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Chief Economist Complex

# Situational Analysis of the Reliability of Economic Statistics in Africa: Special Focus on GDP Measurement

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## Preface

This report summarizes the situation regarding national accounts statistics in Africa. It shows the availability of the basic-gross domestic product (GDP) estimates, considers the availability of survey data and price statistics from which the national accounts are derived, and describes how far African countries are able to follow the international guidelines given in the System of National Accounts (SNA).

The information on which this report is based was collected by means of a questionnaire sent electronically to the national statistical offices of the 54 regional member countries of the African Development Bank. The survey provides a broad picture

of the quality and availability of national accounts in Africa.

During 2012, concerns were raised in the international press about the quality of statistics in Africa and particularly about GDP estimates. The reliability of economic statistics is a crucial concern now that African development is gathering pace and foreign investors need reassurance that they can rely on African statistics. This report will go a long way to reassure them. Statisticians in Africa face many challenges, as do their counterparts worldwide, but the national accounts data in the region are generally timely and of equal quality to data in other developing regions.

Out of the 54 regional member countries, replies were received from 44 in time for inclusion in this report. The African Development Bank is grateful to those countries that participated in this important survey. This demonstrates their commitment to the AfDB's program to enhance statistical capability in the region through an exchange of methodological information and peer reviews recently initiated by the Bank.

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The data collection through a questionnaire was carried out by national accounts experts from the national statistical offices in 44 regional member countries, under the close supervision of the AfDB's Statistical Capacity Building Division.

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## Abbreviations

AfDB	African Development Bank
AFRISTAT	Observatoire Economique et Statistique d'Afrique Subsaharienne
COMESA	Common Market for Eastern and Southern Africa
CPI	Consumer Price Index
DRC	Democratic Republic of the Congo
ECOWAS	Economic Community of West African States
ESCAP	Economic and Social Commission for Asia and the Pacific
FISIM	Financial Intermediation Services Indirectly Measured
GDP	Gross Domestic Product
GDP(E)	Gross Domestic Product – expenditure approach
GDP(P)	Gross Domestic Product – production approach
GFCF	Gross Fixed Capital Formation
GOV	Government Final Consumption Expenditure
HFCE	Household Final Consumption Expenditure
ICP	International Comparison Program
NPISH	Non-Profit Institutions Serving Households
OECD	Organization for Economic Cooperation and Development
PPP	Purchasing Power Parity
SADC	Southern African Development Community
SNA	System of National Accounts
SUT	Supple and Use Table

## Executive Summary

Recent revisions to GDP have arisen following the adoption of newer versions of the System of National Accounts (SNA). The SNA represents a standard set of recommendations on how to compile measures of economic activity. It describes a coherent, consistent, and integrated set of macroeconomic accounts in the context of a set of internationally agreed concepts, definitions, classifications, and accounting rules. The SNA is intended for use by all countries, as it has been designed to accommodate the needs of individual nations at different stages of economic development.

For the vast majority of African countries, a change to either the SNA 1993 or SNA 2008 results in GDP revisions of only one or two percentage points at most. Notwithstanding, the adoption of the new system has provided some countries with the opportunity to thoroughly review the sources and methods underlying the collection and compilation of their national accounts. In this respect, better coverage of informal activities seems to have been responsible for most of the upward revisions to African GDP estimates.

The case of Ghana was exceptional, in that in 2010 the country upwardly revised its GDP estimates by over 60 percent. This led to widespread concern about the possibility of similar large revisions to GDP in other African countries. However, when one or two outliers are ignored, revisions to African GDP in both size and direction are commensurate with those made by countries in Asia and the OECD area. Most countries are now following the SNA 1993, although the adoption of its special features has not been uniform. It should be noted that the differences between successive versions of the SNA are quantitatively small. As a result, the fact that African countries have not adopted all the new

features of the SNA 1993 is not a major cause of non-comparability.

In this context, the African Development Bank (AfDB) in March 2013 decided to undertake a survey to assess the reliability of GDP, including the availability of survey data and base years for constant price GDP and price indices. Forty-three of the 44 African countries that responded are now regularly publishing estimates of current price GDP from both the production and expenditure sides and almost all publish GDP at constant prices. Most countries publish GDP estimates with delays of only one or two years. This represents a significant improvement compared with the situation pertaining a decade ago, when many countries had not published GDP estimates for several years.

To obtain GDP at constant prices, the SNA 1993 recommends the use of annual chain indices, which means in effect updating the base year each year. If countries are unable to use chain indices, the SNA 1993 recommends that the base year be updated every five years. Chart 3 in Chapter 3 shows the base years now being used for constant price estimates in 44 countries. Only nine countries have base years that meet the five-year rule (i.e. 2007 or later). Nineteen countries have base years that are at least ten years old, and eight use base years that are more than 20 years old.

All versions of the SNA require imputations for various types of non-monetary production, and these are particularly important in African countries. Most countries make the necessary imputations but the AfDB survey has highlighted a number of shortfalls that need to be addressed. Three countries do not impute the value added of production of crops and livestock for own consumption; 16 countries do not estimate the value

added of own construction of dwellings or farm buildings; and 7 countries do not impute rents for owner-occupied dwellings. The GDP of these countries is therefore underestimated, compared with countries that follow the SNA rules.

A country's GDP estimates are only as good as the data on which they are based. Although industrial production is believed to be rising sharply in most countries, nearly one-fifth of the respondent countries had not conducted an industry survey since 2000. Even fewer countries conduct regular surveys or censuses of agriculture, despite its criticality to the food security situation in the continent. What is equally surprising is that Algeria, the Democratic Republic of the Congo, and Nigeria, which are three very large countries, have not carried out a population census in the last 20 years. On the other hand, almost all the 44 respondent countries have carried out at least one household survey of income/expenditure since 2000, more than two-thirds have conducted a household labor force survey, and half have undertaken one or more special surveys focusing on the informal sector.

Deflation using price indices is the preferred method for calculating GDP at constant prices. All countries collect data for a Consumer Price Index (CPI) and 31 compute unit value indices for imports and exports. Producer price indices are required for deflation of value added but only around a half of the countries collect producer prices. In the absence of price data, constant price GDP can be obtained by extrapolating base year value added by volume indicators. However, this is a crude method because the volume indicators cannot capture changes in prices of intermediate consumption.

It would be reasonable to surmise that middle-income countries in Africa would have more reliable national accounts than poorer countries. However, our research suggests otherwise: rich countries are not guaranteed to have good statistics; neither are poor countries condemned to have bad data. Some poor countries appear to give high priority to their national accounts statistics while some richer ones have low-quality statistics. Achieving high-quality data entails a political choice and a

firm commitment to invest in statistics that will support informed evidence-based decisions.

Overall, the situation with regard to GDP estimates in Africa is not nearly as bad as has recently been suggested. Nevertheless, the survey points out some areas of weakness which must be addressed. These include both stricter adherence to SNA guidelines and, in particular, the adoption of a regular program of surveys of

households, enterprises, and agriculture. To address these requirements, the AfDB is promoting the introduction of *economic census rounds*. These will allow the updating of national accounts as well as national consumer price indexes by all countries within a set period. The Bank has also embarked on a peer review mechanism for national accounts in its regional member countries; the first such review has just been completed in Ghana.

# 1. Introduction

## 1.1 Background

A number of articles have recently appeared in the press raising concerns about the quality of African statistics. The articles have rightly highlighted these important issues, which need to be addressed to effectively inform Africa's development process. This is especially pertinent at this critical moment when the continent is witnessing a renaissance of its economic fortunes. *But are Africa's statistics as bad as they are being portrayed by some critics?* In attempting to answer this question, the African Development Bank in March 2013 decided to undertake a survey to assess the reliability of GDP data, including the availability of survey data, price indices, and base years for constant price GDP.

In 2010 Ghana announced that in recent years its Gross Domestic Product (GDP) had been underestimated by up to 60 percent. The ensuing revision effectively promoted Ghana from a low-income to a lower-middle-income country, according to the World Bank's classification system. Ghana's revision was well publicized and led a number of observers, both within and outside Africa, to question the reliability of African statistics in general, and in particular GDP estimates.

In January 2013, Cornell University published a book by Dr. Morten Jerven titled, *Poor Numbers. How We Are Misled by African Development Statistics and What to Do about It*.<sup>1</sup> Among other criticisms, Dr. Jerven pointed out that many of the statistics on Africa, including those published by the World Bank, are not

1 Cornell University Press, January 18, 2013 Dr Jerven's book identifies the causes of weak statistics in Africa some of which lie in development strategies imposed from outside the continent, but his main purpose is to show where improvements are required. He identifies poor sources of basic data as a key problem in many countries.

actual measurements by the countries concerned but rather extrapolations and rough estimates made by the international organizations. The book was favorably reviewed in the *Financial Times* under the headline, "Consequences of a continent's miscalculations."<sup>2</sup> A few weeks later, *Jeune Afrique*<sup>3</sup> carried an article "Statistiques africaines : le grand mensonge" ["African Statistics: The Big Lie"], together with an interview with Morten Jerven. The impression left by this bad publicity was that African statistics are inherently unreliable and that foreign investors are in danger of being seriously misled about the true size and growth of African economies.

## 1.2 Quality Survey

The African Development Bank (AfDB) was naturally concerned about these criticisms because for some years it has run an extensive (and largely successful) program aimed at enhancing statistical capability in the region. An additional reason for concern is that the AfDB is currently organizing the African regional component of the 2011 round of the International Comparison Program (ICP). The main purpose of the ICP is to compare the real levels of GDP in Africa – "real" in the sense that price differences are removed, so that the comparison is between the underlying volumes of goods and services being produced and consumed in the participating countries. If countries' GDP estimates for 2011 are really as weak as these critics allege – whereby some countries may be under- or over-stating their GDP by 60 percent or more – then the whole African component of the ICP could be undermined.

2 *Financial Times*, London, February 25, 2013.

3 *Jeune Afrique*, March 18, 2013.

The ICP Global Office is well aware of the need to improve the quality of GDP estimates in all regions and not just in Africa. One of the main advantages for countries participating in the ICP is to receive support from the Global Office and the ICP regional agencies (such as the AfDB) through workshops and expert missions. The objective is to improve the coverage and comparability of their national accounts as these form the foundation on which the International Comparison Program rests. In addition, countries participating in the ICP are required to provide detailed metadata on their national accounts methodology; this information will be made available to users of the results of the 2011 round of the ICP.

In the first quarter of 2013, the AfDB carried out a survey to better gauge the reliability of GDP estimates in its 54 member countries through the issuance of a questionnaire to experts in national statistical offices. The present report analyzes the results of that survey. The questionnaire asked about their national accounts methodology, including its conformity with the UN's 1993 System of National Accounts (SNA 1993). The questionnaire also asked whether countries were making all the imputations for non-monetary activities called for in the SNA, and what kinds of survey and price statistics were available on which to base the GDP estimates. The 99 questions used for the Survey are presented in Annex 2.

The questionnaire was sent by the AfDB to the 54 member countries listed below and replies were received from 44 countries (the 10 non-respondents are shown in *italic*). This represents a high response rate of over 80 percent. Except for Angola, the non-respondents were mainly small countries and included some that are currently

### List of the 54 countries approached by the AfDB for its 2013 Survey on National Accounts

Algeria	Ethiopia	Niger
<i>Angola</i>	<i>Gabon</i>	Nigeria
Benin	<i>Gambia, The</i>	Rwanda
Botswana	Ghana	São Tomé and
Burkina Faso	Guinea	Principe
<i>Burundi</i>	Guinea-Bissau	Senegal
Cameroon	Kenya	Seychelles
Cape Verde	Lesotho	<i>Sierra Leone</i>
Central African Republic	<i>Liberia</i>	<i>Somalia</i>
Chad	<i>Libya</i>	South Africa
Comoros	Madagascar	<i>South Sudan</i>
Congo Republic	Malawi	Sudan
Congo, Dem. Rep.	Mali	Swaziland
Côte d'Ivoire	Mauritania	Tanzania
Djibouti	Mauritius	Togo
Egypt, Arab Rep.	Morocco	Tunisia
Equatorial Guinea	Mozambique	Uganda
<i>Eritrea</i>	Namibia	Zambia
		Zimbabwe

Note: Non-respondent countries are indicated in italic. Response rate to questionnaire was over 80%. The Gambia and Liberia responded to the Survey but their replies arrived too late for inclusion in this report.

experiencing civil unrest. The replies from the 44 respondents provide the broadest picture available to date of the quality of national accounts and related survey statistics in Africa. The respondent countries are representative of all parts of the continent: North, West, South, East, and Central.

## 2. Revisions to National Accounts

### 2.1 GDP revisions for Africa: comparison with other global regions

As noted in the Introduction, recent revisions to GDP estimates have alarmed many observers both within and outside Africa. In the analysis below, the revisions to African GDP estimates are put in an international perspective. Are they significantly out of line with revisions routinely made by countries in other regions?

Charts A to C show the size and direction of revisions that countries in Africa, Asia, and the OECD area had made to their estimates of 2005 GDP by the beginning of 2013. The year 2005 was chosen because the GDP estimate for that year was used as the reference year in the first round of the enlarged International Comparison Program (ICP 2005). All countries shown in these graphs were required to supply GDP estimates for 2005, broken down into 155 very detailed expenditure categories such as “Clothing,” “Beer, wines and spirits,” “Financial services,” “Residential construction,” and “Transport equipment.”

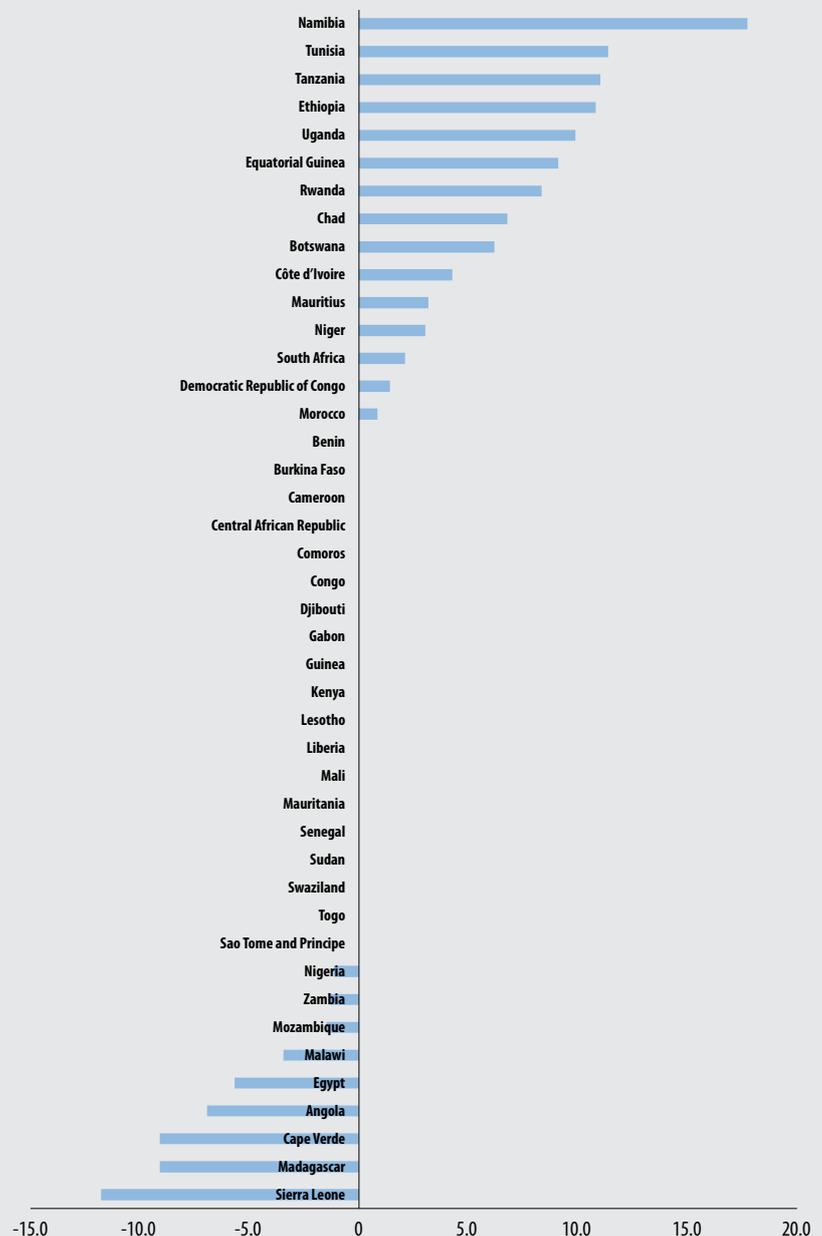
Workshops for the 146 participating countries were organized in the different regions to explain the national accounts requirements for ICP 2005. The GDP data reported by countries were subject to close scrutiny, resulting in improvements to the methodology and data sources used by several countries. The GDP estimates for 2005 were the best that countries were able to make when they submitted them for ICP 2005 in 2006 or 2007. As the charts below reveal, in the six or seven years since then, many countries have revised these 2005 GDP estimates.

These revisions were due to several causes: some countries have moved closer to the SNA 1993 standards, while others have

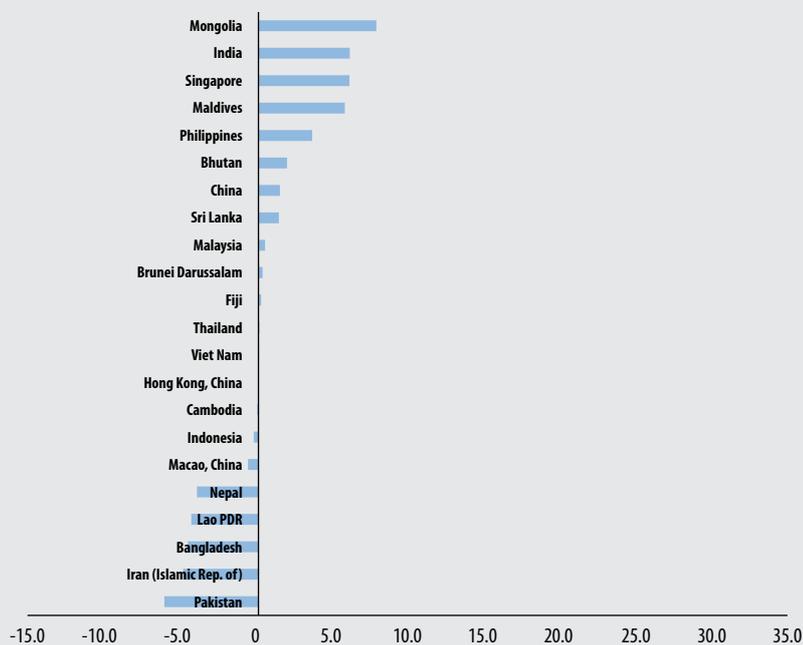
rebased their estimates following a new population census, industrial or agricultural survey, or the implementation of regular household surveys. In addition, during the last decade there has been a concerted effort, led by the international

organizations including AfDB, to help countries to improve the comprehensiveness of their GDP estimates by ensuring fuller coverage of informal activities. System changes – from the SNA 1968 to the SNA 1993 – account for an increase in

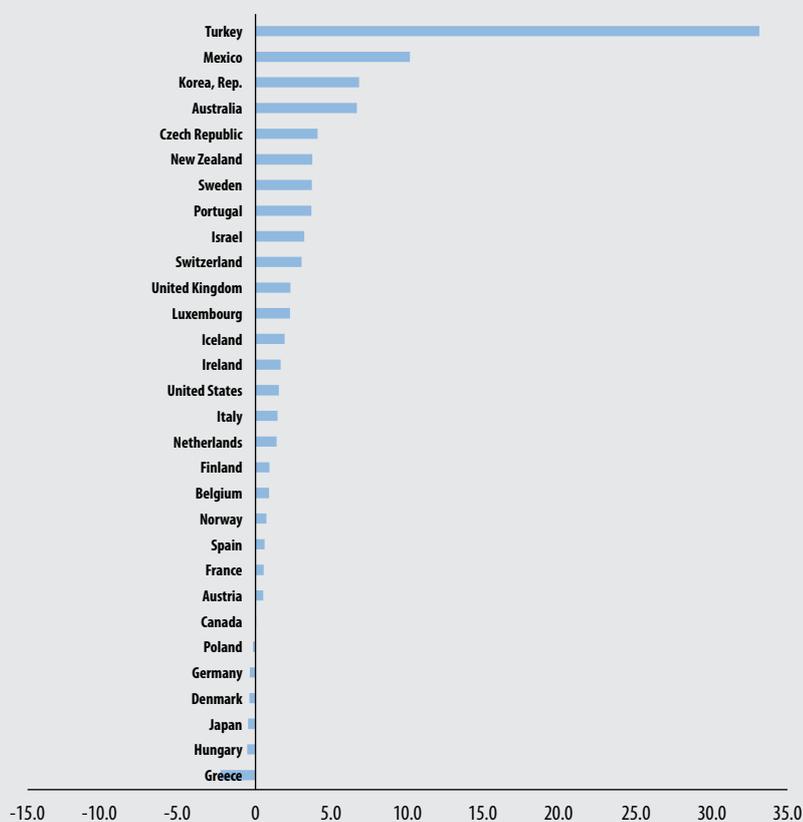
Chart A. Africa: Percent revisions to GDP estimates for 2005 ICP estimates for 2005 compared with latest AfDB estimates for 2005



**Chart B. Asia: Percent revisions to GDP for 2005 ICP estimate for 2005 compared with latest ESCAP estimate for 2005**



**Chart C. OECD: Percent revisions to GDP estimates for 2005 ICP estimate for 2005 compared with latest OECD estimate for 2005**



GDP of, at most, 1 or 2 percentage points. The larger changes shown in these graphs stem from improved data sources or fuller coverage of informal activities. Note, however, that not all revisions lead to higher GDP: in all three regions (Africa, Asia and the OECD), better data sources have led countries to make downward revisions to their 2005 GDP estimates.

Chart A, showing revisions made by African countries, excludes two revisions of about +100% made by the Gambia and Guinea-Bissau. All three charts (A to C) use the same scale and the inclusion of these two countries distorts the graphs. The surprising thing is that, ignoring these two outliers, revisions in all three regions show a similar pattern. African countries do not, in general, make larger revisions to their national accounts than do countries in the other two regions. This is also true when comparing African countries to the OECD countries, which have had the longest experience in compiling national accounts and which generally have access to a wider range of basic data than countries in Asia or Africa.

The very large revision to GDP reported by Ghana has understandably alarmed many observers. But while this revision and the even larger revisions reported by Guinea-Bissau and The Gambia are clearly worrisome, the evidence from revisions does not support the view that there is a general, widespread problem associated with African national accounts.

## 3. Basic GDP Estimates

### 3.1 Availability of GDP estimates

Countries usually start by estimating GDP as the sum of value added by the different kinds of economic activities. Value added is gross output minus intermediate consumption. This method of calculating GDP is generally referred to as the “production approach” and is denoted by GDP(P). Table 1 below shows that 43 of the 44 countries that responded to the survey publish GDP(P) both at current and constant prices. Equatorial Guinea is the only country that does not currently publish any GDP estimates, although it is probable that several of the ten non-respondents are also not publishing GDP at present.<sup>4</sup>

When they are confident with their GDP(P) estimates, countries then move on to estimating GDP as the sum of final expenditures – household and government

<sup>4</sup> A return from Liberia, which arrived too late to be included in this report, shows that Liberia does not currently publish any GDP estimates although some are made for internal use.

consumption, gross fixed capital formation, change in inventories, and exports less imports of goods and services. GDP estimated from the expenditure side is denoted by GDP(E). It is more difficult to estimate GDP(E) than GDP(P); this is because measuring household consumption expenditure, gross fixed capital formation and change in inventories pose particular problems. Nevertheless, all but three of the 44 countries now publish GDP(E), although only 36 publish GDP(E) at constant as well as current prices.

Central banks and finance ministries manipulate interest rates, taxes, and government expenditures to stimulate or reduce demand, so they need to know the impact of these policy measures on GDP through their impact on consumption and capital formation. For this reason GDP(E) is usually of more interest to policy-makers than GDP(P), although GDP(P) is also valuable for evaluating policies targeted at helping particular industries.

Charts 1 and 2 show the latest years for which GDP(P) and GDP(E) had been published by March 2013. Ten countries had released GDP(P) at constant prices for 2012 and 25 had published GDP(P) at constant prices for 2011. Ten countries had only published GDP estimates for 2010 or earlier and by 2013 these would only have been of historical interest. The more interesting GDP(E) estimates for 2012 or 2011 were available for 31 countries in current prices and for 27 in constant prices.

### 3.2 Base years

Constant price estimates are obtained either by extrapolating GDP of a base year using volume indicators or by deflating current price estimates by price indices. Usually a mixture of methods is used: for example, constant price value added in agriculture may be obtained by extrapolating base year current price estimates by volume indicators of crop output or numbers of livestock, while constant price value

Table 1. Publication of basic GDP estimates

Basic GDP estimates: Questions posed	Countries responding Yes	
	Number	%
Do you publish annual estimates of GDP by kind of activity at current prices? (Production approach)	43	98
Do you publish annual estimates of GDP by kind of activity at constant prices? (Production approach)	43	98
Do you publish annual estimates of final expenditure on GDP at current prices? (Expenditure approach)	41	93
Do you publish annual estimates of final expenditure on GDP at constant prices? (Expenditure approach)	36	82

Chart 1. Latest years published for GDP (P) as of March 2013

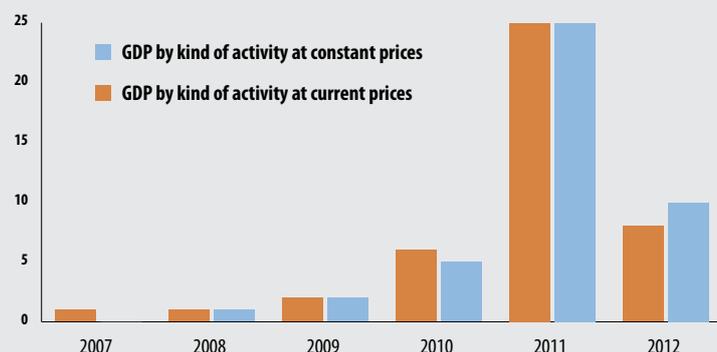
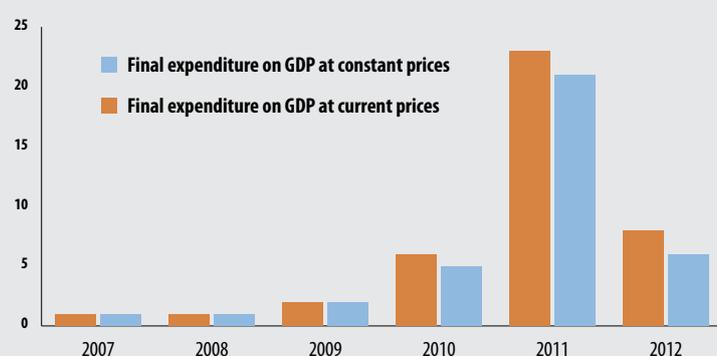


Chart 2. Latest years published for GDP (E) as of March 2013



added in manufacturing may be obtained by deflating current price estimates using the relevant components of the consumer price index. Whichever method is used, the choice of the base year is important because either the relative volumes or the relative

prices of the base year are embedded in the constant price series. In reality, both relative prices and relative volumes will change over time, so the base year needs to be updated at regular intervals. The SNA 1993 recommends the use of annual chain

indices, which means in effect that the base year is updated each year. If countries are not able to use annual chain indices, the base year should be updated every five years.

Chart 3 below shows the base years now being used for constant price estimates in 34 countries. Only nine – Cape Verde, Egypt, Ethiopia, Djibouti, Guinea, Malawi, São Tomé & Príncipe, Togo, and Zimbabwe – have base years that meet the five-year rule (i.e. 2007 or later). Nineteen countries have base years that are at least ten years old, and eight (Benin, Central African Republic, Comoros, Congo Republic, Madagascar, Mali, Nigeria, and Sudan) use base years that are more than 20 years old.

### 3.3 Supply and Use Tables

A Supply and Use Table (SUT) equates the **supply** of goods and services from domestic production and imports with their **uses** for intermediate consumption or final use – government and household consumption, capital formation, and exports. The rows of the SUT contain products, while the columns show the various industries and sectors that use them. SUTs have proved an excellent mechanism for ensuring that GDP estimates from the production side (GDP(P)) and the expenditure side (GDP(E)) are consistent; further the process of balancing supply and use means that the estimates of both supply and use are made more reliable. The use of SUTs for estimating the basic GDP aggregates is now standard practice in North America and Europe and an increasing number of countries in other regions are following their lead, including in Africa.

Thirty-three countries in Africa have compiled at least one SUT since 2000 and 14 countries now compile them every year (Burkina Faso, Cape Verde, Central African Republic, Congo Republic, Côte d'Ivoire, Malawi, Mauritania, Mauritius,

Chart 3. Base year for GDP estimates at constant prices as of 2013

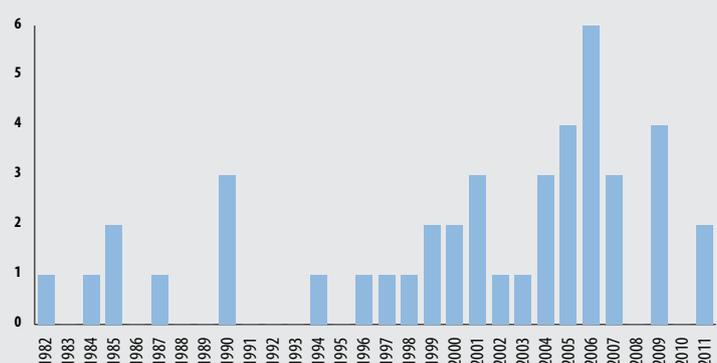
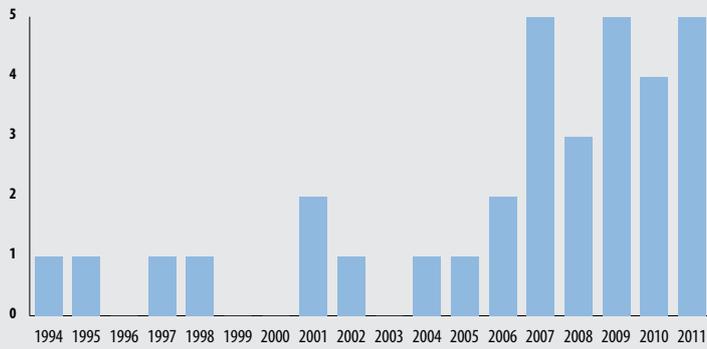


Chart 4. Reference year of latest SUT as of 2013



Mozambique, Niger, Senegal, South Africa, Togo, and Tunisia). Note that the latest published GDP estimates will not always be based on the annual SUT, as this may only become available some months or even years later. When the SUT is eventually available, the GDP estimates will then be revised. Chart 4 shows the latest year for which SUTs were available in March 2013.

## 4. Treatment of SNA 1993 Features

### 4.1 How closely countries follow the SNA 1993

During the 1970s the international organizations – World Bank, IMF, United Nations, and the AfDB – made efforts to help countries to adopt the 1968 version of the System of National Accounts (SNA 1968). This was the first version of the system which had a fully integrated set of accounts for each of the “institutional sectors” – households, government, non-profit institutions, and financial and non-financial enterprises. The SNA 1968 was revised in 1993 and for many countries the SNA 1993 is the one they are trying to implement and it is also the one to be used by all countries participating in the 2011 round of the International Comparison Program (ICP). A few countries in Africa are now seeking to implement the SNA 2008 but, for the majority, the SNA 1993 remains their target system. The question then arises: *How closely are they following the SNA 1993?*

The SNA 1993 introduced a number of changes which affect the level of GDP. Almost all have the effect of increasing GDP compared to SNA 1968. If all the new features of the SNA 1993 are implemented, then GDP is increased by between 1 and 2 percent in most countries. Table 2 shows the extent to which the 34 countries have implemented these new features of the SNA 1993.

Expenditures on computer software, prospecting for minerals, and on certain types of military equipment were all treated as intermediate consumption in the SNA 1968 but they are defined as gross fixed capital formation in the SNA 1993. About 60 percent of African countries have so far adopted this broader definition of gross fixed capital formation.

Less than half of the countries allocate imputed bank service charges – or FISIM in the SNA 1993 terminology – to the sectors that consume them. FISIM is the difference

between interest earned by banks and interest paid to depositors and in all systems of national accounts this difference is treated as part of the gross output of banks. In the SNA 1968, this was treated as intermediate consumption of producers but the SNA 1993 recommends that FISIM consumed by households, by government, and by the rest of the world should be shown as final, rather than intermediate, consumption. This has the effect of increasing GDP. All countries have found it difficult to allocate FISIM to consumers and only 16 of the 44 countries in Africa have so far managed to do so.

Even fewer countries (eight) identify expenditure on “valuables.” Valuables are goods that are purchased in the expectation that they will increase in value over time and include precious metals, jewellery, and works of art. Suppose, for example, that a business buys an original sculpture to decorate a reception area with the expectation that the sculpture will increase in

Table 2. How closely countries follow new features of the SNA 1993

Adherence to new features of the SNA 1993: questions posed	Countries responding Yes	
	Number	%
Do you treat expenditure on computer software by producers as capital formation?	26	59
Do you treat mineral exploration as capital formation?	27	61
Do you treat government expenditure on military durable goods other than weapons as capital formation?	27	61
Do you allocate FISIM* to the institutional sectors that consume FISIM*?	16	36
Do you estimate acquisitions and disposals of valuables?	8	18

\* FISIM = Financial Intermediation Services Indirectly Measured

value over the years. In the SNA 1968 this expenditure would have been treated as a normal business outlay and formed part of intermediate consumption. In the SNA 1993, however, the “net acquisition of valuables” – valuables purchased minus valuables sold – is treated as capital formation and so increases GDP.

As regards the implementation of the SNA 1993, the picture is mixed. Only Ethiopia and the Seychelles reported implementing

all five of the new SNA 1993 features listed in Table 2 and eight countries are not yet implementing any of the new features – Comoros, Côte d’Ivoire, Guinea, Guinea-Bissau, Madagascar, Rwanda, Uganda, and Zambia. The national accounts of the remaining countries are a mixture of SNA 1968 and SNA 1993.

Note that few countries implement all features of a new SNA system at the same time. The usual practice is to adopt the

new guidelines in a piecemeal fashion, with particular features of the new system being implemented as data sources allow. When national accountants are asked which system they are following, their answers will depend on how far they have progressed in adopting the new features. At some point they may feel that they have adopted a new SNA system even if their accounts still retain features of an earlier one. Implementation of a new system is a continuum and not a fixed point.

## 5. Coverage of the Accounts

### 5.1 Coverage: the informal sector

The SNA 2008 was the first version of the SNA to include a chapter discussing informal/non-observed/underground activities in the GDP.<sup>5</sup> This has led some observers to conclude that such activities were not covered in GDP according to previous versions of the SNA. This is quite wrong: previous versions did not distinguish between informal and formal production but make it clear that all types of production are to be included. This is irrespective of whether they take place in large corporate enterprises that keep full written accounts, in small family businesses, or in one-person enterprises that may keep no records at all

<sup>5</sup> "Chapter 25: Informal aspects of the economy," *System of National Accounts 2008*, European Commission, International Monetary Fund, Organisation for Economic Cooperation and Development, United Nations, World Bank, published by United Nations, New York 2009.

of incomes and outlays. All countries try to include these activities in their GDP estimates although there are many difficulties in ensuring full coverage. Better measurement of the informal sector has emerged as a key issue for national accountants in all developing countries. Indeed, efforts to improve coverage have been responsible for some of the large revisions made to the national accounts in Ghana, Malawi, and other countries in the last few years.

The AfDB survey did not ask about coverage of informal activities, as this will be the subject of a detailed follow-up investigation into the sources and methods used by a smaller selection of countries. However, the survey did ask countries about surveys of the informal sector and over half of the respondents (23 countries) reported that

they had carried out at least one such survey since 2000.

### 5.2 Imputing values to non-monetary production

Apart from informal activities, another difficulty is that the SNA requires countries to impute values to various non-monetary transactions. Table 3 shows the numbers and percentages of countries that make imputations for the non-monetary types of production that are likely to be important in most African countries.

All versions of the SNA require that the value of housing services should be included in GDP regardless of whether these are explicitly purchased in the form of rents paid to the owner or are "paid" by homeowners to themselves – acting as

Table 3. Coverage non-monetary production

Coverage of non-monetary production: Questions posed	Countries responding Yes	
	Number	%
Do you impute rents for owner-occupied dwellings in rural areas?	36	82
Do you impute rents for owner-occupied dwellings in urban areas?	39	89
Do you include own-produced crops and livestock in household consumption expenditure?	39	89
Do you include estimates for own-construction of dwellings?	35	80
Do you include estimates for own-construction of other buildings (e.g. storehouses, barns, cattle-pens)?	27	61
Do you include the net increase in herds of domestic animals in the gross output of agriculture?	33	75
Do you include consumption of fixed capital in final consumption expenditure of government?	31	70

both providers and consumers of housing services. While the percentage of countries that include imputed rents for owner-occupiers is high – 82 percent for owner-occupiers in rural areas and 89 percent in urban areas – the surprising thing is that four countries (Comoros, Guinea-Bissau, Madagascar, and Mozambique) do not impute any rents for owner-occupiers and three (Guinea, São Tomé, and Swaziland) do not impute rents for owner-occupiers in rural areas. When properly measured, total rents for dwellings (both actual and imputed) account for at least 5 percent of GDP in low-income countries, while in richer countries the percentage is often twice that level. In Africa most people are owner-occupiers and the omission of imputed rents means that GDP is underestimated and will not be comparable with GDP estimated by countries that follow the SNA rules.

The SNA suggests that rents should be imputed to owner-occupiers using rents actually paid for similar dwellings. Table 4 shows that this is the method most commonly used both for rural and urban owner-occupiers. The problem here is

to find dwellings that are actually being rented. This is particularly a problem for dwellings in rural areas: these are often constructed by their owners using locally available materials such as bamboo, wattle and daub, and palm fronds and are almost never rented. When no actual rents are available, many countries ask the owners to estimate what they think they would have to pay to rent their dwelling or, alternatively, what they would charge in rent for someone else to live in it. Table 4 shows that this is the second commonest method used in Africa.

Owners' rent estimates are notoriously unreliable and when actual rents for similar dwellings are not available, "user cost" is the preferred method to estimate imputed rents. User cost requires the national accountant to simulate rents by adding up the various costs the owner would need to take into account if renting the dwelling to a third party. These are the costs of repair and maintenance, insurance, depreciation, and profit margin; the owner's expected capital gain is then deducted as a kind of negative cost. The difficulty with user cost is that it requires an estimate of the market

value of the dwelling stock in order to calculate depreciation, profit margin, and capital gain. Table 4 shows that only six countries (Central African Republic, Ghana, Nigeria, Tunisia, Uganda, and Zambia) are currently imputing rents by the (preferred) user-cost method for dwellings in both rural and urban areas—Botswana and Zimbabwe reported user cost as a method used for rural dwellings and São Tomé uses this method for urban dwellings.

Almost all countries (89 percent) estimate the value added by production of crops and livestock for own consumption. The countries that do not adopt do this are Comoros, Madagascar, Nigeria, and Zambia. Seven countries (Burkina Faso, Comoros, Madagascar, Malawi, Seychelles, Swaziland, and Tunisia) do not estimate the value added of construction of dwellings by families for their own use. Most countries also estimate the value added by construction of farm buildings such as storage shelters, byres, and cattle pens. However, 16 countries omit this form of production; including several countries where this is likely to be significant (Burkina Faso, Democratic Republic of

Table 4. Methods used to impute rents

Methods used to impute rents: Questions posed	Countries responding Yes	
	Number	%
In Rural Areas:		
Do you use actual rents for similar dwellings?	25	57
Do you use rents estimated by owner-occupiers?	18	41
Do you apply the "user cost method"?	8	18
In Urban Areas:		
Do you use actual rents for similar dwellings?	29	66
Do you use rents estimated by owner-occupiers?	18	41
Do you apply the "user cost method"?	7	16

Note: Percentages exceed 100% because more than one method can be used for different types of dwellings.

Congo, Ghana, Madagascar, Malawi, Niger, Sudan, and Swaziland). According to the SNA, the gross output of animal husbandry includes both the value of animals sold for slaughter or export and the net increase in herds. In this respect, 75 percent of the countries estimate the net increase but 11 countries do not do so. Finally, 13 countries do not include estimates of depreciation of

government assets in their calculation of government expenditure and value added. All these omissions – except for the net increase in herds, which may be negative as well as positive – mean that GDP is being underestimated and is not comparable with GDP estimates for countries that follow the SNA guidelines. The AfDB survey revealed two quantitatively important omissions

in most African countries' coverage of non-monetary production: (i) failure to impute rents to owner-occupiers and to estimate the value added from production of crops and livestock for own consumption and (ii) failure to include value added from own construction of dwellings and other buildings.

## 6. Collection of Survey Data

### 6.1 Range and frequency of censuses and surveys conducted

GDP estimates are only as good as the basic data from which they are derived. Table 5 shows the numbers and percentages of countries that have had at least one survey or census since 2000 on seven important aspects of the economy – household expenditures, industrial and agricultural output, labor force participation, the informal sector, the numbers and characteristics of dwellings, and the population. (For the population census, respondents were asked if one had been carried out since 1990).

All countries except Djibouti have conducted at least one household budget or expenditure survey since 2000, and 80 percent have had at least one enterprise/business survey or census. However, only just over half of the countries (24) have undertaken a census or survey of agriculture since 2000. This is somewhat surprising, given the importance of agriculture throughout Africa. In the absence of survey

data, agricultural output and value added have to be inferred from often unreliable reports from Ministry of Agriculture officials or from export and import statistics. Eighteen countries have had at least one survey of the informal sector. In the francophone countries, these have usually been multi-stage (“1-2” or “1-2-3”) surveys, in which a household labor force survey is first used to identify households containing owners of unincorporated enterprises, with a second survey shortly afterwards to collect detailed data on informal income and expenditures. In the 1-2-3 survey, a third survey collects additional information on total household incomes and expenditures.<sup>6</sup> Surveys of dwellings often form part of the population census; 19 countries have had at least one dwelling survey or census since 2000.

Population censuses are an important data source for national accounts in developing

<sup>6</sup> Multistage surveys in Africa have mostly been assisted by AfDB's partner agency AFRISTAT.

countries. Population growth rates are commonly used to extrapolate employment, expenditures or incomes from periodic household and business surveys. When results of a new population census become available, the national accounts often have to be “rebased” to the new level (higher or lower) implied by the latest census figures. Population censuses are usually carried out every ten years and 31 countries have had one or more population census since 1990. In 25 of these countries, a population census had been undertaken within the previous five years, but in nine countries (Benin, Côte d'Ivoire, Equatorial Guinea, Guinea, Madagascar, Mauritania, Morocco, Senegal and Uganda) it had been more than 10 years since such a census was carried out. – Moreover, three very large countries – Algeria, Democratic Republic of the Congo, and Nigeria – have had no population census since 1990. Outdated census data, or a complete lack of such data, does raise questions about the reliability of both GDP levels and growth rates.

Table 5. Frequency of different surveys and/or censuses

Availability of survey/ census data: Questions posed	Countries responding Yes	
	Number	%
Have you had a household expenditure or budget survey since 2000?	43	98
Have you had an industry/enterprise/business survey or census since 2000?	36	82
Have you had an agricultural survey or census since 2000?	24	55
Have you had a household labor force survey since 2000?	31	70
Have you had a survey or census of dwellings since 2000?	26	59
Have you had a survey of the informal sector since 2000?	23	52
Have you had a population census since 1990?	41	93

Mauritius is the only country to carry out a household expenditure survey every year and the only country to conduct an annual survey of the informal sector. Fourteen countries have annual surveys of industry; eight have annual surveys of the labor force; and nine countries conduct annual surveys of agriculture. In the OECD countries, by contrast, surveys of industry and agriculture are usually annual and household surveys of expenditures and labour force are often quarterly or even monthly.

### 5.2 Reference years for seven types of surveys and censuses

Charts 5 to 11 below show the latest years for these seven types of surveys/censuses.

When data are used from an earlier survey, they have to be extrapolated to the current year using a relevant indicator. The reliability of the extrapolated estimate will depend on both the relevance of the indicator used and on the length of the period. As a rule of thumb, if the survey data are more than five years old (2006 or earlier in this case), the extrapolated data can be taken as of poor reliability. Table 6 shows the numbers of countries with survey data dating before and after 2007.

Chart 5. Reference year for latest Household Income/Expenditure survey as of March 2013

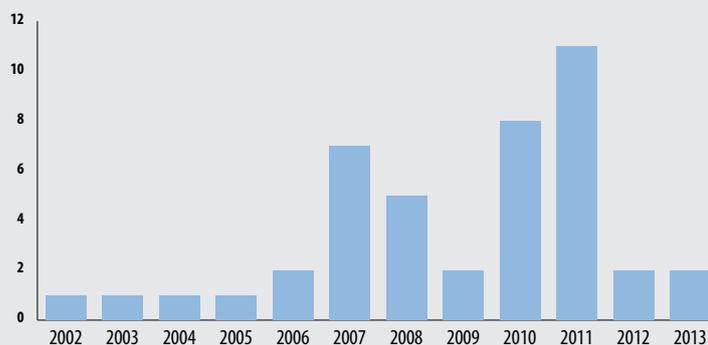


Chart 6. Reference year of latest Business/Enterprise survey as of March 2013

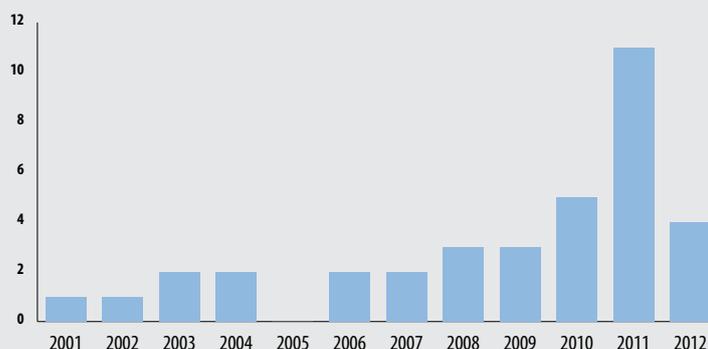


Chart 7. Reference year of latest Agriculture survey as of March 2013

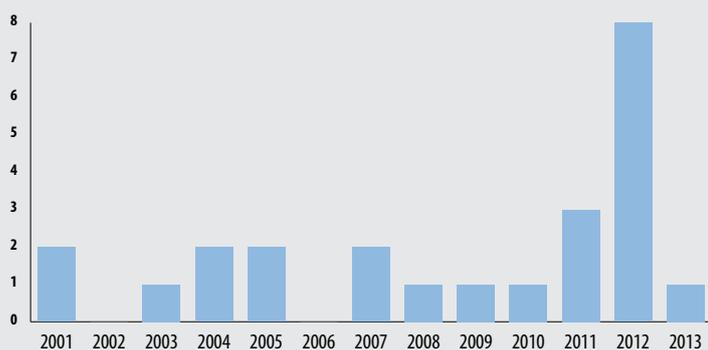


Chart 8. Reference year of latest Household Labour Force Survey as of March 2013

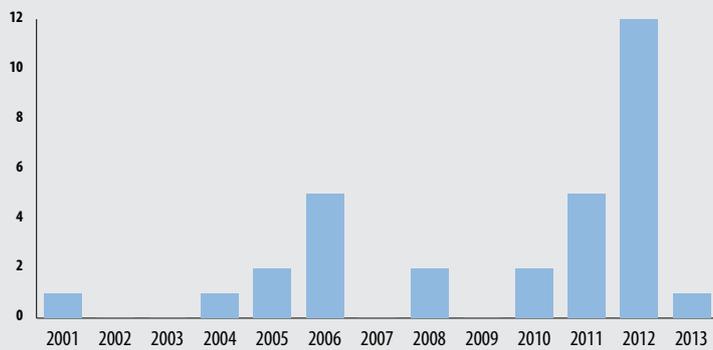


Chart 9. Reference year of latest survey of Dwellings as of March 2013

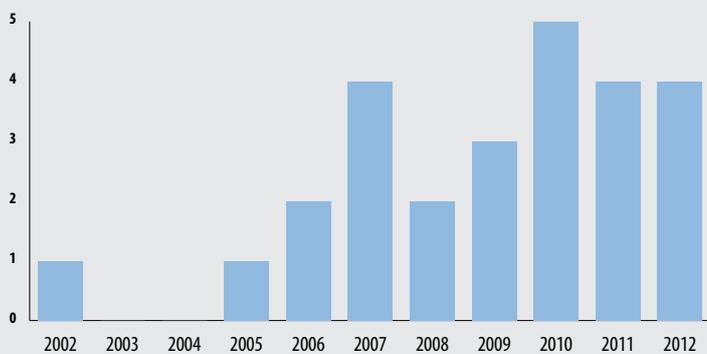


Chart 10. Reference year of the Informal Sector survey as of March 2013

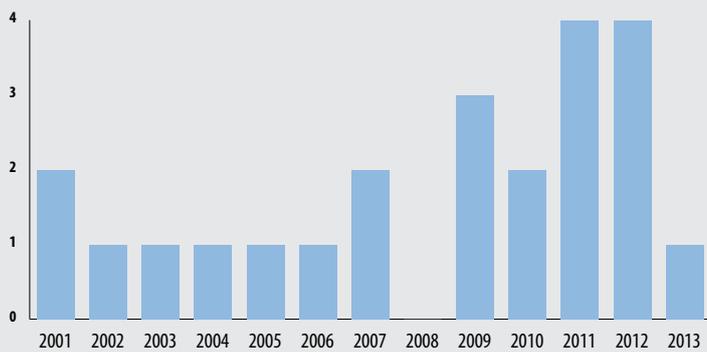
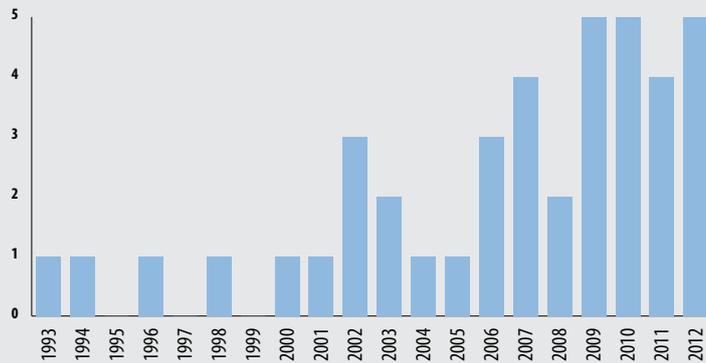


Chart 11. Reference year of latest Population Census as of March 2013



The five-year test suggests that many countries are extrapolating data for their GDP estimates using relatively old data. This poses particular problems with data from household labor force surveys, industry/business surveys, informal sector surveys, and population censuses.

Table 6. Countries with survey data dating before/ after 2007

Type of Survey Data	2006 or earlier	2007 or later
Household income/expenditure survey	6	37
Agriculture survey/census	7	17
Industry/business survey	8	28
Household labor force survey	9	22
Informal sector survey	7	16
Dwelling survey/census	4	22
Population census	16	25

## 7. Price Statistics

### 7.1 Use and availability of price data

Price indices are relevant for constant price estimates of both GDP(P) and GDP(E) although, as noted earlier, constant price series can also be obtained by extrapolating base year estimates using volume indicators. The preferred method, however, is to deflate current price GDP using appropriate price indices.

All countries have consumer price indices (CPIs). The CPI or relevant components are widely used for deflating current price estimates of household expenditure for GDP(E). These are usually monthly indices, although in a few cases they are only compiled each quarter. Relatively few countries collect wholesale prices, but 24 (55 percent) collect producer prices which can be used for deflating gross output and value added for GDP(P). Prices of construction materials and wages of construction workers are relevant for deflating the building and construction component of gross fixed capital formation and may also be used for deflating output of the construction sector. Twenty-three countries collect

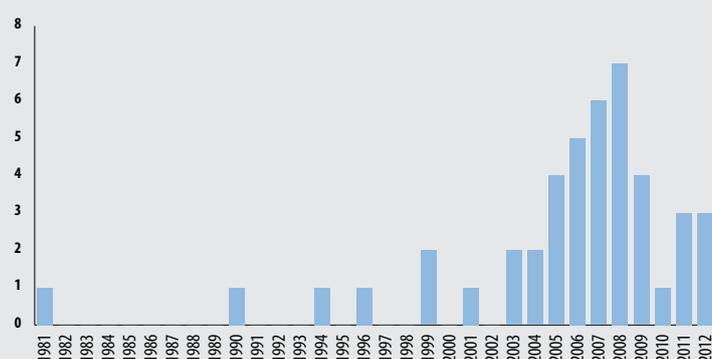
Table 7. Availability of price data

Types of price data collected: Questions posed	Countries responding Yes	
	Number	%
Do you have a Consumer Price Index?	44	100
Do you collect any wholesale prices?	7	16
Do you collect any producer prices?	24	55
Do you collect prices of construction materials?	23	52
Do you collect data on wages of construction workers?	10	23
Do you collect data on unit values of exports and imports?	31	70

prices of construction materials but only ten have data on construction workers' wages. Thirty-one countries compile unit-value indices from customs documents for merchandise trade.

Chart 12 shows the base year for the CPIs of the 44 countries. Twenty-four are using a relatively recent base year – 2007 or later. A further 13 have base years that are between six and ten years out of date, while six countries have base years dating back to the 1990s and earlier – Central African Republic (1981), Comoros (1990), Namibia (1994), São Tomé (1996), Djibouti and Ghana (both 1999). At times of fast economic growth (as now), relative prices may change rapidly and out-of-date deflators give a misleading picture of the real growth of the economy.

Chart 12. Reference year for the weights of Consumer Price Index as of March 2013



## 8. Quality of National Accounts

### 8.1 Country ranking by quality of national accounts

The questionnaires can be used to assess the overall quality of each country's national accounts. Annex 2 lists 71 aspects covering:

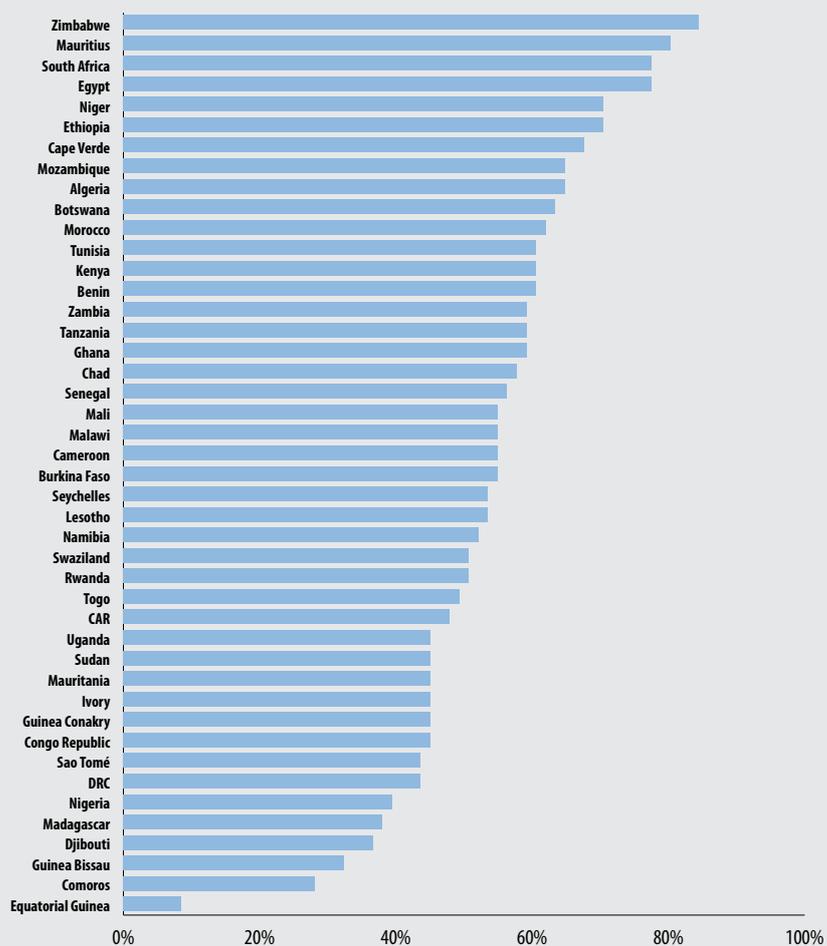
- » the extent to which countries conform to the SNA 1993 and include the various imputations called for in the System of National Accounts;
- » the range of survey data available and whether or not they are recent;
- » the types of price data available for deflation of GDP.

Additional quality points are awarded for the use of preferred methodologies (e.g. user cost for imputing rents of owner-occupiers), use of a recent base year, national coverage of surveys, for conducting surveys or compiling SUTs on an annual basis, and for collecting price data on a monthly basis.

Note that each of the 71 quality points is given the same weight. Thus, for example, the fact that a country publishes GDP(E) at constant prices (an important quality feature) is given the same weight as the fact that it collects information on wholesale prices (a less important quality feature). The country rankings shown in this section would no doubt be different if weights had been assigned.

Chart 13 ranks countries using all 71 quality points. Charts 14, 15, and 16 rank

Chart 13. Ranking by All Quality Variables (1-71) Percentage scores



countries using scores for, respectively, SNA conformity and coverage, availability of survey data, and range of price statistics collected. Based on all 71 quality variables (Chart 13), Zimbabwe, Mauritius, South Africa, and Egypt come top in that order. At the bottom of the table, the weakest

performer is Equatorial Guinea, followed by Comoros, Guinea-Bissau and then Djibouti.

Looking only at the quality variables relevant to SNA conformity and coverage of the accounts (Chart 14), Zimbabwe, Mauritius, South Africa, and Egypt come top while Comoros, Guinea-Bissau, Madagascar, and Swaziland are the weakest four. The low scores are due to the fact that few or none of the SNA 1993 innovations have so far been implemented by these countries. Equatorial Guinea has a zero score because it does not presently publish national accounts statistics.

Chart 14. Ranking by National Accounts Variables (1-29)  
Percentage scores

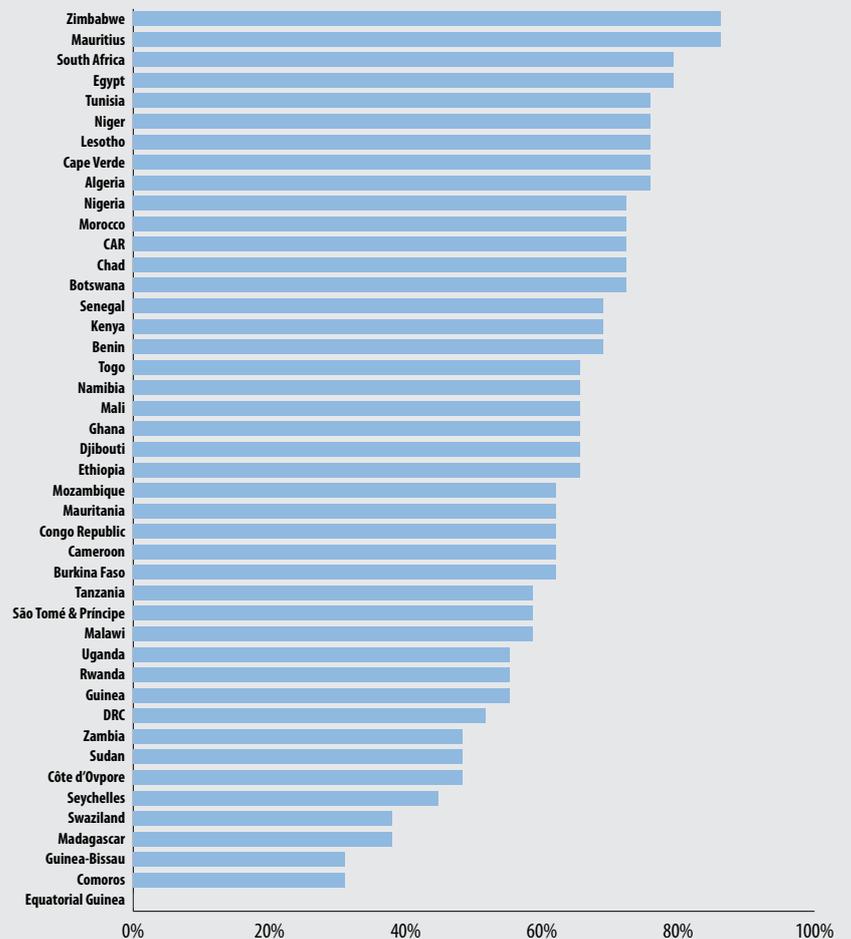


Chart 15. Ranking by Survey Variables (30-57) Percentage scores

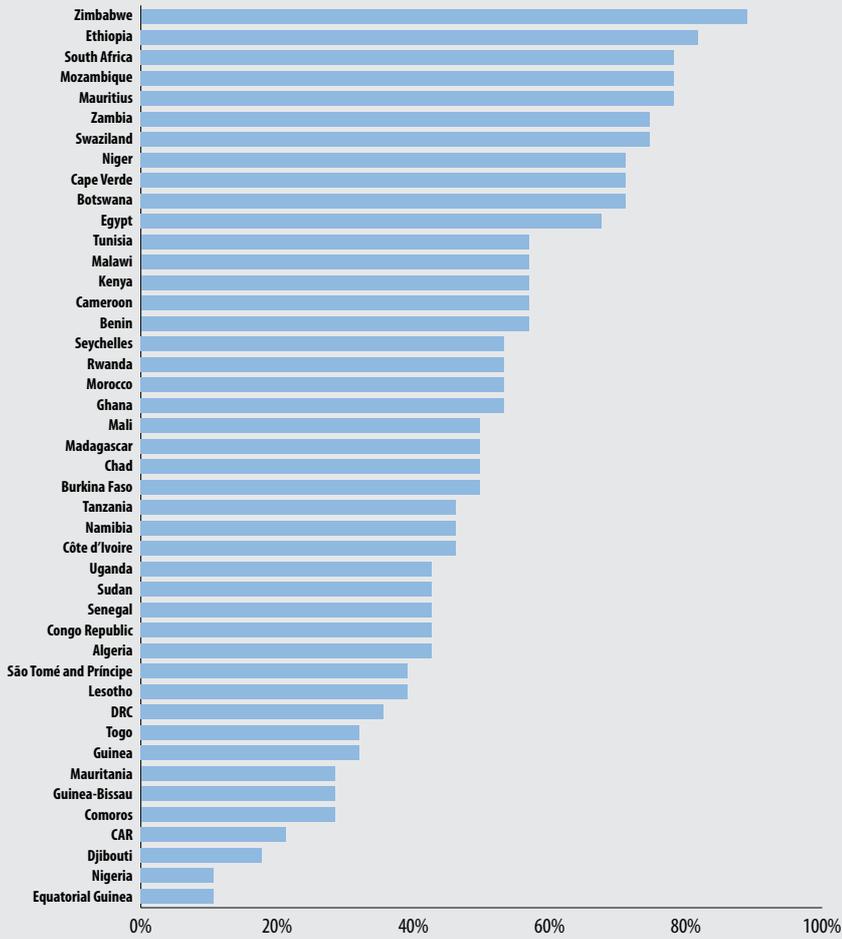
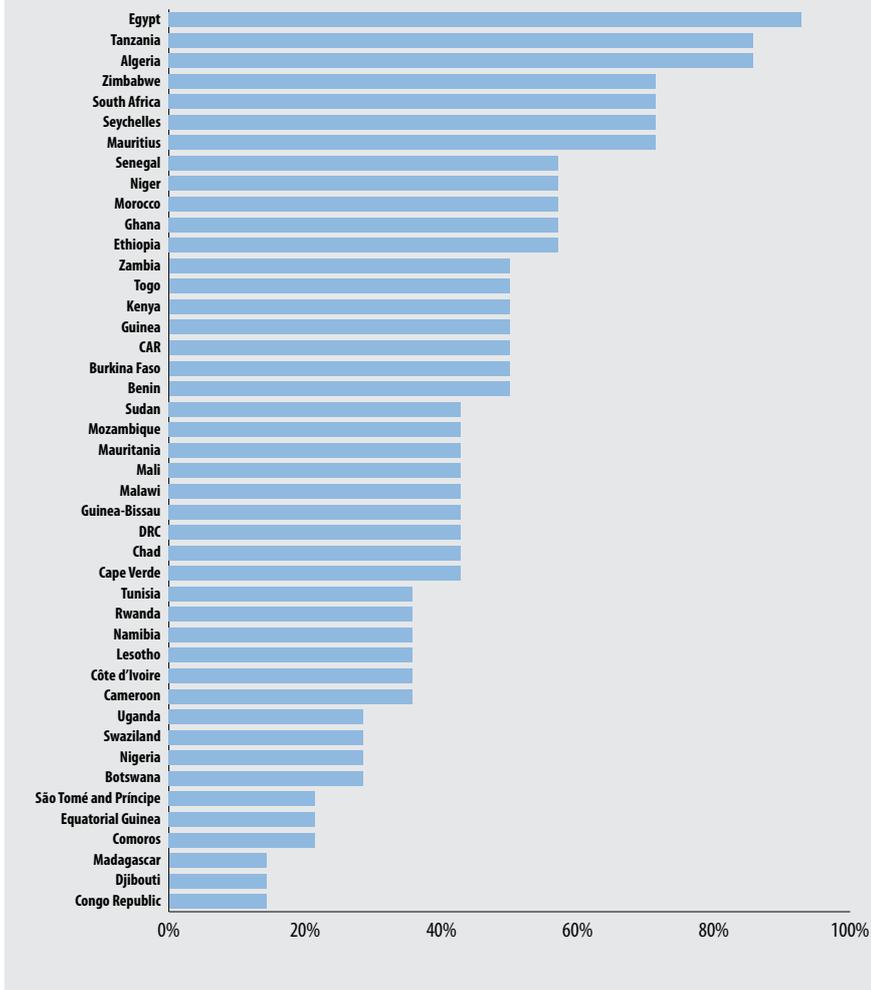


Chart 15 ranks countries according to their access to survey data and to how recent these data are. Zimbabwe, Ethiopia, South Africa, and Mozambique are particularly rich in the range of survey data available, while Central African Republic, Djibouti, Nigeria, and Equatorial Guinea are noticeably weak. In the absence of survey data, these countries' national accounts must inevitably rely on a number of more or less plausible assumptions and these countries are likely to make large revisions to their national accounts when and if actual survey data become available.

Chart 16. Ranking by Price Variables (58-71) Percentage scores



Finally, Chart 16 shows the range of price data collected by the 44 countries. Egypt, Tanzania, and Algeria collect the largest set of price statistics, with Madagascar, Djibouti, and Congo Republic collecting the least. Price data are relevant to GDP estimates at constant prices, which are the basis for evaluating real growth of economies. In the absence of price data, real growth estimates have to be made by extrapolating the base year current price data using volume indicators. This is generally regarded as less reliable than deflation of current price GDP by price indices.

## 9. Quality of Statistics: Rich versus poor countries

### 9.1 Quality scores and per capita GDP

Charts 13 to 16 in Chapter 8 raise the question of whether rich countries have better statistics than poor ones. Charts 17 to 20 provide an answer. They show the correlation between the quality scores in 2013 and per capita GDP in 2005 converted to International Dollars using PPPs. It would have been better to use a more recent year but 2005 is the latest year for which benchmark PPPs are available for Africa: PPPs have to be used to obtain real GDP comparisons between countries.

Chart 17 shows that almost none of the variation in overall quality can be explained by differences in per capita GDP. Poor countries are just as likely to have high quality scores as those with lower per capita GDP.

Chart 18 shows the relationship between the national accounts quality variables and per capita GDP. The correlation is slightly positive with just under 15 percent of the variation in the national accounts scores correlated with differences in per capita GDP.

Surveys are expensive, so one might expect a close correlation between the availability of survey statistics and per capita GDP. However, Chart 19 shows virtually no correlation (with an  $R^2$  of 0.021), suggesting that only 2 percent of the variation in availability of survey statistics is explained by differences in per capita GDP. Ethiopia, Mozambique, and Niger are low-income countries with more survey data than richer countries such as Congo Republic, Equatorial Guinea, and Nigeria.

Chart 17. Quality ranking and per capita GDP  
All quality variables (1-71)

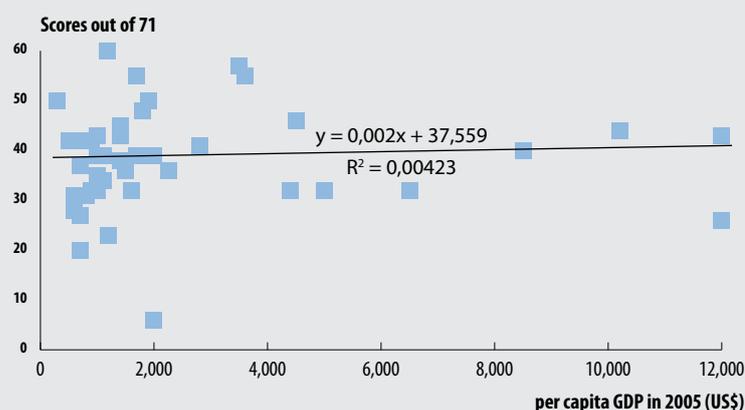


Chart 18. Quality rankings and per capita GDP  
National Accounts Variables (1-29)

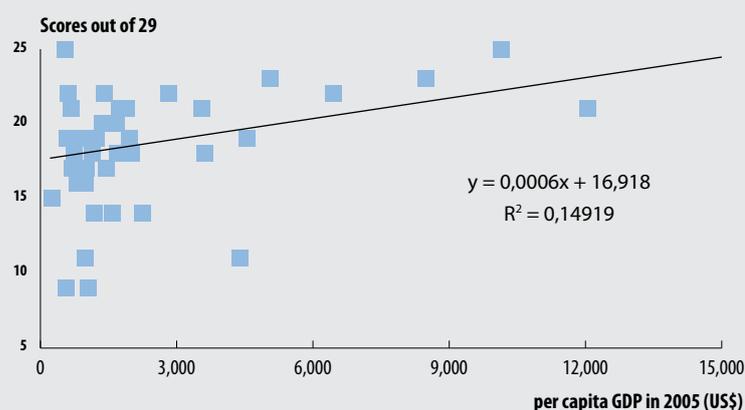


Chart 19. Country rankings and per capita GDP  
Survey Variables (30-57)

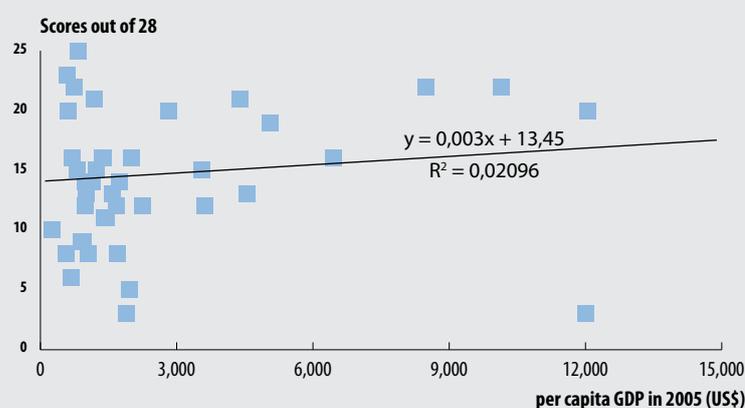
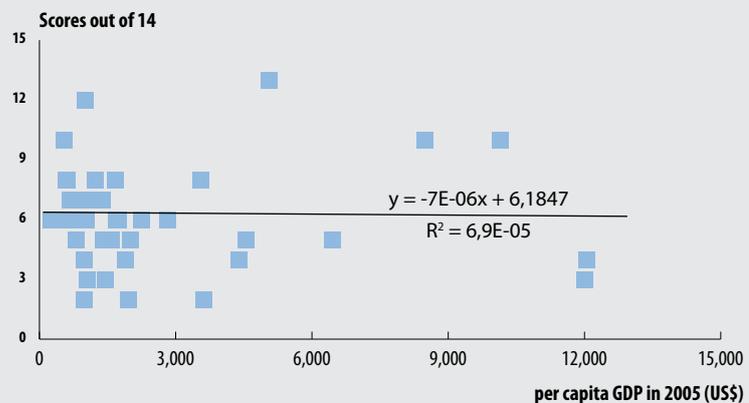


Chart 20 shows that there is no link between per capita GDP and price statistics. All countries are committed to measuring inflation as best they can and poor countries are just as likely as rich countries to collect a wide range of price data.

What can be concluded from these charts? Some rich countries (e.g. South Africa and Mauritius) score well on the quality scale, while some poor ones (e.g. Democratic Republic of the Congo and Guinea-Bissau) score poorly, but there are several exceptions. Niger, Ethiopia, and Mozambique are poorer than most African countries but have invested substantial resources into improving the quality of their statistics. Congo Republic, Côte d'Ivoire, Equatorial Guinea, and Nigeria, are in the top half of the table for per capita GDP but score quite poorly in most of the quality rankings.

Chart 20. Country rankings and per capita GDP  
Price variables (58-71)



Rich countries are not guaranteed to have good statistics and poor countries are not condemned to have bad ones. It is a political choice and regardless of their income

levels, African governments can decide whether or not to give priority to statistical development.

## 10. Conclusions and Recommendations

### 10.1 Conclusions

Recent revisions of GDP estimates in Africa have raised concerns about the overall reliability of economic statistics in Africa. The survey on which this report is based was launched by the AfDB in response to these concerns. It covered the methodology of the national accounts and, equally important, the basic information on agriculture, industry, the labor force, household expenditures and prices on which the national accounts depend.

Most of the 44 countries that replied to the questionnaire are publishing the basic GDP estimates at current and constant prices with an acceptable delay and are estimating GDP from both the production and expenditure sides. African countries are increasingly using Supply and Use Tables (SUTs) to obtain benchmark estimates. Furthermore, they are making special efforts to measure informal activities which are particularly widespread in all developing countries. African countries have in fact taken the lead in developing mixed household-enterprise surveys to measure employment and value added in the informal sector.

In general, middle-income countries have better statistics than lower-income countries. Nonetheless, there are many exceptions and poor countries are not condemned to have poor quality statistics. Devoting funds to improving a country's statistics is a political choice and is essential to attract development funds from development partners.

Although the overall picture is encouraging in a number of ways, the survey identified several areas where further improvements are needed and these are listed below in the "Recommendations" section below. They relate particularly to the basic data

underlying the national accounts estimates. To effectively address these requirements, the AfDB is promoting the introduction of *Economic Census Rounds*, which will allow the updating of national accounts as well as national consumer indices by all countries within a set period.

### 10.2 Recommendations

#### (a) National accounts system and methodology

1. Countries should implement at least these **four features of the SNA 1993**:
  - a. mineral prospecting should be treated as capital formation;
  - b. software should be treated as capital formation;
  - c. government defense expenditures should be treated as capital formation; and
  - d. allocation of FISIM to consuming sectors.
2. Rents should be imputed for **owner-occupied dwellings** in both rural and urban areas.
3. Rents should be imputed by **the user cost method** if actual rents for similar dwellings are not available.
4. Imputations should be made for value added and final expenditures for at least these **non-monetary transactions**:
  - a. production of crops and livestock for own consumption;
  - b. own-construction of dwellings; and
  - c. own-construction of farm buildings
5. **Base years** for constant price estimates should be updated every five years.

#### (b) Surveys

1. **Industry/business surveys** should be carried out every year, covering enterprises included in the business register.

These will usually be mail enquiries with full coverage of larger enterprises and samples of smaller enterprises.

2. **Household labor force surveys** should be carried out at least once every five years and should include questions about employment in the informal sector.
3. **Informal sector surveys** should be carried out every five years. Ideally, these should be mixed household/enterprise surveys and held in conjunction with the household labor force survey.
4. **Household income/expenditure surveys** should be carried out at least every five years.
5. **Agricultural surveys** should be carried out every five years and should include crop-cutting and area measurement.
6. **Population censuses** should be carried out every ten years.

#### (c) Prices

1. In addition to prices of consumer goods and services, producer prices should be collected for major crops, livestock products, minerals and manufacturing output.
2. Unit value indices for imports and exports should be compiled from customs documents. If this is not possible, c.i.f. prices for major imports and f.o.b. prices for major exports should be collected directly from importers and exporters.

## Annex 1: List of Survey Questions

1	Do you publish annual estimates of GDP by kind of activity at current prices? (Production approach)	21	Other method (Describe method under “Explanatory Notes”)
	If yes	22	Do you impute rents for owner-occupied dwellings in urban areas?
2	Latest year published		If yes
3	Do you publish annual estimates of GDP by kind of activity at constant prices? (Production approach)	23	Do you use actual rents for similar dwellings?
	If yes	24	Do you use rents estimated by owner-occupiers?
4	Latest year published	25	Do you apply the “user cost method”?
5	Do you publish annual estimates of final expenditure on GDP at current prices? (Expenditure approach)	26	Other method (Describe method under “Explanatory Notes”)
	If yes	27	Do you collect data on NPISH** for use in your GDP estimates?
6	Latest year published	28	Do you include consumption of fixed capital in final consumption expenditure of government?
7	Do you publish annual estimates of final expenditure on GDP at constant prices? (Expenditure approach)	29	Do you include own-produced crops and livestock in household consumption expenditure?
	If yes	30	Do you include the net increase in herds of domestic animals in the gross output of agriculture?
8	Latest year published	31	Do you include estimates for own-construction of dwellings?
9	What is the base year for your annual GDP estimates at current prices?	32	Do you include estimates for own-construction of other buildings (e.g. storehouses, barns, cattle-pens)?
10	What is the base year for your annual GDP estimates at constant prices?	33	Do you derive net increase in inventories as a residual?
11	Do you treat expenditure on software by producers as capital formation?	34	Do you make separate estimates for increase in inventories and decrease in inventories?
12	Do you treat mineral exploration as capital formation?	35	Has a Supply and Use Table (SUT) ever been compiled for your country?
13	Do you treat government expenditure on military durable goods other than weapons as capital formation?		If yes
14	Do you treat government expenditure on weapons as capital formation?	36	Do you compile a SUT every year?
15	Do you allocate FISIM* to the institutional sectors which consume FISIM*?	37	What is the reference year of your latest SUT?
16	Do you estimate net acquisitions of valuables?	38	How many products (rows) are shown in the latest SUT?
17	Do you impute rents for owner-occupied dwellings in rural areas?	39	How many kinds of activity (columns) are shown in the latest SUT?
	If yes	40	Have you had a <b>household expenditure or budget survey</b> since 2000?
18	Do you use actual rents for similar dwellings?		If yes
19	Do you use rents estimated by owner-occupiers?	41	Is it carried out every year?
20	Do you apply the “user cost method”?		

42	What is the reference year of the latest survey?	68	Have you had a survey of the <b>informal sector</b> since 2000?
43	Did the latest survey cover the whole country?		If yes
44	Did the latest survey only cover one or more urban areas?	69	Is it carried out every year?
45	Have you had an <b>industry/enterprise/business survey or census</b> since 2000?	70	What is the reference year of the latest survey?
	If yes	71	Did the latest survey cover the whole country?
46	Is it carried out every year?	72	Have you had a <b>population census</b> since 1990?
47	What is the reference year of the latest survey?		If yes
48	Did the latest survey cover the whole country?	73	What is the reference year of the latest census?
49	Did the latest survey only cover one or more urban areas?	74	Did the latest census cover the whole country?
50	Did the latest survey collect data for enterprises?	75	Do you have a <b>consumer price index</b> ?
51	Did the latest survey collect data for establishments?		If yes
52	Have you had a <b>household labor force survey</b> since 2000?	76	Is it monthly?
	If yes	77	Is it quarterly?
53	Is it carried out every month?	78	Is it annual?
54	Is it carried out every quarter?	79	Does it cover the whole country?
55	Is it carried out every year?	80	Does it cover only one or more urban areas?
56	What is the reference year of the latest survey?	81	What is the reference year for the weights?
57	Did the latest survey cover the whole country?	82	Do you collect any <b>wholesale prices</b> ?
58	Did the latest survey only cover one or more urban areas?		If yes
59	Have you had a <b>survey or census of dwellings</b> since 2000?	83	Monthly?
	If yes	84	Quarterly?
60	Is it carried out every year?	85	Annually?
61	What is the reference year of the latest survey?	86	Do you collect any <b>producer prices</b> ?
62	Did the latest survey cover the whole country?		If yes
63	Did the latest survey only cover one or more urban areas?	87	Monthly?
64	Have you had an <b>agricultural survey or census</b> since 2000?	88	Quarterly?
	If yes	89	Annually?
65	Is it carried out every year?	90	Do you collect prices of <b>construction materials</b> ?
66	What is the reference year of the latest survey?		If yes
67	Did the latest survey cover the whole country?	91	Monthly?
		92	Quarterly?
		93	Annually?
		94	Do you collect data on <b>wages of construction workers</b> ?
			If yes
		95	Monthly?

96 Quarterly?

97 Annually?

98 Do you collect data on **unit values of exports and imports?**

If yes

99 Monthly?

100 Quarterly?

101 Annually?

## Annex 2: List of Quality Variables

(One point awarded for each Yes answer)

National Accounts Quality Variables	
1	Do you publish annual estimates of GDP by kind of activity at current prices?
2	2011 or 2012
3	Do you publish annual estimates of GDP by kind of activity at constant prices?
4	2011 or 2012
5	Do you publish annual estimates of final expenditure on GDP at current prices?
6	2011 or 2012
7	Do you publish annual estimates of final expenditure on GDP at constant prices?
8	2011 or 2012
9	Base year for GDP estimates is 2007 or later
10	Do you treat expenditure on software by producers as capital formation?
11	Do you treat mineral exploration as capital formation?
12	Do you treat government expenditure on military durable goods other than weapons as capital formation?
13	Do you allocate FISIM* to the institutional sectors that consume FISIM*?
14	Do you estimate acquisitions and disposals of valuables?
15	Do you impute rents for owner-occupied dwellings in rural areas?
16	Do you apply the "user-cost method"?
17	Do you impute rents for owner-occupied dwellings in urban areas?
18	Do you apply the "user-cost method"?
19	Do you collect data on NPISH** for use in your GDP estimates?
20	Do you include consumption of fixed capital in final consumption expenditure of government?
21	Do you include own-produced crops and livestock in household consumption expenditure?
22	Do you include the net increase in herds of domestic animals in the gross output of agriculture?
23	Do you include estimates for own-construction of dwellings?
24	Do you include estimates for own-construction of other buildings (e.g. storehouses, barns, etc.)?
25	Do you make separate estimates for increase in inventories and decrease in inventories?
26	Has a Supply and Use Table (SUT) ever been compiled for your country?
27	Do you compile a SUT every year?
28	Reference year is 2007 or later
29	Number of products is 50 or more

**Survey Quality Variables**

- 30 Have you had a household expenditure or budget survey since 2000?
- 31 Is it carried out every year?
- 32 Reference year is 2007 or later
- 33 Did the latest survey cover the whole country?
- 34 Have you had an industry/enterprise/business survey or census since 2000?
- 35 Is it carried out every year?
- 36 Reference year is 2007 or later
- 37 Did the latest survey (household expenditure or budget) cover the whole country?
- 38 Did the latest survey (household expenditure or budget) collect data for establishments?
- 39 Have you had a household labor force survey since 2000?
- 40 Is it carried out at least every year?
- 41 Reference year is 2007 or later
- 42 Did the latest household labor force survey cover the whole country?
- 43 Have you had a survey or census of dwellings since 2000?
- 44 Is it carried out every year?
- 45 Reference year is 2007 or later
- 46 Did the latest survey or census of dwellings cover the whole country?
- 47 Have you had an agricultural survey or census since 2000?
- 48 Is it carried out every year?
- 49 Reference year is 2007 or later
- 50 Did the latest agricultural survey or census cover the whole country?
- 51 Have you had a survey of the informal sector since 2000?
- 52 Is it carried out every year?
- 53 Reference year is 2007 or later
- 54 Did the latest informal sector survey cover the whole country?
- 55 Have you had a population census since 1990?
- 56 Reference year is 2000 or later
- 57 Did the latest population census cover the whole country?

**Price Quality Variables**

- |    |  |
|----|--|
| 58 | Do you have a Consumer Price Index?                        |
| 59 | Is it monthly?   |
| 60 | Does it cover the whole country?                           |
| 61 | Reference year for weights is 2007 or later                |
| 62 | Do you collect any wholesale prices?                       |
| 63 | Monthly?   |
| 64 | Do you collect any producer prices?                        |
| 65 | Monthly?   |
| 66 | Do you collect prices of construction materials?           |
| 67 | Monthly?   |
| 68 | Do you collect data on wages of construction workers?      |
| 69 | Monthly?   |
| 70 | Do you collect data on unit values of exports and imports? |
| 71 | Monthly?   |