



2005 International Comparison Program Preliminary Results

December 2007

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Table of Contents

Preface	5	
Acknowledgements	7	
Part I: Purchasing Power Parities and 2005 ICP Results	9	
Introduction: The International Comparison Program and Purchasing Power Parities	9	
The International Comparison Program		
Purchasing Power Parity		
Price Level Indices (PLIs)		
The Use Of PPPs And Market Exchange Rates For International Comparisons		
Limitations To The Use Of PPPs And GDP Volume Measures		
2005 ICP – Results And Major Findings	12	
Overview		
Detailed results		
Description of tables		
Data Tables		
Part II: Technical Notes Of The 2005 ICP	40	
Data Requirements	40	
National Accounts Data		
Price Data: Household Consumption Expenditure		
Price Data: Government Final Consumption Expenditure		
Price Data: Gross Fixed Capital Formation		
Representivity and Comparability		
Comparison-Resistant Areas	42	
Housing Rent		
Government		
Construction		
Equipment goods		
Changes in inventories		
Balance of exports and imports		
Reference PPPs		
Data Validation	46	
Data validation - Prices		
Data validation - National accounts		
Data issues and accuracy		
Methodology	47	
Calculating PPPs		
Annual national average prices		
The country-product-dummy (CPD) method		
The EKS* method		
PPPs for GDP and its major aggregates within a region		
The Geary-Khamis (GK) method and the Iklé method		
Combining regional results with a global comparison: The Ring Comparison		
Fixity		
Data confidentiality		
Estimation of PPPs for Non Benchmark Countries		
Annexes		
A	History Of The ICP	56
B	Governance Of ICP 2005	58
C	The ICP Classification Of Expenditure On GDP	59
D	Productivity Adjustment in the Government Sector	67
E	Estimating Average Prices for Household Consumption Items of the People's Republic of China	68
F	ICP Software	69
Glossary	71	
References	73	
Preliminary results	2005 International Comparison Program	

Preface

This publication presents the results of the 2005 International Comparison Program (ICP), which was coordinated by the World Bank during the period from 2003 to 2007. The size and complexity of this important statistical project made it imperative to distribute the tasks by geographic regions. Data collection was overseen by regional coordinating agencies, which compiled the results and produced regional estimates of purchasing power parities (PPP). Throughout the process, the regional coordinators worked closely with the ICP Global Office at the World Bank.

The final step of the ICP has been the linking of regional results into a global data set so that economic activity and price levels can be compared between countries. These global results were produced using new technique known as the “ring comparison.” The results for 146 countries, obtained through this linking process, are contained in this publication.

On behalf of the World Bank and the ICP Executive Board, we would like to thank all those who have contributed to making the 2005 ICP such a resounding success. It has been a great team effort. We cannot give credit, in this limited space, to all of the individuals responsible for its successful completion. Many are listed in the acknowledgements that follow. Here we would like to highlight the efforts of some special groups.

We are very pleased to say that the program has greatly benefited by the overwhelming support it received from national statistical offices and other participating agencies. The success of such a huge and complex undertaking depends critically on the active cooperation of the agencies involved in collecting the data in each country. Some of the processes we used were new and untested, and the spirit in which everyone tackled the problems that inevitably arose in the course of this groundbreaking work has been truly gratifying.

We would especially like to thank the staff of the regional coordinating agencies, namely the African Development Bank (AfDB), the Asian Development Bank (ADB), Statistics Canada, the Economic Commission for Latin American and the Caribbean (ECLAC), the Economic and Social Commission for Western Asia (ESCWA), the Statistical Office of the Commonwealth of Independent States (CISSTAT), the State Statistical Service of the Russian Federation (ROSSTAT), and the Bureau of Economic Analysis (Moscow), which have invested so much effort into setting up regional product lists, training statistical office staff in the concepts underlying PPPs, and addressing the practical issues associated with collecting and editing the data and compiling the PPPs and related statistics for each of the regions.

When the United Nations Statistical Commission gave the go-ahead to this ICP round at its 2002 meeting, it emphasized that the project had to have a strong governance structure. The Executive Board was set up to provide this governance. The Board and its members have had a major impact on the program. We would like to thank them all for their contributions.

The project would not have been such a success without the invaluable inputs from members of the Technical Advisory Group. We appreciate the wholehearted and enthusiastic manner in which they conducted their various discussions – both at meetings in Washington and via emails.

Our special thanks go to the major donors, whose contributions were so important in bringing the program to fruition. Contributors to the Global Trust Fund include the UK Department for International Development, the International Monetary Fund, the Australian Agency for International Development, and the United Nations Development Program. The World Bank made significant contributions to both the global and regional programs, as did numerous regional agencies.

We would like to congratulate the Global Office team at the World Bank. They have faced many frustrations and obstacles over the past four years or so, but their perseverance and unwavering commitment to the project have ultimately helped them overcome all the odds. They have succeeded not only in producing a very important set of statistical indicators, but also in refining important concepts underlying international comparisons, developing new tools to make data collection and compilation easier and more transparent, and setting up a firm basis on which future ICPs can be launched.

We hope that users will find the report useful. These data represent the most comprehensive survey of prices ever undertaken. As with any statistical exercise, there are limitations to the data, and these are highlighted in the report. We welcome any comments and suggestions for their improvement.

Finally, to everyone involved in this enormous task, thanks very much for a job well done!

Dennis Trewin
Chairman
ICP Executive Board

Shaida Badiee
Director
DevelopmentData Group
World Bank

Acknowledgements

The ICP shares a common technical language and conceptual framework related to national-level statistical programs supporting the CPI and output of national accounts. The very essence of the ICP is based on comparability of results between countries, strict adherence to time schedules, and a common understanding of data sharing and confidentiality requirements. There is no other statistical program requiring so much cooperation between national, regional and international organizations.

The successful completion of ICP 2005 is a tribute to the organizations and people who worked in partnership to carry out the work program.

The strength of the program came from the regionalization of the work program into five ICP regions which worked in parallel with the Eurostat-OECD PPP program so that all data could be combined into a set of global results. The technical and managerial leadership furnished by all in partnership sets the example for future international programs. While the donors to the global trust fund have been noted, special thanks also go to the Canadian International Development Agency for its financial support of the South American program, and the Arab Development Fund in its support of Western Asia. The recent contribution from the Islamic Development Bank will form a strong basis for the program to move into the next round. Each of the regional coordinating organizations also provided financial support either in-kind, with funds, or both.

The 2005 ICP methodology was re-engineered to overcome previous problems. The Technical Advisory Group led by Alan Heston made significant contributions. The other TAG members were: Angus Deaton, Erwin Diewert, Paul Konijn, Paul McCarthy, Prasada Rao, David Roberts, Sergey Sergeev, Silke Stapel, and Kim Zieschang.

The Global Office of the ICP was located in the World Bank's Development Data Group (DECDG) led by Shaida Badiie, Director, and Misha Belkindas, Manager. The ICP team responsible for the overall global coordination and technical support included: Yonas Biru, Team Leader, Olga Akcadag, Yuri Dikhanov, Nada Hamadeh, and Virginia Romand. Recognition for their efforts is also given to former ICP team members: Giuliana Cane, Farah Hussain, Jinsook Lee, and Siew Hua Lee. Other members of DECDG providing valuable support to the ICP included Azita Amjadi, Lisa Burke, Sebastian Dessus, Olivier Dupriez, Ramgopal Erabelly, Richard Fix, Omar Hadi, Barbro Hexeberg, Hulda Hunter, Soong Sup Lee, Vilas Mandlekar, Changqing Sun, and Eric Swanson.

The complexity of the program required input from a large group of technical experts who served as consultants to the program: Sultan Ahmed, Derek Blades, Steven Burdette, Peter Hill, Anil Sawhney, and Kenneth Walsh.

The overall leadership and policy making came from the ICP Executive Board which included high level leadership from international, regional, and national statistics organizations. The Board members included: Dennis Trewin, Chair; Ifzal Ali and Bishnu Pant, Asian Development Bank; Shaida Badiie, World Bank; Paul Cheung, United Nations; Rob Edwards, IMF; David Fenwick, Office of National Statistics, UK; Enrico Giovannini, OECD; Peter Harper, Australian Bureau of Statistics; Ben Kiregyera, UN Economic Commission for Africa; Charles Lufumpa and Michel Mouyelo-Katoula, African Development Bank; Luis Machinea, Economic Commission for Latin America; Lars Norlund and Peter Everaers, Eurostat; Jacob Ryten, Statistics Canada; Pronab Sen, Ministry of Statistics and Programme Implementation, India; Vladimir Sokolin and Andrey Kosarev, Federal State Statistics Service, Russia; Mervat Tallawy, UN Economic and Social Commission for Western Asia; and Fuzham Xie and Langhui Huang, China National Bureau of Statistics.

To all, it was a great privilege and pleasure to have the opportunity to work with such dedicated people and organizations.

Frederic A. Vogel
Global Manager
International Comparison Program

Part I: Purchasing Power Parities And 2005 ICP Results

INTRODUCTION: THE INTERNATIONAL COMPARISON PROGRAM AND PURCHASING POWER PARITIES

The International Comparison Program

The International Comparison Program (commonly known as the ICP) is a worldwide statistical initiative to collect comparative price data and estimate purchasing power parities (PPPs) of the world's principle economies. Using PPPs instead of market exchange rates to convert currencies makes it possible to compare the output of economies and the welfare of their inhabitants in real terms — that is, controlling for differences in price levels.

The *System of National Accounts 1993* (SNA93) provides a common international framework for the measurement of economic activity. GDP is the measure most often used to quantify countries' economic activity levels, and GDP and consumption per capita are basic indicators of economic productivity and wellbeing. But the conversion of output or expenditures, measured in the local currency of one economy to a common unit of account for comparison or aggregation with that of other economies is not a trivial problem. The standard method has been to use market exchange rates. However, market exchange rates are determined by the demand for and supply of currencies used in international transactions. They do not necessarily reflect differences in price levels and may therefore under- or overstate the real value of an economy's output and the standard of living of its residents. In fact, the prices of many goods and services within economies are determined in partial or complete isolation from the rest of the world. Therefore the 1993 SNA recommends that the real value of economic activity be determined using purchasing power parities. The need for a more meaningful tool for comparing price levels between economies led to the creation of the International Comparison Program (ICP) in 1968. The increasing use of PPPs by researchers, businesses, and international institutions has made the ICP a truly global program now covering more than 140 countries.

This report brings together the results of two separate PPP programs. The first is the global ICP program conducted by the ICP Global Office within the World Bank, which provided overall coordination for the collection of data and calculation of PPPs in more than 100 (mostly developing) economies. The program was organized in five geographic areas: Africa, Asia-Pacific, Commonwealth of Independent States, Latin America, and Western Asia. Regional agencies took the lead in coordinating the work in the five regions.

In parallel, the Statistical Office of the European Communities (Eurostat) and the Organisation for Economic Co-operation and Development (OECD) conducted its 2005 PPP program that included 46 countries. Eurostat covered 37 countries - the 25 EU member states, the EFTA countries (Iceland, Norway and Switzerland), and Bulgaria, Romania, Turkey, Croatia, Macedonia, Albania, Serbia, Montenegro and Bosnia-Herzegovina. The OECD part of the program included nine other countries—Australia, Canada, Israel, Japan, Republic of Korea, Mexico, New Zealand, Russia, and United States.

The main reasons for conducting the ICP on a regional basis are that the products to be priced are more homogeneous within regions, the national accounts weights are likely to be more similar, and language differences are reduced. Moreover, dividing the ICP organization among a number of regional offices in relatively close proximity to the countries they are coordinating provides operational benefits.

The ICP Global Office has combined the results from each of the five regions with those from the OECD/Eurostat PPP Program into an overall global comparison, so that results for all participating countries can be compared directly. The ring comparison (described in Part II, “Combining regional results with a global comparison: the Ring Comparison”) was developed specifically to link the regional PPPs without changing the relative results within a region (see part II, “Fixity”).

Purchasing Power Parity

A purchasing power parity between two countries, A and B, is the ratio of the number of units of country A's currency needed to purchase in country A the same quantity of a specific good or service as one unit of country B's currency will purchase in country B. PPPs can be expressed in terms of the currency of either of the countries. In practice, they are usually computed between large numbers of countries and expressed in terms of a single currency, with the US dollar most commonly used as the base or “numeraire” currency.

Take the familiar “Big Mac index” as an example. If a Big Mac costs 4.00 US dollars in the United States and 4.80 euros in France, then the PPP for a Big Mac from the French viewpoint is 0.83 US dollars to the euro. From the American

viewpoint, it is 1.20 euros to the US dollar. This means that for every euro spent on Big Macs in France, it would be necessary to spend 0.83 US dollars in the United States to obtain the same quantity and quality of Big Macs. Conversely, for every US dollar spent on Big Macs in the United States, it would be necessary to spend 1.20 euros in France to obtain the same quantity and quality of Big Macs.

The Big Mac is a single, standard product. The aim of the ICP is to produce PPPs that take into account the relative prices between many countries for a broad range of goods and services, including not only consumer products but also capital and government expenditures, which together make up GDP.

Price Level Indices (PLIs)

Comparing PPPs at the level of GDP with market exchange rates provides a measure of the average cost of goods and services in one economy when purchased using currencies converted at prevailing exchange rates. The ratio of a PPP to a corresponding market exchange rate is called a price level index (PLI). A PLI of 100 indicates that price levels are the same as the base country or the world average.

Returning to the Big Mac example, if the market exchange rate is 1 US dollar to 0.67 euros then the PLI for a Big Mac with the USA as the base is 182 ($1.20/0.66 \times 100$). This indicates that, given the relative purchasing power of the US dollar and the euro, a Big Mac is more expensive in France than in the USA. Travelers exchanging their dollars to euros would notice this immediately.

PPPs between any pair of countries change slowly, whereas market exchange rates can change quickly. As a result, sudden changes in PLIs are due mainly to changes in market exchange rates. When market exchange rates change rapidly, a PLI for a country could potentially go from less than 100 to greater than 100 in a short time, indicating that a country that was relatively cheap has now become relatively expensive compared with the base country.

The use of PPPs and market exchange rates for international comparisons

PPPs are the preferred means of converting the value GDP and its components to a common currency. They enable cross-country comparison of the sizes of economies, average consumption levels, poverty rates, productivity, and the use of resources. PPPs should not be used for all international comparisons. Market exchange rates should be used to measure international trade, capital flows, or the values of foreign debt.

PPPs adjust for differences in price levels between economies, which may not be reflected in market exchange rates, at least in the short run. Market exchange rates are the prices at which currencies trade in financial markets. Because developing countries tend to have relatively low prices for non-traded goods and services, a unit of local currency has greater purchasing power within a developing economy than it does in the global market. Consequently, the GDP of a developing country and the consumption of its residents will typically be underestimated if market exchange rates are used to compare their value with those of high-income economies. Although differences in price levels are generally less pronounced among economies at similar levels of development, large and rapid movements of exchange rates can alter the apparent size of economies or the welfare of their residents.

There is no need to convert from national currencies to a common currency (whether by market exchange rates or PPPs) when calculating growth rates for a single economy. However, in computing regional (or world) growth rates, the sizes of the economies matter: national GDPs and aggregates are first converted to a common currency and then summed to regional (or world) totals from which growth rates are computed. The appropriate conversion factor is provided by PPPs. Developing countries have often had (at least in the last decade) higher rates of economic growth than developed economies. As a result, their regional growth rates computed with PPP-based activity levels tend to be higher than those computed using market exchange rates. The reason is that the developing countries have a higher weight in the PPP-based regional totals (both levels and growth rates) than in the market exchange-rate-based ones.

The initial rounds of the ICP in the 1970s focused mainly on what are referred to as “volumes” or “real expenditures” of GDP, its major components, and their per capita estimates. PPPs were seen mainly as providing a stepping stone from national accounts expressed in national currencies to volumes expressed in a common currency. In recent times, economic analysts have shown increasing interest in PPPs in their own right, as a measure of relative price levels between countries, and the extent to which exchange rates differ from the purchasing power parity for a given income level.

Limitations to the use of PPPs and GDP volume measures

Purchasing power parities are statistical estimates. Like all statistics, they are point estimates that fall within some margin of error of the unknown, true values. The error margins surrounding the PPPs depend on the reliability of the expenditure weights and the price data and how well the goods and services that were priced represent the consumption pattern and

price levels of each participating economy. As with national accounts data generally, it is not possible to calculate precise error margins for PPPs or the real expenditure data derived from them.

The ICP included economies ranging from city-states to large and diverse countries such as China, India, Brazil, and Russia, which collectively account for over 40 percent of the world's population and include many people living in remote, rural locations. These and similar countries had to produce national average prices for goods and services that were comparable with other economies in their region. The accuracy of the PPPs for these countries depends upon the extent to which the selected goods and services were representative of their entire economy and on their ability to provide nationally representative average prices. The need to measure prices for internationally comparable goods and services means that they are more likely to reflect consumption patterns of urban areas. If this "urban bias" is consistent between countries, and if the urban to rural price differentials are similar across countries, any bias will tend to cancel out in the estimation of PPPs; if not, results for some countries may be biased, up or down, depending on the extent of over or under representation or urban and rural areas.

Therefore, caution should be used when comparing economies by their GDPs or in per capita measures. Mindful that there may be errors in the calculation of GDP and population sizes as well as in the estimation of PPPs, small differences should not be considered significant. Rather than ranking countries, it is preferable to group countries by broad size categories. Caution should also be exercised about making comparisons of price levels or per capita expenditures at low levels of aggregation, where small errors may lead to large discrepancies.

PPPs should not be used as indicators of the under- or overvaluation of currencies, nor should they be interpreted as equilibrium exchange rates. The PPPs cover all of GDP valued at purchaser's prices, which includes both traded and non-traded goods. Exchange rates, unlike PPPs, reflect the demand for currencies as a medium of exchange, speculative investments, or official reserves.

The 2005 PPPs are derived from a global program of prices surveys carried out using similar methods in 146 countries. The previous benchmark estimates were based on surveys carried out between 1993 and 1996 in a limited number of developing countries and more recent surveys in OECD and CIS countries. Many countries were included for the first time in 2005, including China. Previous estimates of China's PPPs came from a 1986 research study. India participated for the first time since 1985. Since the last round of price collections, PPPs have been extrapolated forward using ratios of price indexes (either GDP deflators or consumer price indexes). In addition, the 2005 PPPs are based on a new methodology designed to overcome problems encountered in previous rounds of the ICP. Therefore, users should be cautious about making comparisons to previous estimates of PPP based GDP and components.

PPPs can be used to measure the productivity of the economy as a whole. They may also be used to compare the value of output and productivity of sub-sectors such as education, health, or construction. PPPs at the sub-sector level will be made available in the future. However, users should keep in mind that PPPs are based on the final price of gross output, not the price of value added by the sector, which would be of greater relevance in measuring relative sector productivity.

2005 ICP – RESULTS AND MAJOR FINDINGS

Overview

The 2005 International Comparison Program has produced estimates of the relative price levels of GDP and its principal aggregates for 146 economies. These purchasing power parities express the values of local currencies in terms of a common currency. In this report the common currency is the US dollar in 2005. When applied to the value of GDP or any component of GDP, the resulting values reflect the real value of consumption in each economy, corrected for differences in price levels and unaffected by transitory movements of exchange rates. The current report provides values for GDP, actual individual consumption by households, collective consumption of governments, gross fixed capital formation, inventory stocks, and net exports. A subsequent report will provide detailed PPPs for components of household consumption.

This was the most extensive and thorough effort ever to measure PPPs across countries. Teams in each region identified characteristic goods and services to be priced. Surveys conducted by each country during 2005 and 2006 provided prices for more than 1,000 goods and services. New and innovative data validation tools were implemented to improve data quality. Initial calculations of PPPs were conducted at the regional level, and those results have been published for all but one region. In addition, a representative group of economies, selected from each region, priced a common set of goods and services. PPPs were calculated separately for this “ring” and used to calibrate the regional PPPs to the global level. It is these global PPPs that are now reported here. Like the regional results, they have been benchmarked to 2005, regardless of the year in which data collection took place.

The new benchmark results provide an update to the PPPs and related measures derived from previous surveys conducted during 1993-1996 (for most developing economies) and 2002 (for most OECD and CIS economies). These were

Estimating PPPs for large countries

Because GDP and its components include economic activity in all regions of an economy, the prices used to compute PPPs should be based on representative products consumed throughout the economy and the average prices paid for them. The products should also be comparable across countries. Therefore, the products to be priced must be carefully defined across many countries. While the intention is that these products are representative of consumption patterns in each country, the reality is that the requirement of comparability obliges countries to submit prices for some products not typically consumed by their residents. The comparability requirement is also likely to result in the overrepresentation of products commonly consumed in urban centers. In small and relatively homogeneous economies, this effect may be unimportant. But for large countries, and especially those with a large rural population, there may be a significant urban bias. To minimize this potential bias, each ICP region prepared its own list of goods and services to be priced so that they would better reflect the characteristics of the economies in its region. The need to deal with the wide diversity of sizes, urbanization, and performance of economies in each region was considered at every step leading to the estimation of PPPs.

The need for national prices for a list of comparable products poses special problems for large, diverse countries and especially those with large, rural populations. The sample sizes and number of data collection centers required to collect the data needed to estimate national average prices exceeds the capacity even of advanced economies. Eurostat countries, for example, only collect prices in urban areas and use other sources to adjust these to the national level. In the case of China, it was agreed that China would collect prices for 11 municipalities; including their surrounding rural areas and that the World Bank and Asian Development Bank would extrapolate these to national average prices. The method adopted by the World Bank and ADB matched urban and rural areas of the 11 municipalities to the 31 provinces of China. However, the rural areas included in the surveys may not have been representative of those in the rest of China.

The over representation of urban areas was not unique to China. Brazil, for example, collected prices only in cities. Other countries in the South American region followed a similar approach. Because PPPs are based on a multilateral comparison within each region, biases in data collection should largely cancel out if all countries within a region are similarly treated. In the Asia Pacific region, the extent of urban bias in China’s PPP measurements will depend on how different were its data collection procedures – and the resulting computation of national average prices -- compared to other countries in its region. Further sensitivity analysis of the results will be needed to quantify the extent of this bias, if any.

benchmarked to 1993 and have been extrapolated forward and backwards using domestic price indexes. Because such extrapolations happen at an aggregate level, they cannot capture changes in relative prices at the detailed level of the original surveys. Furthermore, the 2005 ICP covered a much broader set of goods and services and, in most countries, collected more prices for them.

The 2005 ICP included approximately 40 more countries than the 1993 round. This was the first time for China to participate in the ICP, and the first time since 1985 that India has. This comparison includes 48 African economies, more than ever. New methods were developed and used to overcome shortcomings of the previous data collection and estimation processes. For all these reasons, the results from the current and previous ICP rounds cannot be combined and comparisons between them should be undertaken with caution. What can be said is that the new ICP results substantially revise our view of the world economy.

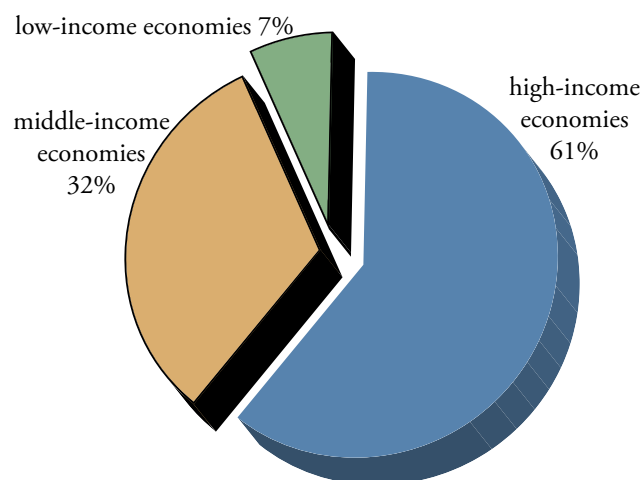
PPP-based measures of the size of economies

The 2005 ICP results show that developing countries (low and middle-income countries¹) comprise a significant share of the world economy², around 39 percent. However, disparities remain striking. Low-income economies, which include 36 percent of the world's population, produce 7 percent of global GDP. Middle-income countries, with 48 percent of world's population, produce 32 percent of global GDP. The GDP of high-income economies accounts 61 percent of the world economy, received by only 16 percent of the world's population.

Compared with previous estimates, the relative size of developing economies has decreased by 7 percentage points or one-sixth. The global GDP shares of the largest developing countries are also smaller. China, which was previously estimated to have 14 percent of global GDP, now has 9 percent. And the estimate of India's share has been revised from 6 percent to 4 percent. But it must be emphasized that these are changes in *estimates*, the previous ones having been based on very old and very limited data. The real outputs of their economies have not changed, only the way we measure them has.

In the new tabulations of GDP, the United States remains the largest economy in the world with a world share of 23 percent, followed by China with 10 percent, and Japan with 7 percent. Of the twelve largest economies, which together account for two-thirds of global GDP, five are low- or middle-income countries -- China, India, Russian Federation, Brazil, and Mexico, which collectively account for almost 22 percent of global GDP.

Figure 1. World shares of PPP-based GDP



¹ The categorization of countries (as adopted by the World Bank) is based on the following cut-offs: low-income countries have per capita gross national incomes (measured using exchange rates) below \$905; Middle-income countries have per capita gross national incomes (measured using exchange rates) above \$905 and below \$11,115. High-income countries have per capita gross national incomes above \$11,115. ² In what follows, the world should be understood as the sum of countries participating to the ICP. Countries not participating are not considered in the discussion.

When measured using PPPs, world GDP is larger than GDP converted to US dollars using market exchange rates. This is because exchange rates tend to understate the purchasing power of the currencies of less developed economies. This effect is particularly noticeable for low- and lower-middle-income economies. For example, India's share of global GDP in 2005 is slightly greater than 4 percent when measured using PPP-based GDP, but only 2 percent when measured using market exchange rates. In contrast, the United States' share of world GDP is 29 percent using market exchange rates, but only 23 percent measured in PPP terms.

In each region¹, some major players emerge. Africa's economy is dominated by South Africa, Egypt, Nigeria, Morocco, and Sudan, which collectively account for two-thirds of the region's GDP.² Brazil accounts for one-half of the South American economy. The Russian Federation dominates the Commonwealth of Independent States (CIS) with three-fourths of the total GDP. In the Asia-Pacific region, China and India take the largest share, with almost two-thirds of regional GDP. In West Asia, Egypt³ and Saudi Arabia account for more than three-fifths of the regional GDP.

Table 1. World shares of GDP

Share of global GDP (%)	Gross domestic product	
	PPP-based	Market exchange rates
United States	23	28
China	10	5
Japan	7	10
Germany	5	6
India	4	2
United Kingdom	3	5
France	3	5
Russian Federation	3	2
Italy	3	4
Brazil	3	2
Spain	2	3
Mexico	2	2

PPP-based measures of living standards

Per capita measures of PPP-based GDP are useful for comparing average living standards in different economies. The Eurostat-OECD region has the highest GDP per capita, by a wide margin. The CIS comes in second, ahead of South America and West Asia.

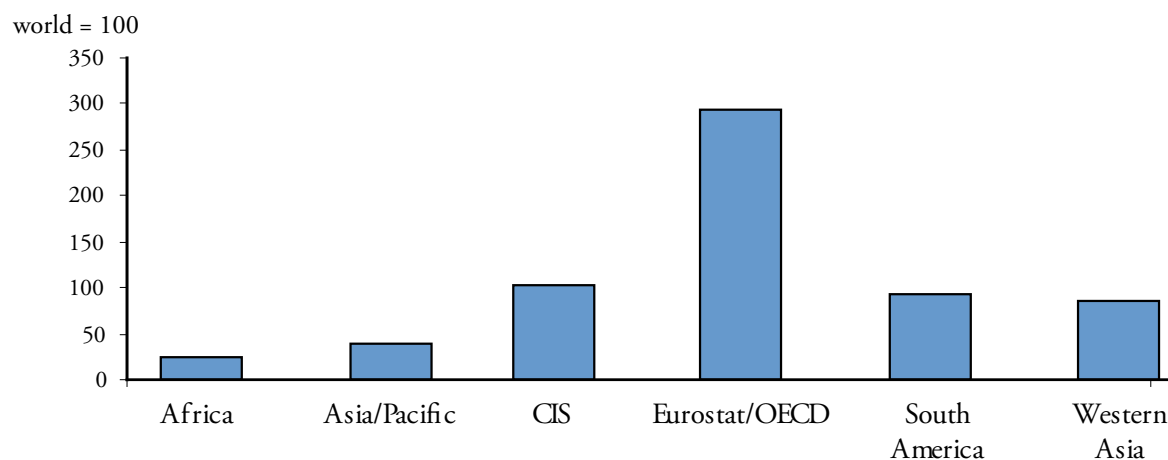
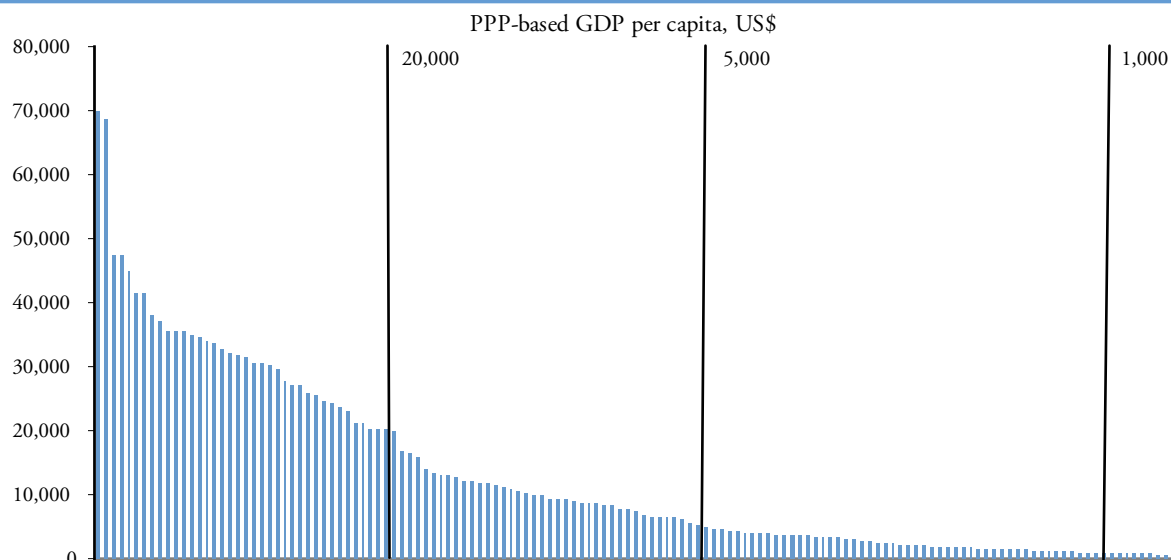
The economies with the highest GDP per capita are Luxembourg, Qatar, Norway, Brunei Darussalam, and Kuwait, all very small and accounting for less than one percent of the world economy in total. The economies with the lowest GDP per capita, all in Africa, are Democratic Republic of Congo, Liberia, Burundi, Zimbabwe, and Guinea-Bissau.

¹ Membership in a "region" is defined by its participation in one of the five regional rounds of the ICP program or in the Eurostat-OECD program. While most countries are classified according to their geographical location, this is not the case for countries belonging to the Eurostat/OECD grouping. The Eurostat/OECD program included the 27 member countries of the European Union, the non-EU member countries of the OECD (such as Australia, Canada, Mexico, Japan, South Korea, United States), countries that were in the process of joining the EU (known as 2EU Candidate Countries²), plus several other countries that were not included in one of the five regional groups. ² Algeria did not participate to the ICP. It is probably the largest non-participating economy. ³ Egypt participated in both the Africa and West Asia comparisons.

Table 2. Economies with the highest and lowest GDP per capita

highest	GDP per capita (% of world average)	lowest	GDP per capita (% of world average)
Luxembourg	781	Congo, Dem Rep.	3
Qatar	769	Liberia	4
Norway	530	Burundi	5
Brunei Darussalam	530	Zimbabwe	6
Kuwait	506	Guinea-Bissau	6

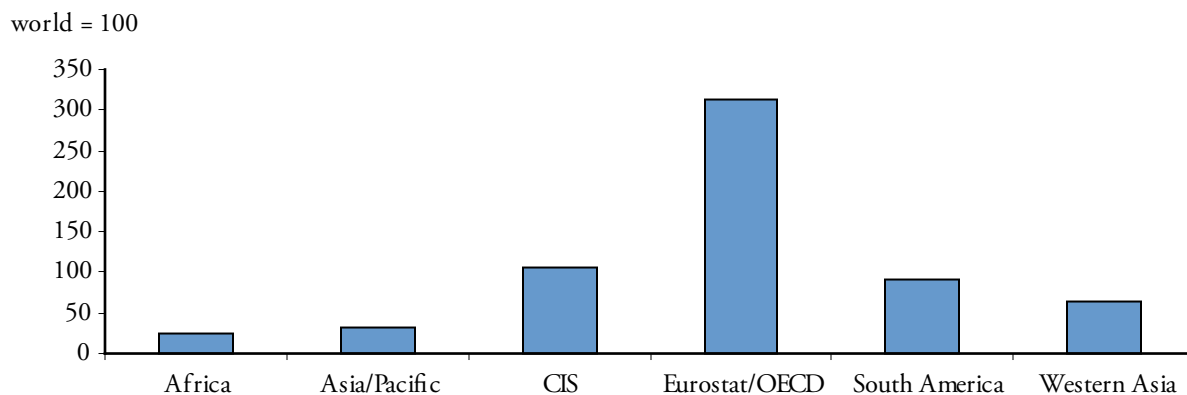
Due to inherent margins of error, both in the measurement of PPPs and GDP, particularly in poor countries with low statistical capacity, little significance should be attached to small differences in estimated values. Nevertheless, the overall distribution of countries' PPP-based GDP per capita provides a reliable picture of the distribution of average income between countries. PPP estimates show substantial income inequalities between countries, although the degree of inequality is less than if GDP per capita were measured using market exchange rates. In 2005, the PPP-based GDP per capita of 17 countries was less than US\$1,000 or less than 11 percent of the world average. In the richest 39 countries, GDP per capita exceeded US\$20,000, which was more than double the world average of US\$8,900.

Figure 2. GDP per capita, PPP-based**Figure 3. The distribution of GDP per capita**

PPP-based measures of actual individual consumption

Actual individual consumption is measured by the total value of household final consumption expenditure, non-profit institutions (such as NGOs and charities) serving households' final consumption expenditure, and government expenditure on individual consumption goods and services (such as education or health). On average, individual consumption comprises 69 percent of GDP. Therefore the regional distribution of individual consumption per capita is very similar to that of GDP per capita. However, small differences can be seen in the Asia-Pacific and West Asia regions, where consumption shares are lower and investment rates are higher.

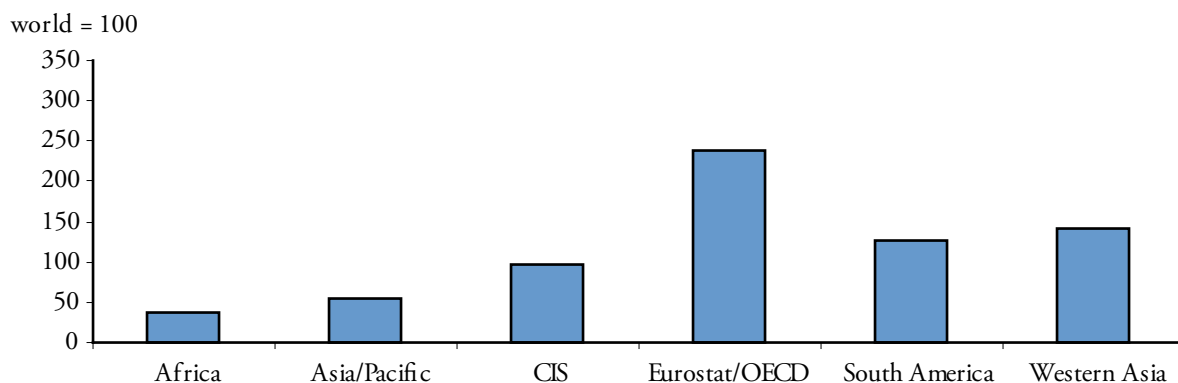
Figure 4. PPP-based actual individual consumption per capita



PPP-Based measures of collective consumption

Collective consumption expenditures consist of expenditures incurred by general and local governments for collective consumption services such as defense, justice, general administration, and the protection of the environment. Lower prices for such services in developing countries tend to reduce the dispersion of collective consumption per capita across regions compared to that observed for per capita GDPs.

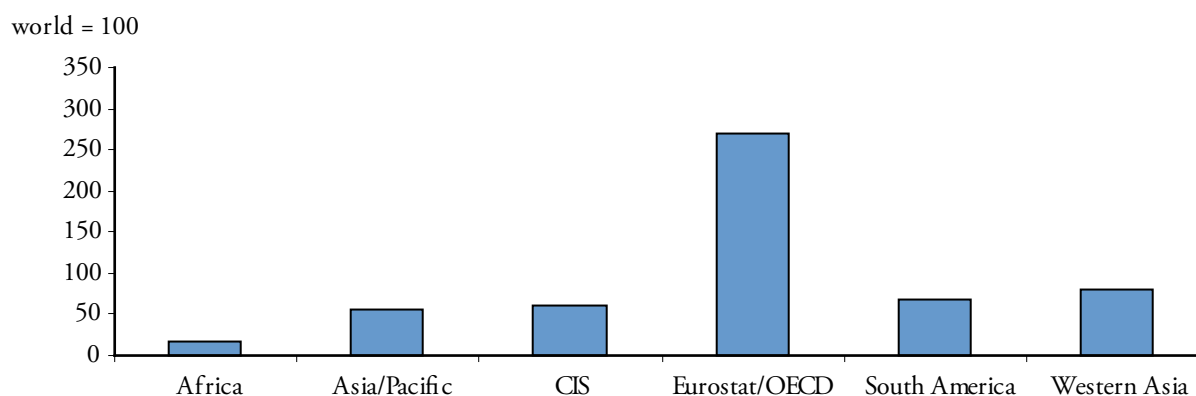
Figure 5. PPP-based actual collective government consumption per capita



PPP-based measures of gross fixed capital formation

Gross fixed capital formation measures countries' investment expenditures, which are mostly comprised of purchases of equipment and construction services. Compared with the regional dispersion of GDP per capita, investment expenditures per capita appear to be less unequally distributed across regions. In particular, differences between the Asia-Pacific, CIS, South America, and West Asia regions narrow. Differences between these regions and the OECD/Eurostat grouping also narrow in comparison with differences in GDPs per capita. On the other hand, Africa lags far behind, reflecting low investment efforts from national and foreign investors, and high investment prices.

Figure 6. PPP-based gross fixed capital formation per capita

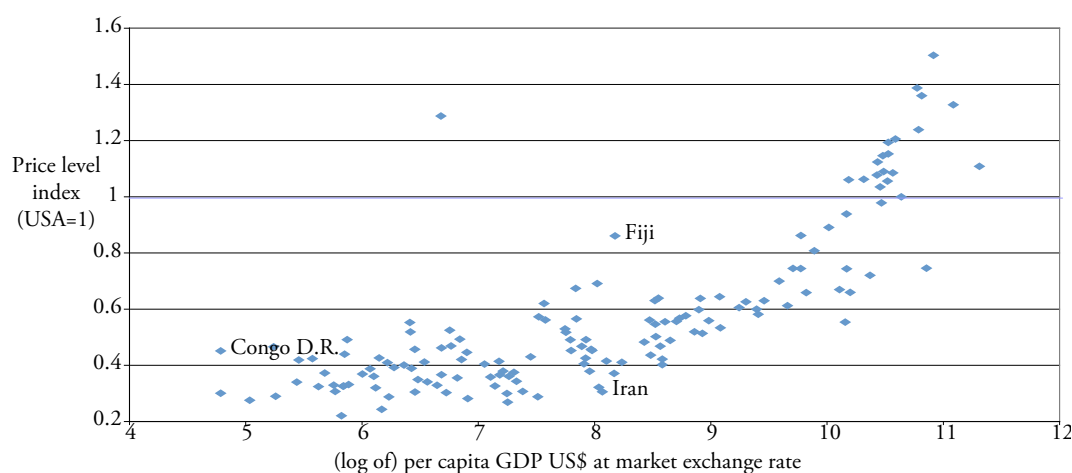


Price level indexes

A price level index (PLI) is the ratio of a PPP to a corresponding exchange rate. It is usually measured in percents. PLIs are used to compare price levels between countries. They indicate the price of GDP (or its components) in a country, if it were "purchased" after acquiring local currency at the prevailing exchange rate. PLIs are generally low in poorest countries. This reflects the common experience of travelers who find many (but not all) of the goods and services in the poorest countries relatively cheap compared to similar products in their home country. But one can also see from Chart 7 that, for similar per capita GDP levels (in US\$), PLIs can differ widely across countries. Average prices in Fiji are almost three times higher than in Bolivia. Prices in the Democratic Republic of Congo are twice as high as in neighboring Burundi. Geographic isolation and conflicts are possible reasons for such large differences.

Price level indexes can be computed for each component of GDP, showing relative prices of actual individual consumption, general government consumption, and gross capital formation. The general government consumption component of GDP exhibits the most pronounced change in PLI as GDP per capita varies and, thus, the greatest dispersion across countries. Because government services are not traded across countries, there is little pressure for prices to converge. Gross capital formation varies the least at different levels of GDP per capita. GFCF consists mostly of traded goods – such as equipment goods – so there will be less price variation across countries. The PLI for actual individual consumption appears similar to that for overall GDP, because it is the largest component of GDP.

Figure 7. GDP Price Level Indices



In all regions except OECD-Eurostat and West Asia, gross fixed capital formation is the most expensive component of GDP. In OECD-Eurostat government consumption is the most expensive component, particularly for the economies with the highest GDP per capita such as Denmark, Iceland, Luxembourg, Norway, and Switzerland. In contrast, the PLI for government consumption is lowest in the African, Asia-Pacific, and South American regions.

Figure 8. Price level index, GDP and components

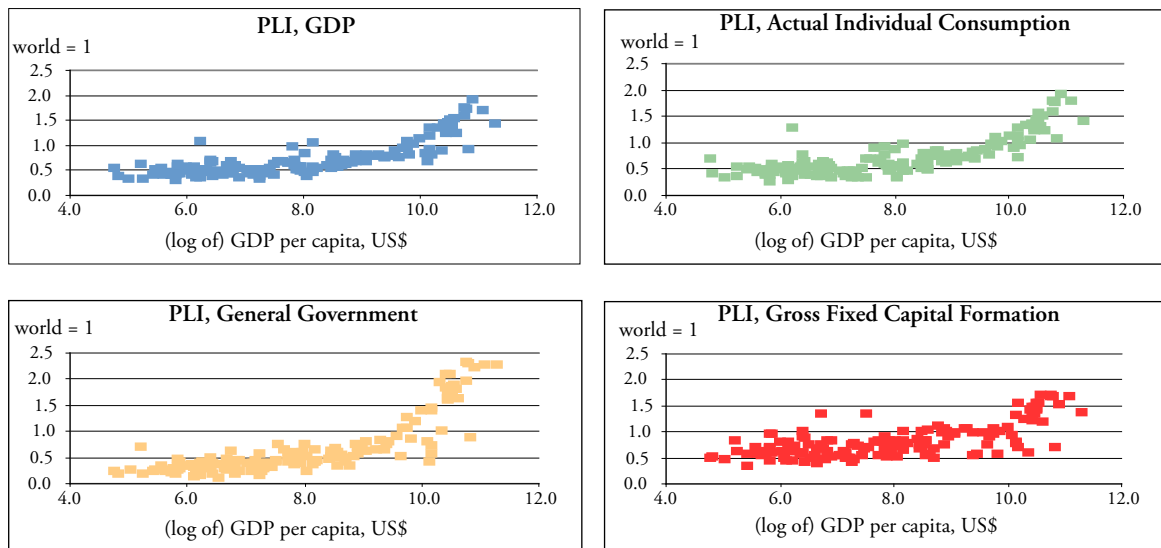
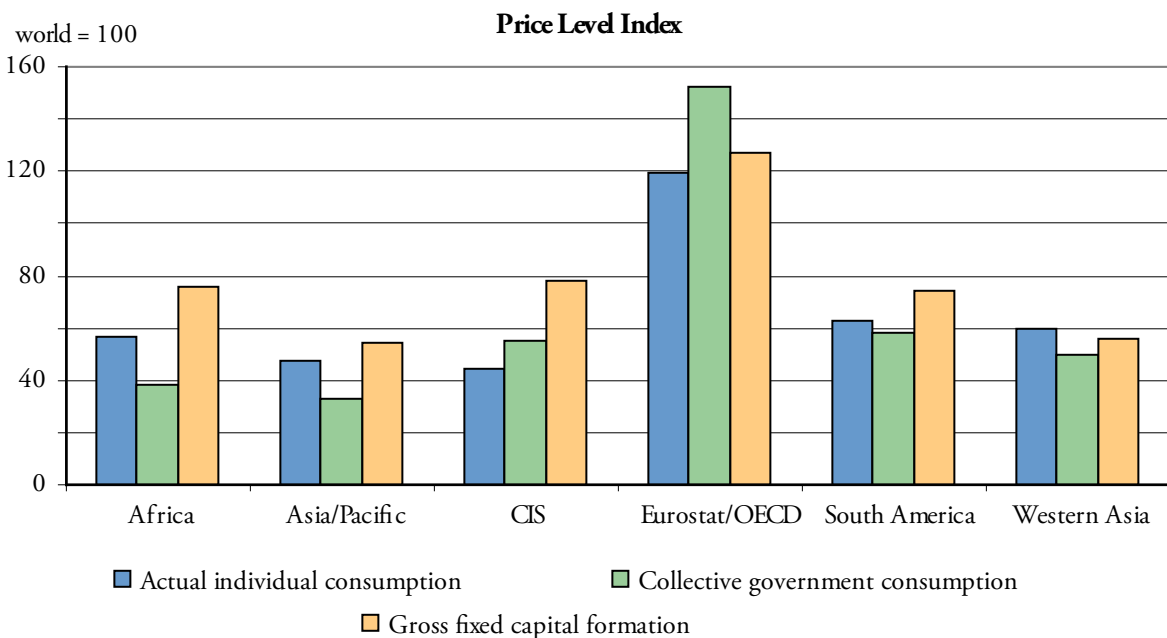


Figure 9. Price level index, GDP components for regions



ABOUT THE DATA

The purchasing power parities and the derived indicators of this report are the product of a joint effort by national statistical offices, regional coordinators, and the global office. PPPs cannot be computed in isolation by a single country, however, each country is responsible for submitting official estimates of 2005 of gross domestic product and its components, population counts, and average exchange rates. The regional coordinators worked with the national statistical offices to review the national accounts data to ensure that they conformed to the standards of the 1993 System of National Accounts (SNA93). Similar reviews were conducted for population and exchange rate data.

The tables of global results reflect the data for GDP, population, and exchange rates as shown in the regional publications. In some cases these data differ from those published elsewhere by the World Bank or by other international organizations. One reason is that the international organizations may not have the most current information or they may publish numbers based upon their own expert analysis.

Productivity adjustments

Three regions, Asia, Africa, and West Asia applied a productivity adjustment described in Annex D to compute the government PPPs in their regions. The productivity adjustments take into account that more developed economies have more capital per worker, and thus higher output per worker, than do the poorer economies. Eurostat-OECD, CIS, and South America regions did not adjust their government PPPs for productivity because there is less difference in capital-labor ratios between countries. Productivity adjustments were not used in the ring comparison.

Imputation of national accounts components

Some countries in Africa and Asia did not submit price data for one or more basic headings within government, compensation, equipment, and construction. But they were able to provide data from their national accounts for all components of the GDP. To provide real GDPs for all countries, results for the missing categories were imputed using results from countries within each region producing full results. The countries are: Maldives; Angola; Burkina Faso; Comoros; Cape Verde; Democratic Republic of Congo; Djibouti; Gabon; Guinea Bissau; Guinea; Liberia; Lesotho; Morocco; Mauritania; Namibia; Rwanda, Sao Tome and Principe; Sudan; Swaziland; Togo; Uganda; Zimbabwe.

Country notes

China submitted prices for 11 administrative areas and the urban and rural components. The World Bank and the Asian Development Bank extrapolated these 11 city prices to the national level. Details on the calculation of the national annual averages for China can be found in Annex E.

Egypt participated in both the African and Western Asia ICP programs by providing prices for the products included in each comparison. Therefore, it was possible to compute PPPs for Egypt separately for Africa and Western Asia. Both regions included Egypt results in their regional reports. Egypt appears in the global report in both regions. The results for Egypt from each region were averaged by taking the geometric mean of the PPPs, allowing Egypt to be shown in each region with the same ranking in the world comparison.

Russia participated in the OECD comparison, but also provided data for the CIS region. Therefore, following past practices the CIS region was linked to Eurostat-OECD using Russia as a link. For comparison purposes, Russia is shown in both regions in the report.

Zimbabwe's official exchange rate was submitted by the national statistical office and used in this report. The very high price level index computed for Zimbabwe indicates a severe misalignment of the official exchange rate with the rate at which transactions actually occur.

ICP revision policy

Data in this report are preliminary with final results to be published in late February 2008 and in greater detail. Quality in the statistical sense has three dimensions: accuracy, relevancy, and timeliness. There is a tension between these factors because results could become more accurate with larger sample sizes and more time for analysis; however, policy makers place a high premium on timely data. Information becomes more relevant as more detailed data are provided. However, the detailed results may not be as accurate as the more condensed information, and it usually takes more time to produce them.

Because timeliness is a critical dimension of data quality, the practice of international, regional, and national statistical organizations is to publish preliminary results at an aggregated level followed by more detailed data at a later time. Revisions will be considered when the final ICP results are published in February 2008 for the following reasons:

- a. National Accounts are updated or revised. Countries routinely publish revisions to their national accounts. The PPPs themselves will not be recomputed to reflect the revised GDP because they are estimated on expenditure shares rather than the actual level. However, PPP-based GDP or its components may be revised.
- b. Additional information on average prices may be provided. However, revisions will be effected only after the new data undergo the same validation process used for the original data.
- c. Questions from data users about some results may signal the need for further analysis to determine the possibility of undetected errors in the data, which if found will be corrected.

Revisions are expected to be few in number because of the rigorous data analysis used and the extensive review of national accounts undertaken. The ICP publications and website will note where data have been revised along with the reason to assist the data users in updating their data bases.

DESCRIPTION OF THE TABLES

The *ICP Global Report* includes a summary table providing both PPP and exchange rate based measures of GDP and GDP per capita. Ten additional show details for actual individual consumption, collective government consumption, and gross fixed capital formation. All tables present the results by region for the 146 economies that participated in the 2005 ICP comparison. Regional and global totals and averages are included where relevant.

Regional classifications are based on ICP regions which differ from those used by other international programs.

The **Summary table of results** provides a summary of the 2005 ICP Global results, including GDP per capita in PPP and USD terms; GDP total (in billions) in PPP and exchange rate terms; the GDP price level index; GDP per capita indices for both the US equal to 100 and the world equal to 100; PPPs for the US dollar; and exchange rates to the US dollar and total population in millions.

Results table 1 presents PPPs for the expenditure on GDP and its major components (actual individual consumption, collective government consumption, and gross fixed capital formation) in national currency per US dollar.

Results table 2 shows the price level index expressed relative to the world average. A price level that exceeds 100 indicates that the level of prices in that country are higher than average.

Results table 3 shows the expenditures in national currencies converted to the US dollars at exchange rates (referred to as nominal expenditures), which reflect price and volume differences between countries. Values for stocks and net exports are included

Results table 4 presents real expenditures in US dollars, which are expenditures in national currencies converted using PPPs. Expenditures so converted reflect only volume differences between countries.

Results table 5 shows nominal expenditures per capita in US dollars computed using table 3 values divided by each country's population.

Results table 6 provides real (PPP converted) expenditures per capita obtained by dividing table 4 data by population.

Results table 7 gives the index of nominal expenditures per capita (world = 100).

Results table 8 gives the index of real expenditures (PPP converted) per capita (world = 100).

Results table 9 gives the nominal expenditures of each country or region as a share of the world total.

Results table 10 gives the real (PPP converted) expenditures of each country or region as a share of the world total.

Tables of results
