

# **Development Indicators Reference Manual**

## CONCEPTS AND DEFINITIONS

Economics and Research Department  
Development Indicators and Policy Research Division  
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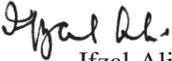
## Preface

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The Asian Development Bank (ADB) has for a long time been deeply aware of the need to provide information on the concepts and definitions of the data it uses and publishes. The 1976 Reference Manual on Concepts and Definitions of Data Used by ADB and the subsequent updates in 1979 and 1982 were prepared primarily for ADB use. This manual is the third revision and incorporates recent conceptual and methodological developments recommended by international statistical conventions. It also includes many new social indicators and the Millennium Development Goals. The manual aims to provide both data users and data producers in ADB, other institutions, and ADB member countries with up-to-date, internationally accepted statistical concepts and definitions.

This manual is not an original work and is not intended to replace statistical publications of other international organizations. The content is drawn from various sources including international agencies and interagency groups responsible for setting global statistical standards. Because it is a concise reference only, lengthy background material is not included. Readers are encouraged to refer to source documents mentioned in the text or in footnotes for more comprehensive and detailed explanations (see Selected References on the following page). We thank various international organizations for their cooperation and permission to use their materials.

This reference manual was prepared by the Development Indicators and Policy Research Division (ERDI) of the Economics and Research Department of ADB under the overall guidance of V.N. Gnanathurai, previous Assistant Chief Economist, ERDI, and Yun-Hwan Kim, Assistant Chief Economist, ERDI. Production of the reference manual was coordinated and supervised by Abuzar Asra with the assistance of Aracelli Patricio, Rhommell Rico, and Evelyn Andrada. The first draft was prepared by ERDI and was improved by Datuk R. Chander and Gonzalo M. Jurado (ADB consultants). Valuable inputs and comments were provided by Dalisay Maligalig, Olivier Dupriez, Christopher Edmonds, Kanokpan Lao-Araya, and Aracelli Patricio. The final draft was edited by the Office of External Relations. Typesetting and cover design were carried out by Rhommell Rico of ERDI.

  
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## Selected References

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**Asian Development Bank:** *Reference Manual: Concepts, Definitions, and Statistical Foundations of Data Used by ADB*, April, 1982.

**Food and Agriculture Organization:** *Production Yearbook*

**European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, and World Bank,** *System of National Accounts 1993* (United Nations publication, Sales No. E. 94. XVII .4)

**International Labour Organization:** *International Standard Classification of Occupations; Yearbook of Labor Statistics* (various editions)

**International Monetary Fund:** *Government Finance Statistics Manual 2001; A Manual on Government Finance Statistics (1986); Monetary and Financial Statistics Manual, 2000; A Guide to Money and Banking, 1984; International Financial Statistics; Balance of Payments Manual, fifth edition (BPM5) 1993; Balance of Payments Manual, fourth edition; Financial Derivatives: a Supplement to the fifth edition (1993) of the Balance of Payments Manual; Balance of Payments Compilation Guide.*

**The World Bank:** *World Development Indicators* (various editions); *The World Bank Atlas* (various editions); *The World Bank Web site*, <http://www.developmentgoals.org/> and <http://devdata.worldbank.org/dataonline/> (Millennium Development Goals); *Global Development Finance.*

**United Nations Education Scientific and Cultural Organization:** *International Standard Classification of Education (1997).*

**United Nations Development Programme:** *Human Development Report* (various editions).

**United Nations:** *The UN System of National Accounts, 1968; UN Yearbook of National Accounts* (various editions); *Standard International Trade Classification (Rev3); UN Demographic Year Book* (various editions); *UN Yearbook of Energy Statistics* (various editions).

**World Customs Organization:** *The Harmonized Commodity Description and Coding System.*

**World Health Organization:** *International Classification of Diseases.*

## List of Abbreviations and Acronyms

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|         |   |
|---------|---|
| ADB     | Asian Development Bank                                    |
| BOP     | balance of payments                                       |
| DMC     | developing member country                                 |
| GDP     | gross domestic product                                    |
| GNP     | gross national product                                    |
| IMF     | International Monetary Fund                               |
| ISIC    | International Standard of Industrial Classification       |
| Lao PDR | People's Democratic Republic of Laos                      |
| MDGs    | Millennium Development Goals                              |
| ODA     | official development assistance                           |
| OECD    | Organization for Economic Co-operation and<br>Development |
| PPP     | purchasing power parity                                   |
| SDR     | special drawing rights                                    |
| SNA     | System of National Accounts                               |
| US      | United States   |
| VAT     | value added tax   |

\* This list includes only those that occur throughout the document. Acronyms and abbreviations used in a specific section are in the Index.

Note: "\$" refers to US dollars



# 1. AN INTRODUCTION TO INTERNATIONAL STATISTICAL STANDARDS

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## The Global Statistical System

The Global Statistical System comprises the statistical offices of international agencies and all national statistical systems, including those of Asian Development Bank (ADB) member countries. Over the past 4 decades, the System has developed a range of tools to support the collection, analysis, and use of statistics at both the national and international levels. This effort has rapidly expanded the availability of data and has notably improved its comparability which has in turn generated parallel salutary effects, namely the facilitation of inter-country and global comparisons and the provision of bases for more meaningful aggregations of countries and regions of the world. The process has also spurred countries to intensify their efforts to standardize the definitions, concepts, and methods used to produce statistics and indicators. This increase in the quantity and quality of timely data has helped national governments to formulate economic and social policies, to assess investment options, and to monitor and track economic and social change. This in turn has strengthened their abilities to implement programs to expand and transform their economies, to reduce poverty, and to enhance the welfare of their people.

International agencies, including bilateral and multilateral donor institutions, have offered technical assistance to build the capacity to produce internationally acceptable statistics and indicators in developing countries. Such assistance has included training staff and providing equipment and advice. Overall, these efforts have been successful. These agencies have also issued reference manuals and guidelines covering a wide spectrum of statistics, from those for national accounts to those on the environment. By clarifying concepts, classifications, and definitions, these guidelines provide guidance to national statistical offices for strengthening national data sets. Beyond that, the reference manuals contribute to the much-needed harmonization of statistics at various levels.

Much has been achieved, yet gaps in data continue to exist. Some countries remain unable to generate basic information and so are caught in a vicious cycle in which poor data leads to poor policies and poor policies hinder development, including statistical development. Despite the input provided by external organizations and investments made by national governments, capacity continues to be a limiting factor in attaining viable statistical systems.

The globalization of the world's economy has intensified the need for standardization and harmonization of statistics. Private capital flows now far exceed official flows, private investment has become the engine of growth for many countries, and financial markets now play a central role in investment

decisions. Trade has assumed a greater importance in promoting economic growth and social transformation. The statistics describing the movement of capital and the exchange of goods and services across international boundaries must not only be collected and compiled but must also be standardized and harmonized so that countries can derive maximum benefits from such interactions.

International agencies are again responding to the challenge. The United Nations Statistical Commission continues to play a pivotal role both as a forum for discussion and as a coordinating body for statistical activities. It continues to provide needed intellectual leadership to national and international efforts to establish and sustain scientifically correct statistical systems.

### **The Role of International Financial Institutions**

The International Monetary Fund (IMF), a prominent agency in the Global Statistical System, recognized the need for new, timely, reliable statistics to describe the increasingly complex trade and capital movements in the global community. In the wake of the Mexican crisis of the early 1990s, the IMF promulgated the Special Data Dissemination Standard (SDDS) to guide members that have or that might seek access to international capital markets in publicizing their economic and financial data. The SDDS identified the following four parameters: (i) coverage, periodicity (frequency of compilation), and timeliness (speed of dissemination) of the data; (ii) public access; (iii) integrity; and (iv) quality. The elements to monitor for access, integrity, and quality emphasize transparency in compilation and dissemination. For instance, to support ready and equal access, the SDDS prescribed advanced publication of release dates and simultaneous release to all interested parties.

The IMF has since established a second standard, the General Data Dissemination System (GDDS), which is applicable to all members though participation is voluntary. The framework is built on the same four parameters used in the SDDS. It is used to develop and disseminate comprehensive frameworks and indicators for each of the four economic and financial sectors (real, fiscal, financial, and external). The purposes of the GDDS are the following:

- to encourage member countries to improve data quality;
- to provide a framework for evaluating needs for data improvement and for setting priorities;
- to guide member countries in the public dissemination of comprehensive, timely, accessible, and reliable macroeconomic, financial, and socio-demographic statistics.

Other international financial institutions (IFIs) like the World Bank and the regional development banks (including ADB), along with bilateral aid agencies also help to build the capacity of nations to collect and compile timely, reliable data. IFIs require detailed information on various aspects of the economy in order to design and implement programs and policy dialogue. Obliging countries to supply the necessary data encourages them to develop and strengthen their statistical systems.

## 2. COUNTRY CLASSIFICATIONS

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ADB's developing member countries (DMCs) are diverse in many respects. Their economies include market, transition, and semi-centrally planned systems. The size and performance of their economies, their resource endowments, population densities, social conditions, and levels of human development all give rise to the great heterogeneity of the region. For meaningful analysis to be possible, they must, therefore, be grouped and classified more homogeneously.

ADB has developed and revised classification schemes for its borrowing DMCs over the years. The current system was approved by the Board of Directors in December 1998 and took effect on 1 January 1999. Two criteria, namely, per capita gross national product (GNP) and debt repayment capacity, were used to classify the 36 borrowing DMCs into groups<sup>1</sup> A, B1, B2, and C. This system determines (i) the degree of eligibility to borrow from the Asian Development Fund (ADF) or from ordinary capital resources (OCR); (ii) the applicable ceiling on ADB financing; and (iii) the minimum share of government contribution to technical assistance costs. The groups consist of the following borrowing DMCs.

**Group A** (ADF only): Afghanistan, Bhutan, Cambodia, Kiribati, Kyrgyz Republic, Lao People's Democratic Republic, Maldives, Mongolia, Myanmar, Nepal, Samoa, Solomon Islands, Tajikistan, Tuvalu, and Vanuatu

**Group B1** (ADF with limited amounts of OCR): Azerbaijan, Bangladesh, Cook Islands, Marshall Islands, Federated States of Micronesia, Pakistan, Sri Lanka, Tonga, and Viet Nam

**Group B2** (OCR with limited amounts of ADF): People's Republic of China, India, Indonesia, Nauru, and Papua New Guinea

**Group C** (OCR only): Fiji Islands, Kazakhstan, Malaysia, Philippines, Thailand, Turkmenistan, and Uzbekistan

ADB has also developed an alternative classification of DMCs, one that is based strictly on geographical location. This is the classification employed in *ADB Key Indicators*. It is shown in Table 1.

---

1 In addition, criteria for graduation from regular ADB assistance have been established. Four members (Republic of Korea; Hong Kong, China; Singapore; and Taipei, China) have graduated from regular ADB assistance. Indonesia is on the watch list for graduation from ADF. For the Cook Islands, limited OCR eligibility will be applied only after the external debt position improves. Timor-Leste has not been classified. For details visit <http://www.adb.org/documents/policies/graduation>.

Table 2.1 **Country Classification****East Asia**

China, People's Rep. of  
 Hong Kong, China  
 Korea, Rep. of  
 Mongolia  
 Taipei, China

**South Asia**

Afghanistan  
 Bangladesh  
 Bhutan  
 India  
 Maldives  
 Nepal  
 Pakistan  
 Sri Lanka

**Central Asia**

Azerbaijan  
 Kazakhstan  
 Kyrgyz Republic  
 Tajikistan  
 Turkmenistan  
 Uzbekistan

**Southeast Asia**

Cambodia  
 Indonesia  
 Lao People's Democratic Republic  
 Malaysia  
 Myanmar  
 Philippines  
 Singapore  
 Thailand  
 Viet Nam

**Pacific DMCs**

Cook Islands  
 Fiji Islands  
 Kiribati  
 Marshall Islands  
 Micronesia, Federated States of  
 Nauru  
 Papua New Guinea  
 Samoa  
 Solomon Islands  
 Timor-Leste, Dem. Rep. of  
 Tonga  
 Tuvalu  
 Vanuatu

The two classification schemes have their merits. The first provides a basis for assessing a country's capacity to repay debt and access to resources while the second uses the commonality of geographic factors to understand economic performance.

### 3. LAND

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Reference sources for this section are the Food and Agriculture Organization's *Production Yearbook*, the United Nations' *Demographic Yearbook*, and the World Bank's *World Development Indicators*, and the ADB's *Reference Manual: Concepts, Definitions and Statistical Foundations of Data used by ADB*, 1982.

3.1. **Surface Area** — a measure of the expanse of land, including uninhabited or uninhabitable stretches, and water (rivers and lakes) that lies within the boundaries of a country. Sometimes rivers, tidal lands, and areas reclaimed and not surveyed are included or excluded. Lack of comparability between country estimates arises primarily from differences in the dates of the data and the measurement methods used.

3.2. **Land Area** — all land not covered by inland water bodies. The definition of inland water bodies generally includes major rivers and lakes.

3.3. **Arable Land** — land under temporary crops (double-cropped areas are counted only once), temporary meadows for mowing or pasture, land under market and kitchen gardens and land temporarily fallow (less than 5 years). Land abandoned due to shifting cultivation is not included in this category. Arable land is not meant to indicate the amount of land that is potentially cultivable.

3.4. **Permanent Cropland** — land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest such as cocoa, coffee and rubber. This includes land under flowering shrubs, fruit trees, nut trees and vines but excludes land under trees grown for wood or timber. See Figure 1 for an illustration.

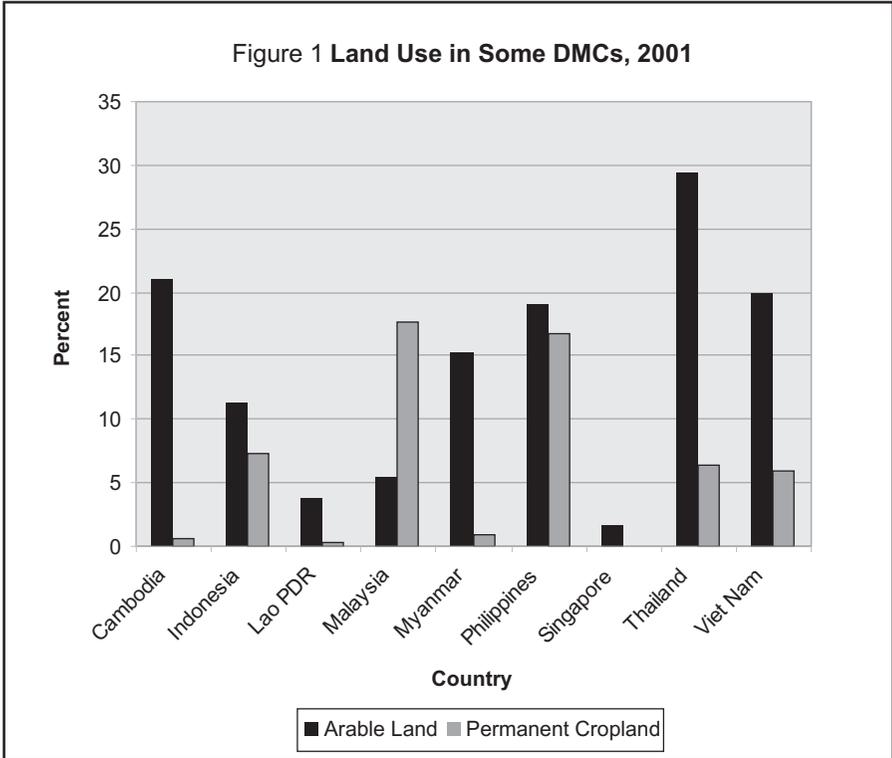
3.5. **Permanent Pasture** — land used permanently (5 years or more) for herbaceous forage crops, either cultivated or growing wild (wild prairie or grazing land).

3.6. **Agricultural Area** — the sum of arable land, permanent cropland, and permanent pasture.

3.7. **Forests and Woodland** — land under natural or planted stands of trees whether productive or not. This category includes land from which forests have been cleared but that will be reforested in the foreseeable future, but it excludes woodland or forest used only for recreation purposes.

3.8. **Urban Areas** — generally, each country decides how to classify an area as either urban or rural. Characteristics of the population in the area such as size, density, or economic activity are important factors. Broader definitions

include additional criteria like the proportion of nonagricultural workers and the presence of services like commercial centers, hospitals, and electricity. The basis for classification is usually the latest census. The variability of criteria means country data on the extent and rate of urbanization are not compatible. Some countries may even change definitions from one census to the next.



Source: ADB, *Key Indicators 2004*.

## 4. POPULATION, FERTILITY, AND FAMILY PLANNING

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Sources used in this section are the United Nations' *Demographic Yearbook*, the World Bank's *World Development Indicators*, the United Nations Development Programme's *Human Development Report* and the ADB's *Reference Manual: Concepts, Definitions and Statistical Foundations of Data used by ADB*, 1982. Other sources are manuals, guidelines, and other publications issued by the agencies reporting the data.

### Population

4.1. **Total Population** — is reckoned either *de facto* or *de jure*. The *de facto* population includes all persons physically present in the country during a census enumeration. This would include foreign military and diplomatic personnel and their accompanying household members and transient foreign visitors in harbors. The *de jure* population excludes transients but includes all usual nationals of the country regardless of their physical location at the time of enumeration.

The principal sources of population data are the censuses that are conducted either decennially or quinquennially in most countries. Censuses divide the total population into two segments: household and institutional. The former includes all persons living in households or dwelling units while the latter refers to persons who at the time of enumeration were in hospitals, military barracks, prisons, and similar establishments. For operational convenience and better accuracy, these two segments of the population are often estimated separately. Estimates for intercensal years generally are obtained from sample surveys, projections from previous censuses under assumed population growth rates, or civil and vital registration records.

Several factors affect the accuracy and comparability of population data. The definitional distinction between *de facto* and *de jure* populations appears simple, yet strict operational conformity to either one is the exception rather than the rule. In spite or because of their sheer magnitude, censuses can contain many errors; thus, very small but more carefully and independently executed post enumeration surveys are often done in order to check on and adjust for under-enumeration of the census. In some countries, estimates for intercensal years have to be revised in light of the results from subsequent censuses.

4.2. **Growth Rate** — the rate at which the country's population grows over a given period of time. Countries base their estimates of their respective population growth rates on censuses, demographic surveys, vital/civil registration records, and special studies. However, since these are not always

current, and in the interest of uniformity, ADB usually computes the average annual geometric rate of increase from a country's population data using this formula

$$r = \left( \sqrt[t]{\frac{p_t}{p_o}} - 1 \right) \times 100$$

where

$r$  is the annual growth rate in percent rounded to one decimal,

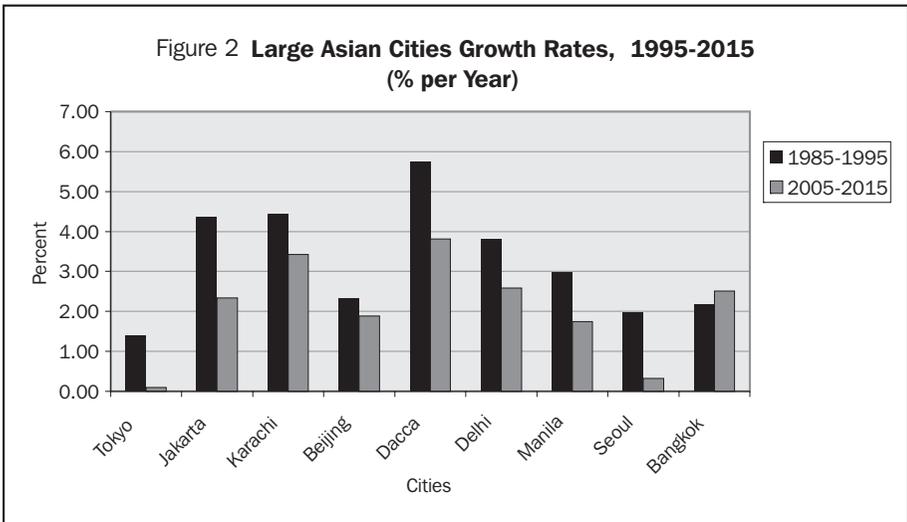
$t$  is the number of years between the initial year and the last year in the time period,

$p_o$  is the population for the initial year, and

$p_t$  is the population for the end year.

$p_o$  and  $p_t$  may be the estimates from the last two censuses.

See Figure 2 for past and projected growth rates of large Asian cities, 1995 – 2015.



Source: ADB 2001. *Urban Indicators for Managing Cities*.

4.3. **Age-Dependency Ratio** — the ratio of the non-working age population to the working-age population. Since countries define working age differently, a straightforward application of the definition will lead to noncomparable data. ADB therefore uses the following UN definition that can be computed directly from an age distribution:

$$\frac{\text{Population Age (0–14) + (65 and over) years}}{\text{Population Aged (15–64) years}} \times 100$$

4.4. **Population Density** — the mid-year or year-end population divided by the land area in square kilometers.

4.5. **Urban Population** — the population living in urban areas as defined in accordance with the national definition or as used in the most recent census.

4.6. **Mean Age of the Population** — the numerical average of the ages of each population group weighted by the share of each group in the total population.

4.7. **Median Age of the Population** — the age that divides the population into exactly two equal parts.

## Fertility

4.8. **Crude Birth Rate (CBR)** — the number of live births per 1,000 persons occurring during the year. Vital registers are the preferred source for these data, but in many developing countries these registers do not exist or are incomplete because of deficiencies in geographic coverage or coverage of events. Many developing countries carry out specialized household surveys that estimate vital rates by asking respondents about births in the recent past. Estimates derived in this way are subject to sampling errors and inaccurate recall by the respondents.

The CBR is computed as:

$$\text{Crude Birth Rate} = \frac{\text{Total no. of live births in a given year}}{\text{Total midyear population in the given year}} \times 1,000$$

The level of the CBR is determined by the sex and age distribution of the population and by the fertility of the population. A relatively high CBR can be recorded if the sex and age distribution is favorable even though fertility is low, e.g. countries with a relatively large proportion of the population in the 15–50 years age groups will have a relatively high CBR, other things being equal.

4.9. **General Fertility Rate (GFR)** — the ratio of the number of births during the year to the population of women aged 15–49. This is a fertility rate rather than a birth rate since it expresses births relative to the number of women in the reproductive age group.

4.10. **Age-Specific Fertility Rate (ASFR)** — the number of births per year to 1,000 women of a particular age. It can be computed for each single year of age from 15 to 49 if desired. Seven age-specific fertility rates are normally calculated at 5-year intervals between ages 15 and 49 (15–19, 20–24, ..., 45–49).

$$\text{Age Specific Fertility Rate} = \frac{\text{Births during the year by women aged X}}{\text{Number of Women aged X at midyear}}$$

4.11. **Adolescent Fertility Rate** — the number of births per 1,000-women aged 15–19.

4.12. **Total Fertility Rate (TFR)** — the average number of children that would be born to a woman if all women lived till the end of their childbearing years and if the fertility patterns of a given period did not change. In other words, it is the total number of children an average woman will bear in her lifetime in the absence of mortality.

The TFR for 5-year age intervals can be computed as follows:

$$\text{Total Fertility Rate} = \frac{(\sum ASFR) \times 5}{1,000}$$

If single year rates are used for the ASFR, then there is no need to multiply by five. The TFR is usually expressed as the number of children per woman while the ASFR is often expressed in terms of 1,000 women. Hence, the denominator is 1,000. Monitoring the TFR is especially relevant to high-fertility, low-income countries with young populations.

4.13. **Gross Reproduction Rate (GRR)** — measures the mean number of *female* children that a female can expect to bear if she lives right through the childbearing period and is subject to the given fertility conditions.

The TFR refers to the number of children that a female can expect to produce while the GRR is restricted to the number of *female* children. The GRR can be estimated by calculating the TFR in terms of female births only, by restricting the births in the specific fertility rates to female births, or by multiplying the TFR by the proportion of all births that are female births, i.e.:

$$\text{GRR} = \text{TFR} \times (\text{number of female births/number of births})$$

4.14. **Net Reproduction Rate (NRR)** — the average number of daughters that would be born to a woman (or a group of women) if she passed through her lifetime conforming to the age-specific fertility and mortality rates of a given year. This rate is similar to the GRR but takes into account that some

women will die before completing their childbearing years. An NRR of 1 means that each generation of mothers is having exactly enough daughters to replace itself in the population. The NRR, indicating the mean number of female children that will be born to a newly-born female who is subject to the given fertility and mortality conditions throughout her lifetime, is a measure of the *replacement potential* of the population. If the NRR equals unity, then throughout her lifetime each female will, on the average, produce one female to replace herself. Under such conditions the population will *ultimately* become stationary. If the NRR is greater than unity, the population will ultimately increase if the conditions continue, while if the NRR is less than unity, the population will ultimately decrease.

## **Family Planning**

4.15. **Contraceptive Prevalence Rate (CPR)** — the percentage of women who are practicing, or whose sexual partners are practicing, any form of contraception. It is usually measured only for married women aged 15–49.

4.16. **Women at Risk of Unintended Pregnancy** — the percentage of fertile, married women of reproductive age who do not want to become pregnant but are not using contraception.

## 5. HEALTH, NUTRITION AND EDUCATION

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The concepts and definitions in this section were derived from several sources. Those relating to health and nutrition come from publications of the World Health Organization while those on education come mostly from publications of the United Nations Educational, Scientific, and Cultural Organization (UNESCO).<sup>2</sup> Other source is the ADB's *Reference Manual: Concepts, Definitions and Statistical Foundations of Data used by ADB*, 1982.

### Health

5.1. **Crude Death Rate (CDR)** — the number of deaths during the year per 1,000 persons. Vital registers are the preferred source for these data, but in many developing countries systems for registering deaths do not exist or are incomplete because of deficiencies in geographic coverage or coverage of events. Many developing countries carry out specialized household surveys that estimate vital rates by asking respondents about deaths in the recent past. Estimates derived in this way are subject to sampling errors due to inaccurate recall by the respondents. Subtracting the crude death rate from the crude birth rate provides the rate of natural increase which is equal to the population growth rate in the absence of net migration. The crude death rate is computed as:

$$\text{Crude Death Rate} = \frac{\text{Number of deaths in year } t}{\text{Midyear population in year } t} \times 1,000$$

The CDR is easily measured and understood. It is frequently used because it requires only two pieces of information, total deaths and total population, both of which often can be estimated with reasonable accuracy even in the absence of costly censuses or vital registration systems. However, it is a poor measure of mortality since it does not take into account the age structure of the population. Differences in CDRs between countries can be registered because of differences in the population distribution by age when actually the rates of mortality are the same. For instance, the CDR may be lower in a developing country than in a developed country because the former has a lower proportion of old people, other things being equal.

5.2. **Age-Specific Mortality Rate** — the number of deaths occurring during a specified period to persons of a specified age or age group divided by the midyear population of that age or age group.

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2 Several of the indicators discussed in this section are included in the indicators designed to monitor progress on the Millennium Development Goals. Consequently, there is an element of duplication between the presentation here and that in Chapter 8.

5.3. **Infant Mortality Rate (IMR)** — the number of infants who die in a given year before reaching 1 year of age per 1,000 live births. If  $D_0^z$  is the number of deaths (excluding fetal deaths) between birth and age 1 during calendar year  $z$  and  $B^z$  is the number of live births within the same year, then:

$$\text{Infant Mortality Rate} = \left( \frac{D_0^z}{B^z} \right) \times 1,000$$

The formula is, however, rarely used directly, if ever, because birth and death records are often incomplete. Some countries do not have nationwide vital and civil registration systems while those that do may have incomplete registration turnouts. More often, adjusted estimates of  $D_0^z$  and  $B^z$  based on supplementary information from censuses and demographic surveys are used.

5.4. **Under-Five Mortality Rate** — the probability that a newborn baby will die before reaching age 5 if subject to current age-specific mortality rates. The probability is expressed as a rate per 1,000.

5.5. **Child Mortality Rate** — the probability of dying between the ages of 1 and 5 if subject to current age-specific mortality rates. The probability is expressed as a rate per 1,000.

The infant mortality, under-five mortality, and child mortality rates measure the survival of children which in turn is a reflection of the social, economic, and environmental influences on children's lives. They measure not only health services (both preventive and curative), but more broadly are an index of the situation into which children are born. These mortality rates are, therefore, good overall indicators of development.

5.6. **Adult Mortality Rate** — the probability of dying between the ages of 15 and 60, that is, the percentage of 15-year-olds who will die before their 60th birthdays if subject to current age-specific mortality rates.

5.7. **Maternal Mortality Rate or Ratio (MMR)** — the number of women who die during pregnancy and childbirth from pregnancy-related causes per 100,000 live births.

The MMR is meant to measure the risk of maternal death. Maternal death is the death of a woman while pregnant or within 42 days of the termination of her pregnancy, irrespective of the duration and the site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Ideally, the MMR should be the annual number of maternal deaths per 1,000 pregnant women in the same year. However, it is almost impossible to determine the number of pregnant women so the following definitions are usually used:

- the MMR is the annual number of maternal deaths (as defined above) per 1,000 or 100,000 live births in the same year.
- the MMR is the annual number of maternal deaths per 1,000 or 100,000 women of childbearing age. This is a less preferred definition.

Household demographic and health surveys attempt to measure maternal mortality by asking respondents about survivorship of sisters. This method tends to underestimate maternal mortality. In addition, the measurement of maternal mortality is subject to many types of errors. Even in high-income countries with vital registration systems, misclassification of maternal deaths has been found to lead to serious underestimation.

5.8. **Life Expectancy at Birth** — the average number of years a newborn would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life. Life expectancy at birth is the average number of years of life remaining after parturition. It is normally estimated separately by sex. Estimation requires construction of a life table which is a summary presentation of the experience of a cohort (e.g. a generation of females) over its period of life. In its simplest form, a life table shows the number living ( $l_x$ ) and dying ( $d_x$ ) at age  $x$  out of an original cohort of  $l_0$  persons:

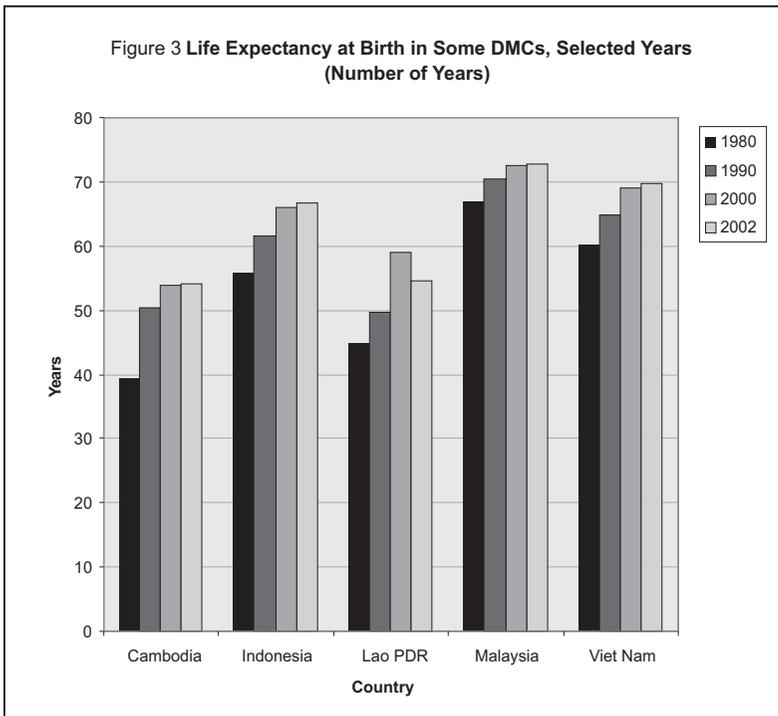
| Age | Living | Dying |
|-----|--------|-------|
| 0   | $l_0$  | $d_0$ |
| 1   | $l_1$  | $d_1$ |
| 2   | $l_2$  | $d_2$ |
| .   | .      | .     |
| .   | .      | .     |
| .   | .      | .     |
| $x$ | $l_x$  | $d_x$ |
| .   | .      | .     |
| .   | .      | .     |
| .   | .      | .     |

The expectation of life at age  $x$ ,  $e_x$ , is the sum of all years lived from age  $x+1$  divided by the number of persons who survive to age  $x$ .

$$e_x = \left( \sum_{t=1}^{\infty} l_{x+t} \right) / l_x$$

Setting  $x = 0$  gives life expectancy at birth,  $e_0 = (1_1 + 1_2 + \dots) / 1_0$

It is not feasible, of course, to track a cohort until all its members die. In practice, life tables are built from estimates of mortality rates by sex and/or age groups obtained from vital registration records, censuses, and surveys. In spite of the availability of sophisticated methods for constructing life tables under different conditions of data availability and quality, the primary determinant of the accuracy of life expectancy estimates is still the accuracy of mortality data. Moreover, the validity of life expectancy estimates of a newborn depends on the assumption that the same mortality rates will prevail throughout his or her life. See Figure 3. for life expectancy at birth in some DMCs, 1980–2002.



Source: ADB: Statistical Data Base System (SDBS).

**5.9. Number of Persons per Hospital Bed** — the population divided by the number of hospital beds available in the country. Unless specified otherwise, hospital beds include those in public and private general and specialized hospitals, medical centers, bedded dispensaries, leprosaria, rehabilitation and physiotherapy centers, establishments for alcoholics, and medical convalescent homes. Old people's homes and establishments for custodial and preventive care are excluded.

- 5.10. **Number of Persons per Physician** — the population divided by the number of physicians. Unless specified otherwise, only practicing physicians who qualified from medical schools at the university level are included.
- 5.11. **Population with Access to an Improved Water Source** — the percentage of the population with reasonable access to an adequate amount of water from a household well or spring, or rainwater collection system. Unimproved sources include vendors, tanker trucks, and unprotected wells and springs. Reasonable access is defined as the availability of at least 20 liters per person per day from a source within 1 kilometer of the dwelling.
- 5.12. **Population with Access to Improved Sanitation Facilities** — the percentage of the population with at least adequate excreta disposal facilities (private or shared, but not public) that can effectively prevent human, animal, and insect contact. Improved facilities range from simple but protected pit latrines to flush toilets with a sewerage connection. To be effective, facilities must be correctly constructed and properly maintained.
- 5.13. **Government Funding of Vaccines** — the percentage of vaccines financed by the national government (including through loans) that are routinely administered in a country to protect children.
- 5.14. **Child Immunization Rate** — the percentage of children under 1 year of age receiving vaccination coverage for four diseases—measles, diphtheria, pertussis (whooping cough), and tetanus (DPT). A child is considered adequately immunized against measles after receiving one dose of vaccine and against DPT after receiving two or three doses depending on the immunization scheme.
- 5.15. **Children Immunized against Measles** — the percentage of children under 1 year of age who received measles vaccine. A child is considered adequately immunized against measles after receiving one dose of vaccine.
- 5.16. **Oral Rehydration Rate** — the percentage of children under 5 with diarrhea in the last two weeks who received increased fluids and continued feeding.
- 5.17. **Number of Children Orphaned by HIV/AIDS** — the number of children under the age of 15 who at the end of the year have lost either their mothers or both parents to AIDS. The number is cumulative and is tracked from the beginning of the epidemic. Some of the children included are, therefore, no longer alive while others are no longer under age 15.
- 5.18. **Adult HIV Prevalence Rate**— the percentage of adults (15–49 years) living with HIV/AIDS at the end of a given period.
- 5.19. **Antenatal Care**— the percentage of women aged 15–49 attended at least once during pregnancy by trained health personnel (doctors, nurses, or midwives).

5.20. **Births Attended by Trained Health Staff** — the percentage of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period, to conduct deliveries, and to care for newborns. Trained health personnel include doctors (specialists or nonspecialists), and/or persons with midwifery skills who can manage normal deliveries and diagnose, manage or refer obstetric complications.

5.21. **Prevalence of Anemia or Iron Deficiency** — the percentage of pregnant women with hemoglobin levels less than 11 grams per deciliter.

5.22. **Pregnant Women Receiving Tetanus Vaccinations** — the percentage of pregnant women who receive two tetanus toxoid injections during their first pregnancies.

5.23. **Incidence of Tuberculosis** — the number of new tuberculosis cases (pulmonary, smear positive, extra-pulmonary) in a given period.

5.24. **DOTS Detection Rate** — the percentage of new infectious tuberculosis cases detected under the directly observed treatment short-course (DOTS) strategy.

5.25. **Public Health Expenditure** — the total of current and capital spending for health purposes from government budgets, external borrowings, and grants (including donations from international agencies and nongovernmental organizations), and social or compulsory health insurance funds.

## Nutrition

5.26. **Low Birth Weight Babies** — newborns weighing less than 2,500 grams in the first hours of life before significant postnatal weight loss has occurred.

5.27. **Prevalence of Child Malnutrition** — the percentage of children under 5 whose weight-for-age and height-for-age ratios are more than two standard deviations below the median for the international reference population aged 0 to 59 months. For children up to 2 years of age, height is measured by recumbent length. For older children, height is measured by stature while standing. The reference population adopted by WHO in 1983 is of children from the United States. There are three indicators of child malnutrition: underweight, stunting, and wasting.

5.28. **Prevalence of underweight children** — the number of underweight children under 5 as a proportion of total population under 5. A child is underweight if his or her weight-for-age ratio is more than two standard

deviations below the median weight-for-age ratio of the healthy reference population. Underweight is severe if the weight-for-age ratio is more than three standard deviations below the median.

5.29. **Prevalence of stunted children** — the number of stunted children under 5 as a proportion of the total population under 5. A child is stunted if his or her height-for-age ratio is more than two standard deviations below the median height-for-age ratio for the healthy reference population.

5.30. **Prevalence of wasted children** — the percentage of wasted children under 5 as a proportion of the total population under 5. A child is wasted if his or her weight-for-height ratio is more than two standard deviations below the median weight-for-height ratio for the healthy reference population.

## Education

5.31. **Adult Literacy Rate** — the percentage of persons aged 15 years and older who can, with understanding, read and write a short, simple statement on their everyday lives.

5.32. **Gross Enrollment Ratio (GER)** — the ratio of total enrollment, regardless of age, in a specific grade level to the population of the age group that officially corresponds to that level of education. The GER is widely used to show the general level of participation in a given level of education. It indicates the capacity of the education system to enroll students of a particular age group. It is used as a substitute indicator to the net enrollment ratio (NER) when data on enrollment by single years of age are not available.

$$GER_h^t = \frac{E_h^t}{P_{h,a}^t} \times 100$$

$GER_h^t$  = Gross enrollment ratio at level of education h in school year t

$E_h^t$  = Enrollment at the level of education h in school year t

$P_{h,a}^t$  = Population in age group a that officially corresponds to the level of education h in school year t

Example: If the entrance age for primary education is 7 years with a duration of 6 years then “a” is 7–12 years.

A high GER generally indicates a high degree of participation whether the pupils belong to the official age group or not. A GER value of 100 percent indicates that a country is, in principle, able to accommodate all of its school-age population, but it does not indicate the proportion already enrolled. The achievement of a GER of 100 percent is therefore a necessary but not sufficient condition for enrolling all eligible children in school. When the GER exceeds 90 percent for a particular level of education, the aggregate number of places for pupils is approaching the number required for universal access of the official age group. However, this is a meaningful interpretation only if one can expect under-aged and over-aged enrollments to decline in the future to free places for pupils from the appropriate age group.

5.33. **Net Enrollment Ratio (NER)** — the ratio of children of official school age (as defined by the national education system) who are enrolled in school to the population of the corresponding official school age. The NER’s maximum is 100 percent.

5.34. **Net Primary School Attendance** — the percentage of children officially of primary school age who attend primary school. These data come from national household surveys. While both attendance and enrollment data should report on children going to primary school, the number of children of primary school age is uncertain in many countries, and this can lead to significant biases in the enrollment ratio.

5.35. **Primary School Entrants Reaching Grade 5** — the percentage of children entering the first grade of primary school who eventually reach grade five.

5.36. **Youth Literacy Rate** — the proportion of people aged 15–24 who can, with understanding, read and write a short, simple statement on everyday life.

5.37. **Ratio of Females to Males in Primary and Secondary Education** — the proportion of girls to boys enrolled at primary and secondary levels in public and private schools. This ratio measures the difference in opportunity for boys and girls to participate in primary and secondary education. A ratio of females to males in primary and secondary education that equals 100 percent signifies that girls and boys participate equally. If the ratio is significantly lower than 100 percent, it suggests that girls have fewer opportunities than boys to participate in primary and secondary education.

5.38. **Ratio of Literate Females to Literate Males** — the number of women aged 15 and over able to read and write relative to the number of men aged 15 and over able to read and write. This indicator seeks to measure gender disparity in adult literacy that is often the result of unequal opportunity for boys and girls to acquire basic literacy skills in primary and secondary school.

## 6. EMPLOYMENT AND MIGRATION

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These concepts and definitions are based on and reproduced from the International Labour Organisation's (ILO), *International Standard Classification of Occupations* and *Yearbook of Labor Statistics* (various editions), and the ILO's *Key Indicators of the Labour Market* (<http://www.ilo.org>) (Copyright ©2003 International Labour Organization).

### Background

To better understand the concepts and definitions in this section, it will be useful to place them in the context of the labor force approach to the formation of labor statistics. This approach breaks the population into various categories and establishes the relationships of these categories with one another as follows:

#### A. Working-age population

##### 1. Economically active population, also called the labor force

###### 1.1 Employed

###### 1.1.1 At work

###### 1.1.2 With a job but not at work

###### 1.2 Unemployed

##### 2. Economically inactive population

#### B. Nonworking-age population sometimes also called dependent population

#### C. Total Population (A + B)

6.1. **Working-Age Population** — in most countries, people between the ages of 15 to 64 inclusive. Some countries use different cut-off years.

6.2. **Economically Active Population** — the population of working age, whether employed or unemployed, who furnish labor during a specified time period for the production of goods and services as defined in the *System of National Accounts*. Another term applied to the economically active population is “labor force.”

6.3. **Economically Inactive Population** — the population of working age that is not supplying labor for productive work. It includes students, disabled and retired persons, persons living entirely on their own means, and persons occupied primarily with domestic duties (housewives). Another term applied to the economically inactive population is “not in the labor force.”

6.4. **Employed Persons** — those defined as “at work” when they work for pay or profit for (usually) at least one hour during a reference period (usually a specified brief period, either 1 week or 1 day) or “with a job but not at work” when they have jobs but are temporarily absent during the specified period because of illness or injury, industrial dispute, vacation, absence with or without leave, or temporary disorganization of work due to bad weather, mechanical breakdown, or other reasons.

Employers and own-account workers are included among the employed and are classified as “at work” or “not at work” on the same basis as other employed persons. Unpaid family workers currently assisting in the operation of a business or a farm are considered employed if they worked for at least one third of the normal working time during the specified period.

6.5. **Unemployed Persons** — those who during the specified period are in the following categories:

- persons available for employment whose contract of employment has been terminated or temporarily suspended and who are without a job and are seeking work for pay or profit;
- persons available for work during the specified period and are seeking work for pay or profit who were never previously employed or whose most recent status was other than that of employee (i.e. former employees, etc.) or who had been in retirement;
- persons without a job and currently available for work who have made arrangements to start a new job at a date subsequent to the specified period;
- persons on temporary or indefinite lay-off without pay.

Over the years, critics have pointed out that these concepts are more appropriate to the highly organized labor markets of industrial countries. Mutually exclusive dichotomies—like the person working for pay or profit or looking for work is economically active, otherwise he is not—can be ambiguous in developing countries. The concept that unemployment implies 0 hours of work coupled with looking for work is relatively less relevant in developing countries typically dominated by rural economies where underemployment is the main problem. It has been observed also that a reference period of 1 week may be too short for the resulting statistics to capture a vivid picture of the often-seasonal economic activities in developing countries. Moreover, people in these countries tend to enter the labor force at a much younger age than in developed countries.

In their efforts to obtain meaningful statistics, many DMCs have adapted the general framework of the labor force approach but have injected concepts and definitions relevant to their own realities and needs. The result is that no two DMCs have strictly comparable labor force statistics owing to differences in their specifications of working-age population, minimum number of hours worked to be considered employed, reference period, and treatment of temporarily laid-off farm workers, among others.

6.6. **Status in Employment** — refers to three categories of the total population employed. These are: (a) wage and salaried workers or employees; (b) self-employed workers; and (c) unpaid family workers (also known as contributing family workers). These three groups of workers are presented as percentages of the total population employed for both sexes and for males and females separately. The subcategories of the self-employed group—self-employed workers with employees (i.e. employers) and self-employed workers without employees (i.e. own-account workers)—are not available for all economies but are presented wherever possible.

6.7. **Employment by Sector** — refers to employment by economic activity classified as follows by the International Standard of Industrial Classification (ISIC): (i) agriculture, (ii) mining and quarrying, (iii) manufacturing, (iv) electricity, gas, and water, (v) construction, (vi) wholesale and retail trade, (vii) transportation and communication, (viii) financing, insurance, real estate, and business services, and (ix) community, social, and personal services.

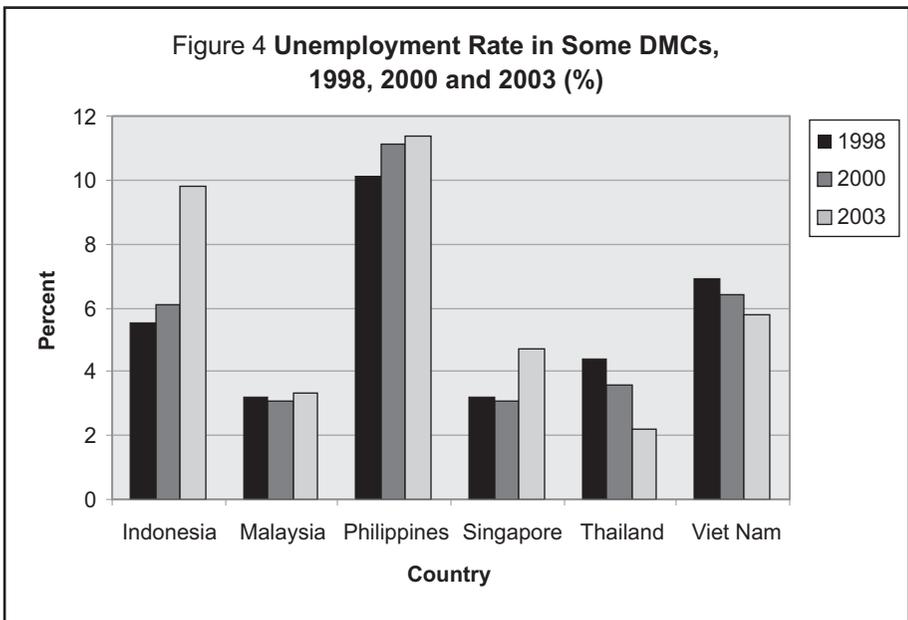
6.8. **Part-Time Workers** — those whose working hours total less than full time. Because there is no agreed international definition as to the minimum number of hours that constitute full-time employment, the dividing line is determined either on an economy-by-economy basis or by use of special estimates. Two measures are calculated for this indicator: total part-time employment as a proportion of total employment, sometimes referred to as the part-time employment rate; and the share of the part-time workforce that comprises women.

6.9. **Hours of Work** — the indicator for hours of work has three distinct elements. The first relates to those employed persons who usually work a “short” week (those whose usual hours of work are below one half of the usual weekly hours for most employed persons, in this case 20 hours per week or fewer). The second relates to those who usually work an “excessive” week (those whose usual hours of work are above the usual weekly hours for most employed persons, in this case 40 hours per week). The third relates to the average number of hours worked per person per year. The data assembled for this indicator are generally from household surveys and population censuses and whenever possible are presented separately for men and women. The coverage generally includes all workers.

6.10. **Labor Force Participation Rate (LFPR)** — the percentage of the labor force (LF) to the working age population (WAP), that is  $LFPR = LF/WAP \times 100$ . It is a measure of the extent an economy's working-age population is economically active. It provides an indication of the relative size of the supply of labor that is available for the production of goods and services in the economy.

6.11. **Employment-to-Population Ratio** — the proportion of an economy's working-age population that is employed. This ratio describes the ability of an economy to create jobs; for many countries it ranks in importance with the unemployment rate. Although a high overall ratio is typically considered "good," the indicator alone does not provide information on labor market problems such as low earnings, underemployment, poor working conditions, or the existence of a large informal sector. Therefore, it is considered appropriate when evaluating economy-specific labor market policies to review the indicators collectively.

6.12. **Unemployment Rate** — the percentage of the labor force that is unemployed (see 6.5). This is probably the best-known labor market measure. Together with the employment rate, it provides the broadest indicator of the status of the country's labor market. See Figure 4 for an illustration.



Source: ADB, *Asian Development Outlook 2004*.

6.13. **Informal Sector Employment Rate** — the number of persons employed in the informal sector as a percentage of the total number of employed persons. This rate is intended to show the proportion of the labor force that is engaged in small-scale, low-productivity, labor-intensive economic activities as distinguished from the proportion of those employed in larger-scale, formal enterprises.

6.14. **Youth Unemployment** — the number unemployed persons typically aged 15 to 24. This is often expressed in four distinct ways: (a) youth unemployment rate (unemployed youth as a percentage of the youth labor force); (b) ratio of the youth unemployment rate to the adult unemployment rate; (c) youth unemployment as a proportion of total unemployment; and (d) youth unemployment as a proportion of the youth population.

6.15. **Migration Rate** — the number of migrants during a year (or a specified period of time) divided by the population exposed to migration (usually the population of midyear).

## 7. POVERTY AND INEQUALITY

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Though no single international agency has assumed responsibility for prescribing guidelines and definitions for measures of poverty, the World Bank's *World Development Report* and the United Nations Development Programme's *Human Development Report* use concepts and definitions pertaining to poverty, its measurement and interpretation. This section draws from these sources; other sources are cited in the footnotes.

### Poverty

Poverty is the deprivation of essential goods, services, and opportunities to which every human being is entitled. Underlying this deprivation is lack of income and the inability to take advantage of opportunities for advancement. Poor people in general lack daily sustenance, suffer from poor health and inadequate education, and do not have the ability to participate meaningfully in making decisions that affect their lives. Poverty is thus measured in terms of food and nutrition, basic education, health care, water and sanitation, political participation, and income and wages.

The alleviation if not eradication of poverty represents one of the most serious challenges facing many developing countries. The issue is more complex than is ordinarily supposed. While creating employment must remain a fundamental response, primary health care, basic education, and community development must be indispensable components of any poverty eradication program.

Planning and implementing effective poverty alleviation and poverty reduction programs require the mobilization of vast amounts of resources, including material and financial resources and scientific information. It is in this context that there is an urgent need for quantitative information identifying the poor and where they live. Providing relevant statistics to national policy makers and to the international community that supports poverty alleviation and poverty reduction programs is critical to their success in individual countries and worldwide.

7.1. **Absolute Poverty** — the level at which the minimum requirements for survival are not met. This is a fixed measure expressed in terms of a minimum caloric requirement and essential non-food components. Absolute poverty is often used interchangeably with extreme poverty; however, the meaning of the latter may vary depending on local interpretations or calculations.

7.2. **Relative Poverty** — usually refers to those individuals or households at the lower end of the household income distribution scale relative to those at the higher end (e.g. those at the bottom 30 percent compared to those at the top

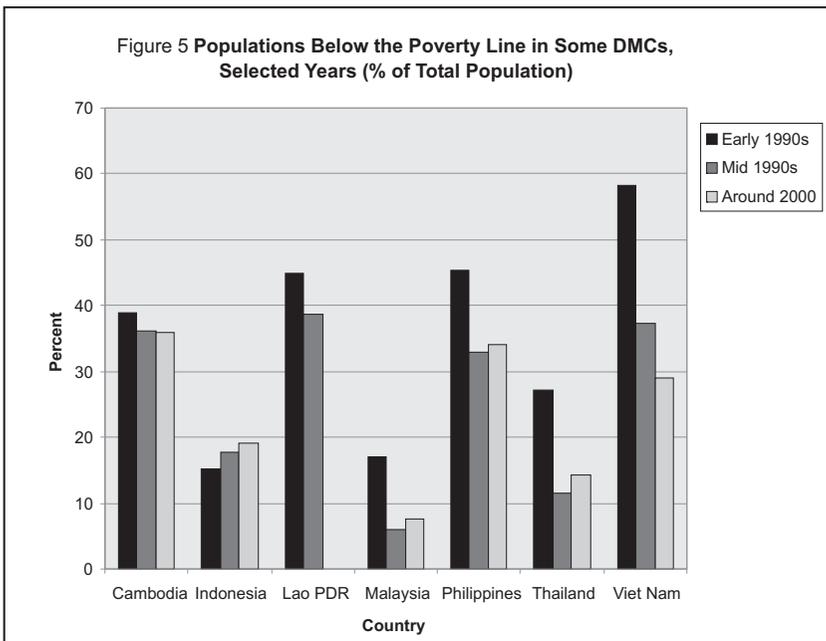
30 percent). The comparison is normally made in terms of average expenditure, average consumption, or average income. The measure can differ across countries or across time for a particular country.

7.3. **Human Poverty** — the lack of essential human requirements and abilities, notably nutrition and literacy.

7.4. **Income Poverty** — the lack of sufficient income to meet minimum consumption needs.

7.5. **Poverty Line** — the income necessary to purchase the minimum requirement of caloric intake and essential non-food elements for bare survival. In practice, the most broadly used standard for defining the poverty line is minimum consumption of food and other essentials, measured by consumption expenditure. See Figure 5 for an illustration of this point in some DMCs.

The poverty line may vary from country to country depending on income and cultural values. Given the variety of definitions of the basket of goods and services representing the consumption of households in poverty, the resulting head counts of the poor are not directly comparable across countries and cannot directly be aggregated to provide a regional estimate. The World Bank has adopted a more global approach for regional/international aggregation. It has set a standard under which the population subsisting on less than \$1 per day (at 1985 purchasing power parity) is below the poverty line.



Source: ADB Poverty and Development Indicators Database.

The figure of \$1 a day was originally chosen because it was typical of the poverty lines in low-income countries. Recently, it was changed to \$1.08 a day. In some instances, a much more austere poverty line that generally includes only food items is applied to derive the extreme poverty rate.

Although the incidence of poverty is a key indicator, there may be a need to complement it with other measures that show its depth and severity. This is because the incidence of poverty may decline without any improvement for the poorest, for example, if those lifted above poverty are those closest to the poverty line rather than those farthest away.

Let  $Y = (Y_1, Y_2, \dots, Y_N)$  be a vector of household/individual incomes in increasing order where  $N$  = the total number of households/individuals. If  $Z > 0$  is the predetermined poverty line, then the number ( $Q$ ) of poor households/individuals having income no greater than  $Z$  can be derived.

**7.6. Income or Poverty Gap** — the aggregate poverty gap ( $T$ ) representing the aggregate shortfall of all the poor from the specified poverty line is given by:

$$T = \sum_{i=1}^Q g_i = \sum_{i=1}^Q (Z - Y_i) = Q(Z - Y_p) \text{ where } Y_p \text{ is the average income of the}$$

poor.

**7.7. Income or Poverty Gap Ratio** — the income gap ratio ( $I$ ), which denotes the shortfall of the average income of poor people from the poverty line as a proportion of the poverty line is given by:

$$I = \left(\frac{1}{Q}\right) \sum_{i=1}^Q \frac{(Z - Y_i)}{Z} = \frac{T}{QZ} = \frac{(Z - Y_p)}{Z} \text{ (see Foster, Greer, Thorbecke,}$$

1984)<sup>3</sup>

(Note: There are other normalization procedures of the aggregate poverty gap ( $T$ ) to derive the income gap ratio ( $I$ ) such as  $I = T/NZ$  as proposed by Anand, 1977 and  $I = T/NY_m$  as proposed by Sen, 1976 where  $Y_m$  is the average income).<sup>4</sup>

**7.8. Foster, Greer and Thorbecke (FGT) Poverty Measure (1984)** — the FGT poverty measure  $P_\alpha$  is defined by:

$$P_\alpha = \left(\frac{1}{N}\right) \sum_{i=1}^Q \left(\frac{g_i}{Z}\right)^\alpha = \left(\frac{1}{N}\right) \sum_{i=1}^Q \left[\frac{Z - Y_i}{Z}\right]^\alpha$$

3 Foster, J.E., Greer, J. and Thorbecke, E. 1984. "A Class of Decomposable Poverty Measures", *Econometrica*, Vol. 52.

4 Anand, S. 1977. "Aspects of Poverty in Malaysia", *Review of Income and Wealth*, Series 23, No. 1; and Sen, A.K. 1976. "Poverty: An Ordinal Approach to Movement", *Econometrica*, Vol. 44, No. 2.

$\alpha$  is the parameter of inequality aversion. Higher values of  $\alpha$  would give more weight to the extreme poor than to those groups closer to the poverty line  $Z$ .

This FGT measure is additively decomposable with population share as the weight given by the following:

$$P_\alpha = \sum_{j=1}^k \left( \frac{N_j}{N} \right) P_j = \sum_{j=1}^k G_j, \quad j = 1, 2, 3, \dots, k. \quad k = \text{number of the groups}$$

where  $G_j$  is  $\left( \frac{N_j}{N} \right) P_j$  which could be interpreted as the total contribution of the  $j^{\text{th}}$  group to overall poverty, while  $(G_j/P_\alpha) \times 100$  is the percentage contribution of group  $j$ .

7.8.1. **Poverty incidence or head-count ratio** — refers to the proportion of households/individuals who live below the poverty line measuring the magnitude of poverty denoted by HCR or simply H.

H is equal to FGT measure  $P_\alpha$  with  $\alpha = 0$ , that is:

$$H = P_0 = \frac{1}{N} \sum_{i=1}^Q \left[ \frac{Z - Y_i}{Z} \right]^0 = \left( \frac{1}{N} \right) \sum_{i=1}^Q (1) = \frac{Q}{N}$$

As stated above, this index is additively decomposable allowing for investigation of the relative importance of a specific group of people on the overall incidence of poverty and the factors governing changes in poverty over time. The decomposition formula is as follows:

$H = \sum_{j=1}^k \left( \frac{N_j}{N} \right) H_j$  where  $j = 1, 2, 3, \dots, k$ .  $k =$  number of the groups, and  $H_j$  is the poverty incidence of the  $j^{\text{th}}$  group.

7.8.2. **Poverty gap index (PG)** — measures both the relative magnitude of poverty (the percentage of poor people or poverty incidence) and the depth of poverty (how poor the poor are measured by poverty gap ratio). It is a combined measure of the incidence of poverty (H) and the income or poverty gap ratio (I), i.e.

$$PG = T/(NZ) = (Q/N) (T/QZ) = H \times I$$

PG is the same as the FGT measure  $P_\alpha$  with  $\alpha = 1$ , i.e.,

$$PG = P_1 = \frac{1}{N} \sum_{i=1}^Q \left[ \frac{Z - Y_i}{Z} \right]^1 = \frac{1}{NZ} \sum_{i=1}^Q (Z - Y_i) = \frac{T}{NZ}$$

When  $\alpha = 1$ , the FGT measure  $P_1$  weights each poor person by his/her distance from the poverty line (the income shortfall or the poverty gap).

This index is similar to the normalized aggregate poverty gap (or income or poverty gap ratio) of  $\frac{T}{NZ}$  as proposed by Anand (1977), which is the mean proportionate poverty gap across the whole population, indicating the aggregate poverty gap as the fraction of the total income needed to support all people living at the poverty line.

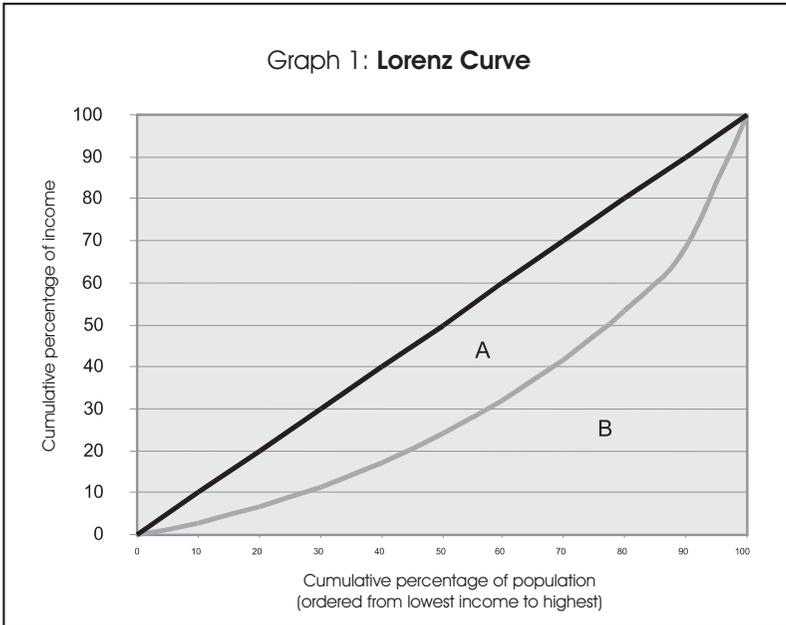
7.8.3. **Poverty severity index (PS)** — also known as the squared poverty gap index, refers to the average value of the square of the depth of poverty. This is the FGT measure  $P_\alpha$  with  $\alpha = 2$ . The poverty severity index gives more weight to very poor than to less poor, i.e. the poorer people contribute relatively more to the index. When  $\alpha = 2$ , the weight given to each poor person is proportional to the square of the income shortfall (squared poverty gap). While this measure has clear advantages for some purposes such as comparing policies that aim to reach the poorest, it is not easy to interpret.

## Inequality<sup>5</sup>

Inequality is part of broader analyses of poverty and welfare because where there is inequality, those at the bottom of the distribution tend to be poor and their welfare suffers. Some poverty indices incorporate inequality in their definitions. Sen's poverty measure contains the Gini coefficient (see 7.10) [ $H \{I + (1 - I) G_p\}$ ], where  $G_p$  is the Gini coefficient of the income distribution among the poor. The FGT measure  $P_\alpha$  with parameter  $\alpha = 2$  also takes into account the distribution of incomes below the poverty line.

7.9. **Lorenz Curve** — maps cumulative income (or expenditure) on the vertical axis against the distribution of the population on the horizontal axis. If each individual had the same income, there would be total equality and the income distribution curve would be a diagonal line across the graph. On the other hand, if only one individual received all the income and the rest received none, there would be total inequality and the income distribution curve would follow the horizontal axis for population and the vertical axis for income. How far the curve deviates from a straight diagonal line indicates the extent of inequality of income distribution (see Graph 1).

5 Fields (2001) differentiates absolute inequality from relative inequality. Both measure fundamentally different concepts. The measures presented here refer to relative inequality. For fuller discussion, see Gary S. Fields, 2001. *Distribution and Development*, MIT Press, New York.



In the graph, the straight diagonal line marks the line of perfect distribution while the curved line is the Lorenz Curve that marks the actual distribution.

**7.10. Gini Coefficient** — the most commonly used indicator of inequality. For the reason, see chapter 2 of Gary S. Fields 2001. *Distribution and Development*. MIT Press. Massachussets).

$$Gini = \frac{1}{2n^2 y} \sum_{i=1}^n \sum_{j=1}^n |y_i - y_j| = \frac{-(n+1)}{n} + \frac{2}{n^2 y} \sum_{i=1}^n i y_i$$

Recipients/individuals are ordered from lowest income to highest.

$y_i$  = income of recipient/individual  $i$ .

$y$  = average income.

$n$  = total number of recipients/individuals.

Alternatively, using the Lorenz Curve, the Gini coefficient can be calculated as the area A divided by the sum of areas A and B. If income is distributed completely equally, then the Gini coefficient is zero; if only one individual owns all income, it is one. The Gini coefficient ranges from 0 to 1.

**7.11. The Income Share of the Bottom 40 Percent of the Population/Households** — an income distribution is said to be of high, moderate, or low inequality depending on the share of the bottom 40 percent of the population/

households. If their share is less than 12 percent, the inequality is considered to be high; between 12 and 17 percent it is considered moderate; and if more than 17 percent, inequality is considered low.

**7.12. The Ratio of the Income Share of High Quintiles to that of Low Quintiles** — another commonly used measure of inequality. It is the ratio of the income share of the highest (richest) 20 percent of the population to the income share of the lowest (poorest) 20 percent of the population. It is equal to the ratio of the average income of these two population groups.

**7.13. Theil Index** — Theil proposed two measures of inequality: the mean log deviation  $GE(0)$  and the Theil Index  $GE(1)$

$$GE(0) = \frac{1}{n} \sum_{i=1}^n \log \frac{\bar{y}}{y_i} \qquad GE(1) = \frac{1}{n} \sum_{i=1}^n \frac{y_i}{\bar{y}} \log \frac{y_i}{\bar{y}}$$

where  $n$  is the number of individuals,  $y_i$  is the income of individual  $i$ ,  $i = 1, 2, \dots, n$ , and  $\bar{y} = (1/n) \sum y_i$ , the arithmetic mean income.

**7.14. Atkinson Index** — The Atkinson Index is a measure of inequality that has the general formula:

$$A_\epsilon = 1 - \left[ \frac{1}{n} \sum_{i=1}^n \left[ \frac{y_i}{\bar{y}} \right]^{1-\epsilon} \right]^{\frac{1}{1-\epsilon}}$$

where  $\epsilon$  is an inequality aversion parameter,  $0 < \epsilon < \infty$ : the higher the value of  $\epsilon$  the more society is concerned about inequality. The Atkinson class of measures ranges from 0 to 1, with zero representing no inequality. The Atkinson indices satisfy the five requirements of the axiomatic approach.<sup>6</sup>

There are many other ways of measuring inequality all of which have some intuitive or mathematical appeal. However, many apparently sensible measures behave in perverse fashions. For example, variance, which must be one of the simplest measures of inequality, is not independent of income scale. Simply doubling all incomes would register a quadrupling of the estimate of income inequality. Most people would argue that this is not a desirable property of an inequality measure, so it seems appropriate to confine the discussion to measures that conform to a set of axioms.

6 The five requirements are the Pigou-Dalton Transfer Principle, Income Scale Independence, Principle of Population, Anonymity/Symmetry, and Decomposability. There is a vast amount of literature on this inequality measurement, e.g. Fields, G. S. (2001). *Distribution and Development*, MIT Press, Massachusetts and New York. Sen, A. K. (1973). *On Economic Inequality*. Clarendon Press, Oxford.

## Composite Indices

7.15. **Physical Quality of Life Index (PQLI)** — measures the performance of a country in improving the quality of life of its population in terms of their longevity and education. The higher or lower the index, the richer or poorer the quality of life of the country's people. The PQLI is a composite of three indicators: life expectancy at age 1, the infant mortality rate (IMR), and the adult literacy rate. It is computed by the following formula:

$$\text{PQLI} = [\text{Index of life expectancy at age 1} + \text{Index of IMR} + \text{Index of adult literacy}]/3$$

where:

$$\text{Index of life expectancy at age 1} = (\text{life expectancy at age one} - 38)/39$$

$$\text{Index of IMR} = (229 - \text{IMR per 1,000})/2.22$$

$$\text{Index of adult literacy} = \text{adult literacy rate.}$$

7.16. **Human Development Index (HDI)** — measures the average achievement of a country in basic human capabilities. The HDI for a country is higher or lower depending on the extent of the country's achievement of three goals. It is a composite of three basic indicators of human development: longevity, knowledge, and standard of living. Longevity is measured by life expectancy. Knowledge is measured by a combination of adult literacy (two-thirds weight) and mean years of schooling (one-third weight). Standard of living is measured by purchasing power parity (PPP) based on real GDP per capita adjusted for the local cost of living. The HDI sets a minimum and a maximum value for each dimension and then measures actual performance values against them. The formula is

$$\text{Index} = (\text{actual value} - \text{minimum value})/(\text{maximum value} - \text{minimum value}).$$

For literacy, the minimum value is 0 percent while the maximum value is 100 percent. For a country whose literacy rate is 75 percent, the literacy index would be 0.75. Similarly, the minimum for life expectancy is 25 years and the maximum 85 years, so the longevity component for a country where life expectancy is 55 years would be 0.5. ( $= \{55 - 25\}/\{85 - 25\}$ ). For income the minimum is \$100 (PPP) and the maximum is \$40,000 (PPP). Income above the average world income is adjusted using a progressively higher discount rate. The scores for the three dimensions are then averaged in an overall index.

Criticisms have been leveled at the HDI. One is that equal weight is assigned to the three variables. This is considered to be somewhat arbitrary. Furthermore, the concept of human development is much broader than the HDI. It is impossible to come up with a quantitative measure because many vital dimensions of human development are not quantifiable. However, this simple, composite

measure can draw attention to the issues quite effectively though it is not a substitute for fuller treatment of the serious challenges human development presents.

7.17. **Gender-Related Development Index (GDI)** — measures the same variables as the HDI (longevity, knowledge, and standard of living). The difference is that the GDI adjusts the average achievement of each country in accordance with the disparity in achievement between men and women thus drawing attention to gender issues. A comparison of country ranking by HDI and GDI shows the extent of gender discrepancies or gaps.

7.18. **Human Poverty Index (HPI)** — the HPI 1 (Human Poverty Index for developing countries) measures deprivations in the same three aspects of human development as the HDI (longevity, knowledge, and standard of living). Deprivations in longevity are measured by the percentage of newborns not expected to survive to age 40. Deprivations in knowledge are measured by the percentage of adults who are illiterate. Deprivations in standard of living are measured by three variables: the percentage of people without access to safe water, the percentage of people without access to health services, and the percentage of moderately and severely underweight children below the age of 5. The HPI 2 (Human Poverty Index for industrialized countries) adds a fourth aspect of development: social exclusion.

## 8. THE MILLENNIUM DEVELOPMENT GOALS

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In the year 2000, the United Nations set 8 Millennium Development goals with 18 targets and 48 indicators to be achieved by member countries within the time frames indicated. The indicators are to serve as landmarks by which progress towards the attainment of the goals is to be monitored. The goals, targets, and indicators (numbered) are shown below. Sources used in the section are the Web sites of the World Bank and the UN and the World Bank's *World Development Indicators 2000*.

### Goal 1: Eradicate extreme poverty and hunger

**Target 1** Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day

- 1) *Proportion of population below \$1 a day*
- 2) *Poverty gap index (incidence x depth of poverty)*
- 3) *Share of poorest quintile in national consumption*

**Target 2** Halve, between 1990 and 2015, the proportion of people who suffer from hunger

- 4) *Prevalence of underweight in children (under 5 years of age)*
- 5) *Proportion of population below minimum level of dietary energy consumption*

### Goal 2: Achieve universal primary education

**Target 3** Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

- 6) *Net enrollment ratio in primary education*
- 7) *Proportion of pupils starting grade 1 who reach grade 5*
- 8) *Literacy rate of 15 to 24-year-olds*

### Goal 3: Promote gender equality and empower women

**Target 4** Eliminate gender disparity in primary and secondary education preferably by 2005 and in all levels of education no later than 2015

- 9) *Ratio of girls to boys in primary, secondary, and tertiary education*
- 10) *Ratio of literate females to males among 15- to 24-year-olds*
- 11) *Share of women in wage employment in the nonagricultural sector*
- 12) *Proportion of seats held by women in national parliament*

**Goal 4: Reduce child mortality**

**Target 5** Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate

- 13) *Under-five mortality rate*
- 14) *Infant mortality rate*
- 15) *Proportion of one-year-old children immunized against measles*

**Goal 5: Improve maternal health**

**Target 6** Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio

- 16) *Maternal mortality ratio*
- 17) *Proportion of births attended by skilled health personnel*

**Goal 6: Combat HIV/AIDS, malaria, and other diseases**

**Target 7** Have halted by 2015 and begun to reverse the spread of HIV/AIDS

- 18) *HIV prevalence among 15- to 24-year-old pregnant women*
- 19) *Condom use rate of the contraceptive prevalence rate*
- 20) *Number of children orphaned by HIV/AIDS*

**Target 8** Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

- 21) *Prevalence and death rates associated with malaria*
- 22) *Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures*
- 23) *Prevalence and death rates associated with tuberculosis*
- 24) *Proportion of tuberculosis cases detected and cured under directly observed treatment short course*

**Goal 7: Ensure environmental sustainability**

**Target 9** Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources

- 25) *Proportion of land area covered by forest*
- 26) *Land area protected to maintain biological diversity*
- 27) *Energy use per unit of GDP*
- 28) *Carbon dioxide emissions (per capita)*
- 29) *Proportion of population using solid fuels*

**Target 10** Halve, by 2015, the proportion of people without sustainable access to safe drinking water

- 30) *Proportion of population with sustainable access to an improved water source*

**Target 11** Have achieved, by 2020, a significant improvement in the lives of at least 100 million slum dwellers

- 31) *Proportion of population with access to improved sanitation*  
 32) *Proportion of population with access to secure tenure [Urban/rural desegregation of several of the above indicators may be relevant for monitoring improvement in the lives of slum dwellers.]*

### **Goal 8: Develop a global partnership for development**

*Some of the indicators listed below will be monitored separately for the least developed countries, Africa, landlocked countries, and small island developing states.*

**Target 12** Develop further an open, rule-based, predictable, nondiscriminatory trading and financial system (includes a commitment to good governance, development, and poverty reduction—both nationally and internationally)

#### **Target 13 Official development assistance (ODA)**

Address the special needs of the least developed countries (includes tariff- and quota-free access for exports, enhanced program of debt relief for highly indebted poor countries (HIPC) and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction)

*Net ODA as a percentage of Development Assistance Committee (DAC) donors' gross national income*

- 33) *Proportion of ODA to basic social services (basic education, primary health care, nutrition, safe water, and sanitation)*  
 34) *Proportion of ODA that is untied*  
 35) *Proportion of ODA for environment in small island developing states*  
 36) *Proportion of ODA for the transport sector in landlocked countries*

#### **Target 14 Market access**

Address the special needs of landlocked countries and small island developing states (through the Barbados Program and 22nd General Assembly provisions)

- 37) *Proportion of exports (by value, excluding arms) admitted free of duties and quotas*  
 38) *Average tariffs and quotas on agricultural products and textiles and clothing*  
 39) *Domestic and export agricultural subsidies in OECD countries*  
 40) *Proportion of ODA provided to help build trade capacity*

**Target 15 Debt sustainability**

Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term

- 41) *Proportion of official bilateral HIPC debt canceled*
- 42) *Debt service as a percentage of exports of goods and services*
- 43) *Proportion of ODA provided as debt relief*
- 44) *Number of countries reaching HIPC decision and completion points*

**Target 16 Other**

In cooperation with developing countries, develop and implement strategies for decent and productive work for youth.

- 45) *Unemployment rate of 15- to 24-year-olds*

**Target 17**

In cooperation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries.

- 46) *Proportion of population with access to affordable, essential drugs on a sustainable basis*

**Target 18**

In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.

- 47) *Telephone lines per 1,000 people*
- 48) *Personal computers per 1,000 people*

**THE 48 INDICATORS<sup>7</sup>****Goal 1: Eradicate Extreme Poverty and Hunger**

8.1. **Population below \$1 a Day** — the population living on less than \$1.08 a day at 1993 international prices (equivalent to \$1 in 1985 prices, adjusted for purchasing power parity) as a percentage of the whole population.

8.2. **Poverty Gap Index at \$1 a Day** — the mean shortfall from the poverty line (where the nonpoor are counted as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.

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7 See also definitions in Chapter 5. As already noted there is an element of repetition in the definitions put forward here and those in Chapter 5.

8.3. **Percentage Share of Income or Consumption Held by Poorest 20%** — the share that accrues to the lowest quintile of the population.

8.4. **Prevalence of Underweight Children** — the percentage of children under 5 whose weight-for-age ratio is more than two standard deviations below the median for the international reference population aged 0 to 59 months. The reference population adopted by the WHO in 1983 is children in the United States.

8.5. **Proportion of Population below Minimum Level of Dietary Energy Consumption** — the population consuming less than the minimum level of dietary energy consumption as a percentage of the total population.

## **Goal 2: Achieve Universal Primary Education**

8.6. **Net Primary Enrollment Ratio** — the ratio of children of official school age (as defined by the national education system) who are enrolled in primary school to the population of the primary school age children. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music.

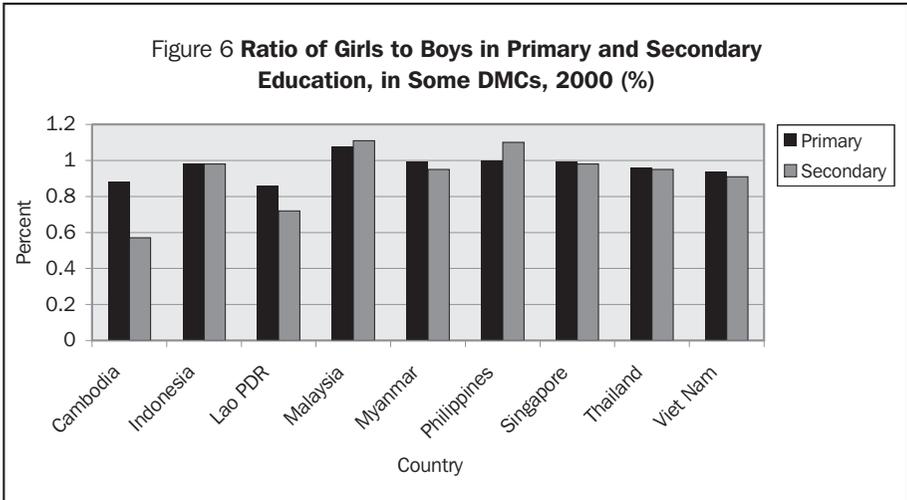
8.7. **Percentage of Cohort Reaching Grade 5** — the number of children in an age group enrolled in primary school who reach grade 5 divided by the total number of children in that age group who initially enrolled in school.

8.8. **Youth Literacy Rate** — the percentage of people aged 15–24 who can, with understanding, read and write a short, simple statement on everyday life.

## **Goal 3: Promote Gender Equality and Empower Women**

8.9. **Ratio of Girls to Boys in Primary and Secondary Education** — the number of girls relative to the number of boys enrolled at primary and secondary levels in public and private schools. Figure 6 on the next page describes the situation in some DMCs in 2000.

8.10. **Ratio of Young Literate Females to Males** — the number of women aged 15–24 who can, with understanding, read and write a short, simple statement on everyday life relative to the number of men aged 15–24 who can do so.



Source: ADB, *Key Indicators 2003*.

**8.11. Share of Women to Men in Wage Employment in the Nonagricultural Sector** — the number of female workers in the nonagricultural sector (industry and services) expressed as a percentage of the total number of workers in that sector. Industry includes mining and quarrying (including oil production); manufacturing; construction; and electricity, gas, and water. The term corresponds to divisions 2–5 (ISIC revision 2). Services include wholesale and retail trade; restaurants and hotels; transport, storage, and communications; financing, insurance, real estate, and business services; and community, social, and personal services. The term corresponds to divisions 6–9 (ISIC revision 2).

**8.12. Proportion of Seats Held by Women in National Parliament** — the seats held by women in national legislative assemblies as a percentage of all seats. The number of seats refers to those of both elected and appointed members.

#### **Goal 4: Reduce Child Mortality**

**8.13. Under-Five Mortality Rate** — the probability that a newborn baby will die before reaching age 5 if subject to current age-specific mortality rates. The probability is expressed as a rate per 1,000.

**8.14. Infant Mortality Rate** — the number of infants who die before reaching 1 year of age per 1,000 live births in a given year.

**8.15. Children Immunized against Measles** — the number of children under 1 year of age who received measles vaccine. A child is considered adequately immunized against measles after receiving one dose of vaccine.

## Goal 5: Improve Maternal Health

8.16. **Maternal Mortality Ratio** — the number of women who die from pregnancy related causes from during pregnancy and childbirth per 100,000 live births.

8.17. **Births Attended by Trained Health Staff** — the number of deliveries attended by personnel trained to give the necessary supervision, care, and advice to women during pregnancy, labor, and the postpartum period, to conduct deliveries on their own, and to care for newborns as a percentage of all deliveries.

## Goal 6: Combat HIV/AIDS, Malaria, and Other Diseases

8.18. **Prevalence of HIV Pregnant Women** — the percentage of pregnant women aged 15–24 who are infected with HIV.

8.19. **Contraceptive Prevalence Rate** — the percentage of women who are practicing, or whose sexual partners are practicing, any form of contraception. It is measured for married women, ages 15–49 only.

8.20. **Number of Children Orphaned by HIV/AIDS** — the estimated number of children at the end of the year who have lost their mothers or both parents to AIDS before age 15 since the epidemic began. Some of the orphaned children included in this cumulative total are no longer alive; others are no longer under age 15.

8.21. **Prevalence of Death Associated with Malaria** — the percentage of persons dying from malaria.

8.22. **Proportion of Population in Malaria-Risk Areas using Effective Malaria Prevention and Treatment Measures** — the population in malaria-risk areas using prevention and treatment divided by the total population in these areas.

8.23. **Prevalence of Death Associated with Tuberculosis** — the percentage of people dying from tuberculosis.

8.24. **Proportion of TB Cases Detected and Cured** — the number of people infected with tuberculosis detected and cured under a government treatment program, divided by the total population infected with tuberculosis.

## Goal 7: Ensure Environmental Sustainability

8.25. **Proportion of Land Area Covered by Forest** — the land area under natural or planted stands of trees, whether productive or not, divided by the total land area.

8.26. **Proportion of Nationally Protected Areas** — areas with limited public access of at least 1,000 hectares that are designated as national parks, natural monuments, nature reserves or wildlife sanctuaries, protected landscapes and seascapes, or scientific reserves as a percentage of total land area.

8.27. **Gross Domestic Product per Unit of Energy Use** — the purchasing power parity of GDP per kilogram of oil equivalent of commercial energy use.<sup>8</sup>

8.28. **Carbon Dioxide Emissions per Capita** — the quantity of carbon dioxide emissions from the burning of fossil fuels and the manufacture of cement, divided by the total population. This includes carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.

8.29. **Proportion of the Population using Solid Fuels** — the number of people using solid or biomass fuels for cooking and heating divided by the total population. Solid fuel is any material derived from plants or animals that is deliberately burnt by humans, e.g. wood, dung, agricultural residues, or coal.

8.30. **Access to an Improved Water Source** — the percentage of the population with reasonable access to an adequate amount of water from a source such as a household connection, public standpipe, borehole, protected well or spring, or rainwater collection system. Unimproved sources include vendors, tanker trucks, and unprotected wells and springs. Reasonable access is defined as the availability of at least 20 liters a person a day from a source within one kilometer of the dwelling.

8.31. **Access to Improved Sanitation Facilities** — the percentage of the population with at least adequate excreta disposal facilities (private or shared, but not public) that can effectively prevent human, animal, and insect contact. Improved facilities range from simple but protected pit latrines to flush toilets with a sewerage connection. To be effective, facilities must be correctly constructed and properly maintained.

8.32. **Proportion of People with Access to Secure Tenure** — the percentage of people who own or who have a good chance to own the land they occupy.

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8 Commercial energy use refers to apparent consumption, which is equal to indigenous production plus imports and stock changes, minus exports and fuels supplied to ships and aircraft engaged in international transport.

## Goal 8: Develop a Global Partnership for Development

8.33. **Proportion of Official Development Assistance (ODA)<sup>9</sup> to Basic Social Services** — aid reported by Development Assistance Committee (DAC) donors for basic health, education, nutrition, and water and sanitation services as a percentage of all aid.

8.34. **Proportion of Untied Official Development Assistance** — the share of the total amount of development assistance that is not subject to donor restrictions on procurement sources.

8.35. **Proportion of Official Development Assistance for Environment in Small Island Developing States** — the share of the total amount of development assistance that is allocated to environmental protection in these countries.

8.36. **Proportion of Official Development Assistance for the Transport Sector in Landlocked Countries** — the share of the total amount of development assistance allocated to the transport sector in these countries.

8.37. **Proportion of Exports Admitted Free of Duties and Quotas** — the value of exports of goods (excluding arms) received from developing countries and admitted without tariffs as a share of total exports from developing countries.

8.38. **Simple Mean Tariff** — the unweighted average of the tariff rates applied to all products subject to tariffs. This includes agricultural products comprising plant and animal products including tree crops but excluding timber and fish products and textiles and clothing comprising natural and man-made fibers and fabrics and articles of clothing made from them.

8.39. **Total Support for Agriculture** — the value of subsidies to the agricultural sector.

8.40. **Proportion of Official Development Assistance for the Building of Trade Capacity** — the share of the total amount of development assistance allocated to develop export and trade-oriented industries.

8.41. **Proportion of Cancelled Official, Bilateral Debt of Highly Indebted Poor Countries** — the amount of cancelled bilateral debt of these countries as a fraction of the total.

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9 **Net Official Development Assistance** consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of DAC, by multilateral institutions, and by certain Arab countries to promote economic development and welfare in recipient economies listed as developing by DAC. Loans with a grant element of at least 25 percent (calculated at a rate of discount of 10 percent) are included in ODA, as are technical cooperation and assistance.

8.42. **Debt Service as a Percentage of Export of Goods and Services** — payments for interest and amortization of the principal of external debt as a percentage of the receipts from the export of goods and services.

8.43. **Proportion of Official Development Assistance Provided as Debt-Relief** — the aid from Development Assistance Committee donors going to debt relief as a percentage of all ODA.

8.44. **Number of Highly Indebted Poor Countries (HIPC) Reaching Decision and Completion Points:**

*HIPC decision point* — the date on which a country with an established track record of good performance under adjustment programs supported by the IMF and the World Bank commits to undertaking additional reforms and to developing and implementing a poverty reduction strategy.

*HIPC completion point* — the date on which a country successfully completes the key structural reforms agreed at the decision point, including the development and implementation of its poverty reduction strategy. After the completion point, the country receives the bulk of debt relief under the HIPC Initiative without any further policy conditions.

8.45. **Unemployment Rate of 15–24-Year-Olds** — the share of the labor force aged 15–24 without work but available for and seeking employment.

8.46. **Proportion of Population with Access to Affordable, Essential Drugs on a Sustainable Basis** — the population that has access to inexpensive medicines as a fraction of the total population.

8.47. **Prevalence of Fixed Line and Mobile Telephones** — the number of telephone lines connecting a customer's equipment to the public, switched telephone network and portable telephones subscribing to an automatic public mobile telephone service using cellular technology that provides access to the public, switched telephone network per 1,000 people.

8.48. **Prevalence of Personal Computers** — the number of self-contained computers designed to be used by a single individual per 1,000 people.

## 9. THE SYSTEM OF NATIONAL ACCOUNTS

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The principal source for this section is the *System of National Accounts*, 1993 by European Commission, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations and World Bank (United Nations publication, Sales No. E. 94. XVII.4).<sup>10</sup> All concepts and definitions in this chapter are reproduced from this publication. Another major source is the United Nations' *System of National Accounts*, 1968. Supplementary sources are the World Bank's *World Development Indicators* and the United Nations' *Yearbook of National Accounts*.

### Background

National accounts are the records of the economic activities and transactions of the people of a country over a given period of time, usually a year. "People" are defined as residents including those temporarily abroad and nonresidents temporarily in the country. Their activities and transactions take place either in the country in question or in other parts of the world. "Activities" are those that produce goods and services and the use of them for consumption or capital formation. The accounts form a system because they are integrated and interconnected in a logical, coherent, and consistent way. The entire scheme of accounts is called the System of National Accounts (SNA).

The SNA is built on the fundamental concepts of macroeconomics and is designed for economic analysis and decision and policy making. In the last half century it has facilitated three major functions — the elaboration and extension of national accounting, the construction of disaggregated economic models, and the initiation of studies into the interrelations of various aspects of the national economy. In this respect it has assisted governments in planning and implementing development programs in greater depth. It has also enabled people and governments to relate economically with their global counterparts on a more systematic basis.

From the original version published in 1953, the SNA graduated first to the succinct and rigorous edition of 1968 and then to the more detailed version of 1993. Building on the theoretical foundations of the 1968 SNA, the 1993 SNA operationalizes the whole concept of national accounts and extends or delimits, as the case may be, many national accounting concepts thus making the elements of the system more reflective of modern-day economic and financial conditions.

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10 Quoted material used with permission of the United Nations.

## **THE 1968 SNA**

### **The Central Framework**

The *1968 SNA* consists of four flow accounts, one stock account, and the balance sheets all tightly held together by an integrated and fully consistent accounting framework. These accounts and their integral components are as follows:

- **Production:** records the supply and disposition of goods and services. Its components are the Commodities Account and the Activities Account.
- **Consumption:** records the earning and expenditure of income. Its components are the Consumption Expenditure Account and the Income and Outlay Account.
- **Accumulation:** records the use of income for capital formation. Its components are the Capital Formation Account and the Capital Finance Account.
- **Rest-of-the-World:** records current and capital transactions with the rest of the world.
- **Balance Sheets:** record the assets, liabilities, and net worth of the economy.

### **Resident Economic Agents**

The accounts in the System are compiled for resident economic agents who are defined as all producers, national or foreign, residing in the domestic territory. The concept is of production within domestic borders, not of production by nationals.

### **Transactors**

Two main classes of transactors are identified in the System: one in the flow of goods and services and one in the flow of finance. Transactors of goods and services are relevant to the production, consumption expenditure, and capital formation accounts. They consist of the following entities.

*i) Industries:* enterprises that produce commodities for sale in the market at a price that covers their cost. This includes government departments and establishments mainly engaged in selling the kinds of goods and services often produced by business establishments, though at prices that may not approximate the full cost of production. It also includes nonprofit organizations serving business.

*ii) Producers of government services:* public establishments that furnish but normally do not sell services that cannot otherwise be conveniently and economically provided to the community. The services are largely financed by the government itself, and the producers are considered the final consumers. All government bodies are included among these producers. They typically engage in a wide range of activities, for example, public administration, defense, health, education, and cultural services.

*iii) Producers of private nonprofit services to households:* organizations that render services to households on a nonprofit basis.

*iv) Households:* households rendering services to other households, e.g. maid and char services, cooking, minding children, and gardening.

Transactors of finance are relevant to the income and outlay and capital finance accounts and to the balance sheets. They consist of the following entities.

*i) Nonfinancial enterprises, corporate and quasi-corporate, private and public:* enterprises engaged primarily in financial activities.

*ii) Financial institutions:* incorporated and unincorporated enterprises primarily engaged in financial transactions in the market that both incur liabilities and acquire financial assets.

*iii) General government:* all agencies of the government not classified elsewhere.

*iv) Private nonprofit institutions serving households*

*v) Households:* including private, nonfinancial, unincorporated enterprises.

## Transactions

Transactions in the production, consumption, expenditure, and capital formation accounts consist of the supply and disposition of goods and services. The supply consists of the gross output of resident producers and of imports from nonresident sources. The demand for these goods and services comes partly from producers for intermediate use but mostly from households for final use in consumption, capital formation, and export.

On the other hand, transactions in the income and outlay and capital finance accounts deal with the receipt and disposition of incomes by institutional units and are linked directly with the production accounts and the final consumption expenditure accounts of the system. The capital finance account portrays the ways in which institutional units finance their accumulation of capital and have direct ties with the capital formation accounts and income and outlay accounts of the system.

### The Components of Gross Domestic Product (GDP)

The core concept of the SNA is the GDP, or gross value added. It is the totality of all final goods and services produced in the system over the relevant time period, usually a year. GDP is expressed in purchasers' values and can be measured in three ways.

a) The *production* approach: GDP is equal to total output minus total intermediate consumption plus taxes less subsidies on products not included in the value of output.

b) The *expenditure* approach: GDP is equal to final consumption expenditure plus gross capital formation plus exports minus imports.

c) The *income* approach: GDP is equal to compensation of employees plus taxes less subsidies on products plus operating surpluses plus imports.

The SNA introduces other national income aggregates including (i) domestic factor incomes, (ii) net domestic product, (iii) gross national product, (iv) net national product, (v) national income, and (vi) national disposable income. The components of these aggregates are as follow:

- 1) Compensation of employees
- 2) Operating surplus
- 3) DOMESTIC FACTOR INCOMES (1 + 2)
- 4) Indirect taxes less subsidies
- 5) NET DOMESTIC PRODUCT (NDP) (3 + 4)
- 6) Consumption of fixed capital
- 7) GROSS DOMESTIC PRODUCT (GDP) (5 + 6)
- 8) Net factor income from abroad
- 9) GROSS NATIONAL PRODUCT (GNP) (7 + 8)
- 10) NET NATIONAL PRODUCT (NNP) (9 - 6)
- 11) Net property and entrepreneurial income from abroad
- 12) NATIONAL INCOME (NI) (1 + 4 + 11)
- 13) Net current transfer from abroad
- 14) NATIONAL DISPOSABLE INCOME (NDI) (12 + 13)

To record the total transactions of the entire economy, the transactions are itemized and linked together into a number of consolidated accounts as follow.

### *The Consolidated Accounts of the Nation*

#### **Account 1. Gross Domestic Product and Expenditure**

|                              |   |
|------------------------------|---|
| Compensation of employees    | Government final consumption expenditure  |
| Operating surplus            | Private final consumption expenditure     |
| Consumption of fixed capital | Increase in stocks                        |
| Indirect taxes               | Gross fixed capital formation             |
| Less Subsidies               | Exports of goods and services             |
|                              | Less Imports of goods and services        |
| Gross domestic product       | Expenditure on the gross domestic product |

#### **Account 2. National Disposable Income and its Appropriation**

|  |   |
|--|---|
| Government final consumption expenditure | Compensation of employees   |
| Private final consumption expenditure    | Compensation of employees from the rest of the world, net           |
| Saving                                   | Operating surplus   |
|  | Property and entrepreneurial income from the rest of the world, net |
|  | Indirect taxes  |
|  | Less subsidies  |
|  | Other current transfers from the rest of the world, net             |
| Appropriation of disposable income       | Disposable income   |

#### **Account 3. Capital Finance**

|   |   |
|---|---|
| Increase in stocks  | Saving  |
| Gross fixed capital formation   | Consumption of fixed capital  |
| Purchases of intangible assets not elsewhere classified from the rest of the world, net | Capital transfers from the rest of the world, net                       |
| Net lending to the rest of the world  | Finance of gross accumulation   |
| Gross accumulation  | Net lending to the rest of the world                                    |
| Net acquisition of financial assets   | Net incurrence of liabilities   |
|   | Net incurrence of liabilities plus net lending to the rest of the world |
| Net acquisition of financial assets   |   |

### Account 4. External Transactions

| Current transactions   |   |
|--|---|
| Exports of goods and services                                  | Imports of goods and services   |
| Compensation of employees from the rest of the world           | Compensation of employees to the rest of the world                                      |
| Property and entrepreneurial income from the rest of the world | Property and entrepreneurial income to the rest of the world                            |
| Other current transfers from the rest of the world             | Other current transfers to the rest of the world  |
| Current receipts   | Surplus of the nation on current transactions   |
|  | Disposal of current receipts  |
| Capital transactions   |   |
| Surplus of the nation on current transactions                  | Purchases of intangible assets not elsewhere classified from the rest of the world, net |
| Capital transfers from the rest of the world, net              |   |
| Net incurrence of foreign liabilities                          | Net acquisition of foreign financial assets   |
| Receipts   | Disbursements   |

## THE 1993 SNA

The *1993 SNA* does not change or alter the theoretical framework of the *1968 SNA*. Instead it (i) modifies the partitioning of the system; (ii) elaborates, expands, or shrinks some categories; and, (iii) introduces several new concepts that reflect contemporary economic and financial practices.

### The Concept of Residence

The *1993 SNA* clarifies the meaning of residence used in the previous version. The concept of residence is the same as that used in the *Balance of Payments Manual* of the International Monetary Fund.

An institutional unit is said to be resident within the economic territory of a country when it maintains a center of economic interest in that territory, that is, when it engages or intends to engage in economic activities or transactions on a significant scale either indefinitely or over a long period of time, usually interpreted as 1 year. Some of the production of a resident institutional unit may take place abroad, for example, the installation of some exported machinery or equipment or a consultancy undertaken by a team of expert advisers working temporarily abroad. Conversely, some of the production taking place within a country may be attributable to foreign institutional units. An institutional unit is said to have a center of economic interest when there exists some location—dwelling, place of production, or other premises—within the economic territory on or from which it

engages and intends to continue to engage in economic activities and transactions on a significant scale either indefinitely or over a finite but long period of time—usually 1 year or more.

## **Institutional Units**

The new version adopts the identities of the transactors used in the previous version but modifies their scope in several cases and renames them institutional units. Institutional units are economic units capable of owning assets, incurring liabilities, and engaging in the full range of transactions. They are grouped together on the basis of their principal functions, behavior, and objectives to form institutional sectors. The following are institutional units.

*i) Nonfinancial corporations:* units principally engaged in the production of market goods and nonfinancial services.

*ii) Financial corporations:* units principally engaged in financial intermediation or in auxiliary financial activities.

*iii) General government:* produces principally non-market services (possibly goods) for individual or collective consumption and redistributes income and wealth in addition to fulfilling its political responsibilities and its role of economic regulation.

*iv) Households:* one individual or a group of individuals who supply labor, act as final consumers, and, as entrepreneurs, produce market goods and non-financial services.

*v) Nonprofit institutions serving households (NPISHs):* legal entities principally engaged in the production of non-market services for households and whose main resources are voluntary contributions by households.

## **Activities and Transactions**

As in the older version, institutional units in the new version carry out various economic functions. They produce, consume, save, and invest. They engage in various economic activities (e.g., agriculture, manufacturing, construction) as entrepreneurs, wage earners, or suppliers of capital, or they are unemployed. They undertake a great number of economic transactions.

In modern market economies, most transactions are monetary and take place between different institutional units. They constitute the fundamental basis

for valuing economic flows in the accounts. Non-monetary transactions are generally negligible in developed economies but they are of considerable importance in developing countries.

### The Accounts in the System

The major contribution of the *1993 SNA* is its modification of the partitioning of the system. In the current version, the accounts are grouped into three categories: current accounts, accumulation accounts, and balance sheets. These accounts and their components are the following:

- **Current accounts:** deal with production and the distribution and use of income. The account components are (i) *production*, (ii) *primary distribution of income*, (iii) *secondary distribution of income*, and (iv) *use of income*.
- **Accumulation accounts:** cover changes in assets and liabilities and changes in net worth. The specific accounts are (i) *capital*, (ii) *financial*, and (iii) *other changes in asset accounts*.
- **Balance sheets:** record stocks of assets and liabilities and net worth held by institutional units or sectors at the beginning and end of an accounting period.

As in the previous version, the rest-of-the-world account in the *1993 SNA* is distributed to the current and accumulation accounts depending on whether the item concerned represents a current or a capital transaction. Specific items contained in these accounts and their relationships are as follow.

### Relationships of Specific Items in the Current Accounts

1. Gross domestic product (GDP) at market prices = Output + taxes, less subsidies on products – intermediate consumption.
2. Gross domestic product (GDP) at market prices = Final consumption expenditure/actual final consumption + changes in inventories + gross fixed capital formation + acquisitions less disposals of valuables + exports of goods and services – imports of goods and services.
3. Gross national income (GNI) at market prices = GDP at market prices + taxes, less subsidies on production and imports (net, receivable from abroad)

+ compensation of employees (net, receivable from abroad) + property income (net, receivable from abroad).

4. Net national income (NNI) at market prices = GNI at market prices – consumption of fixed capital.

5. Net national disposable income (NNDI) = NNDI at market prices + current taxes on income, wealth, etc. (net, receivable from abroad) + social contributions and benefits and other current transfers (net, receivable from abroad).

6. Net national disposable income (NNDI) = Final consumption expenditure/actual final consumption + adjustment for the change in net equity of households on pension funds (net, receivable from abroad) + saving, net.

### **Relationships of Specific Items in the Accumulation Accounts**

7. Saving, net + capital transfers (net, receivable from abroad) = Changes in net worth due to saving and capital transfers.

8. Saving, net + capital transfers (net, receivable from abroad) = Gross fixed capital formation + consumption of fixed capital + changes in inventories + acquisitions less disposals of valuables + acquisitions less disposals of non-produced nonfinancial assets + net lending (+)/net borrowing (-).

9. Net lending (+)/net borrowing (-) = Net acquisition of financial assets + net incurrence of liabilities.

10. Net lending (+)/net borrowing (-) = Net acquisition of financial (external) assets – net incurrence of (external) liabilities.

### **Relationships of Specific Items in the Balance Sheets**

11. Opening assets – opening liabilities = Opening net worth.

12. Closing nonfinancial assets = Opening nonfinancial assets + gross fixed capital formation – consumption of fixed capital + changes in inventories + acquisitions less disposals of valuables + acquisitions less disposals of non-produced nonfinancial assets + other changes in volume of nonfinancial assets + revaluation of nonfinancial assets.

13. Closing financial assets = Opening financial assets + net acquisition of financial assets + other changes in volume of assets + revaluation of financial assets.

14. Closing liabilities = Opening liabilities + net incurrence of liabilities + other changes in volume of liabilities + revaluation of liabilities.

15. Changes in net worth = Changes in net worth due to saving and capital transfers + changes in net worth due to other changes in volume of assets – changes in net worth due to nominal holding gains/losses.

16. Closing assets - closing liabilities = Closing net worth

17. Closing net worth = Opening net worth + changes in net worth

### **Relationships of Specific Items in the Rest-of-the-World Accounts**

18. Exports of goods and services - imports of goods and services + taxes less subsidies on production and imports (net, receivable from abroad) + compensation of employees (net, receivable from abroad) + property income (net, receivable from abroad) + social contributions and benefits and other current transfer (net, receivable from abroad) + capital transfers (net, receivable from abroad) + acquisitions less disposals of non-produced nonfinancial assets = Net acquisition of financial (external) assets – net incurrence of (external) liabilities.

19. Exports of goods and services - imports of goods and services + taxes, less subsidies on production and imports (net, receivable from abroad) + compensation of employees (net, receivable from abroad) + property income (net, receivable from abroad) + current taxes on income, wealth, etc. (net, receivable from abroad) + social contributions and benefits and other current transfers (net, receivable from abroad) + capital transfers (net receivable from abroad) – acquisitions less disposals of non-produced nonfinancial assets = Net lending (+)/net borrowing (-).

20. Net lending (+)/net borrowing (-) – other changes in volume of financial (external) assets + revaluation of financial (external) assets + other changes in volume of (external) liabilities + revaluation of (external) liabilities = Changes in net external financial position

21. Net lending (+)/net borrowing (-) + other changes in volume of financial (external) assets + revaluation of financial (external) assets – other changes in volume of (external) liabilities – revaluation of (external) liabilities = {Closing financial (external) assets – closing (external) liabilities} – [opening financial (external) assets – opening (external) liabilities].

## Comparison of the 1968 and 1993 SNA

Some important changes in the scopes and definitions of some concepts introduced in the *1993 SNA* are given in Table 9.1 below.

**Table 9.1 Some important changes in the scopes and definitions of some concepts introduced in the 1993 SNA**

| 1968 SNA   | 1993 SNA   |
|--|--|
| <ul style="list-style-type: none"> <li>• Uses the term operating surplus for certain unincorporated enterprises owned by households and for other enterprises as well.</li> </ul>  | <ul style="list-style-type: none"> <li>• Distinguishes between that owned by households and by other enterprises.</li> <li>• Uses the term operating surplus to refer to that of other enterprises.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Gross National Product (GNP)</li> </ul>   | <ul style="list-style-type: none"> <li>• Introduces the term “mixed income” to refer to that of households in order to reflect remuneration for work done by the owner of the enterprise as well as a return to entrepreneurship.</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Uses the term “imputed output of bank services” to refer to the difference between the property income of banks, net of income received from investment of its own funds and the interest paid on that property.</li> </ul> | <ul style="list-style-type: none"> <li>• It is changed to Gross National Income (GNI).</li> <li>• Replaces the term with “output of financial intermediation services indirectly measured (FISIM).”</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Uses the term “indirect taxes” and distinguishes between “commodity taxes” and “other indirect taxes and imports.”</li> </ul>   | <ul style="list-style-type: none"> <li>• Replaced the terms by “taxes on production and imports” and “taxes on products” and “other taxes on production” respectively.</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Uses the term “direct taxes.”</li> <li>• Uses the terms “capital transfers to government, including estate and gift taxes and non-recurrent taxes on property.”</li> </ul>  | <ul style="list-style-type: none"> <li>• Replaced by the term “current taxes on income, wealth, etc.”</li> <li>• Treated as “capital taxes.”</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Uses the concept of “final consumption expenditure” for final consumption of households and government.</li> </ul>  | <ul style="list-style-type: none"> <li>• Modified into “actual final consumption” that distinguishes between individual consumption (benefiting identifiable households) and collective consumption (benefiting society as a whole) within the final consumption expenditure by the government.</li> </ul> |

**Table 9.1 Some important changes in the scopes and definitions of some concepts introduced in the 1993 SNA (cont.)**

| 1968 SNA  | 1993 SNA  |
|---|---|
| <ul style="list-style-type: none"> <li>• Exclude from “gross fixed capital formation” almost all military expenditures, e.g. airfields, docks, roads, hospitals, and other buildings except those for construction or alteration of family dwellings of armed forces personnel.</li> <li>• Suggests that “consumption of fixed capital” need not be calculated in respect of such assets as roads, dams, and breakwaters because it was assumed that the maintenance and repair performed on them would be sufficient to ensure that they had infinite service lives.</li> <li>• Values imports of goods on a “cost of insurance and freight (c.i.f)” basis, i.e. including the cost of insurance and freight services provided by residents or nonresidents.</li> <li>• Makes a distinction between final consumption on a domestic and national basis. It separately identifies “direct purchases in the domestic market by nonresident households that are exports of goods and services” and “resident household expenditures abroad that are imports of goods and services.”</li> <li>• Does not incorporate trading gains and losses in the terms of trade as an integral part of the System.</li> <li>• Treats expenditure on mineral exploration as intermediate consumption.</li> <li>• Silent on natural assets.</li> </ul> | <ul style="list-style-type: none"> <li>• Almost all military expenditures are treated as “fixed capital formation” except those for military weapons, vehicles, and equipment for transporting such weapons. These exceptions are treated as “intermediate consumption.”</li> <li>• Recommends that “consumption of fixed capital” should be calculated for such assets as in practice most assets of this kind have finite lives even though proper repair and maintenance may result in long life spans.</li> <li>• Values imports of goods on an “free on board (f.o.b)” basis, i.e. excluding the cost of insurance and freight after the goods have left the frontier of the exporting country.</li> <li>• Makes no distinction.</li> <li>• Incorporates trading gains and losses.</li> <li>• Treats it as gross fixed capital formation that results in the creation of an intangible fixed asset.</li> <li>• Deals with natural assets such as mineral reserves, forests, orchards, plantations, etc.</li> <li>• Provides guidelines for determining coverage for natural assets that are economic assets in the SNA sense, namely:</li> </ul> |

Table 9.1 **Some important changes in the scopes and definitions of some concepts introduced in the 1993 SNA** (cont.)

| 1968 SNA  | 1993 SNA  |
|---|---|
| <ul style="list-style-type: none"> <li>• Treats expenditure on computer software bought as an integral part of a major hardware purchase as “gross fixed capital formation,” but treats software purchased or developed independently as “intermediate consumption.”</li> </ul> | <ul style="list-style-type: none"> <li>• assets whose growth is the result of human cultivation, treated as produced assets;</li> <li>• all other natural assets including land, subsoil assets, non-cultivated biological resources, and water resources that are not cultivated but are under the control of institutional units treated as non-produced assets.</li> <li>• Treats systems and standard applications of computer software that a producer expects to use in production for more than 1 year as an “intangible fixed asset,” no matter whether the computer software is purchased in the market (separately or with the hardware) or is developed in-house. It also includes databases that the enterprise expects to use for more than 1 year.</li> </ul> |

**Key Concepts and Definitions of the 1993 SNA**

(To facilitate understanding, concepts and definitions are arranged in analytic sequence rather than in alphabetical order.)

**Fundamental Distinctions**

**“Product” versus “Income”** — product refers to the physical quantity or volume of production while “income” refers to the money value accruing to producers on account of their participation in that production.

**“Intermediate” versus “Final”** — intermediate (consumption) refers to the inputs used in the production of gross output while final (consumption) refers to the product remaining of gross output after deducting intermediate consumption.

**“Gross” versus “Net”** — gross means inclusive of consumption of fixed capital (depreciation, in accounting terms) while “net” means exclusive of consumption of fixed capital.

**“Domestic” versus “National”** — domestic refers to the work done in the domestic territory by residents whether they are nationals or non-nationals whereas national refers to the work done by nationals whether in the domestic territory or abroad.

**“Market Prices” versus “Factor Cost”** — market prices are inclusive of net indirect taxes (i.e. indirect taxes, net of subsidies) while factor cost means exclusive of net indirect taxes.

## **Economic Activity**

9.1. **Agriculture** — industries of agriculture (farming and animal husbandry), fishery, and forestry corresponding to International Standard of Industrial Classification 1 (ISIC 1).

9.2. **Industry** — mining and quarrying (ISIC 2), manufacturing (ISIC 3), construction (ISIC 4) and provision of electricity, gas and water (ISIC 5). Because of the growing importance of manufacturing, it is generally shown in greater detail in the Industry Sector.

9.3. **Manufacturing** — industries classified in ISIC 3 including (a) food, beverage, and tobacco (31); (b) textiles and clothing (32), (c) wood and related products (33), (d) paper and paper related products (34), (e) chemical and petroleum product (groups 351–356); and (f) basic metals and mineral products (36 and 37).

9.4. **Services** — industries of wholesale and retail trade, hotels and restaurants (ISIC 6), transport and communication (ISIC 7), banking, insurance, and real estate (ISIC 8) and professional and personal services (ISIC 9).

## **Production**

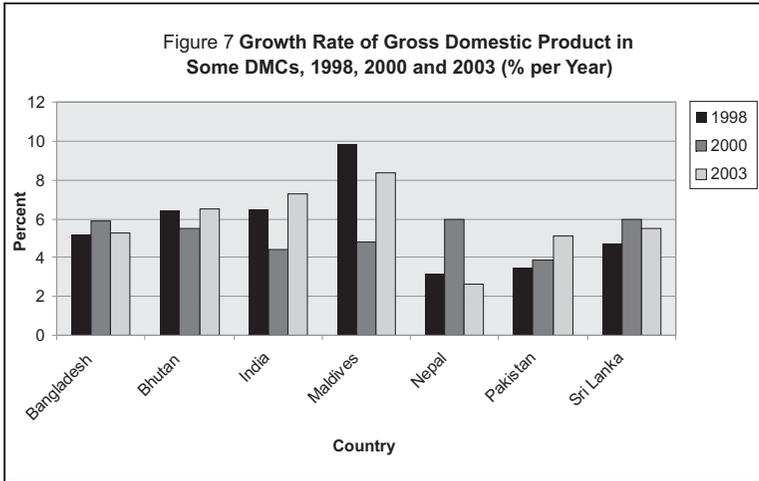
9.5. **Gross Value Added (GVA)** — the difference between output and intermediate consumption.

9.6. **Gross Domestic Product (GDP)** — the sum of gross value added of all resident producer units (institutional sectors or, alternatively, industries) plus that part (possibly the total) of taxes, less subsidies on products that are not included in the valuation of output. This is GDP calculated from the production side. GDP can also be calculated from the income side. In this case, it is equal to the sum of compensation of employees, operating surplus, mixed income, taxes less subsidies, property income, and consumption of fixed

capital. Finally, GDP can be calculated from the expenditure side. In this instance, it is equal to the sum of the final uses of goods and services (all uses except intermediate consumption) measured in purchasers' prices, less the value of imports of goods and services.

9.7. **GDP at Market Prices** — GDP as measured at current market prices. See item 5 in Fundamental Distinctions.

9.8. **GDP at Constant Prices** — GDP as measured at constant prices instead of at current prices. Figure 7 shows the growth rate of GDP in some DMCs in 1998, 2000, and 2003.



Source: ADB, *Asian Development Outlook 2004*.

9.9. **GDP at Producers' Prices** — GDP valued in the amount receivable by the producer minus any value added taxes or similar deductible taxes and any trade and transport charges.

9.10. **GDP at Purchasers' Prices** — GDP at producers' values plus trade and transport margins.

9.11. **GDP by Industrial Origin** — GDP disaggregated into the industries in which it is produced plus import duties. Industries are generally defined in conformity with the ISIC.

9.12. **Net Domestic Product (NDP)** — GDP minus the consumption of fixed capital.

9.13. **Gross National Income (GNI)** — GDP minus primary incomes payable to nonresident units plus primary incomes receivable from nonresident units. In other words, GNI is equal to GDP plus (i) taxes, less subsidies, on production and imports (net, receivable from abroad), (ii) compensation of employees

(net, receivable from abroad), and (iii) property income (net, receivable from abroad). In the 1968 SNA, these three items were called net factor income from abroad (NFIA). GNI is also defined as the aggregate value of the gross balances of primary incomes for all sectors. GNI is called Gross National Product (GNP) in the 1968 SNA. In contrast to GDP, GNI is not a concept of value added but is rather a concept of income (primary income).

9.14. **Net National Income (NNI)** — GNI minus the consumption of fixed capital. This is also defined as the aggregate value of the net balances of primary incomes summed over all sectors. Conceptually, NNI is measure of income and not product.

9.15. **Gross National Disposable Income (GNDI)** — GNI minus current transfers (other than taxes less subsidies on production and imports) payable to nonresident units, plus the corresponding transfers receivable by resident units from the rest of the world. It measures the income available to the nation for final consumption and gross savings. These two current transfers were part of net factor income from abroad in the 1968 SNA.

9.16. **Net National Disposable Income (NNDI)** — gross national disposable income minus the consumption of fixed capital.

In short, the major aggregates of the 1993 SNA are as follows:

- 1.) Compensation of employees
- 2.) Operating surplus
- 3.) Mixed income
- 4.) Taxes net of subsidies on production and imports
- 5.) Property income (rents on land and resources not used in production)
- 6.) Consumption of fixed capital
- 7.) GROSS DOMESTIC PRODUCT (GDP) = 1 + 2 + 3 + 4 + 5 + 6
- 8.) NET DOMESTIC PRODUCT (NDP) = GDP – 6 (consumption of fixed capital)
- 9.) Primary incomes payable to non-resident units
- 10.) Primary incomes receivable from non-resident units
- 11.) GROSS NATIONAL INCOME (GNI) = GDP – 9 + 10
- 12.) NET NATIONAL INCOME (NNI) = GNI – 6
- 13.) Current transfers (other than taxes, less subsidies, on production and imports) payable to non-resident units
- 14.) Current transfers receivable by resident units from the rest of the world
- 15.) GROSS NATIONAL DISPOSABLE INCOME (GNDI) = GNI – 13 + 14
- 16.) NET NATIONAL DISPOSABLE INCOME (NNDI) = GNDI – 6.

## Consumption

9.17. **Final Consumption Expenditure of General Government** — expenditure including imputed expenditure incurred by the general government on both individually consumed goods and services and on collectively consumed services.

9.18. **Actual Final Consumption of General Government** — government's final consumption expenditure less the value of collectively consumed services.

9.19. **Final Consumption Expenditure of Households** — the expenditure including imputed expenditure incurred by resident households on individually consumed goods and services, including those sold at prices that are not economically significant.

9.20. **Actual Final Consumption of Households** — household final consumption expenditure plus the value of collectively consumed services.

9.21. **Total Final Consumption** — the total value of all expenditures on individually and collectively consumed goods and services by resident households, resident nonprofit institutions serving households, and general government units. This is the view from the expenditure side. Viewed from the actual consumption side, this is the value of all the individual goods and services acquired by resident households plus the value of the collective services provided by the general government to the community.

9.22. **Intermediate Consumption** — inputs consumed in production.

## Saving

9.23. **Saving** — disposable income less final consumption expenditures.

9.24. **Gross Saving** — gross disposable income less final consumption expenditures.

9.25. **Net Saving** — net disposable income less final consumption expenditures.

9.26. **Gross Domestic Saving** — the difference between GDP and total consumption where total consumption is the sum of private consumption and government consumption. Alternatively, it is equal to the sum of saving accruing from enterprises, general government, households, and the surplus of the nation on current account without deduction of allowances for fixed capital consumption.

9.27. **Gross National Saving** — gross domestic saving plus net factor income from abroad and net current transfers from abroad.

9.28. **Foreign Saving** — the sum of net transfer and net borrowing from abroad.

### **Accumulation**

9.29. **Gross Capital Formation** — the total value of gross fixed capital formation, changes in inventories, and acquisitions less disposals of valuables.

9.30. **Gross Fixed Capital Formation** — the total value of acquisitions, less disposals of fixed assets plus certain additions to the values of non-produced assets. Fixed assets are tangible or intangible. Tangible assets include dwellings, buildings and structures, machinery and equipment, and trees and livestock. Intangible assets include mineral exploration, computer software, entertainment, and literary or artistic originals. Non-produced assets refer mainly to land. Included in gross fixed capital formation are major improvements to non-produced assets and costs associated with their transfer of ownership.

9.31. **Changes in Inventories** — the value at the beginning of the accounting period of materials and supplies that an enterprise holds in stock for use as intermediate inputs into production and work-in-progress less the value at the end of the accounting period.

9.32. **Acquisitions less Disposals of Valuables** — during the accounting period, the value of assets held primarily as stores of value provided they are not intended to be used as intermediate inputs into production, These would include precious stones and metals, works of art, antiques, jewelry, and other such valuables less the value of disposals of these assets during the accounting period.

9.33. **Consumption of Fixed Capital** — a measure of the decline in the usefulness of a fixed asset for purposes of production, i.e., the negative change in the value of the asset during the production period.

### **Rest-of-the-World Account**

9.34. **Rest-of-the-World Account** — those accounts that capture the full range of transactions that take place between the domestic economy and the rest of the world.

9.35. **Exports and Imports of Goods and Non-Factor Services** — the value of all goods and services provided to and from the rest of the world. Goods refer to merchandise. Non-factor services refer to transportation, travel, insurance, government transactions, and various fees but not to dividends, interest, and other investment income receipts/payments or labor income; those are called factor services.

9.36. **Net Income from Abroad** — the total value of primary income receivable from outside domestic boundaries less the total value payable to nonresidents.

### Transfers

9.37. **Current Transfers** — all transfers that are not of capital; they directly affect the level of disposable income and influence the consumption of goods and services.

9.38. **Capital Transfers** — transfer of physical and financial assets directly affecting the capital account.

### Prices/Values/Volumes

9.39. **Basic Price** — the amount receivable by the producer from the purchaser for a unit of commodity or service less any tax payable and plus any subsidy receivable as a consequence of the unit's production or sale. It excludes transport charges.

9.40. **Producers' Price** — the amount receivable by the producer from the purchaser for a unit of commodity or service less any deductible value added tax (VAT) or similar deductible tax.

9.41. **Purchasers' Price** — the amount paid by the purchaser for a unit of commodity or service, excluding any deductible VAT or similar deductible tax at the time and place required by the purchaser and including trade and transport margins.

9.42. **Market Price** — the amount paid by the purchaser and received by the producer for a unit of commodity or service inclusive of any indirect tax net of subsidies on that unit of commodity or service. See "market price" versus "factor cost" in Fundamental Distinctions.

9.43. **Volume Index** — an average of the proportionate changes in the quantities of a specified set of goods or services between two periods of time.

9.44. **Chain Indices** — indices that are obtained by linking together price (or volume) indices between consecutive periods.

### **Elements of Value Added**

9.45. **Wages and Salaries in Kind** — remuneration in the form of goods and/or services that are not necessary for work and can be used by employees in their own time and at their own discretion for the satisfaction of their own needs or wants or those of other members of their households.

9.46. **Wages and Salaries in Cash** — wages or salaries payable at regular weekly, monthly, or other intervals. This includes payments by results and piecework payments and also includes allowances for working overtime; amounts paid to employees away from work or on holiday; ad hoc bonuses and similar payments; and commissions, gratuities, and tips.

9.47. **Mixed Income** — the surplus or deficit accruing from production by unincorporated enterprises owned by households.

9.48. **Entrepreneurial Income** — operating surplus or mixed income plus property income receivable on financial or other assets owned by the enterprise, minus interest payable on the liabilities of the enterprise and rents payable on land or other tangible non-produced assets rented by the enterprise.

### **Taxes**

9.49. **Income Tax** — a tax on income.

9.50. **Value Added Tax** — a tax on products collected in stages by enterprises but which is ultimately charged in full to the final purchasers.

9.51. **Export Taxes** — taxes on goods and services that become payable when the goods leave the economic territory or when the services are delivered to nonresidents.

9.52. **Import Duties** — taxes levied upon and collected from goods and services when these enter the economic territory.

## Institutional Units

9.53. **General Government** — the totality of institutional units which, in addition to fulfilling their political responsibilities and their role of economic regulation, produce principally non-market services (possibly goods) for individual or collective consumption and redistribute income and wealth.

9.54. **Nonprofit Institutions Serving Households (NPISHs)** — nonprofit institutions that are not financed and controlled by government and which provide goods or services to households free or at prices that are not economically significant.

9.55. **Public Corporations (Nonfinancial and Financial)** — resident corporations and quasi-corporations that are subject to control by government units. Control over a corporation is defined as the ability to determine general corporate policy by choosing appropriate directors if necessary.

## Other Relevant Terms

9.56. **Imputed Bank Service Charges (IBSC)** — the total property income receivable by financial intermediaries minus the total interest payable excluding the value of any property income receivable from the investment of their own funds and such other income that does not arise from financial intermediation. Since it is difficult to distribute IBSC among the industries deemed to have consumed them, IBSC therefore are shown as a single line deduction when the value added of each industry is summed up to obtain GDP.

9.57. **Multiple Exchange Rates** — two or more exchange rates that are applicable to different categories of transactions.

9.58. **Domestic Absorption** — the sum of total final consumption and gross domestic capital formation.

9.59. **Elasticity of Total Consumption** — the percentage change in total final consumption divided by the percentage change in GDP.

9.60. **Elasticity of Investment** — the percentage change in gross domestic investment divided by the percentage change in GDP.

9.61. **Elasticity of Imports** — the percentage change in imports of goods and non-factor services divided by the percentage change in GDP.

9.62. **COFOG (classification of the functions of government)** — a classification used to identify the socioeconomic objectives of current transactions, capital outlays, and acquisition of financial assets by general government and its subsectors.

9.63. **COICOP (classification of individual consumption by purpose)** — a classification used to identify the objectives of both individual consumption expenditures and actual individual consumption.

## 10. RESOURCE GAP

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The resource gap (RG) is the difference between investment or capital formation and saving. The main reference materials used are the ADB's *Reference Manual: Concepts, Definitions and Statistical Foundations of Data Used by ADB*, 1982; the Inter-Agency Working Group on the SNA's *System of National Accounts 1993*; and the United Nations' *System of National Accounts*, 1968.

### Background

The resource gap can be measured from either the national accounts or the balance of payments. Theoretically, the two measurements should yield identical results. In practice, the results may not be the same due to differences in databases, underlying concepts and classifications, and periods covered. The components of investment and saving and their relationships one with the other are as follows:

#### INVESTMENT

- 1.) Net domestic fixed capital formation
- 2.) Increase in stocks
- 3.) NET DOMESTIC CAPITAL FORMATION (1+2)
- 4.) Fixed capital consumption
- 5.) GROSS DOMESTIC CAPITAL FORMATION (3+4)
- 6.) (+)/(-) Net investment abroad
- 7.) GROSS NATIONAL CAPITAL FORMATION (5+6)

#### SAVING (OR FINANCE OF INVESTMENT)

- 8.) Net domestic saving
- 9.) Fixed capital consumption allowance
- 10.) GROSS DOMESTIC SAVING (8+9)
- 11.) (+)/(-) Foreign Saving (= balance on current account of rest-of-the-world account)
- 12.) GROSS DOMESTIC INVESTMENT OR TOTAL RESOURCES (10+11)

**10.1. Resource Gap as Measured from the National Accounts** — the difference between gross domestic capital formation (GDGF) and gross domestic saving (GDS). The resource gap is also known as the saving-investment gap. Since GDGF is financed by GDS and foreign savings (FS), i.e.,

$GDCF = GDS + FS$ , it follows that the resource gap (RG) is equal to FS i.e.,  $RG = GDCF - GDS = FS$

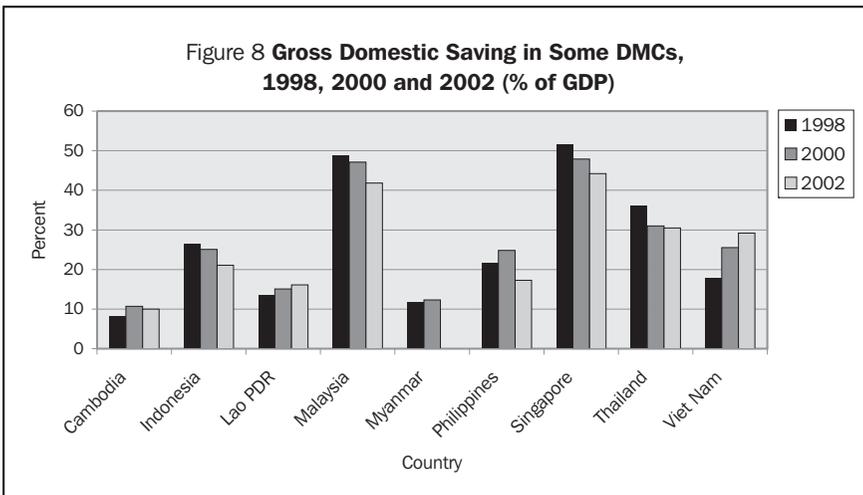
For countries whose net investment abroad is negative, FS will be positive. In contrast, for countries whose net investment abroad is positive, FS will be negative. It is also relevant to mention the relationship between GDS and gross national saving (GNS). The two measures are different to the extent that the former measure is adjusted for net capital transfers from abroad. The RG may also be given in relative terms, as in gross domestic saving as a percent of gross domestic capital formation or  $(GDS/GDCF) \times 100$  percent measured at current market prices.

Another useful relative statistic related to the RG is GDS as percent of GDP or  $(GDS/GDP) \times 100$  percent at current market prices. Note that given GDCF, RG and GDS/GDP will have inversely related values.

**10.2. Resource Gap as Measured from the Balance of Payments** — the difference between exports of goods and non-factor services (X) and imports of goods and non-factor services (M) which is equal to net transfers from the rest of the world (T) plus net borrowings from the rest of the world (B). In algebraic terms:

$$RG = X - M = T + B$$

Similarly, as in the national accounts, the RG can be given relative to the GDCF:  $[(X - M)/GDCF] \times 100$  or relative to the GDP:  $[(X - M)/GDP] \times 100$ . Figure 8 shows the gross domestic saving rate in some DMCs in 1998, 2000 and 2002.



Source: ADB, *Asian Development Outlook 2003*.

## 11. PRODUCTION AND PRICE INDICES

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The main reference for this section is the Food and Agriculture Organization's *Production Yearbook* (various editions) and the ADB's *Reference Manual: Concepts, Definitions, and Statistical Foundations of Data Used by ADB, 1982*.

### Price Indices

#### Background<sup>11</sup>

A price index number is used for comparing changes in the general level of prices of a group of commodities. It may be an index of wholesale prices, of retail prices, of the prices of building materials, of the prices of agricultural products, etc. Generally the index number refers to changes in the prices obtaining in a particular area over time, and it is expressed by putting a particular period (called the *base*) equal to 100 or 1000 and expressing the other periods under consideration (called the *reporting periods*) relatively to 100 or 1000. Although price index numbers are most frequently used to make comparisons over time, they can also be used for making comparisons between the several level of prices obtaining in different areas at particular times (spatial price index).

11.1. **Laspeyres Price Index** — a weighted arithmetic average of price relatives using the relative values of the earlier period as weights.

$$I_L = \frac{\sum_{i=1}^n P_t q_0}{\sum_{i=1}^n P_0 q_0} \times 100 = \frac{1}{V_0} \sum_{i=1}^n \frac{P_t}{P_0} (p_0 q_0) \times 100 = \sum_{i=1}^n \frac{P_t}{P_0} \cdot \frac{V_0}{V_0} \times 100$$

where  $p_0$  and  $p_t$  are the prices of a commodity in the base and reporting periods respectively,  $q_0$  and  $q_t$  are the quantity of the commodity sold in the base and reporting periods, and the summation extends to all commodities being

considered. Note that  $\frac{P_t}{P_0}$  is price relative,  $V_0$  is the total expenditure in the base

period, and  $\frac{V_0}{V_0}$  is the weight.

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11 This background section is reproduced from Chapter 11 of P.H. Karmel and M. Polasck, 1978. *Applied Statistics for Economists*, Pitman Books Ltd., London.

11.2. **Paasche Price Index** — a weighted arithmetic average of price relatives using the relative values of the later period (reporting period) as weights.

$$I_p = \frac{\sum_{i=1}^n p_t q_{t_i}}{\sum_{i=1}^n p_0 q_{t_i}} \times 100 = \sum_{i=1}^n \frac{p_t}{p_0} \cdot \frac{p_0 q_{t_i}}{\sum_{i=1}^n p_0 q_{t_i}} \times 100$$

11.3. **Fisher’s “Ideal” Price Index** – the geometric average of two price indexes (Laspeyres and Paasche) mathematically equal to the square root of the product of the two indices.

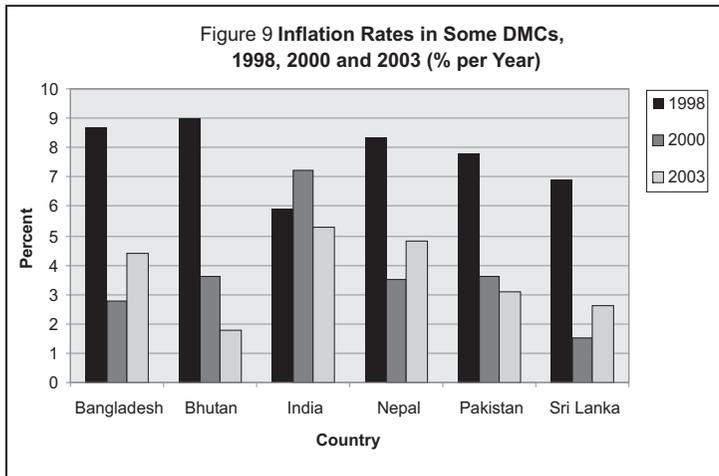
11.4. **Drobish-Bowley Price Index** – the arithmetic average of two price indexes (Laspeyres and Paasche).

11.5. **Wholesale Price Index (WPI)** — the index that is designed to measure changes in the level of commodity prices at a nonretail stage of distribution. In practice, however, the point at which prices are obtained varies somewhat among commodities and countries. The coverage of commodities included in the index also varies widely from country to country. It may refer only to goods consumed in the domestic market, which includes imports but excludes exports, or to domestically produced goods, thus including exports but not imports. Alternatively, it may reflect all nonretail sales which would include both imported and exported commodities. In the majority of countries, WPI numbers are computed using Laspeyres’ formula. In many cases, separate indices are computed for major groups of items (e.g. raw materials, finished goods, building materials, etc.); in such cases, the general WPI index is usually a weighted average of these individual indices.

11.6. **Consumer Price Index (CPI)** — the index that measures changes over time in the cost of a typical basket of goods and services purchased by a chosen group of consumers. Typically, the basket of goods and services differs among countries, and the CPI may pertain to a target group in the main city or principal cities only. The price data of the different goods and services included in the CPI are normally weighted in proportion to the relative importance of each item to total consumption expenditure. The weights are based on expenditure data collected by means of a household expenditure survey typically carried out at 5-year intervals. Most countries use a Laspeyres’ type index; some compile a retail price index which, except for its usually broader coverage of goods and services at the retail stage of distribution, is often meant to be used interchangeably with the CPI.

11.7. **Food Price Index** — a subindex of the CPI.

11.8. **Inflation Rate** — the rate of increase in the consumer price level. It refers to the percentage change in the CPI. See Figure 9 for an illustration of inflation rates in some DMCs in 1998, 2000 and 2003. A broader measure of inflation is provided by the overall GDP deflator.



*Source: ADB, Asian Development Outlook 2004.*

11.9. **Purchasing Power Parity (PPP)** — a price relative which measures the number of units of country B's currency that are needed in country B to purchase the same amount of goods and services as 1 unit of country A's currency would purchase in A.

11.10. **Stock Price Index** — the index measuring changes in and movements of the average prices of shares of stocks traded in the stock exchange.

## Production Indices

11.11. **Agriculture Quantum Indices** — refer to indices of total agricultural production, general food production, and corresponding per capita values. The indices are calculated on a calendar year basis using Laspeyres' formula. First, disposable production quantities ( $q_t$ ) are estimated by deducting amounts used for seed and feed (including eggs for hatching, for example) from total production estimates. These quantities ( $q_t$ ) are weighted by average national producer prices ( $p_o$ ) of each commodity to produce a price-weighted aggregate estimate,  $\sum p_o q_t$ , for a given year ( $t$ ), where the summation extends to all crops and livestock pertinent to the country. With  $\sum p_o q_o$  as the comparable aggregate for the base period, Laspeyres' index number of "total agricultural production for year  $t$ " is

$$\frac{\sum p_o q_t}{\sum p_o q_o}$$

Index numbers of food production are obtained similarly, except that only commodities that are considered edible and contain nutrients are included (e.g. coffee, tea are excluded).

Indices given in FAO's production yearbook prior to 1977 (Vol. 31) are not directly comparable to later indices for a number of reasons, the most important of which is that the weights used in computing the previous indices were regional wheat-based price relatives (1961–65 averages) applied to each country of the region.

**11.12. Manufacturing Quantum Indices** — measure changes over time in the physical volume of production in manufacturing. However, unlike agriculture where there is a single source (FAO) which uses common concepts and definitions for indices, the main sources of manufacturing indices are the DMCs themselves. Although practically all DMCs use a Laspeyres' base weighted index with value-added estimates as weights for individual commodity or commodity groups, comparability of indices among DMCs is constrained particularly by variations in the range of commodities used in the computations.

Manufacturing is defined as the mechanical or chemical transformation of organic or inorganic substances into new products irrespective of whether the work is performed by power-driven machines or by hand in a factory or in the worker's home and of whether the products are sold wholesale or retail.

**11.13. Manufacturing Production Index** — the index of value of production of key manufacturing enterprises.

**11.14. Electricity Production Index** — the index of gross production of primary electricity, i.e., hydro, nuclear, thermal, and geothermal electricity generated by state-owned and privately owned public utilities and by industrial establishments generating for their own use. The index number is calculated from the total gross production, i.e., with  $p_0$  and  $p_t$  representing gross production for the base year and given year respectively, the index for the given year is simply  $(p_t/p_0) \times 100$ .

## 12. MONEY AND BANKING

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The reference for this section is the International Monetary Fund's *Monetary and Financial Statistics Manual, 2000*. All concepts and definitions are reproduced from this manual.

### Background

The IMF *Manual* offers guidelines for the presentation of monetary and financial statistics to assist in the formulation and monitoring of monetary policy and in the development of a statistical framework for assessing financial sector stability. Because its focus is on concepts, the *Manual* does not describe how the statistics are to be compiled. The *Manual* has been harmonized with the *1993 SNA*. For this reason, it follows the same principles and concepts used in the *1993 SNA* in describing the following:

(i) *financial flows and stocks*: Each financial flow is the sum of one or more of the following; a transaction, a change in the value of a financial asset/liability, and other changes in the volume of an asset/liability.

(ii) *resident and nonresident entities*: Residents are those entities that have a center of economic interest in the country or who, from some location within the economic territory of the country, engage or intend to continue engaging (indefinitely or for a finite period) in economic activities and transactions on a significant scale. Entities that do not satisfy these requirements are referred to as nonresidents.

(iii) *the institutional units to which the monetary and financial statistics pertain*: (a) financial corporations, (b) general government, (c) nonfinancial corporations, (d) households, and (e) nonprofit institutions serving households. The first three sectors have their respective subsectors. See Table 12.1 for the main sectors and subsectors involved.

### Monetary Statistics

Monetary statistics consist of a comprehensive set of stock and flow data on the financial and nonfinancial assets and liabilities of an economy's financial corporation centers. The core of these are the assets and liabilities of the financial corporation sector that are classified in the following broad categories: (1) monetary gold and special drawing rights (SDR), (2) currency and deposits, (3) securities other than shares, (4) loans, (5) shares and other equity, (6) insurance technical reserves, (7) financial derivatives, (8) other accounts receivable/payable, and (9) nonfinancial assets.

Table 12.1. **Main Sectors and Subsectors**

|   |
|---|
| Financial corporations  |
| Central bank  |
| Other depository corporations   |
| Other financial corporations  |
| Insurance corporations and pension funds  |
| Other financial intermediaries, except insurance corporations and pension funds |
| Financial auxiliaries   |
| Nonfinancial corporations   |
| Public nonfinancial corporations  |
| Other nonfinancial corporations   |
| General government  |
| Central government  |
| State government  |
| Local government  |
| Social security funds*  |
| Households  |
| Nonprofit institutions serving households                                       |

\*Alternatively, social security funds can be allocated to the other subsectors of general government on the basis of the level at which they are organized.

Source: IMF, *Monetary and Financial Statistics Manual*, 2000.

## Financial Assets

Financial assets are financial claims (e.g., currency, deposits, and securities) that have demonstrable value. More specifically, financial assets are a subset of economic assets—entities over which ownership rights are enforced, individually or collectively, by institutional units and from which economic benefits can be derived by holding or using the assets over a period of time. Most financial assets are financial claims arising from contractual relationships entered into when one institutional unit provides funds to another. These contracts are the basis of creditor/debtor relationships through which asset owners acquire unconditional claims on the economic resources of other institutional units. The creditor/debtor relationship imparts asset and liability dimensions to a financial instrument. Despite the absence of a corresponding liability, monetary gold and SDR are also considered to be financial assets.

Other financial instruments (e.g., financial guarantees and commitments such as lines of credit, loan commitments, and letters of credit) that are contingent

or conditional upon the occurrence of uncertain future events are outside the financial assets boundary and are classified as other financial instruments. A classification of financial assets is provided below.

**12.1. Monetary Gold and SDR** — these are financial assets issued by the IMF for which there are no corresponding financial liabilities. Monetary gold consists only of gold held by the central bank or government (or by others subject to the effective control of the central bank or government) as part of official reserves. Gold holdings that are not part of official reserves are classified as nonfinancial assets.

## 12.2. Currency and Deposits

**12.2.1. Currency** — notes and coins that are of fixed nominal values and are issued by central banks or governments. Currency is divided into separate categories for national currency and foreign currency representing liabilities of central banks or governments in other countries. Central bank or central government holdings of unissued or demonetized currency are not financial assets and should not be recorded in sector balance sheets.

**12.2.2. Deposits** — all claims on the central bank, other depository corporations, government units, and, in some cases, other institutional units that are represented by evidence of deposit. The category of deposits comprises transferable deposits and other deposits. Separate categories are used for deposits denominated in national currency and for those in foreign currency.

**12.2.3. Transferable Deposits** — all deposits that are (1) exchangeable on demand at par and without penalty or restriction and (2) directly usable for making payments by check, draft, giro order, direct debit/credit, or other direct payment facility. Some types of deposit accounts embody only limited features of transferability. For example, some deposits have restrictions such as on the number of third-party payments that can be made per period and/or on the minimum size of individual third-party payments.

**12.2.4. Other deposits** — all claims, other than transferable deposits that are represented by evidence of deposit. Typical forms of deposits included under this classification are as follows:

- Sight deposits that permit immediate cash withdrawals but not direct third-party transfers.
- Savings and fixed-term deposits.
- Nontransferable deposits denominated in foreign currencies.
- Financial corporations' liabilities in the form of shares or similar evidence of deposit that are legally or in practice redeemable immediately or at relatively short notice.

- Shares of money market mutual funds that have restrictions on transferability such as on the number of checks that may be written per period or on the minimum amount per check.
- Repurchase agreements that are included in the national measures of broad money. Repurchase agreements that are not included in broad money should be classified under loans.

12.3. **Securities other than Shares** — negotiable instruments serving as evidence that units have obligations to settle by means of providing cash, a financial instrument, or some other item of economic value. Some common types of securities are government treasury bills, government bonds, corporate bonds and debentures, commercial paper, and certificates of deposit issued by depository corporations. Examples of less common types of securities include tradable depository receipts, notes issued through revolving underwriting facilities (RUFs) and note issuance facilities (NIFs), and secure mortgage loans and credit card receivables. Loans that have become negotiable *de facto* should be classified as securities other than shares.

A security provides evidence that a claim exists and specifies the schedule for interest payments and principal repayments. Common types of securities are those sold on the following bases:

- *coupon*: stipulates that periodic interest, or coupon payments will be made during the life of the instrument and that the principal will be repaid at maturity;
- *amortized*: stipulates that interest and principal payments will be made in installments during the life of the instrument;
- *discount or zero coupon*: a security is issued at a price that is less than the its face (or par) value and all interest and principal are paid at maturity.
- *deep discount*: a security is issued at a price that is less than its face value and the principal and a substantial part of the interest is paid at maturity;
- *indexed*: ties the amount of interest and/or principal payment to a reference index such as a price index or an exchange rate index.

Also belonging to the category of securities other than shares are (i) preferred stocks or shares that pay a fixed income but that do not provide for participation in the distribution of the residual value of an incorporated enterprise on dissolution, (ii) bonds that are convertible into shares, and (iii) bankers' acceptances.

## 12.4. Loans

12.4.1. *Loans* — financial assets that (i) are created when a creditor lends funds directly to a debtor, and (ii) are evidenced by non-negotiable documents.

This category includes all loans and advances—except accounts receivable/payable which are treated as a separate category of financial assets—extended to various sectors by financial corporations, governments, and, in some countries, by other sectors.

12.4.2. *Repurchase agreements (Repos) and lending of securities and other nonloan assets* — an arrangement involving the sale, for cash, of securities at a specified price with a commitment to repurchase the same or similar securities at a fixed price either on a specified future date (often one or a few days hence, but increasingly further in the future) or with an “open” maturity.

12.5. **Shares and other Equity** — all instruments and records acknowledging claims on the residual value of a corporation after the claims of all creditors have been met. Ownership of equity is usually evidenced by shares, stocks, participations, or similar documents. This category includes proprietors’ net equity in quasi-corporations as well as shares and equity in corporations. It also includes preferred stocks or shares that provide for participation in the residual value on dissolution of an incorporated enterprise.

12.6. **Insurance Technical Reserves** — net equity of households in life insurance reserves and pension funds and prepayments of premiums against outstanding claims. All these items are considered assets of beneficiaries and policyholders.

12.6.1. *Net equity of households in life insurance reserves and in pension funds*: policyholders’ claims on the reserves of insurance corporations and pension funds. These reserves ultimately must be used to provide benefits to policyholders upon their retirement or upon the occurrence of other specified events or to compensate heirs upon the death of the policyholder.

12.6.2. *Prepayments of insurance premiums and reserves against outstanding claims*: these are current claims of policyholders and beneficiaries rather than net equity of insurance corporations.

12.7. **Financial Derivatives**—a financial instrument linked to a specific financial instrument, indicator, or commodity, and through which specific financial risks (such as interest rate risk, currency, equity and commodity price risk, credit risk, etc.) can be traded in their own right in financial markets. The value of a financial derivative derives from the price of an underlying item such as an asset or index. No principal amount is advanced that has to be repaid, and no investment income accrues. Financial derivatives are used for a number of purposes including risk management, hedging, arbitrage between markets, and speculation.

12.8. **Other Accounts Receivable/Payable** — these consist of trade credit and advances.

12.9. **Other Financial Instruments** — these consist of contingency arrangements that do not give rise to unconditional requirements either to make payments or to provide other objects of value. Guarantees of payments by third parties are contingencies because payment is only required if the principal debtor defaults. Even though excluded from the monetary and financial statistics, data on contingencies should be reported to the compilers of monetary and financial statistics.

## Broad Money

The IMF *Manual* does not contain prescriptions for national definitions of money, credit, and debt. These are left to the discretion of national authorities. However, despite differences in national definitions, it is possible to construct broad money aggregates<sup>12</sup> for a given country from a uniform set of building blocks. (See Table 12.2.)

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- 12 Conventionally, there are several commonly used definitions of the monetary aggregates or money supply, so-called M1, M2, and M3. M1 or the 'narrow money' supply covers currency holdings by the public (currency in circulation) and demand deposits. Currency in circulation is obtained by deducting from currency issue the inactive cash held in the vaults of the central bank, the government and the commercial banking system. A slightly broader definition is provided by M2 or the 'broad' money supply which includes M1 and the so-called quasi-money which consists of savings and time deposits. M3 represents an even broader measure and includes M2 and various money market instruments such as foreign assets (net), domestic credits, and other items. Net foreign assets are claims of the banking system on nonresidents. Claims on residents are made up of claims on the private sector and claims on governments and other public entities. Claims on the private sector represent gross lending to individuals, enterprises and other nonfinancial institutions. Claims on the government represent loans to the government, purchase of treasury bills and government bonds. Domestic credit is the principal means by which money supply is either expanded or contracted by the central bank.

These definitions are specified as follows:

1. Currency in circulation
2. Demand deposits (or transferable deposits)
3. Money Supply (M1) or "narrow money" = ( 1+2)
4. Quasi-Money
  - (a) Saving deposits
  - (b) Time deposits
5. Money Supply (M2) = M1 + Quasi-money = (3 +4)
6. Foreign assets (net)
7. Domestic credits
8. Other items
9. Money Supply (M3) = M2 + (6)+(7)+(8)

**Table 12.2. Broad Money and Its Holders and Issuers:  
Representative Sectors and Liabilities<sup>1</sup>**

**Broad money holders**

Central government (inclusion usually pertains only to national currency holdings)

Other financial corporations

State and local governments

Public nonfinancial corporations

Other nonfinancial corporations

Other resident sectors

Nonresidents (inclusion usually pertains only to national currency holdings)

**Broad money liabilities**

**Issued by depository corporations**

National currency

Transferable deposits<sup>2</sup>

Other deposits<sup>3</sup>

Securities other than shares

Other<sup>4</sup>

**Issued by other sectors**

National currency issued by central government

Foreign currency (applies to countries in which foreign currency circulates as a medium of exchange)

Transferable deposits<sup>5</sup>

Other deposits accepted by the central government or the postal system

Other

1

National currency, transferable deposits, and other deposits shown under "issued by depository corporations" are included in broad money in most countries. Securities other than shares and "other" liabilities issued by depository corporations (or specific subcategories therein) are included in broad money in a smaller group of countries. The currency, deposit, and "other" categories shown under "issued by other sectors" are applicable to the broad money definitions in an even smaller group of countries.

2

May include deposits denominated in foreign currency.

3

Includes shares or similar evidence of transferable deposit issued by savings and loan associations, building societies, credit unions; savings accounts that provide automatic transfer service (ATS) through which savings account balances are transferred to transferable deposit accounts that would otherwise be overdrawn; electronic money issued by card or otherwise transferable; and other types not classified elsewhere. Includes any loans, financial derivatives, and shares or other equities included in broad money. Includes electronic money issued by units other than depository corporations.

In constructing broad money aggregates, it is necessary to evaluate the degree to which a financial asset provides “liquidity” and a “store of value.” Liquidity refers to the extent to which financial assets can be sold at, or close to, full market value on short notice. The most liquid financial assets are currency and transferable deposits since they can be used as media of exchange, that is, they are immediately exchangeable at full nominal value to acquire goods, services, and financial or nonfinancial assets.

Financial assets other than currency and transferable deposits must possess at least some liquidity if they are to be included in broad money aggregates. Their selection reflects a trade-off between their liquidity and their usefulness as stores of value in real terms. By definition, all financial assets have value and, therefore, to varying degrees, are stores of value. However, financial assets differ widely in the extent to which their real values are maintained or fluctuate in response to changes in prices and interest rates in the economy. The extent to which a financial asset serves as a store of value depends on more than simple preservation of nominal value. Financial assets that grow in nominal value and/or earn interest, dividends, or other yields are held because of their capacity to provide stores of real value.

### *Broad Money Aggregates*

**12.10. Currency and Transferable Deposits** — these comprise the most liquid financial assets and all countries include them in their broad money aggregates. The liquidity of currency and transferable deposits and, therefore, their usefulness as media of exchange arises from their underlying characteristics, i.e., legal tender or general acceptability, fixed nominal (face) value, transferability, divisibility, and maturity. These basic characteristics along with the yield are fundamental in deciding if a particular type of financial asset should be included in broad money and, if so, where it fits within the money hierarchy when there are several monetary aggregates.

**12.11. Foreign Currency** — this should, in principle, when widely accepted as a medium of exchange within a country and held by resident units other than depository corporations, be included in the currency component of broad money. Estimation of the amount of foreign currency in circulation for possible inclusion in broad money is particularly important for countries in which a foreign currency is the main (or only) type of currency in use.

**12.12. Transferable Deposits** — these comprise all deposits that are (1) exchangeable without penalty or restriction on demand at face value, and (2) directly usable for making third-party payments by check, draft, giro order, or other direct payment facility. Transferable deposits of these types if held by sectors that are designated as money holders are included in broad money.

12.13. **Savings Deposits** — these sometimes have automatic transfer service (ATS) features through which deposit balances are automatically transferred to a holder's transferable deposit account to cover overdrafts, that is, in the event that the transferable deposit account is overdrawn. Savings account balances become transferable, albeit indirectly, as a result of the automatic transfer feature. ATS accounts are normally included in transferable deposits. Foreign-currency-denominated deposits that can be directly used as a medium of exchange fall under the category of transferable deposits.

12.14. **Cashier's Checks and Similar Liabilities** — if issued by depository corporations these are usually classified as transferable deposits but may be classified as currency if they circulate as a widely accepted medium of exchange. In any event, they would normally be included in broad money. In some countries, shares in money market funds can be transferred by check or other means of direct third-party payment while in others there may be restrictions on the transferability features, for example, on the maximum number of checks written per period or on the minimum amount per check. Whatever their features, money market fund shares are usually included in broad money.

12.15. **Other Deposits** — these and securities other than shares account for the predominant portion of broad money components other than currency and transferable deposits. This category covers all types of nontransferable deposits: term deposits; savings deposits; foreign-currency-denominated deposits; sight deposits that cannot be directly used for third-party payments; shares or other evidence of deposit issued by savings and loan associations, building societies, credit unions, etc.

12.16. **Savings Deposits and Term Deposits** — if they are of very short maturity they can be redeemed (converted into cash or transferable deposits) with little or no delay or withdrawal penalty. Some types of short-term securities other than shares issued by depository corporations are convertible into cash or transferable deposits with reasonably short delays and at close to full value if traded before maturity and therefore are often included in broad money aggregates. Some medium-term securities (e.g., those that mature in 2 years or less) may be included in broad money.

#### *Assets that are not Broad Money Aggregates*

12.17. **Long-Term Securities** — these are much less liquid even if traded in secondary markets because of their fluctuations in value when interest rates change.

12.18. **Other Categories of Financial Assets** — these include loans, shares and other equity, financial derivatives, insurance technical reserves, and other accounts payable/receivable.

12.19. **Shares and Other Equity** — these serve as stores of value and may be converted to cash or transferable deposits through their sale in organized securities exchanges or over-the-counter markets. However, they have limited liquidity. Shares in money market funds are an exception. Such funds invest only or primarily in short-term money market securities such as treasury bills, certificates of deposit, and commercial paper.

### *The Monetary Base*

The monetary base comprises central bank liabilities that support the expansion of broad money and credit. It is sometimes called “high-powered money,” because changes in the monetary base usually lead to even larger increases in money and credit. The base is not a monetary aggregate because it measures the funding that underlies the monetary aggregate rather than a monetary aggregate itself. The monetary base includes central bank-issued currency included in the monetary aggregates, but it also includes at least two components that are excluded from the monetary aggregates, namely other depository corporations’ deposit holdings at the central bank and their holdings of national currency.

A broad definition of the monetary base would include all central bank liabilities to the financial corporations and other sectors excluding central government holdings of central bank liabilities other than currency. Narrower definitions would exclude some categories of central bank liabilities to other depository corporations, other financial corporations, and/or other sectors. Deposits that are restricted for significant periods of time are typically excluded from the monetary base.

Table 12.3 shows major types of central bank liabilities that are representative of those included in the monetary base in many countries.

### **Frameworks for Presentation**

Monetary and financial statistics can be organized and presented in four formats, namely, *sectoral balance sheets*, *surveys*, *the 1993 SNA accounts*, and *flow of funds*. The organization and presentation of monetary statistics follow a hierarchical approach based on two general data frameworks (a two-level procedure) —sectoral balance sheets and surveys. At the first level, stock and flow data reported by individual institutional units are aggregated into sectoral balance sheets that contain comprehensive data for the individual financial corporation subsector, that is, the central bank, other depository corporations, and other financial corporations. At the second level, the data in the sectoral balance sheets are consolidated into surveys. The data in the sectoral balance sheets are also used in the compilation of financial statistics.

Table 12.3. **The Monetary Base: Representative Components<sup>1</sup>****Currency in circulation<sup>2</sup>****Central bank liabilities to other depository corporations**

Transferable deposits (required reserves and clearing balances)

Other deposits

Securities issued by the central bank<sup>3</sup>**Central bank liabilities included in broad money**

Transferable deposits

Other deposits

**Central bank securities included in broad money**

1

Broader or narrower definitions of the monetary base may be used in the national context.

2

Normally comprises currency holdings of all subsectors other than the central bank. In particular, the holdings of the central government, of all financial corporations other than the central bank, and of nonresidents are usually included along with the holdings of the other sectors. The currency component of the monetary base in the central bank survey includes only the national currency issued by the central bank. The currency component of the monetary base in a monetary authorities account would also include any currency issued by the central government.

3

If holdings of these securities can be used in satisfying reserve requirements they are included in the monetary base. Otherwise, such holdings are included or excluded depending on the specific formulation and analytical use of the monetary base.

**12.20. Balance Sheets** — these contain the highly aggregated stock and flow data for all categories of assets and liabilities of an individual subsector within the financial corporation center.

**12.21. Surveys** — constitute a framework in which the data from the sectoral balance sheets of one or more of the financial corporation subsectors are combined into more aggregated asset and liability categories that are particularly useful for analytical purposes. The surveys comprise the following:

- three surveys that cover the individual financial corporation subsectors – the Central Bank Survey (CBS), the Other Depository Corporation Survey (ODCS), and the Other Financial Corporation Survey (OFCS);
- the Depository Corporation Survey (DCS), which consolidates the CBS and the ODCS;
- a survey that contains consolidated data for the entire sector, the Financial Corporation Survey (FCS) which consolidates the DCS and the OFCS.

12.22. **The 1993 SNA** — is the framework relevant to the presentation of financial statistics that consist of the stock and flow data on the financial assets and liabilities of all sectors of an economy (as distinguished from the financial corporation center for which monetary statistics are compiled.) The *1993 SNA* describes the entire economy in terms of three major accounts: (i) the current accounts which comprise the production account, the distribution of income account, and the use of income account; (ii) the accumulation accounts which consist of the capital account, the financial account, and the other changes in assets account; and (iii) the balance sheets which show stocks of nonfinancial and financial assets and liabilities on the date for which the balance sheet is compiled.

Most relevant for purposes of financial statistics are the accumulation accounts and the balance sheets. These show financial flows among the sectors of an economy and the economy's exact financial asset and liability position at the beginning and end of the period for which the accounts are compiled.

12.23. **Flow of Funds Accounts** — these constitute the fourth framework of presentation for monetary and financial statistics. Flow of funds accounts had their origin as a separate statistical system but are now commonly linked to the nonfinancial economy by their integration within the national accounting framework. Flow of funds accounts exist in various forms that differ according to the analytical needs that are addressed and by the complexity and detail of the accounting presentation and data requirements. The simplest identify financial transactions of major importance between sectors at an aggregated level. The most complex consist of a three-dimensional matrix that relates the creditor sector, the debtor sector, and the financial asset used in the transaction.

Because a country's approach to flow of funds accounts depends on its current state of statistical development and analytical needs, the *IMF Manual* makes no specific recommendations with regard to their compilation. Rather, it describes three variations in order of increasing complexity that are general enough to assimilate new financial instruments and practices. The *Manual* leaves it to national authorities to determine which of these is the most appropriate to their circumstances.

## 13. GOVERNMENT FINANCE

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The main reference for this section is the International Monetary Fund's 2002 *Government Finance Statistics Manual 2001* (hereinafter referred to as *GFSM 2001*). Countries that continue to report their financial data on the basis of the 1986 government finance statistics framework should refer to *GFSM 2001 Companion Material: Classification of GFSM 1986 Data to the GFSM 2001 Framework* for guidance in the conversion of their data to the 2001 framework. All concepts and definitions in this section are reproduced from the *GFSM 2001*.

### Background

The *GFSM 2001* is a revision and updating of previous versions. It provides a comprehensive conceptual and accounting framework for the analysis and evaluation of fiscal policy, especially the performance of the general government sector and the broader public sector of any country. Such analysis and evaluation involves an assessment of (i) the size of the public sector, its contribution to aggregate demand, investment, and saving; (ii) the impact of fiscal policy on the economy, including resource use, monetary conditions, and national indebtedness; (iii) the tax burden; (iv) tariff protection; and (v) the social safety net. Most important, especially from the viewpoint of developing countries, the assessment includes an evaluation of the effectiveness of spending on poverty alleviation and the sustainability of fiscal policies.

The *GFSM 2001* is based on concepts and definitions derived from economic principles and economic reasoning that should be universally valid regardless of the circumstances in which they are employed. As such, it is applicable to all types of economies regardless of the institutional or legal structure of a country's government, the level of development of its statistical system, or the extent of public ownership of resources or participation in socioeconomic activities.

To support fiscal analysis, the *GFSM 2001* is totally harmonized with other internationally recognized macroeconomic statistical systems. These are the System of National Accounts (hereinafter referred to as the 1993 SNA) and two specialized IMF systems that focus on the balance of payments and on monetary and fiscal statistics, i.e., *Balance of Payments Manual, fifth edition (1993)*, and *Monetary and Financial Statistics Manual (2000)*.

The *GFSM 2001* has several new distinctive features.

*Coverage of units:* the focus is the general government sector as defined in the 1993 SNA. This sector consists of all resident government units and all

resident nonprofit institutions serving households that are controlled and mainly financed by government. In contrast, the *GFSM 1986* adopted a functional approach by including all units carrying out a function of government.

*Time of recording economic events:* transactions and other economic flows are recorded on the principles of accrual accounting which require that flows are recorded when economic value is created, transformed, exchanged, transferred, or extinguished. In *GFSM 1986*, transactions are recorded on a cash basis when cash is received or paid.

*Coverage of events:* coverage includes all economic events that affect assets, liabilities, revenue, or expenditure including barter and grants of goods and services. In *GFSM 1986*, it covers only those events represented by a cash transaction.

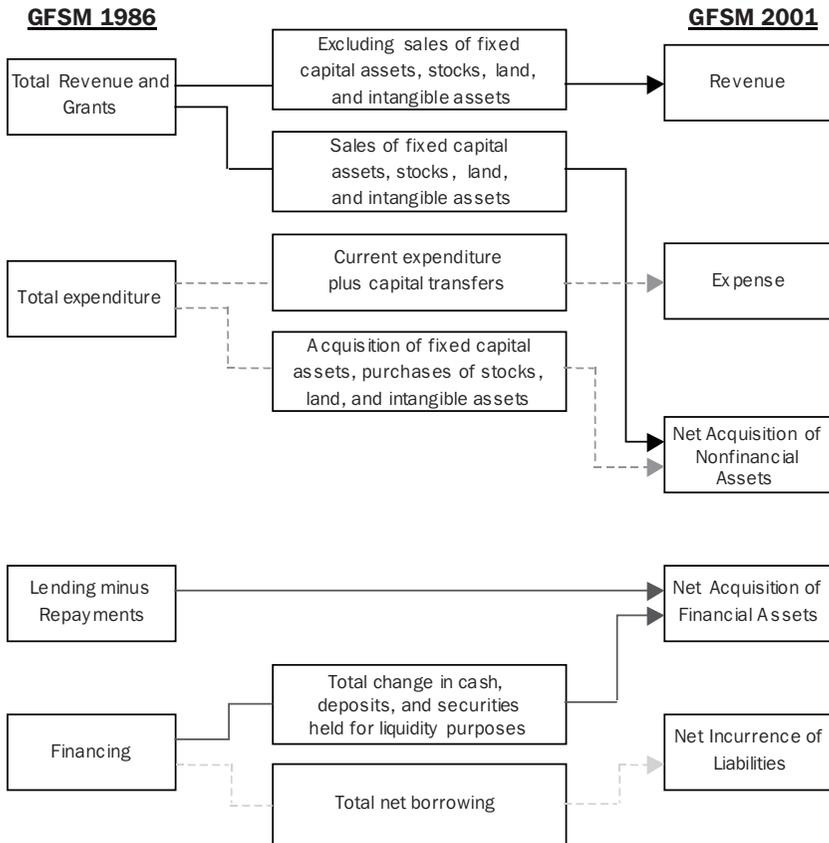
*Valuation:* assets and liabilities are valued at current market prices. This applies to debt securities that may have a different nominal value. However, since loans generally are not traded and do not have market value, they are recorded at their nominal values. In *GFSM 1986*, debt securities are always valued at the amount the government is obligated to pay when the debt matures which may differ from both the nominal value and the current market value.

*Integration of flows and stocks:* stock data at the end of an accounting period can be derived from the stock data at the beginning of the accounting period and the flows occurring during the period. As a result of this integration, all events that affect the financial performance, financial position, or liquidity of the general government sector are included. In *GFSM 1986*, the stock data included are limited to debt liabilities.

The relationship between the *GFSM 1986* and 2001 classification systems is as follows:

- All *GFSM 1986* total revenue and grants are classified to the *GFSM 2001* aggregate revenue except for the sales of fixed capital assets, stocks, and land and intangible assets which are classified to the net acquisition of nonfinancial assets (disposals/sales).
- The *GFSM 1986* aggregates of total current expenditure and capital transfers are classified to the *GFSM 2001* aggregate expense. The remainder of *GFSM 1986* expenditure, i.e., the acquisition of fixed capital assets and purchases of stocks, land, and intangible assets, are classified to the *GFSM 2001* aggregate net acquisition of nonfinancial assets (acquisitions/purchases).
- The *GFSM 1986* aggregate lending minus repayments is classified to the *GFSM 2001* aggregate net acquisition of financial assets.

**Diagram 1: Broad Overview of Relationships Between GFSM 1986 and GFSM 2001 Classification Systems**



Source: IMF. 2002. *Government Finance Statistics Manual 2001*.

- The *GFSM 1986* aggregate financing is split into two components. The financial assets change in cash, deposits, and securities held for liquidity purposes are classified to the *GFSM 2001* aggregate net acquisition of financial assets. The liabilities that make up total net borrowing are classified to the *GFSM 2001* aggregate net incurrence of liabilities.

The core of the analytic framework of *GFSM 2001* is a set of four financial statements. Three can be combined to demonstrate that all changes in stocks result from flows. These are (1) the statement of government operations, (2) the statement of other economic flows, and (3) the balance sheet. In addition, the framework includes a statement of sources and uses of cash to provide key information on liquidity. The concepts and definitions covered in this *Manual* are mainly those put forward in these statements supplemented by other concepts and definitions that are frequently used in compiling and analyzing government financial statistics.

## Statement of Government Operations

This statement presents details of transactions in revenue, expense, the net acquisition of nonfinancial assets, the net acquisition of financial assets, and the net incurrence of liabilities. Table 13.1 itemizes its contents.

Table 13.1. **Statement of Government Operations**

**TRANSACTIONS AFFECTING NET WORTH:**

REVENUE

Taxes  
Social contributions [GFS – see note below]  
Grants  
Other revenue

EXPENSE

Compensation of employees [GFS]  
Use of goods and services  
Consumption of fixed capital [GFS]  
Interest [GFS]  
Subsidies  
Grants  
Social benefits [GFS]  
Other expense

*NET/GROSS OPERATING BALANCE<sup>1</sup>*

**TRANSACTIONS IN NONFINANCIAL ASSETS:**

NET ACQUISITION OF NONFINANCIAL ASSETS<sup>2</sup>

Fixed assets  
Change in inventories  
Valuables  
Non-produced assets

*NET LENDING/BORROWING [GFS]<sup>3</sup>*

**TRANSACTIONS IN FINANCIAL ASSETS AND LIABILITIES (FINANCING):**

NET ACQUISITION OF FINANCIAL ASSETS

Domestic  
Foreign

NET INCURRENCE OF LIABILITIES

Domestic  
Foreign

- 1 The net operating balance equals revenue minus expense. The gross operating balance equals revenue minus expense other than consumption of fixed capital.
- 2 Acquisitions minus disposal and consumption of fixed capital.
- 3 Net lending/borrowing equals the net operating balance minus the net acquisition of nonfinancial assets. It is also equal to the net acquisition of financial assets minus the net incurrence of liabilities.

Source: IMF. 2002. *Government Finance Statistics Manual 2001*.

Note: [GFS] indicates that this item has the same name but different coverage in the 1993 SNA.

### *Revenue*

13.1. **Revenue** — all transactions that increase the net worth of the general government sector. Governments receive three major types of revenue from their fiscal operations: taxes, social contributions, and other revenue. Often, these are supplemented by grants from other governments or external organizations.

13.2. **Taxes** — compulsory transfers received by the general government sector. They include fees that are clearly out of proportion to the costs of providing services, but exclude compulsory social contributions, fines, and penalties.

13.3. **Social Contributions** — include receipts of social security schemes and employer social insurance schemes that provide benefits other than retirement benefits.

13.4. **Grants** — noncompulsory transfers received from other governments or from international organizations. They may be received in cash or in kind.

13.5. **Other Revenue** — includes all revenue transactions not classified as taxes, social contributions, or grants. The major items are sales of goods and services, interest and other types of property income, voluntary transfers in cash or in kind other than grants, and fines and penalties.

### *Expense*

13.6. **Expenses** — all transactions that decrease the net worth of the general government sector. The major types of expense are compensation of employees, use of goods and services, consumption of fixed capital, interest, subsidies, grants, social benefits, and other expenses.

13.7. **Compensation of Employees** — the remuneration in cash or in kind payable to an employee in return for work done. It includes social insurance contributions made by a general government unit on behalf of its employees.

13.8. **Use of Goods and Services** — the total value of goods and services purchased by the general government sector for use in production or acquired for resale less the net change in inventories of those goods and services.

13.9. **Consumption of Fixed Capital** — the decline in the value of the stock of fixed assets during the accounting period as a result of physical deterioration, normal obsolescence, and normal accidental damage.

13.10. **Interest** — an expense incurred by a debtor for the use of another unit's funds. Interest-bearing financial instruments can be classified as deposits, securities other than shares, loans, or accounts receivable/payable.

13.11. **Subsidies** — current transfers that government units pay to enterprises either on the basis of their levels of activities or on the basis of quantities or values of the goods or services that they produce, sell, or import. Included are transfers to public corporations and other enterprises that are intended to compensate for operating losses.

13.12. **Grants** — noncompulsory transfers in cash or in kind paid to another general government unit or to an international organization.

13.13. **Social Benefits** — current transfers to households to provide for needs arising from events such as sickness, unemployment, retirement, housing, or family circumstances. The benefits may be paid in cash or in kind.

13.14. **Other Expenses** — includes all expense transactions not elsewhere classified. Transactions recorded here include property expense other than interest; taxes, fines, and penalties imposed by one government on another; current transfers to nonprofit institutions serving households; capital transfers other than capital grants, and nonlife insurance premiums and claims.

#### *Transactions in Nonfinancial Assets*

13.15. **Transactions in Nonfinancial Assets** — Transactions that change a government's holdings of financial assets. These are classified as fixed assets, inventories, valuables, and non-produced assets.

13.16. **Fixed Assets** — produced assets that are used repeatedly or continuously in production for more than one year.

13.17. **Inventories** — stocks of goods held by general government units that are intended for sale, use in production, or other use at a later date. They can be strategic stocks, materials and supplies, work in progress, finished goods, or goods held for resale.

13.18. **Valuables** — produced assets that are not used primarily for purposes of production or consumption but are held as stores of value over time.

13.19. **Non-Produced Assets** — assets needed for production that have not themselves been produced, such as land, subsoil assets, and certain intangible assets.

#### *Transactions in Financial Assets and Liabilities*

13.20. **Financial Transactions** — those that change a government's holdings of financial assets and liabilities.

Table 13.2. **Statement of Other Economic Flows**

## CHANGE IN NET WORTH RESULTING FROM OTHER ECONOMIC FLOWS

## NONFINANCIAL ASSETS

Holding Gains

Other volume changes

## FINANCIAL ASSETS

Holding Gains

Other volume changes

## LIABILITIES

Holding Gains

Other volume changes

Source: IMF. 2002. *Government Finance Statistics Manual 2001*.

### Statement of Other Economic Flows

This statement presents influences on the government's net worth that are not the result of government transactions. Table 13.2 displays their classification.

13.21. **Holding Gains** — changes in the value of assets, liabilities, and other net worth due solely to price effects. They can result from changes in the general price level or in relative prices or from changes in the exchange rate.

13.22. **Other Volume Changes** — can be described as resulting from exceptional or unexpected events, from normal events, or from reclassifications.

13.23. **Exceptional or Unexpected Events** — include losses from earthquakes, floods, fires, wind, wars, and other catastrophes. They also include bad debts, writing off by creditors, uncompensated seizures, abandonment of production facilities before construction is completed, unforeseen obsolescence of assets, unforeseen degradation of fixed assets from pollution, and exceptional losses of inventories.

13.24. **Normal Events** — include the discovery of a subsoil asset, the depletion of subsoil assets through extraction, the registration of a patent, a change in the liability of a defined benefit pension plan resulting from a change in the benefits covered, the designation of a structure as a historic monument, and the natural growth of uncultivated biological resources.

13.25. **Reclassifications** — occur when a part of a general government unit begins to operate with sufficient independence that it is classified as a quasi-corporation, when a general government unit is converted to a public corporation or vice versa because of a change in its operations or the prices that it charges for its services, and when there is a restructuring or merger of general government units.

| Table 13.3. <b>Balance Sheet</b> |                       |                       |
|----------------------------------|-----------------------|-----------------------|
|                                  | Opening balance sheet | Closing balance sheet |
| <i>Net Worth</i>                 |                       |                       |
| Nonfinancial Assets              |                       |                       |
| Financial Assets                 |                       |                       |
| Domestic                         |                       |                       |
| Foreign                          |                       |                       |
| Monetary gold and SDR            |                       |                       |
| Liabilities                      |                       |                       |
| Domestic                         |                       |                       |
| Foreign                          |                       |                       |

Source: IMF. 2002. *Government Finance Statistics Manual 2001*.

## The Balance Sheet

This is a record of the stocks of assets, liabilities and net worth of the general government sector at the end of an accounting period. Table 13.3 itemizes the balance sheet.

13.26. **Net Worth** — total assets less total liabilities.

13.27. **Nonfinancial Assets** — classified as fixed assets, inventories, valuables, or non-produced assets.

13.28. **Financial Assets** — financial claims (e.g., currency, deposits, and securities) that have demonstrable value. Most claims arise from contractual relationships entered into when one institutional unit provides funds to another. They represent a liability of the contracting party and are classified by residency of the counterparty, by type of instrument, and by sector of the counterparty.

13.29. **Liabilities** — obligations to provide economic value to another institutional unit.

## Statement of Sources and Uses of Cash

This statement shows the total amount of cash generated or absorbed by (1) current operations, (2) transactions in nonfinancial assets, and (3) transactions involving financial assets and liabilities other than cash itself. Table 13.4 provides details of this statement.

13.30. **Cash** — money on hand and cash equivalents.

13.31. **Cash on Hand** — notes and coins held and deposits held on demand with a bank or other financial institution.

Table 13.4. **Statement of Sources and Use of Cash****CASH FLOWS FROM OPERATING ACTIVITIES**

CASH RECEIPTS FROM OPERATING ACTIVITIES  
 CASH PAYMENTS FROM OPERATING ACTIVITIES  
*Net cash inflow from operating activities*

**CASH FLOWS FROM INVESTMENTS IN NONFINANCIAL ASSETS:**

PURCHASE OF NONFINANCIAL ASSETS  
 SALES OF NONFINANCIAL ASSETS  
*Net cash outflow from investments in nonfinancial assets*

*CASH SURPLUS/DEFICIT*

**CASH FLOWS FROM FINANCING ACTIVITIES:**

NET ACQUISITION OF FINANCIAL ASSETS OTHER THAN CASH  
 NET INCURRENCE OF LIABILITIES  
*Net cash inflow from financing activities*

*NET CHANGE IN STOCK OF CASH*

Source: IMF. 2002. *Government Finance Statistics Manual 2001*.

13.32. **Cash Equivalents** — highly liquid investments that are readily convertible to cash on hand at the government's option and overdrafts considered integral to the cash management function.

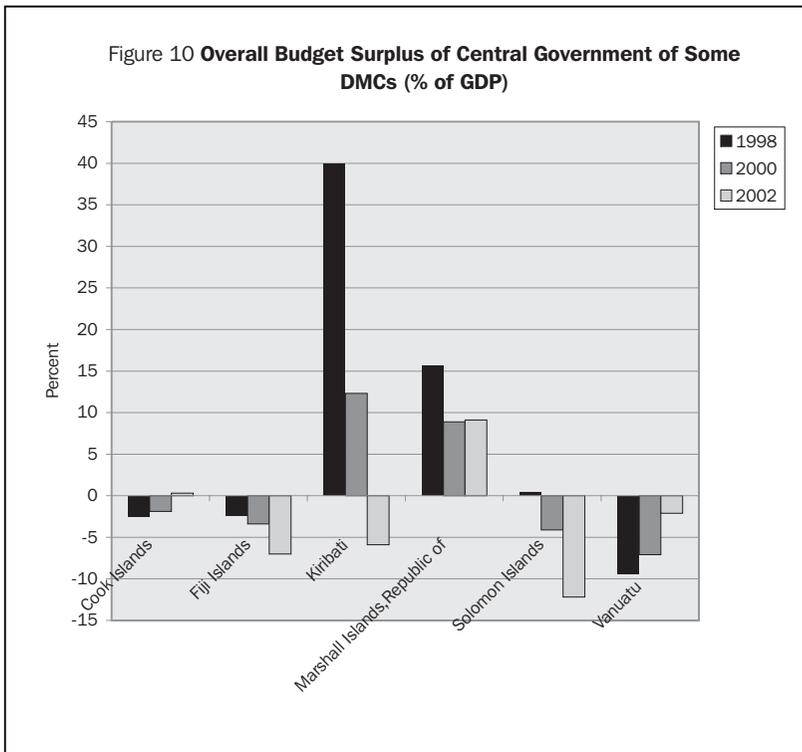
13.33. **Transactions that are not in Cash by their Nature** — consumption of fixed capital, imputed transactions, barter, and other transactions in kind.

### Other Concepts and Definitions

13.34. **Overall Surplus/Deficit** — the difference between total revenue and total expenditure.<sup>13</sup> The overall surplus/deficit provides a picture of the overall financial position of the government. See Figure 10 for this budgetary condition for some DMCs in 1998, 2001 and 2002.

13.35. **Financing** — equal to the magnitude of the overall surplus or deficit but with the opposite sign. It shows the sources of funds obtained to cover the deficit or the disposition of available surplus funds. Essentially, it comprises foreign and domestic borrowing (net of amortization), changes in government deposits and currency holdings, and the transfer of unrealized profits or losses from foreign exchange revaluations to the central government.

13 In the *GFSM 2001*, the term "expense" replaces "expenditure" used in the 1986 *GSFM* because it is more closely associated with the accrual basis of recording and indicates that the transactions in nonfinancial assets are excluded.



Source: ADB, *Asian Development Outlook 2003*.

13.36. **Domestic Borrowing (net)** — the net change in the entire debt held by resident individuals, enterprises, and institutions through transactions such as the sale of government securities, the contracting of loans from banks, or the use of overdraft facilities at banks.

13.37. **Foreign Borrowings (net)** — the net change in debt incurred in relation to nonresidents, enterprises, or institutions. This covers all government borrowings from minus repayments to international development institutions and foreign governments and their agencies, issuance of securities to nonresidents, loans and advances from foreign banks, and credits given by foreign suppliers.

13.38. **Foreign Grants** — non-repayable funds received (in cash or in kind) from foreign governments or international institutions for which no services are rendered by residents of the nation. They are essentially gifts and may be for current or capital purposes. Where applicable, figures are shown net of grants extended.

13.39. **Use of Cash Balances** — this covers changes in cash, deposits, negotiable securities held for liquidity purposes, and the like. It may also include the net acquisition of securities for purposes of public policy as well as any statistical discrepancy.

## **14. BALANCE OF PAYMENTS AND EXCHANGE RATES**

The description of the balance of payments (BOP) is largely drawn from the IMF's (1993) *Balance of Payments Manual, Fifth Edition*. All BOP concepts and definitions are reproduced from this publication.

### **Background**

The fifth edition of the *Balance of Payments Manual* provides guidelines for compiling data measuring external transactions and the stock of external financial assets and liabilities. The fifth edition redefined the current account to exclude capital transfers such as debt forgiveness, migrants' capital transfers, and grants for acquiring capital goods. Those are now incorporated in an expanded capital and financial account. Also within the current account, clear distinctions are made among goods, services, income, and current transfers. The financial account introduces a hierarchical structure for functional categories, asset/liability distinctions, instrument specifications, sectorization, and clearer definitions of long- and short-term instruments. This edition has been harmonized to the extent possible with the 1993 SNA, and the IMF publications *Money and Banking Data*, and *Government Finance Statistics*.<sup>14</sup>

### **Structure and Classification**

BOP statistics must be arranged within a coherent structure to facilitate their utilization and adaptation for multiple purposes, for example, policy formulation, analytical studies, projections, bilateral comparisons of particular components or total transactions, and regional and global aggregations.

The structure and classification of balance of payments standard components reflect conceptual and practical considerations. The classification also reflects efforts to link the structure of the financial account to that of the income accounts and that of the international investment position. The scheme is designed as a flexible framework to be used by many countries in the long-term development of external statistics. Some countries may not be able to provide data for many items; others may be able to provide additional data.

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14 Some countries continue to compile their BOP in accordance with the recommendations contained in the fourth edition of the *Manual*. However, the IMF converts the data reported to conform to the fifth edition.

## Standard Components

The standard components are comprised of two main groups of accounts. The “current account” pertains to goods and services, income, and current transfers. The “capital and financial account” pertains to capital transfers and acquisition or disposal of non-produced, nonfinancial assets and to financial assets and liabilities, respectively.

Most items entered in the current account show gross debits and credits. Most entries in the capital and financial account should be made on a net basis, that is, each component should be shown only as a credit or a debit. Inflows of real resources, increases in financial assets, and decreases in liabilities are shown as debits; outflows of real resources, decreases in financial assets, and increases in liabilities are shown as credits. The *Balance of Payments Manual* provides detailed classifications.

The structure and characteristics of the current account and the capital and financial account show significant changes from the fourth to the fifth edition. Covered in the current account are all transactions (other than those in financial items) that involve economic values and that occur between resident and nonresident entities. Also covered are offsets to current economic values provided or acquired without a *quid pro quo*.

The capital and financial account, on the other hand, covers all transactions of residents with nonresidents that involve real and financial assets and liabilities. Assets represent claims on nonresidents, and liabilities represent indebtedness to nonresidents. The two parties to a transaction in assets or liabilities are usually a resident and a nonresident, but in some instances both parties may be residents or nonresidents.

All valuation changes and all other changes that do not reflect transactions in foreign assets and liabilities are excluded from the capital and financial account but are reflected in the international investment position. Supplementary statements identify certain items that are of analytical interest and that affect various accounts. Examples of such items are liabilities constituting foreign authorities’ reserves and exceptional financing transactions.

Classification of the financial account and the income components of the current account are interrelated and must be consistent to facilitate analysis, to form an effective link between the balance of payments and the international investment position, and to be compatible with the SNA and other IMF statistical systems.

## Balance of Payments

The shortened standard components of the BOP are given in Table 14.1. The longer standard components of the BOP are enumerated in Appendix 1.

| <b>Table 14.1. Balance of Payments: Standard Components</b> |        |       |
|---|--------|-------|
|   | Credit | Debit |
| A. Current Account  |        |       |
| 1. Goods and services                                       |        |       |
| a. Goods  |        |       |
| b. Services   |        |       |
| 2. Income   |        |       |
| a. Compensation of employees                                |        |       |
| b. Investment income  |        |       |
| 3. Current transfers  |        |       |
| a. General government                                       |        |       |
| b. Other sectors  |        |       |
| B. Capital and Financial Account                            |        |       |
| 1. Capital account  |        |       |
| 2. Financial account  |        |       |
| a. Direct investment  |        |       |
| b. Portfolio investment                                     |        |       |
| c. Other investment   |        |       |
| d. Reserve assets   |        |       |

Source: IMF, 1993. *Balance of Payments Manual, Fifth Edition*.

### *Current Account*

#### 14.1. Goods and Services

##### *Goods*

“General merchandise” covers most movable goods that residents export to or import from nonresidents and that, with a few specified exceptions, undergo changes in ownership (actual or imputed).

“Goods for processing” covers exports (or in the compiling economy, imports) of goods crossing the frontier for processing abroad and subsequent re-import (or in the compiling economy, export) of the goods which are valued on a gross basis before and after processing.

“Repairs on goods” covers repair activity on goods provided to or received from nonresidents on ships, aircraft, etc. Although the physical movement of these goods is similar to that described above, the repairs are valued at the prices (fees paid or received) of the repairs and not at the gross values of the goods before and after repairs are made.

“Goods procured in ports by carriers” covers all goods (such as fuels, provisions, stores, and supplies) that resident/nonresident carriers (e.g., air, ships) procure abroad or in the compiling economy. The classification does not cover auxiliary services (e.g., towing, maintenance) that are covered under transportation.

“Nonmonetary gold” covers exports and imports of all gold not held as reserve assets (monetary gold) by the authorities. Nonmonetary gold is treated the same as any other commodity and, when feasible, is subdivided into gold held as a store of value and other (industrial) gold.

### *Services*

“Transportation” covers most of the services that are performed by residents for nonresidents (and vice versa). However, freight insurance is now included with insurance services rather than with transportation. Transportation includes freight and passenger transport by all modes and other distributive and auxiliary services including rentals of equipment with crew.

“Travel” covers goods and services—including those related to health and education—acquired from an economy by nonresident travelers (including excursionists) for business and personal purposes during their visits of less than 1 year in that economy. Travel excludes international passenger services that are included in transportation. Students and medical patients are treated as travelers regardless of the length of stay. Certain others—military and embassy personnel and nonresident workers—are not regarded as travelers. However, expenditures by nonresident workers are included in travel, while those of military and embassy personnel are included in government services not included elsewhere.

“Communication services” cover transactions between residents and nonresidents. Such services comprise postal, courier, and telecommunication services (transmission of sound, images, and other information by various modes and associated maintenance provided by/for residents for/by nonresidents).

“Construction services” cover building and installation work that is, on a temporary basis, performed abroad/in the compiling economy or in extraterritorial enclaves by resident/nonresident enterprises and associated personnel. Such work does not include that undertaken by a foreign affiliate of a resident enterprise or by an unincorporated site office that, if it meets certain criteria, is equivalent to a foreign affiliate.

“Insurance services” cover the provision of insurance to nonresidents by resident insurance enterprises and vice versa. This item comprises services provided for freight insurance (on goods exported and imported), services provided for other types of direct insurance (including life and nonlife), and services provided for re-insurance.

“Financial services” (other than those related to insurance enterprises and pension funds) cover financial intermediation services and auxiliary services conducted between residents and nonresidents. Included among others are commissions and fees for letters of credit, lines of credit, financial leasing services, foreign exchange transactions, consumer and business credit services, brokerage services, underwriting services, and arrangements for various forms of hedging instruments. Examples of auxiliary services include financial market operational and regulatory services and security custody services.

“Computer and information services” cover resident/nonresident transactions related to hardware, software implementation, information services (data processing, database, news agency), and maintenance and repair of computers and related equipment.

“Royalties and license fees” cover receipts (exports) and payments (imports) of residents and nonresidents for (i) the authorized use of intangible, non-produced, nonfinancial assets and proprietary rights such as trademarks, copyrights, patents, processes, techniques, designs, manufacturing rights, franchises, and (ii) the use through licensing agreements of produced originals or prototypes such as manuscripts and films.

“Other business services” provided by residents to nonresidents and vice versa cover selling and other trade-related services; operational leasing services; and miscellaneous business, professional, and technical services.

“Personal, cultural, and recreational services” cover (i) audiovisual and related services and (ii) other cultural services provided by residents to nonresidents and vice versa. Included under (i) are services associated with the production of motion pictures on films or videotape, radio and television programs, and musical recordings. (Examples of these services are rentals and fees received by actors, producers, etc. for productions and for distribution rights sold to the media.)

“Government services not included elsewhere” cover all services (such as expenditures of embassies and consulates) associated with government sectors or international and regional organizations and not classified under other items.

## 14.2. Income

“Compensation of employees” covers wages, salaries, and other benefits, in cash or in kind, and includes those of border, seasonal, and other nonresident workers (e.g., local staff of embassies).

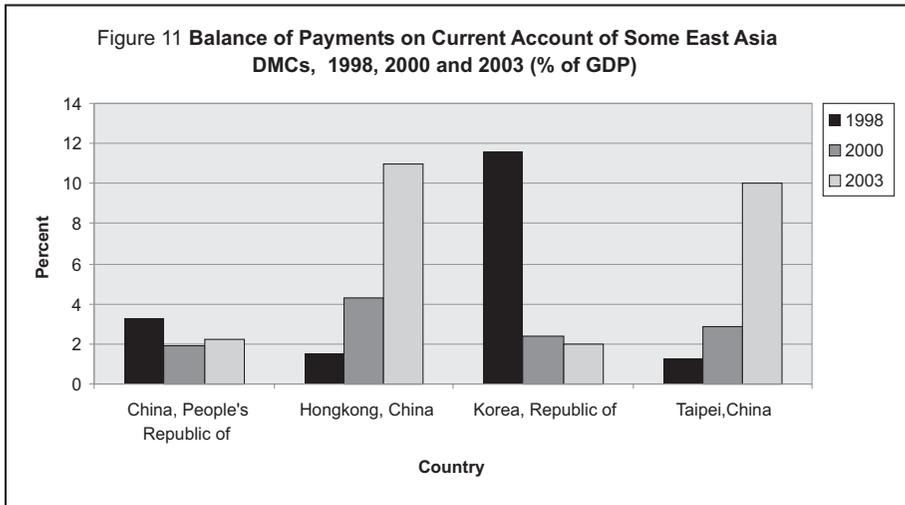
“Investment income” covers receipts and payments of income associated, respectively, with residents’ holdings of external financial assets and with residents’ liabilities to nonresidents. Investment income consists of direct investment income, portfolio investment income, and other investment income. The direct investment component is divided into income on equity (dividends, branch profits, and reinvested earnings) and income on debt (interest); portfolio investment income is divided into income on equity (dividends) and income on debt (interest); other investment income covers interest earned on other capital (loans, etc.) and, in principle, imputed income to households from net equity in life insurance reserves and in pension funds.

## 14.3. Current transfers

“Current transfers” are distinguished from “capital transfers”, which are included in the capital and financial account in concordance with the *SNA* treatment of transfers. Transfers are the offsets to changes which take place between residents and nonresidents in ownership of real resources or financial items and, whether the changes are voluntary or compulsory, do not involve a *quid pro quo* in economic value. Current transfers consist of all transfers that do not involve (i) transfers of ownership of fixed assets; (ii) transfers of funds linked to, or conditional upon, acquisition or disposal of fixed assets; (iii) forgiveness, without any counterparts being received in return, of liabilities by creditors. All of these are capital transfers. Current transfers include those of general government (e.g., current international cooperation between different governments, payments of current taxes on income and wealth, etc.), and other transfers (e.g., workers’ remittances, premiums—less service charges, and claims on non-life insurance). See Figure 11 for the BOP on current accounts of East Asia and some East Asia DMCs in 1998, 2000, and 2003.

## Capital and Financial Account

14.4 **Capital Account** — major components are capital transfers and acquisition/disposal of non-produced, nonfinancial assets. Capital transfers consist of those involving transfers of ownership of fixed assets, transfers of funds linked to or conditional upon acquisition or disposal of fixed assets, or



Source: ADB, *Asian Development Outlook 2004*.

cancellation without any counterparts received in return of liabilities by creditors. Capital transfers include two components: (i) general government, which is subdivided into debt forgiveness and other, and (ii) other, which is subdivided into migrants' transfers, debt forgiveness, and other transfers. Acquisition/disposal of non-produced, nonfinancial assets largely covers intangibles such as patented entities, leases or other transferable contracts, and goodwill. This item does not cover land in a specific economic territory but may include the purchase or sale of land by a foreign embassy.

**14.5. Financial Account** — all components are classified according to type of investment or functional subdivision, i.e., direct investment, portfolio investment, other investment, reserve assets.

**14.5.1. Direct investment** reflects the lasting interest of a resident entity in one economy (direct investor) in an entity resident in another economy (direct investment enterprise). It covers all transactions between direct investors and direct investment enterprises including the initial transaction between the two and all subsequent transactions between them and among affiliated enterprises, both incorporated and unincorporated. Direct investment transactions occurring abroad and in the reporting economy are subclassified into equity capital, reinvested earnings, and other capital (intercompany transactions). For equity capital and other capital, claims on and liabilities to affiliated enterprises and to direct investors are distinguished. Transactions between affiliated banks and between other affiliated financial intermediaries are limited to equity and permanent debt capital. There are directional distinctions (abroad or in the reporting economy) for direct investment, and there are asset or liability distinctions for the equity capital and other capital components within this category.

14.5.2. *Portfolio investment* covers transactions in equity securities and debt securities. The latter are subdivided into bonds and notes, money market instruments, and financial derivatives (such as options) when the derivatives generate financial claims and liabilities. Various new financial instruments are covered under appropriate instrument classifications.

14.5.3. *Other investment* covers short- and long-term trade credits; loans (including use of fund credit, loans from the IMF, and loans associated with financial leases); currency and deposits (transferable and other such as savings and term deposits, savings and loan shares, shares in credit unions,); and other accounts receivable and payable.

For the categories of portfolio investment and other investment, there are the customary asset or liability distinctions. Particularly significant for portfolio investment and other investment is the distinction by type of instrument (equity or debt securities, trade credits, loans, currency and deposits, other assets or liabilities). Traditional and new money market and other financial instruments and derivatives are included in portfolio investment. For portfolio investment and other investment, there are distinctions by sector of the domestic creditor for assets and of the domestic debtor for liabilities. These distinctions serve to facilitate links with the income accounts, the international investment position, the SNA, and other statistical systems.

14.5.4. *Reserve assets* cover transactions in assets that are considered by the monetary authorities of an economy to be available for use in funding payments imbalances and, in some instances, in meeting other financial needs. Such availability is not closely linked in principle to formal criteria such as ownership or currency of denomination. The items covered are monetary gold, Special Drawing Rights (SDR), reserve position in the IMF, foreign exchange assets (currency, deposits, and securities), and other claims.

## **Exchange Rates**

BOP statistics are commonly expressed either in national currency or in US dollars. For the purpose of intercountry comparisons, BOP statements have to be converted into a universal unit of account i.e., SDR or dollars. Figures initially expressed in national currency of the compiling country are converted into the chosen unit of account using an average of the market exchange rates that prevailed during the period in which transactions were recorded in the BOP.

According to both the *1993 SNA* and the fifth edition of the *Balance of Payments Manual*, the exchange rate to be used for conversion from one currency into another is the rate prevailing at the transaction date, or if that is not available, the average rate for the shortest period applicable. The midpoint between buying and selling rates should be used, and the difference between that rate and the buying or selling rate is to be classified as a financial auxiliary service charge. In the case of multiple exchange rates that are the result of official exchange rate policies, the net proceeds accruing to the authorities as a result of transactions involving these multiple rates should be treated as implicit taxes or subsidies. These taxes or subsidies are calculated for each transaction as the difference between the value of the transaction at the actual exchange rate and a “unitary rate” which is calculated as the weighted average of all transactions in the external account. The implicit taxes appear as global adjustments in the external accounts with counterpart items in the central bank or government accounts.

The *1968 SNA* did not provide any explicit guidelines for conversion of transactions and/or treatment of revenues obtained from the spread between buying and selling rates of foreign currency nor for the case of multiple exchange rates. The *1993 SNA* recommends that comparisons of the volume of GDP, or GDP per capita, between countries should be based on international volume indices that use the same kinds of methodology as intertemporal price and volume measures. For this purpose, currencies have to be converted at PPPs. However, it is recognized that it is more difficult to make reliable price comparisons between countries than between time periods in the same country, and that the construction of a set of transitive multilateral volume indices for a group of countries may create further problems. The *1968 SNA* did not consider the use of PPPs to make international comparisons.

14.6. **Exchange Rate** — the number of units of the national currency per unit of the chosen currency of account, generally the US dollar or the SDR.

14.7. **Market Rates** — the exchange rates prevailing in the free market generally reckoned at the end of period.

14.8. **Par Values** — fixed values agreed with the IMF during the par value period, i.e. through November 1971.

## 15. EXTERNAL TRADE

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This section discusses the two major classification schemes that guide the statistical work of trading countries individually and collectively: the United Nations' *Standard International Trade Classification (SITC), Revision 3*, and the World Customs Organization's *Harmonized Commodity Description and Coding System (HS)*.

### Background

The SITC is used for compiling international trade statistics on all merchandise entering international trade and for promoting comparability of international trade statistics. The SITC groups commodities to reflect (a) the materials used in production, (b) the processing stage, (c) market practices and uses of the products, (d) the importance of the commodities in terms of world trade, and (e) technological changes.

*SITC Revision 3* classifies all commodities of international trade into sections, then into divisions, then into groups, then into subgroups, and finally into subsidiary headings. The subsidiary level provides specific descriptions and permits correspondence with the harmonized system (HS). Any of the subsidiary headings may be further subdivided for national use. The subsidiary headings are then classified into subgroups that in turn are summarized into 250 groups that provide the data most usually sought in international compilations of external trade statistics. Those groups, in turn, are assembled into 63 divisions that are finally consolidated into 10 sections that classify the trade aggregate according to broad economic categories.

The code number of each commodity in *SITC, Revision 3* is designed so that the first digit determines the section, the first two digits determine the division, the first three digits determine the group, the first four digits determine the subgroup, and if the subgroup is subdivided, five digits determine each of the resulting items. Individual countries can code any subdivisions of items they make for their own purposes by adding digits in the sixth and subsequent positions. The broadest or first digit classification scheme is as follows.

| <b>Section Head</b> | <b>Section Headings</b>                          |
|---------------------|--|
| 0                   | Food and live animals chiefly for food           |
| 1                   | Beverage and tobacco                             |
| 2                   | Crude materials, inedible, except fuels          |
| 3                   | Mineral fuels, lubricants, and related materials |

- 4 Animal and vegetable oils, fats, and waxes
- 5 Chemicals and related products, not elsewhere specified
- 6 Manufactured goods classified chiefly by material
- 7 Machinery and transport equipment
- 8 Miscellaneous manufactured articles
- 9 Commodities and transactions not classified elsewhere in the SITC

## The Harmonized System (HS)

*The Harmonized Commodity Description and Coding System*, generally referred to as the harmonized system or simply HS, is a multipurpose international product nomenclature developed by the World Customs Organization (WCO). It comprises about 5,000 commodity groups each identified by a six-digit code and arranged in a legal and logical structure. It is supported by well-defined rules to achieve uniform classification. The system is used by more than 177 countries and economies as a basis for their customs tariffs and for the collection of international trade statistics. Over 98 percent of the merchandise in international trade is classified in terms of the HS.

The HS contributes to the harmonization of customs and trade procedures and to the nondocumentary trade data interchange in connection with such procedures, thus reducing the costs related to international trade. It is also extensively used by governments, international organizations and the private sector for many other purposes such as internal taxes, trade policies, monitoring of controlled goods, rules of origin, freight tariffs, transport statistics, price monitoring, quota controls, compilation of national accounts, and economic research and analysis. The HS is a universal economic language and code for goods and an indispensable tool for international trade.

At the global level, the United Nations Conference on Trade and Development (UNCTAD) has been compiling similar indices to aid broad international comparisons. It uses more robust data from partner country trade series as reported by the more developed countries. The indices compiled by UNCTAD are used by other international agencies for comparative analysis and research.

Finally, it should be noted that the *1993 SNA* incorporates the calculation of trading gains and losses from changes in the terms of trade as an integral part of the System. These gains and losses are added to GDP at constant prices to derive real GDP. In the calculation of gains and losses from changes in the terms of trade,

the *1993 SNA* suggests that if there is uncertainty about what numerical index to select to deflate the current trade balance, the arithmetic average of price indices for exports and imports should be used.

15.1. **Quantum Index of Exports (Imports)** — official indices which show the changes in the volume of the aggregate merchandise exports (imports). Each index represents a change in volume between the current period and a fixed period, called the publication base, in which the index is represented by the percentage 100.

15.2. **Unit Value Index of Exports (Imports)** — official indices which show the changes in the average prices of the aggregate merchandise exports (imports). Each index represents a change in price between the current period and a fixed period, called the publication base, in which the index is represented by the percentage 100.

15.3. **Terms of Trade** — a measure of the level of export prices relative to import prices. Also called “net barter terms of trade,” it is calculated as the ratio of the export price index to the import price index, or, alternatively, of the export unit value index to the import unit value index. The terms of trade index therefore show changes over time in the relative level of export prices as a percentage of import prices.

## 16. EXTERNAL DEBT AND INTERNATIONAL FINANCIAL FLOWS

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The principal source for external debt and related data is the World Bank through its Debtor Reporting System that publishes data on public and publicly guaranteed private external debt in a uniform or standardized format in *Global Development Finance*. Other sources for external debt data are national publications and unpublished tables of DMCs. These latter sources may show different levels or amounts, primarily because they have used different concepts, definitions, and classifications in the collection and tabulation of data.

In addition, the World Bank monitors bond issues and reports data through its publication *Borrowing in International Capital Markets*. Covered in this publication are foreign and international bonds, both publicly issued and privately placed, and Eurocurrency credits. For international financial flows, the principal source of data is the Organisation for Economic Co-operation and Development (OECD); hence these data are compiled according to OECD concepts and definitions.

### External Debt

16.1. **Total External Debt**<sup>15</sup> — the total stock of external liabilities of a country owed to nonresidents, regardless of maturity and mode of payment. It is the sum of public and publicly guaranteed long-term debt, private nonguaranteed long-term debt, the use of IMF credit, and short-term debt as reported in the World Bank Debtor Reporting System. ADB and similar development financing institutions are particularly interested in external debt payable only in foreign currency or in goods and services. Indebtedness is assessed on a three-point scale: severely, moderately and less.

16.2. **Public Debt** — an external obligation of a public debtor, including the national government, an agency, and autonomous public bodies.

16.3. **Publicly Guaranteed Debt** — an external obligation of a private debtor that is guaranteed by a public entity.

16.4. **Long-Term External Debt** — an external obligation that has an original or extended maturity of more than one year.

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15 External capital flows, including debt service payments, are components of the balance of payments. These flows and transactions are therefore captured in the BOP. The definitions and concepts employed in debt statistics are harmonized with the *BOP Manual* (see Chapter 14).

16.5. **Short-Term External Debt** — debt that has an original maturity of 1 year or less and does not distinguish between public and private nonguaranteed.

16.6. **External Private Debt** — the obligations of private bodies that are not guaranteed for payment by public bodies. Debt guaranteed by a public body for exchange transfer only is to be classified as private debt.

16.7. **Present Value of Debt** — the amount arrived at after discounting the debt service (interest plus amortization) due on long-term debt over the life of the existing debt.

16.8. **Debt Outstanding and Disbursed** — debt outstanding represents principal only (except where interest is reported as part of the principal) and is net of past repayments. Disbursed debt outstanding is debt drawn (by the borrower) on loan commitments during the year. Undisbursed portions (amounts not drawn by the borrower) are excluded unless debt is said to include undisbursed portions. Undisbursed debt is total debt not drawn at year's end. Data are expressed in current US dollar equivalents.

16.9. **Debt Service Payments** — the sum of principal repayment and interest payments actually made.

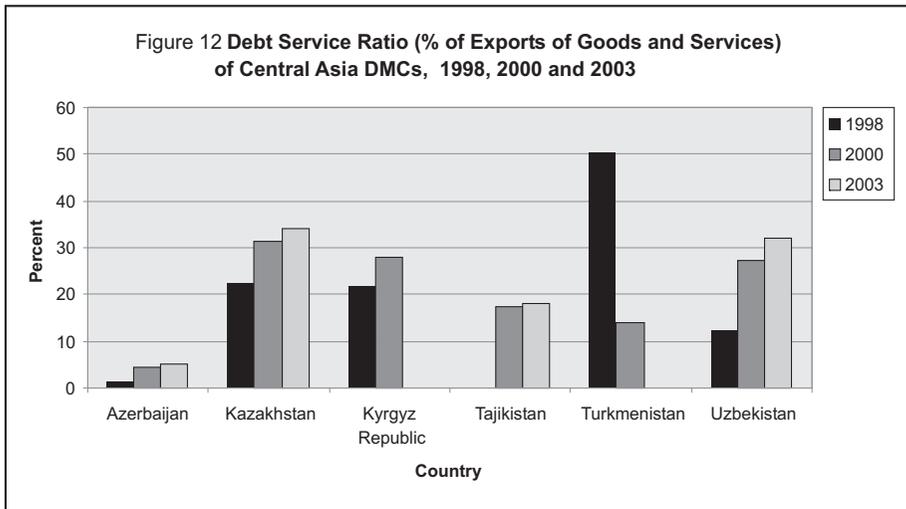
16.10. **Debt Service Ratio (DSR)** — service payments divided by exports of goods and services, including workers' remittances, times 100. The interest service ratio is calculated by expressing interest payments to exports of goods and services. Other ratios of analytical interest are interest payments to GNP, concessional debt to total debt, and multilateral debt to total external debt. See Figure 12 for the debt service ratio of some DMCs in 1998, 2000 and 2003.

16.11. **Debt Restructuring** — changes in the scheduling of debt and debt payments in the context of the Paris Club through commercial banks, debt-equity swaps, buybacks, and bond exchanges. Debt rescheduling is the amount of debt outstanding rescheduled in a given year. Interest rescheduled is the amount of interest that is rescheduled and converted to principal. Debt and interest forgiven represent the amounts written off.

16.12. **Net Flows** — the disbursed amounts received by the borrower during the year less principal repayments.

16.13. **Net Transfers** — net flows minus interest payments during the year; when the borrower made larger payments than received amounts, the net flow is negative.

16.14. **Loans by Type of Creditor** — loans classified according to whether the creditor is official or private. Official creditors include multilateral and bilateral lenders. Loans from these multilateral lenders include loans from the World Bank, the regional development banks, and other multilateral and



Source: ADB, *Asian Development Outlook 2004*.

intergovernmental agencies. Excluded are loans administered by such agencies on behalf of a bilateral donor. Bilateral loans are loans from governments and their agencies including export credit agencies. Private creditors include bonds, commercial banks, and other private lenders. Loans from commercial banks and other private lenders comprise bank and trade-related lending.

**16.15. Bonds** — credit instruments which contain a promise to pay a specified amount of money at a fixed date and to pay interest periodically at stated intervals. Such instruments are usually underwritten and sold by a group of banks of the market country and are denominated in that country's currency.

## International Financial Flows

**16.16. Net Resource Flows** — the sum of net resource flows on long-term debt, plus net foreign direct investment, portfolio equity flows, official grants (excluding technical cooperation).

**16.17. Net Transfers** — net resource flows less interest payments on long-term loans and profits on foreign direct investment.

**16.18. Official Development Assistance (ODA)** — those flows (grants or loans) to developing countries provided by multinational institutions, official agencies including state and local governments, or by their executive agencies. Each transaction must meet the following tests: (i) it is undertaken by the official sector; (ii) its main objective is the promotion of the economic development and welfare of the receiving country; and (iii) it merits concessional

financial terms (that is, if it is a loan, at least 25% of it is a grant element). The grant element of a loan is defined as the difference between the face value of the loan and the present value of the repayments on the principal and interest over the life of the loan. This difference (i.e., the grant element) is then expressed as a percentage of the loan's face value.

16.18.1. *Grants*: either official (i.e. public body) or private in origin, they include transfers made in cash or in kind in respect of which no legal debt is incurred by the recipients. Included also are grants for reparations and indemnification payments made at the government level and technical assistance. However, reparations and indemnification payments to private individuals, insurance, and similar payments to residents of developing countries are excluded. Domestic and overseas administrative costs of aid programs are, in principle, also excluded. Grants are recorded on a net basis.

16.18.2. *ODA loans*: loans with maturities of over 1 year extended by governments and official agencies for which payment is required in convertible currencies or in kind. Rescheduled loans (loans given maturity extensions and originally made by a government or official agency) and loans originally made by a government or an official agency to refinance indebtedness due to the private or official sector are included if reported as ODA, otherwise they are recorded as other official flows. The net data are reported after deduction of amortization receipts in other than local currencies, including repayments in kind.

16.19. **Other Official Flows** — transactions by the official (public) sector the main objective of which is other than development, and/or with financial terms that convey a grant element below 25 percent. The main specific classes of transactions included here are official export credits, official sector equity and portfolio investment, and debt reorganization undertaken by the official sector at nonconcessional terms (irrespective of the nature or the identity of the original creditor).

16.20. **Nonconcessional Flows** — non-ODA flows usually with very different origins, purposes, development-financing characters, and terms. The main components are:

- Private bank loans with maturities of over 1 year and commercial (often floating) interest rates. They finance both current balance-of-payments needs and productive investment projects;
- Export credits also with maturities over 1 year but whose interest rates are subsidized in many countries. These are essentially instruments of trade promotion;
- Direct foreign investment, a particularly useful resource flow and instrument of development cooperation;

- Bond lending, a sophisticated type of foreign resource that only a limited number of developing countries can attract;
- Multilateral, nonconcessional lending that combines long maturity with market interest rates and provides development expertise to the recipient.

16.21. **Technical Assistance** — resources that along with concessional loans make up ODA flows with the primary purpose of (i) augmenting the level of knowledge, skills, technical know-how or productive aptitudes of the population of developing countries, i.e., increasing their stock of human intellectual capital, or (ii) augmenting developing countries' capacity for more effective use of their existing factor endowment, as distinct from transfers intended to increase the stock of physical capital.

## 17. TOURISM AND TRANSPORT

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The main source materials are the United Nations World Tourism Organization Web site: <http://www.world-tourism.org/statistics/tsa-project/basic-references/index-en.htm>, the UN's *Tourism Satellite Account: Methodological References (Draft)*, ST/ESA/STAT/SER.F/80, 29 December 1999, and the ADB's *Reference Manual: Concepts, Definitions and Statistical Foundations of Data Used by ADB*, 1982. Almost all concepts and definitions in the tourism section are reproduced from the United Nations World Tourism Organization Web site.

### *Tourism*

17.1. **Tourism** — the activities of persons traveling to and staying in places outside their usual environments for not more than one consecutive year for leisure, business, and other purposes not related to the exercise of an activity remunerated from within the place visited.

17.2. **Domestic Tourism** — the tourism of resident visitors within the economic territory of the country of reference.

17.3. **Country of Residence** — the country in which a person currently lives or resides whether or not it is the country of which the person is a citizen.

17.4. **Usual Environment** — a concept intended to exclude from the concept of “visitor” persons commuting every day or week between their homes and places of work or study or other places frequently visited. Generally speaking, usual environment corresponds to the geographical boundaries within which an individual displaces himself/herself within his/her regular routine of life, except for leisure and recreation. For some relatively inactive people, this usual environment might mean an area only a few blocks away from their dwellings. For others who commute or conduct day-to-day activities over large distances, it may cover an extensive area. Second homes and vacation houses, although regularly visited, are usually not considered part of the usual environment.

17.5. **Trip or Visit** — any travel to a place outside one's usual environment.

17.6. **Purpose of Visit or Trip** — the intention or objective of a visit or trip, which may be classified as follows: (a) leisure, recreation and holidays, (b) visiting friends and relatives, (c) business and professional, (d) health treatment, (e) religion/pilgrimages, and (f) other.

17.7. **Traveller** — any person on a trip between two or more countries or between two or more localities within his/her country of usual residence.

17.8. **Domestic Traveller** — any person on a trip within his/her own country of residence (irrespective of the purpose of travel and means of transport used, even though s/he may be traveling on foot).

17.9. **International Traveller** — any person on a trip outside his/her country of residence (irrespective of the purpose of travel and means of transport used, even though s/he may be traveling on foot).

17.10. **Visitor** — any person travelling to a place other than that of his/her usual environment for less than 12 months and whose main purpose of visit is other than the exercise of an activity remunerated from within the place visited. Visitors are classified as international visitors and domestic visitors.

17.11. **International Visitor** — any person who travels to a country other than in which s/he has her/his residence but outside his/her usual environment for a period not exceeding 12 months and whose main purpose of visit is other than the exercise of an activity remunerated from within the country visited. International visitors, consisting of (i) tourists (overnight visitors): “visitors who stay at least one night in a collective or private accommodation in the place visited,” and (ii) same-day visitors: “visitors who do not spend one night in a collective or private accommodation in the place visited.”

17.12. **Domestic Visitor** — any person residing in a country who travels to a place within the country outside his/her usual environment for a period not exceeding 12 months and whose main purpose of visit is other than the exercise of an activity remunerated from within the place visited. Domestic visitors comprise of (i) tourists (overnight visitors), and (ii) same-day visitors.

17.13. **In-Transit Visitors** — visitors who do not immediately return to their place of origin but stop in the locality or country of reference on their way to a different destination. In general, in-transit visitors will be same-day visitors, but in some cases in-transit visitors staying overnight within the country reference might be more important. The identification of in-transit visitors, or some subcategories of them, might be of interest in some circumstances, because of their relevance, both in numerical terms and for their economic impact.

17.14. **Duration of the Visit** — the length of time for a traveler to be considered engaged in tourism expressed as the number of hours for same-day visits and the number of nights less than 365 (1 year) for staying visits. For international tourism, the duration is measured either in terms of time spent in the receiving country for inbound tourism or time away from the usual residence for outbound tourism.

17.15. **Number of Tourists** — the number of tourists traveling for any of the purposes described in 17.12 and stopping for varying periods from less than 1 night (same-day visitors) to one or more nights but fewer than 365 nights in a place outside their usual environments within their countries of residence (domestic tourists) or outside their country of residence (international tourists). The figure does not include immigrants, residents in a frontier zone, persons domiciled in one country and working in an adjoining country, and travelers passing through a country without stopping.

17.16. **Number of Hotel Rooms** — the number of rooms of hotels which include pension houses, vacation resorts, and other houses of accommodation for visitors and travelers.

17.17. **Occupancy Rate** — the percentage of rooms occupied during the year of the total number of rooms available during that year. Computationally, this is equal to (number of rooms occupied x number of nights occupied during the year) / (total number of rooms x 365).

17.18. **Average Expenditure per Person per Day (US\$)** — total receipts from visitors divided by the number of visitors x the average number of nights spent in country by visitors.

17.19. **Tourist Receipts (in Millions of US\$)** — the receipts of a country in the form of consumption expenditures, i.e. payments for goods and services, made by foreign visitors out of foreign currency resources. They may, in practice, also include receipts from foreign excursionists or day visitors, except in cases where these are so important as to justify separate classification. These receipts, however, exclude all forms of remuneration resulting from employment as well as international fare receipts.

### *Transport*

17.20. **Aviation Freight Traffic** — the weight of all freight, domestic, and international freight, except mail and excess baggage, carried for remuneration in all scheduled services operated by airlines registered in each country, measured in million ton kilometers.

17.21. **Aviation Passenger Traffic** — the number of passengers, domestic and international, carried in all scheduled services operated by airlines registered in each country measured in million passenger kilometers. Scheduled services include supplementary services occasioned by overflow traffic on regularly scheduled trips and preparatory flights for newly scheduled services.

17.22. **Length of Roads (km)** — the length of roads classified into (i) paved roads, (ii) roads with gravel or crushed stone or stabilized soil surfaces, and (iii) earth roads graded or drained.

17.23. **Motor Vehicles in Use** — the number of vehicles in use as shown by registration or census data or in an official estimate. Vehicles include passenger cars, taxis, jeeps, and station wagons that seat not more than nine persons (including driver) and commercial vehicles which include vans, trucks, buses, tractor and semi-trailer combinations but exclude trailers and farm tractors.

17.24. **Road Accidents** — number of accidents reported to the police which occurred on public thoroughfares and which resulted in death within 30 days or bodily injury to the extent that the person was admitted to the hospital.

17.25. **Railway Passenger Traffic** — the number of passengers, domestic and international, except military, government and railway personnel carried without revenue, traveling in all the railway lines within a country, except railways entirely within urban units and plantations, industrial mining, funicular and cable railways, measured in million passenger kilometers.

17.26. **Railway Freight Traffic** — the weight of all freight, domestic and international, fast and ordinary, goods and services but excluding service traffic, mail, baggage, and nonrevenue governmental freight carried in all the railway lines within a country, except railways entirely within urban units and plantations, industrial mining, funicular and cable railways, measured in million ton kilometers.

## 18. ENERGY

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The main source materials are the United Nations' *Yearbook of World Energy Statistics*, which is also the principal source of energy data worldwide, and the International Energy Agency's *Energy Statistics of Non-OECD Countries 1999–2000*@OECD/IEA, 2002, the ADB's *Reference Manual: Concept, Definitions, and Statistical Foundations of Data Used by ADB*, 1982, and the ADB's *Energy Indicators of Developing Member Countries of the Asian Development Bank*, 1994.

### Energy Classification

Various classification systems of energy commodities are available. Energy is classified either by market (commercial or noncommercial), by technology (conventional or nonconventional), as renewable or nonrenewable, as traditional or nontraditional, or by level of energy flow (primary or secondary or final or useful energy). It is also subdivided into supply, sources, use, transformation, and final consumption.

**18.1. Commercial Energy** — the energy obtained from organized energy supply industries, including any energy form sold in the course of commerce or provided by a public utility. It covers the following energy forms: solid fuels (e.g. coal), liquids (e.g., crude petroleum, natural gas liquids and petroleum products), gas (e.g., natural gas), and electricity (e.g., hydro, nuclear and geothermal power). The term is virtually synonymous with “conventional energy.”<sup>16</sup> Wood and other traditional fuels are not included although they are widely traded. The composition of sources of commercial energy listed by the UN 1979 *Yearbook of World Energy Statistics* is as follows:

#### A. Solid Fuels

1. Hard coal
2. Lignite – brown and peat
3. Oven coke
4. Gas coke
5. Hard coal briquettes
6. Lignite – brown coal and peat briquettes

#### B. Liquids

7. Crude petroleum

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16 Energy is commonly classified according to commerciality, conventionality, or renewability but the terms are not always used consistently or appropriately. In some cases, the meanings of nearly all of the most commonly used terms overlap (ADB's *Energy Indicators of Developing Member Countries of Asian Development Bank*, 1994, p. xiv).

**Natural gas liquids**

8. Natural gasoline
9. Plant condensate
10. Liquefied petroleum gasses<sup>17</sup>
11. Other natural gas liquids

**Energy petroleum products**

12. Aviation gasoline
13. Motor gasoline
14. Jet fuels
15. Kerosene
16. Gas-diesel oil (distillates)
17. Residual fuel oil
18. Liquefied petroleum gas (LPG)<sup>18</sup>
19. Refinery gas

**Non-Energy Petroleum Product**

20. Naphtas
21. White spirit
22. Lubricating oil (including grease)
23. Bitumen (asphalt)
24. Petroleum waxes (paraffin waxes)
25. Petroleum coke
26. Oils n.f.d (other oil products not further defined including feedstocks)

**C. Gas**

27. Natural gas
28. Refinery gas
29. Gas works' gas (city gas)
30. Coke oven gas
31. Blast furnace gas

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17 Includes light hydrocarbon fractions of paraffin or methane series, produced in natural gas processing plants and consisting mainly of propane, butane, iso-butane and ethane or mixtures of them but excludes data for liquefied petroleum gas derived from crude petroleum.

18 A hydrocarbon fraction of the paraffin series, lighter than gasoline, derived from the distillation of crude petroleum only (excluding LPG from natural gas plants or liquefied natural gas and liquefied gases). Data for liquefied petroleum gas from natural gas plants are presented under natural gas liquids.

## D. Electricity

32. Thermal (conventional)
33. Hydro
34. Nuclear
35. Geo-thermal

Noncommercial energy includes all other energy sources not covered under commercial energy and energy obtained from scattered and unorganized sources such as firewood, charcoal, crop residues, animal dung, peat, tar, municipal and other wastes, and the like.

18.2. **Conventional Energy**<sup>19</sup> — energy sources that have hitherto provided the bulk of the requirements of modern industrial society; i.e., coal, petroleum, natural gas and hydronuclear power. Wood is not included in this category although it was extensively used in the past, and still is, to some extent, for industrial purposes.

18.3. **Renewable Energy** — energy forms whose supplies are partly or wholly regenerated in the course of the annual solar cycle. Solar and wind energy, hydropower, alcohol, and other fuels of vegetable origin are regarded as renewable.

18.4. **Traditional Energy** — energy forms generally used in traditional or pre-industrial societies which are largely synonymous with biomass fuels; the term is generally regarded as excluding mineral fuels and hydropower, despite the fact that water wheels have been in use for over 1,000 years.

18.5. **Primary Energy**<sup>20</sup> — energy forms which have not been subjected to any chemical transformation before use, e.g. coal, crude petroleum and natural gas liquids, nuclear and geothermal electricity. On the other hand, *secondary* (or derived sources of) *energy* is the energy available after the transformation of a primary source including coke, briquettes, refined oil products, manufactured gases, and thermal electricity. *Final energy* is the energy made available to the consumer before its final utilization, in other words, the energy consumed by the final user for all energy purposes. *Useful energy* is the amount

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19 This term may cause confusion as it is sensitive to time and space. For instance, nuclear power was nonconventional in developed countries 20 to 30 years ago. Traditional solar drying, wind and water mills, and animal energy are very conventional in developing countries but are regarded as nonconventional in developed countries. (ADB's *Energy Indicators of Developing Member Countries of Asian Development Bank*, 1994, p. xv).

20 Both conventionality and renewability are too sensitive to time and space and circumstance to be regarded as satisfactory description of energy. (*Energy Indicators of Developing Member Countries of Asian Development Bank*, 1994, p. iv).

of heat, light, or work actually made available to final users of energy (industry, transport, household, etc) on the output side of the user's equipment and appliances.<sup>21</sup>

## Source and Use

18.6. **Energy Accounts** — accounts showing modes of acquisition and consumption of different elements of energy. These accounts consists of three parts. The first part shows elements of supply broken down into sources. The second part displays elements of transformation broken down into the elements that are consumed in the process of producing the energy itself. The third part lists elements of final consumption broken down into the various end-users. These elements and their classifications are as follow.

- 1.) Production
- 2.) Inputs from other sources
- 3.) Imports
- 4.) (-) Exports
- 5.) (-) International marine bunkers
- 6.) (+/-) Stock changes
- 7.) DOMESTIC SUPPLY (1+2+3-4-5 +/- 6)
- 8.) Transformation input
- 9.) Energy input
- 10.) Distribution losses
- 11.) TRANSFORMATION (8+9+10)
- 12.) Deliveries to industrial sector
- 13.) Deliveries to transport sector
- 14.) Deliveries to other sectors
- 15.) Non-energy use
- 16.) FINAL CONSUMPTION (12+13+14+15) = Domestic Supply-Transformation

18.7. **Production** — the quantities of fuels extracted or produced, calculated after any operation for removal of inert matter or impurities (e.g., sulphur from natural gas).

18.8. **Inputs from Other Sources** — all inputs of origin other than primary energy sources.

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21 Taken from Energy Indicators of Developing Member Countries of Asian Development Bank, 1994, p. xiv.

18.9. **Imports and Exports** — comprise all energy elements that have crossed the national territorial boundaries of the country whether or not customs clearance has taken place.

18.10. **International Marine Bunkers** — cover those quantities of energy delivered to seagoing ships of all flags, including warships. Consumption by ships engaged in transport in inland and coastal waters and by fishing vessels in all waters is not included.

18.11. **Stock Changes** — the difference between opening stock levels on the first day of the year and closing levels on the last day of the year of stocks on national territory held by producers, importers, energy transformation industries and large consumers. A stock increase is shown as a negative number and a stock decrease as a positive number.

18.12. **Transformation Input** — the amount of energy used in the conversion of primary forms of energy to secondary and further transformation.

18.13. **Energy Input** — the amount of fuels used by energy producing industries.

18.14. **Distribution Losses** — losses in gas distribution, electricity transmission, and coal transport. It may also include unaccounted use of crude oil and petroleum products.

18.15. **Deliveries to the Industrial Sector** — deliveries of fuels to iron and steel industry (ISIC 271 and 2731), chemical industry (ISIC 24), nonferrous metal industries (ISIC 272 and 2732), nonmetallic mineral products (ISIC 26), transport equipment (ISIC 34 and 35), machinery (ISIC 28, 29, 30, 31 and 32), mining (excluding fuels) and quarrying (ISIC 13 and 14), food and tobacco (ISIC 15 and 16), paper, pulp, and print (ISIC 21 and 22), wood and wood products (ISIC 20), construction (ISIC 45), textile and leather (17, 18 and 19), and nonspecified (ISIC 25,33,36 and 37).

18.16. **Deliveries to the Transport Sector** — deliveries of fuels to all transport activities in mobile engines regardless of the economic sector to which the activity is contributing (ISIC 60, 61 and 62) and is divided into the following subsectors: air, road, rail, pipeline transport, internal navigation, and nonspecified.

18.17. **Deliveries to Other Sectors** — deliveries of fuels to users classified as agriculture, hunting and forestry (ISIC 01, 02,05), whether for traction, power or heating. Also includes fuels used for ocean, coastal and inland fishing; commercial and public services (ISIC 41, 50, 51, 52, 55, 63,64, 65,66,67, 70, 71, 72, 73, 74, 75, 80, 85, 90, 91, 92, 93 and 99); residential (ISIC 95); and non-specified (all fuel use not elsewhere classified).

18.18. **Non-Energy use** — use of other petroleum products such as white spirit, paraffin waxes, lubricants, bitumen, and other products.

18.19. **Transfers** — comprise interproduct transfers, products transferred, and recycled products.

18.20. **Statistical Differences** — statistical discrepancies that arise between domestic supply and demand (for transformation and final consumption) because the data for individual components of supply and demand are often derived from different data sources.

18.21. **Energy Consumption per Capita** — the total domestic consumption of each energy commodity converted into a common unit of measure (metric tons or kilograms of coal equivalent), through the application of a technically derived system of conversion factors. These conversion factors and the procedure for using them are contained in the UN's *Yearbook of World Energy Statistics*.

## 19. ENVIRONMENT INDICATORS

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The main source materials are the Food and Agriculture Organization's *State of the World's Forests 2001*, the World Bank's 2003, *World Development Indicators*, and the ADB's 2001 *Urban Indicators for Managing Cities*. This section does not attempt to cover all dimensions of environmental statistics; it takes account only of the minimum core of indicators that are commonly computed in the countries of the region.

### Background

The natural environment presents familiar opportunities for generating income and raising the level of human welfare: rich soils, abundant water, natural beauty, minerals, energy, forests, and fish. Some, with proper management, are renewable, but others are exhaustible. Global concerns about the environment have increased over the past two decades, particularly in the context of global warming, increased levels of pollution, and visible environmental degradation. Sustainable development has emerged as a key development goal.

It is in the context of this concern that countries have in recent years attempted to increase the depth and range of their environment indicators to put policy formulation for environmental preservation on a more solid basis. Some progress has been made, but large data gaps continue to exist. The *1993 SNA* recognized the importance of natural resources and their use and introduced satellite accounts that highlighted the environment.

19.1. **Forest Areas** — natural stands of woody vegetation in which trees predominate or land under natural or planted stands of trees, whether productive or not.

19.2. **Deforestation** — the clearing of forest lands for all forms of agricultural uses (shifting cultivation, permanent agriculture, and ranching) and for other land uses such settlements, other infrastructure, and mining. The process is represented by the annual average change in forest area. It may be positive (an increase) or negative (a decrease).

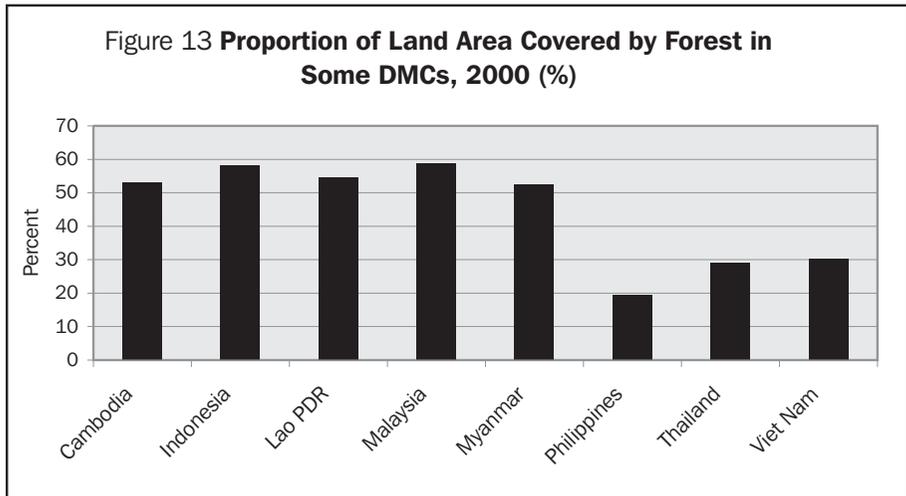
19.3. **Annual Deforestation** — the permanent conversion of forest area to other uses, mainly through shifting cultivation, permanent agriculture, ranching, settlements, or infrastructure development. Deforested areas do not include areas logged but intended for regeneration or areas degraded by fuel wood

gathering, acid precipitation, or forest fires. The extent and percentage of deforestation refers to the average annual deforestation of forest area.

19.4. **Threatened Species** — the number of species classified by international authorities as endangered, vulnerable, rare, indeterminate, out of danger, or insufficiently known.

19.5. **Nationally Protected Areas** — totally or partially preserved areas of at least 1,000 hectares that fall into one of five management categories: scientific reserves and strict nature reserves; national parks of national or international significance (not materially affected by human activity); natural monuments and natural landscapes with some unique aspects; managed nature reserves and wildlife sanctuaries; and protected landscapes and seascapes (which may include cultural landscapes).

19.6. **Proportion of Land Area Covered by Forest** — land under natural or planted stands of trees whether productive or not, as a percentage of total land area. Figure 13 depicts the situation in some DMCs in 2000.



Source: ADB, *Asian Development Outlook 2004*.

19.7. **Fresh Water Resources** — total renewable resources classified as internal flows (river flows and groundwater from rainfall) in the country and river flows from other countries.

19.8. **Annual Fresh Water Withdrawal** — total water withdrawal not counting evaporation losses from storage basins. Withdrawals include water from desalination plants in countries where these are significant sources of water.

19.9. **Fresh Water Withdrawal per Capita** — a country's total fresh water withdrawal divided by its population in the year for which withdrawal estimates are available.

19.10. **Water Erosion** — covers all forms of soil erosion by water including sheet and rill erosion and gullyng. Also included are human-induced landslides caused by vegetation clearance, road construction, etc.

19.11. **Water Logging** — the rise of the groundwater table into the root zone of the soil profile, such that plant growth is adversely affected by oxygen deficiency.

19.12. **Land Desertification** — land degradation in arid, semi-arid and dry subhumid areas resulting from adverse human impact. It is a biologically degrading process which removes the natural resources and productivity of the earth. It may be a natural phenomenon, but human intervention intensifies it.

19.13. **Land Salinization** — soil degradation brought about by the increase of salts in the soil. It covers both salinization—the build up of free salts—and sodification, i.e., the development of dominance of the exchange complex by sodium. These processes occur mainly through saline intrusion—the incursion of seawater into coastal soils arising from overabstraction of groundwater—and human-induced processes like incorrect planning and management of irrigation schemes.

19.14. **Percent of Biological Oxygen Demand (BOD) Removed from Wastewater** — the average fraction of BOD removed in major wastewater receiving bodies. BOD is the amount of dissolved oxygen required to oxidize or neutralize biodegradable matter in water.

19.15. **Air Pollution Concentrations** — the number of days per annum that World Health Organization standards are exceeded for (a) sulfur dioxide (SO<sub>2</sub>), (b) nitrous oxide (NO<sub>x</sub>), (c) carbon monoxide (CO), (d) ozone (O<sub>3</sub>), (e) suspended particles, and (f) lead.

19.16. **Carbon Dioxide Emissions per Capita** — the quantity of carbon dioxide emissions from the burning of fossil fuels and the manufacturing of cement divided by the population. These emissions include carbon dioxide produced during consumption of solid, liquid, and gas fuels and gas flaring.

19.17. **Energy Usage per Person** — the total energy usage per annum per capita in metric tons of coal equivalent. This should be aggregated among all forms of energy usage using standard conversion rates.

# APPENDIX 1

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## Balance of Payments: Standard Components

Credit

Debit

### A. Current Account

#### 1. Goods and services

##### a. Goods

- 1) General merchandise
- 2) Goods for processing
- 3) Repairs on goods
- 4) Goods procured in ports by carriers
- 5) Nonmonetary gold

##### b. Services

- 1) Transportation
  - a) Sea transport
  - b) Air transport
  - c) Other transport
- 2) Travel
  - a) Business
  - b) Personal
- 3) Communications services
- 4) Construction services
- 5) Insurance services
- 6) Financial services
- 7) Computer and information services
- 8) Royalties and license fees
- 9) Other business services
- 10) Personal, cultural, and recreational services
- 11) Government services n.i.e.

#### 2. Income

##### a. Compensation of employees

##### b. Investment income

- 1) Direct investment
  - a) Income on equity
  - b) Income on debt (interest)
- 2) Portfolio investment
  - a) Income on equity (dividends)
  - b) Income on debt (interest)
- 3) Other investment

3. Current transfers
  - a. General government
  - b. Other sectors
    - 1) Workers' remittances
    - 2) Other transfers

## B. Capital and Financial Account

1. Capital account
  - a. Capital transfers
    - 1) General government
    - 2) Other sectors
  - b. Acquisition/disposal of non-produced, nonfinancial assets
2. Financial account
  - a. Direct investment
    - 1) Abroad
      - a) Equity capital
      - b) Reinvested earnings
      - c) Other capital
    - 2) In reporting economy
      - a) Equity capital
      - b) Reinvested earnings
      - c) Other capital
  - b. Portfolio investment
    - 1) Assets
      - a) Equity securities
      - b) Debt securities
        - 1) Bonds and notes
        - 2) Money market instruments
        - 3) Financial derivatives
    - 2) Liabilities
      - a) Equity securities
        - 1) Banks
        - 2) Other sectors
      - b) Debt securities
        - 1) Bonds and notes
        - 2) Money market instruments
        - 3) Financial derivatives
  - c. Other investment
    - 1) Assets
      - a) Trade credits
        - 1) General government
        - 2) Other sectors

- b) Loans
  - 1) Monetary authorities
  - 2) General government
  - 3) Banks
  - 4) Other sectors
- c) Currency and deposits
  - 1) Monetary authorities
  - 2) General government
  - 3) Banks
  - 4) Other sectors
- d) Other assets
  - 1) Monetary authorities
  - 2) General government
  - 3) Banks
  - 4) Other sectors
- 2) Liabilities
  - a) Trade credits
    - 1) General government
    - 2) Other sectors
  - b) Loans
    - 1) Monetary authorities
    - 2) General government
    - 3) Banks
    - 4) Other sectors
  - c) Currency and deposits
    - 1) Monetary authorities
    - 2) Banks
  - d) Other liabilities
    - 1) Monetary authorities
    - 2) General government
    - 3) Banks
    - 4) Other sectors
- d. Reserve assets
  - 1) Monetary gold
  - 2) Special drawing rights
  - 3) Reserve position in the Fund
  - 4) Foreign exchange

5) Other claims

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Source: IMF. 1993. *Balance of Payments Manual*. Fifth Edition pp.43-48.

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