment, the financing is also so fragmented that the private sector column in the Flow of Funds matrix is difficult to fill. This, however, should not hamper its development since most developing countries could start by producing a system on a limited scale, ie. one with a few broad consolidated sectors. This system though limited is still useful in assessing consistency of financial flows as well as being used for monetary analysis and forecasting.

This section attempts to outline a format for a fairly useful system that can be-produced in most Caribbean countries given its data limitations. Every country in the Caribbean should be able to produce a simple four sector Flow of Funds system (banking, central government, external and a residually determined "other domestic" sectors), similar to what was produced in Jamaica. The matrix can then be expanded by further disaggregating the sectors into smaller sub-sectors, and simultaneously deconsolidating the financial instruments.

A large portion of the data needed for the production of a Flow of Funds matrix is available as a by product of other central bank policy data, balance of payments, national accounts or other financial statistical programs. In fact the four sector framework suggested only requires published data from the balance of payments, government fiscal statistics and the monetary accounts. These data are all readily available in most Caribbean countries. An illustrative example of this matrix, with indications where entries are expected is shown in Table 2 below.

TABLE 2

ILLUSTRATIVE EXAMPLE OF "FOUR SECTOR" FLOW OF FUNDS SYSTEM

ITEM	SECTORS			
	"Other Domestic" Sector	Central Gov t	Banking Sector	External Sector
Non-financial Transactions Balance	X	X	-	X
Government Domestic Lending (Net)	X	X	-	-
Government Domestic Non-bank Borrowing	X	X	-	-
Foreign Borrowing	X	X	X	X
Change in Commercial Banks N F A	-	-	X	X
Change in Money & Quasi Money	X	-	X	-
Change in Domestic Credit of the Banking System	X	X	X	-
Change in Monetary Authorities N F A	-	-	X	X
Other Items (net)	X	-	X	X

Note: Government Domestic Non-Bank Borrowing is treated as a residual since domestic bank financing of the budget deficit is taken from the monetary accounts.

If the accounting identities of the three economic management accounts (BOP, Government Fiscal Accounts and Monetary Accounts) are examined it will become clear how each item in the Flow of Funds matrix can be identified, except for government domestic non-bank borrowing which is found as a residual.

The **Balance of Payments** identity can be written as :

$$\Delta R = CA + \Delta FI$$

where :

ΔR = the change in net official international reserves of the monetary authorities.

ΔFI = the change in net foreign lending or indebtedness of domestic residents apart from official reserves.

CA = the current account balance

The equation above shows how the Balance of Payments acts as a constraint to resource use in the economy. It is seen that a current account deficit can only be sustained if capital inflows persist and / or net official international reserves can be decreased. This financing of the deficit is shown in the capital account.

The Monetary Sector accounting identity can be written

$$MS = NFA + NDC$$

where:

MS = money supply (liabilities of the banking system)

NFA = net foreign assets of the banking system. including net official international reserves

NDC = net domestic credit extended by the banking system. including other items (net).

The Government Fiscal accounting identity can be written

$$FB = TR - TE$$

where:

FB = Fiscal Balance

TR = Total Revenue and Grants

TE = Total Expenditure and net lending

Every Caribbean country should be able to implement a Flow of Funds system consistent with the model outlined up to this point. It is also possible for several of the more developed Caribbean countries to go beyond this stage and develop a more disaggregated system by further disaggregating the four sector model outlined above. In several of these countries greater detail

can be added to the system in spite of data limitations and without having to collect additional data. The increased detail involves going beyond published data and requires an examination of the questionnaires sent to financial institutions by the central bank. Bearing in mind the published data is usually a summation of several smaller items, which may be more useful to Flow of Funds in its disaggregated form. For instance total deposits of commercial banks is an aggregation of time, savings. demand and foreign currency deposits. It is these disaggregated items which will be useful in helping to analyse the economic phenomena. as well as allowing analysts to zero in on a target instrument.

Having ascertained the degree of disaggregation available in the worksheets of the central banks. it is then possible to decide on the level of detail possible in the Flow of Funds matrix. The first step is to divide the banking sector into its components. the commercial bank sector and the monetary authority.

Direct estimates for several of the sub-sectors under the residually determined "other domestic" sector is also possible. The "other domestic" sector includes all financial institutions other than commercial banks and the central bank. Estimates should be made of as many individual financial sub-sectors as possible. leaving a more homogenous "other domestic" sector. Estimates could be made for Trust and Mortgage Finance Companies. Finance Houses and Merchant Banks. and if possible Thrift Institutions. Development Banks. Insurance Companies and Credit Unions.

In several countries there would be problems in a central bank making direcct estimates for the Insurance Company and the Credit Union sectors. since the central bank does not have full jurisdiction over these institutions and the data reporting is thus usually deficient. If this is the case direct estimates should be made for as many NFIs as possible leaving the others to be accounted for under the residual "other domestic" sector.

The external sector and the central government sector would remain unchanged from the four sector model. The expanded system will differ in that it includes several non-bank financial institutions. Ideally non financial corporations and households should be estimated individually, however, this would virtually be impossible given the limited database with which we are working.

Throughout the description so far, little attention has been directly focused on the expansion or disaggregation of transaction type detail. Nevertheless there has been an increase in detail of the coverage of financial transactions, as each sector is broken down into directly estimated subsectors, new claims will be brought out that were not previously in the matrix. Such claims were "hidden" when the subsector was a consolidated part of the original sector from which it was disaggregated.

There are also direct attempts at further breaking down the financial transactions instruments. An attempt is made at reducing the residual financial instrument, i.e. the government domestic non bank borrowing, by directly accounting for some portion of this item through the change in domestic credit of non bank financial institutions to the government. This domestic credit takes the form of both loans and investment. Other items that were previously entered as one aggregated figure of several different smaller components are now disaggregated. An example of this is the change in money and quasi money which is subdivided into:

- Currency
- Demand Deposits
- Time and Savings Deposits
- Foreign Currency Deposits

This is easily available from published central bank monetary statistics. Change in domestic credit of the banking system is divided between domestic credit of the commercial banks as well

as the domestic credit of the central bank. The sector detail to which the credit was extended was also further expanded.

In this newly expanded matrix, the financial system was expanded to take into account the role of non bank financial institutions e.g. Trust and Mortgage Finance Companies and Finance Houses and Merchant Banks, Insurance Companies, Credit Unions, etc. Now on the liabilities side of the financial system, instead of merely looking at the change in money and quasi money of the banks, attention is also focused on changes in non bank financial institutions deposits.

On the asset side of the financial system change in domestic credit of the non bank financial institutions is added. The domestic credit is broken down into investment and loans and are shown separately in the accounts. The final change to the financial instruments is the inclusion of a new item, this being use of IMF credit.

An illustrative example of the expanded matrix showing where possible entries should occur is seen in Table 3 below

TABLE 3
ILLUSTRATIVE EXAMPLE OF EXPANDED FLOW OF FUNDS SYSTEM

INSTRUMENTS	SECTORS					
	Other Domestic	Central Government	Central Bank	Commercial Banks	NFIs	External Sector
1. Non Financial Transaction Balance	x	x	.	.	.	x
2. Gov't Domestic Lending (Net)	.	x	.	.	.	.
3. Gov't Domestic Non-Bank Borrowing	x	x	.	.	.	.
4. Foreign Borrowing	x	x	x	.	.	x
5. Change In Domestic Credit Of Commercial Banks						
Investments						
Treasury bills	.	x	.	x	.	
Other Central Gov't Security	.	x	.	x	.	.
Time Deposits	.	.	.	x	x	.
Marketable Stock	x	.	.	x	.	.
Equity in Subsidaries & Affiliates	x	.	.	x	x	.
Other	x	.	.	x	.	.
Loans						
Public		x		.	.	.
Private	x	.	.	x	.	.
6. Change In Central Bank Domestic Credit						
Investment	.	x	x	.	.	.
Central gov't securities	.	.	x	.	.	.
Advances to Gov't Agencies	.	.	x	.	.	.
Other Public Securities	.	.				
Loans						
Public	.	x	x	.	.	.
7. Change In Domestic Credit Of NFIs	x	x		x	x	.
Bal. due from Local Commercial Banks (net)	.	.	.	x	x	
Investments						
Treasury bills	.	x	.	.	x	
Other Central Gov't Security	.	x	.	.	x	.
Other Public Sect. Security	.	.	.	.	x	
Time Deposits	.	.	.	x	x	
Marketable Stock	x	.	.	.	x	.
Equity in Subsidaries & Affiliates	x	.	.	.	x	.
Other	x	.	.	.	x	
Loans						
Public	.	x	.	.	x	.
Private	x	.	.	x	x	.
8. Change In Money and Quasi Money						
Currency	x	.	x	.	.	.
Demand deposits	x	.	.	x	.	.
Time & Savings deposits	x	.	.	x	.	.
Foreign deposits	x	.	.	x	.	.
Central gov't Deposit	.	x	.	x	.	.
9. Change In Non Bank Financial Inst. Deposits	x	x	.	.	x	.
10. Cash Deposits At Central Bank	.	.	x	x	x	.
11. Reserves Deposit At Central Bank	.	.	x	x	x	.
12. Change In Commercial Bank Net Foreign Asset	.	.	.	x	.	x
13. Change In Central Bank Net Foreign Assets	.	.	x	.	.	x
14. Change In Nfis Net Foreign Assets	.	.	.	.	x	x
15. Use Of I.M.F. Credit	.	.	x	.	.	x
16. Other Items Net	x	x	x	x	x	x

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