2005 International Comparison Program

Preliminary Results

December 2007

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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 Badiee, 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 Badiee, 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 on page 52, "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 page 54, "Fixity"). Therefore the global PPP results were not reviewed by national statistical authorities prior to publication.

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*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.

PPPs provide a measure of the overall price level of an economy, but they may not reflect the expenditure patterns of the poor. Nor do they capture differences in price levels within a country. Additional data and analysis will be necessary before international poverty rate can be estimated, therefore direct application of these PPPs to the estimation of poverty levels and rates may yield misleading results.

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.

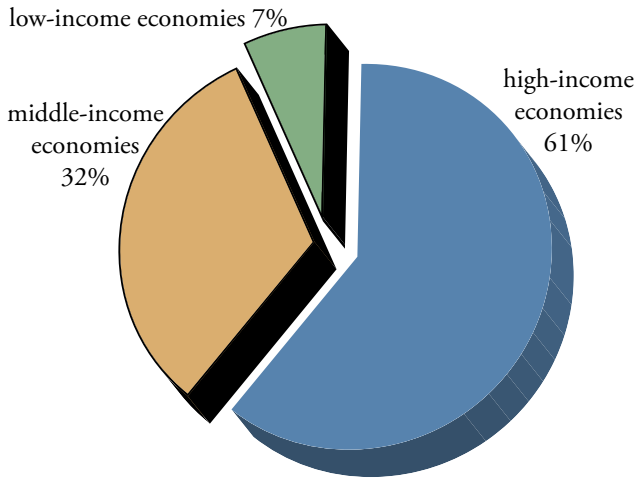
PPP-based measures of the size of economies

The 2005 ICP results show that developing countries (low and middle-income countries[1]) comprise a significant share of the world economy[2], around 39 percent. However, disparities remain striking. Low-income economies, which include 35 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 for 61 percent of the world economy, received by only 17 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 10 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 28 percent using market exchange rates, but only 23 percent measured in PPP terms.

In each region[1], 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, Egypt[3] and Saudi Arabia account for more than three-fifths of the regional GDP.

Table 1. World shares of GDP

	Gross domestic product share of global GDP (%)	
	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 Countries"), 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

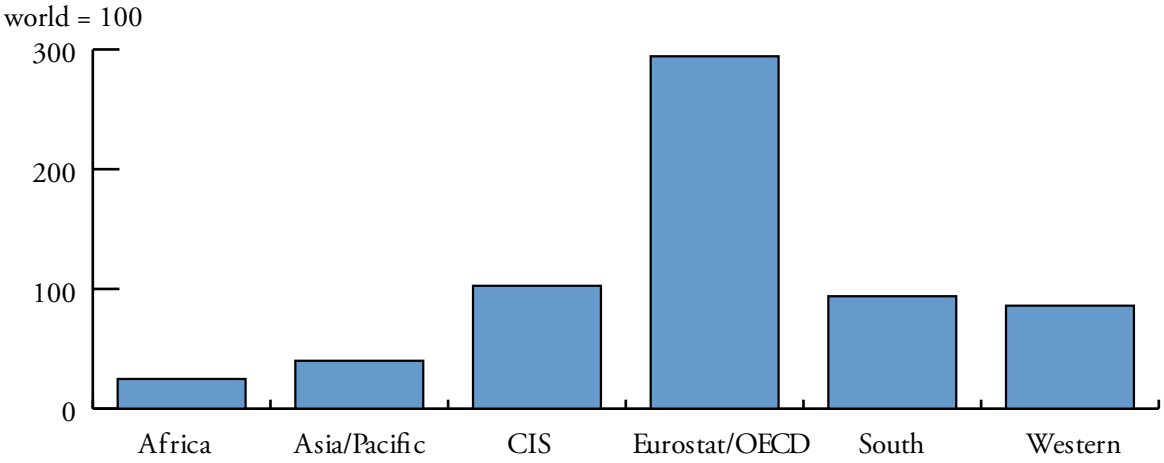
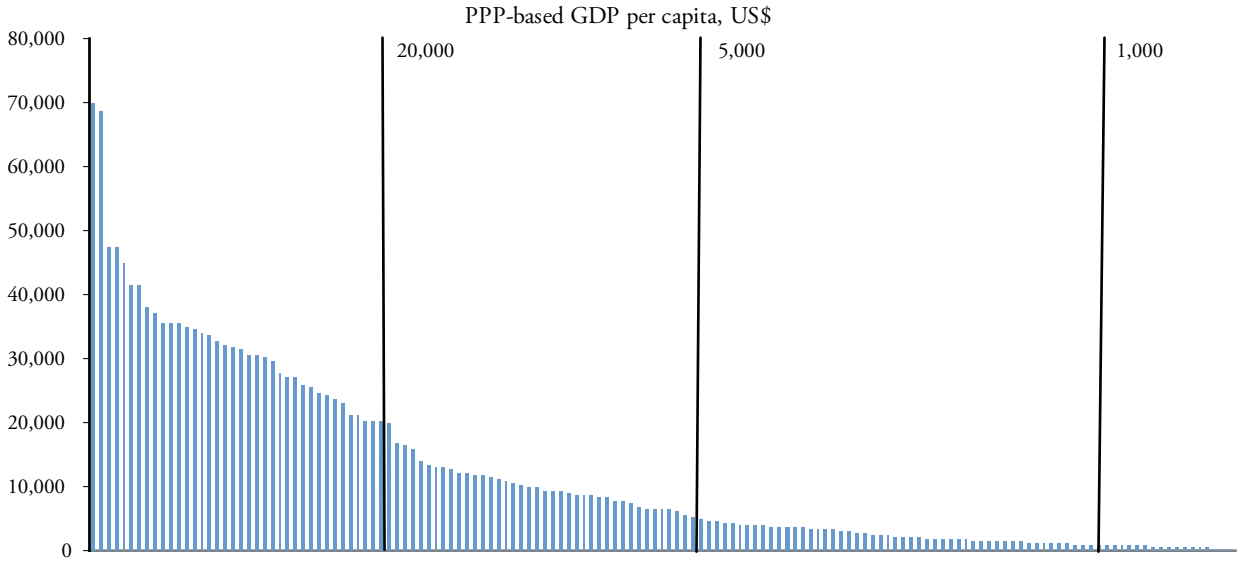


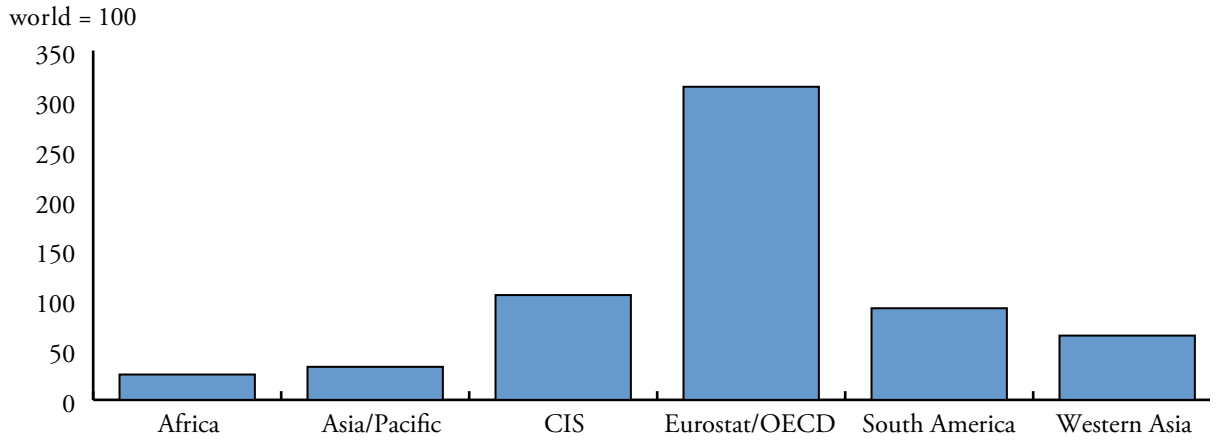
Figure 3. The distribution of GDP per capita



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.

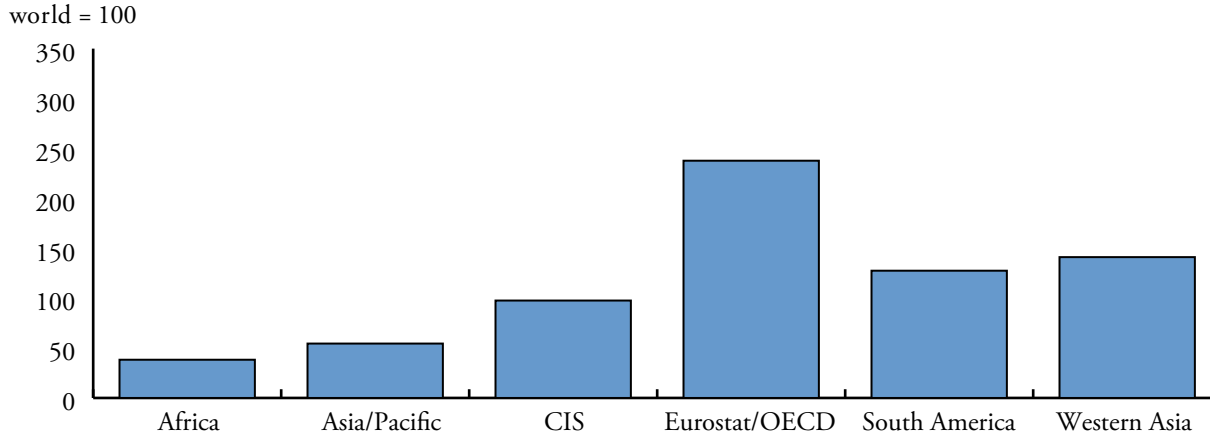
Figure 4. PPP-based actual individual consumption per capita



PPP-Based measures of collective government consumption

Collective government 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.

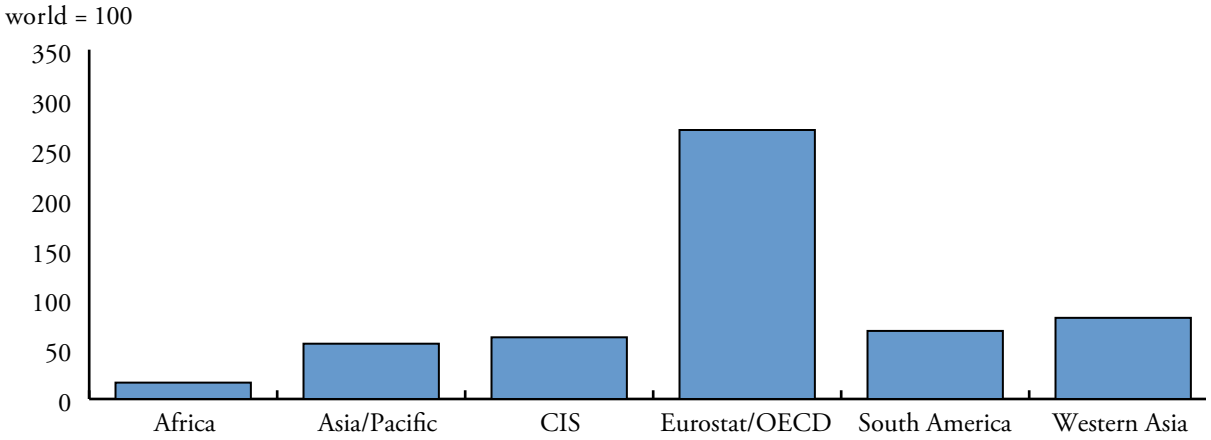
Figure 5. PPP-based collective government consumption per capita



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

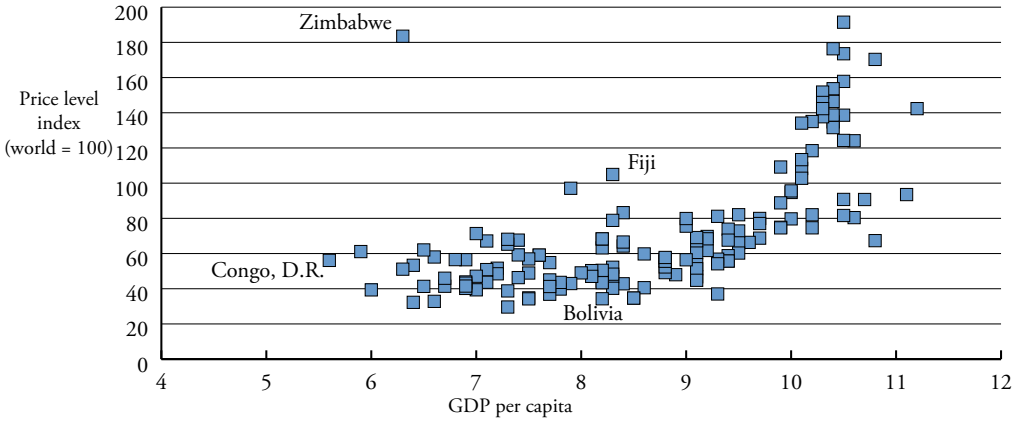


Price level indexes

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 Figure 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, collective government consumption, and gross fixed capital formation. The collective 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 fixed capital formation varies the least at different levels of GDP per capita. Gross fixed capital formation 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 collective government consumption is lowest in the African, Asia-Pacific, and South American regions.

Figure 8. Price level index, GDP and components

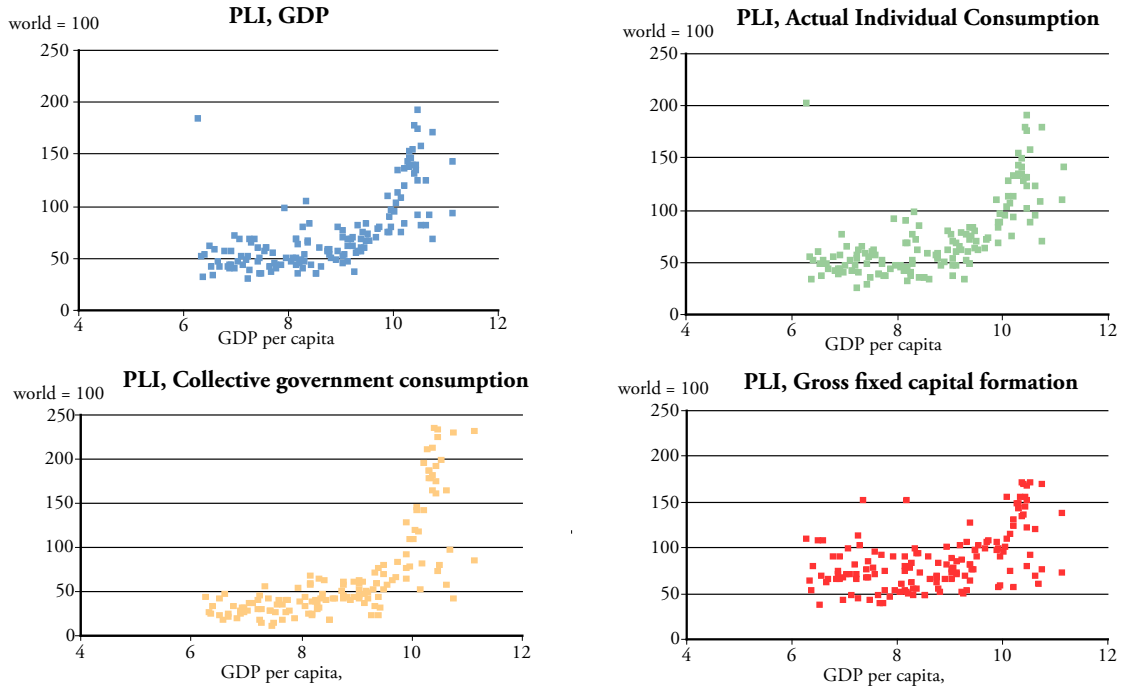
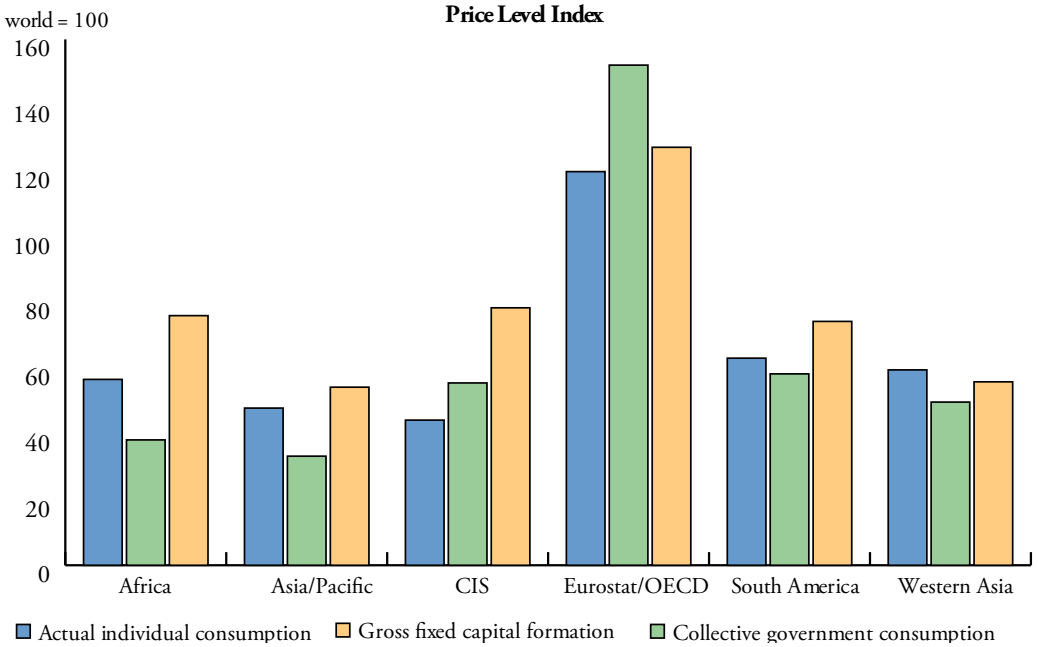


Figure 9. Price level index, GDP components for regions



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 Principle; 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

2005 ICP Global Results: Summary table of results

	GDP				GDP per capita				PPP	Price Level Index	Exchange rate	Population
	PPP $	US$	Shares (World=100)				Indices (US=100)					
Economy	billions	billions	GDP @ PPP	GDP @ US$	PPP $	US$	PPP	US$	US$=1	US=100	US$=1	millions
Africa												
Angola	55.0	30.3	0.10	0.07	3,533	1,945	8.5	4.7	44.5	55	80.8	15.6
Benin	10.5	4.4	0.02	0.01	1,390	579	3.3	1.4	219.6	42	527.5	7.5
Botswana	20.5	9.7	0.04	0.02	12,057	5,712	28.9	13.7	2.4	47	5.1	1.7
Burkina Faso	14.6	5.5	0.03	0.01	1,140	433	2.7	1.0	200.2	38	527.5	12.8
Burundi	..	..	..	..	..	..	..	..	343.0	32	1,081.6	7.5
Cameroon	35.0	16.6	0.06	0.04	1,995	950	4.8	2.3	251.0	48	527.5	17.5
Cape Verde	1.4	1.1	0.00	0.00	2,831	2,215	6.8	5.3	69.4	78	88.7	0.5
Central African Republic	2.7	1.4	0.00	0.00	675	338	1.6	0.8	263.7	50	527.5	4.0
Chad	14.9	5.9	0.03	0.01	1,749	690	4.2	1.7	208.0	39	527.5	8.5
Comoros	0.6	0.4	0.00	0.00	1,063	611	2.6	1.5	226.2	57	393.4	0.6
Congo, Dem. Rep.	15.7	7.1	0.03	0.02	264	120	0.6	0.3	214.3	45	473.9	59.5
Congo, Rep.	12.0	6.1	0.02	0.01	3,621	1,845	8.7	4.4	268.8	51	527.5	3.3
Côte d'Ivoire	30.1	16.4	0.05	0.04	1,575	858	3.8	2.1	287.5	55	527.5	19.1
Djibouti	1.5	0.7	0.00	0.00	1,964	936	4.7	2.2	84.7	48	177.7	0.8
Egypt, Arab Rep.	353.5	98.8	0.64	0.22	5,051	1,412	12.1	3.4	1.6	28	5.8	70.0
Equatorial Guinea	12.2	6.6	0.02	0.01	11,999	6,538	28.8	15.7	287.4	54	527.5	1.0
Ethiopia	42.5	11.1	0.08	0.02	591	154	1.4	0.4	2.3	26	8.7	72.1
Gabon	17.8	8.7	0.03	0.02	12,742	6,190	30.6	14.9	256.2	49	527.5	1.4
Gambia, The	1.1	0.3	0.00	0.00	726	192	1.7	0.5	7.6	26	28.6	1.5
Ghana	26.1	10.7	0.05	0.02	1,225	502	2.9	1.2	3,720.6	41	9,073.8	21.3
Guinea	8.8	2.9	0.02	0.01	946	317	2.3	0.8	1,219.3	33	3,644.3	9.3
Guinea-Bissau	0.8	0.3	0.00	0.00	569	234	1.4	0.6	217.3	41	527.5	1.3
Kenya	47.9	18.7	0.09	0.04	1,359	531	3.3	1.3	29.5	39	75.6	35.3
Lesotho	2.6	1.4	0.00	0.00	1,415	777	3.4	1.9	3.5	55	6.4	1.9
Liberia	1.2	0.6	0.00	0.00	383	188	0.9	0.5	0.5	49	1.0	3.2
Madagascar	16.8	5.5	0.03	0.01	988	320	2.4	0.8	649.6	32	2,005.7	17.0
Malawi	8.6	2.9	0.02	0.01	691	230	1.7	0.6	39.5	33	118.4	12.4
Mali	12.1	5.5	0.02	0.01	1,027	468	2.5	1.1	240.1	46	527.5	11.7
Mauritania	4.8	1.8	0.01	0.00	1,691	631	4.1	1.5	98.8	37	264.8	2.8
Mauritius	12.6	6.3	0.02	0.01	10,155	5,053	24.4	12.1	14.7	50	29.5	1.2
Morocco	107.1	59.0	0.19	0.13	3,547	1,952	8.5	4.7	4.9	55	8.9	30.2
Mozambique	14.4	6.7	0.03	0.02	743	347	1.8	0.8	10,909.5	47	23,323.0	19.4
Namibia	9.3	6.2	0.02	0.01	4,547	3,049	10.9	7.3	4.3	67	6.4	2.0
Niger	7.7	3.3	0.01	0.01	613	264	1.5	0.6	226.7	43	527.5	12.6
Nigeria	247.3	113.5	0.45	0.26	1,892	868	4.5	2.1	60.2	46	131.3	130.7
Rwanda	7.2	2.4	0.01	0.01	813	271	2.0	0.7	186.2	33	557.8	8.8
São Tomé and Principe	0.2	0.1	0.00	0.00	1,460	769	3.5	1.8	5,558.1	53	10,558.0	0.1
Senegal	18.1	8.7	0.03	0.02	1,676	800	4.0	1.9	251.7	48	527.5	10.8
Sierra Leone	4.0	1.5	0.01	0.00	790	293	1.9	0.7	1,074.1	37	2,899.2	5.1
South Africa	397.5	242.0	0.72	0.55	8,477	5,162	20.3	12.4	3.9	61	6.4	46.9
Sudan	79.6	35.2	0.14	0.08	2,249	994	5.4	2.4	107.7	44	243.6	35.4
Swaziland	4.9	2.6	0.01	0.01	4,384	2,270	10.5	5.4	3.3	52	6.4	1.1
Tanzania	35.9	12.7	0.07	0.03	1,018	360	2.4	0.9	395.6	35	1,119.4	35.3
Togo	4.6	2.1	0.01	0.00	888	405	2.1	1.0	240.4	46	527.5	5.2
Tunisia	64.8	29.0	0.12	0.07	6,461	2,896	15.5	6.9	0.6	45	1.3	10.0
Uganda	26.3	9.1	0.05	0.02	991	345	2.4	0.8	619.6	35	1,780.7	26.5
Zambia	13.4	7.3	0.02	0.02	1,175	636	2.8	1.5	2,414.8	54	4,463.5	11.4
Zimbabwe	6.2	9.2	0.01	0.02	538	796	1.3	1.9	33,068.2	148	22,363.0	11.5
Total	**1,835.7**	**839.2**	**3.34**	**1.89**	**2,223**	**1,016**	**5.3**	**2.4**		**46**		**825.7**
Asia/Pacific												
Bangladesh	173.7	61.2	0.32	0.14	1,268	446	3.0	1.1	22.6	35	64.3	137.0
Bhutan	2.3	0.8	0.00	0.00	3,694	1,318	8.9	3.2	15.7	36	44.1	0.6
Brunei Darussalam	17.6	9.5	0.03	0.02	47,465	25,754	113.9	61.8	0.9	54	1.7	0.4
Cambodia	20.1	6.3	0.04	0.01	1,453	454	3.5	1.1	1,278.5	31	4,092.5	13.8
China	5,333.2	2,243.8	9.70	5.06	4,091	1,721	9.8	4.1	3.4	42	8.2	1,303.7
Fiji	3.5	3.0	0.01	0.01	4,208	3,558	10.1	8.5	1.4	85	1.7	0.8
Hong Kong, China	243.1	177.8	0.44	0.40	35,680	26,094	85.6	62.6	5.7	73	7.8	6.8
India	2,341.0	778.7	4.26	1.76	2,126	707	5.1	1.7	14.7	33	44.1	1,101.3
Indonesia	707.9	287.0	1.29	0.65	3,234	1,311	7.8	3.1	3,934.2	41	9,704.7	218.9
Iran, Islamic Rep.	734.5	219.2	1.34	0.49	10,692	3,190	25.7	7.7	2,674.8	30	8,964.0	68.7
Lao PDR	10.2	2.9	0.02	0.01	1,811	508	4.3	1.2	2,988.4	28	10,655.2	5.7
Macao, China	17.6	11.6	0.03	0.03	37,259	24,507	89.4	58.8	5.3	66	8.0	0.5
Malaysia	299.6	137.2	0.54	0.31	11,466	5,250	27.5	12.6	1.7	46	3.8	26.1
Maldives	1.2	0.7	0.00	0.00	4,017	2,552	9.6	6.1	8.1	64	12.8	0.3
Mongolia	6.7	2.3	0.01	0.01	2,644	915	6.3	2.2	417.2	35	1,205.2	2.5
Nepal	27.4	8.7	0.05	0.02	1,081	343	2.6	0.8	22.7	32	71.4	25.3
Pakistan	368.9	118.4	0.67	0.27	2,396	769	5.8	1.8	19.1	32	59.5	154.0
Philippines	250.0	98.7	0.45	0.22	2,932	1,158	7.0	2.8	21.8	39	55.1	85.3
Singapore	180.1	116.7	0.33	0.26	41,478	26,879	99.5	64.5	1.1	65	1.7	4.3
Sri Lanka	68.5	24.0	0.12	0.05	3,481	1,218	8.4	2.9	35.2	35	100.5	19.7
Taiwan, China	590.5	355.1	1.07	0.80	26,068	15,674	62.6	37.6	19.3	60	32.2	22.7
Thailand	444.9	176.2	0.81	0.40	6,869	2,721	16.5	6.5	15.9	40	40.2	64.8
Vietnam	178.1	52.9	0.32	0.12	2,142	637	5.1	1.5	4,712.7	30	15,858.9	83.1
Total	**12,020.7**	**4,892.6**	**21.86**	**11.04**	**3,592**	**1,462**	**8.6**	**3.5**		**41**		**3,346.3**

2005 ICP Global Results: Summary table of results

	GDP				GDP per capita				PPP	Price Level Index	Exchange rate	Population
	PPP $	US$	Shares (World=100)				Indices (US=100)					
			GDP @ PPP	GDP @ US$	PPP $	US$	PPP	US$	US$=1	US=100	US$=1	millions
Economy	billions	billions										
CIS												
Armenia	12.6	4.9	0.02	0.01	3,903	1,519	9.4	3.6	178.6	39	459.1	3.2
Azerbaijan	38.4	13.3	0.07	0.03	4,648	1,604	11.2	3.8	1,631.6	35	4,728.6	8.3
Belarus	83.5	30.1	0.15	0.07	8,541	3,084	20.5	7.4	779.3	36	2,158.3	9.8
Georgia	15.3	6.2	0.03	0.01	3,505	1,425	8.4	3.4	0.7	41	1.8	4.4
Kazakhstan	131.8	57.0	0.24	0.13	8,699	3,764	20.9	9.0	57.6	43	133.2	15.1
Kyrgyz Republic	8.9	2.5	0.02	0.01	1,728	477	4.1	1.1	11.4	28	41.1	5.1
Moldova	8.5	3.0	0.02	0.01	2,362	830	5.7	2.0	4.4	35	12.6	3.6
Russian Federation	1,697.5	762.5	3.09	1.72	11,861	5,328	28.5	12.8	12.7	45	28.4	143.1
Tajikistan	9.7	2.3	0.02	0.01	1,413	337	3.4	0.8	0.7	24	3.1	6.9
Ukraine	263.0	86.0	0.48	0.19	5,583	1,826	13.4	4.4	1.7	33	5.1	47.1
Total	**2,269.2**	**967.8**	**4.13**	**2.18**	**9,202**	**3,925**	**22.1**	**9.4**		**43**		**246.6**
OECD-Eurostat												
Albania	16.8	8.1	0.03	0.02	5,369	2,587	12.9	6.2	48.6	48	100.8	3.1
Australia	671.5	712.0	1.22	1.61	32,798	34,774	78.7	83.4	1.4	106	1.3	20.5
Austria	280.8	305.1	0.51	0.69	34,108	37,056	81.8	88.9	0.9	109	0.8	8.2
Belgium	336.0	375.5	0.61	0.85	32,077	35,852	77.0	86.0	0.9	112	0.8	10.5
Bosnia and Herzegovina	25.0	11.6	0.05	0.03	6,506	3,007	15.6	7.2	0.7	46	1.6	3.8
Bulgaria	72.2	27.2	0.13	0.06	9,353	3,525	22.4	8.5	0.6	38	1.6	7.7
Canada	1,133.0	1,134.8	2.06	2.56	35,078	35,133	84.2	84.3	1.2	100	1.2	32.3
Croatia	58.8	38.9	0.11	0.09	13,232	8,749	31.8	21.0	3.9	66	6.0	4.4
Cyprus	18.6	16.9	0.03	0.04	24,473	22,359	58.7	53.7	0.4	91	0.5	0.8
Czech Republic	207.6	124.8	0.38	0.28	20,281	12,190	48.7	29.3	14.4	60	23.9	10.2
Denmark	182.2	259.0	0.33	0.58	33,626	47,793	80.7	114.7	8.5	142	6.0	5.4
Estonia	22.4	13.9	0.04	0.03	16,654	10,341	40.0	24.8	7.8	62	12.6	1.3
Finland	159.8	195.4	0.29	0.44	30,469	37,262	73.1	89.4	1.0	122	0.8	5.2
France	1,862.2	2,136.3	3.39	4.82	29,644	34,008	71.1	81.6	0.9	115	0.8	62.8
Germany	2,514.8	2,791.3	4.57	6.30	30,496	33,849	73.2	81.2	0.9	111	0.8	82.5
Greece	282.8	247.0	0.51	0.56	25,520	22,285	61.2	53.5	0.7	87	0.8	11.1
Hungary	171.6	110.6	0.31	0.25	17,014	10,962	40.8	26.3	128.5	64	199.5	10.1
Iceland	10.5	16.3	0.02	0.04	35,630	54,975	85.5	131.9	97.1	154	62.9	0.3
Ireland	157.9	200.8	0.29	0.45	38,058	48,405	91.3	116.2	1.0	127	0.8	4.1
Israel	156.7	129.8	0.28	0.29	23,845	19,749	57.2	47.4	3.7	83	4.5	6.6
Italy	1,626.3	1,769.6	2.96	3.99	27,750	30,195	66.6	72.5	0.9	109	0.8	58.6
Japan	3,870.3	4,549.2	7.04	10.27	30,290	35,604	72.7	85.4	129.6	118	110.2	127.8
Korea, Rep.	1,027.4	791.4	1.87	1.79	21,342	16,441	51.2	39.5	788.9	77	1,024.1	48.1
Latvia	30.4	16.2	0.06	0.04	13,218	7,035	31.7	16.9	0.3	53	0.6	2.3
Lithuania	48.1	25.7	0.09	0.06	14,085	7,530	33.8	18.1	1.5	53	2.8	3.4
Luxembourg	32.6	37.3	0.06	0.08	70,014	80,315	168.0	192.7	0.9	115	0.8	0.5
Macedonia, FYR	15.0	5.8	0.03	0.01	7,393	2,858	17.7	6.9	19.1	39	49.3	2.0
Malta	8.2	5.9	0.01	0.01	20,410	14,605	49.0	35.0	0.2	72	0.3	0.4
Mexico	1,175.0	768.4	2.14	1.73	11,317	7,401	27.2	17.8	7.1	65	10.9	103.8
Montenegro	4.9	2.2	0.01	0.01	7,833	3,564	18.8	8.6	0.4	45	0.8	0.6
Netherlands	566.6	632.9	1.03	1.43	34,724	38,789	83.3	93.1	0.9	112	0.8	16.3
New Zealand	100.7	108.8	0.18	0.25	24,554	26,538	58.9	63.7	1.5	108	1.4	4.1
Norway	219.8	301.7	0.40	0.68	47,551	65,267	114.1	156.6	8.8	137	6.4	4.6
Poland	518.0	304.0	0.94	0.69	13,573	7,965	32.6	19.1	1.9	59	3.2	38.2
Portugal	211.0	185.7	0.38	0.42	20,006	17,599	48.0	42.2	0.7	88	0.8	10.5
Romania	202.7	98.9	0.37	0.22	9,374	4,575	22.5	11.0	1.4	49	2.9	21.6
Russian Federation	1,697.5	762.5	3.09	1.72	11,861	5,328	28.5	12.8	12.7	45	28.4	143.1
Serbia	64.1	26.5	0.12	0.06	8,609	3,564	20.7	8.6	27.2	41	65.7	7.4
Slovak Republic	85.6	47.4	0.16	0.11	15,881	8,798	38.1	21.1	17.2	55	31.0	5.4
Slovenia	46.0	35.1	0.08	0.08	23,004	17,558	55.2	42.1	147.0	76	192.6	2.0
Spain	1,183.5	1,129.7	2.15	2.55	27,270	26,031	65.4	62.5	0.8	95	0.8	43.4
Sweden	288.9	357.8	0.53	0.81	31,995	39,621	76.8	95.1	9.2	124	7.5	9.0
Switzerland	266.3	372.4	0.48	0.84	35,520	49,675	85.2	119.2	1.7	140	1.2	7.5
Turkey	561.1	361.3	1.02	0.82	7,786	5,013	18.7	12.0	0.9	64	1.3	72.1
United Kingdom	1,901.7	2,244.1	3.46	5.06	31,580	37,266	75.8	89.4	0.6	118	0.5	60.2
United States	12,376.1	12,376.1	22.51	27.93	41,674	41,674	100.0	100.0	1.0	100	1.0	297.0
Total	**36,469.0**	**36,171.9**	**66.33**	**81.64**	**26,404**	**26,189**	**63.4**	**62.8**		**99**		**1,381.2**
South America												
Argentina	419.6	183.2	0.76	0.41	11,076	4,836	26.6	11.6	1.3	44	2.9	37.9
Bolivia	34.2	9.4	0.06	0.02	3,623	1,001	8.7	2.4	2.2	28	8.1	9.4
Brazil	1,585.1	882.5	2.88	1.99	8,606	4,791	20.7	11.5	1.4	56	2.4	184.2
Chile	199.8	118.9	0.36	0.27	12,277	7,305	29.5	17.5	333.3	60	560.1	16.3
Colombia	264.0	122.9	0.48	0.28	6,314	2,940	15.2	7.1	1,080.6	47	2,320.8	41.8
Ecuador	86.4	36.5	0.16	0.08	6,541	2,761	15.7	6.6	0.4	42	1.0	13.2
Paraguay	23.0	7.5	0.04	0.02	3,905	1,267	9.4	3.0	2,004.3	32	6,178.0	5.9
Peru	176.2	79.4	0.32	0.18	6,474	2,916	15.5	7.0	1.5	45	3.3	27.2
Uruguay	30.7	16.6	0.06	0.04	9,277	5,026	22.3	12.1	13.3	54	24.5	3.3
Venezuela, RB	262.8	144.8	0.48	0.33	9,888	5,449	23.7	13.1	1,151.5	55	2,089.8	26.6
Total	**3,081.9**	**1,601.7**	**5.61**	**3.62**	**8,425**	**4,379**	**20.2**	**10.5**		**52**		**365.8**

2005 ICP Global Results: Summary table of results

	GDP				GDP per capita				PPP	Price Level Index	Exchange rate	Population
	PPP $	US$	Shares (World=100)				Indices (US=100)					
Economy	billions	billions	GDP @ PPP	GDP @ US$	PPP $	US$	PPP	US$	US$=1	US=100	US$=1	millions
West Asia												
Bahrain	20.2	13.4	0.04	0.03	27,257	18,019	65.4	43.2	0.2	66	0.4	0.7
Egypt, Arab Rep.	353.5	98.8	0.64	0.22	5,051	1,412	12.1	3.4	1.6	28	5.8	70.0
Iraq	89.5	33.9	0.16	0.08	3,202	1,214	7.7	2.9	558.3	38	1,473.0	28.0
Jordan	23.5	12.6	0.04	0.03	4,297	2,304	10.3	5.5	0.4	54	0.7	5.5
Kuwait	110.5	80.8	0.20	0.18	44,982	32,882	107.9	78.9	0.2	73	0.3	2.5
Lebanon	38.4	21.6	0.07	0.05	10,220	5,741	24.5	13.8	846.9	56	1,507.5	3.8
Oman	51.1	30.8	0.09	0.07	20,350	12,289	48.8	29.5	0.2	60	0.4	2.5
Qatar	55.9	42.1	0.10	0.10	68,749	51,809	165.0	124.3	2.7	75	3.6	0.8
Saudi Arabia	491.0	315.3	0.89	0.71	21,236	13,640	51.0	32.7	2.4	64	3.8	23.1
Syrian Arab Republic	75.1	28.4	0.14	0.06	4,062	1,535	9.7	3.7	19.7	38	52.1	18.5
Yemen, Rep.	46.2	16.8	0.08	0.04	2,278	826	5.5	2.0	69.4	36	191.4	20.3
Total	**1,355.0**	**694.5**	**2.46**	**1.57**	**7,716**	**3,955**	**18.5**	**9.5**		**51**		**175.6**
WORLD	**54,980.4**	**44,306.4**	**100**	**100**	**8,972**	**7,230**	**21.5**	**17.3**		**81**		**6,128.1**

2005 ICP Global Results: Detailed tables

	Results table 1. PPP				Results table 2. Price level index			
	LCU per US$				world = 100%			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	GDP	Actual individual consumption	Collective government consumption	GFCF
Africa								
Angola	44.49	59.38	28.91	60.87	68	90	59	91
Benin	219.58	230.18	96.53	285.42	52	53	30	65
Botswana	2.42	3.00	1.36	2.69	59	72	44	63
Burkina Faso	200.23	202.40	91.44	307.05	47	47	28	70
Burundi	..	..	..	..	..	..	..	..
Cameroon	251.02	246.02	127.15	414.74	59	57	40	94
Cape Verde	69.36	65.98	29.19	65.73	97	91	54	89
Central African Republic	263.74	256.84	133.37	467.60	62	59	41	107
Chad	208.00	233.90	33.88	373.56	49	54	11	85
Comoros	226.19	244.92	62.12	218.69	71	76	26	67
Congo, Dem. Rep.	214.27	262.47	66.88	224.16	56	68	23	57
Congo, Rep.	268.76	293.88	124.69	665.15	63	68	39	152
Côte d'Ivoire	287.49	276.06	179.80	665.41	68	64	56	152
Djibouti	84.69	89.77	37.95	104.20	59	62	35	70
Egypt, Arab Rep.	1.62	1.65	0.63	2.32	35	35	18	48
Equatorial Guinea	287.42	357.18	73.28	553.32	68	83	23	126
Ethiopia	2.25	2.30	1.27	3.82	32	32	24	53
Gabon	256.23	355.26	101.05	334.10	60	82	31	76
Gambia, The	7.56	8.66	3.08	16.52	33	37	18	69
Ghana	3,720.60	3,768.13	1,976.95	5,347.08	51	51	36	71
Guinea	1,219.35	1,222.69	419.71	1,960.34	42	41	19	65
Guinea-Bissau	217.30	235.58	82.58	280.97	51	55	26	64
Kenya	29.52	28.55	18.05	50.89	48	46	39	81
Lesotho	3.49	2.93	1.73	5.97	68	56	45	113
Liberia	0.49	0.43	0.41	0.77	61	52	67	92
Madagascar	649.57	632.29	334.45	1,183.61	40	38	27	71
Malawi	39.46	47.34	16.80	36.06	41	49	23	37
Mali	240.09	240.47	98.04	391.57	56	56	30	89
Mauritania	98.84	103.73	45.10	148.39	46	48	28	67
Mauritius	14.68	14.62	7.38	20.96	62	61	41	85
Morocco	4.88	4.97	3.61	5.81	68	69	67	79
Mozambique	10,909.46	9,711.16	6,576.87	20,680.39	58	51	46	107
Namibia	4.26	4.41	2.43	4.92	83	85	63	93
Niger	226.66	224.52	104.26	349.03	53	52	32	80
Nigeria	60.23	64.38	20.42	83.76	57	60	26	77
Rwanda	186.18	195.15	73.19	300.58	41	43	22	65
São Tomé and Principe	5,558.09	5,258.85	1,845.67	8,925.65	65	61	29	102
Senegal	251.67	251.97	135.32	332.14	59	58	42	76
Sierra Leone	1,074.12	1,151.71	418.63	1,482.52	46	49	24	61
South Africa	3.87	4.00	2.25	4.62	76	77	58	87
Sudan	107.68	103.07	58.81	186.72	55	52	40	92
Swaziland	3.29	3.18	1.84	4.97	64	61	47	94
Tanzania	395.63	402.01	185.61	612.62	44	44	27	66
Togo	240.38	234.43	104.03	392.07	57	54	32	89
Tunisia	0.58	0.60	0.36	0.73	56	57	45	68
Uganda	619.64	617.82	266.93	1,106.30	43	42	25	75
Zambia	2,414.81	2,337.68	985.57	3,653.43	67	64	36	98
Zimbabwe	33,068.22	36,857.42	5,952.58	20,414.03	183	201	44	110
Total					**57**	**57**	**38**	**76**
Asia/Pacific								
Bangladesh	22.65	22.08	14.12	25.25	44	42	36	47
Bhutan	15.74	15.93	6.67	17.99	44	44	25	49
Brunei Darussalam	0.90	0.96	0.42	1.05	67	70	41	76
Cambodia	1,278.54	1,322.85	343.48	1,473.22	39	39	14	43
China	3.45	3.46	1.53	3.70	52	52	31	54
Fiji	1.43	1.35	0.67	1.40	105	97	65	99
Hong Kong, China	5.69	6.39	3.45	5.10	91	100	73	79
India	14.67	13.58	9.35	17.74	41	38	35	48
Indonesia	3,934.25	3,649.56	2,513.16	4,783.40	50	46	42	59
Iran, Islamic Rep.	2,674.76	2,386.37	1,214.84	3,715.29	37	33	22	50
Lao PDR	2,988.42	3,063.89	927.20	3,774.99	35	35	14	43
Macao, China	5.27	5.74	3.83	6.14	82	87	79	92
Malaysia	1.73	1.83	0.75	1.68	57	59	32	53
Maldives	8.13	7.98	2.88	8.85	79	76	37	83
Mongolia	417.20	423.38	137.79	463.36	43	43	19	46
Nepal	22.65	22.80	13.54	25.15	39	39	31	42
Pakistan	19.10	17.79	10.14	25.99	40	37	28	52
Philippines	21.76	21.11	12.90	24.22	49	47	38	53
Singapore	1.08	1.29	0.58	0.95	80	95	57	69
Sri Lanka	35.17	34.16	14.75	44.17	43	42	24	53
Taiwan, China	19.34	19.71	10.06	19.94	75	75	51	74
Thailand	15.93	15.38	10.63	16.89	49	47	43	50
Vietnam	4,712.75	4,846.30	1,675.85	5,178.42	37	37	17	39
Total					**51**	**48**	**33**	**54**

2005 ICP Global Results: Detailed tables

	Results table 1. PPP				Results table 2. Price level index			
	LCU per US$				world = 100%			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	GDP	Actual individual consumption	Collective government consumption	GFCF
CIS								
Armenia	178.58	150.82	112.62	294.99	48	40	40	77
Azerbaijan	1,631.56	1,329.33	1,155.96	2,872.59	43	34	40	73
Belarus	779.33	635.48	682.46	1,298.45	45	36	52	72
Georgia	0.74	0.61	0.63	1.12	50	41	57	74
Kazakhstan	57.61	51.05	36.07	85.88	54	47	44	78
Kyrgyz Republic	11.35	9.63	6.83	22.79	34	29	27	67
Moldova	4.43	3.70	3.10	7.84	44	36	40	75
Russian Federation	12.74	10.96	10.19	19.21	56	47	59	81
Tajikistan	0.74	0.63	0.34	1.82	30	25	18	70
Ukraine	1.68	1.40	1.29	2.81	41	33	41	66
Total					**53**	**44**	**55**	**78**
OECD-Eurostat								
Albania	48.56	48.41	25.19	75.77	60	59	41	90
Australia	1.39	1.37	1.31	1.47	132	128	164	135
Austria	0.87	0.86	0.85	0.97	135	130	174	145
Belgium	0.90	0.89	1.04	0.90	139	135	212	134
Bosnia and Herzegovina	0.73	0.74	0.55	1.08	57	58	57	82
Bulgaria	0.59	0.60	0.35	0.94	47	46	36	72
Canada	1.21	1.21	1.19	1.23	124	122	161	122
Croatia	3.94	3.90	2.89	4.78	82	80	80	97
Cyprus	0.42	0.42	0.40	0.42	113	112	141	109
Czech Republic	14.40	13.31	11.15	19.34	75	68	76	97
Denmark	8.52	8.75	8.56	8.42	176	178	234	169
Estonia	7.81	7.37	5.08	10.98	77	72	66	105
Finland	0.98	1.02	0.92	0.95	152	155	187	142
France	0.92	0.89	1.03	0.99	142	135	211	148
Germany	0.89	0.88	0.91	0.95	138	133	186	143
Greece	0.70	0.70	0.57	0.77	108	107	117	115
Hungary	128.51	119.54	101.15	177.34	80	73	83	107
Iceland	97.06	98.05	86.25	79.60	191	190	225	152
Ireland	1.02	1.04	0.97	1.14	158	157	199	171
Israel	3.72	3.74	3.27	3.75	103	102	120	100
Italy	0.88	0.88	0.95	0.83	135	133	194	124
Japan	129.55	129.16	119.67	136.36	146	143	178	149
Korea, Rep.	788.92	808.78	675.05	770.43	96	96	108	90
Latvia	0.30	0.29	0.18	0.45	66	63	52	97
Lithuania	1.48	1.38	0.95	2.35	66	61	56	102
Luxembourg	0.92	0.93	1.13	0.91	142	141	231	137
Macedonia, FYR	19.06	19.77	11.80	26.55	48	49	39	65
Malta	0.25	0.25	0.19	0.28	89	87	91	98
Mexico	7.13	6.84	4.70	9.62	81	77	71	106
Montenegro	0.37	0.41	0.21	0.55	56	62	42	82
Netherlands	0.90	0.86	0.94	1.04	139	131	191	155
New Zealand	1.54	1.49	1.26	1.83	134	128	146	155
Norway	8.84	9.41	8.99	9.03	170	178	229	169
Poland	1.90	1.83	1.37	2.41	73	69	69	90
Portugal	0.71	0.72	0.63	0.71	109	109	128	105
Romania	1.42	1.43	0.82	2.05	61	60	46	85
Russian Federation	12.74	10.96	10.19	19.21	56	47	59	81
Serbia	27.21	28.17	16.54	35.63	51	52	41	65
Slovak Republic	17.20	16.02	11.64	25.65	69	63	62	99
Slovenia	147.04	148.00	127.06	153.19	95	94	108	96
Spain	0.77	0.74	0.69	0.88	118	113	141	131
Sweden	9.24	9.16	8.25	10.66	154	150	181	172
Switzerland	1.74	1.79	1.76	1.74	174	176	232	167
Turkey	0.87	0.87	0.50	1.12	80	79	61	100
United Kingdom	0.65	0.63	0.59	0.71	146	141	177	156
United States	1.00	1.00	1.00	1.00	124	122	164	120
Total					**123**	**120**	**152**	**127**
South America								
Argentina	1.27	1.21	0.91	1.66	54	51	51	69
Bolivia	2.23	2.10	1.08	3.48	34	32	22	52
Brazil	1.36	1.37	0.91	1.54	69	69	61	76
Chile	333.28	345.25	256.01	355.26	74	75	75	76
Colombia	1,080.61	1,063.35	711.66	1,323.09	58	56	50	69
Ecuador	0.42	0.43	0.25	0.46	52	53	41	55
Paraguay	2,004.34	1,842.45	1,402.00	3,151.33	40	36	37	61
Peru	1.48	1.46	1.20	1.69	56	54	60	62
Uruguay	13.26	13.46	8.92	14.51	67	67	60	71
Venezuela, RB	1,151.45	1,105.18	644.82	1,788.95	68	65	51	103
Total					**64**	**63**	**58**	**74**

2005 ICP Global Results: Detailed tables

	Results table 1. PPP				Results table 2. Price level index			
	LCU per US$				world = 100%			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	GDP	Actual individual consumption	Collective government consumption	GFCF
West Asia								
Bahrain	0.25	0.28	0.18	0.18	82	92	80	57
Egypt, Arab Rep.	1.62	1.65	0.63	2.32	35	35	18	48
Iraq	558.26	540.03	296.29	631.01	47	45	33	51
Jordan	0.38	0.42	0.18	0.33	67	72	42	55
Kuwait	0.21	0.26	0.17	0.15	91	108	96	60
Lebanon	846.86	960.78	446.33	632.39	70	78	49	50
Oman	0.23	0.26	0.15	0.18	75	82	64	56
Qatar	2.74	3.27	1.88	2.17	94	110	85	71
Saudi Arabia	2.41	2.70	1.78	1.82	80	88	78	58
Syrian Arab Republic	19.70	20.16	9.25	20.38	47	47	29	47
Yemen, Rep.	69.44	74.54	29.45	61.23	45	48	25	38
Total					**64**	**59**	**50**	**56**
WORLD					**100**	**100**	**100**	**100**

2005 ICP Global Results: Detailed tables

Results table 3. Nominal expenditures

US$ billions

Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	Stocks	Net exports
Africa						
Angola	30.3	8.2	4.1	10.3	..	7.7
Benin	4.4	3.5	0.4	0.8	-0.1	-0.3
Botswana	9.7	3.1	1.7	1.9	1.6	1.4
Burkina Faso	5.5	4.2	1.0	1.1	0.0	-0.8
Burundi	..	..	..	..	..	..
Cameroon	16.6	12.4	1.1	2.9	0.3	-0.2
Cape Verde	1.1	0.9	0.1	0.4	0.0	-0.3
Central African Republic	1.4	1.2	0.1	0.1	..	-0.1
Chad	5.9	3.5	0.4	1.2	0.3	0.5
Comoros	0.4	0.3	0.0	0.0	0.0	0.0
Congo, Dem. Rep.	7.1	4.9	0.6	1.4	0.1	0.0
Congo, Rep.	6.1	1.9	0.5	1.1	0.0	2.6
Côte d'Ivoire	16.4	11.8	1.8	1.5	0.3	1.0
Djibouti	0.7	0.5	0.1	0.1	0.0	0.0
Egypt, Arab Rep.	98.8	76.0	7.1	16.7	0.6	-1.6
Equatorial Guinea	6.6	2.0	0.1	2.1	0.0	2.4
Ethiopia	11.1	9.1	1.3	2.3	0.0	-1.7
Gabon	8.7	3.1	0.6	2.0	0.0	2.9
Gambia, The	0.3	0.3	0.1	0.1	0.0	-0.1
Ghana	10.7	8.5	0.6	3.4	0.0	-1.8
Guinea	2.9	2.1	0.1	0.8	0.1	-0.1
Guinea-Bissau	0.3	0.3	0.1	0.0	0.0	-0.1
Kenya	18.7	16.1	1.5	3.5	-0.3	-2.0
Lesotho	1.4	1.5	0.1	0.5	0.0	-0.7
Liberia	0.6	0.4	0.1	0.2	0.1	-0.1
Madagascar	5.5	4.1	0.8	1.3	0.1	-0.9
Malawi	2.9	2.6	0.2	0.5	0.1	-0.5
Mali	5.5	4.1	0.6	0.8	0.4	-0.4
Mauritania	1.8	1.3	0.3	1.1	0.1	-1.0
Mauritius	6.3	4.7	0.5	1.3	0.1	-0.4
Morocco	59.0	38.1	6.6	16.8	1.0	-3.6
Mozambique	6.7	4.9	0.6	1.9	0.1	-0.8
Namibia	6.2	3.9	1.0	1.5	0.1	-0.2
Niger	3.3	2.6	0.4	0.7	0.1	-0.4
Nigeria	113.5	81.2	4.5	13.6	0.0	14.1
Rwanda	2.4	1.9	0.3	0.5	0.0	-0.4
São Tomé and Principe	0.1	0.1	0.0	0.0	0.0	0.0
Senegal	8.7	7.0	0.8	1.9	0.2	-1.2
Sierra Leone	1.5	1.5	0.2	0.2	0.0	-0.4
South Africa	242.0	173.6	26.3	41.4	2.9	-2.2
Sudan	35.2	28.1	2.1	7.3	1.4	-3.7
Swaziland	2.6	1.8	0.2	0.6	0.0	-0.1
Tanzania	12.7	10.4	0.8	2.8	0.0	-1.3
Togo	2.1	2.1	0.2	0.3	0.0	-0.6
Tunisia	29.0	20.4	2.5	6.5	-0.1	-0.2
Uganda	9.1	7.5	0.8	2.1	0.0	-1.3
Zambia	7.3	5.4	0.7	2.0	0.1	-0.9
Zimbabwe	9.2	8.2	0.6	0.5	0.1	-0.3
Total	**839.2**	**592.1**	**74.7**	**160.4**	**10.0**	**1.9**
Asia/Pacific						
Bangladesh	61.2	47.5	2.4	15.3	..	-4.0
Bhutan	0.8	0.4	0.1	0.4	0.0	-0.1
Brunei Darussalam	9.5	2.7	1.4	1.1	0.0	4.3
Cambodia	6.3	5.4	0.2	0.7	0.0	-0.1
China	2,243.8	964.4	200.4	931.0	25.2	122.9
Fiji	3.0	2.5	0.2	0.8	0.0	-0.5
Hong Kong, China	177.8	109.8	9.3	37.2	-0.6	22.1
India	778.7	493.6	54.1	221.9	32.5	-23.4
Indonesia	287.0	192.9	14.2	66.9	0.8	12.2
Iran, Islamic Rep.	219.2	122.2	13.9	47.1	24.4	11.5
Lao PDR	2.9	1.8	0.3	1.0	0.1	-0.3
Macao, China	11.6	3.6	0.6	3.1	0.1	4.2
Malaysia	137.2	70.3	8.3	28.3	-0.5	30.8
Maldives	0.7	0.4	0.1	0.4	..	-0.2
Mongolia	2.3	1.5	0.1	0.7	0.2	-0.1
Nepal	8.7	7.4	0.5	1.7	0.6	-1.5
Pakistan	118.4	94.3	7.1	22.4	1.9	-7.2
Philippines	98.7	71.9	6.1	14.2	10.6	-4.1
Singapore	116.7	52.4	8.3	25.7	-3.8	34.0
Sri Lanka	24.0	18.3	1.4	5.7	0.7	-2.2
Taiwan, China	355.1	234.5	30.3	74.7	1.0	14.5
Thailand	176.2	111.2	12.4	50.5	4.4	-2.3
Vietnam	52.9	33.3	3.2	17.2	1.4	-2.2
Total	**4,892.6**	**2,642.2**	**375.1**	**1,568.1**	**98.9**	**208.3**

Results table 4. Real expenditures

international $ billions

Economy	GDP	Actual individual consumption	Collective government consumption	GFCF
Africa				
Angola	55.0	11.1	11.5	13.7
Benin	10.5	8.0	2.0	1.6
Botswana	20.5	5.3	6.4	3.6
Burkina Faso	14.6	10.8	5.8	1.9
Burundi	..	..	..	..
Cameroon	35.0	26.7	4.8	3.7
Cape Verde	1.4	1.2	0.2	0.5
Central African Republic	2.7	2.5	0.4	0.1
Chad	14.9	7.9	5.8	1.7
Comoros	0.6	0.6	0.2	0.1
Congo, Dem. Rep.	15.7	8.9	4.5	3.0
Congo, Rep.	12.0	3.4	2.0	0.9
Côte d'Ivoire	30.1	22.6	5.2	1.2
Djibouti	1.5	0.9	0.6	0.2
Egypt, Arab Rep.	353.5	266.9	64.7	41.6
Equatorial Guinea	12.2	3.0	0.9	2.0
Ethiopia	42.5	34.3	9.1	5.3
Gabon	17.8	4.7	3.0	3.1
Gambia, The	1.1	0.9	0.7	0.1
Ghana	26.1	20.5	2.7	5.7
Guinea	8.8	6.1	0.9	1.5
Guinea-Bissau	0.8	0.6	0.4	0.1
Kenya	47.9	42.6	6.3	5.2
Lesotho	2.6	3.3	0.4	0.5
Liberia	1.2	0.9	0.2	0.2
Madagascar	16.8	13.1	4.6	2.2
Malawi	8.6	6.4	1.6	1.6
Mali	12.1	9.0	3.4	1.1
Mauritania	4.8	3.4	1.6	1.9
Mauritius	12.6	9.5	2.2	1.9
Morocco	107.1	67.9	16.3	25.6
Mozambique	14.4	11.8	2.2	2.1
Namibia	9.3	5.6	2.5	2.0
Niger	7.7	6.0	2.2	1.1
Nigeria	247.3	165.7	29.2	21.2
Rwanda	7.2	5.5	2.2	1.0
São Tomé and Principe	0.2	0.2	0.1	0.0
Senegal	18.1	14.6	2.9	3.1
Sierra Leone	4.0	3.7	1.4	0.3
South Africa	397.5	276.0	74.4	56.9
Sudan	79.6	66.4	8.6	9.5
Swaziland	4.9	3.6	0.9	0.8
Tanzania	35.9	28.8	4.8	5.1
Togo	4.6	4.8	1.1	0.5
Tunisia	64.8	43.8	9.0	11.5
Uganda	26.3	21.7	5.2	3.3
Zambia	13.4	10.3	3.2	2.4
Zimbabwe	6.2	5.0	2.2	0.6
Total	**1,835.7**	**1,278.7**	**321.4**	**253.8**
Asia/Pacific				
Bangladesh	173.7	138.4	10.9	39.0
Bhutan	2.3	1.2	0.6	1.1
Brunei Darussalam	17.6	4.7	5.5	1.8
Cambodia	20.1	16.7	2.8	2.0
China	5,333.2	2,284.1	1,073.6	2,062.7
Fiji	3.5	3.1	0.6	0.9
Hong Kong, China	243.1	133.7	21.0	56.7
India	2,341.0	1,602.6	255.3	551.8
Indonesia	707.9	513.1	54.8	135.7
Iran, Islamic Rep.	734.5	459.0	102.9	113.7
Lao PDR	10.2	6.3	3.8	2.7
Macao, China	17.6	5.0	1.3	4.0
Malaysia	299.6	145.4	42.1	63.7
Maldives	1.2	0.6	0.4	0.6
Mongolia	6.7	4.1	1.0	1.8
Nepal	27.4	23.0	2.7	4.8
Pakistan	368.9	315.6	41.4	51.3
Philippines	250.0	187.6	26.0	32.3
Singapore	180.1	67.6	24.0	44.9
Sri Lanka	68.5	53.8	9.8	12.9
Taiwan, China	590.5	382.7	96.8	120.5
Thailand	444.9	290.9	47.0	120.2
Vietnam	178.1	108.8	30.5	52.7
Total	**12,020.7**	**6,748.2**	**1,854.8**	**3,478.1**

2005 ICP Global Results: Detailed tables

Results table 3. Nominal expenditures

US$ billions

Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	Stocks	Net exports
CIS						
Armenia	4.9	3.9	0.3	1.5	-0.1	-0.6
Azerbaijan	13.3	6.3	0.7	5.5	-0.5	1.3
Belarus	30.1	19.4	2.6	7.9	0.0	0.2
Georgia	6.2	4.6	0.6	1.8	0.4	-1.1
Kazakhstan	57.0	31.5	3.3	15.9	1.2	5.0
Kyrgyz Republic	2.5	2.3	0.2	0.4	0.0	-0.5
Moldova	3.0	3.1	0.2	0.7	0.2	-1.2
Russian Federation	762.5	438.0	68.6	133.5	19.0	103.4
Tajikistan	2.3	2.1	0.1	0.3	0.3	-0.4
Ukraine	86.0	59.8	6.1	18.9	0.6	0.7
Total	**967.8**	**570.9**	**82.7**	**186.4**	**21.0**	**106.8**
OECD-Eurostat						
Albania	8.1	6.5	0.5	3.3	-0.3	-1.8
Australia	712.0	469.0	67.2	186.6	2.4	-13.2
Austria	305.1	205.6	21.1	62.1	1.3	15.0
Belgium	375.5	250.3	32.8	76.3	2.1	13.9
Bosnia and Herzegovina	11.6	11.7	1.3	3.1	0.0	-4.5
Bulgaria	27.2	21.3	2.7	6.6	1.0	-4.4
Canada	1,134.8	759.1	85.4	238.8	8.4	43.1
Croatia	38.9	26.4	3.7	11.3	0.8	-3.3
Cyprus	16.9	12.4	1.7	3.2	0.1	-0.4
Czech Republic	124.8	74.8	13.8	31.2	1.0	4.0
Denmark	259.0	169.9	22.9	52.9	1.0	12.2
Estonia	13.9	8.9	1.1	4.3	0.5	-0.9
Finland	195.4	129.5	14.8	37.0	3.2	10.9
France	2,136.3	1,546.4	177.1	423.7	8.6	-19.5
Germany	2,791.3	1,956.4	217.2	486.0	-9.3	140.9
Greece	247.0	179.9	26.3	58.5	0.1	-17.9
Hungary	110.6	74.8	10.9	25.2	1.0	-1.2
Iceland	16.3	12.4	1.3	4.6	0.0	-2.0
Ireland	200.8	112.5	11.0	52.4	0.2	24.7
Israel	129.8	88.2	18.2	21.8	1.1	0.4
Italy	1,769.6	1,255.2	150.4	363.9	1.5	-1.3
Japan	4,549.2	3,060.2	362.7	1,052.2	10.9	63.1
Korea, Rep.	791.4	463.7	65.1	231.7	12.3	18.7
Latvia	16.2	11.5	1.5	5.0	0.6	-2.3
Lithuania	25.7	19.3	1.8	5.9	0.6	-1.9
Luxembourg	37.3	18.1	2.5	7.5	0.6	8.6
Macedonia, FYR	5.8	5.0	0.6	1.0	0.2	-1.0
Malta	5.9	4.5	0.6	1.1	0.0	-0.3
Mexico	768.4	577.8	35.5	148.3	19.1	-12.3
Montenegro	2.2	1.8	0.5	0.4	-0.1	-0.4
Netherlands	632.9	395.9	66.0	120.0	0.6	50.4
New Zealand	108.8	76.8	7.8	25.9	0.7	-2.3
Norway	301.7	166.2	21.7	55.8	8.5	49.5
Poland	304.0	222.2	24.2	55.4	3.2	-1.0
Portugal	185.7	144.0	16.0	40.1	1.5	-16.0
Romania	98.9	77.6	9.1	22.8	-0.4	-10.2
Russian Federation	762.5	438.0	68.6	133.5	19.0	103.4
Serbia	26.5	21.4	2.0	4.6	4.3	-5.7
Slovak Republic	47.4	30.8	5.2	12.7	1.1	-2.4
Slovenia	35.1	23.0	2.8	9.0	0.6	-0.2
Spain	1,129.7	772.0	84.3	331.6	1.6	-59.8
Sweden	357.8	241.7	27.5	61.7	-0.3	27.3
Switzerland	372.4	249.1	18.7	78.9	1.5	24.2
Turkey	361.3	266.3	28.3	71.6	19.1	-24.0
United Kingdom	2,244.1	1,745.6	184.6	385.3	9.0	-80.3
United States	12,376.1	9,501.5	1,174.9	2,377.5	36.8	-714.6
Total	**36,171.9**	**25,905.3**	**3,093.6**	**7,391.9**	**176.1**	**-395.0**
South America						
Argentina	183.2	120.5	13.7	39.3	-1.1	10.8
Bolivia	9.4	7.1	0.7	1.2	0.1	0.3
Brazil	882.5	594.5	115.1	143.6	-2.4	31.7
Chile	118.9	74.7	7.5	24.5	2.1	10.1
Colombia	122.9	84.5	13.9	24.6	0.9	-1.0
Ecuador	36.5	25.9	2.3	8.0	0.9	-0.6
Paraguay	7.5	5.9	0.5	1.4	0.0	-0.4
Peru	79.4	55.1	5.4	15.0	-0.3	4.2
Uruguay	16.6	12.9	1.1	2.2	0.0	0.4
Venezuela, RB	144.8	75.5	8.1	29.3	3.5	28.5
Total	**1,601.7**	**1,056.6**	**168.2**	**289.1**	**3.7**	**84.1**

Results table 4. Real expenditures

international $ billions

Economy	GDP	Actual individual consumption	Collective government consumption	GFCF
CIS				
Armenia	12.6	11.8	1.3	2.3
Azerbaijan	38.4	22.4	2.8	9.0
Belarus	83.5	65.8	8.1	13.2
Georgia	15.3	13.7	1.6	2.9
Kazakhstan	131.8	82.2	12.3	24.7
Kyrgyz Republic	8.9	9.8	1.3	0.7
Moldova	8.5	10.4	0.9	1.2
Russian Federation	1,697.5	1,133.2	190.8	197.0
Tajikistan	9.7	10.2	1.4	0.4
Ukraine	263.0	219.4	24.1	34.5
Total	**2,269.2**	**1,579.0**	**244.6**	**286.0**
OECD-Eurostat				
Albania	16.8	13.5	2.0	4.3
Australia	671.5	447.1	67.3	165.9
Austria	280.8	193.0	20.0	51.5
Belgium	336.0	226.8	25.4	68.2
Bosnia and Herzegovina	25.0	24.7	3.6	4.5
Bulgaria	72.2	56.4	12.1	11.0
Canada	1,133.0	760.2	87.1	234.7
Croatia	58.8	40.3	7.5	14.0
Cyprus	18.6	13.5	2.0	3.5
Czech Republic	207.6	134.5	29.6	38.6
Denmark	182.2	116.4	16.0	37.7
Estonia	22.4	15.2	2.7	5.0
Finland	159.8	102.3	13.0	31.3
France	1,862.2	1,401.7	137.6	344.2
Germany	2,514.8	1,793.0	191.7	409.3
Greece	282.8	205.9	36.8	61.3
Hungary	171.6	124.7	21.5	28.3
Iceland	10.5	8.0	1.0	3.6
Ireland	157.9	87.3	9.1	36.9
Israel	156.7	105.8	24.9	26.1
Italy	1,626.3	1,152.7	126.9	352.6
Japan	3,870.3	2,611.4	334.1	850.5
Korea, Rep.	1,027.4	587.1	98.8	307.9
Latvia	30.4	22.4	4.6	6.1
Lithuania	48.1	38.9	5.3	6.9
Luxembourg	32.6	15.7	1.8	6.6
Macedonia, FYR	15.0	12.5	2.6	1.8
Malta	8.2	6.3	1.0	1.4
Mexico	1,175.0	920.0	82.3	168.1
Montenegro	4.9	3.5	1.9	0.6
Netherlands	566.6	368.6	56.6	93.2
New Zealand	100.7	73.4	8.7	20.0
Norway	219.8	113.7	15.5	39.8
Poland	518.0	392.0	57.4	74.2
Portugal	211.0	161.3	20.5	45.8
Romania	202.7	158.2	32.1	32.4
Russian Federation	1,697.5	1,133.2	190.8	197.0
Serbia	64.1	49.9	7.8	8.5
Slovak Republic	85.6	59.7	13.8	15.4
Slovenia	46.0	29.9	4.2	11.3
Spain	1,183.5	834.6	98.3	304.7
Sweden	288.9	197.0	24.8	43.2
Switzerland	266.3	172.8	13.2	56.6
Turkey	561.1	411.8	76.2	85.9
United Kingdom	1,901.7	1,515.0	171.1	297.3
United States	12,376.1	9,501.5	1,174.9	2,377.5
Total	**36,469.0**	**26,413.7**	**3,336.0**	**6,985.3**
South America				
Argentina	419.6	289.5	43.7	68.8
Bolivia	34.2	27.3	5.1	2.7
Brazil	1,585.1	1,054.7	308.4	227.6
Chile	199.8	121.2	16.3	38.7
Colombia	264.0	184.4	45.3	43.2
Ecuador	86.4	59.9	9.1	17.4
Paraguay	23.0	19.8	2.1	2.8
Peru	176.2	124.6	14.7	29.2
Uruguay	30.7	23.4	3.1	3.7
Venezuela, RB	262.8	142.7	26.3	34.2
Total	**3,081.9**	**2,047.7**	**474.1**	**468.3**

2005 ICP Global Results: Detailed tables

	Results table 3. Nominal expenditures						Results table 4. Real expenditures			
	US$ billions						international $ billions			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	Stocks	Net exports	GDP	Actual individual consumption	Collective government consumption	GFCF
West Asia										
Bahrain	13.4	7.0	0.9	2.4	0.1	3.0	20.2	9.3	1.8	5.0
Egypt, Arab Rep.	98.8	76.0	7.1	16.7	0.6	-1.6	353.5	266.9	64.7	41.6
Iraq	33.9	19.1	9.3	3.2	2.0	0.3	89.5	52.2	46.2	7.5
Jordan	12.6	12.3	1.2	3.9	0.4	-5.2	23.5	20.8	4.8	8.4
Kuwait	80.8	30.8	7.9	11.8	1.5	28.8	110.5	34.7	13.5	23.5
Lebanon	21.6	19.5	2.0	4.7	0.0	-4.7	38.4	30.7	6.9	11.3
Oman	30.8	12.5	4.3	5.6	0.0	8.4	51.1	18.6	11.0	12.0
Qatar	42.1	9.2	3.1	14.2	0.8	14.8	55.9	10.3	6.1	23.8
Saudi Arabia	315.3	116.2	37.3	52.2	4.2	105.5	491.0	161.4	78.4	107.7
Syrian Arab Republic	28.4	21.1	1.8	6.7	-1.8	0.6	75.1	54.5	10.3	17.2
Yemen, Rep.	16.8	11.5	1.3	3.2	-0.1	0.8	46.2	29.7	8.2	10.0
Total	**694.5**	**335.3**	**76.2**	**124.5**	**7.7**	**150.9**	**1,355.0**	**689.0**	**251.8**	**268.0**
WORLD	**44,306.4**	**30,588.4**	**3,794.9**	**9,570.2**	**297.7**	**55.2**	**54,980.4**	**37,355.9**	**6,227.2**	**11,500.8**

2005 ICP Global Results: Detailed tables

Results table 5. Nominal expenditures per capita

US$

Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	Stocks	Net exports
Africa						
Angola	1,945	526	264	662	..	493
Benin	579	466	48	112	-7	-40
Botswana	5,712	1,838	1,001	1,128	920	826
Burkina Faso	433	325	78	86	2	-59
Burundi	..	..	..	..	..	..
Cameroon	950	710	66	167	17	-10
Cape Verde	2,215	1,932	147	736	-14	-585
Central African Republic	338	310	23	33	..	-28
Chad	690	413	44	140	34	60
Comoros	611	565	63	54	11	-81
Congo, Dem. Rep.	120	83	11	24	1	1
Congo, Rep.	1,845	571	141	346	7	780
Côte d'Ivoire	858	620	93	77	18	51
Djibouti	936	615	174	151	1	-5
Egypt, Arab Rep.	1,412	1,086	101	238	9	-22
Equatorial Guinea	6,538	1,972	120	2,118	-35	2,363
Ethiopia	154	127	18	32	0	-24
Gabon	6,190	2,248	407	1,418	18	2,099
Gambia, The	192	185	49	39	11	-92
Ghana	502	400	27	158	0	-83
Guinea	317	222	11	87	6	-10
Guinea-Bissau	234	194	50	37	12	-58
Kenya	531	456	43	99	-9	-57
Lesotho	777	824	63	273	1	-384
Liberia	188	113	26	49	26	-26
Madagascar	320	242	45	77	7	-51
Malawi	230	206	19	39	5	-38
Mali	468	348	53	72	31	-37
Mauritania	631	470	99	378	43	-358
Mauritius	5,053	3,776	442	1,083	55	-303
Morocco	1,952	1,262	219	557	34	-120
Mozambique	347	253	32	98	6	-41
Namibia	3,049	1,900	466	749	41	-107
Niger	264	203	34	55	6	-34
Nigeria	868	622	35	104	0	108
Rwanda	271	217	33	62	2	-43
São Tomé and Principe	769	738	75	173	16	-233
Senegal	800	644	70	179	22	-116
Sierra Leone	293	290	40	35	1	-73
South Africa	5,162	3,703	561	883	62	-48
Sudan	994	793	59	205	40	-104
Swaziland	2,270	1,586	218	532	29	-94
Tanzania	360	293	23	79	1	-36
Togo	405	408	40	67	2	-112
Tunisia	2,896	2,029	247	645	-9	-16
Uganda	345	284	30	78	1	-48
Zambia	636	470	61	173	7	-75
Zimbabwe	796	715	51	47	12	-29
Total	**1,016**	**717**	**90**	**194**	**12**	**2**
Asia/Pacific						
Bangladesh	446	347	17	112	..	-29
Bhutan	1,318	697	132	702	4	-217
Brunei Darussalam	25,754	7,369	3,697	3,074	3	11,610
Cambodia	454	390	17	53	2	-9
China	1,721	740	154	714	19	94
Fiji	3,558	2,953	283	908	39	-624
Hong Kong, China	26,094	16,111	1,364	5,458	-90	3,250
India	707	448	49	202	29	-21
Indonesia	1,311	882	65	306	4	56
Iran, Islamic Rep.	3,190	1,779	203	686	355	168
Lao PDR	508	320	59	169	9	-49
Macao, China	24,507	7,538	1,308	6,530	171	8,960
Malaysia	5,250	2,689	318	1,083	-19	1,178
Maldives	2,552	1,373	339	1,365	..	-525
Mongolia	915	570	46	275	60	-35
Nepal	343	291	20	67	22	-57
Pakistan	769	613	46	145	12	-47
Philippines	1,158	843	71	167	125	-48
Singapore	26,879	12,072	1,923	5,926	-870	7,829
Sri Lanka	1,218	929	73	289	37	-111
Taiwan, China	15,674	10,353	1,336	3,298	46	642
Thailand	2,721	1,717	192	779	68	-36
Vietnam	637	400	39	207	17	-26
Total	**1,462**	**790**	**112**	**469**	**30**	**62**

Results table 6. Real expenditures per capita

international $

Economy	GDP	Actual individual consumption	Collective government consumption	GFCF
Africa				
Angola	3,533	716	736	879
Benin	1,390	1,068	261	207
Botswana	12,057	3,127	3,771	2,140
Burkina Faso	1,140	847	450	148
Burundi	..	..	..	..
Cameroon	1,995	1,522	272	213
Cape Verde	2,831	2,596	446	993
Central African Republic	675	636	89	37
Chad	1,749	931	686	197
Comoros	1,063	907	401	97
Congo, Dem. Rep.	264	149	76	51
Congo, Rep.	3,621	1,025	597	274
Côte d'Ivoire	1,575	1,184	272	61
Djibouti	1,964	1,217	817	258
Egypt, Arab Rep.	5,051	3,813	925	594
Equatorial Guinea	11,999	2,912	860	2,019
Ethiopia	591	477	126	73
Gabon	12,742	3,338	2,124	2,239
Gambia, The	726	610	453	68
Ghana	1,225	963	125	268
Guinea	946	662	92	162
Guinea-Bissau	569	434	320	69
Kenya	1,359	1,207	179	147
Lesotho	1,415	1,789	232	290
Liberia	383	264	64	63
Madagascar	988	768	272	130
Malawi	691	514	133	129
Mali	1,027	764	287	97
Mauritania	1,691	1,199	579	675
Mauritius	10,155	7,620	1,768	1,524
Morocco	3,547	2,250	539	849
Mozambique	743	607	114	110
Namibia	4,547	2,737	1,219	968
Niger	613	476	172	84
Nigeria	1,892	1,267	224	163
Rwanda	813	621	255	114
São Tomé and Principe	1,460	1,481	429	204
Senegal	1,676	1,348	272	285
Sierra Leone	790	731	278	68
South Africa	8,477	5,886	1,587	1,214
Sudan	2,249	1,875	243	268
Swaziland	4,384	3,170	755	680
Tanzania	1,018	817	137	144
Togo	888	918	204	90
Tunisia	6,461	4,371	894	1,149
Uganda	991	817	197	126
Zambia	1,175	897	276	211
Zimbabwe	538	434	193	51
Total	**2,223**	**1,548**	**389**	**307**
Asia/Pacific				
Bangladesh	1,268	1,010	80	284
Bhutan	3,694	1,931	871	1,721
Brunei Darussalam	47,465	12,800	14,742	4,873
Cambodia	1,453	1,208	204	147
China	4,091	1,752	823	1,582
Fiji	4,208	3,703	719	1,097
Hong Kong, China	35,680	19,622	3,078	8,326
India	2,126	1,455	232	501
Indonesia	3,234	2,344	250	620
Iran, Islamic Rep.	10,692	6,682	1,497	1,655
Lao PDR	1,811	1,112	679	477
Macao, China	37,259	10,521	2,733	8,513
Malaysia	11,466	5,566	1,612	2,438
Maldives	4,017	2,202	1,505	1,975
Mongolia	2,644	1,622	403	715
Nepal	1,081	909	105	191
Pakistan	2,396	2,050	269	333
Philippines	2,932	2,200	305	379
Singapore	41,478	15,565	5,534	10,352
Sri Lanka	3,481	2,735	499	658
Taiwan, China	26,068	16,892	4,272	5,321
Thailand	6,869	4,491	726	1,856
Vietnam	2,142	1,309	367	634
Total	**3,592**	**2,017**	**554**	**1,039**

2005 ICP Global Results: Detailed tables

	Results table 5. Nominal expenditures per capita						Results table 6. Real expenditures per capita			
	US$						international $			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	Stocks	Net exports	GDP	Actual individual consumption	Collective government consumption	GFCF
CIS										
Armenia	1,519	1,209	97	452	-39	-201	3,903	3,681	397	703
Azerbaijan	1,604	761	83	661	-62	161	4,648	2,707	339	1,088
Belarus	3,084	1,982	262	813	5	22	8,541	6,733	829	1,351
Georgia	1,425	1,064	131	412	80	-262	3,505	3,142	375	666
Kazakhstan	3,764	2,080	220	1,052	80	332	8,699	5,426	811	1,632
Kyrgyz Republic	477	445	42	76	2	-88	1,728	1,901	251	138
Moldova	830	849	63	204	52	-338	2,362	2,899	256	329
Russian Federation	5,328	3,061	479	933	133	723	11,861	7,918	1,333	1,377
Tajikistan	337	301	22	37	39	-62	1,413	1,492	200	64
Ukraine	1,826	1,269	129	401	12	15	5,583	4,657	512	732
Total	**3,925**	**2,315**	**335**	**756**	**85**	**433**	**9,202**	**6,403**	**992**	**1,160**
OECD-Eurostat										
Albania	2,587	2,068	161	1,039	-101	-580	5,369	4,305	642	1,382
Australia	34,774	22,907	3,280	9,112	119	-644	32,798	21,836	3,285	8,104
Austria	37,056	24,969	2,565	7,541	164	1,817	34,108	23,444	2,424	6,254
Belgium	35,852	23,899	3,133	7,284	205	1,331	32,077	21,656	2,428	6,515
Bosnia and Herzegovina	3,007	3,036	327	809	2	-1,168	6,506	6,437	940	1,179
Bulgaria	3,525	2,765	345	852	134	-571	9,353	7,305	1,568	1,422
Canada	35,133	23,503	2,644	7,393	260	1,333	35,078	23,535	2,696	7,267
Croatia	8,749	5,946	824	2,540	170	-732	13,232	9,077	1,696	3,161
Cyprus	22,359	16,355	2,236	4,229	112	-573	24,473	17,854	2,600	4,646
Czech Republic	12,190	7,305	1,349	3,044	102	391	20,281	13,145	2,897	3,770
Denmark	47,793	31,357	4,227	9,765	185	2,259	33,626	21,478	2,959	6,952
Estonia	10,341	6,606	810	3,220	365	-660	16,654	11,275	2,006	3,689
Finland	37,262	24,690	2,821	7,061	609	2,081	30,469	19,505	2,475	5,970
France	34,008	24,618	2,819	6,744	137	-310	29,644	22,314	2,190	5,479
Germany	33,849	23,724	2,634	5,894	-112	1,709	30,496	21,743	2,325	4,963
Greece	22,285	16,233	2,369	5,280	13	-1,611	25,520	18,580	3,319	5,533
Hungary	10,962	7,411	1,080	2,493	97	-119	17,014	12,365	2,129	2,804
Iceland	54,975	41,901	4,461	15,486	-38	-6,834	35,630	26,884	3,254	12,238
Ireland	48,405	27,121	2,650	12,626	57	5,951	38,058	21,048	2,188	8,886
Israel	19,749	13,431	2,767	3,325	173	54	23,845	16,100	3,796	3,979
Italy	30,195	21,417	2,566	6,209	25	-22	27,750	19,667	2,165	6,016
Japan	35,604	23,951	2,839	8,235	85	494	30,290	20,438	2,615	6,656
Korea, Rep.	16,441	9,632	1,353	4,812	256	388	21,342	12,196	2,052	6,397
Latvia	7,035	4,995	633	2,154	265	-1,012	13,218	9,747	2,008	2,664
Lithuania	7,530	5,660	531	1,720	171	-551	14,085	11,403	1,551	2,030
Luxembourg	80,315	38,977	5,384	16,056	1,388	18,511	70,014	33,684	3,829	14,133
Macedonia, FYR	2,858	2,454	305	487	105	-493	7,393	6,122	1,276	905
Malta	14,605	11,185	1,368	2,840	-4	-784	20,410	15,681	2,474	3,466
Mexico	7,401	5,565	342	1,429	184	-119	11,317	8,861	792	1,619
Montenegro	3,564	2,837	792	651	-82	-635	7,833	5,601	3,068	956
Netherlands	38,789	24,262	4,048	7,354	40	3,086	34,724	22,591	3,469	5,712
New Zealand	26,538	18,720	1,890	6,304	174	-551	24,554	17,892	2,131	4,881
Norway	65,267	35,969	4,690	12,064	1,830	10,714	47,551	24,610	3,359	8,602
Poland	7,965	5,822	635	1,451	83	-27	13,573	10,272	1,504	1,945
Portugal	17,599	13,655	1,514	3,804	146	-1,521	20,006	15,289	1,940	4,337
Romania	4,575	3,589	420	1,056	-17	-473	9,374	7,314	1,484	1,499
Russian Federation	5,328	3,061	479	933	133	723	11,861	7,918	1,333	1,377
Serbia	3,564	2,877	264	617	576	-770	8,609	6,712	1,050	1,139
Slovak Republic	8,798	5,716	961	2,360	208	-447	15,881	11,077	2,561	2,856
Slovenia	17,558	11,498	1,381	4,482	307	-111	23,004	14,967	2,093	5,637
Spain	26,031	17,789	1,943	7,640	38	-1,378	27,270	19,232	2,265	7,020
Sweden	39,621	26,767	3,041	6,828	-38	3,023	31,995	21,818	2,750	4,781
Switzerland	49,675	33,222	2,500	10,520	199	3,233	35,520	23,050	1,765	7,548
Turkey	5,013	3,695	393	993	265	-333	7,786	5,715	1,057	1,192
United Kingdom	37,266	28,988	3,065	6,398	149	-1,334	31,580	25,159	2,841	4,938
United States	41,674	31,995	3,956	8,006	124	-2,406	41,674	31,995	3,956	8,006
Total	**26,189**	**18,756**	**2,240**	**5,352**	**127**	**-286**	**26,404**	**19,124**	**2,415**	**5,057**
South America										
Argentina	4,836	3,181	361	1,038	-28	284	11,076	7,644	1,153	1,815
Bolivia	1,001	756	73	125	13	34	3,623	2,898	546	291
Brazil	4,791	3,228	625	780	-13	172	8,606	5,727	1,674	1,236
Chile	7,305	4,591	458	1,506	127	623	12,277	7,448	1,002	2,375
Colombia	2,940	2,021	332	589	22	-24	6,314	4,410	1,084	1,034
Ecuador	2,761	1,962	173	605	64	-43	6,541	4,529	686	1,313
Paraguay	1,267	1,000	81	245	3	-62	3,905	3,354	355	480
Peru	2,916	2,024	197	550	-9	156	6,474	4,579	541	1,072
Uruguay	5,026	3,894	342	658	2	130	9,277	7,083	939	1,111
Venezuela, RB	5,449	2,840	306	1,102	130	1,071	9,888	5,370	991	1,287
Total	**4,379**	**2,888**	**460**	**790**	**10**	**230**	**8,425**	**5,598**	**1,296**	**1,280**

2005 ICP Global Results: Detailed tables

	Results table 5. Nominal expenditures per capita						Results table 6. Real expenditures per capita			
	US$						international $			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	Stocks	Net exports	GDP	Actual individual consumption	Collective government consumption	GFCF
West Asia										
Bahrain	18,019	9,450	1,173	3,199	162	4,035	27,257	12,526	2,393	6,760
Egypt, Arab Rep.	1,412	1,086	101	238	9	-22	5,051	3,813	925	594
Iraq	1,214	684	332	116	70	12	3,202	1,865	1,652	270
Jordan	2,304	2,240	221	705	81	-942	4,297	3,803	869	1,534
Kuwait	32,882	12,517	3,221	4,810	593	11,740	44,982	14,130	5,484	9,584
Lebanon	5,741	5,204	545	1,261	-10	-1,259	10,220	8,166	1,840	3,006
Oman	12,289	4,997	1,706	2,216	10	3,361	20,350	7,402	4,400	4,796
Qatar	51,809	11,349	3,855	17,426	998	18,180	68,749	12,639	7,453	29,293
Saudi Arabia	13,640	5,026	1,613	2,257	180	4,564	21,236	6,981	3,390	4,657
Syrian Arab Republic	1,535	1,139	99	363	-97	31	4,062	2,946	557	929
Yemen, Rep.	826	569	62	157	-4	42	2,278	1,462	403	491
Total	**3,955**	**1,909**	**434**	**709**	**44**	**859**	**7,716**	**3,923**	**1,434**	**1,526**
WORLD	**7,230**	**4,992**	**619**	**1,562**	**49**	**9**	**8,972**	**6,096**	**1,016**	**1,877**

2005 ICP Global Results: Detailed tables

	Results table 7. Index of nominal expenditures per capita				Results table 8. Index of real expenditures per capita			
	world = 100%				world = 100%			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	GDP	Actual individual consumption	Collective government consumption	GFCF
Africa								
Angola	26.9	10.5	42.6	42.4	39.4	11.7	72.5	46.8
Benin	8.0	9.3	7.7	7.2	15.5	17.5	25.7	11.0
Botswana	79.0	36.8	161.6	72.2	134.4	51.3	371.1	114.0
Burkina Faso	6.0	6.5	12.6	5.5	12.7	13.9	44.3	7.9
Burundi	..	..	..	..	..	..	..	..
Cameroon	13.1	14.2	10.6	10.7	22.2	25.0	26.8	11.3
Cape Verde	30.6	38.7	23.7	47.1	31.6	42.6	43.9	52.9
Central African Republic	4.7	6.2	3.6	2.1	7.5	10.4	8.8	2.0
Chad	9.5	8.3	7.1	8.9	19.5	15.3	67.5	10.5
Comoros	8.5	11.3	10.2	3.4	11.9	14.9	39.5	5.2
Congo, Dem. Rep.	1.7	1.7	1.7	1.5	2.9	2.4	7.5	2.7
Congo, Rep.	25.5	11.4	22.8	22.1	40.4	16.8	58.7	14.6
Côte d'Ivoire	11.9	12.4	15.0	4.9	17.5	19.4	26.8	3.3
Djibouti	12.9	12.3	28.2	9.7	21.9	20.0	80.4	13.7
Egypt, Arab Rep.	19.5	21.8	16.3	15.2	56.3	62.6	91.0	31.6
Equatorial Guinea	90.4	39.5	19.3	135.6	133.7	47.8	84.7	107.6
Ethiopia	2.1	2.5	3.0	2.1	6.6	7.8	12.4	3.9
Gabon	85.6	45.0	65.7	90.8	142.0	54.8	209.0	119.3
Gambia, The	2.7	3.7	7.9	2.5	8.1	10.0	44.6	3.6
Ghana	6.9	8.0	4.4	10.1	13.7	15.8	12.3	14.3
Guinea	4.4	4.4	1.7	5.6	10.5	10.9	9.0	8.7
Guinea-Bissau	3.2	3.9	8.1	2.3	6.3	7.1	31.5	3.7
Kenya	7.3	9.1	6.9	6.3	15.1	19.8	17.6	7.8
Lesotho	10.7	16.5	10.2	17.5	15.8	29.3	22.9	15.5
Liberia	2.6	2.3	4.3	3.1	4.3	4.3	6.3	3.4
Madagascar	4.4	4.8	7.3	4.9	11.0	12.6	26.8	6.9
Malawi	3.2	4.1	3.0	2.5	7.7	8.4	13.1	6.9
Mali	6.5	7.0	8.6	4.6	11.5	12.5	28.2	5.2
Mauritania	8.7	9.4	15.9	24.2	18.8	19.7	57.0	35.9
Mauritius	69.9	75.6	71.4	69.4	113.2	125.0	174.0	81.2
Morocco	27.0	25.3	35.4	35.6	39.5	36.9	53.1	45.3
Mozambique	4.8	5.1	5.2	6.3	8.3	10.0	11.2	5.9
Namibia	42.2	38.1	75.3	47.9	50.7	44.9	120.0	51.6
Niger	3.6	4.1	5.5	3.5	6.8	7.8	16.9	4.5
Nigeria	12.0	12.5	5.6	6.6	21.1	20.8	22.0	8.7
Rwanda	3.8	4.4	5.4	3.9	9.1	10.2	25.1	6.1
São Tomé and Principe	10.6	14.8	12.1	11.1	16.3	24.3	42.2	10.9
Senegal	11.1	12.9	11.3	11.5	18.7	22.1	26.8	15.2
Sierra Leone	4.0	5.8	6.5	2.2	8.8	12.0	27.4	3.6
South Africa	71.4	74.2	90.6	56.5	94.5	96.6	156.2	64.7
Sudan	13.7	15.9	9.5	13.1	25.1	30.8	24.0	14.3
Swaziland	31.4	31.8	35.2	34.0	48.9	52.0	74.3	36.3
Tanzania	5.0	5.9	3.7	5.1	11.3	13.4	13.5	7.7
Togo	5.6	8.2	6.5	4.3	9.9	15.1	20.1	4.8
Tunisia	40.0	40.7	39.8	41.3	72.0	71.7	88.0	61.2
Uganda	4.8	5.7	4.8	5.0	11.0	13.4	19.4	6.7
Zambia	8.8	9.4	9.8	11.1	13.1	14.7	27.2	11.3
Zimbabwe	11.0	14.3	8.3	3.0	6.0	7.1	19.0	2.7
Total	**14.1**	**14.4**	**14.6**	**12.4**	**24.8**	**25.4**	**38.3**	**16.4**
Asia/Pacific								
Bangladesh	6.2	6.9	2.8	7.2	14.1	16.6	7.8	15.2
Bhutan	18.2	14.0	21.3	44.9	41.2	31.7	85.7	91.7
Brunei Darussalam	356.2	147.6	597.1	196.9	529.0	210.0	1,450.7	259.7
Cambodia	6.3	7.8	2.8	3.4	16.2	19.8	20.1	7.9
China	23.8	14.8	24.8	45.7	45.6	28.7	81.0	84.3
Fiji	49.2	59.2	45.7	58.1	46.9	60.7	70.7	58.5
Hong Kong, China	360.9	322.8	220.3	349.5	397.7	321.9	302.9	443.7
India	9.8	9.0	7.9	12.9	23.7	23.9	22.8	26.7
Indonesia	18.1	17.7	10.5	19.6	36.0	38.5	24.6	33.0
Iran, Islamic Rep.	44.1	35.6	32.8	43.9	119.2	109.6	147.3	88.2
Lao PDR	7.0	6.4	9.5	10.8	20.2	18.2	66.8	25.4
Macao, China	339.0	151.0	211.2	418.1	415.3	172.6	269.0	453.6
Malaysia	72.6	53.9	51.4	69.4	127.8	91.3	158.6	129.9
Maldives	35.3	27.5	54.7	87.4	44.8	36.1	148.1	105.2
Mongolia	12.7	11.4	7.4	17.6	29.5	26.6	39.6	38.1
Nepal	4.7	5.8	3.2	4.3	12.0	14.9	10.3	10.2
Pakistan	10.6	12.3	7.4	9.3	26.7	33.6	26.5	17.7
Philippines	16.0	16.9	11.5	10.7	32.7	36.1	30.0	20.2
Singapore	371.8	241.9	310.5	379.4	462.3	255.3	544.5	551.6
Sri Lanka	16.8	18.6	11.8	18.5	38.8	44.9	49.1	35.0
Taiwan, China	216.8	207.4	215.8	211.2	290.6	277.1	420.4	283.5
Thailand	37.6	34.4	31.0	49.9	76.6	73.7	71.5	98.9
Vietnam	8.8	8.0	6.3	13.3	23.9	21.5	36.1	33.8
Total	**20.2**	**15.8**	**18.1**	**30.0**	**40.0**	**33.1**	**54.5**	**55.4**

2005 ICP Global Results: Detailed tables

Results table 7. Index of nominal expenditures per capita

world = 100%

Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF
CIS				
Armenia	21.0	24.2	15.7	28.9
Azerbaijan	22.2	15.2	13.4	42.3
Belarus	42.7	39.7	42.3	52.0
Georgia	19.7	21.3	21.1	26.4
Kazakhstan	52.1	41.7	35.5	67.4
Kyrgyz Republic	6.6	8.9	6.7	4.9
Moldova	11.5	17.0	10.2	13.1
Russian Federation	73.7	61.3	77.4	59.7
Tajikistan	4.7	6.0	3.5	2.4
Ukraine	25.3	25.4	20.8	25.7
Total	**54.3**	**46.4**	**54.1**	**48.4**
OECD-Eurostat				
Albania	35.8	41.4	25.9	66.5
Australia	481.0	458.9	529.7	583.5
Austria	512.5	500.2	414.3	482.9
Belgium	495.9	478.8	505.9	466.4
Bosnia and Herzegovina	41.6	60.8	52.9	51.8
Bulgaria	48.8	55.4	55.7	54.6
Canada	485.9	470.9	426.9	473.4
Croatia	121.0	119.1	133.1	162.7
Cyprus	309.2	327.7	361.1	270.8
Czech Republic	168.6	146.3	217.8	194.9
Denmark	661.0	628.2	682.6	625.3
Estonia	143.0	132.3	130.9	206.2
Finland	515.4	494.6	455.5	452.2
France	470.4	493.2	455.2	431.8
Germany	468.2	475.3	425.4	377.4
Greece	308.2	325.2	382.6	338.1
Hungary	151.6	148.5	174.3	159.7
Iceland	760.4	839.4	720.3	991.6
Ireland	669.5	543.3	428.0	808.5
Israel	273.2	269.1	446.8	212.9
Italy	417.6	429.1	414.4	397.6
Japan	492.4	479.8	458.4	527.3
Korea, Rep.	227.4	193.0	218.4	308.1
Latvia	97.3	100.1	102.2	137.9
Lithuania	104.2	113.4	85.7	110.1
Luxembourg	1110.9	780.9	869.5	1,028.1
Macedonia, FYR	39.5	49.2	49.3	31.2
Malta	202.0	224.1	220.9	181.9
Mexico	102.4	111.5	55.2	91.5
Montenegro	49.3	56.8	127.9	41.7
Netherlands	536.5	486.1	653.7	470.9
New Zealand	367.0	375.0	305.3	403.6
Norway	902.7	720.6	757.4	772.5
Poland	110.2	116.6	102.6	92.9
Portugal	243.4	273.6	244.6	243.6
Romania	63.3	71.9	67.8	67.6
Russian Federation	73.7	61.3	77.4	59.7
Serbia	49.3	57.6	42.7	39.5
Slovak Republic	121.7	114.5	155.1	151.1
Slovenia	242.8	230.4	222.9	287.0
Spain	360.0	356.4	313.8	489.2
Sweden	548.0	536.3	491.0	437.2
Switzerland	687.1	665.6	403.7	673.6
Turkey	69.3	74.0	63.5	63.6
United Kingdom	515.4	580.7	495.0	409.7
United States	576.4	641.0	638.9	512.6
Total	**362.2**	**375.8**	**361.7**	**342.7**
South America				
Argentina	66.9	63.7	58.4	66.4
Bolivia	13.9	15.1	11.8	8.0
Brazil	66.3	64.7	100.9	49.9
Chile	101.0	92.0	74.0	96.5
Colombia	40.7	40.5	53.7	37.7
Ecuador	38.2	39.3	27.9	38.8
Paraguay	17.5	20.0	13.0	15.7
Peru	40.3	40.5	31.8	35.2
Uruguay	69.5	78.0	55.3	42.2
Venezuela, RB	75.4	56.9	49.4	70.5
Total	**60.6**	**57.9**	**74.3**	**50.6**

Results table 8. Index of real expenditures per capita

world = 100%

Economy	GDP	Actual individual consumption	Collective government consumption	GFCF
CIS				
Armenia	43.5	60.4	39.1	37.5
Azerbaijan	51.8	44.4	33.3	58.0
Belarus	95.2	110.4	81.5	72.0
Georgia	39.1	51.5	36.9	35.5
Kazakhstan	97.0	89.0	79.8	86.9
Kyrgyz Republic	19.3	31.2	24.7	7.3
Moldova	26.3	47.6	25.2	17.5
Russian Federation	132.2	129.9	131.2	73.4
Tajikistan	15.8	24.5	19.7	3.4
Ukraine	62.2	76.4	50.4	39.0
Total	**102.6**	**105.0**	**97.6**	**61.8**
OECD-Eurostat				
Albania	59.8	70.6	63.2	73.6
Australia	365.6	358.2	323.3	431.8
Austria	380.2	384.6	238.6	333.2
Belgium	357.5	355.3	239.0	347.1
Bosnia and Herzegovina	72.5	105.6	92.5	62.8
Bulgaria	104.3	119.8	154.3	75.8
Canada	391.0	386.1	265.4	387.2
Croatia	147.5	148.9	166.9	168.4
Cyprus	272.8	292.9	255.9	247.6
Czech Republic	226.0	215.6	285.1	200.9
Denmark	374.8	352.3	291.2	370.4
Estonia	185.6	185.0	197.4	196.6
Finland	339.6	320.0	243.6	318.1
France	330.4	366.0	215.6	291.9
Germany	339.9	356.7	228.8	264.5
Greece	284.4	304.8	326.6	294.8
Hungary	189.6	202.8	209.5	149.4
Iceland	397.1	441.0	320.2	652.1
Ireland	424.2	345.3	215.3	473.5
Israel	265.8	264.1	373.5	212.0
Italy	309.3	322.6	213.1	320.6
Japan	337.6	335.3	257.3	354.7
Korea, Rep.	237.9	200.1	202.0	340.9
Latvia	147.3	159.9	197.6	141.9
Lithuania	157.0	187.1	152.7	108.2
Luxembourg	780.4	552.6	376.8	753.1
Macedonia, FYR	82.4	100.4	125.6	48.2
Malta	227.5	257.2	243.4	184.7
Mexico	126.1	145.4	78.0	86.3
Montenegro	87.3	91.9	301.9	51.0
Netherlands	387.0	370.6	341.3	304.4
New Zealand	273.7	293.5	209.7	260.1
Norway	530.0	403.7	330.6	458.4
Poland	151.3	168.5	148.0	103.6
Portugal	223.0	250.8	190.9	231.1
Romania	104.5	120.0	146.0	79.9
Russian Federation	132.2	129.9	131.2	73.4
Serbia	96.0	110.1	103.4	60.7
Slovak Republic	177.0	181.7	252.1	152.2
Slovenia	256.4	245.5	206.0	300.3
Spain	304.0	315.5	222.8	374.1
Sweden	356.6	357.9	270.6	254.8
Switzerland	395.9	378.1	173.7	402.2
Turkey	86.8	93.7	104.0	63.5
United Kingdom	352.0	412.7	279.6	263.1
United States	464.5	524.9	389.3	426.6
Total	**294.3**	**313.7**	**237.7**	**269.5**
South America				
Argentina	123.5	125.4	113.4	96.7
Bolivia	40.4	47.5	53.7	15.5
Brazil	95.9	93.9	164.8	65.9
Chile	136.8	122.2	98.6	126.5
Colombia	70.4	72.3	106.6	55.1
Ecuador	72.9	74.3	67.5	70.0
Paraguay	43.5	55.0	34.9	25.6
Peru	72.2	75.1	53.2	57.1
Uruguay	103.4	116.2	92.4	59.2
Venezuela, RB	110.2	88.1	97.5	68.6
Total	**93.9**	**91.8**	**127.5**	**68.2**

2005 ICP Global Results: Detailed tables

	Results table 7. Index of nominal expenditures per capita				Results table 8. Index of real expenditures per capita			
	world = 100%				world = 100%			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	GDP	Actual individual consumption	Collective government consumption	GFCF
West Asia								
Bahrain	249.2	189.3	189.3	204.9	303.8	205.5	235.5	360.2
Egypt, Arab Rep.	19.5	21.8	16.3	15.2	56.3	62.6	91.0	31.6
Iraq	16.8	13.7	53.7	7.4	35.7	30.6	162.6	14.4
Jordan	31.9	44.9	35.7	45.1	47.9	62.4	85.5	81.7
Kuwait	454.8	250.8	520.2	308.0	501.4	231.8	539.6	510.7
Lebanon	79.4	104.3	88.0	80.7	113.9	134.0	181.1	160.1
Oman	170.0	100.1	275.4	141.9	226.8	121.4	433.0	255.6
Qatar	716.6	227.4	622.6	1,115.9	766.3	207.3	733.4	1,560.9
Saudi Arabia	188.7	100.7	260.5	144.5	236.7	114.5	333.6	248.1
Syrian Arab Republic	21.2	22.8	15.9	23.3	45.3	48.3	54.8	49.5
Yemen, Rep.	11.4	11.4	10.0	10.1	25.4	24.0	39.7	26.2
Total	**54.7**	**38.3**	**70.1**	**45.4**	**86.0**	**64.4**	**141.1**	**81.3**
WORLD	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

2005 ICP Global Results: Detailed tables

Results table 9. Nominal expenditures country shares

world = 100%

Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF
Africa				
Angola	0.07	0.03	0.11	0.11
Benin	0.01	0.01	0.01	0.01
Botswana	0.02	0.01	0.04	0.02
Burkina Faso	0.01	0.01	0.03	0.01
Burundi	..	..	..	..
Cameroon	0.04	0.04	0.03	0.03
Cape Verde	0.00	0.00	0.00	0.00
Central African Republic	0.00	0.00	0.00	0.00
Chad	0.01	0.01	0.01	0.01
Comoros	0.00	0.00	0.00	0.00
Congo, Dem. Rep.	0.02	0.02	0.02	0.01
Congo, Rep.	0.01	0.01	0.01	0.01
Côte d'Ivoire	0.04	0.04	0.05	0.02
Djibouti	0.00	0.00	0.00	0.00
Egypt, Arab Rep.	0.22	0.25	0.19	0.17
Equatorial Guinea	0.01	0.01	0.00	0.02
Ethiopia	0.02	0.03	0.04	0.02
Gabon	0.02	0.01	0.02	0.02
Gambia, The	0.00	0.00	0.00	0.00
Ghana	0.02	0.03	0.02	0.04
Guinea	0.01	0.01	0.00	0.01
Guinea-Bissau	0.00	0.00	0.00	0.00
Kenya	0.04	0.05	0.04	0.04
Lesotho	0.00	0.01	0.00	0.01
Liberia	0.00	0.00	0.00	0.00
Madagascar	0.01	0.01	0.02	0.01
Malawi	0.01	0.01	0.01	0.01
Mali	0.01	0.01	0.02	0.01
Mauritania	0.00	0.00	0.01	0.01
Mauritius	0.01	0.02	0.01	0.01
Morocco	0.13	0.12	0.17	0.18
Mozambique	0.02	0.02	0.02	0.02
Namibia	0.01	0.01	0.03	0.02
Niger	0.01	0.01	0.01	0.01
Nigeria	0.26	0.27	0.12	0.14
Rwanda	0.01	0.01	0.01	0.01
São Tomé and Principe	0.00	0.00	0.00	0.00
Senegal	0.02	0.02	0.02	0.02
Sierra Leone	0.00	0.00	0.01	0.00
South Africa	0.55	0.57	0.69	0.43
Sudan	0.08	0.09	0.05	0.08
Swaziland	0.01	0.01	0.01	0.01
Tanzania	0.03	0.03	0.02	0.03
Togo	0.00	0.01	0.01	0.00
Tunisia	0.07	0.07	0.07	0.07
Uganda	0.02	0.02	0.02	0.02
Zambia	0.02	0.02	0.02	0.02
Zimbabwe	0.02	0.03	0.02	0.01
Total	**1.89**	**1.94**	**1.97**	**1.68**
Asia/Pacific				
Bangladesh	0.14	0.16	0.06	0.16
Bhutan	0.00	0.00	0.00	0.00
Brunei Darussalam	0.02	0.01	0.04	0.01
Cambodia	0.01	0.02	0.01	0.01
China	5.06	3.15	5.28	9.73
Fiji	0.01	0.01	0.01	0.01
Hong Kong, China	0.40	0.36	0.24	0.39
India	1.76	1.61	1.43	2.32
Indonesia	0.65	0.63	0.37	0.70
Iran, Islamic Rep.	0.49	0.40	0.37	0.49
Lao PDR	0.01	0.01	0.01	0.01
Macao, China	0.03	0.01	0.02	0.03
Malaysia	0.31	0.23	0.22	0.30
Maldives	0.00	0.00	0.00	0.00
Mongolia	0.01	0.00	0.00	0.01
Nepal	0.02	0.02	0.01	0.02
Pakistan	0.27	0.31	0.19	0.23
Philippines	0.22	0.23	0.16	0.15
Singapore	0.26	0.17	0.22	0.27
Sri Lanka	0.05	0.06	0.04	0.06
Taiwan, China	0.80	0.77	0.80	0.78
Thailand	0.40	0.36	0.33	0.53
Vietnam	0.12	0.11	0.08	0.18
Total	**11.04**	**8.64**	**9.88**	**16.38**

Results table 10. Real expenditures country shares

world = 100%

Economy	GDP	Actual individual consumption	Collective government consumption	GFCF
Africa				
Angola	0.10	0.03	0.18	0.12
Benin	0.02	0.02	0.03	0.01
Botswana	0.04	0.01	0.10	0.03
Burkina Faso	0.03	0.03	0.09	0.02
Burundi	..	..	..	..
Cameroon	0.06	0.07	0.08	0.03
Cape Verde	0.00	0.00	0.00	0.00
Central African Republic	0.00	0.01	0.01	0.00
Chad	0.03	0.02	0.09	0.01
Comoros	0.00	0.00	0.00	0.00
Congo, Dem. Rep.	0.03	0.02	0.07	0.03
Congo, Rep.	0.02	0.01	0.03	0.01
Côte d'Ivoire	0.05	0.06	0.08	0.01
Djibouti	0.00	0.00	0.01	0.00
Egypt, Arab Rep.	0.64	0.71	1.04	0.36
Equatorial Guinea	0.02	0.01	0.01	0.02
Ethiopia	0.08	0.09	0.15	0.05
Gabon	0.03	0.01	0.05	0.03
Gambia, The	0.00	0.00	0.01	0.00
Ghana	0.05	0.05	0.04	0.05
Guinea	0.02	0.02	0.01	0.01
Guinea-Bissau	0.00	0.00	0.01	0.00
Kenya	0.09	0.11	0.10	0.04
Lesotho	0.00	0.01	0.01	0.00
Liberia	0.00	0.00	0.00	0.00
Madagascar	0.03	0.04	0.07	0.02
Malawi	0.02	0.02	0.03	0.01
Mali	0.02	0.02	0.05	0.01
Mauritania	0.01	0.01	0.03	0.02
Mauritius	0.02	0.03	0.04	0.02
Morocco	0.19	0.18	0.26	0.22
Mozambique	0.03	0.03	0.04	0.02
Namibia	0.02	0.01	0.04	0.02
Niger	0.01	0.02	0.03	0.01
Nigeria	0.45	0.44	0.47	0.18
Rwanda	0.01	0.01	0.04	0.01
São Tomé and Principe	0.00	0.00	0.00	0.00
Senegal	0.03	0.04	0.05	0.03
Sierra Leone	0.01	0.01	0.02	0.00
South Africa	0.72	0.74	1.19	0.50
Sudan	0.14	0.18	0.14	0.08
Swaziland	0.01	0.01	0.01	0.01
Tanzania	0.07	0.08	0.08	0.04
Togo	0.01	0.01	0.02	0.00
Tunisia	0.12	0.12	0.14	0.10
Uganda	0.05	0.06	0.08	0.03
Zambia	0.02	0.03	0.05	0.02
Zimbabwe	0.01	0.01	0.04	0.01
Total	**3.34**	**3.42**	**5.16**	**2.21**
Asia/Pacific				
Bangladesh	0.32	0.37	0.18	0.34
Bhutan	0.00	0.00	0.01	0.01
Brunei Darussalam	0.03	0.01	0.09	0.02
Cambodia	0.04	0.04	0.05	0.02
China	9.70	6.11	17.24	17.94
Fiji	0.01	0.01	0.01	0.01
Hong Kong, China	0.44	0.36	0.34	0.49
India	4.26	4.29	4.10	4.80
Indonesia	1.29	1.37	0.88	1.18
Iran, Islamic Rep.	1.34	1.23	1.65	0.99
Lao PDR	0.02	0.02	0.06	0.02
Macao, China	0.03	0.01	0.02	0.04
Malaysia	0.54	0.39	0.68	0.55
Maldives	0.00	0.00	0.01	0.01
Mongolia	0.01	0.01	0.02	0.02
Nepal	0.05	0.06	0.04	0.04
Pakistan	0.67	0.84	0.66	0.45
Philippines	0.45	0.50	0.42	0.28
Singapore	0.33	0.18	0.39	0.39
Sri Lanka	0.12	0.14	0.16	0.11
Taiwan, China	1.07	1.02	1.55	1.05
Thailand	0.81	0.78	0.76	1.04
Vietnam	0.32	0.29	0.49	0.46
Total	**21.86**	**18.06**	**29.79**	**30.24**

2005 ICP Global Results: Detailed tables

Results table 9. Nominal expenditures country shares

world = 100%

Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF
CIS				
Armenia	0.01	0.01	0.01	0.02
Azerbaijan	0.03	0.02	0.02	0.06
Belarus	0.07	0.06	0.07	0.08
Georgia	0.01	0.02	0.02	0.02
Kazakhstan	0.13	0.10	0.09	0.17
Kyrgyz Republic	0.01	0.01	0.01	0.00
Moldova	0.01	0.01	0.01	0.01
Russian Federation	1.72	1.43	1.81	1.40
Tajikistan	0.01	0.01	0.00	0.00
Ukraine	0.19	0.20	0.16	0.20
Total	**2.18**	**1.87**	**2.18**	**1.95**
OECD-Eurostat				
Albania	0.02	0.02	0.01	0.03
Australia	1.61	1.53	1.77	1.95
Austria	0.69	0.67	0.56	0.65
Belgium	0.85	0.82	0.86	0.80
Bosnia and Herzegovina	0.03	0.04	0.03	0.03
Bulgaria	0.06	0.07	0.07	0.07
Canada	2.56	2.48	2.25	2.50
Croatia	0.09	0.09	0.10	0.12
Cyprus	0.04	0.04	0.04	0.03
Czech Republic	0.28	0.24	0.36	0.33
Denmark	0.58	0.56	0.60	0.55
Estonia	0.03	0.03	0.03	0.05
Finland	0.44	0.42	0.39	0.39
France	4.82	5.06	4.67	4.43
Germany	6.30	6.40	5.72	5.08
Greece	0.56	0.59	0.69	0.61
Hungary	0.25	0.24	0.29	0.26
Iceland	0.04	0.04	0.03	0.05
Ireland	0.45	0.37	0.29	0.55
Israel	0.29	0.29	0.48	0.23
Italy	3.99	4.10	3.96	3.80
Japan	10.27	10.00	9.56	10.99
Korea, Rep.	1.79	1.52	1.72	2.42
Latvia	0.04	0.04	0.04	0.05
Lithuania	0.06	0.06	0.05	0.06
Luxembourg	0.08	0.06	0.07	0.08
Macedonia, FYR	0.01	0.02	0.02	0.01
Malta	0.01	0.01	0.01	0.01
Mexico	1.73	1.89	0.93	1.55
Montenegro	0.01	0.01	0.01	0.00
Netherlands	1.43	1.29	1.74	1.25
New Zealand	0.25	0.25	0.20	0.27
Norway	0.68	0.54	0.57	0.58
Poland	0.69	0.73	0.64	0.58
Portugal	0.42	0.47	0.42	0.42
Romania	0.22	0.25	0.24	0.24
Russian Federation	1.72	1.43	1.81	1.40
Serbia	0.06	0.07	0.05	0.05
Slovak Republic	0.11	0.10	0.14	0.13
Slovenia	0.08	0.08	0.07	0.09
Spain	2.55	2.52	2.22	3.46
Sweden	0.81	0.79	0.72	0.64
Switzerland	0.84	0.81	0.49	0.82
Turkey	0.82	0.87	0.75	0.75
United Kingdom	5.06	5.71	4.86	4.03
United States	27.93	31.06	30.96	24.84
Total	**81.64**	**84.69**	**81.52**	**77.24**
South America				
Argentina	0.41	0.39	0.36	0.41
Bolivia	0.02	0.02	0.02	0.01
Brazil	1.99	1.94	3.03	1.50
Chile	0.27	0.24	0.20	0.26
Colombia	0.28	0.28	0.37	0.26
Ecuador	0.08	0.08	0.06	0.08
Paraguay	0.02	0.02	0.01	0.02
Peru	0.18	0.18	0.14	0.16
Uruguay	0.04	0.04	0.03	0.02
Venezuela, RB	0.33	0.25	0.21	0.31
Total	**3.62**	**3.45**	**4.43**	**3.02**

Results table 10. Real expenditures country shares

world = 100%

Economy	GDP	Actual individual consumption	Collective government consumption	GFCF
CIS				
Armenia	0.02	0.03	0.02	0.02
Azerbaijan	0.07	0.06	0.05	0.08
Belarus	0.15	0.18	0.13	0.11
Georgia	0.03	0.04	0.03	0.03
Kazakhstan	0.24	0.22	0.20	0.21
Kyrgyz Republic	0.02	0.03	0.02	0.01
Moldova	0.02	0.03	0.01	0.01
Russian Federation	3.09	3.03	3.06	1.71
Tajikistan	0.02	0.03	0.02	0.00
Ukraine	0.48	0.59	0.39	0.30
Total	**4.13**	**4.23**	**3.93**	**2.49**
OECD-Eurostat				
Albania	0.03	0.04	0.03	0.04
Australia	1.22	1.20	1.08	1.44
Austria	0.51	0.52	0.32	0.45
Belgium	0.61	0.61	0.41	0.59
Bosnia and Herzegovina	0.05	0.07	0.06	0.04
Bulgaria	0.13	0.15	0.19	0.10
Canada	2.06	2.03	1.40	2.04
Croatia	0.11	0.11	0.12	0.12
Cyprus	0.03	0.04	0.03	0.03
Czech Republic	0.38	0.36	0.48	0.34
Denmark	0.33	0.31	0.26	0.33
Estonia	0.04	0.04	0.04	0.04
Finland	0.29	0.27	0.21	0.27
France	3.39	3.75	2.21	2.99
Germany	4.57	4.80	3.08	3.56
Greece	0.51	0.55	0.59	0.53
Hungary	0.31	0.33	0.34	0.25
Iceland	0.02	0.02	0.02	0.03
Ireland	0.29	0.23	0.15	0.32
Israel	0.28	0.28	0.40	0.23
Italy	2.96	3.09	2.04	3.07
Japan	7.04	6.99	5.36	7.39
Korea, Rep.	1.87	1.57	1.59	2.68
Latvia	0.06	0.06	0.07	0.05
Lithuania	0.09	0.10	0.09	0.06
Luxembourg	0.06	0.04	0.03	0.06
Macedonia, FYR	0.03	0.03	0.04	0.02
Malta	0.01	0.02	0.02	0.01
Mexico	2.14	2.46	1.32	1.46
Montenegro	0.01	0.01	0.03	0.01
Netherlands	1.03	0.99	0.91	0.81
New Zealand	0.18	0.20	0.14	0.17
Norway	0.40	0.30	0.25	0.35
Poland	0.94	1.05	0.92	0.65
Portugal	0.38	0.43	0.33	0.40
Romania	0.37	0.42	0.52	0.28
Russian Federation	3.09	3.03	3.06	1.71
Serbia	0.12	0.13	0.13	0.07
Slovak Republic	0.16	0.16	0.22	0.13
Slovenia	0.08	0.08	0.07	0.10
Spain	2.15	2.23	1.58	2.65
Sweden	0.53	0.53	0.40	0.38
Switzerland	0.48	0.46	0.21	0.49
Turkey	1.02	1.10	1.22	0.75
United Kingdom	3.46	4.06	2.75	2.59
United States	22.51	25.44	18.87	20.67
Total	**66.33**	**70.71**	**53.57**	**60.74**
South America				
Argentina	0.76	0.78	0.70	0.60
Bolivia	0.06	0.07	0.08	0.02
Brazil	2.88	2.82	4.95	1.98
Chile	0.36	0.32	0.26	0.34
Colombia	0.48	0.49	0.73	0.38
Ecuador	0.16	0.16	0.15	0.15
Paraguay	0.04	0.05	0.03	0.02
Peru	0.32	0.33	0.24	0.25
Uruguay	0.06	0.06	0.05	0.03
Venezuela, RB	0.48	0.38	0.42	0.30
Total	**5.61**	**5.48**	**7.61**	**4.07**

2005 ICP Global Results: Detailed tables

	Results table 9. Nominal expenditures country shares				Results table 10. Real expenditures country shares			
	world = 100%				world = 100%			
Economy	GDP	Actual Individual consumption	Collective government consumption	GFCF	GDP	Actual individual consumption	Collective government consumption	GFCF
West Asia								
Bahrain	0.03	0.02	0.02	0.02	0.04	0.02	0.03	0.04
Egypt, Arab Rep.	0.22	0.25	0.19	0.17	0.64	0.71	1.04	0.36
Iraq	0.08	0.06	0.24	0.03	0.16	0.14	0.74	0.07
Jordan	0.03	0.04	0.03	0.04	0.04	0.06	0.08	0.07
Kuwait	0.18	0.10	0.21	0.12	0.20	0.09	0.22	0.20
Lebanon	0.05	0.06	0.05	0.05	0.07	0.08	0.11	0.10
Oman	0.07	0.04	0.11	0.06	0.09	0.05	0.18	0.10
Qatar	0.10	0.03	0.08	0.15	0.10	0.03	0.10	0.21
Saudi Arabia	0.71	0.38	0.98	0.55	0.89	0.43	1.26	0.94
Syrian Arab Republic	0.06	0.07	0.05	0.07	0.14	0.15	0.17	0.15
Yemen, Rep.	0.04	0.04	0.03	0.03	0.08	0.08	0.13	0.09
Total	**1.57**	**1.10**	**2.01**	**1.30**	**2.46**	**1.84**	**4.04**	**2.33**
WORLD	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Part II: Technical Notes of the 2005 ICP

Data Requirements

There are two basic data requirements for participation in the ICP. Each country must provide national annual average prices for a set of well-defined goods and services. In addition, each country must provide estimates of its GDP compiled in line with the framework described in SNA93, expressed in national currencies.

National accounts data

For use by the ICP, GDP must be compiled using the expenditure approach[1], with its components allocated to 155 basic headings. Basic headings are the lowest level of disaggregations for which PPPs are computed. Product specifications are selected for each basic heading. GDP expenditures for each basic heading are used to weight the basic heading PPPs to higher levels of aggregation and to GDP. (See Annex C for a list of basic headings.)

Expenditure-based estimates of GDP must be consistent between countries. Several classifications are defined in SNA93, which enable the national accounts to be categorized in different ways. For ICP purposes, the most important classifications are those relating to expenditures. In particular, the "Classification of individual consumption by purpose" (COICOP) provides the framework for dividing individual consumption expenditure by households into its 110 basic headings. Likewise, the "Classification of the functions of government" (COFOG) provides the framework for government expenditures (individual and collective). The remaining significant component of GDP, gross fixed capital formation, is classified by the type of asset on which the expenditures were incurred, such as construction or equipment goods.

Data for some of the required basic heading levels were not available in all countries and so estimates had to be made by the local national accounts experts. In some cases, particularly in statistically less-developed countries, the national accounts are compiled using only the production approach, which meant that the expenditure estimates required for ICP purposes were not available. In such cases, the basic heading estimates were calculated using alternate data sources (for example, retail sales, household expenditure surveys, or commodity flow data). Occasionally, the weights underlying price indices, such as the consumer price index (CPI), were used to impute the detailed basic heading expenditures.

In some countries where expenditure-based GDP was not available, the percentage distribution of an economically comparable country from the same region was applied to production-based GDP aggregates to impute the basic heading details. When necessary, the regional coordinator assisted countries to produce the basic heading estimates by providing advice or by sending a statistician to work directly with the local national accountants. The regional coordinators and the Global Office reviewed the basic heading breakdowns for consistency across countries.

Own-account production can be significant in developing countries, as can the activities of the informal economy. Countries that included own-account production in their national accounts were asked to make adjustments to their average prices at the basic heading level to reflect its implicit price.

A number of new items introduced in SNA93 (such as mineral exploration, software, and valuables) were not included in some countries' national accounts because they were still being compiled according to the 1968 SNA. Given the difficulties in collecting prices for most of these new items, "reference PPPs" (see page 44) were used instead of specifically calculated PPPs, except for computer software, for which prices were specially collected.

Price data: household consumption expenditure

Purchasing Power Parities (PPPs) are based on an inter-country comparisons of the national annual average prices for a representative selection of goods and services. Price comparisons are based on the principle of matching "like with like." Therefore, after determining which products to price, it was necessary to define carefully their price-determining characteristics so that truly comparable items were priced across all countries within each region.

Because of the crucial importance of this part of the work, a new approach was adopted for the 2005 ICP. The first step was to define different "product clusters," groups of products with shared broad characteristics such as "fresh whole milk" from which more specific products needed to be specified. COICOP was used as the starting point because most countries use it, or a compatible variant of it, in compiling their national accounts or their consumer price index (CPI). It was mapped to the OECD/Eurostat PPP classification to identify the products making up each ICP basic heading. The broad characteristics of each group of products were identified using the US Bureau of Labor Statistics "checklist" from its CPI

[1] Expenditure-based GDP is household consumption plus government consumption plus private and public investment plus changes in inventories plus exports minus imports.

as a starting point to develop a series of "Structured Product Descriptions" (SPDs), which show the key characteristics of each product to be priced (for example, type, variety, seasonal availability, quantity, packaging and pricing basis). An SPD identifies those characteristics that are price determining. For example, the package type or weight of a product will often be price-determining, but the color will not usually affect the price.

Each region went through an independent exercise to define the specifications of the products to be priced. Once an SPD was set up for the product cluster, individual products were identified by selecting the specific characteristics for each product to be included (at least potentially) in the pricing list. Each selected product was given a detailed product specification.

The number of products specified under each basic heading varied significantly from one basic heading to another and even for the same basic heading in different regions, because of the number and diversity of price-determining characteristics. For example, given the centralization of postal services in most countries it was possible to cover very thoroughly the "postal services" basic heading with only a handful of products. On the other hand, the "bread" basic heading required a wide range of products to be specified because of the diversity of bread types available in different countries.

Developing the final product specifications was a lengthy, iterative process. Chapter 5 of the *ICP 2003-2006 Handbook* describes in detail the preparation of the SPDs and the steps taken to derive product specifications within a region.

A basic concept guiding the price collection is that the prices should be consistent with those underlying each country's national accounts expenditure estimates. The prices collected should include all non-deductible taxes, and include tips or gratuities where significant. And the prices recorded must be annual national average prices consistent with the values recorded in the national accounts (see page 48). Meeting the latter requirement proved to be difficult in many countries. The special price collections for the ICP were generally run once in each quarter. In some cases, it was necessary for countries to collect prices monthly to prevent biases arising out of price volatility during the quarter. An alternative, adopted by some countries for products whose prices were highly seasonal, was to use movements from the same product (or product group) in the CPI to adjust the ICP prices that were collected less frequently than those in the CPI were. It was not an option available to all countries because its effectiveness depended on having a sufficiently detailed and reliable monthly CPI available.

Calculating prices consistent with the national average prices in the national accounts proved to be a difficult process, particularly in very large countries. Generally, prices in rural areas are lower than those in urban centers, but collecting prices in rural areas is more difficult and costly than collecting them in towns and cities. Where it was not feasible to collect prices in both urban and rural areas, it was sometimes possible to use price information collected for other purposes. For example, rural and urban adjustment factors were sometimes applied to the prices collected in urban areas to impute rural price levels. The urban and rural prices were then weighted together (for example, using household expenditure survey data) to obtain a national average price. For many basic headings, the rural sector had little impact on average prices, because they included products or services only available in urban areas.

Price data: government final consumption expenditure

For ICP purposes, government final consumption expenditure was divided into two broad components: expenditure by general government on collective consumption goods and services and expenditure by general government on individual consumption services. The collective consumption component covers services that are provided to the community as a whole, such as defense, police, and fire fighting. The individual component relates to those services provided to specific individuals, such as health and education. For ICP purposes, a national accounting aggregate known as "actual individual consumption expenditure" was used for comparison of household consumption. It comprises household final consumption expenditure plus the individual component of government final consumption expenditure and the final consumption expenditure by non-profit institutions serving households (NPISHs). The reason for using actual individual consumption in the ICP rather than the household final consumption expenditure is that it is not affected by the extent to which services such as health and education are financed by government or purchased directly by households.

The underlying principles for defining PPPs for government expenditure are described in the section on results, beginning on page 12. Compensation of employees for health, education, and general government is a major input to the overall government PPPs. The compensation recorded for PPP purposes included the basic salary and allowances, before income taxes were deducted, in-kind payments (such as employer-subsidized housing), and actual and imputed social security contributions paid by the employer.

Price data: gross fixed capital formation

For gross fixed capital formation, the prices recorded include all installation charges and the costs of delivering equipment or materials to the site where they were to be used. In construction, labor cost was recorded in a similar way as employee compensation for government final consumption expenditure.

Representativity and comparability

The products priced affect the outcome of the comparisons. The products to be priced by each country needed to meet two criteria: they should be representative of its economy and comparable between countries. Conflicts arise in attempting to meet these requirements because the products that are most representative of a particular type of expenditure in one country are not necessarily identical to those in another country.

In practice, there are significant differences in the types of products purchased within the same basic heading in different countries. And, of course, the proportions of total expenditure for each basic heading differ between countries. Therefore, tradeoffs were required to ensure that the products priced were representative of the expenditures to which they related, as well as being comparable from one country to another.

The representative products in a country are those that figure prominently in the expenditures within a basic heading. They may therefore be products that are frequently purchased by resident households and are likely to be widely available throughout the country. They may also be relatively high-value products, which may not be bought so frequently but whose total value is a significant proportion of the total expenditure within a basic heading.

With regard to comparability, products are said to be comparable if their physical and economic characteristics are identical or they are so similar that consumers are hardly concerned about any difference between them. In other words, a typical consumer is not prepared to pay more for one than the other. The main way in which comparability was ensured was to set up detailed specifications for each product to be priced for the ICP in each region. However, another tradeoff was involved in this process. A product selected for pricing in different countries can be more accurately compared between countries if the specifications are tightly defined. On the other hand, the more tightly defined the product, the less likelihood there is of locating it in many countries.

It is important to note that the product lists were set up to provide the greatest possible opportunity for countries to identify representative products to price. As a result, no single country was expected to price all the products within any particular basic heading. On the other hand, all countries were expected to price at least some non-representative products so they could be matched with prices collected in other countries.

Comparison-Resistant Areas

Some particular components of expenditure on GDP have a long history of being difficult to estimate. In the ICP these components are often referred to as "comparison-resistant" goods and services. They are found mainly in housing, collective government consumption, health, education, and investment on equipment and construction. Different approaches were used in these areas. The Global Office either consulted closely with experts in relevant organizations (such as the World Health Organization) or employed experts in the respective fields (investment on equipment and construction) to assist in setting up special pricing lists for the products involved. In each of these cases, the requirements regarding the prices recorded were similar to those for the household final consumption products, that is, they had to be national annual average prices consistent with the expenditures recorded in a country's national accounts.

Housing rent

Housing rent is an important component of household expenditures and a significant contributor to GDP. Actual rents are recorded in the national accounts along with an imputed component based on the rental value of owner-occupied housing. In effect, the national accounts consider owner-occupiers as renters of their own homes. The aim of this imputation is to avoid a situation in which the value of GDP could be affected by a switch in the proportion of tenants and owner-occupiers in a country, even if there had been no change in the size or composition of the housing stock. In the past calculating PPPs for rents has proved to be problematic. The main problem has been that the rental market in some countries is so small it is difficult to obtain realistic average prices. In addition, the prices reported for calculating PPPs have not always been consistent with those underlying the values of rents in the national accounts. As a result, the real value of housing services computed using PPPs derived from reported rent prices have been different (sometimes significantly so) from volumes based on estimates of the housing stock.

The Global Office developed a questionnaire to obtain detailed data underlying the estimates of dwelling stocks used in the national accounts for both rented dwellings and owner-occupied dwellings (that is, imputed rent). The details of particular interest for ICP purposes were the numbers of dwellings of each different type (detached houses, apartments, and so forth), classified by size, region, locality (urban or rural), and the facilities available (electricity, running water, private toilet), as well as the average rent paid for each type of dwelling. The aim was to produce direct volume comparisons of the real value of dwelling services between the countries. An indirect PPP could also be imputed using these real values of dwelling services and the total values of rents recorded in each country's national accounts.

In the 2005 round of ICP, regions used one or a combination of three approaches to compute PPPs for housing rent. The first approach is the "quantity method," described above, where physical indicators on the numbers and characteristics of dwellings are used to produce directly comparable real expenditures on dwelling. The second approach is the direct rent approach, where rental data for comparable housing types (apartment, house, and so forth) are used to compute the PPP for the dwelling basic heading. In the absence of detailed rental data and detailed information on the numbers and characteristics of dwellings, regions can use the "reference volume relative" method. This third method is a "neutral" approach which uses the volume relatives for *Individual Consumption Expenditures by Households (excluding rentals for housing)* as reference for housing volume relatives. Latin America and CIS used the quantity method, while Western Asia and OECD/Eurostat used a combination of the first two methods. Asia and Africa used the reference volume method.

Government

The national accounting convention for measuring non-market outputs is the input-cost approach, which means that they are recorded as the sum of the wage costs of the employees involved, plus the intermediate consumption of goods and services (materials used, rents, and so forth), plus consumption of fixed capital. Collective consumption by government and non-market services in health and education produced by government include basic headings for compensation of employees, intermediate consumption, and some other, smaller items as shown in Annex E. PPPs for compensation of employees were compiled by comparing salaries between countries for a number of carefully selected and well-defined jobs that are typical of government expenditures around the world, for both the regional and ring comparisons (see page 52).

Measuring the compensation of government employees is a difficult area for ICP because labor productivity in government varies widely between countries. For the OECD-Eurostat, CIS, and Latin America regions these differences were ignored because they were judged not so large that ignoring them would not invalidate the comparisons. However, the participating countries in Asia and the Pacific, Africa, and Western Asia regions were at very different economic levels of development, reflected in government compensation levels. For example, in Asia, average compensation (based on exchange rates) in the government health sector of Hong Kong was about 120 times higher than in Lao PDR. If no productivity adjustments were made, economies such as Vietnam, Cambodia, or Lao PDR, where government salaries are very low, would be seen as having very high real consumption of government services – and hence very high real GDP – compared with economies such as Hong Kong and Singapore, where government salaries are relatively much higher.

The solution adopted by these regions was to adjust government compensation, and hence government consumption expenditure, for differences in productivity. Details on the productivity adjustment used can be found in Annex D.

Health was one of the most difficult components to measure. For ICP purposes, health goods and services were divided into several basic headings, which were treated in different ways for price measurement. They were:

- health products and services paid for by households, including pharmaceutical and therapeutical products, and medical, dental, and hospital services; and
- the same products and services provided by government.

Health products and services can be purchased four ways:

- households purchase them directly and pay for them in full;
- households purchase private insurance and the insurance company reimburses the purchaser for the products;
- they are purchased and paid for in full by government for distribution to households;
- they are purchased and paid for partly by households and partly by government.

The prices used in the ICP should reflect the full price, no matter who is paying for the goods or services. In other words, purchasers' prices are required. In the ICP, the full price paid by consumers was required for products purchased using either of the first two means listed above. For products paid for in full by government (the third way listed above), the full cost of

each product to the government was the "price" required. The final means of payment (partly paid for by government and partly by households) was the most difficult to measure. The price required for ICP purposes was the total of any amounts paid by the consumer plus any contribution to the overall cost made by the government.

The PPP derived for consumption expenditure on health services included a combination of prices paid by consumers and government contributions measured by the sum of inputs (that is, compensation of employees plus intermediate consumption, net taxes, and gross operating surplus, less receipts from sales). A reference PPP (see section starting page 12) was used for hospital services because of the difficulties involved in specifying and pricing comparable products across countries, particularly given the huge range of ways in which hospital services are provided and charged in different countries. The reference PPP used was that for the production of health services by government (excluding net taxes on production and receipts from sales).

Construction

Construction investment is a particularly difficult area because of the variety of projects and techniques in different parts of the world, even within the same region. Historically, two alternatives have been used to price such projects. The first is to price the inputs (wages for the labor, materials used in construction such as bricks, timber, and steel, and the cost of hiring equipment). The second is based on standard models for different types of construction projects (for example, housing, bridges, roads, and factory buildings) and pricing them by construction experts. The main advantage of this approach, rather than pricing inputs, is that overheads and productivity differences between countries are taken into account. However, it is much more costly to implement than pricing inputs.

A completely new method was introduced in the 2005 ICP. In practice, it falls in between the input and model-based approaches. It has been termed the "basket of construction components" (BOCC) approach, and it involves pricing identifiable, complete, installed components, including the materials and labor plus the cost of hiring any capital equipment used. The product list focused on components (such as window frames) that were significant in the total cost and then identified the major elements of each. The type of inputs and the mix between labor and equipment differ between countries. The BOCC approach took account of such variations in the mix of inputs. The Global Office selected 22 components, which represented the principal types of construction activities around the world. Twelve basic construction inputs such as labor, equipment rental costs, and selected materials were also priced. While the BOCC approach allowed for productivity differences at the individual component level, an underlying assumption was that the profit margins for managing the overall project were identical (proportionally) between countries. These global specifications were priced by all ICP regions.

Equipment goods

Pricing the goods underlying investment expenditures on equipment goods (that is, plant and machinery) was another problematic area in both the regional and the ring comparisons. The approach adopted was similar to the one for consumption goods and services for which SPDs (see paragraphs 35-38) were used as the starting point. However, for consumption products each region itself developed its own specifications. A major difference for equipment goods was that the Global Office staff not only prepared the respective SPDs on a worldwide basis but also developed the product specifications. The Global Office identified at least two manufacturers and two model numbers for most products. Countries were asked to provide prices for the first of these two specifications for each product, provided the model specified was available and in common use in the country; otherwise the second one was to be priced. If more than one model could be priced on this basis, then countries were asked to do so. In those cases for which exact product matches could not be found, each country had to price a model that broadly met the specifications and was commonly used in the country.

Changes in Inventories

PPPs are not directly estimated for changes in inventories. Instead PPPs are imputed using PPPs for consumer goods and equipment as described below for reference PPPs.

Balance of Exports and Imports

Exchange rates are used to reflect the PPPs.

Reference PPPs

Reference PPPs were used for basic headings for which no prices were collected. They are based on PPPs calculated for other basic headings. Ideally, the reference PPPs used in the ICP would be those calculated for similar goods and services. For example, the reference PPP for package holidays is a weighted average of the measured PPPs for transport services, hotels, and restaurants. In cases for which it proved impossible to use a reference PPP from similar goods or services, a "neutral"

PPP was used instead. For example, the reference PPP used for changes in inventories was a weighted average of the PPPs for consumer goods and the PPPs for equipment (investment) goods.

The table below shows some examples of the most commonly used reference PPPs. It was necessary to use them in cases where one or more countries in a region had been unable to price any products under a particular basic heading. Decisions were made on the most appropriate reference PPP to use. The reference PPPs used by each region are shown in their regional reports.

Table 3. Commonly used reference PPPs

Code	Description	Reference PPP
100000	Gross Domestic Product	
110000	Final Consumption Expenditure By Households	
110400	Housing, Water, Electricity, Gas And Other Fuels	
110440	Water supply and miscellaneous services relating to the dwelling	
110442	Miscellaneous services relating to the dwelling	
110442.1	Miscellaneous services relating to the dwelling	PPPs for actual and imputed rents
110600	Health	
110630	Hospital services	
110631	Hospital services	
110631.1	Hospital services	PPPs for production of health services by government (without net taxes on production and receipts from sales)
110900	Recreation And Culture	
110960	Package holidays	
110961	Package holidays	
110961.1	Package holidays	PPPs for transport services and restaurants and hotels
130000	Individual Consumption Expenditure By Government	
130220	Production Of Health Services	
130222	Intermediate consumption	
130222.1	Intermediate consumption	PPPS for household final consumption expenditure on the domestic market (excluding health and education basic headings and reference PPPs basic headings)
130223	Gross operating surplus	
130223.1	Gross operating surplus	PPPs for gross fixed capital formation
130224	Net taxes on production	
130224.1	Net taxes on production	PPPs for production of health services by government (without net taxes on production and receipts from sales)
130225	Receipts from sales	
130225.1	Receipts from sales	PPPs for production of health services by government (without net taxes on production and receipts from sales)
160000	Changes in inventories and acquisitions less disposals of valuables	
160100	Changes in inventories	
160110	Changes in inventories	
160111	Changes in inventories	
160111.1	Changes in inventories	PPPs for consumer goods and equipment goods

Data Validation

Data validation was a critical part of the 2005 ICP. Several stages were involved, with some of them going through an iterative process to clean up the data progressively. The process was time consuming and required close coordination and goodwill on the part of the regional coordinator and the national coordinators in each region. A key aim of the very methodical data validation process undertaken in all regions was to ensure that the prices and national accounts data were as comparable as possible between countries so that consistent results would be produced.

Data validation - Prices

The first stage of data validation was a price comparison within each country, shortly after the first quarter's price collections were completed. The aim was for each national coordinator to ensure that the products being priced were consistent from one part of the country to another so that countries in which problems were identified would be able to correct their procedures or better specify the products being priced for the remaining three quarters of price collection. The starting point was to compare the average prices collected for a single product in each area within a country (that is, each city or a rural area within a state or province). The process involved examining the spread of prices from these different areas on the assumption that variations in prices for the same product within a country should not be very large. Any extreme observations were examined closely to determine whether they had been correctly recorded, appropriate units of measurement used, or there was some inconsistency in the product being priced in different regions. In some cases quite significant differences in price levels between urban and rural areas occurred legitimately. If this appeared to be the case, price levels were compared between cities and between rural areas. The process highlighted some different interpretations of the product specifications, particularly for the more generically described products, and it also identified a number of cases of inappropriate quantities being priced. This process enabled appropriate corrections to be made to the initial data.

Countries supplied prices progressively to the regional coordinators after each quarter's collection, which provided the opportunity for a second check, but with the advantage of being able to compare between, as well as within, countries. The primary purpose of this review was to ensure that countries priced comparable items. The national coordinators worked closely with the regional coordinators in carrying out this work, which involved checking the average prices of corresponding products in all countries in the region. At this stage, a "Quaranta" validation table could be produced for each basic heading, allowing the regional coordinator to compare various characteristics of the prices between countries (for example, their relative levels, variation, and dispersion).

Another editing facility used for the first time in the 2005 ICP was the Dikhanov table, which extends the type of analysis provided by the Quaranta table. The main difference between the two is that the Quaranta table concentrates on key features of the data at the basic heading level while the Dikhanov table presents a broader overview across Basic Headings.

In the first round of comparing prices between countries, it was necessary to convert prices into a common currency using exchange rates, which may seem somewhat anomalous given that the prices were to be used to calculate PPPs. However, at the early stages of editing, using exchange rates proved the most satisfactory way to proceed because PPPs produced from the unedited prices with possible inconsistencies could disguise problems in editing the detailed prices data and so could have compromised the editing process in its initial stages. Once the price data had gone through this initial cleaning process, provisional PPPs were calculated and used to convert each country's prices into a common currency for the next round of editing. The feedback from the preliminary editing phase provided a means, early in the price collection cycle, of identifying products that were being incorrectly identified or priced in one or more countries. Editing using the Quaranta table was an iterative process, as data problems were identified and corrected, the relationships presented in the tables changed and so several cycles were normally required to complete the data cleaning.

The process was managed by the regional coordinators who sent queries to the national coordinators. Once the problems identified in the price data were resolved, a second set of Quaranta and Dikhanov tables was produced and the detailed checking process was repeated. It was about this time that most regions held a Data Validation Workshop. The purpose of these workshops was to have price experts from each country in the region review, as a group, the price data in a "semi-final" state. The aim was to finalize product prices by resolving data queries during the meeting. Inevitably, it was not possible to resolve every problem, and so a major outcome of a data validation workshop was a list of potential problems for which the price statisticians had either to find an explanation for apparent anomalies or to provide a set of corrected prices.

Once the price data were considered final, the national coordinators were asked to formally approve their own country's prices. Final sets of Quaranta and Dikhanov bables were circulated as part of this process. After all national coordinators had approved their prices the regional coordinator transmitted the full set of regional prices to the ICP Global Office.

Data validation - National Accounts

A crucial aspect of validation was to make international comparisons of the contributions of each basic heading to GDP. Any significant differences that could not be readily explained by the regional coordinator's team were referred back to the countries concerned for resolution. The patterns of expenditure between different groupings of countries were also compared. For example, the share of GDP spent on basic living essentials such as food should be relatively high in low-income countries, while the share of expenditure on luxury items such as motor vehicles should be higher in the high-income countries. Such checks are fairly subjective but they did identify a number of problems that had to be corrected before each region's comparisons were finalized.

Data issues and accuracy

The ICP is a very large statistical program that uses not only existing data sources (for example, national accounts data) but also data derived from special surveys, particularly to obtain prices not otherwise available. The results are published on a country basis, so each country has a stake in the accuracy of its results. Consequently, there is shared responsibility for editing the ICP inputs and outputs although the Global Office is ultimately responsible for the quality of the final overall results.

Users of ICP data are often unsure about their accuracy. The results of a multilateral comparison will differ from those from a bilateral one for any pair of countries. Generally, a bilateral comparison can be focused more closely on the set of products available in both countries rather than having to make the compromises required in setting up product lists for 20 or 30 countries involved in a regional comparison. A multilateral comparison brings more countries into the process so that the parity between any two countries is also affected by their comparisons with other countries.

Several steps were taken to improve data accuracy. These started with the careful selection and defining of products to be priced via the structured product definitions. The next significant steps involved data validation at the regional level where workshops were convened after each data collection, and where countries reviewed the prices submitted to determine whether all priced the same product the same way.

When comparing GDP volumes between countries, it is also necessary to take account of the accuracy of the underlying national accounts estimates. The estimates of GDP in national currencies can have large errors associated with them. For example, substantial revisions have been made to the level of GDP in many countries over the past decade as more and better statistical surveys have become available, particularly in the area of services, and as the non-observed economy has been covered more comprehensively. Any such shortcomings in the national accounts data feed through into the international comparisons for those countries, no matter whether PPPs or exchange rates are used.

As is the case with national accounts data in general, the data for some aggregates are more accurate than those for others. Sometimes it is the quality of the underlying data source that determines the level of accuracy, and it is sometimes statistical measurement issues (for example, in the methods of estimating the values of non-market services) that predominate. The same is true of the ICP data, particularly at the basic heading level. In many cases, the values underlying the basic headings have been obtained by allocating broader national accounts aggregates using data that may not be completely compatible with the accounts (see paragraph 31). In such cases, the data are useful as weights to obtain broader aggregates, but they will not necessarily provide an accurate comparison between countries at that level.

Methodology

Calculating PPPs

Calculating PPP-based expenditure volumes requires high quality price data and detailed expenditure weights derived from national accounts data for each of the countries for which PPPs are being calculated. After the data collection phase was completed, the prices were averaged into national average prices for each product, which were then used to derive PPPs for basic headings and higher aggregates. These PPPs were divided into the relevant national accounts aggregates, expressed in national currency, to convert them to a common currency at a uniform price level.

Before looking at the methods of the PPP calculations, it is necessary to consider some important requirements of PPPs. One is that the comparison between any pair of countries should not change no matter which country is chosen as the base country (that is, the country of reference). This requirement is referred to as the PPPs being "base-country invariant." A second requirement is that the PPPs in a multilateral comparison should be transitive. Transitivity is the property whereby

the direct PPP between any two countries (or regions) yields the same result as an indirect comparison via a third country (or region). In other words, a direct comparison between country A and country B gives the same results as an indirect comparison between countries A and B via a third country C. Transitivity is important because it means that comparisons made between any pair of countries are mutually consistent. (An analogy with a national consumer price index is that the CPI measured between, say, January and March, should be equal to the product of the indexes between January and February and between February and March).

In describing the computational methods used in the 2005 ICP, it is necessary to define the various stages of aggregation required. Three broad aggregation processes were involved to compute regional PPPs:

- Averaging the individual price observations to form an annual national average price for each product in each country;
- Averaging individual price ratios for products to obtain PPPs at the basic heading level between countries within a region;
- Averaging BH-PPPs to obtain aggregated PPPs for GDP and its major aggregates between countries within a region.

For some of the stages, different techniques were used across the regions. The key difference arose in compiling PPPs at the basic heading level. The methods used were: (a) the CPD (country-product-dummy) approach in Latin America, Africa, Asia, and Western Asia; and (b) the EKS* (Elteto, Koves, and Szulc) approach used by OECD/Eurostat and the Commonwealth of Independent States (CIS) in their PPP comparisons. For aggregation above the basic heading level, the EKS method was used in all regions other than in Africa, where the Iklé method was used. Details about these methods are in sections on Methodology, page 47.

Annual national average prices

In principle, the annual national average price for 2005 for an individual product would be its average unit value for 2005 (that is, the value of the product sold during 2005 divided by the quantity sold in 2005). In practice, such detailed data are rarely, if ever available, and that is why the ICP used an approach similar to that used by national statistical offices in producing price indices to deflate the national accounts to obtain volume estimates.

Prices were collected throughout 2005 for the products specified in each region of the ICP. Typically, the prices were obtained from a range of different outlets in a sample of cities and towns throughout each country at least once every quarter. Africa collected prices on a monthly basis, while Asia, Latin America, and Western Asia collected prices on a quarterly basis. National average prices were calculated using as weights the quantities sold in different quarters of the year and in different regions of the country. Data on quantities sold were not available in most countries; alternatively, regions used expenditures or population as weights. In cases where weights were not available altogether, the annual national average price was calculated as a simple arithmetic mean of the prices observed during the year, provided that there were no significant seasonal variations in the prices.

Once the national annual average prices were computed, aggregation methods, such as CPD and EKS, were applied to derive the PPPs at the basic heading level. An outline of the processes associated with these methods follow. Full details, including examples, are presented in Chapter 11 of the *ICP 2003-2006 Handbook*.

The country-product-dummy (CPD) method

The CPD method has been used in each previous round of the ICP to produce PPPs at the basic heading level. It is a multilateral approach in which the PPPs are estimated simultaneously for all products and for all countries within a region with simultaneous estimation of prices for all products. A very important property of the PPPs generated by this model is that they are transitive.

In the 2005 ICP the starting point of the CPD approach was a matrix of prices (in national currencies) for products priced within each country in the region concerned. There were gaps in the matrix because it was not possible (and neither necessary nor generally desirable) for all countries to price every product in the list. The CPD method is a regression technique. The underlying model is multiplicative (but additive in logarithmic terms) and it assumes that prices vary by product within countries at the same rate across all countries, and that prices vary between countries at the same rate across all products. In practice, one product in one country has to be chosen as a base and all other product/country combinations are measured in terms of their variation from this base. As is usual with a regression equation, an error term (also multiplicative in this

case) is required to handle differences in the observed country/product prices from those generated by the model.

The multiplicative CPD model can be shown using a general example. Let us assume there are *m* countries and their product list contains *n* products. Then, for each product in each country the observed price is p_{ij} for i = 1, 2, ……., m and j = 1, 2, ……., n. Note that the prices p_{ij} are expressed in each country's national currencies. The multiplicative CPD model is expressed as $p_{ij} = \alpha_i \beta_j \upsilon_j$ where v_{ij} is the error term.

Additive models have some useful properties and so, in practice, the CPD model is converted from a multiplicative one to an additive one by expressing the terms in the model as logarithms:

$$\log(p_{ij}) = \log(\alpha_i \beta_j \upsilon_j) = \log(\alpha_i) + \log(\beta_j) + \log(\upsilon_{ij}).$$

The observed price data are collected prices in national currencies; dummy variables (1; 0) represent each country (*i*) and product (*j*). . The regression coefficients are estimated by ordinary least-squares. The main output is PPPs expressed in terms of base country. The interdependent country factors (α_i) are the PPPs and the product factors (β_j) are average prices in the selected numeraire country In the model, if we assume the base country is country 1, then $\alpha_1 = 1$. In addition, it is necessary to select a product to act as a base product so, if we make $\beta_1 = 1$, then the model produces estimates of prices in terms of their variation from product 1 in country 1. Any other country can be made the base country simply by dividing each other country's PPP by that (new base) country's PPP.

Another useful output from the CPD model is a set of prices for each product for each country. These prices provide an estimate of what the prices would be if the assumptions of the model hold in practice. Differences between observed prices and the modeled prices provide an indication of possible problems with the prices provided by a country. Large differences indicate possible problems because the prices for the same product vary significantly between countries, or because the relativities between prices of products within a country vary greatly compared with those in other countries. The distribution of these differences provides the underlying basis for the Dikhanov table as an editing tool. The distributions can be graphed to provide a simple means of identifying potential problem prices, either for a product or within a country.

The EKS* method

The EKS* method was used in the OECD/Eurostat and CIS regions The EKS formula (named after its developers Elteto, Koves and Szulc) was first used to produce transitive PPPs from a set of non-transitive bilateral parities that were obtained as simple geometric averages from individual price ratios for a pair of countries. The EKS* method is an extension of the original EKS method; the asterisk (*) refers to the way in which the OECD/Eurostat and the CIS denote representative products in their PPP price collections. Each product deemed by a country to be representative of its expenditures is assigned an asterisk in a representativity field. Any products that do not have an asterisk in that field are treated as non-representative.

The EKS*[1] method differs from the CPD method in several important respects. First, it is based on a binary approach rather than a multilateral one. It does not automatically produce transitive estimates and hence an extra step is required to convert the binary comparisons into multilateral, transitive ones. And it requires information about whether or not each product priced in a particular country is representative or non-representative.

The starting point for EKS* is a comparison between each pair of countries in a region. The issue of representative/non-representative products comes into play at this stage. Three bilateral PPPs at the basic heading level are calculated for each pair of countries. A bilateral PPP is calculated by first taking all the representative products within one country and matching them with the products priced by a second country, whether or not the products in the second country were classified as representative. The ratio of prices in the first country to those in the second is calculated for each of the matched products and a geometric mean is taken of all the price ratios. The process is repeated by matching all representative products in the second country with as many products as possible from the first country, whether or not they are classified as representative

[1] Please note that the EKS method used at the basic heading level [elementary aggregation] is quite different from the EKS-Fisher used at the aggregate [above basic heading] level. In its current form the EKS index used in elementary aggregation is a variant of the Jevons formula.

in the first country. The price ratios are calculated for all matched products but this time, the ratios are those between the second country and the first country. Once again, the geometric mean is calculated for the price ratios of all the matched products. The final bilateral PPP for the basic heading is obtained as the geometric mean of the two geometric means obtained from these first two steps. At this point, the PPPs for each basic heading have been calculated as an unweighted (more correctly, equally-weighted) averages of the prices. No weights are available below the basic heading level because, by definition, the basic heading is the most detailed level for which national accounts expenditures are required for the ICP, although the distinction between representative and non-representative products can be seen as a form of weighting.

Products classified as non-representative by both countries are excluded from the bilateral price ratio calculations even if both countries price them. However, prices for these products are not discarded. They can be used in other bilateral comparisons if some other countries classified them as representative and in the EKS procedure described below to make the PPPs transitive, and so they can have some influence on the final PPP calculations.

PPPs can be produced in this way for all basic headings for all pairs of countries, but they are not transitive. As a result, a PPP obtained by directly comparing two countries differs from a PPP obtained by comparing the PPPs between each of those two countries and a third one. For a multilateral comparison, such as the ICP, transitivity is an important requirement.

The EKS formula is used to produce transitive figures from a set of bilateral PPPs. If there are *n* countries in a region, transitive PPPs are obtained as the *n*th root of direct bilateral PPP with weight 2 and (n-2) indirect PPPs each with weight 1. For example if there are three countries – A,B and C – the transitive PPP for countries A and B is:

$$PPP^{A/B}{}_{transitive} = \left[\left(\frac{P^A}{P^B} \right) x \left(\frac{1}{P^B / P^A} \right) x \left(\left(\frac{P^C}{P^B} \right) x \left(\frac{P^A}{P^C} \right) \right) \right]^{\frac{1}{3}}$$

The EKS formula produces transitive PPPs that are as close as possible to the non-transitive PPPs originally calculated in the binary comparisons. For the EKS formula to work, it is necessary for PPPs to be available for all countries for each basic heading. Occasionally, some PPPs for some countries were missing because of data collection problems or data consistency issues. In such cases, PPPs had to be imputed either by using the PPP of a similar basic heading or from a broader (but related) aggregate.

PPPs for GDP and its major aggregates within a region

Once the PPPs were available for each basic heading in each country in a region, the next step was to aggregate the basic heading PPPs to estimate PPPs GDP and its major aggregates. In past ICP rounds, the Geary-Khamis (GK) method had been used, although OECD/Eurostat has used the EKS method since 1990. In the 2005 ICP, Africa used a variation of the GK method, known as the Iklé method (see page 51), while all the other regions used an EKS approach. The reason was that Africa preferred using an additive method which was considered important in the analysis. When using the EKS method, unlike the GK and Iklé methods, the volumes computed by deflating values in national currency by the corresponding PPP are not additive across the national accounting aggregates within a country (similar to chain volumes in a time series) because the EKS computations are done for each aggregate separately. For example, the EKS volume of GDP does not equal the sum of EKS volumes of the major components of GDP.

The EKS method to obtain the broader level aggregates up to GDP is different from the EKS* method used in elementary aggregation. The EKS formula at this stage is computed on the basis of the matrix of bilateral Fisher indices. A more detailed description of the various aggregation methods, including some examples, is provided in Chapter 12 of the *ICP 2003-2006 Handbook*.

The EKS method used to obtain PPPs for the aggregates up to GDP is similar to the one described above for the EKS* at the basic heading level. However, at this level the asterisk is no longer relevant because the representativity variable applies only to individual products .Therefore, the process used is better described as "EKS" rather than "EKS*" The basic heading expenditure weights reflect the representativity of products groups.

The aggregation process was identical at each level of the national accounts. For example, all 155 basic headings had to be combined to obtain a PPP for GDP, while the 29 basic headings that comprise "food and non-alcoholic beverages" were combined using a similar process to calculate a PPP for "food and non-alcoholic beverages." Once PPPs were available for a particular aggregate, the volume was obtained by deflating the value (in national currency) by the appropriate PPP.

The process involved a series of comparisons between each pair of countries within a region. The first step in the process was to combine the basic heading parities between that country and the other country using the basic heading values of the first country (in national currency) as weights. A similar process was then followed, but using the second country's basic heading values (expressed in terms of that country's currency) as the weights. In both cases, the same group of basic headings was used – that is, those making up the expenditure category concerned, such as "food and non-alcoholic beverages." The PPP for that category between the two countries was calculated as the geometric mean of the two PPPs calculated using each country's weights separately (Fisher type of PPP). The EKS can be seen as a procedure that minimizes the differences between multilateral binary PPPs and bilateral binary PPPs. In mathematical notation it can be presented as:

$$F_{j,k} = \left(\prod_{l} F_{j,l} \,/\, F_{k,l}\right)^{1/m}$$

where $F_{j,k}$ - Fisher index for country j and country k

m - the number of all countries

The outcome of this process was a matrix of PPPs for each pair of countries, for each aggregate for which PPPs were required, up to the level of GDP. Each matrix consisted of non-transitive PPPs, which were then made transitive by applying the EKS method. This was done to obtain transitive PPPs for each aggregate that remain as close as possible to the non-transitive PPPs calculated in the initial step.

The transitive EKS-PPPs were used as deflators to convert aggregates expressed in national currency into volumes expressed in a common currency. It is important to note that because the volumes are not additive, it is not possible to obtain volumes for any aggregates for which PPPs have not been calculated directly through the above process.

The Geary-Khamis (GK) method and the Iklé method

The GK method was used at this stage of the process in previous rounds of the ICP. Conceptually, the GK method calculates volumes in a numeraire currency by valuing the quantities in each country using a common vector of average prices. The price vector has to be as typical as possible of the region as a whole and so a quantity weighted average of the prices for the entire region would be the ideal price vector. To obtain this price vector, prices in national currency have to be converted to a numeraire currency using the PPPs. So, average common prices and PPPs are interdependent variables in the GK linear system. Major advantages of using a single price vector are that the process is a straightforward multilateral one and no second stage of processing is required as the volumes are transitive; they are also additive, which is a useful attribute for some analyses.

The disadvantage of the GK method is that the average prices in the price vector are weighted using quantity weights from all countries in the region. The result is that the prices of larger countries and countries that have a relatively high level of expenditure will have a greater weight than those of the smaller countries. In other words, the prices observed in the smaller and lower-income countries tend to deviate more from the average prices of the region (that is, those in the price vector) than those of larger and of higher-income countries, which have a greater influence on the average prices calculated. One consequence of this weighting pattern is that the volumes estimated for lower-income countries tend to be higher than would have been the case if a weighting pattern were used that more closely matched the actual price structure in the lower-income countries. This bias is referred to as the "Gerschenkron effect."

In order to reduce the extent of the bias caused by the Gerschenkron effect, the approach used in the African region was a variation of the GK approach known as the Iklé method. Under this approach, the weights underlying the regional price vector are more evenly distributed among countries rather than being so heavily dependent on the higher-income and larger countries (the Iklé weights are based on country expenditure weights or country expenditure shares rather than on country quantity weights). It minimizes the Gerschenkron effect, although does not eliminate it completely. More importantly, it provides additivity, and result-wise approximates superlative indices such as the EKS or Törnqvist. (For a discussion on the Geary-Khamis, Ikle and other additive indices see http://siteresources.worldbank.org/ICPINT/Resources/icppapertotal.pdf).

Combining regional results with a global comparison: The Ring Comparison

The 2005 ICP was organized on a regional basis, partly for operational reasons and partly because countries within a geographic region are more likely to be similar to each other than to countries in other parts of the world. This latter point means that more robust results are likely within a region than would be the case if all countries in the world were combined in a single, worldwide comparison. For example, within a regional comparison, the product lists can be focused on a smaller range of products, enabling countries to price a large proportion of them. At the same time, the characteristics of the products can be more tightly specified, so quality differences are likely to be less significant.

Regional outputs must themselves be systematically matched with each other to produce global results. Two alternative methods were considered for linking regions in the ICP. One was to nominate "core" or "bridge" countries, which would have to participate in two regional comparisons, providing a link between that pair of regions. The other was to select group of countries, a few from each region, which would participate in a separate and parallel worldwide comparison organized specifically to provide a link between regions.

With one exception, the second alternative was adopted for the 2005 ICP. This has become known as the "ring comparison" because of the way in which it worked to determine the relativities between different global regions. The ring comparisons was a much-reduced global ICP comparison in which transitive PPP relationships, at the basic heading level and above, were established between regions rather than between individual countries in each region. In total, 18 ring countries conducted special price collections using a global product list to enable these relativities to be calculated.

The ICP's Technical Advisory Group recommended the ring comparison approach because it felt that it would provide the most robust links between regions. The ICP Global Office was responsible for leading the ring comparison work. It was developed in such a way that products could be matched between ring countries in any pair of regions, thereby maximizing the usefulness of the data collected.

Whichever linking technique was used (that is, bridge countries or the ring comparison), it would have been possible to use either a single country or several countries from each region to link the regions together. It was not necessary to include the same number of countries in each region, although obviously at least one country must be involved from each region. The bridge country approach would have been simpler to implement, and it is less data intensive and less resource demanding than the ring comparison. However, experience in previous rounds of the ICP showed that the results from using a single country within each region to link the regions were too dependent on the economic structure of that country. This was a particular concern with so many new techniques being used for the first time in the 2005 ICP. Any problems that arose with a bridge country's results would be reflected in the relationship between all countries in that region and hence those in all other regions. The ring comparison was developed as a means of providing more robust links possible between regions.

The single exception was the Commonwealth of Independent States (CIS), whose regional results were linked to the OECD/Eurostat region using the Russian Federation as a bridge country. The Russian Federation priced both the CIS and the OECD/Eurostat product lists to provide the link. The ring comparison was used to combine the results for the other five regions. The CIS countries' results were then linked to those for the other regions using the relationship between the Russian Federation and the OECD/Eurostat region. In effect, the CIS results were linked into the rest of the world in a two-stage process. The first was using the RF as a bridge country. The second was a link to the other four regions using the relationships established by the OECD/Eurostat countries that participated in the ring comparison. The main reason for using the Russian Federation as a bridge country was that this process had been used successfully in recent ECP rounds and the conceptual expertise and the practical experience required to enable this method to work were available in the region.

The following criteria were used to select ring countries:

a. Having developed markets and an open economy;
b. Having a wide range of goods and services that were likely to be found in ring countries in other regions;
c. Able to participate in the full GDP comparison;
d. Having acceptable price data and expenditure weights;
e. Able to derive annual, national average prices;
f. Willingness to act as a ring country..

Table 4. Countries included in the ring comparison

Africa	Asia	South America	Western Asia	OECD/ Eurostat
Cameroon	Hong Kong, China	Chile	Jordan	Estonia
Egypt	Malaysia	Brazil	Oman	Japan
Kenya	Philippines			Slovenia
Senegal	Sri Lanka			United Kingdom
South Africa				
Zambia				

Developing the product list for ring countries was complicated because it involved several different phases. The most time-consuming part was preparing the product list for most consumer products. The starting point was to examine the product lists for each of the regions and check off the products that each ring country had priced in the regional comparisons. Any products not priced by a ring country were discarded while the remaining products were retained as potential products to be included in the ring list. The next stage was to check the structure product descriptions (SPDs) (see paragraphs 35-38) for each of these products. The usefulness of the worldwide SPD approach was evident in this phase. Even though the final product specifications differed from one region to another, the regional SPDs were used to identify those products that were most likely to be comparable between regions. In consultation with the ring countries, the Global Office prepared the final product list for the household consumption products.

As was the case with the regional comparisons, products that were not covered by this process were housing, government consumption, health, and capital goods. Global specifications were prepared for these items and priced by all countries except those in the CIS, OECD, and Eurostat regions for their regional comparisons with the same data used for the global results. Ring countries in the OECD/Eurostat region priced the ICP global specifications for the ring comparison.

The number of products specified for the ring comparison and the number actually priced in each region are shown in the table below. A more detailed description of the ring methodology can be found in Chapter 14 of the *ICP 2003-2006 Handbook*.

Table 5. Number of products proced by bregion for the ring comparison

Category	Africa	Asia	CIS	OECD Eurostat	South America	Western Asia	Ring countries
Food and non-alcoholic beverages	356	223	198	422	147	353	281
Alcoholic beverages and tobacco	41	19	20	72	8	21	30
Clothing and footwear	128	78	104	319	136	162	132
Housing and utilities	21	17	22	64	18	12	35
Furnishing and household equipment	95	85	91	460	77	83	124
Health	144	112	75	244	51	69	162
Transportation	55	65	47	365	33	29	96
Communication	19	19	16	81	8	12	28
Recreation and Culture	49	70	79	336	54	59	96
Education	7	7	7	5	10	11	7
Restaurants and hotels	51	25	45	117	14	20	60
Misc. goods and services	34	56	36	136	22	31	44
Total consumption	**1,000**	**776**	**740**	**2,621**	**578**	**862**	**1,095**
General Government	**50**	**50**	**50**	**50**	**50**	**50**	**50**
Construction	**34**	**34**	**34**	**34**	**34**	**34**	**34**
Equipment	**108**	**108**	**108**	**108**	**108**	**108**	**108**

The steps to compute the global PPPs were:

- Basic heading ring prices for each ring country within a region were converted to a regional price using the region PPPs. This resulted in five sets of regional in each basic heading
- The CPD method was used to compute five between-region PPPs for each basic heading.
- The between-region PPPs times the regional PPPs resulted in global basic heading PPPs for every country referenced to the US dollar. Because a single scalar applied to all countries within a region, all basic heading results of countries in each region remain the same as they were in the regional calculations.

The next step was to average the global basic heading PPPs to GDP and major aggregates. The volumes for each basic heading were summed up across all countries within the region to obtain regional total volumes in the numeraire currency. The between region basic heading PPPs were aggregated to higher levels using regional relative volumes as weights by the EKS method.

The outcomes were PPPs (and volumes calculated from them) at the basic heading and aggregate levels that preserved fixity within each region (see below) and could be compared between any pair of countries in the world.

Fixity

The relative ranking of countries by GDP or GDP per capita or any other aggregate depends on the composition of the group of countries being compared, because the inclusion of different countries in the comparison affects the underlying weighting patterns. "Fixity" is the term given to the convention whereby the price and volume relativities between a group of countries that were established in a comparison covering just that group of countries remain unchanged, or fixed, when the countries of the group are included in comparisons with a wider group of countries.

Fixity is an issue in the 2005 ICP because of the process of regionalization that was adopted for operational purposes. Regionalizing the ICP meant that different product lists were used in each region and the data editing processes were carried out independently in each region. Each of the regional coordinating agencies became responsible for producing the results for their respective regions, and each agreed to publish their own results. The rate of progress in different regions varied because of the different types of problems encountered along the way. Applying fixity to the PPPs and expenditure volume estimates for each region has enabled each coordinating agency to publish the results for its region as they became available, knowing that the relative positions of countries in the region would not change as they were combined with the results for other regions around the world. Additionally the fixity of the PPP results is an obligatory requirement for the EU, where PPP based indicators are used to set and administer policies, which should depend exclusively on the data of EU countries.

Data access and confidentiality

At the request of the ICP Executive Board, the World Bank has developed a policy governing access to detailed ICP data (that is, at the level of basic headings and below). The policy respects the access rules of all participating countries, while at the same time facilitating public access as far as possible. Aggregate results published in paper publications (such as this one) will also be available electronically; more detailed results will be available only electronically. Access to certain data, such as basic heading data and below, will be restricted to bona fide researchers. The full details of the access policy are available on the World Bank website (www.worldbank.org/data/icp).

Estimation of PPPs for Non Benchmark Countries

This section provides estimates of PPP-based GDP per capita for countries not included in the 2005 benchmark surveys. ICP 2005 included 146 economies; at least another 65 countries or territories did not participate for a variety of reasons including lack of resources or no national interest. Although these non benchmark countries account for only a small share of the global economy and population, it is important to include as many of them as possible in a comprehensive database.

Each year the World Bank includes estimates of PPPs for non benchmark countries in its *World Developmental Indicators* publication and database, relying on an estimating equation using information from the benchmark countries. The estimating equation used to impute values for missing countries from the previous round (1993-96) of the ICP was

$$Ln(GDP/cap) = 0.3402 + 0.5851*Ln(GNI/cap) + 0.2941*Ln(SGER)$$

where GDP/cap is the ICP benchmark estimate of GDP per capita (PPP); GNI/cap is GNI per capita in US$ estimated by the World Bank Atlas method; and SGER is secondary school gross enrollment rate. All three variables are indexed to the corresponding values for the United States (USA=100). This model was first estimated using the benchmark results from earlier rounds and re-estimated when the 1993-96 results became available.

Using the preliminary results from ICP 2005, the above model was re-estimated to be

$$Ln(GDP/cap) = 0.6980*Ln(GNI/cap) + 0.2330*Ln(SGER) + 0.3437$$

(0.0187) (0.0482) (0.1765)

Adj. R-squared = 0.9673 Root MSE = 0.2409 N = 137

The fit of the model might be improved by including additional independent variables correlated with factor productivity and wage differentials due to imperfect labor mobility between countries and between trading sectors and non-trading sectors. However, full exploration of various model specifications is beyond the scope of this preliminary exercise, which is intended to replicate the existing method so that other methods can be compared to it.

The results of the non benchmark estimates are shown in table 6 below. No estimates were made for economies for which data on secondary school gross enrollment rates or Atlas GNI per capita were missing in 2005. Input data for the estimating equation and the reference value of GDP per capita shown in the table were taken from the World Development Indicators database (September 2007).

Table 6. Estimates of 2005 PPP GDP per capita for non benchmark countries

Economy	Estimated GDP/capita (PPP)	Reference GDP/capita (US$)
Afghanistan [1]	753	284
Algeria	5,985	3,098
Antigua and Barbuda	14,705	10,579
Bahamas, The [1]	22,989	18,421
Barbados [1]	17,303	11,465
Belize	7,259	3,786
Costa Rica	8,619	4,616
Dominica	8,082	3,938
Dominican Republic	5,128	3,073
El Salvador	5,212	2,467
Eritrea	689	220
Grenada	8,353	4,451
Guatemala	4,902	2,517
Guyana	3,186	1,057
Haiti	1,242	518
Honduras	3,048	1,151
Jamaica	7,104	3,672
Kiribati	3,358	670
Libya	10,727	7,118
Marshall Islands	6,184	2,282
Micronesia, Fed. Sts.	5,499	2,145
Myanmar [1]	784	220
Nicaragua	2,725	954
Palau	12,917	7,197
Panama	8,355	4,791
Papua New Guinea	1,767	840
Samoa	4,824	2,184
San Marino [1]	48,184	49,981
Seychelles	13,887	8,551
Solomon Islands	1,675	624
Somalia [1]	199	62
St. Kitts and Nevis	13,353	9,438
St. Lucia	8,921	5,007
St. Vincent and the Grenadines	7,008	3,612
Suriname	5,770	2,989
Timor-Leste	2,181	359
Tonga	4,963	2,097
Trinidad and Tobago	15,644	12,417
Turkmenistan [1]	4,211	1,676
United Arab Emirates [1]	28,930	28,612
Uzbekistan	1,970	558
Vanuatu	3,543	1,741
West Bank and Gaza	3,585	1,107

[1] GDP per capita (US$) is used to impute GDP per capita (PPP) as 2005 GNI per capita (Atlas method) is not available.
Source: GDP per capita (US$) and GNI per capita (Atlas method) are from World Development Indicators database(September 2007).

ANNEX A

HISTORY OF THE ICP

Economic statisticians have known for several decades that using exchange rates to compare the levels of economic activity between countries can lead to quite misleading results. Several projects were initiated in the 1950s and 1960s to examine the alternatives to exchange rates for making such comparisons. In the early 1950s, the Organization for European Economic Cooperation (OEEC) produced purchasing power parities (PPPs) for France, Federal Republic of Germany, Italy, the United Kingdom, and the United States of America. In the early 1960s, PPP comparisons were carried out in Latin America. Around the mid 1960s, the Conference of European Statisticians set up a project to make PPP-based comparisons between some market economies and some centrally planned economies. Comparisons were also made in the second half of the 1960s between several Eastern European countries by the Council for Mutual Economic Assistance (COMECON). Economic statisticians from Hungary and Poland were heavily involved in this work. A key initiative was to extend the concept of consumption expenditure for the ICP to include individual consumption expenditure by government along with private final consumption expenditure to form an aggregate of total individual consumption named "Consumption expenditure of the population" (CEP). The aim of measuring CEP was to minimize the effect on the volume comparisons of differences in institutional arrangements, particularly regarding the extent to which government and private sectors provided health and education services in different countries. In this respect, the ICP was more than two decades ahead of the *System of National Accounts, 1993* (SNA93), which set out the concept of "Actual final consumption expenditure" (defined almost identically to CEP) as an official national accounts measure.

In 1965, the United Nations Statistical Commission (UNSC) discussed in some detail the problems inherent in exchange rate comparisons and agreed that the United Nations Statistical Office (UNSO) should develop a more suitable methodology for making international comparisons of activity levels. In 1968, the UNSC considered a report that outlined a project to be run from 1968 to 1971 aimed at developing PPP-based comparisons for a small group of countries. It agreed that a project should go ahead to develop, test and document techniques that would lead to more robust international comparisons. The UNSO had only limited resources available and so the UNSC requested that other international organizations and UN member countries assist in this project. At this stage, the proposal endorsed by the UNSC was to cover GDP measured from both the expenditure and production (or output) sides of the national accounts. The work in Phase I concentrated on the expenditure side of the accounts because it was less difficult to implement in practice given that a single set of expenditures was involved rather than both outputs and inputs, which gave rise to the added complexity of double deflation.

Later in 1968, the UN International Comparison Project (ICP) was developed as a joint undertaking between the UNSO and the University of Pennsylvania, which established a special unit funded by a grant from the Ford Foundation. The World Bank became involved, providing financial assistance directly and also through a grant from the Scandinavian countries, which was channeled through the World Bank. The United States Agency for International Development and the United States Social Science Research Council assisted with monetary contributions. The United Kingdom offered in-kind statistical support for participating countries. The director of the UNSO was responsible for supervising the project. An Advisory Board, which had been set up to provide technical advice, considered detailed proposals for the project at a meeting held in October 1969.

Phase I of the ICP was run in two stages. The first was a pilot project based on data collected for 1967 for six countries (Hungary, India, Japan, Kenya, the UK, and the USA). The second stage was benchmarked to 1970. Another four countries (Colombia, France, Federal Republic of Germany, and Italy), which had not been able to report the necessary data for 1967, were included in this stage. The output consisted of a number of different sets of estimates, including multilateral comparisons between all 10 countries for gross domestic product (GDP) and a range of its components for 1970. The results of Phase I were released in *A System of International Comparisons of Gross Product and Purchasing Power (Kravis, Kenessey, Heston and Summers, 1975).* Details presented in this publication include the overall results of the multilateral comparison for 1970, a variety of bilateral comparisons for both 1967 and 1970, and the outcomes from various experiments on important issues-- such as rents, motor vehicle prices and the consistency of some different quantity comparisons.

Phase II involved a further six countries, initially for a broader comparison for 1970, but with the main aim being to update the PPPs and associated statistics up to 1973. The six extra countries included in Phase II of the ICP were Belgium, Iran, Republic of Korea, Malaysia, the Netherlands, and the Philippines. Detailed results for the 16 countries were published in 1978 in *International Comparisons of Real Product and Purchasing Power (Kravis, Heston and Summers, 1978).*

Thirty-four countries participated in Phase III of the ICP, which was benchmarked to 1975. In the earlier phases, the ICP team used the detailed characteristics for products in the US consumer price index as the starting point for developing the

ICP product lists. They were modified in consultation with a number of countries, including India and the COMECON group, to make the ICP product specifications more generally applicable, for example, by removing characteristics such as brand name that were specific to the USA. The greater diversity of countries in Phase III meant that the range of products to be priced had to be expanded further so that all participating countries could price a sufficient number of products that were representative of their expenditures. At this time, the project leaders considered the pros and cons of continuing with a single global comparison or moving to regional comparisons that would be linked to produce worldwide results. The tradeoff involved was that regionalizing the project should lead to improved comparisons between countries within a region but at the expense of the comparisons between countries in different regions because of the difficulties inherent in linking results between regions. In the event, Phase III went ahead as a single global comparison although some regional results were presented, having been calculated for the relevant countries from the globally based results. Details were released in 1982 in World Product and Income: International Comparisons of Real Gross Product (Kravis, Heston, and Summers, 1982).

There was a large increase-- from 30 to 60-- in the number of countries participating in Phase IV of the ICP, benchmarked to 1980. Some major changes also occurred in this round. The University of Pennsylvania ended its involvement in the benchmark comparisons and handed over responsibility to the UNSO. Another significant change was the regionalization of the ICP for the first time. The large number of countries involved from all around the world was partly behind the regionalization. Another important factor was the decision by the OECD to set up a PPP program for its member countries in conjunction with the PPP program being run by Eurostat for countries in what is now the European Union. Apart from the OECD/Eurostat "region," the other regions involved in Phase IV were Africa, Asia and the Pacific, and Latin America. Regions were linked using a "core country" (sometimes called a "bridge country") approach in which selected countries priced some product specifications from another region to provide a relationship, or link, between their region and the other region.

Phase V of the ICP saw only a small increase in the number of countries participating (from 60 to 64), with a number of new countries replacing some that had been in Phase IV but which had dropped out of Phase V. Once again, a regional approach was adopted. The regions included were Africa, Asia, the Caribbean, and OECD/Eurostat. In addition, three Eastern European countries were added to Western Europe using Austria as a link country. The core country approach was used again to link regions but some of the links were problematic due to difficulties encountered by several core countries in collecting a sufficiently broad range of prices for products from the "other" region.

The next round (Phase VI) of the ICP, benchmarked to 1993, was an ambitious project aimed at producing PPP-based comparisons for 118 countries around the world. However, from the outset it was beset by difficulties. Lack of funding was the major problem, although the lack of overall project coordination also led to some major deficiencies in the final outcome. While the 1993 ICP round produced some reasonable results for Asia and Latin America, it proved virtually impossible to link them with each other or with the results from the OECD/Eurostat PPP Program, which was also benchmarked to 1993. A major review of the ICP was commissioned as a result of the failure of this round. The consultant's report[1] was presented to the 1999 meeting of the UNSC. It led to the introduction of major changes in the 2005 ICP regarding funding, governance and linking of regional results.

Relationship of the ICP with the OECD/Eurostat PPP Program

Eurostat started a PPP program for a handful of European Economic Community (EEC) countries in the late 1960s and, as noted above, three of these countries (France, the Federal Republic of Germany, and Italy) also provided data for Phase I of the ICP. In the early 1980s, the OECD joined with Eurostat in running an expanded PPP program. The aim was to cover all the OECD countries (at that time, all the countries in what is now the European Union were also OECD member countries). In effect, the expansion was aimed at incorporating Australia, Canada, Japan, New Zealand, and the USA into the PPP program, an outcome that was achieved for the 1985 round. At that time, the OECD/Eurostat PPP program was being run every five years. However, after the 1990 round, a decision was made to shorten the gap between rounds to three years. Twenty-four countries participated directly in the 1993 OECD/Eurostat round. A number of Eastern European countries, the Russian Federation, and the member countries of the Commonwealth of Independent States also participated in a special round whose results were linked into the OECD/Eurostat results using Austria as a link country.

The OECD/Eurostat PPP Program continued to include a number of non-OECD and non-EU member countries for each of the 1996, 1999, and 2002 rounds. The numbers of countries participating in each of those rounds were 32, 43, and 42 respectively.

[1] 1999 UN Statistical Commission paper E/CN.3/1999/8 *Evaluation of the International Comparison Programme* (available on the World Bank website http://siteresources.worldbank.org/ICPINT/Resources/8-e.pdf).

ANNEX B
GOVERNANCE OF ICP 2005

A review of the 1993 ICP concluded that one of its major shortcomings was the lack of formal governance. In particular, there was insufficient coordination between regions, which meant the processes were not standardized and the results inconsistent. At the outset of the 2005 ICP, the World Bank implemented a governance structure to ensure that consistent results would be produced in each region by coordinating the work globally, establishing a single set of standards, providing centralized technical and practical guidance, and ruling on issues that had the potential to be interpreted in different ways in the regions. Several tiers of governance were necessary, ranging from worldwide coordinating groups to regional bodies. Here, the basic level of governance being the national coordinators in each country to ensure that the relevant agencies in their country approached the ICP with a consistent aim as to what was required and how to achieve it.

The **Executive Board** was established to provide strategic leadership and make decisions about priorities, standards, the overall work program and the budget. It also had a key role in providing oversight of the activities of the ICP Global Office. The Board members are eminent economists/statisticians and experienced statistical managers. Many are heads of National Statistical Offices or of the Statistics Departments in international organizations while others are managers of economic statistics divisions, having skills and experience in national accounts or price statistics.

The **Global Office** was established within the World Bank in Washington DC in 2002 to carry out the day-to-day work required to implement the ICP worldwide. The **Global Manager** was responsible for its operations, supported by a team of professional statisticians and administrative staff. The Global Office reported regularly to the Executive Board, with annual work programs and budgets requiring the approval of the Board. Important activities carried out by the Global Office and its external consultants were the development of ICP standards, the preparation of the framework to determine the goods and services to be priced, preparing the *ICP 2003-2006 Handbook* and the *ICP Operational Manual*, producing the software for countries to edit and input prices data (the "ToolPack" system), analyzing data collected for the ICP, and aggregating the prices and national accounts data within and between regions. Since its inception, the Global Office has been subject to the World Bank's administrative and fiduciary rules and regulations. On day-to-day activities, the Global Office reported to the director of the World Bank's Development Data Group. It also regularly prepared reports for the Executive Board and the United Nations Statistical Commission.

The **Technical Advisory Group (TAG)** was responsible for providing advice on technical issues related to the ICP. The TAG's responsibilities were to resolve conceptual and methodological matters. The TAG members were appointed by the Executive Board. They were all internationally known experts in the fields of prices or national accounts. In order to overcome shortcomings of previous rounds, several major methodological improvements were implemented with the TAG providing technical advice.

The **Regional Offices** coordinated ICP work in each of the five geographic regions (Africa, Asia/Pacific, Commonwealth of Independent States (CIS), Latin America, and Western Asia) through the African Development Bank (AfDB), the Asian Development Bank (ADB), the Statistical Office of the Commonwealth of Independent States (CISSTAT) in partnership with the State Statistical Service of the Russian Federation (ROSSTAT) and the Bureau of Economic Analysis (Moscow), Statistics Canada in cooperation with the Economic Commission for Latin American and the Caribbean (ECLAC), and the Economic and Social Commission for Western Asia (ESCWA). In addition, the countries included in the regular PPP program run by OECD and Eurostat were treated as though they were in an autonomous region for the purposes of incorporating their estimates into the worldwide estimates.

In most countries, different agencies were involved in providing the national accounts and prices data for the ICP. In such cases, one agency was nominated as the **National Coordinating Office** and within that agency a **National ICP Coordinator** was appointed. The main roles of the national coordinator were to ensure that the country's ICP data (national accounts, prices and wages) were correctly estimated, that statistical and field staff (involved in collecting prices) were trained in the concepts underlying the ICP and the practical implications for collecting prices, that data were edited and entered into the ICP database, and that editing queries from the regional coordinator were handled promptly. The national coordinators also attended the Data Validation Workshops that were held in each of the regions to check the consistency of the data supplied within each region.

There was close liaison between the World Bank, OECD, and Eurostat during both the planning and operational phases of the 2005 ICP. The aim was to incorporate the OECD/Eurostat results directly into the ICP by treating the OECD/Eurostat program as a sixth "region" in the world for ICP purposes. The techniques used by OECD and Eurostat differ in some respects from those used in the other regions because the OECD/Eurostat program has developed particular methods over the years that could not always be replicated in other regions. However, the close relationships between the coordinating organizations have meant that the results could be satisfactorily integrated with each other despite the different procedures used.

ANNEX C

THE ICP CLASSIFICATION OF EXPENDITURE ON GDP

Code	Description
100000	**Gross Domestic Product**
110000	**Final consumption expenditure by households**
110100	**Food and non-alcoholic beverages**
110110	**Food**
110111	***Bread and cereals***
110111.1	Rice
110111.2	Other cereals, flour and other cereal products
110111.3	Bread
110111.4	Other bakery products
110111.5	Pasta products
110112	***Meat***
110112.1	Beef and Veal
110112.2	Pork
110112.3	Lamb, mutton and goat
110112.4	Poultry
110112.5	Other meats and meat preparations
110113	***Fish***
110113.1	Fresh, chilled or frozen fish and seafood
110113.2	Preserved or processed fish and seafood
110114	***Milk, cheese and eggs***
110114.1	Fresh milk
110114.2	Preserved milk and other milk products
110114.3	Cheese
110114.4	Eggs and egg-based products
110115	***Oils and fats***
110115.1	Butter and margarine
110115.3	Other edible oils and fats
110116	***Fruit***
110116.1	Fresh or chilled fruit
110116.2	Frozen, preserved or processed fruit and fruit-based products
110117	***Vegetables***
110117.1	Fresh or chilled vegetables other than potatoes
110117.2	Fresh or chilled potatoes
110117.3	Frozen, preserved or processed vegetables and vegetable-based products
110118	***Sugar, jam, honey, chocolate and confectionery***
110118.1	Sugar
110118.2	Jams, marmalades and honey
110118.3	Confectionery, chocolate and ice cream
110119	***Food products n.e.c.***
110119.1	Food products n.e.c.
110120	**Non-alcoholic beverages**
110121	***Coffee, tea and cocoa***
110121.1	Coffee, tea and cocoa
110122	***Mineral waters, soft drinks, fruit and vegetable juices***
110122.1	Mineral waters, soft drinks, fruit and vegetable juices

Code	Description
110200	**Alcoholic Beverages, Tobacco and Narcotics**
110210	**Alcoholic beverages**
110211	***Spirits***
110211.1	Spirits
110212	***Wine***
110212.1	Wine
110213	***Beer***
110213.1	Beer
110220	**Tobacco**
110221	***Tobacco***
110221.1	Tobacco
110230	**Narcotics**
110231	***Narcotics***
110231.1	Narcotics
110300	**Clothing and Footwear**
110310	**Clothing**
110311	***Clothing materials, other articles of clothing and clothing accessories***
110311.1	Clothing materials, other articles of clothing and clothing accessories
110312	***Garments***
110312.1	Garments
110314	***Cleaning, repair and hire of clothing***
110314.1	Cleaning, repair and hire of clothing
110320	**Footwear**
110321	***Shoes and other footwear***
110321.1	Shoes and other footwear
110322	***Repair and hire of footwear***
110322.1	Repair and hire of footwear
110400	**Housing, Water, Electricity, Gas and Other Fuels**
110410	**Actual and imputed rentals for housing**
110411	***Actual and imputed rentals for housing***
110411.1	Actual and imputed rentals for housing
110430	**Maintenance and repair of the dwelling**
110431	***Maintenance and repair of the dwelling***
110431.1	Maintenance and repair of the dwelling
110440	**Water supply and miscellaneous services relating to the dwelling**
110441	***Water supply***
110441.1	Water supply
110442	***Miscellaneous services relating to the dwelling***
110442.1	Miscellaneous services relating to the dwelling
110450	**Electricity, gas and other fuels**
110451	***Electricity***
110451.1	Electricity
110452	***Gas***
110452.1	Gas
110453	***Other fuels***
110453.1	Other fuels

Code	Description
110500	**Furnishings, Household Equipment and routine maintenance of the house**
110510	**Furniture and furnishings, carpets and other floor coverings**
110511	*Furniture and furnishings*
110511.1	Furniture and furnishings
110512	*Carpets and other floor coverings*
110512.1	Carpets and other floor coverings
110513	*Repair of furniture, furnishings and floor coverings*
110513.1	Repair of furniture, furnishings and floor coverings
110520	**Household textiles**
110521	*Household textiles*
110521.1	Household textiles
110530	**Household appliances**
110531	*Major household appliances whether electric or not*
110531.1	Major household appliances whether electric or not
110532	*Small electric household appliances*
110532.1	Small electric household appliances
110533	*Repair of household appliances*
110533.1	Repair of household appliances
110540	**Glassware, tableware and household utensils**
110541	*Glassware, tableware and household utensils*
110541.1	Glassware, tableware and household utensils
110550	**Tools and equipment for house and garden**
110551	*Major tools and equipment*
110551.1	Major tools and equipment
110552	*Small tools and miscellaneous accessories*
110552.1	Small tools and miscellaneous accessories
110560	**Goods and services for routine household maintenance**
110561	*Non-durable household goods*
110561.1	Non-durable household goods
110562	*Domestic services and household services*
110562.1	Domestic services
110562.2	Household services
110600	**Health**
110610	**Medical products, appliances and equipment**
110611	*Pharmaceutical products*
110611.1	Pharmaceutical products
110612	*Other medical products*
110612.1	Other medical products
110613	*Therapeutical appliances and equipment*
110613.1	Therapeutical appliances and equipment
110620	**Out-patient services**
110621	*Medical Services*
110621.1	Medical Services
110622	*Dental services*
110622.1	Services of dentists
110623	*Paramedical services*
110623.1	Paramedical services

Code	Description
110630	**Hospital services**
110631	*Hospital services*
110631.1	Hospital services
110700	**TRANSPORT**
110710	**Purchase of vehicles**
110711	*Motor cars*
110711.1	Motor cars
110712	*Motor cycles*
110712.1	Motor cycles
110713	*Bicycles*
110713.1	Bicycles
110714	*Animal drawn vehicles*
110714.1	Animal drawn vehicles
110720	**Operation of personal transport equipment**
110722	*Fuels and lubricants for personal transport equipment*
110722.1	Fuels and lubricants for personal transport equipment
110723	*Maintenance and repair of personal transport equipment*
110723.1	Maintenance and repair of personal transport equipment
110724	*Other services in respect of personal transport equipment*
110724.1	Other services in respect of personal transport equipment
110730	**Transport services**
110731	*Passenger transport by railway*
110731.1	Passenger transport by railway
110732	*Passenger transport by road*
110732.1	Passenger transport by road
110733	*Passenger transport by air*
110733.1	Passenger transport by air
110734	*Passenger transport by sea and inland waterway*
110734.1	Passenger transport by sea and inland waterway
110735	*Combined passenger transport*
110735.1	Combined passenger transport
110736	*Other purchased transport services*
110736.1	Other purchased transport services
110800	**Communication**
110810	**Postal services**
110811	*Postal services*
110811.1	Postal services
110820	**Telephone and telefax equipment**
110821	*Telephone and telefax equipment*
110821.1	Telephone and telefax equipment
110830	**Telephone and telefax services**
110831	*Telephone and telefax services*
110831.1	Telephone and telefax services
110900	**Recreation and Culture**
110910	**Audio-visual, photographic and information processing equipment**
110911	*Audio-visual, photographic and information processing equipment*
110911.1	Audio-visual, photographic and information processing equipment
110914	*Recording media*
110914.1	Recording media

Code	Description
110915	*Repair of audio-visual, photographic and information processing equipment*
110915.1	Repair of audio-visual, photographic and information processing equipment
110920	**Other major durables for recreation and culture**
110921	*Major durables for outdoor and indoor recreation*
110921.1	Major durables for outdoor and indoor recreation
110923	*Maintenance and repair of other major durables for recreation and culture*
110923.1	Maintenance and repair of other major durables for recreation and culture
110930	**Other recreational items and equipment, gardens and pets**
110931	*Other recreational items and equipment*
110931.1	Other recreational items and equipment
110933	*Gardens and pets*
110933.1	Gardens and pets
110935	*Veterinary and other services for pets*
110935.1	Veterinary and other services for pets
110940	**Recreational and cultural services**
110941	*Recreational and sporting services*
110941.1	Recreational and sporting services
110942	*Cultural services*
110942.1	Cultural services
110943	*Games of chance*
110943.1	Games of chance
110950	**Newspapers, books and stationery**
110951	*Newspapers, books and stationery*
110951.1	Newspapers, books and stationery
110960	**Package holidays**
110961	*Package holidays*
110961.1	Package holidays
111000	**Education**
111010	**Education**
111011	*Education*
111011.1	Education
111100	**Restaurants and Hotels**
111110	**Catering services**
111111	*Catering services*
111111.1	Catering services
111120	**Accommodation services**
111121	*Accommodation services*
111121.1	Accommodation services
111200	**Miscellaneous Goods and Services**
111210	**Personal care**
111211	*Hairdressing salons and personal grooming establishments*
111211.1	Hairdressing salons and personal grooming establishments
111212	*Appliances, articles and products for personal care*
111212.1	Appliances, articles and products for personal care
111220	**Prostitution**
111221	*Prostitution*
111221.1	Prostitution

Code	Description
111230	**Personal effects n.e.c.**
111231	*Jewelry, clocks and watches*
111231.1	Jewelry, clocks and watches
111232	*Other personal effects*
111232.1	Other personal effects
111240	**Social protection**
111241	*Social protection*
111241.1	Social protection
111250	**Insurance**
111251	*Insurance*
111251.1	Insurance
111260	**Financial services n.e.c.**
111261	*Financial intermediation services indirectly measured (FISIM)*
111261.1	Financial intermediation services indirectly measured (FISIM)
111262	*Other financial services n.e.c*
111262.1	Other financial services n.e.c.
111270	**Other services n.e.c.**
111271	*Other services n.e.c.*
111271.1	Other services n.e.c.
111300	**Balance of Expenditures of Residents Abroad and Expenditures of Non-residents on the economic territory**
111310	**Balance of Expenditures of Residents Abroad and Expenditures of Non-residents on the economic territory**
111311	*Balance of Expenditures of Residents Abroad and Expenditures of Non-residents on the economic territory*
111311.1	Final consumption expenditure of resident households in the rest of the world
111311.2	Final consumption expenditure of non-resident households on the economic territory
120000	**Individual Consumption Expenditure by NPISHs**
120100	**Individual Consumption Expenditure by NPISHs**
120110	**Individual consumption expenditure by NPISHs**
120111	*Individual consumption expenditure by NPISHs*
120111.1	Individual consumption expenditure by NPISHs
130000	**Individual Consumption Expenditure by Government**
130100	**Housing**
130110	**Housing**
130111	*Housing*
130111.1	Housing
130200	**Health**
130210	**Health benefits and reimbursements**
130211	*Medical products, appliances and equipment*
130211.1	Pharmaceutical products
130211.2	Other medical products
130211.3	Therapeutic appliances and equipment
130212	*Health services*
130212.1	Out-patient medical services
130212.2	Out-patient dental services
130212.3	Out-patient paramedical services
130212.4	Hospital services

Code	Description
130220	**Production of Health Services**
130221	*Compensation of employees*
130221.1	Compensation of employees (Physicians, nurses and other medical and non medical staff)
130222	*Intermediate consumption*
130222.1	Intermediate consumption
130223	*Gross operating surplus*
130223.1	Gross operating surplus
130224	*Net taxes on production*
130224.1	Net taxes on production
130225	*Receipts from sales*
130225.1	Receipts from sales
130300	**Recreation and Culture**
130310	**Recreation and culture**
130311	*Recreation and culture*
130311.1	Recreation and culture
130400	**Education**
130410	**Education benefits and reimbursements**
130411	*Education benefits and reimbursements*
130411.1	Education benefits and reimbursements
130420	**Production of education services**
130421	*Compensation of employees*
130421.1	Compensation of employees (Primary, secondary, and post-secondary education)
130422	*Intermediate consumption*
130422.1	Intermediate consumption
130423	*Gross operating surplus*
130423.1	Gross operating surplus
130424	*Net taxes on production*
130424.1	Net taxes on production
130425	*Receipts from sales*
130425.1	Receipt from sales
130500	**Social Protection**
130510	**Social protection**
130511	*Social protection*
130511.1	Social protection
140000	**Collective Consumption Expenditure by Government**
140100	**Collective Services**
140110	**Collective services**
140111	*Compensation of employees*
140111.1	Compensation of employees (Defense and non defense collective services)
140112	*Intermediate consumption*
140112.1	Intermediate consumption
140113	*Gross operating surplus*
140113.1	Gross operating surplus
140114	*Net taxes on production*
140114.1	Net taxes on production
140115	*Receipts from sales*
140115.1	Receipts from sales
150000	**Expenditure on Gross Fixed Capital Formation**
150100	**Machinery and Equipment**
150110	**Metal products and equipment**
150111	*Fabricated metal products, except machinery and equipment [CPA 28.11 to 28.75]*
150111.1	Fabricated metal products, except machinery and equipment

Code	Description
150112	*General purpose machinery [CPA 29.11 to 29.24]*
150112.1	General purpose machinery
150113	*Special purpose machinery [CPA 29.31 to 29.72]*
150113.1	Special purpose machinery
150114	*Electrical and optical equipment [CPA 30.01 to 33.50]*
150114.1	Electrical and optical equipment
150115	*Other manufactured goods n.e.c. [CPA 36.11 to 36.63]*
150115.1	Other manufactured goods n.e.c.
150120	**Transport equipment**
150121	*Road transport equipment [CPA 34.10 to 34.30 and 35.41 to 35.50]*
150121.1	Motor vehicles, trailers and semi-trailers
150121.2	Other road transport
150122	*Other transport equipment [CPA 35.11 to 35.30]*
150122.1	Other transport equipment
150200	**Construction**
150210	**Residential buildings**
150211	*Residential buildings*
150211.1	Residential buildings
150220	**Non-residential buildings**
150221	*Non-residential buildings*
150221.1	Non-residential buildings
150230	**Civil engineering works**
150231	*Civil engineering works*
150231.1	Civil engineering works
150300	**Other Products**
150310	**Other products**
150311	*Other products*
150311.1	Other products
160000	**Changes in Inventories and Acquisitions Less Disposals of Valuables**
160100	**Changes In Inventories**
160110	**Changes in inventories**
160111	*Changes in inventories*
160111.1	Opening value of inventories
160111.2	Closing value of inventories
160200	**Acquisitions Less Disposals of Valuables**
160210	**Acquisitions less disposals of valuables**
160211	*Acquisitions less disposals of valuables*
160211.1	Acquisitions of valuables
160211.2	Disposals of valuables
170000	**Balance of Exports and Imports**
170100	**Balance of Exports and Imports**
170110	**Balance of Exports and Imports**
170111	*Balance Of Exports And Imports*
170111.1	Exports of goods and services
170111.2	Imports of goods and services

ANNEX D

PRODUCTIVITY ADJUSTMENT IN THE GOVERNMENT SECTOR

The compensation of government employees, which were used in the ICP to "price" government services, show enormous variation between countries at different levels of development. Some of this variation is presumably due to differences in productivity. For example, in Asia, average compensation (based on exchange rates) in the government health sector of Hong Kong was about 120 times higher than in Lao PDR. If no productivity adjustments were made, economies such as Vietnam, Cambodia, or Lao PDR, would be seen as having per capita levels of real consumption of government services comparable or even much higher than that of Hong Kong, and even the level of real GDP would be affected for those countries..

To adjust government compensation for productivity a Cobb-Douglas function was estimated in its typical specification one of constant returns to scale:

$Y = \mathbf{C}^{\alpha} K^{1-\alpha}$ where output (Y) is a function of labor (L) and the capital stock (K), with labor and capital shares of α and $(1-\alpha)$, respectively.

The government production function is expressed as:

$$Y_G = \mathbf{L}_G^{\alpha} K_G^{1-\alpha}.$$

Productivity is measured as output per worker,

$$\frac{Y_G}{L_G} = c\left(\frac{K_G}{L_G}\right)^{1-\alpha},$$

where gross domestic product (Y_G) is a function of labor input in government sectors (L_G) and the capital stock in government sectors (K_G), and *c* is a scale parameter that depends on the units of measurement.

Because the government-specific capital-labor ratio (K_G/L_G) cannot be directly measured, the capital intensity of government in each economy was assumed to be proportional to the whole economy. Thus, K/L needs to be estimated only for the whole economy.

The capital stock was estimated using the perpetual inventory method with geometric decline as follows:

$$K_{2005} = \sum_{t=1981}^{2005} \frac{I_t}{(1+.\mathbf{\delta})^{2005-t}}$$

where I_t is investment in year t and .05 is the depreciation rate.

With the estimate of the capital stock and data on labor force, labor productivity can be estimated iteratively from the identity,

$$\frac{Y}{L} = c\left(\frac{K}{L}\right)^{1-\alpha} = c\left(\frac{Y}{L} \bullet \frac{K}{Y}\right)^{1-\alpha}.$$

Values of α in the range of 0.5 to 0.7 and capital-output ratios of 2.5, 3.0, and 3.5 for low-, middle-, and high-income economies were used. The effects of productivity adjustment vary within each region and across the regions. For example, the adjustment factor for Mongolia was found to be 0.24, meaning that, compared with Hong Kong, per capita consumption of government services in Mongolia was adjusted to about a quarter of what it would have been in the absence of any adjustment; the reduction was even larger for Vietnam and Lao PDR.

ANNEX E

ESTIMATING AVERAGE PRICES FOR HOUSEHOLD CONSUMPTION ITEMS OF THE PEOPLE'S REPUBLIC OF CHINA

In the People's Republic of China (PRC), ICP price surveys conducted by the National Bureau of Statistics of China (NBS) for household consumption items covered the 11 municipalities of Beijing, Shanghai, Ningbo, Qingdao, Guangzhou, Xiamen, Dalian, Harbin, Wuhan, Chongqing, and Xi'an. Data were collected from outlets in both the cities proper and surrounding areas. However, the computation of purchasing power parity (PPP) data requires both average prices and GDP weights at the national level. The Asian Development Bank (ADB) convened an Expert Group[2] from 19-20 June 2006 to develop a procedure for extrapolating the data from the 11 municipalities to the national level. The Expert Group agreed on the following steps:

- Average prices for the each of the 11 cities proper and, separately, the surrounding areas were computed at the product level by NBS and submitted to ADB. However, the national annual average prices are not official estimates of the NBS, but were computed by the ADB and the World Bank.

- Per capita household expenditures by eight expenditure categories – food, clothing, household appliances and services, health care and medical services, transport and communication, education, cultural and recreation services, residence, and other goods and services – derived from China urban and rural household income and expenditure surveys, and population data for urban and rural areas for all 31 provinces of China were taken from *China Statistical Yearbook* 2007.

- A principal components analysis of urban and rural per capita household expenditure structures of the 31 provinces in the PRC was used to group them into four analytical clusters: Capitals, Coastal, Northeast, and Inner China. Each of 11 municipalities is included in only one of the four analytical clusters.

- Weights for the eight expenditure categories from each of the urban and rural areas of the 31 provinces were allocated to the corresponding average price data collected from the 11 municipalities within the four analytical clusters.

- Using these weights, the national average prices were estimated for each household consumption item. PPPs for the basic headings in household consumption were calculated using these national average prices.

- For government consumption expenditure, NBS also provided data on compensation of government employees for the 11 cities. However, because the *China Statistical Yearbook* had national level figures for government compensation, these figures were used in estimating PPPs for both individual and collective consumption.

- For Gross Fixed Capital Formation, prices for construction goods were collected for three cities only, and those for machinery and equipment were collected in 11 cities in which the type of equipment could be found that matched the specifications. This is consistent with methodology used in other countries and regions, thus no extrapolation was required.

- The national accounts data for the PRC as a whole (rather than for the 11 municipalities) were used as the starting point for allocating the expenditures on GDP to the 155 basic headings required for the ICP. These national data were disaggregated using detailed data sources such as national household income and expenditure surveys and government expenditure data.

For more information on the calculation of average prices for China, see Annex 1 of the ADB's final report on the ICP Program in Asia and the Pacific (http://adb.org/Documents/Reports/ICP-Purchasing-Power-Expenditures/appendixes.pdf).

[2] The members of the Expert Group came from the Asian Development Bank, Australian Bureau of Statistics, National Bureau of Statistics of China, and the World Bank.

ANNEX F

ICP SOFTWARE

An important innovation introduced in the 2005 ICP by the World Bank is a suite of well-integrated and specialized software tools to support the collection, storage, validation, and processing of price data to produce PPPs at various levels of aggregations. Underlying these tools is a database in which individual as well as average prices of products can be stored in a secure manner. The database also stores the GDP expenditure weights (at the basic heading level), spatial weights, exchange rates, and population data.

The collective set of software tools is called the ICP "ToolPack", which provides an end-to-end solution for the ICP process and introduces methodological rigor and "best practices," as well as transparency in the computations. The ToolPack covers the activities such as: product list preparation for pricing using structured product description; survey preparation; user and product outlet specification; price data collection and data entry; data validation at the country level; and data processing and data exchange between the regional coordinators and national coordinators. At the regional level, the ToolPack has a number of data validation tools for cross-country analysis across regions or sub-regions. Finally, the ToolPack has several innovative features for reporting on the price data aggregation to produce PPPs using a variety of statistical methods.

The ToolPack is multilingual. It was designed to support the six UN languages: Arabic, Chinese, English, French, Russian and Spanish. The multilingual functionality is particularly useful in the data collection modules.

In the 2005 ICP round, several software components were developed. The following highlights some of the features and the ToolPack components that support them.

a. ***Product list preparation using a structured product description (SPD) method***: This component helps in creating detailed product specifications for all categories of products used in the ICP. This supports a dialogue between Global, Regional and National ICP coordinators, as well as, assists coordinators in comparing different products.

b. ***Price survey and data collection for household consumption items:*** The price collection module (PCM) is designed for countries to collect price data on *consumption* items based on a product list and a survey framework created using another module of the ToolPack – the data processing module (DPM). The PCM has basic data validation features to correct data entry errors and has some data auditing functions.

c. ***Data collection for government and gross fixed capital formation items:*** Besides the household consumption item prices, which are collected using the PCM, the other major GDP categories of expenditure – *Construction, Equipment and Compensation* – are not readily amenable for data collection using the PCM. Therefore another module the data collection forms (DCF) is now available that is well-integrated with the DPM for price data aggregation and index computation.

d. ***Data Processing:*** The ToolPack's DPM component is the main data processing engine that can be used both by the National and Regional Coordinators. Depending on the user, the software presents the tools for validation needed at the national or the regional levels. For example, a national coordinator could use it for the initial checking of the individual price observations for each product in his/her country. Once s/he was satisfied with the individual price data, the national coordinator could then use the system to calculate the average prices for each product for which prices were collected in the country concerned. The countries have choice in either providing individual prices or only the average product prices. The ToolPack accepts either submission from the countries for further processing.

e. ***Country Diagnostic Reports:*** These reports are produced in the DPM from country submissions and are reviewed by the region and communicated back to the national coordinator if there are issues with individual prices. The reports pinpoint the observation under question and the probable causes of the data errors, thereby making the dialog between Regions and countries much more efficient.

f. ***Quaranta Tables:*** After the preliminary data cleaning is completed, the ToolPack provides a more broadly based set of editing processes. One of the main diagnostic tools used at this stage is the "Quaranta table", named after Vincenzo Quaranta from the Italian national statistical office (ISTAT), who developed it as an editing tool for the OECD/Eurostat PPP program. The Quaranta table shows details of the product, the reference period, the mean, the highest and lowest observations, PPP, PLI, exchange rate, weight, and coefficient of variation (the standard deviation divided by the arithmetic mean) for each product within a basic heading, for each country.

g. ***Dikhanov Tables:*** Another important innovation introduced to assist in the editing phase of the 2005 ICP is the Dikhanov table, named after Yuri Dikhanov of the World Bank. It shows the relationships between product prices across the whole range of products up to the level of GDP for each country in a region, using the CPD model as the basis for aggregating and analyzing the prices data. For example, a particular feature of the Dikhanov table is a measure of the distribution of the prices actually provided by a country compared with the estimated (or predicted) prices generated by the CPD model. A positive residual means that the observed average price is greater than that estimated by the model, while a negative residual means that the estimated price is greater than the observed one. The residuals show by how much the data diverge from the mean estimates of the model. Large residuals indicate significant departures from the expected prices and can identify unexpected variations in the product prices between countries and/or large variations in the prices for products within a country. Any significant variation in one or the other of these variables can indicate an underlying problem with the price data or signal that a country may not be pricing the same item, as did the other countries. The ToolPack implementation of the Dikhanov Tables provide many options for comparing data anomalies at different levels of aggregation, from. major GDP categories downwards to the basic heading level . Further, the Tool Pack allows drilling down below the basic heading level to the average product prices to be able to trace the cause for the deviations.

h. ***Equipment, Construction, and Compensation (ECC) Data Validation:*** The data validation module (DVM) is yet another innovation of the ICP 2005 round for validating the average prices of construction components and the "construction systems," the equipment and compensation prices. This module compares the components of a price observation for example, taxes or freight and insurance charges, to better understand the differences in prices for the same components across countries and to determine the causes of data anomalies. This module is also well integrated with the DVM so that after the ECC validations are done the data can be processed further with the other expenditure categories.

i. ***Expenditure Weights Diagnostic Module (WDM):*** GDP expenditure weights are essential to the final index computations. The WDM gives the regions a tool to compare the GDP expenditures across all countries at the basic heading or higher levels and to identify problem areas by computing statistical deviations across countries. The deviations work on the shares of expenditures at each level as a percentage of the total GDP.

j. ***Data Reports:*** The ToolPack's DPM has several reports showing real (PPP-based) and nominal GDP expenditures, real GDP per capita, and more importantly, the index numbers (PPPs) themselves. The DPM computes more than a dozen different indices, including the EKS, Iklé, Geary-Khamis. The major innovation in the ToolPack is the idea of flexible reporting in which the data can be aggregated by grouping of categories desired by the user at run-time. Further, such "flexible" groupings can be stored in the database for future usage and applied to updated or new data. The reporting engine in the DPM stores the report and the data underlying it for future usage. This feature allows the archiving and reproduction of results in the future.

Glossary

Actual final consumption of households is the value of the consumption goods and services acquired by households, whether by purchase in general, or by transfer from government units or non-profit institutions serving households (NPISHs), and used by them for the satisfaction of their needs and wants; it is derived from their final consumption expenditure by adding the value of social transfers receivable in kind.

Basic heading consists, in principle, of a group of similar well-defined goods or services for which a sample of products can be selected that are both representative of their type and of the purchases made in participating countries. In practice, a basic heading is defined as the smallest aggregate for which expenditure data are available.

Collective government consumption service is a service provided by general government simultaneously to all members of the community or to all members of a particular section of the community, such as all households living in a particular region.

Comparability requires participating countries to price products that are identical or, if not identical, equivalent. Pricing comparable products ensures that differences in prices between countries for a product reflect actual price differences and are not influenced by differences in quality. Two or more products are said to be comparable if either

- their physical and economic characteristics are identical, or
- they are sufficiently similar that consumers are generally indifferent between them.

Comparative price levels (CPLs). *See* Price level indices.

Consumer durables are durable goods acquired by households for final consumption (that is, those that are not used by households as stores of value or by unincorporated enterprises owned by households for purposes of production); they may be used for purposes of consumption repeatedly or continuously over a period of a year or more.

Country-product-dummy (CPD) method is a generalized multilateral method that uses regression techniques to obtain transitive PPPs for each basic heading. The data for a given category consist of all the prices available for the various specifications for the entire collection of countries in the region. The traditional CPD model assumes that the ratio of prices for each product within a basic heading is the same in every country.

Final consumption consists of goods and services used up by individual households or the community to satisfy their individual or collective needs or wants.

Final expenditure consists of final consumption expenditure and gross fixed capital formation.

Government final consumption expenditure consists of expenditure, including imputed expenditure, incurred by general government on both individual consumption goods and services and collective consumption services.

Gross domestic product. expenditure based, is total final expenditures at purchasers' prices (including the f.o.b. value of exports of goods and services), less the f.o.b. value of imports of goods and services.

Gross fixed capital formation is measured by the total value of a producer's acquisitions, less disposals, of fixed assets during the accounting period plus certain additions to the value of non-produced assets (such as subsoil assets or major improvements in the quantity, quality or productivity of land) realized by the productive activity of institutional units.

Household final consumption expenditure consists of the expenditure, including imputed expenditure, incurred by resident households on individual consumption goods and services, including those sold at prices that are not economically significant.

International dollars. The Purchasing Power Parities at the global level for each country are computed with the US = 1.00 making it the numeraire currency. These PPP conversion factors transform GDP and aggregates in national currency into a common world currency referred to as real expenditures in the international dollar. To remove the effect of the US exchange rate, indices of real expenditure per capita at the world = 100 reflect the ratio of national real expenditures per capita to the world average real expenditures per capita.

Net exports are the difference in value between the total exports and total imports of an economy during a specific period of time.

Numeraire currency is the term used for the currency unit selected to be the common currency in which PPPs and final expenditures on GDP (nominal and volumes) are expressed. The numeraire is usually an actual currency (such as the US dollar) but it can be an artificial currency unit developed for the purposes of PPP comparisons. The Hong Kong dollar is the numeraire currency for the Asia/Pacific region comparisons.

Per capita volumes are standardized measures of volume. They indicate the relative levels of the product groups or aggregates being compared after adjusting for differences in the size of populations between countries. At the level of GDP they are often used to compare the economic wellbeing of populations. They may be presented either in terms of a particular currency or as an index number.

Price level index (PLI) for a basic heading is defined as the ratio of the basic heading PPP to the exchange rate. It is expressed as an index on a base of 100. A PLI that is greater than 100 means that, when the national average prices are converted at exchange rates, the resulting prices within the basic heading tend to be higher, on average, than prices in the base country (or countries) of the region (and vice versa). At the level of GDP they provide a measure of the differences in the general price levels of countries. PLIs are also referred to as "Comparative price levels" (or CPLs).

Purchaser's price is the amount paid by the purchaser, excluding any deductible VAT or similar deductible tax, in order to take delivery of a unit of a good or service at the time and place required by the purchaser; the purchaser's price of a good includes any transport charges paid separately by the purchaser to take delivery at the required time and place.

Purchasing power parity (PPP) between two countries, A and B, is a price relative which measures the number of units of country A's currency that are needed in country A to purchase the same quantity of an individual good or service as one unit of country B's currency will purchase in country B

Reference PPPs are PPPs that are used for basic headings for which no prices are collected; they are based on prices collected for other basic headings.

Representative product is one that accounts for a significant share of the expenditures within a basic heading in the country in question.

Stocks - Changes in inventories (including work-in- progress) consist of changes in: (a) stocks of outputs that are still held by the units that produced them prior to their being further processed, sold, delivered to other units or used in other ways; and (b) stocks of products acquired from other units that are intended to be used for intermediate consumption or for resale without further processing; they are measured by the value of the entries into inventories less the value of withdrawals and the value of any recurrent losses of goods held in inventories. PPPs are not estimated directly, instead they are imputed using PPPs for consumer goods equipment.

Transitivity is the property whereby the direct PPP between any two countries (or regions) yields the same result as an indirect comparison via a third country (or region). It is sometimes referred to as "circularity."

Volume measures are obtained by using PPPs to convert final expenditures on product groups, major aggregates, and GDP of different countries into a common currency, by valuing them at a uniform price level. They are the spatial equivalent of a time series of GDP for a single country expressed at constant prices. They provide a measure of the relative magnitudes of the product groups or aggregates being compared. At the level of GDP they are used to compare the economic size of countries. They may be presented either in terms of a particular currency or as an index number.

The definitions in this Glossary are based on definitions from the following publications:

- Commission of the European Communities (Eurostat), Organization for Economic Cooperation and Development, *Eurostat/OECD PPP Methodological Manual,* 2006
- Kravis, Irving B; Heston, Alan; Summers, Robert; *World Product and Income: International Comparisons of Real Gross Product* (The Johns Hopkins University Press, Baltimore and London, 1982)
- *Organization for* Economic *Cooperation and Development, System of National Accounts, 1993 – Glossary (OECD, Paris, 2000)*
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