CENTRAL BUREAU OF STATISTICS The Netherlands National Accounts Research Division

A PROPOSAL FOR A SAM WHICH FITS INTO THE NEXT SYSTEM OF NATIONAL ACCOUNTS")

Steven J. Keuning**)

*) Paper presented at the conference A SAM FOR EUROPE, Valencia, Spain, 3rd-4th September 1990.

**) Chief of the National Accounts Research Division.

The views expressed in this paper are those of the author and do not necessarily reflect the views of the Netherlands Central Bureau of Statistics

Nr. NA-037 1990

Abstract

۰.

This paper shows that all flow accounts which may become part of the next System of National Accounts (SNA) can be embedded easily in a Social Accounting Matrix (SAM) framework. In fact, a SAM format has several advantages when compared to the traditional T-accounts for the institutional sectors. The SAM allows for more flexibility in selecting a) the most relevant (different) classification in each account, and b) the most relevant (different) valuation principle in each account.

When compared to most currently available SAMs, the National Accounting Flows Matrix in this paper contains, in addition, a complete supply and use system, more detail in the income generation and distribution accounts, a produced capacity account recording the destination of investments by production activity, a financial account, an other changes in assets account (showing holding gains and losses, economic (dis)appearance of non-produced assets etc.) and a changes in balance sheet account. This framework is illustrated with an example for the Netherlands.

Contenes

•

1.	Introduction	1
2.	Incorporation of the SAM concept into the next SNA	2
3.	A National Accounting Flows Matrix	8

Appendix.	An	example	of	classifications	in	each	account	19
Notes								21
References	S							23

•

1. Introduction

The present System of National Accounts (SNA) was published at a time [United Nations, 1968] when the Social Accounting Matrix (SAM) framework in its current form had yet to be developed. As set out by Pyatt [1987], a Keynesian growth model underlies the basic design of these famous UN guidelines. Since then, new policy issues have come up, new economic theories have been worked out, and the output of related statistics has increased in most countries. Therefore, it is not surprising that a round of consultations concerning a next revision of the SNA has started a couple of years ago.

This revision process is nearing a final stage now. Recently, the United Nations Statistical Office has sent out a document containing (most of) the outstanding issues, for discussion in meetings of the Regional Commissions of the UN [Inter-Secretariat Working Group on National Accounts, 1990].

This paper serves to indicate to what extent the main principles of the currently existing SAMs have been incorporated in the proposals for the next SNA, and reversely to what extent the SAM framework must be adjusted if one wants link up with the new version of these universal guidelines.¹⁾

2. Incorporation of the SAM concept into the next SNA

• * .

When trying to detect the exact influence of the SAM concept on the most recent set of proposals for amendment of the present SNA, it struck us that basically this impact is limited to an increased attention for a sub-sectoring of the institutional sector households by socio-economic category. Admittedly, a meaningful breakdown of households is a crucial feature of every Social Accounting Matrix. However, the SAM philosophy on accounting goes much further. As also emphasized by Pyatt [1989], the whole accounting system should focus on people, such that attendant, national policy issues can be at the heart of analysis based on these data.

This calls for a full-fledged system of meso-economic accounts with a balanced set of classifications for commodities, production activities, value added categories (including various types of labour) and institutional sectors. It also means that the accounting principles are not exclusively tuned to the objective of international comparability of the figures. The present SNA presupposes that the same, fictive institutional structure exists in every country. This often requires substantial imputations and reroutings of actual transactions. The resulting data set is not particularly suitable to most economic analyses at the national (or regional) level.

At an early stage of the revision process, Dutch national accountants have advocated more flexibility in the next SNA (cf. e.g. van Bochove and van Tuinen [1986]; van Bochove and Bloem [1986]). They have tried to face the consequences of the fact that a single system cannot cater for all purposes of national accounts at all times and across the globe, if only because countries have quite different historical backgrounds and are at quite different stages of development. The solution is to design a national accounts system which consists of a compact, universal core and a set of modules which serve more specific purposes. This core should reflect actual transactions as much as possible, thereby removing the functional elements which reflect a particular view.²) Moreover, the

- 2 -

core should provide for a more elaborate description of the economy at the meso-level (that is including an adequate subsectoring of households in all accounts). Among the mandatory modules would be the one which aims at maximum international comparability.³

Although the background of these proposals is somewhat different, it is obvious that they share many important elements with the SAM-approach.⁴⁾ Unfortunately, these suggestions may not be incorporated in the main accounting framework of the next SNA, precisely because it has been argued that "..The various imputed flows in the SNA are designed to enhance the comparability of the national accounts both between countries with different institutional arrangements and within a single country when institutional arrangements change over time." [Blades, 1989]. This opinion contrasts with the emphasis laid on contemporary (national) policy issues by SAM-builders.

How about the insight the new SNA will provide into the causes and consequences of a certain distribution of welfare? A fairly recent overview of SNA revision proposals [Harrison, 1989] still mentions that "..the new Blue Book will stress the role of employment and income distribution and redistribution in understanding how the ultimate beneficiaries of production, the population, are affected by changes in the level and type of production undertaken. This inter-relation will be shown explicitly in the framework of social accounting matrices." However, the present discussion paper for the Regional Commissions meetings does not contain a SAM. Instead, it is stated: "The alternative matrix presentations also serve as a *link between* the revised SNA and social accounting matrices." [Intersecretariat Working Group on National Accounts, 1990: paragraph 348]. This seems to imply that SAMs will not be part of the new SNA, let alone that they will be incorporated into the Central Framework of the System.

In common with the 1968 SNA, the next SNA may miss some quite crucial inter-relations which are incorporated in a SAM. First and foremost, this applies to the fact that income generation should not only be shown by production activity and by institutional sector, but also by value

- 3 -

added category. It is not the household which works and earns a salary, but the individual. Skipping this link may not create a major problem if households depend on only one $c_{\mu\nu}$ of factor income and if this type of income also serves to classify households. However, in practice multiple income sources prevail, both in developed countries and in developing countries. Moreover, income source is not the only classification criterion for households. In many cases, a geographical subdivision is very relevant because living standards or expenditure patterns differ substantially.

Excluding labour market information from (the Central Framework of) the next SNA is indeed a serious omission, the more so as (un)employment problems have featured very high on the policy agenda since 1968. This applies equally to developed and developing countries. Unfortunately, unemployment may remain high in many countries in the near future. Even if low population growth will solve the problem at the macro level, most experts still expect serious mismatches of demand and supply in substantial segments of the labour market. Consequently, a detailed insight into employment and wage rates by labour type and by industry becomes all the more important. SAMs have served to fill this gap, but it is about time that the 'official' national accounts statistics no longer neglect this issue.

There is only one amendment to the present SNA which goes into the direction of providing more relevant information on the type of income which is generated. This concerns the distinction of mixed income as a separate category of value added. Mixed income refers to the operating surplus of (small) unincorporated businesses, which includes a remuneration of labour input of the entrepreneur and possible unpaid family workers. Since the nature of operating surplus in these businesses is evidently quite different from that in corporate enterprise, this split obviously serves to improve the analytical clarity of the system.⁵⁾

- .

Another deficiency in the SNA revision proposals relates to the notion that one should select for each account a (cross-classification of)

- 4 -

taxonomy(s) which is most relevant to the group of processes under consideration (cf. van Bochove and van Tuinen [1986: 143]). Instead, the Central Framework of the next SNA will probably focus on an (identical) institutional sector subdivision in all (T-)accounts. With regard to the matrix presentation, only an aggregated table for the integrated accounts of the nation is foreseen, in addition to a set of supply and use tables. In the latter, goods and services will be classified by CPCsection, and industries by ISIC-category. Unfortunately, the socioeconomic classification of households has not been incorporated in the final consumption expenditure columns of the supply and use tables, while the full sequence of accounts for each subsector may not contain sufficient detail on the kind of commodities consumed. As a consequence, one is left with merely the row and column totals of a meaningful table showing differences in expenditure patterns by socio-economic category.

More examples of this lack of flexibility and elaboration in the use of taxonomies could in fact be given. It is clear that in many instances a cross-classification or even a three-way classification is required. This will be worked out in the next section of this paper.

Finally, the valuation principles which are used give cause for some concern. This applies in particular to value added.⁶) The abovementioned discussion paper recommends the 'mixed valuation method' (i.e. outputs at basic prices and inputs at market prices), but only "..on practical grounds". Nevertheless, it is also stated that "..experts groups have noted that certain product taxes cannot be allocated to supply and therefore cannot be considered as income of domestic producers. This was true in the 1968 <u>SNA</u> for import duties, but is equally true for value-added type taxes." (paragraph 74)

In fact, a consistent view would be that <u>all</u> taxes on products, including e.g. excise taxes, cannot be considered as income of domestic producers and should therefore not be part of the core GDP concept. In addition, it is questionable whether one gets a correct impression of the contribution of e.g. the liquor industry to GDP if value added is measured including excise taxes. Finally, since taxes on domestic

- 5 -

products are typically not higher than taxes on the same kind of imports, the 'value' which is thus created cannot really be regarded as an achievement of inland manufacturers.

Things are slightly different with respect to taxes (and subsidies) on production processes, like various kinds of licenses. These seem to me a borderline case; they may not affect all (domestic) producers of a certain commodity to the same extent, so that it becomes more difficult to pass them on to the costumer. Moreover, for example a levy on the discharge of oxygen-demanding materials into surface water is basically just as much a tax on the use of inputs as a social security premium paid on behalf of the employees. As a consequence, the core GDP concept may refer to a valuation at basic prices, that is, factor costs plus net taxes on production, but excluding taxes on the (output of) products. However, if one thinks that net taxes on production processes do not belong to value added either, GDP at factor costs is the most suitable concept in the standard accounts. Besides, that valuation principle is more commonly known than basic prices and it is also the one we will use in the rest of this paper.

Simultaneously, National Income (NI) should evidently be measured at market prices. Whereas GDP serves to analyze value added by domestic producers, NI is more oriented towards the measurement of living standards. A different purpose calls for a different valuation principle in this case. How this can be incorporated in a single framework will be shown in the next section.

In conclusion, it can be stated, first, that SAMs and the next SNA will have much in common, simply because SAMs and the present SNA share many important features too. Besides, disaggregating the household sector throughout the system as well as distinguishing a separate category mixed income will be important innovations in the next SNA.

Second, a couple of fundamental differences may remain. Particularly, the ability of the next SNA to assist national policy makers in tackling labour market problems must be questioned. Moreover, the development of

- 6 -

input-output models into more flexible, Computable General Equilibrium
(CGE) models seems to have been overlooked (cf. Pyatt [1989]). Anyhow,
The supply and use tables and the full sequence of accounts for the
institutional sectors, which may constitute the core of the next SNA,
do not provide sufficient information for use as a base-year data set in
a CGE-model.

Third, the revision proposals do contain various elements which may be incorporated into the SAM-concept. This refers to e.g. more detail in the income generation and distribution accounts, and the addition of other changes in assets accounts (showing holding gains and losses, economic (dis)appearance of non-produced assets etc.). These adjustments are discussed in the next section of this paper.

3. A National Accounting Flows Matrix

As explained above, there remains a need for an accounting framework which links up the next SNA with the structure of currently available SAMs.⁷) Table 1 shows a so-called National Accounting Flows Matrix. This matrix was based on the design proposed by Keuning and de Ruijter [1988: table 1], and has expanded and re-arranged that framework a bit such that it integrates a) the full sequence of accounts and balancing items, and b) the set of supply and use tables, which are foreseen in the next SNA (cf. Inter-Secretariat Working Group on National Accounts [1990:tables 2.1 and 2.5]). However, on the one hand some of the proposed SNA accounts have not been included here, and one the other hand a subdivision of the capital account is introduced.

First, the clarity of exposition may improve if stock data (e.g. opening and closing balance sheets) are not incorporated. By definition, flows are transferred from one (sub)account to another: each flow implies an income for the row account and an outlay for the column account. This does not apply to stocks: those figures can only be depicted in a matrix format in a rather artificial way. Yet, the (closing) balance sheets are easily computed with the help of the information contained in this table, since all elements of Total Changes in Net Worth have been included.

Moreover, our matrix contains neither a Redistribution of income in kind account nor subdivisions of the Appropriation of (primary) income account, of the Use of income account, and of the Other changes in assets account. The Redistribution of income in kind account (numbered II.3 in the Discussion Paper's table 2.1) mainly relates to the
incidence of government expenditures benefiting identifiable households. We are not in favour of showing both the actual flows and an (imputed) rerouting of these flows in the same table. Nevertheless, the relevance of this kind of information is not questioned here and thus these imputed receipts and expenditures should be presented in supplementary

- 8 -

. . .

E 1. A COMPLETE NATIONAL ACCOUNTING FLOWS MATRIX (SNA NATRIX, SAN VERSION)

		·····		*····	*	 _												
CCOU Clas	NT siflcoti	on)	0. Goods & Services (Conno- dities)	1.Production (Production Activities)	II.1.1 Income Generation (Value Added Categories)	11.1.2 a. 11.1.2 Income Appropriation	- II.4 Incom National (Sec II.2 Income Re-distrib.	w Distributi tors) 11.4 Use of ncome	on and Use b. Rest of the World	III.1.1 B.Wational (Sectors)	Capitel1 b. Rest of the World	111.1.2 m.National (Sectors)	Capital2 b. Rest of the World	Produced Capacity (Production Activities)	lil.2 fi- nancial (Financ. Assets)	III.3 Other Changes In Assets (Assets)	IV.2 Changes in Bulance Sheet (Sectors)	TOTAL
			1	2	3	4	5	6	7	8	\$	10	11	12	13	14	15	1
xds & vnmod	Service ities)	·s 1	Trade E Transport Margins	Interme- diate Con- sumption				Final Con- sumption	Exports			Change in Stocks		Gross Fixed Capital Formation				Commodity Use (mp)
oduct roduc ctivi	ion tion ties)	2	Dutput															Output (besic prices)
come atue atego	Generati Added ries)	ion		COP					Wages & Op. Surplum from ROW									Income Gene rated
	Incom Appro priati	ne p. 4 ion	Net Taxes on Products	Net Other Taxes Linked to Production	INNP I(fector I costs)	Property Income Flows			Property Income from ROM									Primery Income Origin
tio- inel (Sec	ncon Redist	ne tri 1 on				CNNS =(market == = prices) ==	Current Transfer Flows		Current Transfers from ROW									Secondary Income Origin
	Use	ne (Disposable 1											Disposable Income
e Re	st of e World	1	Imports		Wages & Ope- rating Sur- plus to ROW	Property Income to ROW	Current Transfers to ROW											Current Payments to ROM
apital Worth Genera	Nation 1 (Sec- tors)	nel 1						Savings		Capital Transfer Flows	Capital Transfers from ROM							Finance of Generated Worth Change
tion)	Rest d the Vorld	of q							Relence	Capital Transfers to ROW								FinanceofROW Generated Vorth Change
apital Other	Nation 2 (Sec- tors)	vet 10			Consumption of Fixed Capital							Transactions in Non-prod. Assets	Sales of Non prod. Assets to Abroad		Borrowing	Notding Gains&Econ. Appearance	NetWorthChan ges,Saving & Cap.Transfer	Finance of Gross Worth Accumulation
lation) Rest d the World	of 11										Purch.of Won prod. Assets from Abroad			Lending to ROM	Nolding Gains	NetWorthChan ges,Curr.Acc &CapTransfer	Capital Payments to ROM
Produce (Prod.A	d Capeci ctivitie	ity (s) 12										Investment Allocation						Gross Capacity Expansion
Financi (Fin. A	el ssets)	13										Lending	Borrowing from ROW					Increase in Financial Assets
Other C In Asse (Asset	hanges ts Types)	14										Nolding Losses and Destruction	Holding Losses and Destruction				WetWorthChan ges, Other AssetChanges	Oth.Assets' Changes in Gross Worth
Changes Balance (Sector	in Sheet s)	15								NetVorthChan ges,Saving & Cap,Transfer	NetWorthChan ges,Curr.Acc &CapTransfer	HetWorthCham ges, Other AssetChanges	NetWorthChan ges, Other AssetChanges					Totel The Changes In-
101	A L		Commodity Supply (mer- tet prices)	Input (besic prices)	Allocation of Genera- ted Income	Primmry Income Destination	Secondary Income Destination	Expen- ditures	Current Receipts from ROV	Generated Worth Change	Generated Worth Change By ROW	Grose Worth Accumum letion	Capital Receipts from ROW	Gross Capacity Expansion	Increase in Liabi- lities	Oth.Assets' Changes in Gross Worth	Total Changes in Net Worth	

matrices.

The capital account has been subdivided in order to facilitate the link with the changes in balance sheet accounts. Therefore, the sum of sectoral savings and net capital transfers received is first put on the changes in balance sheet accounts before its use in the process of gross worth accumulation is shown.

The sequence and numbering of the accounts in table 1 agrees with those in the "Full sequence of accounts and balancing items for institutional sectors" in the UN Discussion Paper. In addition, the combined current and capital account of the Rest of the world are presented separately. This has the advantage that the important balancing item on the current account of the balance of payments is also shown explicitly in this aggregated framework. By the way, all balancing items in our matrix can be traced easily, since the relevant cells have been highlighted.

As explained above, not all accounts need to be classified by institutional sector. Instead, in each account the most relevant taxonomy is selected. This is indicated in parentheses in the row and column headings. An example of classifications which may be suitable is shown in the Appendix to this paper.

The first set of rows and columns contains the goods and services accounts. In the first set of columns, the second account contains the supply matrix (in basic prices). It shows the value of commodities generated by each production activity. In the income appropriation account, the government directly receives the net taxes on products. This method of recording obviates the necessity to allocate import duties and value added taxes on commodities to industries or sectors (which is actually not possible in any meaningful way). Imports (at c.i.f. prices) originate from the current account for the rest of the world. In order to arrive at total domestic supply at market prices, trade and transport margins must still be settled. This is done in the submatrix in the upper left-hand corner of this table. This block consists of rows for the commodities trade and transport, showing the relevant margins on each product, and recording negative entries in the columns for trade and transport respectively, such that the row sums are equal to zero. The jutals in this set of columns then give domestic commodity supply at market prices.

The first set of rows presents the use matrix, split into intermediate consumption (by production activities), final consumption (by national sectors), exports (to the rest of the world), change in stocks (as an outlay of the capital account) and fixed capital formation (by production activity in which the investment is made). The totals give domestic commodity use at market prices, and these figures are equal to the concomitant column sums representing the value of total supply (this equality naturally applies to all row and column totals).

Next, the production accounts register output as receipts of production activities, and intermediate consumption, net other taxes linked to production and gross value added as their outlays. Total value added equals Gross Domestic Product (GDP), at factor costs, and this is booked on the income generation account. This account is classified by value added category: compensation of various types of employees, net mixed income, other net operating surplus, consumption of fixed capital. The use of this taxonomy yields important information on the choice of technology by industry (in the rows) and on the kind of income received by each institutional sector, including various household groups (in the columns). For example, it is possible to distinguish between wages received by men and women. That reveals, among other things, in which industries each type of labourers is employed, and to what extent each household group depends on female labour income, male labour income or mixed income. It also acknowledges that wages are generated by individuals before they are appropriated by households. This interrelation is overlooked if the income generation account is classified by institutional sector.⁸⁾

Some income is generated abroad (e.g. compensation of border workers). This should be added to GDP to arrive at the total <u>nationally</u> generated net product (by value added category). On the other hand, part of GDP is not nationally generated. This is booked on the current account of the rest of the world in the column of the income generation account. Horeover, consumption of fixed capital is now put on the capital account. The balance equals what has been dubbed here Net National Product (NNP). This term now finally means what it says: the net product which has been generated nationally (and which is not necessarily the same, even in current prices, as national <u>income</u>). In our view, it makes sense to introduce this balance in between GDP and Net National Income (NNI). Wages earned are different, in a fundamental sense, from returns on portfolio investments (i.e. property income). This distinction is quite well-known within the national accounts framework and should therefore also be pursued in the current account of the rest of the world. It may perhaps be noted that the Balance of Payments Manual [IMF, 1977] also separates for instance direct investment income from other investment income.

In the income appropriation account, each institutional sector receives several types of primary income: the Net National Product contributed by each value added category, property income received from other institutional units, and property income received from abroad. Finally, net indirect taxes constitute part of primary income of the government. In the columns of this account, outlays on account of having incurred liabilities (i.e. payments of property 'income') are settled for each sector. The balance equals Net National Income at market prices, one of the most important aggregates of the system.

The NNI reappears on the credit side of the (re-)distribution of income account. Further, transfer incomes from other institutional units and from abroad are shown here. Transfer outlays are recorded on the debit side and the balance is known as disposable income (of each sector).

• On the income use account, disposable income is spent. Household groups and the government consume goods and services, and the balance, (net) savings, is put on the capital account. In the case of corporations and non-profit institutions, all disposable income is saved.

- 12 -

In accordance with international practice, the income distribution and use accounts for the rest of the world have been combined. The traditional registration met' of national accounting systems is followed here: current receipts of the rest of the world appear in the row and current outlays in the column. The balance is transferred to the capital account of the rest of the world. In common usage, this balance is viewed from the side of the national economy. Naturally, a positive balance on the current account of the rest of the world agrees with a deficit on the current account of the balance of payments of the national economy.

The capital account is quite extensive in this kind of matrix. As explained above, it is split into two components. In the first subaccount, net savings and capital transfers received (from other institutional units and from abroad) are equal to capital transfers paid and a balancing item which can be considered as that part of changes in net worth which has been generated by actions of the institution concerned (as opposed to other changes in net worth which simply occur, probably without a purposeful action by anyone).

The second capital account component adds depreciation, sales of land and other non-produced (non-financial) assets (possibly to abroad), borrowing (i.e. incurring various types of liabilities) and other increases in the volume and price of assets (economic appearance of nonproduced assets, nominal holding gains etc.) of each institution to the balancing item of the first capital subaccount ('generated' changes in net worth). This yields total funds available for gross worth accumulation which is presented in the columns of this account. It consists of: gross fixed capital formation, changes in stocks, purchases of non-produced assets (from other institutions and from abroad), lending (net purchases of financial assets), other decreases in the volume and price of assets (destruction of assets by non-insurable risks, nominal holding losses etc.), and the balance of the other changes in assets account: changes in net worth due to other changes in assets.

- 13 -

Similar accounts are drawn for the rest of the world. Foreign savings, which may bear a negative sign, agree with the deficit on the current account of the national economy. In addition, capital transfers to abroad contribute to an increase in net worth generated by foreign institutions. Before one arrives at this balancing item, capital transfers from abroad must still be subtracted. Next, this balance is augmented by purchases of non-produced assets from abroad, lending to abroad, and nominal holding gains on (external) financial assets. The sum of these items is equal to the total of (non-produced) asset sales to abroad, borrowing from abroad, destruction of foreign assets (by noninsurable risks), uncompensated seizures of foreign assets, nominal holding losses on (external) financial assets. and changes in net worth due to other changes in (foreign) assets.

It is likely that a significant part of gross worth accumulation consists of gross fixed capital formation. In order to obtain a clear view of the dynamics of an economy, it is of great importance to know which institutions invest in which industries. Strangely enough, this information is lacking in the full sequence of accounts. Although the current proposals imply an extension of the 1968 System in various useful areas, most additionally required pieces of information are probably less relevant and more difficult to measure than the destination of funds invested by institutions. In the SAM in particular, this information should not be lacking (and be given more weight than the other changes in assets accounts, say). So in the matrix presented in table 1, this omission is remedied and a "produced capacity" account for production activities is introduced. This account registers gross capacity expansion (that is, the expansion of depreciated capacity) of each industry, from two different angles: who invests where is recorded in the rows, and which capital goods are installed in which industries appears in the columns. Notice that if this account was skipped, the capital account for institutions would have to show their acquirement of each capital good, a submatrix which is neither easy nor relevant to fill. The produced capacity accounts are certainly indispensable when a SAM serves as data basis for a Computable General Equilibrium (CGE) model.

- 14 -

Subsequently, the financial accounts are presented. These indicate which sector (including the rest of the world) has acquired which types of assets (and liabilities) during the refulince period.

The one but last set of rows and columns of table 1 contains the other changes in assets accounts. The character of this account differs from all the others since it does not really relate to flows (consequences of actions), but to changes in states (other economic events). Other changes in the volume and price of assets claimed by institutional sectors and the rest of the world are recorded here, as well as the balance of those adjustments, called changes in net worth due to other changes in assets. In an extended system, these accounts may be subdivided not only by type of asset, but also by type of other change (volume adjustment, price adjustment, balancing item).

At the bottom and at the right-hand side, changes in the balance sheets close the full sequence of accounts and balancing items. The totals of this account reflect in principle all economically relevant changes in the net worth of each institution. They may be added to the opening balance sheets to arrive at the closing balance sheets. Moreover, these mutations may be presented by type of asset (and liability), if this information is at hand.

Table 1 demonstrates that it is possible to register all (aggregated) transfers between (sub)accounts on one sheet of paper. It is obvious that in most countries insufficient data are available to fill this matrix completely. For that purpose, an abbreviated table may be more practical at present. In such a matrix, the last two accounts are deleted. As a consequence, both capital accounts can be consolidated into one account by institutional sector. By way of example, this is illustrated in table 2 which presents an aggregate national accounting flows matrix for the Netherlands, filled with fictitious data based on 1988 estimates (cf. Centraal Bureau voor de Statistiek [1989]). In this table, the final balancing item is net lending or net borrowing (the transaction between the consolidated capital account and the financial account).

- 15 -

Table 2: An Aggregate Wational Accounting Flows Matrix for the Wetherlands, fictitious data based on 1988 estimates (billions of guilders)

ACCOUNT (Classific	Btion)	0. Goods L Services (Conno- dities)	I. Production (Production Activities)	11.1.1 Income Generation (Value Added Categories)	11.1.2 - B. Na Appropriation	11.4 Income Dis tional (Sectors) 11.2 Income	stribution and	d Use b. Rest of the World	B.Wetionat (Sectors)	pital b. Rest of the World	Produced Cepacity (Production Activities)	111.2 fi- nanciel (financ. Assets)	TOTAL
Goods & Se (Commodit	rvices ies)	0.0	377.8			· · · · · · · · · · · · · · · · · · ·	339.2	246.0	-2.9		96.7	· · · · · · · · · · · · · · · · · · ·	1056.8
Production (Product	<u>بة</u> و	Output, bp 791.4											1.107
Income Gen (Value A Categor	eretion dded ies)		GDP, fc 409.4					9.2	· · · · · · · · · · · · · · · · · · ·				418.6
	Income Appro- ristion	37.6	4.2	NUP, fc 352.3	143.7			22.7					560.5
Di tio- st nel ri (Sec- b, tors) -	Income Distri- bution				т. 107 7.105	294.5		10.5					706.7
	Income Use					Disposable Inc 397.8		4 4			· · · · · · · · · · · · · · · · · · ·		397.8
U- Rest se the W	of orld	227.8		18.7	15.1	14.4		() (_) () () () (_) (_) (_)		· · · · · · · · · · · · · · · · · · ·			276.0
Ca- (Sec	ional tors)			47.6			let Savings 58.6	<pre></pre>	91.7		·	44.5	243.6
tat Kes	t of he rid						<u>.</u>	ur.Acc.Deficit	2.4		· · · · · · · · · · · · · · · · · · ·	11.2	1.2
Produced C (Prod.Activ	apacity vities)							<pre>y</pre>	94.7	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		96.7
Financiat (Financiatu	Assets)								55.7				55.7
101 1 1		1056.8	791.4	418.6	560.5	706.7	397.8	276.0	243.6	1.2	96.7	55.7	

Note: the = at basic prices (factor costs plus other net taxes on production); fc = at factor costs; wp = at market prices.

In any national accounts yearbook, this matrix may be given a prominent place since all major domestic and national balance items as well as their inter-relation can be read directly from one place. As a consequence, it may serve as a reference table for the whole System. Obviously, more detailed tables will be required as well. That implies in most cases a disaggregation of transactors or transactions in an account of the reference table (e.g. property income flows shown by type of property income). If each submatrix is labeled according to its position (row and column set of accounts number) in this table, and if this label reappears in the heading of each subsequent, disaggregated table, the readers of a national accounts publication will always be able to locate where any table fits into the System.

Finally, table 3 illustrates that even when most accounts are somewhat disaggregated, this matrix still fits on one sheet of paper.⁹⁾ This table may also serve to clarify one of the most important advantages of the matrix presentation: the flexibility in selecting the most relevant classification in each account. The same applies to the valuation principles: a consistent method of valuation is applied within each account, but valuation methods must differ between accounts and between balancing items.

ACCOUNT (CLBSS)	ficetion)	0. Goods & Services Agr Ind Serv	1. Production	11.1.1 Income Generation Vag O.S. Depr	11.1.2 - 11.1.28 frecome Arpropriation Hh. Comp Govert	11.4 Income Distr 11.2n Income Distribution Hh. Comp Govmt	ibution and Use [[1.4e Income]] Use Re Hh Com Gov Wc	11.b sst of orld	111.1 Cap a.National Mh Com Gov	b. Rest of the world	Pro- duced Cepe- city	11.2 Fi-T nanciat	01 1 1
Goods L Service	Agricul. s Industry Services	3 82 -85	2 30 1 15 182 68 1 24 55				5	16 224 6	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0 % 0		53 677 327
Product	Agricul. ion Industry Services	37								· · · · · · · · · · · · · · · · · · ·			37 374 381
Income Genera- tion	Vages etc. Oper.Surpl FixCapCons		4 73 162 11 46 66 3 18 27					- 0					240
	Income Hh. Appro- Con pristion Gov	2 35		239 39 - - 70 - - 5 -	2 23 5 2 54 22 0 9 0			~ 50					337 169 56
Di tio- st nel ri b.	Income Hh. Distri- Com bution Gov				335 - - - 38 - - - 29	- 1 125 1 0 0 149 16 4		-00					306 206
	Income Hh. Use Con Gov					310 - 22 - 66							=~%
se Rest	of the World	11 187 30	_	1 18	0 15 0	1 3 0 12				_	-		276
Co- No	Housh tional Comp. Govert						42		- 22 4 56 0 8 1 1 0			18 27	80 E 20 50 E 20 50 E 20
	est of World		_				-	-13	1 1 1	_			
Produce	d Capacity		-				_	-	1 11 97 07	•	-	_	10
Financi	el		-				_	-	. 52 4	_		-	56
101	۲ •	53 677 327	37 374 381	240 131 48	337 169 56	462 39 206	310 22 66	276	98 119 28		67	2 6	
 	1	• • • • • • • • • • • • • • • • • • •		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				1 2 2 2 2 2			8 8 8 8 8 8 8 8 8		

Appendix. An example of classifications in each account:

0. GOODS AND SERVICES

Commodities:

- 1. Domestically Produced (by CPC category)
- 2. Imported (by CPC category)
- I. PRODUCTION
 - Production Activities: ISIC

II.1.1. INCOME GENERATION

Value Added Categories:

- 1. Compensation of Employees (by labour category)
- 2. Mixed Income net (by institutional owner)
- 3. Operating Surplus net of producers other than those in the household sector (by institutional owner)
- 4. Consumption of Fixed Capital

II.1.2. INCOME APPROPRIATION,

- II.2. INCOME (RE-)DISTRIBUTION,
- II.4. INCOME USE, and
- III.1. CAPITAL

Institutional Sectors:

- 1. Households (by socio-economic category)
- 2. Private Non-Profit Institutions
- Non-financial Corporations (public/private; national/foreign controlled)
- 4. Financial Corporations (financial intermediaries/insurance companies and pension funds)
- 5. General Government (central/local; social security schemes)
- 6. Rest of the World (by region)

PRODUCED CAPACITY

Production Activities:

ISIC (aggregated)

III.2 FINANCING

Financial Asset Types:

- 1. Gold and SDRs
- 2. Currency and Deposits
- 3. Securities other than Shares
- 4. Loans
- 5. Shares and other Equity
- 6. Insurance Technical Reserves
- 7. Other accounts receivable and payable

III.3 OTHER CHANGES IN ASSETS

Assets

••

- 1. Produced Assets (by aggregated ISIC)
- Non-produced, Non-financial Assets (land, subsoil assets, others)
- 3. Financial Assets (financial asset types)

- 1) Refer to Pyatt and Round [1985] and Keuning and de Ruijter [1988] for an overview of the structure of currently existing SAMs.
- 2) Imputations (and reroutings) may be taken into consideration only if it is more cumbersome to remove them than to estimate them separately. Food production is a case in point, since it is often easier to assess the total harvest and all inputs used for that purpose than to measure only the marketed surplus and to split the inputs accordingly. Without doubt, an imputation for owner-occupied dwelling services and a rerouting of employers' social contributions to wages and salaries of the employees are among those which will not be registered in the core.
- 3) We doubt whether a single system can ever come close to yielding comparable GDP figures all over the world. Strictly speaking, it is not possible to juxtapose more than two economies at a time. In practice, some system for use within the European Community may produce roughly analogous outcomes and the same applies to a (somewhat different) system for use in the ASEAN-countries, say. Similar arguments can be brought up against comparisons over time. Reality changes discontinuously (think only of the situation in Eastern Europe) and not all types of analysis are served by a data system from which the influence of institutional reforms has been removed.
- 4) The 'Dutch view' has in fact also been connected to a socio-economic accounting system for the household sector (cf. Gorter and van der Laan [1989]). The implications for input-output analysis are sketched by Reich [1989].
- 5) Refer to Keuning [1985] for a further elaboration and a case study on this issue.

- 6) Another problem concerns the valuation of international trade in the national accounts (cf. Bos [1989]).
- 7) It may be useful to list some of the differences between SAMs and table 2.1 of the 1968 SNA, since one sometimes comes across the view that these matrices are actually the same. In the latter, row and column totals are not given, the income accounts consist of a combination of accounts for various types of transactors (institutional sectors) and for various types of transactions (forms of income), and the same applies to the accumulation accounts (both for institutional sectors and for types of capital formation). Besides, SAMs contain subdivisions of the household sector and of value added categories (e.g. compensation of employees by labour type). On the other hand, some of the details given in the SNA-matrix are usually not (yet) shown in SAMs (e.g. on forms of income).
- 8) Even more relevant is showing the income generation process in a three-way table, that is simultaneously by production activity, by value added category and by institutional sector. Especially for an analysis of the uses made of non-labour income, one would like to know to which institutional sector the profits in <u>each</u> production activity have accrued. Besides, a three-way table may yield more realistic 'fixed' coefficients when performing multiplier analysis with the help of a SAM (cf. Keuning and Thorbecke [1989: table 2, note 7]).
- 9) As the Netherlands national accounts do not yet contain a subsectoring of the household sector, all flows within the household sector are equal to zero in this table. Flows within the company and government sectors reflect an aggregation of flows among subsectors.

..

- 22 -

References

- Blades, D., 1989, 'Revision of the System of National Accounts: A Note on Objectives and Key Issues', in OECD Economic Studies: pp./205-19.
- Bochove, C.A. van, and A.M. Bloem, 1986, 'The Structure of the Next SNA: A Review of the Basic Options', in Statistical Journal of the United Nations ECE, Volume 4: pp. 369-90.
- Bochove, C.A. van, and H.K. van Tuinen, 1986, 'Flexibility in the Next SNA: The Case for an Institutional Core', in The Review of Income and Wealth, Series 32, Number 2 (June): pp. 127-54.
- Bos, F., 1989, Registration of Trade in Services and Market Valuation of Imports and Exports in the National Accounts, paper presented at the 21th IARIW Conference, Lahnstein, West-Germany, 20-26 August.
- Centraal Bureau voor de Statistiek, 1989, Nationale Rekeningen 1988, The Hague, Staatsuitgeverij.
- Gorter, C.N. and P. van der Laan, 1989, An Economic Core System and the Socio-economic Accounts Module for the Netherlands, National Accounts Occasional Paper Nr. NA-032, Voorburg, Centraal Bureau voor de Statistiek.
- Harrison, A., 1989, Major Changes Proposed for the Revised SNA: An Overview, paper presented at the 21th IARIW Conference, Lahnstein, West-Germany, 20-26 August.
- International Monetary Fund, 1977, Balance of Payments Manual; Fourth Edition, Washington, International Monetary Fund.
- Inter-Secretariat Working Group on National Accounts, 1990, System of National Accounts (SNA) Review Issues; Discussion Paper for 1990

Regional Commissions Meetings on SNA, New York, United Nations Statistical Office.

- Keuning, S.J., 1985, 'Segmented Development and the Way Profits Go: The Case of Indonesia', in The Review of Income and Wealth, Series 31, Number 4 (December): pp. 375-97.
- Keuning, S.J., and W.A. de Ruijter, 1988, 'Guidelines to the Construction of a Social Accounting Matrix', in The Review of Income and Wealth, Series 34, Number 1 (March): pp. 71 -101.
- Keuning, S.J. and E. Thorbecke, 1989, The Impact of Budget Retrenchment on Income Distribution in Indonesia: A Social Accounting Matrix Application, OECD Development Centre Technical Papers No.s 3 and 3a, Paris, Organization for Economic Cooperation and Development.
- Pyatt, G., 1987, The SAM Approach in Retrospect and Prospect, Warwick Economic Research Papers No. 290, Coventry, University of Warwick.
- Pyatt, G., 1989, SAMs and the SNA, paper presented at the 21th IARIW Conference, Lahnstein, West-Germany, 20-26 August.
- Pyatt, G., and J.I. Round, 1985, Social Accounting Matrices: A Basis for Planning, Washington, The World Bank.
- Reich, U.-P., 1989, 'Essence and Appearance: Reflections on Input-Output Methodology in Terms of a Classical Paradigm', in Economic Systems Research, Volume 1, Number 4: pp. 417-29.
- United Nations, 1968, A System of National Accounts, Studies in Methods, Series F, No. 2, Rev. 3, New York, United Nations.

. .

National Accounts Occasional Papers

- **KA/01 Flexibility in the system of National**1x-1Y1 Accounts, Van Eck, R., C.N. Gorter and H.K. van Tuinen (1983). This paper sets out some of the main ideas of what gradually developed into the Dutch view on the fourth revision of the SNA. In particular it focuses on the validity and even desirability of the inclusion of a number of carefully chosen alternative definitions in the "Blue Book", and the organization of a flexible system starting from a core that is easier to understand than the 1968 SNA.
- WA/02 The unobserved economy and the National Accounts in the Netherlands, a sensitivity analysis, Broesterhuizen, G.A.A.M. (1983). This paper studies the influence of fraud on macro-economic statistics, especially GDP. The term "fraud" is used as meaning unreporting or underreporting income (e.g. to the tax authorities). The conclusion of the analysis of growth figures is that a bias in the growth of GDP of more than 0.5% is very unlikely.
- NA/03 Secondary activities and the National Accounts: Aspects of the Dutch measurement practice and its effects on the unofficial economy, Van Eck, R. (1985). In the process of estimating national product and other variables in the National Accounts a number of methods is used to obtain initial estimates for each economic activity. These methods are described and for each method various possibilities for distortion are considered.
- NA/04 Comparability of input-output tables in time, Al, P.G. and G.A.A.M. Broesterhuizen (1985). It is argued that the comparability in time of statistics, and inputoutput tables in particular, can be filled in in various ways. The way in which it is filled depends on the structure and object of the statistics concerned. In this respect it is important to differentiate between coordinated input-output tables, in which groups of units (industries) are divided into rows and columns, and analytical input-output tables, in which the rows and columns refer to homogeneous activities.
- NA/05 The use of chain indices for deflating the National Accounts, Al, P.G., B.M. Balk, S. de Boer and G.P. den Bakker (1985). This paper is devoted to the problem of deflating National Accounts and input-output tables. This problem is approached from the theoretical as well as from the practical side. Although the theoretical argument favors the use of chained Vartia-I indices, the current practice of compilating National Accounts restricts to using chained Paasche and Laspeyres indices. Various possible objections to the use of chained indices are discussed and rejected.
- NA/06 Revision of the system of National Accounts: the case for flexibility, Van Bochove, C.A. and H.K. van Tuinen (1985). It is argued that the structure of the SNA should be made more flexible. This can be achieved by means of a system of a general purpose core supplemented with special modules. This core is a fully fledged, detailed system of National Accounts with a greater institutional content than the present SNA and a more elaborate description of the economy at the meso-level. The modules are more analytic and reflect special purposes and specific theoretical views.
- RA/07 Integration of input-output tables and sector accounts; e possible solution, Van den Bos, C. (1985). The establishment-enterprise problem is tackled by taking the institutional sectors to which the establishments belong into account during the construction of input-output tables. The extra burden on the construction of input-output tables resulting from this approach is examined for the Dutch situation. An adapted sectoring of institu-tional units is proposed for the construction of input-output tables.
- HA/08 A note on Dutch National Accounting data 1900-1984, Van Bochove, C.A. (1985). This note provides a brief survey of Dutch national accounting data for 1900-1984, concentrating on national income. It indicates where these data can be found and what the major discontinuities are. The note concludes that estimates of the level of national income may contain inaccuracies; that its growth rate is measured accurately for the period since 1948; and that the real income growth rate series for 1900-1984 may contain a systematic bias.

NA/09 The structure of the next SNA: review of the basic options, Van Bochove, C.A. and A.M. Bloem (1985). There are two basic issues with respect to the structure of the next version the UN System of National Accounts. The first is its 'size ': reviewing this issue, it can be concluded that the next SNA should contain an integrated meso-economic statistical system. It is essential that the next SNA contains an institutional system without the imputations and attributions that pollute present SNA. This can be achieved by distinguishing, in the central system of the next SNA, a core (the institutional system), a standard module for non-market production and a standard module describing attributed income and consumption of the household sector.

KA/10 Dual sectoring in National Accounts, Al, P.G. (1985). Following a conceptual explanation of dual sectoring, an outline is given of a statistical system with complete dual sectoring in which the linkages are also defined and worked out. It is shown that the SNA 1968 is incomplete and obscure with respect to the links between the two sub-processes.

NA/11 Backward and forward linkages with an application to the Dutch agroindustrial complex, Harthoorn, R. (1985). Some industries induce production in other industries. An elegant method is developed for calculating forward and backward linkages avoiding double counting. For 1981 these methods have been applied to determine the influence of Dutch agriculture in the Dutch economy in terms of value added and labour force.

KA/12 Production chains, Harthoorn, R. (1986). This paper introduces the notion of production cains as a measure of the hierarchy of industries in the production process. Production chains are sequences of transformation of products by successive industries. It is possible to calculate forward transformations as well as backward ones.

- NA/13 The simultaneous compilation of current price and deflated inputoutput tables, De Boer, S. and G.A.A.M. Broesterhuizen (1986). A few years ago the method of compiling input-output tables underwent in the Netherlands an essential revision. The most significant improvement is that during the entire statistical process, from the processing and analysis of the basic data up to and including the phase of balancing the tables, data in current prices and deflated data are obtained simultaneously and in consistency with each other.
- NA/14 A proposal for the synoptic structure of the next SNA, Al, P.G. and C.A. van Bochove (1986).
- NA/15 Features of the hidden economy in the Netherlands, Van Eck, R. and B. Kazemier (1986). This paper presents survey results on the size and structure of the hidden labour market in the Netherlands.
- NA/16 Uncovering hidden income distributions: the Dutch approach, Van Bochove, C.A. (1987).
- NA/17 Main national accounting series 1900-1986, Van Bochove, C.A. and T.A. Huitker (1987). The main national accounting series for the Netherlands, 1900-1986, are provided, along with a brief explanation.
- NA/18 The Dutch economy, 1921-1939 and 1969-1985. A comparison based on revised macro-economic data for the interwar period, Den Bakker, G.P., T.A. Huitker and C.A. van Bochove (1987). A set of macro-economic time series for the Netherlands 1921-1939 is presented. The new series differ considerably from the data that had been published before. They are also more comprehensive, more detailed, and conceptually consistent with the modern National Accounts. The macro-economic developments that are shown by the new series are discussed. It turns out that the traditional economic-historical view of the Dutch economy has to be reversed.
- NA/19 Constant wealth national income: accounting for war damage with an application to the Netherlands, 1940-1945, Van Bochove, C.A. and W. van Sorge (1987).

- NA/20 The micro-meso-macro linkage for business in an SNA-compatible system of economic statistics, Van Bochove, C.A. (1987).
- NA/21 Micro-macro link for government, Bloem, A.M. (1987). This paper describes the way the link between the statistics on government finance and national accounts is provided for in the Dutch government finance statistics.
- NA/22 Some extensions of the static open Leontief model, Harthoorn, R. (1987). The results of input-output analysis are invariant for a transformation of the system of units. Such transformation can be used to derive the Leontief price model, for forecasting input-output tables and for the calculation of cumulative factor costs. Finally the series expansion of the Leontief inverse is used to describe how certain economic processes are spread out over time.
- NA/23 Compilation of household sector accounts in the Netherlands National Accounts, Van der Laan, P. (1987). This paper provides a concise description of the way in which household sector accounts are compiled within the Netherlands National Accounts. Special attention is paid to differences with the recommendations in the United Nations System of National Accounts (SNA).
- NA/24 On the adjustment of tables with Lagrange multipliers, Harthoorn, R. and J. van Dalen (1987). An efficient variant of the Lagrange method is given, which uses no more computer time and central memory then the widely used RAS method. Also some special cases are discussed: the adjustment of row sums and column sums, additional restraints, mutual connections between tables and three dimensional tables.
- NA/25 The methodology of the Dutch system of quarterly accounts, Janssen, R.J.A. and S.B. Algera (1988). In this paper a description is given of the Dutch system of quarterly national accounts. The backbone of the method is the compilation of a quarterly input-output table by integrating short-term economic statistics.
- NA/26 Imputations and re-routeings in the National Accounts, Gorter, Cor N. (1988). Starting out from a definition of 'actual' transactions an inventory of all imputations and re-routeings in the SNA is made. It is discussed which of those should be retained in the core of a flexible system of National Accounts. Conceptual and practical questions of presentation are brought up. Numerical examples are given.
- NA/27 Registration of trade in services and market valuation of imports and exports in the National Accounts, Bos, Frits (1988). The registration of external trade transactions in the main tables of the National Accounts should be based on invoice value; this is not only conceptually very attractive, but also suitable for data collection purposes.
- NA/28 The institutional sector classification, Van den Bos, C. (1988). A background paper on the conceptual side of the grouping of financing units. A limited number of criteria are formulated.
- HA/29 The concept of (transactor-)units in the National Accounts and in the basic system of economic statistics, Bloem, Adriaan M. (1989). Units in legal-administrative reality are often not suitable as statistical units in describing economic processes. Some transformation of legal-administrative units into economic statistical units is needed. This paper examines this transformation and furnishes definitions of economic statistical units. Proper definitions are especially important because of the forthcoming revision of the SNA.
- NA/30 Regional income concepts, Bloem, Adriaan M. and Bas De Vet (1989). In this paper, the conceptual and statistical problems involved in the regionalization of national accounting variables are discussed. Examples are the regionalization of Gross Domestic Product, Gross National Income, Disposable National Income and Total Income of the Population.

- NA/31 The use of tendency surveys in extrapolating National Accounts, Ouddeken, Frank and Gerrit Zijlmans (1989). This paper discusses the feasibility of the use of tendency survey data in the compilation of very timely Quarterly Accounts. Some preliminary estimates of relations between tendency survey data and regular Quarterly Accounts-indicators are also presented.
- NA/32 An economic core system and the socio-economic accounts module for the Netherlands, Gorter, Cor N. and Paul van der Laan (1989). A discussion of the core and various types of modules in an overall system of economy related statistics. Special attention is paid to the Dutch Socio-economic Accounts. Tables and figures for the Netherlands are added.
- KA/33 A systems view on concepts of income in the National Accounts, Bos, Frits (1989). In this paper, concepts of income are explicitly linked to the purposes of use and to actual circumstances. Main choices in defining income are presented in a general system. The National Accounts is a multi-purpose framework. It should therefore contain several concepts of income, e.g. differing with respect to the production boundary. Furthermore, concepts of national income do not necessarily constitute an aggregation of income at a micro-level.
- NA/34 How to treat borrowing and leasing in the next SNA, Keuning, Steven J. (1990). The use of services related to borrowing money, leasing capital goods, and renting land should not be considered as intermediate inputs into specific production processes. It is argued that the way of recording the use of financial services in the present SNA should remain largely intact.
- NA/35 A summary description of sources and methods used in compiling the final estimates of Dutch National Income 1986, Gorter, Cor N. and others (1990). Translation of the inventory report submitted to the GNP Management Committee of the European Communities.
- NA/36 The registration of processing in make and use tables and input-output tables, Bloem, Adriaan M., Sake De Boer and Pieter Wind (1990, forthcoming). The registration of processing is discussed primarily with regard to its effects on input-output-type tables and input-output quotes. Links between National Accounts and basic statistics, user demands and international guidelines are examined.
- NA/37 A proposal for e SAM which fits into the next System of Mational Accounts, Keuning, Steven J. (1990). This paper shows that all flow accounts which may become part of the next System of National Accounts can be embedded easily in a Social Accounting Matrix (SAM). In fact, for many purposes a SAM format may be preferred to the traditional T-accounts for the institutional sectors, since it allows for more flexibility in selecting relevant classifications and valuation principles.
- NA/38 Net versus gross National Income, Bos, Frits (1990). In practice, gross figures of Domestic Product, National Product and National Income are most often preferred to net figures. In this paper, this practice is challenged. Conceptual issues and the reliability of capital consumption estimates are discussed.
- NA/39 Concealed interest income of households in the Netherlands; 1977, 1979 and 1981, Kazemier, Brugt (1990). The major problem in estimating the size of hidden income is that total income, reported plus unreported, is unknown. However, this is not the case with total interest income of households in the Netherlands. This makes it possible to estimate at least the order of magnitude of this part of hidden income. In this paper it will be shown that in 1977, 1979 and 1981 almost 50% of total interest received by households was concealed.

NA/40 Who came off worst: Structural change of Dutch value added and employ-ment during the interwar period, Den Bakker, Gert P. and Jan de Gijt (1990). In this paper new data for the interwar period are presented. The distribution of value added over industries and a break-down of value added into components is given. Employment by industry is estimated as well. Moreover, structural changes during the interwar years and in the more recent past are juxtaposed.

NA/41 The supply of hidden labour in the Netherlands: a model, Kazemier, Brugt and Rob van Eck (1990). This paper presents a model of the supply of hidden labour in the Netherlands. Model simulations show that the supply of hidden labour is not very sensitive to cyclical fluctuations. A tax exempt of 1500 guilders for second jobs and a higher probability of detection, however, may substantially decrease the magnitude of the hidden labour market.

NA/42 Benefits from productivity growth and the distribution of income, Keuning, Steven J. (1990). This paper contains a discussion on the measurement of multifactor productivity and sketches a framework for analyzing the relation between productivity changes and changes in the average factor remuneration rate by industry. Subsequently, the effects on the average wage rate by labour category and the household primary income distribution are studied.

NA/43 Valuation principles in supply and use tables and in the sectoral accounts, Keuning, Steven J. (1991). In many instances, the valuation of transactions in goods and services in the national accounts poses a problem. The main reason is that the price paid by the purchaser deviates from the price received by the producers. The paper discusses these problems and demonstrates that different valuations should be used in the supply and use tables and in the sectoral accounts.

NA/44 The choice of index number formulae and weights in the National Accounts. A sensitivity analysis based on macro-economic data for the intervar period, Bakker, Gert P. den (1991). The sensitivity of growth estimates to variations in index number formulae and weighting procedures is discussed. The calculations concern the macro-economic variables for the intervar period in the Netherlands. It appears, that the use of different formulae and weights yields large differences in growth rates. Comparisons of Gross Domestic Product growth rates among countries are presently obscured by the use of different deflation methods. There exists an urgent need for standardization of deflation methods at the international level.

Netherlands Central Bureau of Statistics National Accounts Department Occasional Papers

P.O. Box 959, 2270 AZ Voorburg The Netherlands