

National Accounts Framework for International Comparisons: GDP Compilation and Breakdown Process

PAUL MCCARTHY

The primary purpose of the International Comparison Program (ICP) is to provide the purchasing power parities (PPPs) used to convert national estimates of the gross domestic product (GDP) into a common currency.¹ GDP is a measure of a country's economic production, computed without double counting by calculating the value of gross output and then deducting the value of the goods and services used up as intermediate inputs (or intermediate consumption). GDP can also be measured as the market value of all final goods and services produced within a country in a year. The purpose of this chapter is to explain how the concepts underlying GDP must be considered in collecting prices and estimating PPPs. These concepts include defining the final expenditure components of GDP, explaining the prices used to value them, introducing the classifications to be used for the different expenditure components, and describing the data sources commonly used to break down the expenditures into the necessary detail.

The ICP is designed to compare levels of economic activities between countries by estimating PPPs to convert values in national currencies into a common currency in order to provide estimates of "volumes" or "real expenditures" of activity. The real expenditures are commonly based on data from the national accounts, but in practice PPPs can be used to convert any values into a common currency. One of the major uses of PPPs is for poverty analysis. Determining a country's poverty line expressed in both national currency units and an international poverty line of one or two U.S. dollars per day is an important use of PPPs.

Over time, changes in the current values of GDP are a combination of changes in prices and changes in the underlying volume of output. For many purposes, analysts are interested in abstracting from changes in prices to enable them to better assess changes in actual levels of activity, or volumes. Various techniques are used to estimate changes in volumes, and their common element is that the effects of price changes are removed from the changes in the current values. Spatial comparisons also have an equivalent of these times series volumes. It is the outcome of dividing current values of GDP (and its major aggregates) by a PPP. The resulting values can be

compared directly between countries, with the values expressed in terms of a common currency and adjusted for differences in price levels between the countries.

The ICP, as a major statistical exercise, requires a great deal of cooperation and coordination between price statisticians and national accountants. A large part of the overall work program is directed at identifying the products to be priced and then collecting and checking the prices required to produce PPPs. Both the selection of the products (the basis of the prices to be collected) and the survey framework for data collection must be consistent with the underlying estimates of expenditures making up GDP. Because of these links between PPPs and national accounts, it is clear that the prices collected in the ICP have to be consistent with the basis on which the national accounting values were recorded.

It is also important that national accounts estimates are consistent between countries. The international framework for national accounts for the 2005 ICP was the *System of National Accounts 1993* (SNA93) and will be again for the 2011 ICP (Commission of the European Communities et al. 1993).

In 2005 the majority of countries worldwide were compiling their national accounts according to SNA93. However, some were still using the version from 1968 or an even earlier one. Countries' national accounts also tend to vary to some extent from the ideal because of the limitations imposed by the statistical data sources available for compiling the accounts. In particular, the extent to which countries adjust their estimates of GDP to ensure they completely cover all economic activities tends to vary significantly. Such an adjustment is relatively more important in developing countries than in developed countries because of activities such as subsistence production.

So that the national accounts data were as consistent as possible, during the preparations for the 2005 ICP country statisticians were brought together to review their estimates of GDP and the breakdowns to the basic headings to make sure they were following the SNA requirements. Some countries had to revise their data so they were more comparable with those of other countries. Considerable effort also went into ensuring that the prices provided for the ICP were consistent with the national accounts expenditures.

One of the main requirements for each country participating in the ICP is to provide national accounts estimates of expenditure on GDP, expressed in terms of its national currency and broken down into 155 detailed expenditure subclasses of GDP known as basic headings. This breakdown of the national accounts aggregates into basic headings provided the values that were converted into real expenditures at detailed levels and also were used as weights when averaging PPPs to more aggregated levels, up to the level of GDP. Because the basic heading values were used as weights, the PPPs of goods and services that accounted for large shares of the final expenditure were given a larger weight in calculating the PPPs for higher-level aggregates than the PPPs of goods and services that had relatively small shares (see chapters 5 and 6 for details on aggregation methods).

In explaining how the concepts underlying GDP must be considered in collecting prices and estimating PPPs, this chapter is organized as follows. The first section describes the three different methods of measuring GDP and those expenditures that have to be imputed to ensure that GDP completely covers all relevant economic activity. The second section explains the components of the expenditure approach to measuring GDP and the specific ICP requirements that result in some modifications in the breakdown of the national accounts expenditure classification into categories such as health and education. The third section goes into detail about the breakdown of GDP into basic headings. The section that follows then describes the basis on which product prices are collected for the ICP to ensure they are consistent with the national accounts values. The final

section provides a brief summary and outlines the process proposed for collecting national accounts expenditures in the 2011 ICP. This chapter also contains an annex that lists the 155 basic headings specified for the 2005 ICP.

Concept and Measurement of GDP

GDP measures a country's economic output as the market value of all final goods and services produced within an accounting period (generally a year or a quarter) by enterprises resident in the country. The market value is expressed in terms of "purchasers' prices."² The value of GDP measured at purchasers' prices is often referred to as "GDP at current prices" or "current values of GDP" or "nominal GDP." It includes the out-of-country production of a resident producer and excludes in-country production by nonresident producers. For example, a resident producer may have employees working abroad temporarily (less than one year) installing equipment in an oil field. Such output is recorded as part of the GDP of the country in which the producing unit resides (as an export of that producer and the country) rather than as part of the GDP of the country in which the activity is undertaken. In practice, the bulk of a country's output is attributable to business units resident in the country.

Three Methods of Estimating GDP

In concept, GDP is a measure of value added (i.e., gross output less intermediate consumption³) from all economic activity within an economy. The three approaches to measuring GDP are as follows, all of which should give the same result:

1. The *production measure* of GDP is derived as the value of gross output (minus intermediate consumption) plus any taxes (minus subsidies⁴) on products not already included in the value of output. The most direct measure of GDP, it is the sum of the value added of every class of enterprise. Many countries use only the production method to estimate their GDP. However, these countries are required to provide the expenditure breakdowns for the ICP. The production approach to measuring GDP is not used to estimate PPPs because prices would be needed for both final output and intermediate consumption, broken down into detailed aggregates, and these would be difficult to collect. Also, a major use of PPPs is to estimate poverty lines, which rely on PPPs for household consumption expenditures.
2. The *income measure* of GDP is derived as the value of compensation of employees added to gross operating surplus, gross mixed incomes,⁵ and taxes (minus subsidies) on both production and imports. This approach works off the principle that the incomes of producers and their employees are equal to the value of their products. Therefore, GDP is the sum of all producers' incomes and those of their employees. Income-based estimates of GDP cannot be used by the ICP because no prices are available for gross operating surplus, which is a major component.
3. The *expenditure measure* of GDP is derived as the sum of expenditures on final consumption by households and by government added to gross fixed capital formation⁶ and exports (minus imports). This measure is based on the principle that all of the final products are either purchased by someone or put into inventories. The breakdown of GDP into aggregates and basic headings for the ICP is based on the expenditure method

because it is easier to obtain the underlying prices for these components. The values of final expenditures recorded in the national accounts are closely associated with the data and prices used for the national consumer and producer price indexes for household consumption and equipment purchases by businesses, respectively.

Conceptually, each of these methods results in the same estimate of GDP, but, in practice, data deficiencies can lead to differences between them.

The difference between the production-based measure of GDP and each of the income- and expenditure-based estimates of GDP may be shown explicitly as a “statistical discrepancy” for each of those accounts. In some countries, the three approaches are balanced using supply-use tables, which provide a framework for systematically removing any discrepancies between these three conceptually identical estimates of GDP.

Expenditure-based estimates of GDP comprise (1) final consumption expenditure by households and by government, (2) gross fixed capital formation by businesses and government, and (3) net exports (exports minus imports) of goods and services. Gross capital formation by businesses consists of the buildings or equipment acquired (such as a factory or industrial machinery) and civil engineering works (such as a port acquired or built by a coal exporter) and changes in inventories. Examples of gross capital formation by government would be the construction of government schools or the purchase of equipment for a government hospital. Imports of goods and services have to be deducted in calculating GDP because, although they are included in the final expenditures, they are part of the production of the countries from which they have been imported rather than part of domestic production (i.e., GDP). The expenditure for an import appears in the basic heading in which the purchase takes place—for example, the expenditures for an automobile imported and purchased by a consumer are recorded in “household final consumption expenditure on motor car purchases.”

GDP Compared with Gross National Income

GDP measures the production by producers who reside within a country’s territory. The income generated from such production is distributed mainly to residents of the country, but some of the income may accrue to nonresidents (such as the interest or dividends that have to be paid abroad or the cost of servicing foreign debt). Similarly, some residents may receive income from nonresidents (such as interest or dividends paid to residents from abroad). For some types of analysis, these income flows can be of interest, which leads to the concept of gross national income (GNI). GNI measures the value of the incomes received by residents. It differs from GDP by the net amount of the income flows between a country’s residents and the residents of other countries.

National Accounts Production Boundary

The production boundary of GDP defines the activities to be included or excluded from the measure of economic output. In theory, all output for market is included in the production boundary of GDP, which has implications for the data required for the ICP. Some nonmarket production is also included in the production boundary.

Market output is output that is sold at economically significant prices or is otherwise disposed of on the market. Prices are said to be economically significant when they have a significant influence on the amounts that producers are willing to supply and on the amounts purchasers wish to buy. Apart from certain service industries that have adopted special conventions,

the value of the market output of a producer is obtained as follows for an accounting period (year or quarter):

Market output of a producer

equals the total value of goods and services sold

plus the total value of goods and services bartered

plus the total value of goods and services used for payments in kind, including employees' compensation in kind

plus the total value of goods and services supplied by one establishment to another belonging to the same market enterprise to be used as intermediate inputs

plus the total value of changes in inventories of finished goods and work in progress intended for one or other of the above uses.

The goods and services sold should be valued at the prices received for their sale—that is, at purchasers' prices, taking into account any own-account consumption that has no taxes or margins included in the price. These same prices provide a means to impute values for goods and services bartered, for those provided as payments in kind, and for any goods and services transferred within the enterprise. Income in kind should be valued at purchasers' prices if the employer has purchased the goods and services being provided to the employees. It should be valued at producers' prices if the goods and services were produced by the enterprise itself. Valuing inventories for national accounting purposes is a complicated process; SNA93 states that goods entering inventories should be valued at the prices at which they could have been sold when first produced, and goods withdrawn from inventories should be valued at the prices at which they could be sold at a later time.

The production boundary requires that values be imputed for some of the expenditure components of GDP. Some goods and services are acquired without any payment. For national accounting purposes, values must be imputed for these types of transactions to ensure that GDP measures the value of all the production in an economy and that countries are comparable. The main imputations are income in kind, the rents of owner-occupiers, financial intermediation services indirectly measured (FISIM), barter transactions, and consumption of goods produced for one's own final use. Values are imputed for these goods and services based on the prices of similar goods and services sold on the market, or based on the costs of production when suitable prices are not available.

In theory, the three different measures of GDP (expenditure, income, and production) are identical, although data deficiencies can in practice result in differences. Any imputations have to be recorded for each of these three approaches to measuring GDP to maintain the conceptual identity between them. For example, the value of the personal use of a business vehicle by an employee would be included as part of the "transport" component of the household final consumption expenditure in the expenditure measure of GDP, thereby increasing both that component and GDP itself. On the production side of the accounts, the value of the personal use of the vehicle would be deducted from intermediate consumption and shifted into "income in kind" within compensation of employees, thereby increasing value added for the industry concerned and thus production-based GDP. This increase in the compensation of employees (recorded as "income in kind" within that aggregate) would also flow through directly to the income-based measure of GDP. The imputation and methods used are important to the ICP because they not only affect the value of the real expenditures in the basic headings involved, but also the expenditure weights used to aggregate basic heading PPPs. There are implications as well for the underlying prices to be collected, which is especially important for housing and own consumption.

Imputed Expenditures

This section describes briefly the issues underlying the imputations required.

Income in Kind

Employees sometimes receive goods and services free or at very low prices as part of their compensation. For example, railway workers may have the right to free train travel, coal miners may receive a regular ration of coal, and members of the armed forces may be provided with meals. In the national accounts, goods and services provided as income in kind that is recorded as part of employee compensation should be matched by a corresponding amount in the household final consumption expenditure to ensure that the expenditure-based and income-based estimates of GDP are identical. The category in which such expenditures are recorded depends on the nature of the good or service provided—that is, free railway travel provided to railway employees would be recorded as part of the “transport” component of the household final consumption expenditure, and a coal ration provided to coal miners would be allocated to the “housing, water, electricity, gas, and other fuels” component of this aggregate. For pricing purposes, the income in kind is priced at producers’ prices if produced by the employer or at the full price paid by consumers (purchasers’ prices) if purchased by the employer for the employee.

Rents of Owner-Occupiers

Under the SNA, people who live in their own dwellings are selling dwelling services to themselves. Therefore, expenditures on rents are estimated both for those who really do pay rents to the owners of their dwellings and for those who own their own houses or apartments.

Expenditures on housing make up a significant part of household consumption. It is difficult to compare housing across countries because residents of some countries live mostly in rental units, while in other countries most persons live in housing they own. Although rental surveys can provide the basis to estimate expenditures for rental properties, it is more difficult to estimate comparable expenditures for those who occupy a dwelling they own.

The general rule is that the rents of owner-occupied dwellings are imputed by reference to rents actually paid for similar dwellings. “Similarity” in the case of dwellings is usually judged by the type of dwelling (single-family or multifamily), location (city center, suburban, or rural), and facilities (such as floor space, running water, indoor toilet, electricity, and central heating). The recommended approach is to complete a matrix of prices showing the average rents actually paid for different types of dwellings. The number of owner-occupied dwellings of each type is then distributed over the same matrix to obtain, by multiplication, the imputed rents of owner-occupiers for each type of dwelling, which are then aggregated to a national total. Problems arise in countries that do not have a well-developed and broadly based rental sector—for example, the rental sector might be mainly confined to the higher-priced part of the rental market such as for expatriates working in the country for a relatively short time. For the 2005 ICP, when countries did not have an adequate rental market to impute housing rentals, they were advised to estimate the expenditures based on the user cost method. The same concept will apply to the 2011 ICP with enhancements made based on the 2005 experience.

The user cost method consists of estimating each cost that the owners of dwellings would have to take into account in fixing a market rent if they decided to rent their dwellings to other people. These costs are intermediate consumption, other taxes (minus subsidies) on production, consumption of fixed capital, and real net operating surplus—that is, nominal operating surplus minus nominal holding gain (see table 3.1 for a description of these costs).

The nominal operating surplus is calculated as the value of the dwelling multiplied by the nominal rate of interest. The nominal holding gain is calculated as the value of the dwelling multiplied by the overall rate of inflation.

The main difficulties in applying the user cost method are (1) estimating the stock of owner-occupied dwellings, which is required to calculate both consumption of fixed capital and the net operating surplus; (2) calculating the consumption of fixed capital once the stock has been estimated; and (3) choosing the real rate of return to be applied to the current value of the stock of owner-occupied dwellings to calculate the net operating surplus.

Estimating the expenditure on the services provided by owner-occupied dwellings via the user cost method requires a range of data, but at a fairly aggregated level. The data are generally available in countries that produce estimates of capital stock as part of their national accounts. The basic source for much of the data is a census of population and housing. Table 3.1 shows the data items required and the ways in which they are aggregated.

In many developing countries, particularly in Africa, people build their own houses from locally gathered materials. This so-called traditional housing is almost always occupied by its owners, and so there are no market rentals for equivalent types of dwellings to use in imputing the values of the services of owner-occupied dwellings. As a result, in many countries no values are imputed for these

TABLE 3.1 Estimating the Expenditure on Owner-Occupied Dwelling Services: User Cost (UC) Method

Item no.	Item description
<i>Intermediate consumption</i>	
UC01	Expenditure on maintenance and repair of owner-occupied dwellings
UC02	Gross insurance premiums paid on owner-occupied dwellings
UC03	Insurance claims paid to owners
UC04	Net insurance premiums paid by owners (UC02) – (UC03)
UC05	Total intermediate consumption (UC01) + (UC04)
<i>Other taxes on production</i>	
UC06	Taxes paid by owners on dwelling services
UC07	Taxes paid by owners on the value of owner-occupied dwellings and their associated land
UC08	Total taxes paid by owners (UC06) + (UC07)
<i>Consumption of fixed capital</i>	
UC09	Consumption of fixed capital on owner-occupied dwellings at current prices (excluding land)
<i>Net operating surplus</i>	
UC10	Current market value of stock of owner-occupied dwellings at beginning of year (including land)
UC11	Current market value of stock of owner-occupied dwellings at end of year (including land)
UC12	Current market value of stock of owner-occupied dwellings at midyear (including land) $((UC10) + (UC11))/2$
UC13	Real rate of return on owner-occupied dwellings (including land) expressed as percent per annum
UC14	Real net operating surplus $(UC13) \times (UC12)/100$
<i>Expenditure on owner-occupied dwelling services</i>	
UC15	Expenditure on owner-occupied dwelling services $(UC05) + (UC08) + (UC09) + (UC14)$

Source: ICP.

services, while in others the imputations appear to be based on actual rents paid for dwellings that may be quite unlike most of the owner-occupied dwellings. Generally, these dwellings would be of higher quality than traditional housing, and therefore the outcome would be an overstatement of the services provided by such dwellings. The approach preferred for the ICP is to impute a value for the services provided by traditional housing by adopting the user cost approach. The estimates can be amalgamated if necessary with those from the rental-equivalence approach for other types of dwellings.

Financial Intermediation Services Indirectly Measured

Financial institutions accept deposits from units (such as households) that want to receive interest on spare funds and then lend these funds to units (such as businesses or households) that wish to borrow funds. The money involved is not matched directly between a depositor and a borrower. Instead, a pool of funds is provided collectively by depositors, and funds are loaned to borrowers from this pool. Unlike most businesses that charge directly for the goods they sell or the services they provide, financial institutions, because of the different nature of financial services, charge for their services in a variety of ways. Examples are a flat fee to provide a particular type of account, a certain price for each transaction on an account, or a fee for every transaction above a specified number in a month. Various combinations of such charges may apply in different countries or even between different financial institutions within a country. Most institutions, however, do have one means of charging in common: they pay lower rates of interest to those who lend them money and charge higher rates of interest to those who borrow from them. This margin between the interest rates on loans and deposits provides financial institutions with the bulk of their funds. In national accounts, the value of production by financial institutions is measured as the sum of their receipts from direct charges plus their receipts from the margins between the interest rates they charge for loans and those they pay for deposits. The indirect charges levied via the differentials in interest rate margins are known as financial intermediation services indirectly measured, or FISIM.

FISIM is paid by everyone (households, unincorporated enterprises, corporations, and government) who use the services of banks and other types of financial institutions. FISIM can also be exported (i.e., paid by nonresidents to resident financial institutions) or imported (i.e., paid by resident businesses or households to nonresident financial institutions). If FISIM is paid by corporations or unincorporated enterprises, it is part of their intermediate consumption. But if it is paid by households as consumers, it is included in their final consumption expenditures and so is part of expenditures on GDP. The situation is slightly more complicated, however, for government and nonprofit institutions serving households (NPISH) because FISIM is part of their intermediate consumption. Because the national accounting convention values the output of general government and NPISH as the sum of their costs of production, FISIM directly affects their final consumption expenditure, and so it also becomes part of the expenditure on GDP. Typically, the GDP level in developed countries is increased by about 2 percent by allocating FISIM across the final expenditures, although it can be higher in countries with large financial sectors. In developing countries, GDP is likely to be increased by about 1 percent by allocating FISIM, although it is also affected by the size of a country's financial sector.

Barter Transactions

Barter is the exchange of goods or services for other goods or services without money changing hands. In principle, the final consumption expenditure by households should include barter transactions, which should be valued at the market worth (purchasers' prices) of the goods or services exchanged. In practice, neither taxes on products nor transportation costs may apply, in which case the purchasers' prices will be the same as the basic prices ("farm gate" prices) of the products involved. If the goods or services exchanged are not of equal value, the average market value of the goods or services involved should be used.

Output Produced for Own Final Use

Goods consumed by the households that produce them (in many countries the largest item will be the crops and livestock produced by small farmers) should be included as part of the output produced for own final use and as part of the household final consumption expenditure. The value imputed for goods arising from subsistence production should be based on the prices that could be obtained by farmers if they had sold the goods rather than consumed them—that is, based on the farm gate prices, which are formally described in the national accounts as being expressed in basic prices. In the ICP, it is important that the prices used to compare such production are recorded consistently in each country. Output produced for own final use also refers to goods or services retained for final use by the owners of the businesses in which the goods and services were produced. Examples are those used for own gross fixed capital formation such as special machine tools produced by engineering businesses and a wide range of construction activities, particularly in rural areas, including the individual or communal construction activities undertaken by households (or groups of households) to build dwellings or add extensions to dwellings. The services produced by employing paid domestic staff also are included as output for own final use. However, the output of domestic and personal *services* produced for own consumption within households is not included. Examples of this type of output are cooking and washing clothes, which are often called “unpaid household services.” However, the materials used in producing these outputs, such as food and washing powder, are included in the household final consumption expenditure.

In this area, two issues arise for the ICP. The first is that the value of output produced for own final use cannot be directly valued because it is not sold on the market. As a result, that part relating to businesses must be estimated by applying the basic prices for similar products sold on the market (if such prices are available) to estimates of the quantities of output produced on own account; the sum of the costs of production would be an alternative. Any goods consumed by the households that produce them are best valued using the basic prices (excluding taxes and margins) of similar goods in local markets. The second issue is ensuring that the prices used in the ICP are consistent with the valuation methods used in each country’s national accounts.

The importance of the activities discussed in this section varies significantly from one country to the next. For example, surveys conducted by some national statistical offices may be adjusted to take into account informal producers, whereas in other countries no corresponding adjustment is made. Some countries do not include any illegal activities in their data, while others either include some explicit estimates, such as for smuggling, or use a source such as income tax data, which contains the income from illegal activities to the extent they are reported for tax purposes. The expenditure classification of the ICP includes basic headings for narcotics and prostitution, which can account for sizable expenditures, but are also illegal in many countries. In the 2005 ICP, countries were encouraged to account for these expenditures; however, reference PPPs were used for these basic headings. Overall, in the 2005 ICP the Global Office encouraged countries to ensure to the best of their abilities that their national accounts were “exhaustive”—that is, they included the value of all productive activities within the SNA’s production boundary.

Expenditure Aggregates of GDP

National accounts estimates based on the expenditure approach and expressed in national currency units are required for the ICP because the prices most readily observed are those related to final expenditures. For example, the consumer price index (CPI) collects prices directly related to many components of the household final consumption expenditure, and producer price indexes (PPIs)

include prices for the types of equipment purchased by businesses and included in gross fixed capital formation on machinery and equipment. However, it is important to ensure that PPIs used for the ICP are recorded on (or adjusted to) the basis of purchasers' prices.

The main expenditure aggregates are the following:

- Household final consumption expenditure
- Final consumption expenditure by NPISH
- Government final consumption expenditure
 - Individual consumption expenditure by government
 - Collective consumption expenditure by government
- Final consumption expenditures on health and education
- Actual final consumption
- Gross fixed capital formation
- Change in inventories
- Net acquisitions of valuables
- Balance of exports and imports of goods and services.

Final Consumption Expenditures

The household final consumption expenditure consists of the expenditure (including that whose value must be estimated indirectly) incurred by resident households for individual consumption goods and services, including those sold at prices not economically significant and consumption goods and services acquired abroad.

NPISH consist of nonmarket nonprofit institutions that are not controlled by government. They provide goods and services to households free or at prices that are not economically significant. Examples are social and sports clubs, trade unions, charities, and some types of research bodies and environmental groups.

Market goods and services are recorded in the national accounts on the basis of the values in the accounts of the businesses concerned such as the value of sales by retailers. However, measuring the values of nonmarket services (principally those provided by government bodies and by NPISH) is not a straightforward exercise because the services are provided free or at prices not economically significant, and therefore no prices underlie the output. The convention adopted in the SNA is that the output of nonmarket services is valued at the cost of producing them. The value required for ICP purposes is their final consumption expenditure, which is calculated as the value of the inputs minus the value of any receipts from sales of the services provided. The input components summed to obtain the value of “output” are compensation of employees, intermediate consumption, gross operating surplus (equal to consumption of fixed capital because net operating surplus should be zero), and net taxes on products.

The government final consumption expenditure consists of the expenditure (including that whose value must be estimated indirectly) incurred by general government on both individual consumption goods and services and collective consumption services. Such expenditures can be incurred by the central (or national), state (or provincial), or local levels of government. In some countries, social security funds also constitute government units.

An important distinction is made within the government final consumption expenditure between an individual consumption good or service—that is, one acquired by a household and used by members of that household—and a collective consumption service—that is, a service provided simultaneously to all members of the community or to all members of a particular section of the community such as all

households living in a particular region. Collective services are financed by general government units out of tax revenues or other incomes. Examples are public administration and police services.

Government expenditures defined as individual fall into two categories:

1. Services produced by the government for the benefit of individual households such as running schools and hospitals. The government organizes and finances the production of these services for consumption by individual households.
2. Goods and services purchased by government from other producers that are then passed on to households, either free or at prices below the costs of production, without any further processing by government. Examples are medicines and medical services for outpatients. In some cases, households obtain these goods and services free or at very low prices at the point of sale, while in others households pay the full price at the point of sale and are later reimbursed in part or in full by the government.

All expenditures within the household final consumption expenditure are considered to be individual. Similarly, most goods and services produced by NPISH represent individual consumption, but it is possible for NPISH to provide collective services—for example, research institutes that make their research freely available. However, for practical purposes all expenditures by NPISH can be considered individual, which was the procedure adopted for the 2005 ICP.

Final Consumption Expenditures on Health and Education

Health and education expenditures make up over 20 percent of the world's expenditures on GDP expressed in international dollars. Because health and education services are provided by both private and government sources, the estimation of expenditures and PPPs requires steps not needed for other consumption items. The methods used to estimate the expenditure breakdowns to the basic headings, the prices required, and the estimation of PPPs are described in chapter 11. The purpose of this section is to provide an overview of how health and education expenditures are to be recorded and the prices used in the estimation of PPPs.

Health products and education services can be obtained in three different ways: (1) they are paid for in full by the purchaser; (2) they are paid for in full by the government and provided free to households; or (3) they are paid for in part by households and in part by the government.

Countries differ in how they provide and charge for health and education goods and services. They may be supplied to varying degrees by the private sector or by the government. Even if they are provided by the private sector, government subsidies can affect the prices charged. The subsidies may be applied directly to the service charge to reduce it, such as providing a certain amount for a patient to consult a doctor, or they may be provided at a broader level, such as an annual subsidy to individual schools. In addition, in many countries households can purchase insurance cover for many health goods and services. The outcome is that the extent of charging, the prices charged, and the types of subsidies provided can vary significantly from one country to another, which makes it difficult to directly compare prices for health and education services. For this reason, the concept of actual final consumption is used for the ICP. To compare health and education expenditures (real expenditures or per capita real expenditures), it is necessary to combine the respective expenditures made by households, NPISH, and the government.

The prices required for the 2005 ICP for health and education had to reflect the full price, no matter who was paying for the goods or services—that is, the purchasers' prices. In the 2005 ICP, the actual price paid was required for products purchased and paid for in full by consumers.

In many cases, it was not possible to identify a price for products paid for in full by the government and provided free to households because the products may have been produced by the government and not sold on the market. In such cases, the full cost of each product to the government was the “price” required. The price required for the 2005 ICP for products paid for in part by households and in part by the government was the total of any amounts paid for each product by the consumer plus any contribution to the unit cost made by the government. However, the different combinations of payment methods adopted by countries made it very difficult to collect consistent prices from country to country. As a result, investigations are under way of alternative methods of deriving real expenditures for health and education for the 2011 ICP.

Actual Final Consumption

The total value of goods and services acquired by households for final consumption includes the individual goods and services used by but not directly purchased by the final user. The distinction between who consumes (individuals or the community) and who pays (households, NPISH, or government) is used in SNA93 to derive a new aggregate called “actual final consumption,” which is an important measure for the ICP, especially for health and education. The actual individual consumption of households is obtained by adding individual consumption expenditures by NPISH and by government to the final consumption expenditure by households. Collective consumption is entirely attributable to government. The ICP uses the concept of actual final consumption rather than that of final consumption expenditure when presenting the results for consumption expenditures.

The relationships between the components of final consumption expenditure and actual final consumption are shown in table 3.2.

When actual final consumption is used as the basis for the ICP, the comparisons of services such as health and education provided in part by government and in part by private suppliers are consistent across countries because the total of these services is being compared no matter who provides them.

Table 3.3 shows for selected countries the potential size of the differences that can arise between the household final consumption expenditure and actual final consumption expenditure when countries have very different institutional arrangements for providing individual services such as health and education. In this comparison of the individual consumption expenditure by households, individual consumption expenditure by government, and actual individual consumption, it is not possible to show the first two data columns as a share of the third because the estimation methods used in the 2005 ICP resulted in nonadditive real expenditures within a country. However, it is legitimate to directly compare countries’ real expenditures per capita for each expenditure category. The table reveals that the United States has a level of individual

TABLE 3.2 Relationship between Final Consumption Expenditure and Actual Final Consumption

Final consumption expenditure	Actual final consumption
<i>Households</i> Individual consumption expenditure by households	<i>Actual individual consumption</i> Individual consumption expenditure by households
<i>NPISH</i> Individual consumption expenditure by NPISH	+ individual consumption expenditure by NPISH
<i>Government</i> Collective consumption expenditure by government + individual consumption expenditure by government	+ individual consumption expenditure by government <i>Actual collective consumption</i> Collective consumption expenditure by government

Source: ICP.

TABLE 3.3 Comparison of Per Capita Individual Consumption Expenditure by Households and by Government and Actual Individual Consumption: Selected Countries

international dollars

Country	Individual consumption expenditure by households	Individual consumption expenditure by government	Actual individual consumption ^a
Brazil	4,480	1,648	5,720
India	1,176	319	1,455
Norway	17,362	7,793	24,610
Russian Federation	5,546	2,837	7,918
Sweden	14,372	8,712	21,818
United States	29,332	2,673	31,995

Source: ICP.

a. Actual individual consumption in international dollars is not the sum of the individual consumption expenditure by households and the individual consumption expenditure by government because real expenditures are not additive within a country under the method used to compute PPPs. See chapters 5 and 6 for descriptions of these methods.

consumption expenditure by households that is more than double that of Sweden and about two-thirds greater than that of Norway, but its individual consumption by government is well under half that of Sweden and Norway. These per capita values reflect the more important role of the government sector in providing health and education in Sweden and Norway. The values shown in table 3.3 are real expenditures per capita, expressed in international dollars.

Gross Fixed Capital Formation

This category includes the total value of the gross fixed capital formation, changes in inventories, and acquisitions (minus disposal of valuables). Gross fixed capital formation includes construction of residential and nonresidential buildings, construction of civil engineering works such as roads, and purchases of machinery and equipment. Because these items are difficult to both measure and compare, separate chapters in this volume describe the methodology used to estimate PPPs for construction (chapter 13) and equipment (chapter 14). Gross fixed capital formation is measured by the total value of a producer's acquisitions (minus disposals) of fixed assets during the accounting period plus a certain specified expenditure on services that adds to the value of nonproduced assets (fixed assets are defined as those used in production for more than one year). Changes in inventories are measured by the value of the entries into inventories minus the value of withdrawals and the value of any recurrent losses of goods held in inventories during an accounting period. Valuables are produced goods of considerable worth that are not used primarily for production or consumption but are held as stores of value over time.

Changes in Inventories, Net Acquisition of Valuables, and Balance of Exports and Imports

Exports are goods and services produced within the domestic economy but used by other economies. Imports are goods and services supplied from outside the domestic economy. For the ICP, the aggregate required is the net balance of exports and imports of goods and services, which, of course, could be positive or negative.

Three aggregates of GDP could have negative values: changes in inventories, net acquisition of valuables, and balance of exports and imports. In an annual set of estimates such as those for the 2005 ICP, the one most likely to be significant is the balance of exports and imports. The major implication of having negative values is that they complicate the process of aggregating basic heading PPPs to obtain the PPP for GDP because the weight has a negative value.

Another potentially negative component is the net expenditures of residents abroad. The value can be positive or negative, depending on whether the expenditures of visitors to the country outweigh those of the country's residents who go abroad or vice versa. It can also be zero in countries that use data from household expenditure surveys of their residents to compile estimates of the household final consumption expenditure. SNA93 does not include net expenditures of residents abroad as a specific category within GDP, but it is a required basic heading for the ICP.

In the 2005 ICP, the net expenditures of residents abroad were not reported consistently by participating countries. Many countries reported zero expenditure for this item, indicating that either it had been allocated across relevant components of the household final consumption expenditure or it had not been estimated. A zero value may be recorded in a country's accounts because the item is considered insignificant or because the data sources, such as a household expenditure survey, used to calculate the household final consumption expenditure did not require this balancing adjustment.

Breakdown of GDP Expenditures into Basic Headings

This section explains the concepts that determine the classification of the components of GDP into expenditure aggregates, and from there the breakdown into basic headings. The level at which the most detailed national accounts data for the ICP are provided is known as the "basic heading." Ideally, both values and prices would be available for all major individual products so that PPPs and real expenditures could be estimated at the product level. In practice, however, it is not possible to obtain values in such fine detail. The compromise, then, is to determine the lowest level for which expenditures can be supplied and to which products can be uniquely assigned. The basic heading expenditures are also used as weights in the aggregation to higher levels of expenditures on GDP. Therefore, the importance of the basic heading extends beyond its role as simply a means of classifying the most detailed value component within the ICP. In fact, it is no exaggeration to describe the basic headings as the backbone of the ICP.

The Eurostat–Organisation for Economic Co-operation and Development (OECD) PPP Programme uses 225 basic headings. These basic headings are compatible with the 155 used in the 2005 ICP; some of them are, however, broken down into more levels than those specified for the ICP. The importance of the basic heading as the most detailed building block of the ICP is embodied in its definition:

The basic heading is the lowest level of aggregation of items in the GDP breakdown for which parities are calculated. In theory, a basic heading is defined as a group of similar well-defined goods or services. In practice, it is defined by the lowest level of final expenditure for which explicit expenditure weights can be estimated. Thus, an actual basic heading can cover a broader range of products than is theoretically desirable. Basic headings are the building blocks of a comparison. It is at the level of the basic heading that expenditures are defined, products selected, prices collected, prices edited, and PPPs first calculated and averaged. (World Bank 2007)

The use of basic headings as “building blocks” for the broader national accounts aggregates is obvious in the following structure of gross fixed capital formation for machinery and equipment. The structure consists of two product groups: metal products and equipment, which contains five basic headings, and transport equipment, which consists of three basic headings.

150000	EXPENDITURE ON GROSS FIXED CAPITAL FORMATION
150100	MACHINERY AND EQUIPMENT
150110	Metal products and equipment
150111.1	Fabricated metal products, except machinery and equipment
150112.1	General-purpose machinery
150113.1	Special-purpose machinery
150114.1	Electrical and optical equipment
150115.1	Other manufactured goods n.e.c. (not elsewhere classified)
150120	Transport equipment
150121.1	Motor vehicles, trailers, and semitrailers
150121.2	Other road transport
150122.1	Other transport equipment

Several aspects of the role of the basic heading as a building block affect both the values and the prices collected for the ICP. The basic headings are the starting point for identifying the products to be priced for the ICP, and so each one is defined in terms of a set of like products. For example, “rice” is a basic heading, but many different types of rice can be priced in different countries. In the 2005 ICP, the number of specifications for individual types of rice varied by the region. In Asia, where rice is an important staple food, 19 different types of rice were specified, whereas in the Eurostat-OECD PPP Programme only eight rice specifications were used. A basic heading can also be very broad in its coverage. For example, gross fixed capital formation on nonresidential building construction includes the full range of structures. Examples are farm buildings such as stables and machinery sheds, industrial buildings such as factories and warehouses, commercial buildings such as offices and shops, and other nonresidential buildings such as hospitals, schools, hotels, and cinemas.

SNA Classifications

International classifications provide a coherent and consistent means of defining the structure of the economic activities within their scope based on a set of internationally agreed concepts, definitions, principles, and rules. Their importance is that they provide a comprehensive framework within which data can be collected, reported, and analyzed. The most important aspect of any classification is that the categories defined by the classification are both complete (have no gaps) and consistent (have no overlaps). The 2005 ICP was no exception; the expenditure classification was designed to ensure full coverage of all components of GDP.

Classification systems are required to ensure that every possible product with expenditures going into GDP is uniquely assigned to a basic heading. For example, fresh meat is in a different basic heading than sausage because the latter involves additional processing and storage requirements. Although the basic heading is the lowest level at which expenditures are needed, the classification is important so that products included in each heading are as homogeneous as possible. The starting

point for the detailed classifications used in the 2005 ICP was those defined in SNA93. The SNA classifications for consumption expenditures are Classification of Individual Consumption by Purpose (COICOP) and Classification of the Functions of Government (COFOG).

COICOP is designed to provide estimates of the individual consumption expenditure based on the purpose of the expenditure being incurred. In the 2005 ICP, the individual consumption expenditure by household was divided into 110 basic headings. The starting point identified aggregates such as food, clothing and footwear, transport, and communication. More detailed data breakdowns were defined within each of these aggregates at the next level of the classification. For example, food was divided into nine classes as shown in the annex to this chapter. Table 3.4 lists the basic headings assigned to the bread and cereals and meat classes.

The individual consumption expenditure by NPISH was treated as a single basic heading. Because many countries were not able to separate NPISH expenditures from those by households, for publication purposes the Global Office distributed NPISH expenditures where provided back into the individual consumption expenditure by households. The Global Office is examining the usefulness of including NPISH as a separate basic heading before deciding how to handle this component in the 2011 ICP round.

The Classification of the Functions of Government is designed to classify general government transactions at all levels of government by function or purpose such as health and education. COFOG can be applied to various types of transactions, including the final consumption expenditure, subsidies and current transfers, capital formation and capital transfers, and acquisition of financial assets by general government. For the 2005 ICP, COFOG played an important role in identifying the final expenditure categories by function for which the basic headings were defined.

The individual consumption expenditures by government were classified into 21 basic headings, each linked to a five-digit code in COFOG. The government expenditures were first distributed according to purpose (such as housing, health, recreation and culture, education, and social protection) and then, in the case of health and education, by whether the expenditure was for the purchase of health or education services from other producers or whether it was for the production of health or education services by government itself (see chapter 11 for additional details about the linkage between government and household expenditures for health and education).

The basic headings for government individual consumption that included the production of health and education services consisted of the following cost components: compensation of employees, which is the largest component of government expenditures; intermediate consumption;

TABLE 3.4 Example of Basic Headings Assigned to Bread and Cereals and Meat Aggregates

ICP group	Basic heading
Bread and cereals	Rice
	Other cereals, flour, and other cereal products
	Bread
	Other bakery products
	Pasta products
Meat	Beef and veal
	Pork
	Lamb, mutton, and goat
	Poultry
	Other meat and meat preparations

Source: ICP.

gross operating surplus (equal to consumption of fixed capital because net operating surplus should be zero for government); net taxes on production; and receipts from sales.

Collective consumption expenditures by government were classified by cost component in a way similar to that for individual consumption by government.

To define the basic headings, gross fixed capital formation was classified in the 2005 ICP by type of product according to the Statistical Classification of Products by Activity (CPA). Twelve basic headings were identified: eight for machinery and equipment, three for construction, and one for “other products,” which included those of agriculture, forestry, fisheries and aquaculture; computer software; expenditures on land improvement such as fencing, leveling, irrigation, and drainage; mineral exploration; and creation of entertainment, literary, and artistic originals.

Two basic headings were used for inventories: opening value of inventories and closing value of inventories. Similarly, acquisitions of valuables and disposals of valuables were identified separately.

A detailed breakdown of expenditures on exports and imports of goods and services was not required because the balance of exports and imports was classified into only two basic headings: exports of goods and services and imports of goods and services.

In the 2005 ICP, considerable effort went into reviewing each country’s basic heading expenditures to ensure that consistent approaches were followed. As might be expected, this exercise was difficult for countries that lacked good statistical capabilities, but they received assistance; data from similar countries were used to break down data to the basic heading. A basic heading is also a form of stratification, and it is the first stage at which PPPs are computed. These first-stage PPPs are then averaged to higher aggregates using the basic heading expenditures as weights. From a sampling point of view, statistical variability is greatest at this level and precludes publishing data for most basic headings. However, as the accounts are aggregated the degree of confidence in the estimates grows.

Table 3.5 presents details on the distribution of the basic headings used in the 2005 ICP for the major expenditure aggregates of GDP.

Data Sources and Methods

An essential requirement for participating in the ICP was that a country provide details of its expenditure on GDP, including expenditures for the 155 basic headings. The Global Office encouraged countries to use a commodity flow approach (preferably going the extra step of producing supply-use tables) to help in breaking down the expenditure aggregates into basic headings. For example, import data could be used to estimate the basic heading breakdown of gross fixed capital formation on machinery and equipment in countries that had little domestic production of capital equipment. However, even countries that had detailed supply-use tables had to take some special steps to estimate the details for every basic heading. For example, food balances compiled by the UN Food and Agriculture Organization could be used as a data source to break down food expenditures to the basic heading. In some countries, the national statisticians had to use expert judgment to break down the data to basic headings. The regional coordinators also reviewed the national breakdowns and advised countries to follow the allocations of similar economies in their region if they had no other data. The exercise was most difficult in countries that did not systematically estimate all expenditure components in their annual accounts.

Other sources of information for the breakdown into basic headings were production statistics from industrial and agricultural censuses and surveys to provide estimates of expenditures on food, surveys of restaurants and hotels to obtain sales volumes, records of motor vehicle registrations to make the distinction between freight and passenger vehicles, reports on sales to

TABLE 3.5 Number of Categories, Groups, Classes, and Basic Headings, ICP 2005

Main aggregates	Categories	Groups	Classes	Basic headings
Individual consumption expenditure by households	13	43	90	110
01 Food and nonalcoholic beverages		2	11	29
02 Alcoholic beverages, tobacco, and narcotics		3	5	5
03 Clothing and footwear		2	5	5
04 Housing, water, electricity, gas, and other fuels		4	7	7
05 Furnishings, household equipment, and maintenance		6	12	13
06 Health		3	7	7
07 Transport		3	13	13
08 Communication		3	3	3
09 Recreation and culture		6	13	13
10 Education		1	1	1
11 Restaurants and hotels		2	2	2
12 Miscellaneous goods and services		7	10	10
13 Net purchases abroad		1	1	2
Individual consumption expenditure by NPISH	1	1	1	1
Individual consumption expenditure by government	5	7	16	21
01 Housing		1	1	1
02 Health		2	7	12
03 Recreation and culture		1	1	1
04 Education		2	6	6
05 Social protection		1	1	1
Collective consumption expenditure by government	1	1	5	5
Gross fixed capital formation	3	6	11	12
01 Machinery and equipment		2	7	8
02 Construction		3	3	3
03 Other products		1	1	1
Change in inventories and acquisitions minus disposals of valuables	2	2	2	4
01 Change in inventories		1	1	2
02 Acquisitions minus disposals of valuables		1	1	2
Balance of exports and imports	1	1	1	2
GDP	26	61	126	155

Source: ICP.

households by utility companies and state monopolies to obtain expenditure data, and statistics on the value added tax (VAT) or other sales taxes classified according to the goods and services taxed.

The problems most commonly encountered in estimating basic heading values were the final consumption expenditure by NPISH and gross capital formation, especially on software, inventories, valuables, and relevant parts of defense expenditures. Government accounts and annual reports were the most important sources of data on public investment, and the two main sources

for private capital expenditure were investment surveys of enterprises and the commodity flow method. The latter involves estimating the total supply—domestic production plus imports, both at basic prices—of goods used for capital formation. Margins for any wholesaling and retailing involved separately invoiced transport charges, and net product taxes were then added to obtain the estimated value of gross fixed capital formation at purchasers' prices.

Price Concepts

Two key characteristics of the prices collected for the ICP are that they must be comparable between countries and representative of the expenditures in each. It is very important that the prices underlying the national accounts values and the prices collected for the ICP are consistent with each other—that is, they are representative of the products underlying the corresponding value. But in practice that meant for the 2005 ICP that the annual national average prices had to be collected to ensure consistency with the national accounts values. In large countries, it was necessary to collect prices across a number of regions or to adjust the prices collected in a smaller number of regions to national average prices. For the 2005 ICP, prices were collected in most regions across the four quarters of 2005 to provide an estimate of annual average prices that took into account prices that varied on a seasonal basis.

SNA Concepts

The *System of National Accounts* identifies three different bases for measuring prices: basic prices, producers' prices, and purchasers' prices. The differences between these prices depend on how taxes and subsidies on products, transport charges, and trade margins are recorded. Deductible taxes, such as value added taxes and similar deductible taxes, may also affect the prices recorded. It is important to correctly identify the pricing basis for each type of transaction because the differences can be significant.

The values recorded for the components of expenditure on GDP are expressed in purchasers' prices because the transactions are based on the prices paid by the final users of the goods and services, such as households for consumption goods and businesses for capital goods. It is important to ensure consistency between the prices underlying the national accounts values and the prices collected for the ICP. In practice, it means the pricing basis required for the ICP is purchasers' prices (except for any imputed expenditures valued on a basis other than purchasers' prices such as some own-account production). The relationships between basic prices, producers' prices, and purchasers' prices are as follows:

Basic prices

plus taxes on products excluding invoiced VAT

less subsidies on products

equal **producers' prices**

plus VAT not deductible by the purchaser

plus separately invoiced transport charges

plus wholesalers' and retailers' margins

equal **purchasers' prices.**

Valuing Own-Account Production and Consumption

As indicated earlier in this chapter, any goods consumed by the households that produce them should be valued at basic prices. In developing countries, the values of own-account consumption can be a significant proportion of overall consumption of some products, particularly foodstuffs such as

meat, milk, eggs, vegetables, potatoes, fruits, and even wine and spirits. The value of each of these types of products purchased from shops, markets, or elsewhere is recorded in the national accounts at purchasers' prices, which is consistent with the prices collected for the consumer price index. Unlike basic prices, purchasers' prices include taxes, as well as trade and transport margins, and so they are higher than basic prices. It is important that the prices collected for the ICP are appropriately adjusted to take into account the two different price bases underlying the valuation of such products. The preferred method is to obtain details of the basic prices used to value each of these products in the national accounts and weight them together with the purchasers' prices that are obtained from the CPI or other similar sources to obtain the prices required for the ICP. (The basic prices should be farm gate prices, usually obtained by a special survey such as a household budget survey.) The level of (product) detail at which the prices can be weighted together will vary from one country to another. Ideally, the prices and weights would be available for every individual product, but realistically it is more likely that all the data required for these calculations will not be available below the basic heading level. At that level, some assumptions will be required to obtain an average unit price underlying all the products within a basic heading. The weights should be estimated using the expenditures recorded in the national accounts for each of the shares of own-account consumption and purchased components of each product. Table 3.6 provides an example of the calculations required.

In the table the first set of columns shows the expenditure values, the basic price, and the implied quantities of each good produced for own-account consumption. The next set of columns provides the same breakdown for purchased products. Note that the prices for own-account consumption and purchased quantities differ. The implied quantities are used to compute a weighted average.

The ratio in column (10) is divided into the purchasers' prices for each product within the relevant basic heading to obtain the average prices to use for that product in the ICP. For example, if the country represented by the table collected prices for rump steak, beef for a stew or curry, minced beef, and veal chops under the "beef and veal" heading, then each unit price would be adjusted for the ICP by dividing it by 1.231 (see table 3.7 for an example).

Similarly, the purchaser's price for each of the products this country priced under the "poultry" heading would be adjusted by dividing each price by the factor calculated for poultry products, 1.267.

Pricing Market Output

The SNA points out that different households may pay different prices for identical products because of the costs of identifying the retail outlets selling at the lowest prices, or households may find it be too inconvenient or costly to visit the outlets selling at the lowest prices. However, household expenditures are recorded at the prices actually paid, even though identical goods or services may not be valued uniformly.

Prices and Nonmarket Output

Nonmarket output should be valued using the prices of equivalent market output (if these are available). Otherwise, it should be valued at the cost of production. The prices required for ICP purposes are those that correspond to those underlying the values recorded in the national accounts. For example, the government final consumption expenditure is valued at the cost of production, which largely consists of the wages paid to the government employees involved in the production of government services. As a result, the ICP collects details of the wages of a range of government employees to calculate the PPPs required to estimate the real expenditures for the government final consumption expenditure.

TABLE 3.6 Estimating Adjustment Factor Price for Products with Significant Amounts of Own-Account Production
national currency

Product	Own-account consumption			Purchased products			Total			Ratio to divide into purchasers' prices to obtain average prices for ICP (10) = (9)/(2)
	Value (1)	Average underlying price (2)	Implied quantity (3) = (1)/(2)	Value (4)	Average underlying price (5)	Implied quantity (6) = (4)/(5)	Value (7) = (1) + (4)	Quantity (8) = (3) + (6)	Average price (9) = (7)/(8)	
Meat										
Beef and veal	2,000	9	222.2	6,000	12	500.0	8,000	722.2	11.1	1,231
Pork	500	12	41.7	1,800	14	128.6	2,300	170.2	13.5	1,126
Lamb and mutton	4,500	8	562.5	7,000	11	636.4	11,500	1,198.9	9.6	1,199
Poultry	7,000	6	1,166.7	12,000	9	1,333.3	19,000	2,500.0	7.6	1,267

Source: ICP.

TABLE 3.7 Obtaining Adjusted Price to Use in ICP*national currency*

Basic heading	Product	Purchaser's price	Adjustment factor	Adjusted price for ICP
Beef and veal			1.231	
	Rump steak	17.0		13.8
	Beef for a stew or curry	8.1		6.6
	Minced beef	6.5		5.3
	Veal chops	12.7		10.3

Source: ICP.

Prices for Gross Fixed Capital Formation

In many developing countries, almost all investment machinery and equipment are imported. Because most countries have detailed import statistics through their customs systems, estimates of gross fixed capital formation on machinery and equipment can be obtained through commodity flow techniques. In such cases, though, the valuation basis of the imports will not correspond to that required for national accounts expenditures on GDP. The differences stem from the transport and trade margins that will increase the landed price (the basic price) of each item of machinery and equipment. Any taxes levied will also have to be added to the landed price to estimate the purchaser's price, which can then be used in the commodity flow approach to estimate a value for each group of like items of machinery and equipment. The prices required for the ICP are these estimated purchasers' prices for those investment items specified in the ICP product list.

Reference PPPs

Several PPPs are not directly estimated. Instead, these PPPs are imputed using PPPs from other basic headings that reflect the price levels of each country. For example, the earlier discussion of FISIM clearly demonstrated the difficulty of estimating those expenditures. Therefore, the PPP for FISIM is imputed using the average of PPPs for household final consumption (excluding the health and education basic headings) and other basic headings where PPPs were imputed. The PPPs used for the imputation are known as reference PPPs. Chapter 17 provides a summary of the reference PPPs used in the different regions and their impact on the PPPs at the GDP level.

Summary

The national accounts are an integral component of the ICP. The statistical framework used in the 2005 ICP was the 1993 *System of National Accounts*. Even though the 2008 SNA is now available, the 1993 SNA will be used as the basis for compiling national accounts estimates for the 2011 ICP because most countries will still be using this version in 2012 when the national accounts data have to be supplied.

The 2005 ICP's main requirements for the national accounts were estimates based on the expenditure approach to measuring GDP, divided into 155 basic headings. A similar set of basic headings will be used in the 2011 ICP to facilitate comparisons between the two benchmark years.

The national accounts also provide the basis for the prices to be collected, because it is critical that the prices be consistent with the values recorded in the national accounts so that the real expenditures obtained by dividing national accounts values by PPPs are not distorted.

The national accounts are thus clearly an integral component of the ICP. In the 2005 ICP, the collection of prices received the most emphasis because so much intensive work was required to draw up the product lists in each region and to prepare the Ring list—that is, the prices needed to link together the regions (see chapter 8 for details). As a result, the national accounts data were collected relatively late in the process and several problems were encountered. For example, the national accounts estimates were not always consistent with those given to the various international organizations in the annual national accounts questionnaire; some countries' estimates of GDP were not exhaustive; and several countries were unable to supply values for all the basic headings. Resolving these problems proved to be difficult because of the relatively short time available.

The ICP's special focus on the real expenditure estimates of GDP gives countries an opportunity to improve their national accounts. The ICP also gives countries that do not have national accounts (or whose national accounts may be lagging by several years) an incentive to produce a set of accounts or to update them to 2011. Therefore, the national accounts will be placed at the center of the 2011 ICP framework.

In the 2005 ICP, no earlier benchmark was available to check the reliability of the detailed national accounts data. However, in the 2011 ICP it will be possible to compare the structure of the expenditures on GDP with those reported in the 2005 round and follow up any major inconsistencies. To help in this process, preliminary national accounts data for the years 2005–09 were collected in late 2010. The goal is to identify any problems that countries are facing with their data and resolve them before the 2011 national accounts data are collected during the second half of 2012.

Meanwhile, a training program will be provided to help countries produce the detailed accounts for 2011 required for the ICP. Because some countries have only production-based estimates of GDP, they will receive assistance in identifying the potential data sources that may be available to help them produce expenditure-based GDP.

The national accounts will be reviewed at an earlier stage than was possible in the 2005 ICP. The preliminary data for the latest year available (i.e., earlier than 2011) will also be used in editing the price data, which may indicate potential problem areas in the national accounts data themselves.

ANNEX

ICP Classification

Code	Description
100000	GROSS DOMESTIC PRODUCT
110000	FINAL CONSUMPTION EXPENDITURE BY HOUSEHOLDS
110100	FOOD AND NONALCOHOLIC BEVERAGES
110110	Food
110111	<i>Bread and cereals</i>
110111.1	Rice
110111.2	Other cereals, flour, and other cereal products
110111.3	Bread
110111.4	Other bakery products
110111.5	Pasta products
110112	<i>Meat</i>
110112.1	Beef and veal
110112.2	Pork
110112.3	Lamb, mutton, and goat
110112.4	Poultry
110112.5	Other meats and meat preparations
110113	<i>Fish</i>
110113.1	Fresh, chilled, or frozen fish and seafood
110113.2	Preserved or processed fish and seafood
110114	<i>Milk, cheese, and eggs</i>
110114.1	Fresh milk
110114.2	Preserved milk and other milk products
110114.3	Cheese
110114.4	Eggs and egg-based products
110115	<i>Oils and fats</i>
110115.1	Butter and margarine
110115.3	Other edible oils and fats
110116	<i>Fruit</i>
110116.1	Fresh or chilled fruit
110116.2	Frozen, preserved, or processed fruit and fruit-based products
110117	<i>Vegetables</i>
110117.1	Fresh or chilled vegetables other than potatoes
110117.2	Fresh or chilled potatoes
110117.3	Frozen, preserved, or processed vegetables and vegetable-based products

Code	Description
110118	<i>Sugar, jam, honey, chocolate, and confectionery</i>
110118.1	Sugar
110118.2	Jams, marmalades, and honey
110118.3	Confectionery, chocolate, and ice cream
110119	<i>Food products n.e.c.</i>
110119.1	Food products n.e.c.
110120	Nonalcoholic beverages
110121	<i>Coffee, tea, and cocoa</i>
110121.1	Coffee, tea, and cocoa
110122	<i>Mineral waters, soft drinks, fruit and vegetable juices</i>
110122.1	Mineral waters, soft drinks, fruit and vegetable juices
110200	ALCOHOLIC BEVERAGES, TOBACCO, AND NARCOTICS
110210	Alcoholic beverages
110211	<i>Spirits</i>
110211.1	Spirits
110212	<i>Wine</i>
110212.1	Wine
110213	<i>Beer</i>
110213.1	Beer
110220	Tobacco
110221	<i>Tobacco</i>
110221.1	Tobacco
110230	Narcotics
110231	<i>Narcotics</i>
110231.1	Narcotics
110300	CLOTHING AND FOOTWEAR
110310	Clothing
110311	<i>Clothing materials, other articles of clothing, and clothing accessories</i>
110311.1	Clothing materials, other articles of clothing, and clothing accessories
110312	<i>Garments</i>
110312.1	Garments
110314	<i>Cleaning, repair, and hire of clothing</i>
110314.1	Cleaning, repair, and hire of clothing
110320	Footwear
110321	<i>Shoes and other footwear</i>
110321.1	Shoes and other footwear
110322	<i>Repair and hire of footwear</i>
110322.1	Repair and hire of footwear
110400	HOUSING, WATER, ELECTRICITY, GAS, AND OTHER FUELS
110410	Actual and imputed rentals for housing

(continued)

Code	Description
110411	<i>Actual and imputed rentals for housing</i>
110411.1	<i>Actual and imputed rentals for housing</i>
110430	Maintenance and repair of the dwelling
110431	<i>Maintenance and repair of the dwelling</i>
110431.1	<i>Maintenance and repair of the dwelling</i>
110440	Water supply and miscellaneous services relating to the dwelling
110441	<i>Water supply</i>
110441.1	<i>Water supply</i>
110442	<i>Miscellaneous services relating to the dwelling</i>
110442.1	<i>Miscellaneous services relating to the dwelling</i>
110450	Electricity, gas, and other fuels
110451	<i>Electricity</i>
110451.1	<i>Electricity</i>
110452	<i>Gas</i>
110452.1	<i>Gas</i>
110453	<i>Other fuels</i>
110453.1	<i>Other fuels</i>
110500	FURNISHINGS, HOUSEHOLD EQUIPMENT, AND ROUTINE MAINTENANCE OF THE HOUSE
110510	Furniture and furnishings, carpets, and other floor coverings
110511	<i>Furniture and furnishings</i>
110511.1	<i>Furniture and furnishings</i>
110512	<i>Carpets and other floor coverings</i>
110512.1	<i>Carpets and other floor coverings</i>
110513	<i>Repair of furniture, furnishings, and floor coverings</i>
110513.1	<i>Repair of furniture, furnishings, and floor coverings</i>
110520	Household textiles
110521	<i>Household textiles</i>
110521.1	<i>Household textiles</i>
110530	Household appliances
110531	<i>Major household appliances whether electric or not</i>
110531.1	<i>Major household appliances whether electric or not</i>
110532	<i>Small electric household appliances</i>
110532.1	<i>Small electric household appliances</i>
110533	<i>Repair of household appliances</i>
110533.1	<i>Repair of household appliances</i>
110540	Glassware, tableware, and household utensils
110541	<i>Glassware, tableware, and household utensils</i>
110541.1	<i>Glassware, tableware, and household utensils</i>
110550	Tools and equipment for house and garden
110551	<i>Major tools and equipment</i>
110551.1	<i>Major tools and equipment</i>

Code	Description
110552	<i>Small tools and miscellaneous accessories</i>
110552.1	Small tools and miscellaneous accessories
110560	Goods and services for routine household maintenance
110561	<i>Nondurable household goods</i>
110561.1	Nondurable household goods
110562	<i>Domestic services and household services</i>
1105 62.1	Domestic services
110562.2	Household services
110600	HEALTH
110610	Medical products, appliances, and equipment
110611	<i>Pharmaceutical products</i>
110611.1	Pharmaceutical products
110612	<i>Other medical products</i>
110612.1	Other medical products
110613	<i>Therapeutic appliances and equipment</i>
110613.1	Therapeutic appliances and equipment
110620	Outpatient services
110621	<i>Medical services</i>
110621.1	Medical services
110622	<i>Dental services</i>
110622.1	Services of dentists
110623	<i>Paramedical services</i>
110623.1	Paramedical services
110630	Hospital services
110631	<i>Hospital services</i>
110631.1	Hospital services
110700	TRANSPORT
110710	Purchase of vehicles
110711	<i>Motor cars</i>
110711.1	Motor cars
110712	<i>Motorcycles</i>
110712.1	Motorcycles
110713	<i>Bicycles</i>
110713.1	Bicycles
110714	<i>Animal-drawn vehicles</i>
110714.1	Animal-drawn vehicles
110720	Operation of personal transport equipment
110722	<i>Fuels and lubricants for personal transport equipment</i>
110722.1	Fuels and lubricants for personal transport equipment
110723	<i>Maintenance and repair of personal transport equipment</i>

(continued)

Code	Description
110723.1	Maintenance and repair of personal transport equipment
110724	<i>Other services in respect of personal transport equipment</i>
110724.1	Other services in respect of personal transport equipment
110730	Transport services
110731	<i>Passenger transport by railway</i>
110731.1	Passenger transport by railway
110732	<i>Passenger transport by road</i>
110732.1	Passenger transport by road
110733	<i>Passenger transport by air</i>
110733.1	Passenger transport by air
110734	<i>Passenger transport by sea and inland waterway</i>
110734.1	Passenger transport by sea and inland waterway
110735	<i>Combined passenger transport</i>
110735.1	Combined passenger transport
110736	<i>Other purchased transport services</i>
110736.1	Other purchased transport services
110800	COMMUNICATION
110810	Postal services
110811	<i>Postal services</i>
110811.1	Postal services
110820	Telephone and telefax equipment
110821	<i>Telephone and telefax equipment</i>
110821.1	Telephone and telefax equipment
110830	Telephone and telefax services
110831	<i>Telephone and telefax services</i>
110831.1	Telephone and telefax services
110900	RECREATION AND CULTURE
110910	Audiovisual, photographic, and information processing equipment
110911	<i>Audiovisual, photographic, and information processing equipment</i>
110911.1	Audiovisual, photographic, and information processing equipment
110914	<i>Recording media</i>
110914.1	Recording media
110915	<i>Repair of audiovisual, photographic, and information processing equipment</i>
110915.1	Repair of audiovisual, photographic, and information processing equipment
110920	Other major durables for recreation and culture
110921	<i>Major durables for outdoor and indoor recreation</i>
110921.1	Major durables for outdoor and indoor recreation
110923	<i>Maintenance and repair of other major durables for recreation and culture</i>
110923.1	Maintenance and repair of other major durables for recreation and culture
110930	Other recreational items and equipment, gardens, and pets

Code	Description
110931	<i>Other recreational items and equipment</i>
110931.1	Other recreational items and equipment
110933	<i>Gardens and pets</i>
110933.1	Gardens and pets
110935	<i>Veterinary and other services for pets</i>
110935.1	Veterinary and other services for pets
110940	Recreational and cultural services
110941	<i>Recreational and sporting services</i>
110941.1	Recreational and sporting services
110942	<i>Cultural services</i>
110942.1	Cultural services
110943	<i>Games of chance</i>
110943.1	Games of chance
110950	Newspapers, books, and stationery
110951	<i>Newspapers, books, and stationery</i>
110951.1	Newspapers, books, and stationery
110960	Package holidays
110961	<i>Package holidays</i>
110961.1	Package holidays
111000	EDUCATION
111010	Education
111011	<i>Education</i>
111011.1	Education
111100	RESTAURANTS AND HOTELS
111110	Catering services
111111	<i>Catering services</i>
111111.1	Catering services
111120	Accommodation services
111121	<i>Accommodation services</i>
111121.1	Accommodation services
111200	MISCELLANEOUS GOODS AND SERVICES
111210	Personal care
111211	<i>Hairdressing salons and personal grooming establishments</i>
111211.1	Hairdressing salons and personal grooming establishments
111212	<i>Appliances, articles, and products for personal care</i>
111212.1	Appliances, articles, and products for personal care
111220	Prostitution
111221	<i>Prostitution</i>
111221.1	Prostitution
111230	Personal effects n.e.c.

(continued)

Code	Description
111231	<i>Jewelry, clocks, and watches</i>
111231.1	Jewelry, clocks, and watches
111232	<i>Other personal effects</i>
111232.1	Other personal effects
111240	Social protection
111241	<i>Social protection</i>
111241.1	Social protection
111250	Insurance
111251	<i>Insurance</i>
111251.1	Insurance
111260	Financial services n.e.c.
111261	<i>Financial intermediation services indirectly measured (FISIM)</i>
111261.1	Financial intermediation services indirectly measured (FISIM)
111262	<i>Other financial services n.e.c.</i>
111262.1	Other financial services n.e.c.
111270	Other services n.e.c.
111271	<i>Other services n.e.c.</i>
111271.1	Other services n.e.c.
111300	BALANCE OF EXPENDITURES OF RESIDENTS ABROAD AND EXPENDITURES OF NONRESIDENTS ON THE ECONOMIC TERRITORY
111310	BALANCE OF EXPENDITURES OF RESIDENTS ABROAD AND EXPENDITURES OF NONRESIDENTS ON THE ECONOMIC TERRITORY
111311	<i>BALANCE OF EXPENDITURES OF RESIDENTS ABROAD AND EXPENDITURES OF NONRESIDENTS ON THE ECONOMIC TERRITORY</i>
111311.1	Final consumption expenditure of resident households in the rest of the world
111311.2	Final consumption expenditure of nonresident households on the economic territory
120000	INDIVIDUAL CONSUMPTION EXPENDITURE BY NPISH
120100	INDIVIDUAL CONSUMPTION EXPENDITURE BY NPISH
120110	Individual consumption expenditure by NPISH
120111	<i>Individual consumption expenditure by NPISH</i>
120111.1	Individual consumption expenditure by NPISH
130000	INDIVIDUAL CONSUMPTION EXPENDITURE BY GOVERNMENT
130100	HOUSING
130110	Housing
130111	<i>Housing</i>
130111.1	Housing
130200	HEALTH
130210	Health benefits and reimbursements
130211	<i>Medical products, appliances, and equipment</i>
130211.1	Pharmaceutical products
130211.2	Other medical products
130211.3	Therapeutic appliances and equipment

Code	Description
130212	<i>Health services</i>
130212.1	Outpatient medical services
130212.2	Outpatient dental services
130212.3	Outpatient paramedical services
130212.4	Hospital services
130220	PRODUCTION OF HEALTH SERVICES
130221	<i>Compensation of employees</i>
130221.1	Compensation of employees
130222	<i>Intermediate consumption</i>
130222.1	Intermediate consumption
130223	<i>Gross operating surplus</i>
130223.1	Gross operating surplus
130224	<i>Net taxes on production</i>
130224.1	Net taxes on production
130225	<i>Receipts from sales</i>
130225.1	Receipts from sales
130300	RECREATION AND CULTURE
130310	Recreation and culture
130311	<i>Recreation and culture</i>
130311.1	Recreation and culture
130400	EDUCATION
130410	Education benefits and reimbursements
130411	<i>Education benefits and reimbursements</i>
130411.1	Education benefits and reimbursements
130420	Production of education services
130421	<i>Compensation of employees</i>
130421.1	Compensation of employees
130422	<i>Intermediate consumption</i>
130422.1	Intermediate consumption
130423	<i>Gross operating surplus</i>
130423.1	Gross operating surplus
130424	<i>Net taxes on production</i>
130424.1	Net taxes on production
130425	<i>Receipts from sales</i>
130425.1	Receipts from sales
130500	SOCIAL PROTECTION
130510	Social protection
130511	<i>Social protection</i>
130511.1	Social protection
140000	COLLECTIVE CONSUMPTION EXPENDITURE BY GOVERNMENT

(continued)

Code	Description
140100	COLLECTIVE SERVICES
140110	Collective services
140111	<i>Compensation of employees</i>
140111.1	Compensation of employees
140112	<i>Intermediate consumption</i>
140112.1	Intermediate consumption
140113	<i>Gross operating surplus</i>
140113.1	Gross operating surplus
140114	<i>Net taxes on production</i>
140114.1	Net taxes on production
140115	<i>Receipts from sales</i>
140115.1	Receipts from sales
150000	EXPENDITURE ON GROSS FIXED CAPITAL FORMATION
150100	MACHINERY AND EQUIPMENT
150110	Metal products and equipment
150111	<i>Fabricated metal products, except machinery and equipment [CPA 28.11 to 28.75]</i>
150111.1	Fabricated metal products, except machinery and equipment
150112	<i>General-purpose machinery [CPA 29.11 to 29.24]</i>
150112.1	General-purpose machinery
150113	<i>Special-purpose machinery [CPA 29.31 to 29.72]</i>
150113.1	Special-purpose machinery
150114	<i>Electrical and optical equipment [CPA 30.01 to 33.50]</i>
150114.1	Electrical and optical equipment
150115	<i>Other manufactured goods n.e.c. [CPA 36.11 to 36.63]</i>
150115.1	Other manufactured goods n.e.c.
150120	Transport equipment
150121	<i>Road transport equipment [CPA 34.10 to 34.30 and 35.41 to 35.50]</i>
150121.1	Motor vehicles, trailers, and semitrailers
150121.2	Other road transport
150122	<i>Other transport equipment [CPA 35.11 to 35.30]</i>
150122.1	Other transport equipment
150200	CONSTRUCTION
150210	Residential buildings
150211	<i>Residential buildings</i>
150211.1	Residential buildings
150220	Nonresidential buildings
150221	<i>Nonresidential buildings</i>
150221.1	Nonresidential buildings
150230	Civil engineering works
150231	<i>Civil engineering works</i>

Code	Description
150231.1	Civil engineering works
150300	OTHER PRODUCTS
150310	Other products
150311	<i>Other products</i>
150311.1	Other products
160000	CHANGES IN INVENTORIES AND ACQUISITIONS LESS DISPOSALS OF VALUABLES
160100	CHANGES IN INVENTORIES
160110	Changes in inventories
160110.1	Opening value of inventories
160110.2	Closing value of inventories
160200	ACQUISITIONS LESS DISPOSALS OF VALUABLES
160210	Acquisitions less disposals of valuables
160211	<i>Acquisitions less disposals of valuables</i>
160211.1	Acquisitions of valuables
160211.2	Disposals of valuables
170000	BALANCE OF EXPORTS AND IMPORTS
170100	BALANCE OF EXPORTS AND IMPORTS
170110	BALANCE OF EXPORTS AND IMPORTS
170111	<i>BALANCE OF EXPORTS AND IMPORTS</i>
170111.1	Exports of goods and services
170111.2	Imports of goods and services

Source: ICP.

Note: Basic headings are shaded gray. NPISH = nonprofit institutions serving households; CPA = Statistical Classification of Products by Activity; n.e.c. = not elsewhere classified.

NOTES

1. For more on the subject of this chapter, see World Bank (2008).
2. *Purchaser's price* is the amount paid by the purchaser, excluding any value added tax (VAT) or similar tax deductible by the purchaser, in order to take delivery of a unit of a good or service at the time and place required by the purchaser. The purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place, as well as the wholesale and retail trade margins and any taxes on products (excluding the VAT deductible by the purchaser) minus the subsidies on products.
3. *Intermediate consumption* is the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital.
4. *Subsidies* are current unrequited payments that government units, including nonresident government units, make to enterprises on the basis of the levels of their production activities or the quantities or values of the goods or services that they produce, sell, or import. A subsidy on a product is a subsidy payable per unit of a good or service.
5. *Operating surplus* is a measure of the surplus accruing from production processes before deducting any explicit or implicit interest charges, rent, or other property incomes payable on the financial assets, land, or other natural resources required to carry on the production. Business profits are a large part of the gross operating surplus. *Mixed income* is the term used to describe the operating surplus of unincorporated enterprises because it implicitly contains an element of remuneration for work done by the owner (or other members of the household to which the unincorporated enterprise belongs) that cannot be separately identified from the return to the owner as an entrepreneur.
6. Gross capital formation shows the acquisition, minus disposal, of produced assets for purposes of fixed capital formation, inventories, or valuables. Gross fixed capital formation is measured by the total value of a producer's acquisition (minus disposal) of fixed assets during the accounting period plus certain specified expenditures on services that adds to the value of nonproduced assets.

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