

## Chapter 19: Summarizing, integrating and balancing the accounts (revised title and revised content)

(OLD Chapter 16: Summarizing and integrating the accounts)

### A. Introduction

- 19.1 This chapter provides a synthesis of the sequence of economic accounts presented in chapters 67 to 1314 and shows how they relate to the tables in chapter 23. It shows how the most common aggregates in the SNA, GDP, NDP, ~~and~~ GNI and NNI are related to the balancing items in the various accounts. It shows the impact on national aggregates of transactions undertaken between a resident unit and ~~a~~ one resident in the rest of the world. It also describes the articulation of the accumulation accounts. The chapter ends with a section on balancing the accounts.
- 19.2 The chapter lays the groundwork for greater elaboration of the accounts, in both manners of presentation and further analysis that form the subject matter of later chapters.

### B. Integrating the accounts

- 19.3 The tables presented in ~~the previous~~ chapters 7 to 14 use a format very common in published tables; the items representing ~~resources~~ revenues are shown in the right-hand side of the table and the items representing ~~uses~~ expenditures in the left-hand side of the table. This format is flexible because it allows a multiple number of columns to be shown for both parts of the table and even for the two parts to be shown on different pages if the columns are sufficiently numerous. However, there is another format for the tables that is particularly useful for explanatory purposes, the T account.
- 19.4 In a T account, only one set of descriptive headings (stubs) is shown in the middle of the table with values representing ~~resources~~ revenues in columns to the right and values representing ~~uses~~ expenditures in columns to the left. An example of a T account is given in table 1619.1. The rows in the table show the rows from tables 67.1, 78.1, 79.2, 89.1 and 910.1 at a high level of aggregation. Data for the individual sector accounts are not shown but the total for the economy as well as for the rest of the world and the total of both these are shown. In addition, the column for the goods and services account is retained.

Table 1619.1: Summary of the current accounts in the sequence of economic accounts

#### 1. Summarizing the current accounts

- 19.5 The current accounts included in table 1617.1 consist of the production account and accounts showing the ~~primary~~ distribution of income, the ~~secondary~~ re-distribution of income and the use of income. In addition to these accounts, table 1619.1 begins with imports and exports of goods and services, the entries from the rest of the world account that show the value of goods and services that ~~re-enter~~ enter the national economy from the rest of the world and those that are produced in the national economy but are provided to the rest of the world.

#### The production account

- 19.6 The immediately following rows show the main entries from the production account: output ~~and~~ as well as taxes less subsidies on products not already included in the value of output (see paragraph 7.59 ff) on the ~~resource~~ revenues side and intermediate consumption on the ~~use~~ expenditures side. The balancing item for the production account, value added, appears next, also on the ~~use~~ expenditures side as the closing item of the production account. Value added is the basic building block for determining GDP.

## The generation of earned income account

- 19.7 The next few rows correspond to the generation of earned income account. This is the first part of the primary distribution of earned income account. Value added, the balancing item from the production account, appears as the only entry on the resources revenues side of the account. The entries on the left-hand side of the account under uses expenditures show how much of value added is generated by labour in the form of compensation remuneration of employees and how much of the value of output is payable to government in the form of taxes on productions less subsidies on productions, including taxes on products less subsidies on products not already included in the value of output. The balancing items, operating surplus ~~and mixed income~~, represents the contribution of capital to the generation of value added, while the balancing item mixed income represents the combination of the contribution of labour input of self-employed persons and the contribution of capital to the value added of unincorporated enterprises.

## The allocation of primary earned income account

- 19.8 In the allocation of primary earned income account, these contributions to value added appear as resources revenues of the relevant sectors; compensation remuneration of employees to households, taxes less subsidies to government and operating surplus and mixed income to the sectors containing the relevant production units. In addition, however, the allocation of primary earned income account shows how much of each of these three items is payable to non-resident units and where comparable items generated in non-resident units are payable to resident sectors.
- 19.9 In the course of production, producers may have made use of financial and non-produced non-financial assets belonging to other units. The payments for the use of these assets are shown as property income. Property income may be payable by residents or non-residents and may be receivable by residents or non-residents. Once the values for three of them are known, the value of the last is necessarily determined. For example, property income receivable by residents must be equal to property income payable by both residents and non-residents less property income receivable by non-residents. Thus property income receivable by both residents and non-residents (shown under resources revenues) must be equal to property income payable by both residents and non-residents (shown under uses expenditures).
- 19.10 The balancing items from the generation of earned income account, operating surplus and mixed income, are recorded Value added as a resource revenue on the allocation of earned income account, plus Together with the resource revenue entries of compensation remuneration of employees, operating surplus, mixed income, taxes less subsidies on production and property income, less the corresponding entries for these items as uses expenditures leads to the balance of primary earned incomes. This is the balancing item for the allocation of primary earned income account shown as an use expenditure, and the first item, a resource revenue, of the secondary distribution of income transfers other than social transfers in kind account.
- 19.11 From the balance of primary earned incomes, another key aggregate of the SNA, national income, is derived. Value added is determined by the criterion of residence; all resident units and only resident units contribute to the total. For the balance of primary earned income, however, the focus changes not just from production to income but to the residence of the units receiving the income generated by production rather than the residence of the producing units themselves. Further discussion of national income appears below in connection with the discussion of the rest of the world account.

## The ~~secondary distribution of income~~ transfers other than social transfers in kind account

- 19.12 The ~~secondary distribution of income~~ transfers other than social transfers in kind account shows how primary earned income is transformed to disposable income by the payment and receipt of current transfers. Various factors stimulate redistribution of income between sectors of the economy. One of these is the role of government in levying current taxes on income and wealth; one is the role played by social insurance schemes in redistributing contributions by current workers to retirees; another is the role of insurance in

providing a mechanism whereby small regular payments by many units are channelled to a few units suffering predefined sorts of losses. Among other types of current transfers, the role of purely voluntary transfers is of increasing interest. Such transfers may provide the main source of finance for NPISHs, in the form of international cooperation between governments, or may be between resident and non-resident households in the form of workers' remittances.

- 19.13 Current transfers payable by resident and non-resident units must be equal to current transfers receivable by both resident and non-resident units, and thus total uses and resources are equal as is the case for property income.
- 19.14 Disposable income is an important balancing item in the accounts since it shows, disregarding the impact of capital transfers, how much can be consumed without the need to run down assets or incur liabilities. It thus corresponds to the economic theoretical concept of income.

### The use of income accounts

- 19.15 The use of disposable income account shows how much disposable income is in fact used for final consumption and how much is saved. When looking at the sector accounts, the adjustment for the change in pension entitlements has to be made to ensure that these form part of the saving of households and not of pension funds. However, in the aggregate only flows relating to pension entitlements involving non-resident employees or resident employees of non-resident enterprises appear.
- 19.16 Table 4619.1 does not include the redistribution of income ~~via transfers in~~ kind account and the use of ~~adjusted~~ disposable income adjusted for social transfers in kind account but these could be inserted either in place of, or as a complement to, the income transfers other than social transfers in kind account and the use of disposable income account.

## 2. Summarizing the accumulation accounts

- 19.17 Table 4619.2 presents a summary of the accumulation accounts and balance sheets with the same degree of detail as used for the current accounts in table 4619.1. In this case, the titles given to the right- and left-hand columns are changed; the columns to the right are described as changes in liabilities and net worth, and those to the left show changes in assets.

### Table 4619.2: Summary of the accumulation accounts and balance sheets

### The capital account

- 19.18 The first items appearing on the right-hand side of the capital account are saving and the current external balance. Also appearing as resources are capital transfers receivable. By convention, capital transfers payable also appear under resources but with a negative sign. For the economy as a whole, including transactions with the rest of the world, capital transfers receivable and payable exactly offset one another in the same way that property income and current transfers do. However, this equality is not generally true for the total economy excluding the rest of the world nor for individual sectors within it.
- 19.19 Together, saving plus receivable, minus payable, capital transfers (~~net~~) show how much is available within the economy to acquire non-financial capital, primarily capital formation but also non-produced non-financial assets. This total is shown as a special aggregate called changes in net worth due to saving and capital transfers. It is not a balancing item but has the same characteristic of being an analytical construct of particular interest.
- 19.20 The ~~uses~~ expenditures shown in the capital account are the acquisition, less disposals, of produced non-financial assets and non-produced non-financial assets, both excluding natural capital, as well as acquisitions, less disposals, of natural capital. The balancing item of the capital account is net borrowing or lending. When there is net lending, it shows the extent to which the sum of saving and capital transfers is actually used to

finance the acquisition of non-financial assets and how much is lent to the rest of the world. When there is net borrowing, saving plus capital transfers are insufficient to finance all the acquisition of non-financial assets and borrowing from the rest of the world is necessary.

### The financial account

- 19.21 The financial account shows exactly how net lending or borrowing takes place by showing all the transactions in financial instruments. Transactions in financial assets shown as changes in assets exactly balance the amounts shown as changes in liabilities ~~and net worth~~ because when all transactions of resident units with either other resident units or non-resident units are taken into account, there can be no net lending or borrowing left unexplained.
- 19.22 Because the financial account does not introduce any new balancing items and only explains how net lending or net borrowing is effected, and because it requires quite different data sources and understanding of the data sources, this account is not always compiled by national accountants. However, without the financial account, the compiler cannot be certain that the estimates for the other accounts are fully consistent and complete. Just as the national accountant must have an understanding of the balance of payments system and ensure that the transactions relating to the rest of the world are fully captured in the accounts, ~~so~~ there is a need to have an understanding ~~appreciate the implications of systems~~ of monetary and financial statistics. Two later chapters, chapters 2629 and 2733, discuss the relationships with these other statistical systems in more detail.

### 3. The goods and services account

- 19.23 Throughout the sequence of accounts, each transaction line is balanced. For the distributive and redistributive transactions, this is automatically the case if the data are fully reconciled since whatever is shown as payable by one unit must be shown as receivable by another. However this is not obviously the case for the transactions relating to goods and services. In order to preserve the balancing nature of the accounts, a column headed “goods and services” is included on each side of the accounts. In every case where there is a transaction relating to goods and services, an entry in the goods and services column on the other side of the account is made.
- 19.24 Ultimately the entries on the left-hand side of the account show the value of all goods and services supplied to the economy, either as ~~production~~ domestic output or imports, plus the taxes on products less subsidies not already included in the value of output ~~paid on them~~. On the right-hand side of the account, the use of the goods and services is shown, as intermediate or final consumption, capital formation or exports.
- 19.25 Clearly, ex post the total amount of goods and services supplied to the economy must be equal to the total use made of those goods and services. Setting the entries in the left-hand goods and services column equal to those in the right-hand side column gives the familiar goods and services account, described in chapter 415:
- $$\begin{aligned} & \text{Output} + \text{imports} + \text{taxes less subsidies on products} \\ & = \text{intermediate consumption} + \text{final consumption} + \text{exports} + \text{capital formation} \end{aligned}$$
- 19.26 The equation reflects the notion that goods and services produced in the current period are used either to generate more goods and services in the current period (intermediate consumption) or to generate more goods and services in future periods (capital formation) or to satisfy human wants immediately (final consumption). However, because no economy is entirely closed, it is necessary to allow for those goods and services supplied from outside the economy (imports) and those goods and services used by other economies (exports).
- 19.27 This identity comprises the goods and services account. *The goods and services account shows the balance between the total goods and services supplied as resources to the economy as output and imports (including the value of taxes less subsidies on products not already included in the valuation of output) and the use*

*of the same goods and services as intermediate consumption, final consumption, capital formation and exports.*

#### 4. The accounts for the rest of the world

- 19.28 The entries in the integrated accounts for the rest of the world correspond to the entries in the balance of payments as laid out in *BPM76*. Table 1619.3 shows the entries for the rest of the world in the structure of the balance of payments accounts.

**Table 1619.3: Entries for the rest of the world using the *BPM76* structure of accounts**

- 19.29 There are ~~three~~four current accounts; one for goods, ~~one for~~and services, one for ~~primary~~earned income and one for ~~secondary~~transfer income. Each of these has a balancing item but, unlike the accounts in the SNA, the balancing items do not carry down from one account to the next. However, other balancing items that do match those in the SNA are allowed for. Thus the external balance of goods, services and ~~primary~~earned income is the sum of the [external] balance of goods, ~~the [external] balance of~~and services and the [external] balance of ~~primary~~earned incomes and corresponds to the balance of ~~primary~~earned income for the total economy. When this item is added to the external balance of ~~secondary~~transfer income, the current external balance is derived which corresponds to saving for the total economy. In this respect, it should be noted that all balancing items in the external account have an opposite sign compared to the accounts of the rest of the world in national accounts. While the national accounts record flows and positions between residents and non-residents from the perspective of non-residents, the external accounts record the relevant flows and positions from a domestic point of view.
- 19.30 In the capital account of the rest of the world, the only entries are for capital transfers receivable from and payable to the rest of the world and acquisition less disposals of non-produced non-financial assets involving non-resident units. These give the [external] capital ~~external~~account balance. When this is added to the current external balance, the result is net lending to or borrowing from the rest of the world.

#### 5. Integration of stock and flow data

##### Linking the opening and closing balance sheets

- 19.31 The balance sheets are an integral part of the SNA. An understanding of the articulation of the balance sheets with the flows relating to assets in the capital, financial and other changes in assets and liabilities accounts is fundamental to understanding the role capital accumulation plays in the SNA.

- 19.32 The basic accounting identity linking the opening and the closing balance sheet values for a single type of asset can be summarized as follows:

The value of the stock of a specific type of asset in the opening balance sheet valued at the prices prevailing at the date the balance sheet refers to;

*plus* the total value of the assets acquired, less the total value of those disposed of (including ~~consumption of fixed capital~~depreciation and depletion, where appropriate), in transactions that take place within the accounting period;

*plus* the value of other positive or negative changes in the volume of the assets held (for example, as a result of the discovery of a subsoil resource or the destruction of assets as a result of war or a natural disaster);

*plus* the value of the positive or negative nominal holding gains accruing during the period resulting from a change in the price of the asset;

*equals* the value of the stock of the asset in the closing balance sheet valued at the prices prevailing at the date the balance sheet refers to.

- 19.33 The value of the non-financial assets acquired, less the total value of those disposed of, in transactions that take place within the accounting period is recorded in the capital account and the value of transactions in financial assets (and liabilities) in the financial account. The value of other positive or negative changes in the volume of the assets (and liabilities) held is recorded in the other changes in the volume of assets and liabilities account. The value of the positive or negative nominal holding gains accruing during the period resulting from a change in the price of the asset (or liability) is recorded in the revaluation account. This means that the value of each entry in the closing balance sheet can, in principle, be constructed by taking the value in the opening balance sheet and adding to it the entries relating to the same asset (or liability) in each of the four accumulation accounts.
- 19.34 A nominal holding gain may be decomposed into a neutral holding gain and a real holding gain. The nominal holding gain indicates by how much the value of an asset has increased over the period. The neutral holding gain indicates the increase that would have been necessary for the asset to exactly maintain its purchasing power over the period. If the nominal holding gain is larger than the neutral holding gain, the owner of the asset has a real holding gain (equal to the difference between the nominal and neutral holding gains). If the nominal holding gain is less than the neutral holding gain, then the owner suffers a real holding loss.
- 19.35 The identity linking the opening and closing balance sheets and the accumulation account is valid even in the case of assets that are held only temporarily within the accounting period and that do not appear in either the opening or the closing balance sheets. For example, an asset may be acquired in a period, increase in price due to a holding gain and then suffer some destruction before being sold again before the end of the period.
- 19.36 The nominal holding gains and losses shown in the revaluation account include both realized and unrealized holding gains and losses but the realized holding gains and losses are incorporated in the value of transactions of the assets, leaving only the unrealized holding gains and losses in the closing balance sheet.
- 19.37 The link between the balance sheet and flow accounts in respect of financial assets and liabilities is often recognized and presented. Less attention has been focused on the links for non-financial assets though, as chapter 2017 on capital services makes clear, it is no less important, especially as regards an understanding of productivity growth in the economy.

### Net worth

- 19.38 The balancing item on a balance sheet is equal to the sum of all the assets less all the liabilities and is called net worth. The change in net worth between the opening and closing balance sheet can be shown to be composed of three items.
- The first of these is the change in net worth due to saving and capital transfers. This comes from the capital account and is the item shown as the total of ~~resources~~ revenues on that account.
  - The second item is the change in net worth due to other changes in the volume of assets and liabilities, and is the sum of all the entries for assets, less all the entries for liabilities, in the other changes in the volume of assets and liabilities account ~~less all the entries for liabilities~~.
  - The third item is the change in net worth due to nominal holding gains and losses. This is the sum of the entries for nominal holding gains and losses for all assets, ~~recorded in the revaluation account~~ less the entries for nominal holding gains and losses on all liabilities, as recorded in the revaluation account. This can be broken down into the change in net worth due to neutral holding gains and losses and the change in net worth due to real holding gains and losses in an obvious manner.

### Asset accounts

- 19.39 The identity linking opening and closing balance sheets holds for assets (or liabilities) in total, for every separate class of asset (or liability), and indeed for every individual asset (or liability). An asset (or liability) account describes the changes in the stock of an asset (or liability) or class of assets (or liabilities) from one balance sheet to the next, itemizing which changes are due to capital transactions, which to financial

transactions and which to other changes in volume and revaluation. Asset accounts are described in chapter ~~13~~14.

## 6. Consolidating the accounts

19.40 Although it is not usual to present the accounts in a fully consolidated form, it is useful from a pedagogical point of view to consider what results from a full consolidation of the accounts.

### *Consolidating the current accounts*

19.41 All the items in table ~~16~~19.1 relating to the distribution and redistribution of income appear on both sides of the account. Their inclusion permits the derivation of significant balancing items but it is also possible to consider what entries are left if they are eliminated by consolidation. In fact what remains are the entries in the goods and services columns plus the entries for saving and the current external balance. This result can be seen from the following:

a. ~~Resources~~Revenues

- Imports 499;
- Output 3 604;
- Taxes on products 141;
- Subsidies on products -8;
- Total 4 236;

b. ~~Uses~~Expenditures

- Exports 540;
- Intermediate consumption 1 883;
- Final consumption 1 399
- Saving 427;
- Current external balance -13;
- Total 4 236.

19.42 The current external balance (-13) is equal to the external balance of goods and services (-41) plus the external balance of earned and transfer flows of income coming from the rest of the world (28). If imports, exports and the external balance of goods and services are removed from the consolidation just described, the following result can be derived:

Output 3 604

*plus* taxes on products 141

*minus* subsidies on products 8

*minus* intermediate consumption 1 883

(result 1 854)

*equals*

final consumption 1 399

*plus* saving 427

*plus* external balance of earned and transfer income ~~from the rest of the world~~ 28.

- 19.43 The first part of this identity is the definition of income generated in the economy. If the external balance of earned and transfer income from the rest of the world is regarded as an analogue to saving generated within the domestic economy, this identity can be seen as the simple economic concept that income is equal to consumption plus saving.

#### *Consolidating the accumulation accounts*

- 19.44 When the capital and financial accounts are consolidated, all the entries in the financial account are eliminated and the entries for net lending or borrowing that appear in each account cancel. All that is left is:

acquisitions less disposals of produced assets (= capital formation) (414)

~~plus the acquisition less disposals of non-produced assets (0)~~ equals  
saving (427)

plus the current external balance (-13).

#### *Consolidating the rest of the world account*

- 19.45 Looking only at the capital and financial account of the rest of the world:

the current external balance (-13)

plus the acquisitions less disposals of non-produced assets (0)

plus capital transfers receivable (4)

minus capital transfers payable (1)

equals net lending or borrowing (-10).

- 19.46 Combining this identity with the previous one reduces to:

the acquisitions less disposals of produced assets (= capital formation) (414)

plus the acquisitions less disposals of non-produced assets (0)

equals

saving (427)

plus net lending or borrowing to the rest of the world (-10)

minus capital transfers payable to the rest of the world (4).

plus capital transfers receivable from the rest of the world (1).

In other words investment is equal to saving generated from within the total economy or drawn in from the rest of the world.

## **C. The macroeconomic aggregates in the SNA**

## 1. The GDP identities

19.47 Rearranging the order of items appearing in the goods and services account leads to the most familiar definitions of GDP:

Output (3 604)

*minus* intermediate consumption (1 883)

*plus* taxes less subsidies on products (141 - 8)

*equals*

final consumption (1 399)

*plus* the acquisitions less disposals of produced assets (= capital formation) (414)

*plus* exports (540)

*minus* imports (499)

*equals* GDP (1 854).

There are thus two separate ways in which GDP can be defined:

- a. *the production measure of gross domestic product (GDP) is derived as the value of output less intermediate consumption plus any taxes less subsidies on products not already included in the value of output,*
- b. *the expenditure measure of gross domestic product (GDP) is derived as the sum of expenditure on final consumption plus gross capital formation plus exports less imports.*

19.48 The production measure of GDP can also be expressed as value added adjusted to ensure all taxes less subsidies on products are included. As described in chapter 78, value added can be viewed as the elements comprising income: compensation remuneration of employees, operating surplus, mixed income and other taxes less subsidies on production. If separate estimates are available of these components, then a third way of compiling GDP is possible, that is, from the income side. Because other taxes less subsidies on production are included in value added and taxes less subsidies on products are to be included also, the two tax items can be replaced by the term that is the sum of them both, taxes less subsidies on production and imports.

GDP (1 854)

*equals*

compensation remuneration of employees (1 150)

*plus* gross operating surplus (452)

*plus* gross mixed income (61)

*plus* taxes less subsidies on production and imports (191).

The third way in which GDP can be defined is thus

- c. *the income measure of gross domestic product (GDP) is derived as ~~compensation remuneration~~ of employees plus gross operating surplus plus gross mixed incomes plus taxes less subsidies on both production and imports.*

## 2. A note on the valuation of output

- 19.49 In chapter 67, it is explained that the preferred measurement of output in the system is basic prices. At basic prices, the value of output excludes all taxes on products and includes all subsidies on products. It includes all other taxes on production and excludes all other subsidies on production. However, the data sources in some countries may not permit this valuation to be followed. In this case, output will be valued at producers' prices. All taxes on both products and production (possibly excluding any VAT type taxes) will be included in the value of output and all subsidies on both products and production will be excluded.
- 19.50 For this reason, the definition of GDP from the production side given above includes the phrase "plus any taxes less subsidies on products not already included in the value of output". When output is valued at producers' prices, there will be no further taxes on products to add in (except possibly VAT type taxes); they will be already included in the measure of output (and similarly subsidies on products will already be deducted). In this case, GDP may be defined as *the production measure of gross domestic product (GDP) is derived as the value of output at producers' prices less intermediate consumption*. When output is measured at basic prices (as preferred in the SNA and as followed in the numerical example) the definition can be rephrased as *the production measure of gross domestic product (GDP) is derived as the value of output at basic prices less intermediate consumption plus taxes less subsidies on products*.

### 3. Gross and net domestic product

- 19.51 While the third definition of GDP is correct both economically and statistically, it is held not to be the best measure of income. Income is usually defined as the amount that can be consumed while keeping the level of capital intact. (For further discussion on this see [paragraph 9.25 the introduction to chapter 8](#).) It is for this reason that the items ~~consumption of fixed capital depreciation and depletion are~~ so important in the accounts and appears in every account as the difference between balancing items on a gross and net basis. To measure domestic production on a net basis, it is necessary:
- to deduct ~~consumption of fixed capital depreciation and depletion~~ from the production measure of GDP,
  - to replace gross capital formation by net capital formation, and subtract depletion, in the expenditure measure of GDP,
  - to replace gross operating surplus by net operating surplus and gross mixed income by net mixed income in the income measure of GDP.
- 19.52 Each deduction from GDP is equivalent because the difference between gross and net capital formation is the ~~consumption of fixed capital depreciation, while depletion is explicitly subtracted as a stand-alone item. Both items also represent~~ as is the difference between the sum of operating surplus and mixed income on a gross basis as opposed to a net basis. Thus, *net domestic product (NDP) is defined as gross domestic product (GDP) less ~~the consumption of fixed capital depreciation and less depletion~~*.

NDP (1 632)

*equals*

GDP (1 854)

*minus* ~~consumption of fixed capital depreciation~~ (222)

*minus depletion* (...).

### 4. Gross and net national income

- 19.53 In some countries, border or seasonal workers may have a significant effect on the amount of ~~compensation remuneration~~ of employees that is either payable abroad or receivable from abroad. ~~Compensation Remuneration~~ earned abroad but repatriated to the country where the employee is resident (as opposed to where he or she works) adds to the income of households available for consumption. The concept of national income as opposed to domestic production is thus another key aggregate of the SNA. As well as

labour income from abroad in the form of ~~compensation~~remuneration of employees, income earned abroad on capital, especially financial capital, in the form of property income, is included in national income as well as any taxes ~~less subsidies on production and imports on products~~ payable by non-residents. Similar payments flowing out of the total economy to the rest of the world have to be deducted from GDP to reach national income.

- 19.54 *Gross national income (GNI) is defined as GDP plus ~~compensation~~remuneration of employees receivable from abroad plus property income receivable from abroad plus taxes less subsidies on production receivable from abroad less ~~compensation~~remuneration of employees payable abroad less property income payable abroad and less taxes plus subsidies on production payable abroad.* In the terms of an equation,

GNI (1 864)

*equals*

GDP (1 854)

*plus ~~compensation~~remuneration of employees receivable from abroad (6)*

*plus property income receivable from abroad (44)*

*plus taxes less subsidies on production ~~and imports~~ receivable from abroad (0)*

*minus ~~compensation~~remuneration of employees payable abroad (2)*

*minus property income payable abroad (38)*

*minus taxes less subsidies on production and imports payable abroad (0).*

- 19.55 As mentioned above, an income concept is better measured after deducting ~~consumption of fixed capital~~depreciation and depletion, so *Net national income (NNI) is defined as GNI less ~~the consumption of fixed capital~~depreciation and depletion.*

NNI (1 642)

*equals*

GNI (1 864)

*minus ~~consumption of fixed capital~~depreciation (222)*

*minus depletion (...).*

## 5. National disposable income

- 19.56 A further step in examining the impact of the rest of the world on the national economy is to consider current transfers receivable from abroad and those payable abroad. Transfers receivable from abroad include remittances from nationals working abroad for long enough (more than one year) to be treated as resident elsewhere. However, like ~~compensation~~remuneration of employees payable from abroad, these transfers from non-residents can have a major impact on the resources available to the national economy. Overseas assistance, other than development assistance for capital projects, is also shown here. As before, transfers payable abroad must be deducted in moving from national income to national disposable income.

- 19.57 National disposable income, more often than domestic product and national income, is usually shown on a net basis. *Net national disposable income (NNDI) is defined as net national income (NNI) plus current transfers receivable from abroad less current transfers payable abroad.* In equation terms,

NNDI (1 604)

*equals*

NNI (1 642)

*plus current transfers receivable from abroad (17)*

*minus* current transfers payable abroad (55).

## D. An example set of integrated economic accounts

- 19.58 The T accounts shown in table 1619.1 and 1619.2 can be extended to cover all the sectors of the economy and as much detail as required in the accounts. Such an extended presentation is referred to as the sequence a set of (integrated) economic accounts. An example is tables 1619.4 and 1619.5 which show, simultaneously, the general accounting structure of the SNA and present a set of data for the individual institutional sectors, the economy as a whole and the rest of the world.

**Table 1619.4: Summary current account with sector details – ~~uses~~ expenditures**

**Table 1619.4 (cont): Summary current account with sector details – ~~resources~~ revenues**

**Table 1619.5: Summary of the accumulation accounts and balance sheets with sector details – assets and changes in assets**

**Table 1619.5 (cont): Summary of the accumulation accounts and balance sheets with sector details – liabilities, net worth and changes in them**

~~The table brings together in one presentation:~~

~~——— the institutional sector accounts,~~

~~the rest of the world accounts, and~~

~~the goods and services account.~~

- 19.59 In order to simplify this table while still having it comprehensive, classifications of sectors, transactions and other flows, assets and liabilities are at the highest level of aggregation compatible with understanding the structure of the SNA. However, columns and rows can be subdivided to introduce subsectors or more detailed classifications of transactions and other flows, assets and liabilities.

### 1. Institutional sector accounts

#### Current accounts

- 19.60 As an example of the institutional sectors current accounts, consider the column for non-financial corporations.
- 19.61 The production account shows output (2 808) on the right-hand side, intermediate consumption (1 477) and value added (1 331 gross, 1 174 net, the difference referring to consumption of fixed capital depreciation and depletion (157), on the left-hand side). Value added, the balancing item of the production account, appears again in the same row as a resource revenue of the generation of earned income account.
- 19.62 The uses expenditures of the generation of earned income account (compensation remuneration of employees (986) and other taxes (88) less subsidies on production (35)) are shown on the left-hand side, the balancing item being net operating surplus (135), which appears again as a resource revenue of the allocation of primary earned income account.
- 19.63 In the allocation of primary earned income account, property income receivable (96), along with operating surplus is recorded on the right-hand side, and property income payable (134) is recorded on the left-hand side. It also shows, as a negative item related to rent, the reallocation of depletion to the legal owner of natural resources in proportion to its economic ownership of the resources. The balancing item is the net balance of

~~primary earned~~ incomes (97), which appears again as a ~~resource revenue~~ of the ~~secondary distribution of~~ income ~~transfers other than social transfers in kind~~ account. The ~~secondary distribution of income~~ ~~transfers other than social transfers in kind~~ account shows current transfers, payable (98) and receivable (72), leading to the balancing item of net disposable income (71). This item, which can also be described as the undistributed income of non-financial corporations, appears as a ~~resource revenue~~ in the use of income account.

- 19.64 The only transaction appearing in the use of income account for the corporations sectors is an entry for the change in pension entitlements. In this case the entry has a value of zero so the balancing item of the use of income account, saving, has the same value as disposable income.
- 19.65 The accounts for other institutional sectors may be read the same way, the relevant transactions varying according to the sector involved.

### The use of income account

- 19.66 The presentation of the two ways in which disposable income is associated with final consumption, one taking account of the redistribution ~~of income via transfers~~ in kind leading to actual consumption and the other showing final consumption expenditure to disposable income directly, is simplified in table 1619.4. The ~~redistribution of income~~ ~~social transfers~~ in kind account and the use of ~~adjusted disposable~~ income ~~adjusted for social transfers in kind~~ account are merged with the use of ~~disposable~~ income account as follows. Disposable income, ~~net gross~~, is 317 for general government, 37 for NPISHs and 1 219 for households. Final consumption expenditure is 352 for government, 32 for NPISHs and 1 015 for households. Total consumption expenditure is 1 399. Saving is given by disposable income less final consumption expenditure.

### The accumulation accounts

- 19.67 The accumulation accounts follow the sequence of current accounts for the institutional sectors. For example, net saving of households is 192. Households receive 23 and pay 5 as capital transfers. Thus the value of the changes in their net worth due to saving and capital transfers is 210. Households have 48 as ~~gross fixed capital formation~~ ~~acquisitions less disposals of produced assets~~ (25 as net ~~fixed capital formation~~ after deduction of ~~consumption of fixed capital~~ ~~depreciation~~ (23)), changes in inventories of 2, and acquisitions less disposals of valuables of 5. Their acquisitions less disposals of non-produced non-financial assets (land) are 4. The net lending of households is 174. They incur financial liabilities (net) of 15 and acquire financial assets (net) of 189. Other changes in volume of assets ~~and liabilities~~ are 2. The value of the assets held by households increases by 96 due to changes in the prices of both non-financial assets (80) and financial assets (16); there are no nominal gains or losses on their liabilities, which means that all their liabilities are denominated in ~~monetary terms~~ ~~nominal values~~ and probably in the national currency of the economy in question.

### The balance sheets

- 19.68 The balance sheets are also part of the ~~integrated sequence of~~ economic accounts. In order to see the relationships between the accumulation accounts and balance sheets, take general government as the example. The opening assets are 1 185 (789 non-financial assets and 396 financial assets) and the opening liabilities 687, net worth thus being 498. The total value of non-financial assets increases by 57, which results from all changes in these assets recorded in the accumulation accounts, ~~gross fixed capital formation~~ ~~acquisition less disposals of produced assets (excluding natural capital)~~ (35), ~~consumption of fixed capital~~ ~~depreciation related to these assets~~ (-27), acquisitions less disposals of valuables (3), acquisitions less disposals of non-produced non-financial assets ~~(excluding natural capital)~~ (2), ~~acquisitions less disposals of natural capital (...)~~, ~~depreciation and depletion related to these assets (- ...)~~, other volume changes (0) and nominal holding gains (44). Financial assets decrease by 9 (net disposal of financial assets, 10, other volume changes, 0, nominal holding gains, 1). On the right-hand side, liabilities increase by 102, which results again

from all changes in liabilities recorded in the accumulation accounts (net incurrence of liabilities (93), other volume changes (2), revaluation of liabilities (7)). So the closing assets are 1 233 (846 + 387) and the closing liabilities are 789; closing net worth (444) shows a decrease over the year of 54. The sources of this change in net worth are summarized on the right-hand side of the account showing the change in balance sheets; changes in net worth due to saving and capital transfers (-90, see also the right-hand side of the capital account), to other changes in volume of assets and liabilities (-2, see also the right-hand side of the other changes in volume of assets and liabilities account), and to nominal holding gains or losses (38, see also the right-hand side of the revaluation account).

## 2. The rest of the world account

- 19.69 As explained earlier, the rest of the world accounts are presented from the viewpoint of the rest of the world. Imports of goods and services (499) are a resource revenue for the rest of the world, even though they represent an outflow from the national economy and exports (540) are an use expenditure of the rest of the world. Thus imports appear on the right-hand side of the table and exports on the left. The external account of goods and services is shown at the same level as the production account for institutional sectors. The external balance of goods and services is -41. With a positive sign, it is a surplus of the rest of the world (a deficit of the national economy) and vice versa.
- 19.70 As explained in connection with table 19.3, the external balance on primary earned income is -10 and on secondary transfer income is 38, giving a current external balance of -13.
- 19.71 Transactions of the accumulation accounts appear in the columns for the rest of the world when relevant (mainly capital transfers and financial transactions). The rest of the world columns show the assets and liabilities position of the rest of the world vis-à-vis the national economy (external assets and liabilities account). The row “changes in net worth due to saving and capital transfers” corresponds, for the rest of the world, to the current external balance and capital transfers.

## 3. The goods and services account

- 19.72 In the integrated economic accounts, the goods and services account is shown in a column, not in a row. It reflects the various transactions in goods and services that appear in the accounts of the institutional sectors. Intermediate consumption and final consumption appear as uses in the institutional accounts on the left-hand side of the accounts. For the goods and services account, they appear in the right-hand side column, even though the right-hand side is generally reserved for resources revenues and consumption is a use. This device of using the opposite side of the account from normal gives a balance for the row for each of the items appearing in the goods and services account. On the resources side of the table, the figures appearing in the column for goods and services are the counterparts of the uses made by the various sectors and the rest of the world: exports (540), intermediate consumption (1 883), final consumption expenditure or actual final consumption (1 399), gross fixed capital formation acquisitions less disposals of produced assets (excluding natural capital) (376), acquisitions less disposals of produced natural capital (...), changes in inventories (28) and acquisitions less disposals of valuables (10). On the use expenditure side of the table, the figures in the column for goods and services are the counterparts of the resources revenues of the various sectors and the rest of the world: imports (499) and output (3 604). On the same side taxes less subsidies on products (133) are shown directly in the column for goods and services. They are a component of the value of the supply of goods and services that has no counterpart in the value of the output of any institutional sector.

## 4. The total economy column

- 19.73 The columns for the total economy remain to be explained. Except for taxes less subsidies on products and gross and net domestic product, the figures in these columns are simply the sum of the corresponding figures for the institutional sectors. The production account for the total economy includes, as resources revenues, output (that is, the total output of the economy (3 604)) and taxes less subsidies on products (133), the latter being the counterpart of the figure appearing on the left-hand side in the column for goods and services. The use expenditures side of the production account for the total economy shows intermediate consumption (1

883) and domestic product at market prices (1 854 gross, 1 632 net). The latter is the sum of value added of the various sectors and taxes less subsidies on products. Domestic product then appears on the right-hand side as a resource revenue of the generation of earned income account for the total economy. Taxes less subsidies on products are shown again on the left-hand side in the column for total economy and on the right-hand side as a resource revenue of government (and the rest of the world if relevant). This double routing of taxes less subsidies on products is made in order to get domestic product, gross and net, directly in the overall accounts, as explained above.

19.74 The other items in the columns for the total economy are self-explanatory. Net national income at market prices (1 642) is shown directly as the sum of balance of primary earned incomes of the various sectors; national disposable income, national saving, etc. are also obtained directly.

## **E. Balancing the accounts**

19.75 As explained in more detail in section E of chapter 4, the accounting system underlying the SNA derives from the following bookkeeping principles:

- a. Vertical double-entry bookkeeping, which implies that each transaction leads to at least two entries, traditionally referred to as a credit entry and a debit entry, in the books of the transactor. As a consequence, net lending or net borrowing resulting from non-financial transactions is by definition equal to net lending or net borrowing resulting from financial transactions.
- b. Horizontal double-entry bookkeeping, which implies that each transaction of a certain unit leads to a counterpart transaction of another unit. As a consequence, for any transaction, total receipts of all units, including receipts of non-resident units from resident units, are by definition equal to total payments of all units, including payments by non-resident units to resident units. This also holds for total supply of goods and services and total use of goods and services, as explained in chapter 15 and, more concisely, in [paragraph 19.47](#).
- c. Quadruple-entry bookkeeping, which basically combines the two principles above.

19.76 The first principle also ensures the fundamental identity of a unit's balance sheet, that is, the total value of assets equals the total value of liabilities plus net worth, i.e., net worth equals the sum of cumulative changes in net worth due to saving and capital transfers, cumulative changes in net worth due to other changes in assets and liabilities, and cumulative changes in net worth due to holding gains and losses. It also ensures, as explained in [paragraph 19.32](#), that for a single type of asset (or liability and net worth) the difference between the opening and the closing value can be explained by the total value of the assets acquired, less the total value of those disposed of (including depreciation and depletion where appropriate) plus the value of other positive or negative changes in the volume of the assets and liabilities plus the value of the positive or negative nominal holding gains resulting from a change in the price of the asset.

19.77 The system of national accounts can thus be seen as a fully consistent and closed accounting system guided by the quadruple-entry bookkeeping principle. From a conceptual point of view, all transactions and positions of a unit/sector add up, and for all transactions (stocks), total receipts (stocks of financial assets) of all agents are equal to total payments (stocks of liabilities).

19.78 This quadruple entry bookkeeping system is not just a theoretical notion. It provides a very powerful tool for checking the quality of the data used for the compilation of national accounts, by looking at the consistency of the source data in two ways. First, one can see whether the numbers for an institutional unit or sector are internally consistent, by checking whether they respect the traditional vertical double entry bookkeeping rules. In the national accounts, this consistency is usually checked by comparing the balancing item from the capital account with the balancing item of the financial account. The other check concerns the consistency between total payments and total receipts, for each of the transactions (and positions), including total supply and total use of goods and services.

19.79 The compilation of national accounts typically involves the combination of information from a large variety of data sources. The type and quality of information available will depend on the country, but all countries

use a mix of data derived from statistical surveys, administrative data sources, financial reports, etc. These data sources may relate to particular units or sectors, or may relate to particular sets of transactions, other flows or stocks. The source information available may also differ depending on the frequency (e.g., quarterly versus annual) and the timeliness of the relevant national accounts estimates.

19.80 These data sources used as input for the compilation of national accounts are often not fully in line with the standards of the SNA, and adjustments may need to be made before integrating the results in the framework of national accounts. These adjustments may relate to differences in industry or sector coverage, conceptual differences with regard to the recording and valuation of the flows and stocks, and items that may be missing. In some cases adjustments can be made on the basis of counterpart information available from other data sources, but in other cases assumptions have to be made to fill these gaps.

19.81 The next step in the compilation process is to confront and balance the various pieces of information within the frameworks of the national accounts, be it the sequence of economic accounts for institutional sectors, the supply and use tables, or the labour market tables, in order to ensure consistency in line with the above principles. As noted above, the various data sources consist of different types of information, have undergone different types of adjustments, and differ in quality. Therefore, the balancing process can be quite complex. It often involves weighting the relative quality of the various data sources, discussing possible reasons for any differences, making decisions using informed judgement on which information to use and simultaneously adjusting the information in the framework to arrive at full consistency. Often, this is an iterative process.

19.82 To arrive at full consistency is the ideal, but this is not the practice. Usually, countries manage to compile estimates which respect the horizontal double entry bookkeeping principle, although some countries do publish, for example, different estimates for GDP from the production perspective and GDP from the expenditure perspective (particularly for quarterly estimates), thus not fully respecting the equality of supply and use of goods and services. In addition, these countries may publish yet another estimate for GDP from an income perspective.

~~19.75~~19.83 A more general phenomenon is that countries are not in a position to compile estimates which fully respect the vertical double entry bookkeeping principle for all, or most of, the institutional sectors. As a consequence, one can observe differences between net lending or net borrowing resulting from non-financial transactions versus net lending or net borrowing resulting from financial transactions. These differences are usually framed and published as “statistical discrepancies”. If such discrepancies have a structural component, in the sense of being consistently positive or negative for a certain institutional sector, there should be continued research to resolve the inconsistencies and further improving the estimates.