

## Chapter 4.0 ACCOUNTING SYSTEMS: MAIN TYPES OF ACCOUNTS

In chapter 1, reference was made to different types of accounts that normally form part of a country's national accounting system. The following types were mentioned in this connection: production account; income-outlay account; capital account; commodity account; external account. Furthermore it was pointed out that a number of these accounts may be compiled for the aggregate level of the economy, as well as for a lower level of aggregation; ie, productive branches (groups of production units that carry out the same kinds of production activities) or institutional sectors (homogeneous groups of economic units, such as households, enterprises, governmental units). Below we will give a simplified, schematic outline of the types of accounts mentioned above. The accounts presented here are in the form of T-type accounts, where on one side of the account the incomings, or receipts, are shown, while on the other side the outgoings or disbursements are given. As was noted earlier, these accounts may also be expressed in other forms.

### 4.1 Production Account models

#### (a) A Production Account For a Branch or a (sub-) Sector

Production account - Productive sector i	
Outgoings	Incomings
- intermediate consumption	- total/gross output
* domestic inputs	* intermediate uses
* foreign inputs	* final uses
- primary inputs / value added	
* wages and salaries	
* operating surplus(net)	
* depreciation	
* net indirect taxes	
Total/Gross Input	Total/ Gross Output

At the disaggregate level, production accounts may be compiled for branches of production activity (agricultural activities, manufacturing activities, trade activities, etc.) or for institutional sectors (the enterprise sector, the household sector, the government sector, etc.). These accounts aim at providing details on outputs and inputs re the productive

activities of the branches or sectors in question. (For further clarification of the difference between productive branches and institutional sectors, see the item 'Production accounts for branches and institutional sectors', on p. 93).

On the incomings side the account gives the value of the total, or gross, output. The total/gross output value is, analytically speaking, composed of the value of the part of the output used for intermediate purposes, and the value of that part of the output used for final purposes. While in the above model explicit reference has been made to these two components of the total/gross output item for didactical reasons, it may be noted that in practice this breakdown of gross output is usually not provided for production accounts at the level of a branch or sector.

The expenditure side of the account gives the value of the intermediate inputs used in production (i.e. the intermediate consumption), as well as the components of the value added. The value of the intermediate consumption is equal to the sum of the value of the intermediate inputs from domestic supply and those, which have been imported, as has been indicated in the account above. However, also in the case of this item it should be noted that in practice details re its breakdown normally not given.

The above kind of production account resembles to some extent (parts of) the profit and loss account of a business, more in particular the trading account. In fact, the production account may be interpreted as a modified kind of trading account.

(b) Production Account Models for the Economy

Below three versions of production accounts for the economy are being presented. Version A may be seen as directly derived from the production accounts for individual branches/sectors. Versions B and C are reformulations of version A. In fact, version C comes close to the format internationally adopted for the production account of the economy. By presenting this sequence of versions it is being demonstrated, in a somewhat simplified manner, how the latter kind of account (C) might conceptually be related to production accounts for individual branches/sectors.

Production account Economy - version A	
Outgoings	Incomings
( - domestic intermediate inputs)	( - intermediate output)
- imported intermediate inputs	- final output
	* consumption purposes
	* investment purposes
- Primary inputs / value added	* exports
* wages and salaries	
* operating surplus (net)	
* depreciation	
* net indirect taxes	
Total/Gross Input	Total/Gross Output

Conceptually, this account may be seen as derived from the production accounts for individual branches/sectors (see account I.(a)) by having added together the latter ones. Thus the sum of the total/gross output values for all individual branches/sectors gives the value of the total/gross output for the economy. A similar reasoning applies to the other items.

Provided data would be available for breaking down the value of gross output in terms of intermediate output and the main components of final output, and for breaking down the value of total intermediate input in terms of domestically produced intermediate inputs and imported intermediate inputs, Gross Domestic Product/Income may be derived from this account. In this connection it should be remembered that, at the level of the economy, the intermediate output equals (by definition) that of the domestically produced intermediate inputs. As a consequence these items cancel out each other in the above account, and may be omitted from it, as is customary in such cases, for which reason we have put them between brackets. More in general it may be noted in this connection, that the practice of elimination of those items that cancel out each other after having added together several accounts, is referred to as **consolidation**.

The right hand side of the account will represent, after elimination of the intermediate output item, the value of the final output produced. By deducting from this figure the value of the intermediate imports as presented on the expenditure side, the value of the GDP at market prices is obtained. As can be seen, this value is equal to the sum of the wages, salaries and net operating surplus (i.e. the net factor income), plus the depreciation and net indirect taxes, as presented on the disbursements side. The sum of these components

equals at the same time the Value Added (gross, at market prices) for the economy as a whole.

In section 2.1 it was explained that the value of the Domestic Product may also be calculated by taking the value of total final expenditure minus the value of total (i.e. intermediate plus final) imports. The relevant items in the above production account could be restated accordingly. This reformulation has been reflected in version B. Moreover, the intermediate output/input of domestic origin has now been left out completely.

Production account Economy - version B	
Outgoings	Incomings
- expenditure on imports     - Primary inputs * wages and salaries * operating surplus (net) * depreciation * net indirect taxes	- final expenditure * final consumption expenditure . private . public  * investment expenditure . re fixed assets . re stocks  * expenditure on exports
Total Imports plus Value Added	Total Final Expenditure

By deducting from the right hand side total of this account, which represents the total final expenditure, the value of all imports (i.e. intermediate and final) the value of the GDP is again obtained. The items relating to the primary inputs in this version B are the same as those referred to in version A.

Version B may be further rearranged so as to show immediately on the right hand side of the account GDP, at market prices, and on the left-hand side its distribution over factor incomes and other primary cost components. This is done by deducting from both sides of the account the value of the expenditures on imports, leading to the following result:

Production account Economy - version C	
Outgoings	Incomings
- wages and salaries	- final consumption expenditure
- operating surplus (net)	. private
- depreciation	. public
- net indirect taxes	- investment expenditure
	. re fixed assets
	. re stocks
	- expenditure on exports
	minus:
	- expenditure on imports
Gross domestic Income, market pr.	Gross Domestic Product, market pr.

Given the equality of left hand side and right hand side of the above account we obtain:

$$\mathbf{Gross\ Dom.\ Inc. = Fin\ Cons.\ Exp. + Inv.\ Exp. + Exports - Imports}$$

or, in symbols:

$$\mathbf{Y_{g,dom} = C + I + E - M}$$

This equation represents the well-known macro-economic identity.

## 4.2 Income-outlay Account models

### (a) Income-outlay accounts for sectors

At the disaggregate level, income-outlay accounts are compiled for institutional sectors. A sectoral income-outlay account will on the receipt side give details of the income received by that sector. This income may in the first place consist of factor income from activities in which the sector itself is directly engaged (e.g. operating surplus received by enterprises from their 'own' productive activities). In addition it may include factor income transferred from other institutions in compensation for the supply of factors of production (e.g. wages and salaries, interest, dividends etc. received by households from enterprises; interest, dividends etc. received by enterprises from other enterprises). Furthermore it may include other transfers of a current nature that increase the income of the receiving (sub-) sector (e.g. taxes received by government; charitable transfers received by households from other sectors).

On the expenditure side details will be found on the composition and size of the current expenditure of the sector in question. These may include, where applicable, the transfer of factor income to other institutions (e.g. enterprises paying interest, dividends etc. to other enterprises, to households etc.); final consumption expenditure (in the case of households and government); the making of other current transfers (eg, the payment of direct taxes by enterprises and households; the making of charitable transfers; eg, by enterprises or households).

Note, that 'saving' is the balancing item in the income-outlay accounts. In other words, saving is obtained as the difference between total income and all current expenditure, in line with the definition of this concept.

The income-outlay account can to some extent be compared to the appropriation account in business accounting, which shows the main sources of income of the business, and which gives details re the distribution / allocation of the income.

Below income-outlay account models are given for three kinds of (sub-) sectors normally involved in income and outlay transactions, namely Households, Enterprises, and Government. In most cases, the models will speak for themselves.

Income-outlay account: Households sector	
Outgoings	Incomings
- private final consumption	- wages and salaries
- direct taxes	* from domestic production
	* from abroad
- property income paid	- property and entrepreneurial
* to domestic institutions	income received
* to abroad	* from domestic institutions
	* from abroad
- other current transfers	- other current transfers
paid	received
* to domestic institutions	* from domestic institutions
* to abroad	* from abroad
- saving	
Total Outlay	Total Income

The incomings side shows that total income is composed of labour income (i.e wages and salaries); different kinds of non-labour factor income ('property and entrepreneurial income'), such as interest, dividend etc.; and other current transfers. These different kinds of income may have been received from within the economy, as well as from abroad. In the above model this has been emphasized by indicating that the amounts recorded under these items are, generally speaking, composed of a domestic component and a foreign component.

The expenditure side is composed of outlays related to final consumption; direct taxes; property income (i.e. interest payment); other current transfers (e.g. donations). 'Saving' is the balancing item. The payments of property income, and of other current transfers may have been made to other institutions in the economy, as well as to abroad.

Income-outlay account: Enterprises sector, sub-sector i	
Outgoings	Incomings
- property and entrepreneurial income paid * to domestic institutions * to abroad	- operating surplus
- direct taxes	- property and entrepreneurial income received * from domestic institutions * from abroad
- other current transfers paid * to domestic institutions * to abroad	- other current transfers received * from domestic institutions * from abroad
- saving	
Total Outlay	Total Income

The incomings side indicates that the income of the Enterprises sub-sector i is first of all composed of different kinds of non-labour factor income, namely operating surplus from its own productive activities, and factor income (e.g. interest, dividend) transferred from other (sub-)sectors. In addition, other current transfers may be a source of income as well.

Expenditure is in the first place composed of outlays related to the payment of non-labour factor income (e.g. interest, dividends etc.). In this connection it may be noted, that the payment of labour income (i.e wages and salaries) by enterprises has been recorded already on the expenditure side of the production accounts. Other expenditure categories are direct taxes, and other current transfers paid. 'Saving' is the balancing item.

Note again, that in the case of certain receipt/ expenditure items may not only involve domestic sources/destinations, but foreign as well.

The above account has been referred to as a model for a sub-sector of the sector Enterprises. A model for the entire sector would look similar. It could be thought of as the aggregate of the Enterprise sub-sector accounts.

Income-outlay account: Government sector	
Outgoings	Incomings
- government final consumption expenditure	- net indirect taxes
- property income paid * to domestic institutions * to abroad	- direct taxes
other current transfers paid * to domestic institutions * to abroad	- property income received * from domestic institutions * from abroad
- saving	- other current transfers received * from domestic institutions * from abroad
-	
- Total Outlay	- Total Income

Major income components in this account refer to taxes, i.e. direct and indirect taxes. Non-labour factor incomes ('property income') such as interest and dividend (e.g. from public enterprises) form other sources of income of Government. Finally, other current transfers (e.g. grants, donations etc.) are sources of income.

Expenditure is in the first place composed of final expenditure by Government, which represents the value of services produced for public consumption (i.e. total value of services produced by Government minus revenues from sales of these services). Furthermore payments of property income (in particular referring to payments of interest on public debt) form part of expenditure. Finally, other current transfers, such as social security payments to households, represent a part of expenditure.

Note, that also in this case again certain receipt/ expenditure items may - at least in principle - not only involve domestic sources/destinations, but foreign as well.

(b) An Income-Outlay Account for the Economy

The income-outlay account for the economy should from a conceptual point be understood as the consolidated aggregate of the income-outlay accounts for the various sectors constituting the economy. As was observed already earlier, consolidation refers to the process of eliminating those items which cancel out each other after having added together different accounts.

Below several versions of the income-outlay account for the economy are being presented, among other things with a view to make clear how the consolidated aggregate conceptually may be arrived at. Version A, which may be considered of an intermediate character, has been obtained simply through aggregation of the income-outlay accounts for the sectors constituting the economy, say Households, Enterprises and Government.

Income-outlay account ECONOMY - Version A	
Outgoings	Incomings
<ul style="list-style-type: none"> <li>- private final consumption expenditure (by Households)</li> <li>- government final consumption expenditure</li> <li>(- direct taxes paid)               <ul style="list-style-type: none"> <li>* by Enterprises</li> <li>* by Households</li> </ul> </li> <li>- property &amp; ent. income paid (* to domestic institutions)               <ul style="list-style-type: none"> <li>* to abroad</li> </ul> </li> <li>- other current transfers paid (* to domestic institutions)               <ul style="list-style-type: none"> <li>* to abroad</li> </ul> </li> <li>- saving (HH + ENT + GOVT)</li> </ul>	<ul style="list-style-type: none"> <li>- wages &amp; sal. (rec. by Househ.)               <ul style="list-style-type: none"> <li>* from domestic production</li> <li>* from abroad</li> </ul> </li> <li>- operating surplus</li> <li>- net indirect taxes</li> <li>(- direct taxes received by Govt.)</li> <li>- property &amp; ent. income received (* from domestic institutions)               <ul style="list-style-type: none"> <li>* from abroad</li> </ul> </li> <li>- other current transfers received (* from domestic institutions)               <ul style="list-style-type: none"> <li>* from abroad</li> </ul> </li> </ul>
Total Outlay	Total Income

In the above account a number of items appear on both sides, i.e. as a receipt as well as expenditure. In certain cases these items cancel out each other, for which reason they have been put between brackets. Examples are: direct taxes; receipts/payments of property and entrepreneurial income between domestic institutions; receipts/payments of other current transfers between domestic institutions. Consolidation leads to the elimination of these items. In those other cases where items appear on both sides but do not cancel out each other entirely, they have been presented in net terms in the consolidated version. The practice of presenting an item in net terms, i.e. in terms of the difference between the debit-side and credit-side amounts is called **netting**. Examples in the above case are: property and entrepreneurial income received from abroad/paid to abroad; other current transfers received from abroad/paid to abroad.

Note, that the item (net) indirect taxes, unlike the direct taxes item, appears only on the right-hand side of the aggregate account, i.e. as a receipt (by government). The payment of these taxes has been recorded in the production accounts of the branches/ (sub-)sectors that have paid them. Consequently the (net) indirect taxes cannot be cancelled out, and will therefore appear in the consolidated version of the income-outlay account; the direct taxes item on the other hand will not, because this item can be cancelled out.

Version B presents the aggregate income-outlay account for the economy after consolidation and netting of the items discussed earlier.

Income-outlay account ECONOMY - Version B	
Outgoings	Incomings
<ul style="list-style-type: none"> <li>- private final consumption expenditure (by Households)</li> <li>- government final consumption expenditure</li> <li>- saving</li> </ul>	<ul style="list-style-type: none"> <li>- wages &amp; sal. (rec. by Househ.)</li> <li>- operating surplus</li> <li>- net indirect taxes</li> <li>- prop. &amp; ent. inc. received from abroad, net</li> <li>- other current transfers received from abroad, net</li> </ul>
Total Outlay	Total Income

The above version of the income-outlay account for the economy may be modified somewhat through reformulation of the item 'wages and salaries (received by households) '.

Note, that total wages and salaries received by households is equal to wages and salaries received by households from domestic production plus wages and salaries received by households from abroad. The first component equals the total amount of wages and salaries paid by domestic producers, minus the wages and salaries to foreigners (i.e. to abroad). Therefore total wages and salaries received by households can be said to be equal to the total amount of wages and salaries paid by domestic producers minus the wages and salaries paid to foreigners (i.e. to abroad), plus wages and salaries received by households from abroad. Rearranging this a little further, one obtains that wages and salaries received by households equals wages and salaries paid by domestic producers, minus net wages and salaries received from abroad. This last formulation is reflected in the first two items of the incomings side of the above account. Version C below, which is the result after modification, resembles closely the format adopted internationally for the income-outlay account of the economy.

Note, that the total of the right-hand side of the account is equal to the National Disposable Income. The sum of the first four items of the right-hand side equal the National Income, net, at factor cost.

Income-outlay account: ECONOMY Version C	
Outgoings	Incomings
<ul style="list-style-type: none"> <li>- government final consumption expenditure</li> <li>- private final consumption expenditure</li> <li>- saving</li> </ul>	<ul style="list-style-type: none"> <li>- wages &amp; sal. paid by domestic producers</li> <li>- wages &amp; sal. from abr. net</li> <li>- operating surplus</li> <li>- property &amp; ent. income from abroad, net</li> <li>- net indirect taxes</li> <li>- other current transfers from abroad, net</li> </ul>
Total Outlay	Total Income

Given the equality of left hand side and right hand side of the above account, we obtain:

Nat. Disp. Inc. = Gov. Fin. Cons. Exp. + Priv. Fin. Cons. Exp. + (net) Sav.

or, in symbols:

$$Y_{\text{nat,disp}} = C_g + C_p + S_n$$

from this follows:  $S_n = Y_{\text{nat,disp}} - C_g - C_p$

Note, that the saving concept is a net concept (i.e. net of depreciation) in this case, since the income concept from which it is derived is a net concept as well.

### 4.3 Capital Account models

In general, the capital account gives details on the investments (physical and financial), as well as on the sources used for financing the investments made, such as savings, borrowings, etc. The account may be compiled for an institutional (sub-) sector or for the entire economy

#### (a) Capital Account models for a (sub-) sector

(Sub-) Sectoral Capital Account Version A	
Outgoings	Incomings
- investments in stocks - investments in fixed assets - acquisition of land (net) - net lending * to domestic sectors * to abroad	- saving - depreciation allowance - net capital transfers * from domestic sectors * from abroad
Total Accumulation	Total Sources

With regard to the above account the following may be observed:

The expenditure side gives the size and composition of the investments made by the sector. These investments may consist in the first place of physical investments, such as investments (i.e. increase) in stocks, investment in fixed assets, and net investments in land. The latter is to be understood as the difference between the acquisition of land by the sector from other sectors, minus the disposal of land to other sectors. In addition, financial investment may take place. The item 'net lending' refers to the net amount of financial investment in other sectors (domestic and abroad), being in other words the difference between the total value of what the sector has lent to other sectors in the economy or abroad, and what the sector has borrowed from other domestic sectors and the rest of the world. (Note, that intra-sectoral lendings/borrowings cancel out each other, for which reason 'net lending' of the sector is equal to the above-mentioned difference). These lendings take different forms, e.g. purchase of bonds or stocks, making of bank deposits etc. All these forms can be considered financial investments. While the physical investments refer to direct investments by the sector itself in relation to its own productive activities, do the financial investments represent a transfer of resources to other sectors to be used for investments in relation to the productive activities of these other sectors.

The incomings side gives the sources used for financing the capital expenditures. In addition to the sector's own internal savings depreciation allowance is also such a source, since it reflects the amounts reserved from the sector's current income for the making of replacement investments. Capital transfers, such as grants and other unrequited transfers of a capital nature coming from other sectors can be another source of finance for the sector's investments. While a sector may not only receive capital transfers from other sectors, but make them to other sectors as well, the item 'capital transfers' may in principle appear on both sides. In the version above it has been presented as a net item on the incomings side, i.e. as the difference between the capital transfers received and the capital transfers made.

In principle two positions are possible, namely a) the total of 'own' resources available (including net capital transfers) exceeds total direct investment; b) the total of 'own' resources is smaller than total direct investment. In the first case a surplus of resources exist which is available for use by other sectors: this will be reflected in a positive value for net lending, this item being in fact the balancing item of the above account. In the second case 'own' resources fall short of total direct investment, and the value for the net lending item will be negative. In this case the gap must have been bridged through borrowings, or through the selling of financial assets (= financial des-investment).

The way(s) in which a sectoral surplus has been put at the disposal of other sectors, or in which a sectoral deficit has been accommodated, should be reflected in the changes in the financial assets and liabilities of the sector during the accounting period. The account as presented above may be extended by adding details on the changes in financial assets and liabilities. The model below (version B) is a simple example of such an extension, being more in particular applicable to the corporate sector. For other institutional sectors the idea would be more or less the same, although details re financial assets and liabilities may differ somewhat.

(Sub-) Sectoral Capital Account Version B	
Outgoings	Incomings
<ul style="list-style-type: none"> <li>- investments in stocks</li> <li>- investments in fixed assets</li> <li>- acquisition of land (net)</li> <li>- net lending               <ul style="list-style-type: none"> <li>* to domestic sectors</li> <li>* to abroad</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- saving</li> <li>- depreciation allowance</li> <li>- net capital transfers               <ul style="list-style-type: none"> <li>* from domestic sectors</li> <li>* from abroad</li> </ul> </li> </ul>
Total Accumulation	Total Sources
<ul style="list-style-type: none"> <li>- change in currency owned and deposits held               <ul style="list-style-type: none"> <li>* re domestic sectors</li> <li>* re rest of world</li> </ul> </li> <li>- change in securities owned               <ul style="list-style-type: none"> <li>* re domestic sectors</li> <li>* re rest of world</li> </ul> </li> <li>- change in other financial assets owned               <ul style="list-style-type: none"> <li>* re domestic sectors</li> <li>* re rest of world</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- net lending               <ul style="list-style-type: none"> <li>* to domestic sectors</li> <li>* to abroad</li> </ul> </li> <li>- change in securities issued               <ul style="list-style-type: none"> <li>* re domestic sectors</li> <li>* re rest of world</li> </ul> </li> <li>- change in other liabilities               <ul style="list-style-type: none"> <li>* re domestic sectors</li> <li>* re rest of world</li> </ul> </li> </ul>
Net acquisition of financial assets	Net incurrence of liabilities plus net lending

The account above is now composed of two parts, i.e. an upper part and a lower part. The upper part basically presents details on the direct investments made by the sector as well as on its internal sources of finance (including net capital transfers, the item 'net lending' being the balancing item of this upper part. The lower part of the account shows how net lending is reflected in the changes in financial assets and liabilities of the sector. Financial assets have been broken down in some broad categories, while the same applies to liabilities.

With regard to both versions A and B above it may be noted, that in the case of certain items reference has been made to a domestic - foreign breakdown. This has been done to emphasise that the amounts recorded under these items are, generally speaking, composed of a domestic component (i.e. transactions related to domestic sectors) and a foreign component (i.e. transactions related to the rest of the world).

The capital account can to some extent be compared to (parts of) the so-called Funds Statement as known from business accounting, which aims at showing changes in the position of a business with respect to assets and liabilities. Changes in assets are reflected, among other things, in different kinds of (des-)investments, changes in liabilities among other things in increases/decreases in borrowings.

(b) A Capital Account for the Economy

The capital account for the economy can from a conceptual point of view be understood as the consolidated aggregate of the capital accounts for the various sectors of the economy. The model below can be seen as having been obtained through aggregation and consolidation of a set of sector accounts modelled along the lines of version B presented above.

Capital Account ECONOMY	
Outgoings	Incomings
- investments in stocks	- saving
- investments in fixed assets	- depreciation allowance
- net lending to abroad	- net capital transfers from abroad
Total Accumulation	Total Sources
- change in currency owned and deposits held re rest of world	- net lending to abroad
- change in securities owned re rest of world	- change in securities issued re rest of world
- change in other financial assets owned re rest of world	- change in other liabilities re rest of world
Net acquisition of financial assets	Net incurrence of liabilities plus net lending

Regarding the above Capital account for the economy the following may be said:

At the aggregate level of the economy transactions between domestic sectors cancel out each other, and may be eliminated in line with the usual consolidation rules. The above model reflects this principle: those items which refer in the case of the sector accounts to intersectoral transactions in total (i.e. domestic plus foreign), refer at the level of the economy to just the transactions with the rest of the world.

At the level of the economy net purchases of land are supposed to be equal to zero, and need, therefore, not be considered as a component of capital formation.

Given the equality of left hand side and right hand side of the upper part of the account we obtain:

physical investment + net lending to abroad =

saving (net) + depreciation + net capital transfers from abroad

in symbols:  $I + NLTA = S_n + D + NCATFA$

or:  $I + NLTA = S_{gr} + NCATFA$  , where  $S_{gr}$  (saving, gross) =  $S_n + D$

Note, that in the case of a closed economy, where  $NLTA = 0$  and  $NCATFA = 0$ , the equation reduces to:

$$I = S_{gr}$$

#### 4.4 External Account models

This account, which is usually compiled in relation to the economy as a whole only, summarizes the transactions, of both current and capital nature, of the economy with respect to the rest of the world. In a more extended form it will present in addition details regarding the changes in financial assets and liabilities which underlie the current and capital transactions. The two models presented below (versions A and B) reflect these two forms.

External Account ECONOMY Version A	
Outgoings	Incomings
<ul style="list-style-type: none"> <li>- exports of goods and services</li> <li>- factor income from abroad</li> <li>- other current transfers from abroad</li> </ul>	<ul style="list-style-type: none"> <li>- import of goods and services</li> <li>- factor income to abroad</li> <li>- other current transfers to abroad</li> <li>- surplus current account ECONOMY</li> </ul>
Total	Total
<ul style="list-style-type: none"> <li>- surplus current account ECONOMY</li> <li>- net capital transfers from abroad</li> </ul>	<ul style="list-style-type: none"> <li>- surplus current &amp; capital account ECONOMY</li> </ul>
Total	Total

With regard to the above model the following may be noted:

The account has been drawn up from the point of view of the rest of the world. Thus, the incomings side refers to the receipts by the rest of the world, being the expenditure/disbursements of the economy. So does the expenditure side refer to the

outgoings/disbursements by the rest of the world, these being the incomings/receipts of the economy coming from abroad. This way of recording the foreign transactions is implied by the application of the double-entry system, in which each transaction is, in principle, recorded twice, namely as a receipt for the receiving entity, and as a disbursement for the paying entity. The transactions in the external account summarize the various transactions of the rest of the world with the economy, and have, as such, already once been recorded in either the production, income-outlay or capital account of the economy.

The account has an upper and a lower part. The upper part presents transactions of a current nature. They include: import and export flows; flows of factor income from and to abroad ; and flows of other current transfers from and to abroad.

The item 'surplus current account' is the balancing item of this upper part. It equals the difference between the incomings of the rest of the world from the economy, and its outgoings to the economy. If the current outgoings from the rest of the world to the economy exceed its incomings from the economy, it has a deficit in current transactions vis-a-vis the economy. In that case the economy has a surplus vis-a-vis the rest of the world. The term 'surplus current account' therefore refers to the surplus of the economy in current transactions vis-a-vis the rest of the world. In case the current outgoings from the rest of the world to the economy are less than its incomings from the economy (i.e when the current outgoings from the economy to the rest of the world are more than its incomings from the abroad), the 'surplus' will be negative.

The lower part of the account presents capital transactions, referring basically to capital transfers. In the above model these transfers have been included as a net item in this panel, although it might have been possible as well to present on the two sides of the account the two composing flows. The balancing item of the lower part equals the sum of the current account surplus and the capital transactions' surplus of the economy with the rest of the world.

The combined surplus of current and capital transactions finds its reflection in the changes in the position re financial assets and liabilities of the rest of the world vis-a-vis the domestic economy. A third panel which gives details on these changes may be added to the above model. This will give us version B presented below.

External Account ECONOMY Version B	
Outgoings	Incomings
<ul style="list-style-type: none"> <li>- exports of goods and services</li> <li>- factor income from abroad</li> <li>- other current transfers from abroad</li> </ul>	<ul style="list-style-type: none"> <li>- import of goods and services</li> <li>- factor income to abroad</li> <li>- other current transfers to abroad</li> <li>- surplus current account ECONOMY</li> </ul>
Total	Total
<ul style="list-style-type: none"> <li>- surplus current account ECONOMY</li> <li>- net capital transfers from abroad</li> </ul>	<ul style="list-style-type: none"> <li>- surplus current &amp; capital account ECONOMY</li> </ul>
Total	Total
<ul style="list-style-type: none"> <li>surplus current &amp; capital account ECONOMY</li> <li>- change in securities issued re rest of world</li> <li>- change in other liabilities re rest of world</li> </ul>	<ul style="list-style-type: none"> <li>- change in currency owned and deposits held re rest of world</li> <li>- change in securities owned re rest of world</li> <li>- change in other financial assets owned re rest of world</li> </ul>
Total	Total

The third panel, which presents the changes in financial assets and liabilities, mirrors the lower part of the capital account for the domestic economy presented in the previous section. It was pointed out that the items in that part of the capital account refer to changes in financial assets and liabilities vis-a-vis the rest of the world only, due to consolidation. As such, these items are the same ones as those displayed in the third panel of the external account. Since the latter account is presented from the perspective of the rest of the world,

only the debit-credit position of the items in question has changed in relation to the capital account.

It may be noted, that the external account model version B as presented above may be interpreted as a kind of Balance of Payments (BOP).

It may furthermore be observed that the overall surplus of current and capital transactions is equal to the net lending item of the capital account for the economy. This may be demonstrated with the help of some simple algebra.

#### Net lending - Capital account

According to the upper part of the capital account for the economy the following equality holds:

$$(1) \quad \mathbf{I + NLROW = S_n + D + NFCAPTR}$$

Therefore:

$$(2) \quad \mathbf{NLROW = S_n + D + NFCAPTR - I}$$

From the income - outlay account the following equalities are obtained:

$$(3) \quad \mathbf{S_n = Y_{nat,disp} - C}$$

and

$$(4) \quad \mathbf{Y_{nat,disp} = Y_{g,dom} + NFFI + NFCUTR - D}$$

Therefore:

$$(5) \quad \mathbf{S_n = (Y_{g,dom} + NFFI + NFCUTR - D) - C}$$

Substituting (5) in (2) gives:

$$(6) \quad \mathbf{NLROW = (Y_{g,dom} + NFFI + NFCUTR - D) - C + D + NFCAPTR - I}$$

From the production account the following equality is derived:

$$(7) \quad \mathbf{Y_{g,dom} = C + I + E - M}$$

Substituting (5) in (2) gives:

$$\begin{aligned}
 (8) \quad \mathbf{NLROW} &= \mathbf{C + I + E - M + NFFI + NFCUTR - D - C + D + NFCAPTR - I} \\
 &= \mathbf{E - M + NFFI + NFCUTR + NFCAPTR}
 \end{aligned}$$

Surplus of current and capital transactions - External account

From the second part of the external account the following equality is obtained:

$$(9) \quad \mathbf{SURPCURCAP = SURPCUR + NFCAPTR}$$

From the first part of the external account the following equality is obtained:

$$(10) \quad \mathbf{SURPCUR = E - M + NFFI + NFCUTR}$$

Substituting (10) in (9) gives:

$$(11) \quad \mathbf{SURPCURCAP = E - M + NFFI + NFCUTR + NFCAPTR}$$

Comparison of equation (8) to equation (11) makes clear that

$$(12) \quad \mathbf{NLROW = SURPCURCAP}$$

Implied by the above equations is also the well-known equality between the macro-economic savings-investment balance ( $\mathbf{S_{gr} - I}$ ) and the surplus/deficit of the current part of the external account ( $\mathbf{SURPCUR}$ ).

Combining (2) and (8) yields:

$$\begin{aligned}
 (13) \quad \mathbf{NLROW} &= \mathbf{S_n + D + NFCAPTR - I} \\
 &= \mathbf{E - M + NFFI + NFCUTR + NFCAPTR}
 \end{aligned}$$

By eliminating  $\mathbf{NFCAPTR}$  one obtains:

$$(14) \quad S_n + D - I = E - M + \text{NFFI} + \text{NFCUTR}$$

Referring to (10), this may be expressed as:

$$(15) \quad (S_n + D) - I = \text{SURPCUR}$$

Or:

$$(16) \quad S_{gr} - I = \text{SURPCUR}$$

NOTE:

For analytical purposes the macro-economic S-I balance is often broken down into a private sector component and a government sector component, as follows:

$$\begin{aligned} S_{gr} - I &= (S_{gr;P} + S_{gr;G}) - (I_P + I_G) \\ &= (S_{gr;P} - I_P) + (S_{gr;G} - I_G) \end{aligned}$$

This leads to the following alternative expression for (16):

$$(16') \quad (S_{gr;P} - I_P) + (S_{gr;G} - I_G) = \text{SURPCUR}$$

### Meaning of symbols

**C** : final consumption expenditure (private plus public)

**I** : gross physical investments (stocks and fixed assets)

**S<sub>n</sub>** : net national saving

**S<sub>gr</sub>** : gross national saving

**D** : depreciation (cons. of fixed capital)

**E** : exports of goods and services

**M** : imports of goods and services

**$Y_{g,dom}$  : domestic product/income, gross (market prices)**

**$Y_{nat,disp}$  : national disposable income, net (market prices)**

**NFFI : net foreign factor income**

**NFCUTR : net foreign current transfers**

**NFCAPTR : net foreign capital transfers**

**NLROW : net lending to rest of world**

**SURPCUR : surplus current account ECONOMY - external account**

**SURPCURCAP : surplus current & capital account ECONOMY - external account**

#### 4.5 Numerical example

With a view to illustrate the various kinds of accounts thusfar presented, and their interrelationships, a simple numerical example is being given here. The data for this example are largely based on table 2 in chapter 2.

In this example an economy is being assumed which has three main sectors, namely Enterprises (ENT.), Households (HH), and Government (GOVT.), of which Enterprises and Government are involved in productive activities. Productive activities by Enterprises comprise agriculture, manufacturing and services. Government produces public services. Consequently, four productive branches/sub-sectors are being distinguished, namely 'Enterprises Agriculture' (A), 'Enterprises Manufacturing' (M), 'Enterprises Other' (O), and 'Public Services Government' (G). All production in the economy is supposed to take place in the aforementioned branches.

### PRODUCTION ACCOUNTS

For the sake of this example it has been assumed that for each branch data are available on: value of gross output and its composition in terms of intermediate and final output; value of intermediate input and its composition in terms of domestic supply and imports; values for the various components of value added.

Production accounts branches/sub-sectors

OUTG.	Prod. Acc. A	INC.
- INT. CONS.	17	- INT. OUTPUT 30
* Dom. Inputs	15	- FINAL OUTPUT 35
* Imported Inputs	2	* Cons. G. 20
- VALUE ADDED (GROSS)	48	* Inv. G. 0
* Wages & Sal.	22	* Exported 15
* Net Ind. Taxes	4	
* Depreciation	8	
* Net Op. Surplus	14	
GROSS INPUT	65	GROSS OUTPUT 65

OUTG.	Prod. Acc. M		INC.
- INT. CONS.	45	- INT. OUTPUT	25
* Dom. Inputs	40	- FINAL OUTPUT	50
* Imported Inputs	5	* Cons. G. 17	
- VALUE ADDED (GROSS)	30	* Inv. G. 23	
* Wages & Sal.	18	* Exported 10	
* Net Ind. Taxes	1		
* Depreciation	5		
* Net Op. Surplus	6		
GROSS INPUT	75	GROSS OUTPUT	75

OUTG.	Prod. Acc. O		INC.
- INT. CONS.	18	- INT. OUTPUT	20
* Dom. Inputs	16	- FINAL OUTPUT	15
* Imported Inputs	2	* Cons. G. 8	
- VALUE ADDED (GROSS)	17	* Inv. G. 0	
* Wages & Sal.	9	* Exported 7	
* Net Ind. Taxes	2		
* Depreciation	2		
* Net Op. Surplus	4		
GROSS INPUT	35	GROSS OUTPUT	35

OUTG.	Prod. Acc. G		INC.
- INT. CONS.	5	- INT. OUTPUT	-
* Dom. Inputs	4	- FINAL OUTPUT	10
* Imported Inputs	1	* Cons. G.	10
- VALUE ADDED (GROSS)	5	* Inv. G.	-
* Wages & Sal.	5	* Exported	-
* Net Ind. Taxes	0		
* Depreciation	0		
* Net Op. Surplus	-		
GROSS INPUT	10	GROSS OUTPUT	10

#### Production account Economy

Through aggregation of the four production accounts for A, M, O, and G we obtain the production account for the economy, version A, as given below.

OUTG.	Prod. Acc. ECONOMY version A		INC.
(- INT. INPUT DOM. PROD.	75)	(- INT. OUTPUT	75)
- INT. INPUT IMPORTED	10	- FINAL OUTPUT	110
- VALUE ADDED (GROSS)	100	* Cons. G.	55
* Wages & Sal.	54	* Inv. G.	23
* Net Ind. Taxes	7	* Exported	32
* Depreciation	15		
* Net Op. Surplus	24		
GROSS INPUT	185	GROSS OUTPUT	185

Version A can be modified by 1) leaving out intermediate output / domestically produced intermediate input; 2) express right hand side in terms of final expenditure; 3) replace value of intermediate imports by value for total imports. This will render us version B.

OUTG.	Prod. Acc. ECONOMY version B		INC.
- TOTAL IMPORT	15	- FINAL EXPENDITURE	115
		* Cons. G.	58
		* Inv. G.	25
- VALUE ADDED (GROSS)	100	* Exported	32
* Wages & Sal.	54		
* Net Ind. Taxes	7		
* Depreciation	15		
* Net Op. Surplus	24		
TOTAL IMPORT + VALUE ADD.		FINAL EXPENDITURE	
	115		115

Finally, version B can be further rearranged by deducting from both sides of the account the value of the expenditures on imports, leading to the following result:

OUTG.	Prod. Acc. ECONOMY version C		INC.
- WAGES & SALARIES	54	- FINAL EXPENDITURE	115
- NET IND. TAXES	7	* Cons. G. Exp.	58
- DEPRECIATION	15	* Inv. G. Exp.	25
- NET OP. SURPLUS	24	* Exports	32
		MINUS: TOT. IMPORTS	(-)15
GROSS VALUE ADDED		GROSS DOM. PRODUCT	
	100		100

## INCOME - OUTLAY ACCOUNTS

Income - Outlay accounts sectors

OUTG.	Inc. & Outlay Acc. Households (HH.)		INC.
- FINAL CONS. EXP.	48	- WAGES & SAL.	52
		* From dom. prod.	51
- DIRECT TAXES	15	* From abroad	1
- PROP. & ENTERPR. INC.	5	- PROP. & ENTERPR. INC.	19
* To ENT.	5	* From ENT.	15
* To abroad	0	* From GOVT.	4
		* From abroad	0
- CURRENT TRANSFERS	1	- CURRENT TRANSFERS	12
* To GOVT.	0	* From abroad	2
* To abroad	1	* From GOVT.	10
- SAVING	14		
<b>OUTLAYS</b>	<b>83</b>	<b>INCOME</b>	<b>83</b>

OUTG.	Inc. & Outlay Acc. Enterprises (ENT.)		INC.
- PROP. & ENTERPR. INC.	26	- NET OP.SURPLUS	24
* To GOVT.	8	- PROP. & ENTERPR. INC.	13
* To HH	15	* From GOVT.	6
* To abroad	3	* From H.H.	5
- DIRECT TAXES	7	* From abroad	2
- CURRENT TRANSFERS	0		
- SAVING	4		
<b>OUTLAYS</b>	<b>37</b>	<b>INCOME</b>	<b>37</b>

OUTG.	Inc. & Outlay Acc. Government (GOVT.)		INC.
- FINAL CONS. EXP.	10	- INDIRECT TAXES, NET	7
		- DIRECT TAXES	22
		* From ENT.	7
- PROP. & ENTERPR. INC.	10	* From HH.	15
* To ENT.	6		
* To HH.	4		
* To abroad	0	- PROP. & ENTERPR. INC.	8
		* From ENT.	8
		* From HH.	0
- CURRENT TRANSFERS	10	* From abroad	0
* To HH.	10		
* To ENT.	0	- CURRENT TRANSFERS	3
* To abroad	0	* From abroad	3
- SAVING	10		
OUTLAYS	40	INCOME	40

#### Income - Outlay account Economy

Through aggregation of the three sectoral income-outlay accounts presented above, the income-outlay account for the Economy, version A is obtained.

OUTG.	Inc. & Outlay Acc. ECONOMY Version A		INC.
- FINAL CONS. EXP.	58	- W & S REC. BY HH	52
* By HH.	48	* From dom. prod.	51
* By GOVT.	10	* From abroad	1
- DIRECT TAXES	22	- NET OP. SURPLUS	24
* By HH.	15	DIRECT TAXES	22
* By ENT.	7	- PROP. & ENTERPR. INC.	40
- PROP. & ENTERPR. INC.	41	* From dom. inst.	38
* To dom. inst.	38	* From abroad	2
* To abroad	3	- CURRENT TRANSFERS	15
- CURRENT TRANSFERS	11	* From dom. inst.	10
* To dom. inst.	10	* From abroad	5
* To abroad	1	- INDIRECT TAXES	7
- SAVING	28		
OUTLAYS	160	INCOME	160

By applying elimination and netting of items of version A, version B is obtained.

OUTG.	Inc. & Outlay Acc. ECONOMY Version B		INC.
- FINAL CONS. EXP. HH.	48	- W & S REC. BY HH	52
- FINAL CONS. EXP. GOVT	10	* From dom. prod.	51
		* From abroad	1
		- NET OP. SURPLUS	24
		- PROP. & ENT. INC.	
		FROM ABROAD, NET	- 1
- SAVING	28	- CURRENT TRANSFERS	
		FROM ABROAD, NET	4
		- INDIRECT TAXES	7
OUTLAYS	86	INCOME	86

After rearrangement of version B re the item 'wages and salaries, version C is obtained.'

OUTG.	Inc. & Outlay Acc.	ECONOMY Version C	INC.
- FINAL CONS. EXP. HH.	48	- WAGES & SAL. PAID BY DOMESTIC PRODUCERS	54
- FINAL CONS. EXP. GOVT	10	- WAGES & SAL. FROM ABROAD, NET	- 2
		- NET OP. SURPLUS	24
		- PROP. & ENT. INC. FROM ABROAD, NET	- 1
- SAVING	28	- CURRENT TRANSFERS FROM ABROAD, NET	4
		- INDIRECT TAXES	7
OUTLAYS	86	INCOME	86

### CAPITAL ACCOUNTS

The capital accounts below represent the basic versions, i.e. without financial transactions.

Capital Accounts sectors

OUTG.	Capital Acc. HH.	INC.	
- INVESTMENTS	0	- SAVING	14
* In stocks	0	- DEPRECIATION	0
* In fixed assets	0	- NET CAPITAL TRANSFERS	0
* In land	0		
- NET LENDING	14		
ACCUMULATION	14	SOURCES	14

OUTG.	Capital Acc. ENT.		INC.
- INVESTMENTS	21	- SAVING	4
* In stocks	3	- DEPRECIATION	15
* In fixed assets	18	- NET CAPITAL TRANSFERS	0
* In land	0		
- NET LENDING	- 2		
ACCUMULATION	19	SOURCES	19

OUTG.	Capital Acc. GOVT.		INC.
- INVESTMENTS	4	- SAVING	10
* In stocks	1	- DEPRECIATION	0
* In fixed assets	3	- NET CAPITAL TRANSFERS	- 2
* In land	0		
- NET LENDING	4		
ACCUMULATION	8	SOURCES	8

### Capital Account Economy

Through aggregation of the three sectoral capital accounts presented above, the capital account for the Economy given below is obtained.

OUTG.	Capital Acc.ECONOMY		INC.
- INVESTMENTS	25	- SAVING	28
* In stocks	4	- DEPRECIATION	15
* In fixed assets	21	- NET CAPITAL TRANSFERS FROM ABROAD	- 2
* In land	0		
- NET LENDING TO ABROAD	16		
ACCUMULATION	41	SOURCES	41

## EXTERNAL ACCOUNT

The figures in this account follow from the data re foreign transactions as presented in the production -, income & outlay -, and capital accounts for the economy as a whole. As such, this external account represents the basic version, i.e. without financial transactions.

OUTG.	External Account ECONOMY		INC.
- EXPORTS GOODS & SERV.	32		- IMPORTS GOODS & SERV. 15
- FACTOR INCOME FROM ABR.	3		- FACTOR INCOME TO ABR. 6
* Wages & sal.	1		* Wages & sal. 3
* Prop./enterpr. inc.	2		* Prop./enterpr. inc. 3
- OTHER CURR. TRANSFERS FROM ABROAD	5		- OTHER CURRENT TRANSF. TO ABROAD 1
			- SURPLUS CURRENT ACC. 18
TOTAL	40		TOTAL 40
- SURPLUS CURRENT ACC.	18		
- NET CAPITAL TRANSFERS FROM ABROAD	- 2		- SURPLUS CURRENT & CAPITAL ACCOUNT 16
TOTAL	16		TOTAL 16

#### 4.6 Commodity Account models

This kind of account presents for more or less homogeneous groups of commodities details with regard to their origin (domestic production, imports) and their destination/use (i.e intermediate use, final consumption, capital formation, export). This kind of account can be seen as complementary to the kinds of accounts discussed above, more in particular to the production accounts. The concept of the production account, whether for the economy as a whole or for an individual branch/sector has the producing unit as its analytical basis. The commodity account on the other hand has as its analytical basis the commodity (group). As such both production accounts and commodity accounts provide details re the production process. The emphasis in the former kind is on output, input and especially value added generated in production for a certain homogeneous group of producers. In the latter kind the emphasis is rather on supply and destination of homogeneous groups of commodities.

Given below is a simple model of a commodity account for commodity group i.

Commodity account for commodity group i

supply	use
-	-
supply by domestic producers of comm. i	use for intermediate purposes of comm.i
-	-
imports (incl. duties) of comm.i	use for final consumption of comm i
	-
	use for capital formation of comm. i
	-
	exports of comm i
Total Supply	Total Use

The above commodity account for commodity group i should largely speak for itself. The supply of goods is composed of domestic output plus imports.

When the value of the total supply is expressed in purchaser terms (i.e inclusive of trade and transport margins, and of indirect taxes such as turnover tax, duties, export tax etc.), the total should equal the total value of purchases of the commodities according to different purposes. The left hand side of the account presents the supply of the commodities in purchaser terms, the right hand side the total purchases according to use/destination.

By aggregating the commodity accounts for all commodities supplied and used, one would get the aggregate commodity account for the economy. Basically it would look the same as the account presented above.

Commodity account ECONOMY	
supply	use
-	
- total supply goods & serv. by domestic producers	- use for intermediate purposes all goods & serv.
-	
- total import (incl. duties) of goods & serv.	- use for final consumption of all goods & serv.
	- use for capital formation of all goods & serv.
	- total export goods & serv.
Total Supply	Total Use

Given the equality of right hand side and left hand side of the above commodity account for the economy we obtain the following identity:

$$\begin{aligned}
 & \text{total dom. suppl. G \& S} + \text{total imp. G \& S} \\
 = & \text{total interm. use G \& S} + \text{total use final cons. G \& S} + \\
 & \text{total use investm. G\&S} + \text{exports G\&S}
 \end{aligned}$$

in symbols:  $\mathbf{X + M = B + C + I + E}$

$$\text{---> } \mathbf{X - B = C + I + E - M}$$

Since X represents total gross output, and B total intermediate input, X - B represents Value Added, or Y.

$$\mathbf{Y = C + I + E - M}$$

The models of the different types of accounts presented above are meant to give an idea of the main kinds of accounts that may form part of a country's national accounting system. It should be stressed that the versions as used in practice may differ in detail from those presented here. Deviations can be found not only with respect to the exact terminology used, but also re the items included. Reasons of a statistical character do often play a role in this connection.

Furthermore the point may be repeated here, that while the macro - accounts may conceptually be interpreted as being derived from the corresponding sector accounts, the actual compilation of these accounts will in many cases be done in other ways, not involving sector accounts.

In addition to the kinds of accounts referred to above, other kinds may form part of national accounting systems. Among these are: revaluation accounts, other changes in volume of assets accounts, and balance sheets. About these types of accounts more will be said in 5.2.