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2 THE STRUCTURE OF NATIONAL INCOME ACCOUNTING

The Background of the United States System

National income accounting in the United States is in large measure the result of an evolutionary process initiated by early studies of national income measurement. In 1920 the National Bureau of Economic Research produced as its first publication a study entitled *Income in the United States,* by W. C. Mitchell, W. I. King, F. R. Macaulay, and O. W. Knauth [4]. During the twenties the Bureau published three additional volumes on national income and the incomes of individual states, written by Knauth, Leven, and King [5, 6, 7]. The Bureau's research of this period culminated in the basic study by Willford King, published in 1930 [8].

The depression of the thirties with its precipitous decline in income and employment emphasized the need for more comprehensive information on national income. Concepts were developed and sharpened in this period. The classic works written by Simon Kuznets in this field, dating from the late thirties, provided the basis for future development [9]. Largely because of the Bureau's interest, the Conference on Research in Income and Wealth was established, and in the years since 1937 it has published over 30 volumes on this topic. In the late thirties, the Department of Commerce established a National Income Division, which had the responsibility for preparing current estimates of national income data on an official basis.

The thirties also saw the major development of economic theory that was to convert the field of national income measurement into national income accounting. The Keynesian formulation of income as the sum of consumption and investment focused attention on the final-use breakdown of output, and emphasized the equality of savings and the accumulation of goods. The Keynesian theory also focused attention on the relationship between consumers and producers, and thus fostered the development of sector accounts that articulated the intersectoral network of income and expenditure transactions.

With the outbreak of World War II, it became obvious that considerably more comprehensive statistical information was needed on the operation of the economic system in order to answer such questions as how large a rearmament program or war effort the economic system could support, and how much inflation would be generated by putting the economy on a war footing. The existing statistics on national income and its various breakdowns were not adequate for such analysis, and the National Income Division under Milton Gilbert and George Jaszi enlarged the framework of the statistical system and developed output and income estimates based on the more comprehensive concept of gross national product [10]. During the war, the national income framework and the data were steadily improved. New economic constructs, such as gross capital formation, government expenditures on goods and services, personal income, and disposable income, came into being. Although during this period the data were not published in an accounting form, the framework for the transactions data was explicitly based on the receipts and outlays of government, business, and individuals.

In 1947, the National Income Division cast its published data into an accounting form for the first time [11]. Six accounts were presented, including a national income and product account showing both the gross national product and the national income; sector accounts for business, government, households, and the rest of the world; and a savings and investment account for the economy as a whole. These accounts had as one of their major purposes the derivation of the gross product originating in each of the sectors; less accent was placed on creating a system of intersectoral flows intended as the basis for analysis. A set of 48 supporting tables built around the accounts provided the national income accounting statistics for the period 1929–46, together with related supplementary data at detailed levels of classification. National income and the various types of income payments were shown by industry, as was employment. Detailed data were provided on personal consumption expenditures by type, and special tables reconciled the national income accounts with the savings estimates of the Securities and Exchange Commission and the corporate profits data of the Bureau of Internal Revenue. Additional data were provided on special flows such as new construction activity, producer durable equipment, transfer payments, and interest. Quarterly data were shown for some of the breakdowns in the different accounts, and monthly data were given for personal income by type of income. Thus, by 1947 the national income accounts had emerged for the United States as the basic set of information on the operation of the economic system.

During the next decade there was substantial improvement in the quality of the statistical data and the kind of detailed information provided. In 1954, the National Income Division under George Jaszi published a National Income Supplement [12], which provided extensive information on the sources and methods used in constructing national income, and presented statistical data on a comparable revised basis for the period from 1929 to 1953.

Additional work on national economic accounting was done by other parts of the government in this period. The work on input-output initiated in 1939 by Wassily Leontief [13] was carried on by the Bureau of Labor Statistics, and resulted in an input-output table for the year 1947 [14]. The pioneering work of Morris Copeland on moneyflows [15] was taken over by the Federal Reserve Board and data on the flow of funds were published for the period from 1939 on [16].

To consider the interrelationships of these different forms of national economic accounting, a National Accounts Review Committee under the direction of the National Bureau of Economic Research was appointed by the Bureau of the Budget in 1956. This committee surveyed all the existing forms of economic accounting, and made recommendations for a closer integration of the different forms. Relatively few recommendations were made concerning the major economic constructs in the national income accounts, and relatively minor changes in the accounts themselves were suggested [17].

The Office of Business Economics had during this period been preparing a revision of the national income accounts, and in 1958 brought out a version with a somewhat simpler accounting structure and an increased body of data.[1] In this period the OBE also undertook the task of preparing input-output tables, and later published one for the year 1958 on a basis that is statistically integrated with the national

[1] See in particular [1], pp. 118–231.

income accounts. The national income accounting system developed in 1958 is still in current use in the United States, but the primarily statistical revision published in 1966 [18] has provided additional detail and increased accuracy.

The Present United States System

The present US national income accounting system consists of five interlocking accounts: National Income and Product Account, Personal Income and Outlay Account, Government Receipts and Expenditures Account, Foreign Transactions Account, and Gross Saving and Investment Account. These accounts are shown in summary form for the year 1966 in Table 1.

The National Income and Product Account provides a consolidated production account for the economy as a whole. The right-hand side of the account shows the output of the nation in terms of the expenditure of the different sectors for consumption and capital formation, together with imports and exports. The left-hand side of the account shows the income payments, taxes, and retained earnings that are generated by the productive activity of the economy. The Personal Income and Outlay Account shows on the right-hand side the income received by households and nonprofit institutions serving households, and on the left-hand side the taxes, outlays, and saving of the sector. The Government Receipts and Expenditures Account shows government receipts in terms of types of taxes on the right-hand side, and on the left-hand side, government expenditures in terms of purchases of goods and services, transfer payments, net interest, subsidies, and the surplus or deficit of the government. The Foreign Transactions Account shows imports of goods and services, net transfer payments, and net foreign investment on the right-hand side, and exports of goods and services on the left-hand side. The Gross Saving and Investment Account collects on the right-hand side all of the savings elements in the system, and balances them with the gross private domestic investment and net foreign investment. Four different types of account are thus shown: (1) a production account for the economy as a whole, (2) income and outlay accounts for the household and nonprofit institution sector and for the general government sector, (3) an external transactions account, and (4) a saving and investment account on a consolidated basis for all sectors of the economy.

TABLE 1

The US System: Summary National Income and Product Accounts, 1966

(billions of dollars)

1. National Income and Product Account

Line			Line		
1	Compensation of employees	435.7	24	Personal consumption expenditures (2–3)	465.9
2	Wages and salaries	394.6	25	Durable goods	70.3
3	Disbursements (2–7)	394.6	26	Nondurable goods	207.5
4	Wage accruals less disbursements (5–4)	.0	27	Services	188.1
5	Supplements to wages and salaries	41.1	28	Gross private domestic investment (5–1)	118.0
6	Employer contributions for social insurance (3–14)	20.3	29	Fixed investment	104.6
7	Other labor income (2–8)	20.8	30	Nonresidential	80.2
8	Proprietors' income (2–9)	59.3	31	Structures	27.9
9	Rental income of persons (2–10)	19.4	32	Producer durable equipment	52.3
10	Corporate profits and inventory valuation adjustment	82.2	33	Residential structures	24.4
11	Profits before tax	83.8	34	Change in business inventories	13.4
12	Profits tax liability (3–11)	34.5	35	Net exports of goods and services	5.1
13	Profits after tax	49.3	36	Exports (4–1)	43.0
14	Dividends (2–11)	21.5	37	Imports (4–2)	37.9
15	Undistributed profits (5–5)	27.8	38	Government purchases of goods and services (3–1	154.3
16	Inventory valuation adjustment (5–6)	−1.6	39	Federal	77.0
17	Net interest (2–13)	20.2	40	National defense	60.5
18	NATIONAL INCOME	616.7	41	Other	16.5
19	Business transfer payments (2–17)	2.7	42	State and local	77.2
20	Indirect business tax and nontax liability (3–12)	65.1			
21	*Less*: Subsidies less current surplus of government enterprises (3–6)	2.2			
22	Capital consumption allowances (5–7)	63.5			
23	Statistical discrepancy (5–9)	−2.6			
	CHARGES AGAINST GROSS NATIONAL PRODUCT	743.3		GROSS NATIONAL PRODUCT	743.3

(continued)

TABLE 1 (continued)

2. Personal Income and Outlay Account

Line			Line		
1	Personal tax and nontax payments (3–10)	75.2	7	Wage and salary disbursements (1–3)	394.6
2	Personal outlays	479.0	8	Other labor income (1–7)	20.8
3	Personal consumption expenditures (1–24)	465.9	9	Proprietors' income (1–8)	59.3
4	Interest paid by consumers (2–15)	12.4	10	Rental income of persons (1–9)	19.4
5	Personal transfer payments to foreigners, net (4–4)	.6	11	Dividends (1–14)	21.5
6	Personal saving (5–3)	29.8	12	Personal interest income	42.4
			13	Net interest (1–17)	20.2
			14	Net interest paid by government (3–5)	9.9
			15	Interest paid by consumers (2–4)	12.4
			16	Transfer payments to persons	43.9
			17	From business (1–19)	2.7
			18	From government (3–3)	41.2
			19	*Less:* Personal contributions for social insurance (3–15)	17.9
	PERSONAL TAXES, OUTLAYS, AND SAVING	584.0		PERSONAL INCOME	584.0

3. Government Receipts and Expenditures Account

1	Purchases of goods and services (1–38)	154.3	10	Personal tax and nontax payments (2–1)	75.2
2	Transfer payments	43.5	11	Corporate profits tax liability (1–12)	34.5
3	To persons (2–18)	41.2	12	Indirect business tax and nontax liability (1–20)	65.1
4	To foreigners, net (4–3)	2.3	13	Contributions for social insurance	38.2
5	Net interest paid (2–14)	9.9	14	Employer (1–6)	20.3
6	Subsidies less current surplus of government enterprises (1–21)	2.2	15	Personal (2–19)	17.9
7	Surplus or deficit (−), national income and product accounts (5–8)	3.2			
8	Federal	.3			
9	State and local	2.9			
	GOVERNMENT EXPENDITURES AND SURPLUS	213.0		GOVERNMENT RECEIPTS	213.0

(continued)

TABLE 1 (concluded)

4. Foreign Transactions Account

Line			Line		
1	Exports of goods and services (1–36)	43.0	2	Imports of goods and services (1–37)	37.9
			3	Transfer payments from US government to foreigners, net (3–4)	2.3
			4	Personal transfer payments to foreigners, net (2–5)	.6
			5	Net foreign investment (5–2)	2.2
	RECEIPTS FROM FOREIGNERS	43.0		PAYMENTS TO FOREIGNERS	43.0

5. Gross Saving and Investment Account

1	Gross private domestic investment (1–28)	118.0	3	Personal saving (2–6)	29.8
2	Net foreign investment (4–5)	2.2	4	Wage accruals less disbursements (1–4)	.0
			5	Undistributed corporate profits (1–15)	27.8
			6	Corporate inventory valuation adjustment (1–16)	−1.6
			7	Capital consumption allowances (1–22)	63.5
			8	Government surplus or deficit (−), national income and product accounts (3–7)	3.2
			9	Statistical discrepancy (1–23)	−2.6
	GROSS INVESTMENT	120.2		GROSS SAVING AND STATISTICAL DISCREPANCY	120.2

SOURCE: *Survey of Current Business*, July 1967.

NOTE: Numbers in parentheses indicate accounts and items of counter-entry in the accounts.

Two sectors of the economy are shown explicitly: the household and nonprofit institution sector and the general government sector. Households and nonprofit institutions are combined for two reasons: nonprofit institutions do provide consumption of a private nature, and nonprofit institutions, unlike other business enterprises, are not motivated by considerations of profit. Nonprofit institutions included in the household sector are confined to those which furnish services to individuals. This includes religious organizations, social and athletic clubs, labor organizations, nonprofit schools and hospitals, and charitable and welfare organizations. Nonprofit organizations such as mutual savings banks, cooperatives, and other activities primarily of an enterprise nature are excluded from the household and nonprofit institution sector. The nonprofit institutions that are included in the household sector do engage in productive activity, private consumption, and capital formation. Production can also originate in households proper in the US accounts; specifically, households can employ domestic servants. The services of owner-occupied houses, however, are included in the enterprise sector, and households proper have no fixed capital formation.

The general government sector in the US accounts covers all of those activities of the federal, state, and local governments that are not of an enterprise nature. The general government engages in productive activity by hiring government employees. In the US accounts, the government does not engage in fixed capital formation. Expenditures on construction and equipment that in the enterprise sector would be considered fixed capital formation are considered current outlays when made by the general government.

Although there is no explicit enterprise sector in the US accounts, those productive activities that are not specifically included in the household and nonprofit institution sector or in the general government sector can be considered to be enterprise activities. In the 1947 system there was both a business sector and a rest of the world sector. In the present US system, these two groups together constitute the enterprise sector. The rest of the world is included in the enterprise sector because the consolidated production account for the economy shows national rather than domestic productive activity and the payments of national rather than domestic income. Had the consolidated production account for the economy been drawn up to show domestic income and product and domestic income payments, the enterprise sector would by definition have excluded rest of the world activities and there would need to be a separate rest of the world sector. The National Income and Product Account also serves the function of an income and outlay account for enterprises, showing how the income of enterprises is distributed among employees, owners of capital, and payment of taxes to the government, or retained within the corporate sector.

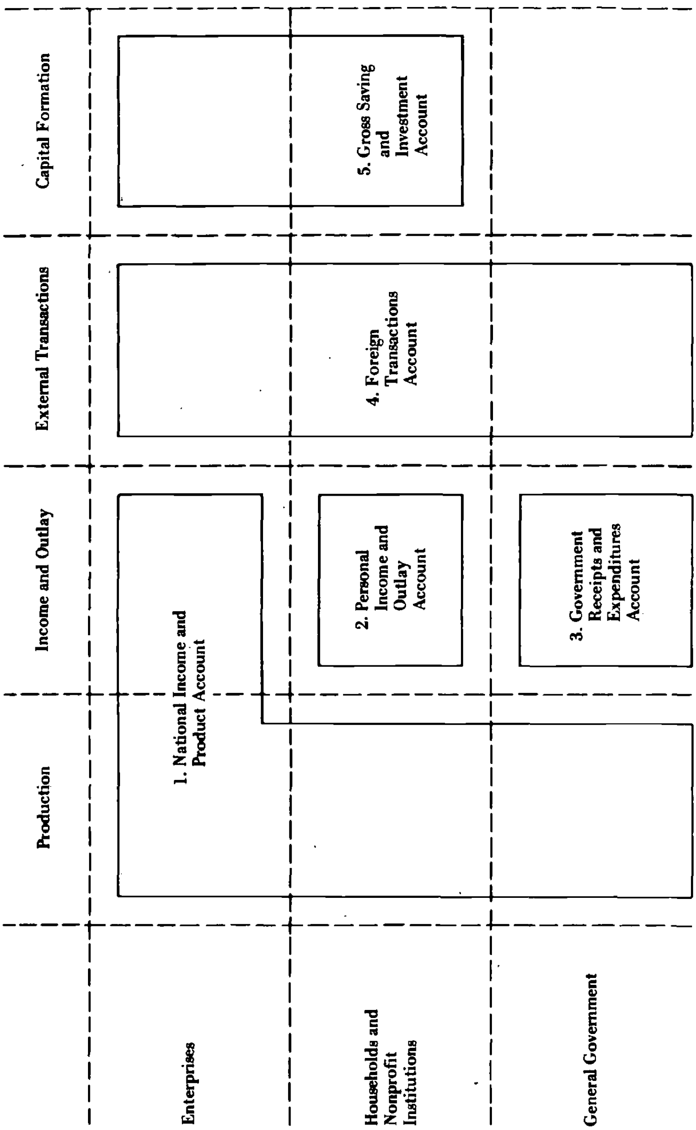
The structure of the US accounts is shown in Figure 1. The rows in this figure indicate the three sectors of the economy: enterprises, households and nonprofit institutions, and the general government. The columns show the four types of accounts used to record economic activity: production, income and outlay, external transactions, and capital formation. The five accounts of the US national income accounts are entered in the diagram as boxes that indicate the sector and activity coverage of each account. The National Income and Product Account is shown as a consolidated production account for all sectors, and in addition as an income and outlay account for the enterprise sector. The Personal Income and Outlay Account and the Government Receipts and Expenditures Account are shown as separate income and outlay accounts for the household and nonprofit institution sector and the general government sector. The Foreign Transactions Account is shown as a consolidated account for external transactions. The Gross Saving and Investment Account is consolidated for enterprises and nonprofit institutions but, since in the US accounts the general government does not engage in capital formation, the consolidation does not include this sector.

The Old United Nations System

The old United Nations System of National Accounts [2] was adopted in 1952. In large measure it reflected the development of the national income accounting framework in a number of countries during World War II. Although the work in the United Kingdom and the United States is best known, substantial work on national income accounts was also done in Norway and the Netherlands. In 1940 Ragnar Frisch published a study entitled *National Accounting* [19], and in 1941 the Central Bureau of Statistics of the Netherlands developed a system based on the national bookkeeping concepts of Ed. van Kleef [20]. In 1946 Richard Stone prepared for the League of Nations a monograph on social accounting that was to become the cornerstone for the further development of the field [21]. Many of the European countries under-

FIGURE 1

The Structure of the US System of National Income Accounts



took the compilation of national accounts at this time in order to help in planning economic recovery, and the Organisation for European Economic Cooperation fostered this development by using national income accounting as a basis for its planning. The OEEC set up a National Accounts Research Unit under Richard Stone in Cambridge, England, which developed a standardized system of national accounts for the use of the OEEC; this system with some modification later became the "System of National Accounts" adopted by the United Nations, and shown in Table 2.

TABLE 2

The Old UN System of National Accounts and Supporting Tables: The Standard Accounts

Account 1. Domestic Product

1.1	Net domestic product at factor cost (2.9)	1.5	Private consumption expenditure (4.1)
1.2	Provisions for domestic fixed capital consumption (3.4 + 4.14 + 5.17)	1.6	General government consumption expenditure (5.1)
1.3	Indirect taxes (5.8)	1.7	Gross domestic fixed capital formation (3.1)
1.4	*Less* subsidies −(5.2)	1.8	Increase in stocks (3.2)
		1.9	Exports of goods and services (6.1)
		1.10	*Less* imports of goods and services −(6.4)
GROSS DOMESTIC PRODUCT AT MARKET PRICES		EXPENDITURE ON GROSS DOMESTIC PRODUCT	

Account 2. National Income

2.1	Compensation of employees (4.7)	2.9	Net domestic product at factor cost (1.1)
2.2	Income from unincorporated enterprises (4.8)	2.10	Net factor income from the rest of the world (6.2)
2.3	Income from property (4.9)		
2.4	Saving of corporations (3.3)		
2.5	Direct taxes on corporations (5.9)		
2.6	General government income from property and entrepreneurship (5.6)		
2.7	*Less* interest on the public debt (5.7)		
2.8	*Less* interest on consumers' debt −(4.2)		
NATIONAL INCOME		NET NATIONAL PRODUCT AT FACTOR COST	

(continued)

TABLE 2 (continued)

Account 3. Domestic Capital Formation

3.1 Gross domestic fixed capital formation (1.7) 3.2 Increase in stocks (1.8)	3.3 Saving of corporations (2.4) 3.4 Provisions for fixed capital consumption in corporations (1.2*) 3.5 Net capital transfers to corporations (5.14 + 6.8 − 4.15) 3.6 Net borrowing of corporations −(4.18 + 5.19 + 6.11)
	Finance of gross capital formation in corporations 3.7 Finance of gross capital formation in noncorporate private sector (4.12) 3.8 Finance of gross capital formation in noncorporate public sector (5.13)
GROSS DOMESTIC CAPITAL FORMATION	FINANCE OF GROSS DOMESTIC CAPITAL FORMATION

Account 4. Households and Private Nonprofit Institutions

Current Account

4.1 Consumption expenditure (1.5) 4.2 Interest on consumers' debt −(2.8) 4.3 Direct taxes (5.10) 4.4 Other current transfers to general government (5.11) 4.5 Current transfers to rest of the world (6.5) 4.6 Saving (4.13)	4.7 Compensation of employees (2.1) 4.8 Income from unincorporated enterprises (2.2) 4.9 Income from property (2.3) 4.10 Current transfers from general government (5.3) 4.11 Current transfers from rest of the world (6.3*)
DISPOSAL OF INCOME	INCOME OF HOUSEHOLDS AND PRIVATE NONPROFIT INSTITUTIONS

Capital Reconciliation Account

4.12 Finance of gross capital formation in noncorporate private sector (3.7)	4.13 Saving (4.6) 4.14 Provisions for fixed capital consumption (1.2*) 4.15 Net capital transfers from corporations (3.5*) 4.16 Net capital transfers from general government (5.15) 4.17 Net capital transfers from rest of the world (6.9) 4.18 Net borrowing −(3.6 + 5.19 + 6.11)
DISBURSEMENTS	RECEIPTS

(continued)

TABLE 2 (continued)

Account 5. General Government

Current Account

5.1	Consumption expenditure (1.6)	5.6	Income from property and entrepreneurship (2.6)
5.2	Subsidies −(1.4)	5.7	*Less* interest on the public debt (2.7)
5.3	Current transfers to households (4.10)	5.8	Indirect taxes (1.3)
5.4	Current transfers to rest of the world (6.5)	5.9	Direct taxes on corporations (2.5)
5.5	Saving (5.16)	5.10	Direct taxes on households (4.3)
		5.11	Other current transfers from households (4.4)
		5.12	Current transfers from rest of the world (6.3*)
	DISPOSAL OF CURRENT REVENUE		CURRENT REVENUE

Capital Reconciliation Account

5.13	Finance of gross capital formation in noncorporate public sector (3.8)	5.16	Saving (5.5)
5.14	Net capital transfers to corporations (3.5*)	5.17	Provisions for fixed capital consumption (1.2*)
5.15	Net capital transfers to noncorporate private sector (4.16)	5.18	Net capital transfers from rest of the world (6.10)
		5.19	Net borrowing −(3.6 + 4.18 + 6.11)
	DISBURSEMENTS		RECEIPTS

Account 6. External Transactions (Rest of the World)

Current Account

6.1	Exports of goods and services (1.9)	6.4	Imports of goods and services −(1.10)
6.2	Net factor income from rest of the world (2.10)	6.5	Current transfers to rest of the world (4.5 + 5.4)
6.3	Current transfers from rest of the world (4.11 + 5.12)	6.6	Surplus of nation on current account (6.7)
	CURRENT RECEIPTS		DISPOSAL OF CURRENT RECEIPTS

(continued)

TABLE 2 (concluded)

Capital Reconciliation Account	
6.7 Surplus of nation on current account (6.6)	6.11 Net lending to rest of the world $-(3.6 + 4.18 + 5.19)$
6.8 Net capital transfers from rest of the world to corporations (3.5*)	
6.9 Net capital transfers from rest of the world to households (4.17)	
6.10 Net capital transfers from rest of the world to general government (5.18)	
RECEIPTS	DISBURSEMENTS

SOURCE: *A System of National Accounts and Supporting Tables*, Statistical Office of the United Nations, 1953.

NOTE: Numbers in parentheses indicate accounts and items of counter-entry in the accounts. An asterisk denotes "part of" item listed.

The old UN national income accounting system contains six interrelated accounts, but the last three of these accounts each have two separate parts, current and capital. The accounts are Domestic Product, National Income, Domestic Capital Formation, Households and Private Nonprofit Institutions, General Government, and External Transactions (Rest of the World Account). The first three of these accounts are consolidated for the economy as a whole. The Domestic Product Account shows on the right-hand side the expenditures on gross domestic product, and on the left-hand side net domestic product at factor cost, capital consumption, indirect taxes, and subsidies. Income arising in the rest of the world sector is excluded, and the distribution of income to the various sectors of the economy is not shown. The National Income Account shows the income originating both in the domestic sectors and in the rest of the world, and how this income is distributed to the different sectors of the economy. The Domestic Capital Formation Account is consolidated for all the domestic sectors of the economy, showing on the left-hand side the gross domestic fixed capital formation and the increase in stocks, and on the right, the saving and financing of capital formation. The households and private nonprofit institutions sector, the general government sector, and the rest of the world sector all have both current accounts and capital reconciliation accounts. For all of these sectors, the current account shows receipts and outlays of a current nature, and the capital reconciliation account shows how saving, transfers, and borrowing finance gross capital formation.

The old UN system of accounts thus presents basically three types of account: production, current, and capital. There are three explicit sectors: households and nonprofit institutions, general government, and the rest of the world. In this system the rest of the world is treated as a sector rather than as an external transactions account, because it is specifically excluded from the enterprise sector with respect to both production and capital formation, and because like other sectors it is also provided with current and capital accounts. The definition of the household and nonprofit institution sector follows that already described for the United States. Although the coverage of the general government sector is the same as that of the US system, the old UN system considers that general government purchases of construction and equipment do constitute gross capital formation.

The structure of the old UN accounts is shown in Figure 2. The Domestic Product Account is a consolidated production account extending over all domestic sectors. The National Income Account is a current income and outlay account extending over both the domestic sectors and the rest of the world. The Domestic Capital Formation Account is a consolidated account extending over the domestic sectors, and for each of the explicit sectors of the economy a current income and outlay and a capital reconciliation account are provided, making in effect a nine-account system.

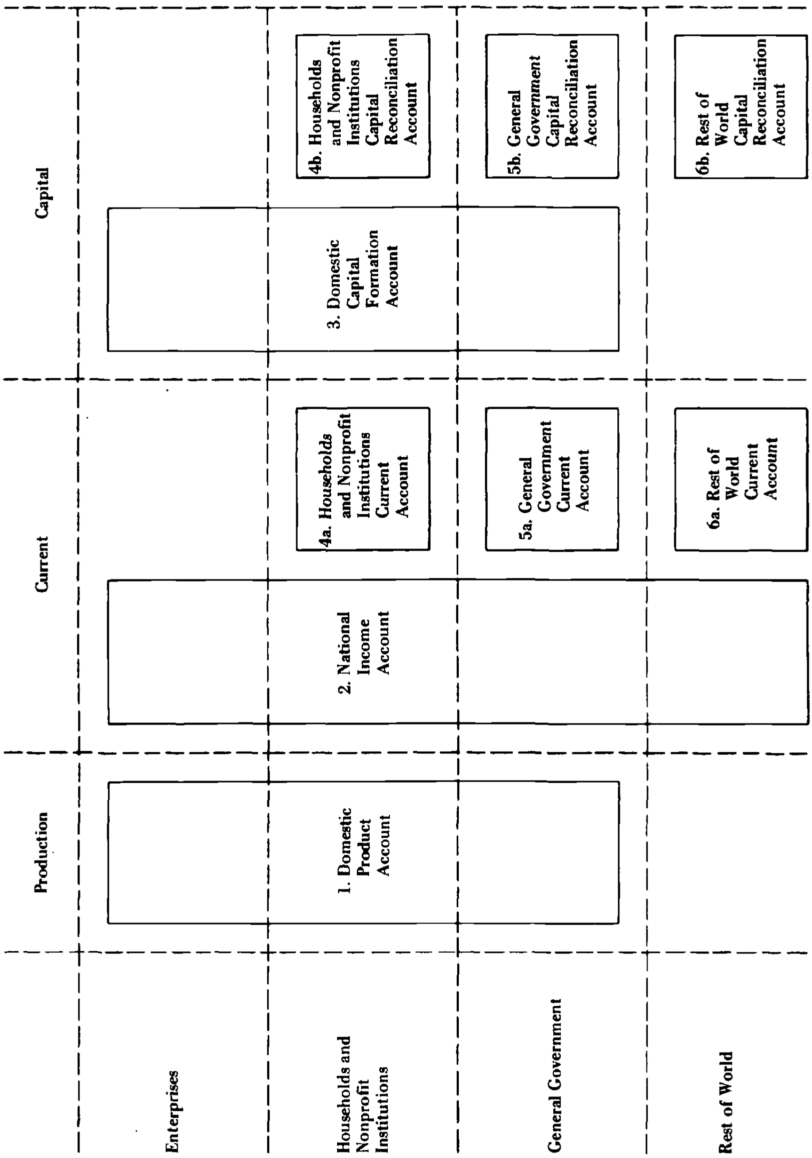
The New United Nations System

The Rationale of the Revision

In recent years there has been considerable pressure for revision of the United Nations System of National Accounts. The elaboration and extension of national accounting and the construction of disaggregated economic models have made it both possible and necessary to formulate a new system if international standards and reporting are to keep pace with the actual work being done in a number of different countries. The desirability of integrating input-output and financial transactions information with national income accounting data has been recognized for some time, and it is evident that the framework of balancing accounts could be expanded to do this satisfactorily. It is also

FIGURE 2

The Structure of the Old UN System of National Accounts



evident that an expanded system of national economic accounts is necessary to provide a consistent statistical picture of the development of an economic system, and in describing and analyzing economic change for many forms of economic decision making.

In 1964, an expert group of economists from a number of different countries was convened by the Secretary-General of the United Nations to consider the revision of the SNA. During the next four years a number of documents were produced. Special regional meetings were held in different parts of the world on different aspects of the proposed system. Use was also made of the studies and discussions of other special groups convened by the United Nations on such topics as constant prices, income distribution, and selected aspects of the structure, classification, and tabulations proposed for the new system.

The new UN system, its authors state, is not intended to represent a shift in emphasis; rather, by providing the necessary basic information in a more complete and comprehensive fashion, it seeks to modernize the system to take advantage of recent developments in statistical capabilities and to permit a wider range of problems to be studied. It explicitly recognizes that a national accounts system should provide a data framework for the collection of economic statistics, and that a properly constructed national accounting system can be used to test the consistency and adequacy of data coverage in many areas. The system is regarded as a target for statistical development, a target that will not be reached in the same degree or same manner by all countries. One of its major functions is to provide explicit links between complex representations of an economy and the simple, familiar national income accounts. Systems of consolidation are provided so that the masses of detailed information can be reduced to summary information for the economy as a whole. It is also expected that the revision will provide the basis for a revised system of international reporting, but the specific way in which this will be accomplished has not yet been detailed. Other related topics such as the development of national balance sheets, the distribution of income, the development of regional accounts, and the linking of the UN system to the material products system used by the Eastern European countries are also left to later development.

The Matrix Approach

The conceptual basis of the new UN system is a matrix approach to the classification of types of economic activity, sectoring of transactors,

TABLE 3

The New UN System: A Primary Disaggregation of the National Accounts, Including Balance Sheets

			1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
Opening assets	*1*	Financial claims										1,249		165				
	2	Net tangible assets										661						
Production	*3*	Commodities				245	166		6	41			50					
	4	Activities			443		44											
Consumption	*5*	Consumer goods/purposes						210					2					
	6	Income and outlay			14	241						−19	13					
Accumulation	*7*	Increase in stocks										6						
	8	Fixed capital formation										41						
	9	Financial claims										58		18				
	10	Capital finance	1,217	693				27			59				−23	44	1,253	764
The rest of the world	*11*	Current transactions			51	1	2	12										
	12	Capital transactions	197	−32							17		1		0	−2	214	−33
Revaluations	*13*	Financial claims										−21		−2				
	14	Net tangible assets										42						
Closing assets	*15*	Financial claims										1,286		181				
	16	Net tangible assets										731						

NOTE: In the columns, opening and closing assets are balanced by opening and closing liabilities; and net tangible assets are balanced by net worth.

and classification of transactions. An example of this matrix approach for a larger system of national accounts, which embraces balance sheets as well as national income accounts, input-output, and financial transactions, is shown in Table 3, which is taken from the UN proposal.[2] The revised SNA does not include balance sheets, and therefore covers only that area of the table which is shown within the heavy black lines. The matrix is symmetrical in that the same items serve as row and column descriptors, and for any given row and its corresponding column the accounts balance. It will be noted that while Table 3 contains different types of accounts and different kinds of transactions, there is no indication of sectors. The new UN system does provide sector information, in terms of both industries and institutions; this detail is shown in the more expanded matrix given in Appendix C. In the more expanded version, for example, the capital finance account shown as row and column 10 in Table 3 is further broken down by (1) type of capital formation, (2) type of capital transfer, (3) type of financial asset, and (4) institutional sector. By use of these fairly general matrices, it is possible to describe any type of accounts, any system of sectoring, or any transaction classification. The UN emphasizes, however, that the matrix presentation is a conceptual device to illustrate the underlying structure of the system, and does not constitute the new system as such.

The Standard Accounts

In the construction of the standard accounts, the revision of the UN system focuses somewhat more than in the matrix on sectors, in order to exhibit the relationships among various transactors and activities. The list of accounts is shown below. The full set of accounts will be found in Appendix B.

List of the Standard Accounts in the New UN System

Class I Accounts—Consolidated Accounts for the Nation
- Account 1. Domestic Product and Expenditure
- Account 3. National Disposable Income and Its Appropriation
- Account 5. Capital Finance
- Account 6. All Accounts—External Transactions

Class II Accounts—Production, Consumption Expenditure, and Capital Formation Accounts
- A. Commodities—Accounts 1, 2, and 4

[2] See [3], Table 6, p. 30.

B. Other Goods and Services—Accounts 1, 2, and 4
   a. Sales by Nonprofit Services and Direct Imports of General Government
   b. Final Consumption Expenditure of General Government
   c. Final Consumption Expenditure of Private Nonprofit Institutions Serving Households
   d. Final Consumption Expenditure of Households
C. Industries—Account 1, Production Account
D. General Government Services—Account 1, Production Account
E. Services of Private Nonprofit Institutions Serving Households—Account 1, Production Account

Class III Accounts—Income and Outlay and Capital Finance Accounts
A. Nonfinancial Enterprises, Corporate and Quasi-Corporate
   Account 3. Income and Outlay Account
   Account 5. Capital Finance Account
B. Financial Institutions
   Account 3. Income and Outlay Account
   Account 5. Capital Finance Account
C. General Government
   Account 3. Income and Outlay Account
   Account 5. Capital Finance Account
D. Private Nonprofit Institutions Serving Households
   Account 3. Income and Outlay Account
   Account 5. Capital Finance Account
E. Households, Including Private Nonfinancial Unincorporated Enterprises
   Account 3. Income and Outlay Account
   Account 5. Capital Finance Account

There are three major classes of these accounts: Class I accounts are the consolidated accounts for the nation. Class II accounts are deconsolidations of the Class I production account into commodity accounts, showing the available supply and disposition of goods and services, and industry accounts, showing the origin of domestic production. The Class II commodity accounts cover production, consumption expenditure, and capital formation. The Class II industry accounts show the production of commodities and other goods and services. The Class III accounts are deconsolidations of Class I income and outlay and capital finance accounts into the same type of accounts for institutional sectors. There are thus six different basic types of accounts for economic activities. These are (1) production accounts, (2) consumption expenditure accounts, (3) income and outlay accounts, (4) capital formation accounts, (5) capital finance accounts, and (6) external transactions accounts.

The major sectors of the economy for which accounts are drawn up are (1) enterprises, (2) general government, (3) nonprofit institutions serving households, (4) rest of the world, and (5) households.

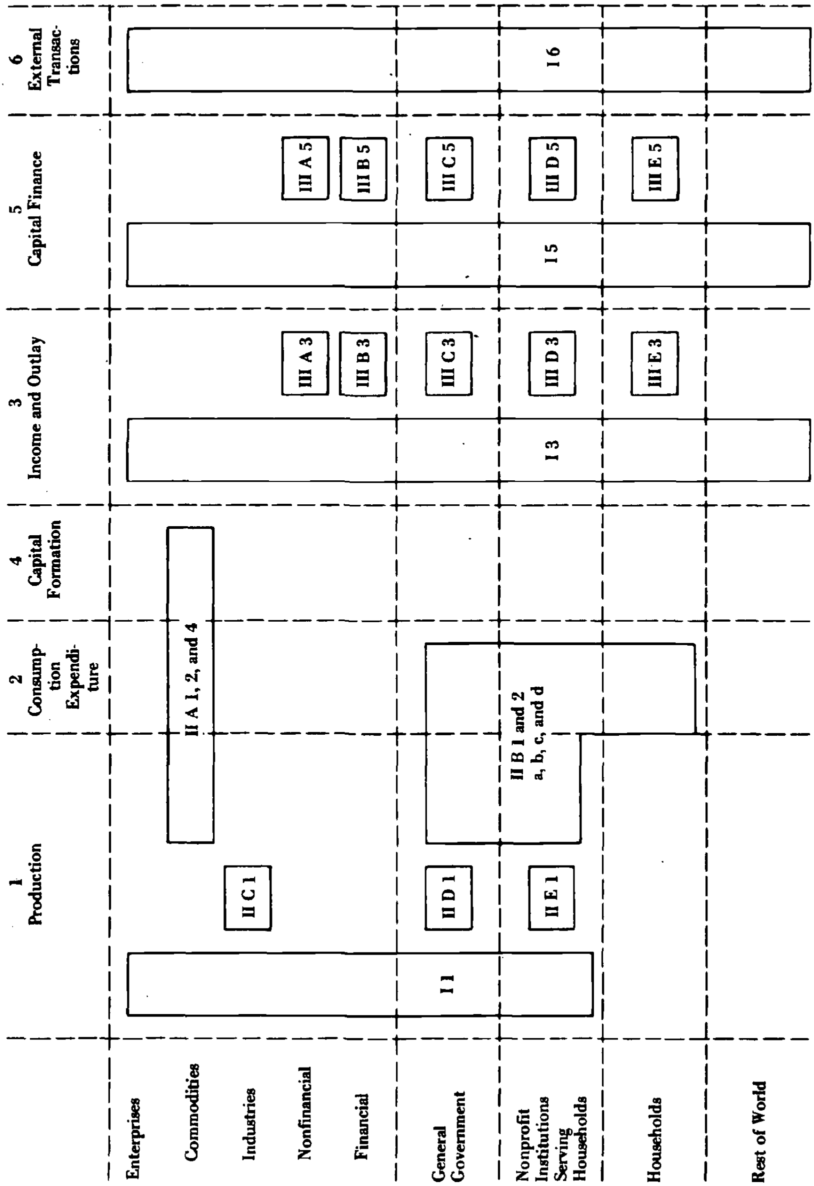
The enterprise sector is broken into four different sets of subsectors: (a) commodities, (b) industries, (c) nonfinancial enterprises, and (d) financial enterprises. Nonprofit institutions serving households are treated as a separate sector. Although the rest of the world never appears as an explicit sector it is implicit in the sectoring of the economy, since it is excluded from domestic production and domestic capital formation but it is part of the consolidated national income and outlay account and the consolidated external accounts. Since nonprofit institutions have been separated from households, the household sector contains only final consumers who neither produce goods and services nor engage in capital formation.

The structure of the types of economic activity and sectoring in the new UN accounts is shown in Figure 3. The Class I accounts are consolidated, and show (1) production for domestic sectors of the economy, and for all sectors, (2) income and outlay, (3) capital finance, and (4) external transactions. These are accounts labeled I1, I3, I5, and I6. Accounts IIA and IIB show the supply and use of commodities in the system: the commodities supplied by industries, general government, and nonprofit institutions are used for consumption expenditure and capital formation. The production of the economy in terms of industry and sector of origin is shown in accounts IIC, IID, and IIE. Finally, income and outlay and capital finance accounts are shown for nonfinancial and financial enterprises, the general government, nonprofit institutions, and households, thus completing the full set of accounts.

The set of new UN accounts is considerably more comprehensive than conventional national income accounts. The Class I accounts do constitute an abbreviated set of national income accounts, but since they are consolidated for the economy as a whole they do not show the intersectoral relationships. On the other hand, although the new system lays the basis for input-output tables and financial transactions by sector, it does not present this information as part of the system itself but expects the basic data to be provided in the supporting tables. Actually, the 19 standard accounts in the UN list somewhat understate the number of accounts required, since the commodity and industry sectors, even in the summary presentation, are conceived as sets of sector tables. The UN recommends a minimum of seven sectors for the commodity and industry accounts, thus resulting in a basic system of 31 accounts.

FIGURE 3

The Structure of the New UN System of National Accounts



Evaluating the Structure of National Income Accounts

The three systems of national income accounts which have been examined cover four basic types of economic activity: production, income and outlay, capital formation, and external transactions. The revision of the UN accounts introduces two additional types of activity, consumption and capital finance, to provide data on the supply and use of commodities and on financial transactions. From the point of view of the national income accounting system, however, these do not constitute additional types of economic activity; rather, as is pointed out in the UN document, they are deconsolidations of the income and outlay and the capital accounts.

The division of the economy into sectors differs somewhat in the various systems. Nonprofit institutions are combined with households in the US and the old UN systems, but in the new UN system nonprofit institutions are shown as a separate sector. In both the UN systems, furthermore, a rest of the world sector separate from the enterprise sector is implicit. For the purpose of evaluating these systems, however, the discussion can be carried on in the context of the economic activities of three major sectors: enterprises, households, and government.

The Enterprise Sector Accounts

In none of the national income accounting systems examined is there an explicit enterprise sector. In the US and the old UN systems, the enterprise sector is consolidated with the productive activities of the economy as a whole. In the new UN system, the enterprise sector is included as part of the consolidated Class I accounts, on the one hand, and deconsolidated into a number of commodity, industry, and financial and nonfinancial enterprise subsectors, on the other hand. The US and old UN systems thus present a somewhat too consolidated view, but the revision of the UN system goes further than is desirable in the standard accounts toward deconsolidation. The enterprise sector is divided into so many subgroups that it loses its separate identity.

The enterprise sector should cover all of the market activity of the economy, both profit and nonprofit, carried on in the context of enterprises. Production carried out by the general government or by households that is not sold in the market should not be included in the output of the enterprise sector. If the government hires civil servants to produce public services that are not sold this constitutes nonmarket output by the government; the government is in fact providing services to the economy outside the market mechanism. Similarly, if an individual raises food for his own consumption, this is also output which does not reach the market sector. In less developed countries where the subsistence sector is large such household production may be important, and the national income accounts would accordingly show that a smaller share of the total output of the economic system originates as enterprise output.

The classification of private nonprofit institutions raises special problems. The US and the old UN systems include nonprofit institutions serving households as part of the household sector, on the ground that these nonprofit institutions do provide free private consumption goods. The UN revision, however, recognizes that the activity of such organizations is not the same as household activity, and that the homogeneity of the household sector would be substantially improved by the exclusion of nonprofit institutions. The solution it adopts is to set up a completely separate sector for nonprofit institutions serving households. This means that this sector, like other sectors, must have a complete set of accounts and its transactions must be articulated with those of other sectors. This solution is not really satisfactory, however. In the United States the gross product of the nonprofit institutions that are included in the household sector was only $17 billion in 1966, out of a total gross national product of $743 billion. In other words, the nonprofit sector in the new UN system would represent only 2.3 per cent of the US economy, and would have less analytic significance than many subsectors of the enterprise sector.

In a number of important respects nonprofit institutions do operate like enterprises; for example, a nonprofit hospital hires employees, buys materials, and charges patients in a manner quite similar to profit-making hospitals. The difference in legal form of organization does not appear to warrant setting up a completely different major sector of the economy. Merely because an operation is carried on in the enterprise sector does not imply that it is profit-making; government enterprises, for example, are included in the enterprise sectors of both the US and UN systems. In view of these considerations it would seem that the best solution is to include nonprofit institutions serving households as part of the enterprise sector, and to recognize that they provide free private consumption in much the same way that the government provides free public consumption.

The recognition of enterprise consumption provided by nonprofit institutions does suggest the further question of whether profit-making enterprises may not also provide free consumption goods directly to the public or to their employees. In the United States, for example, television and radio entertainment is supported by business advertising, but since neither the US nor UN systems recognize enterprise consumption as an economic activity these consumption goods are excluded from final output entirely. Yet in other countries where these same activities are supported by taxation they are considered to be a part of public consumption and thus are included in final output. In a similar manner, consumption goods that the enterprise provides to its employees as fringe benefits, such as recreation facilities, subsidized cafeterias, health clinics, expense accounts, etc., are not included in either employee compensation or consumer expenditures, yet such services do exist, and they are enjoyed as a part of the private consumption provided by enterprises.

It is therefore suggested that the activities of the enterprise sector should be shown much more explicitly than they now are in either the US or UN national income accounts. The role which this sector plays in the production of goods and services and the distribution of income generated by market activity, and the consumption which it provides through the operation of both profit and nonprofit institutions, should be fully reflected in the system of accounts. In particular this suggests that in the national income and product account the productive contribution of enterprises be distinguished from the production taking place in households and general government, and that an income and outlay account and a capital formation account be provided explicitly for the enterprise sector so that its role in the economy can be seen more clearly. Although the deconsolidations provided by the UN revision of the enterprise sector do provide much useful information, they would seem more appropriate considered as supplemental deconsolidation and subsectoring of the primary national income accounts.

The Government Sector Accounts

The definition of the government sector is generally the same for all the national income accounting systems examined. They all cover general government only, excluding the trading activities of government enterprises. The accounts provided for the government sector, however, differ considerably between the US and UN systems. In the US system all outlays by the government are considered to be current, and the government does not engage in capital formation. The UN system, however, does recognize expenditures on construction and equipment as capital formation by the general government. The UN treatment seems preferable, since it is logical to consider that government expenditures that provide a flow of services in future periods are capital formation just as are similar expenditures undertaken by enterprises. If this treatment is adopted, the flow of services arising from past government expenditures on capital goods must be included in government current consumption.

The Household Sector Accounts

As noted above, the US and the old UN systems of accounts have a combined household and nonprofit institution sector, but the new UN system excludes nonprofit institutions, thus considerably improving the homogeneity of this sector. If this procedure is followed, the question then arises as to whether the household sector proper engages in either production or capital formation. The US and the old UN systems include employees hired by the household, i.e., domestic servants, as part of the productive activity of households, but do not recognize any capital formation by households. Owner-occupied houses are treated as businesses; the flow of services they produce is treated as enterprise income, and their construction is considered capital formation by the enterprise sector. The purchase of consumer durables is considered current consumption expenditure. The UN revision does not recognize either productive activity or capital formation by households. Domestic servants, like doctors and lawyers, are considered to be self-employed, and thus are included in the enterprise sector; since the line of demarcation between self-employed persons who provide services to the household and employees of the household is quite arbitrary, this treatment seems logical. The treatment of owner-occupied houses in the new UN system is similar to that of the current US system, and purchases of consumer durables are again classified as current consumption expenditures.

If, however, enterprise activity is to be defined in terms of market activity, there are a number of productive activities that should be considered as taking place within the household. The household that grows food for its own consumption is engaging in productive activity that is not included in the enterprise sector; no market transactions are involved. In a similar manner, the flow of services provided by owner-occupied housing reflects current nonmarket activity taking place within the household, and when an individual purchases his own home he is in fact engaging in capital formation.

Furthermore, consumer durables do provide a continued flow of services within the household sector. Treating the purchase of an automobile, for instance, as a current consumption expenditure does considerable violence to the facts; some households retain them for periods ranging up to ten years or more, and during World War II it became obvious that the stock of automobiles was an important asset that was capable of yielding services over an extended period of time. One of the hallmarks of modern economic development has been the rapid growth in the production of consumer durables. Such consumer durables as dishwashers, refrigerators, stoves, and air conditioners are often included in the purchase price of the house to which they are attached, and they are often financed by the mortgage on the house. It does not seem reasonable to subtract from the value of the house the cost of the durable goods which are built into it, or to exclude them from capital formation on the ground that they have been purchased separately.

There is also another argument for considering expenditures on consumer durables as capital outlays. In the early years of a family's lifetime, expenditures on consumer durables (including such things as furniture) are likely to be particularly heavy. In contrast, retired persons spend relatively little in these categories. If the time distribution of the services of durables is not taken into account, the rates of consumption of families at different points in their life cycles will be distorted. It is true that the services of consumer durables do not produce monetary income and retired people do need monetary income for some purposes (e.g., Medicare) but the realities of the situation are that there are capital costs involved in setting up a household, and retired people are receiving a flow of services from the assets that they have accumulated during their lifetimes. In studying the development of the economy, furthermore, the accumulation of consumer durables over time by the household sector is, as has been shown by Juster in his study of household capital formation and financing [22], an important dimension of economic growth and development. If this form of capital accumulation is not taken into consideration, an important set of information relating to economic activity and behavior will be omitted.

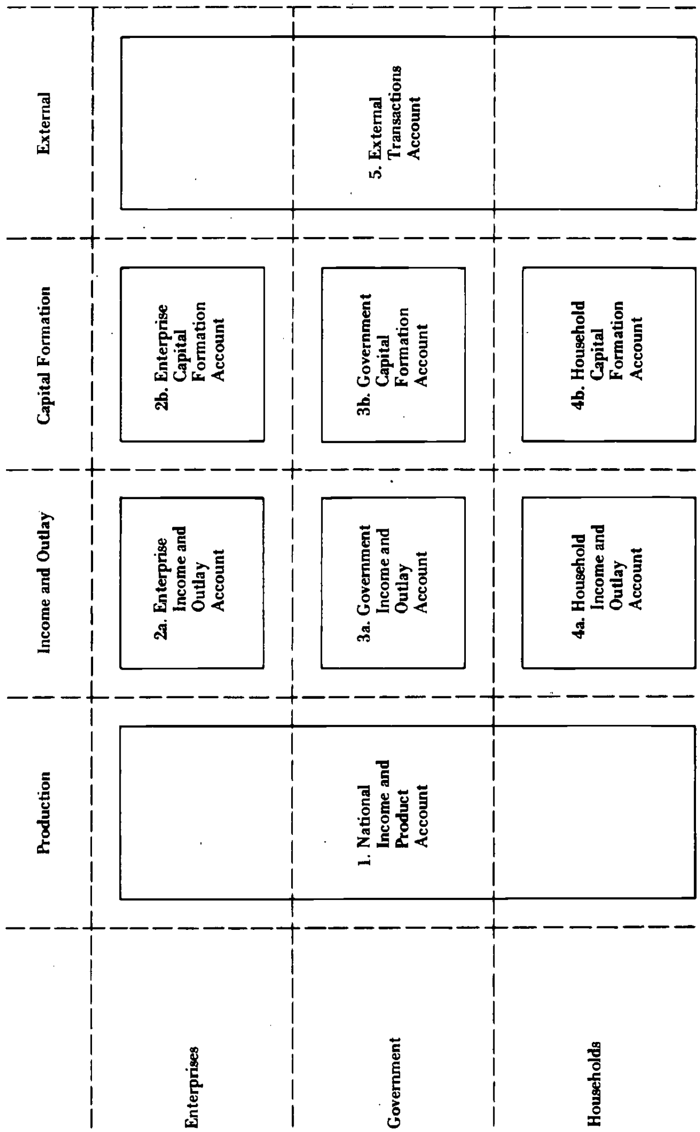
In view of these considerations, it is suggested that the activities of the household sector include both production and capital formation, as well as consumption. The productive activity that takes place within the household should be entered in the consolidated production account for the economy; households should be provided with a capital formation account that would recognize both owner-occupied housing and consumer durables, and the flow of services of these owner-occupied houses and consumer durables should be included in household consumption.

Summary of Recommendations on the Structure of National Income Accounts

Both the US and the old UN systems of accounts were constructed to show the major flows of economic activity among the different sectors of the economy. Both systems have been quite successful in providing an overview of the operation of the economic system, and are widely relied upon for this purpose. The new UN system, however, does not serve this purpose as well. On the one hand, the consolidated accounts for the economy as a whole, i.e., the Class I accounts, do not contain accounts for sectors, so that information on the economic activity of government and households is not separately presented. The deconsolidation of the production, consumption, and capital formation accounts in terms of commodities, industries, nonprofit institutions, households, and general government, and the deconsolidation of the income and outlay and capital finance accounts for nonfinancial enterprises, financial enterprises, nonprofit institutions, households, and general government do contain the necessary intersectoral information, but at the cost of introducing a great deal of detail that is not required for an overview of the operation of the system, and that in fact interferes with an understanding of what is taking place. It has already been noted that the accounts listed on pages 26 and 27 and shown in Appendix B do not reflect even the minimum breakdown of the commodity and industry sectors that are recommended for the revised UN system. Even the full set of proposed national accounts, however, does not contain the detailed data required for input-output tables, flow-of-funds tables, etc. This information is presented in a set of 28 supporting and

FIGURE 4

The Structure of the Proposed System of National Income Accounts



supplementary tables. The new UN system in its consolidated form thus provides too little information about the economic activities and the interrelationships of sectors, but in even the initial deconsolidation it provides such a complex and detailed network of flows that the relationships are obscured. It is therefore suggested that a level of deconsolidation approximating that contained in the US and the old UN systems should be retained.

Specifically, it is suggested that four economic activities (production, income and outlay, capital formation, and external transactions) and three sectors of the economy (enterprises, general government, and households) should be recognized. For productive activities and external transactions, it is further suggested that the activities of all sectors be consolidated to show the performance of the economy as a whole, but for income and outlay and capital formation, separate accounts should be provided for each sector. It is expected, of course, that in supporting tables the breakdown of production activities by industry and sector would be shown. Figure 4 presents the structure of such a national income accounting system.

This system bears a much closer resemblance to the US and the old UN systems than it does to the revision of the UN system. It provides for the explicit recognition of the enterprise sector with respect to both income and outlay and capital formation. Both the general government sector and the household sector engage in capital formation; but, since each sector is provided with a separate capital formation account, the capital formation of the different sectors can be identified. Finally, by including the activity of nonprofit institutions in the enterprise sector, the homogeneity of the household sector is improved without introducing a separate relatively unimportant sector into the system.