International Comparison Program

# [04.05]

# ICP Survey Framework

## Global Office

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## Section 1. Overview

One of the primary purposes of the International Comparison Program is to provide the means to convert national estimates of respective Gross Domestic Products to a common currency. The foundation of the ICP is that the GDP is measured strictly according to the 1993 System of National Accounts and that Purchasing Power Parities based on the comparison of national prices for a selected basket of goods and services be used as the currency converters.

Chapter 3 provides the scope of the GDP expenditures and their breakdown as required by the ICP, and Chapter 4 explains the concepts that define the prices to be collected.

The purpose of this chapter is to describe the overall survey framework used for the collection of prices for the 2005 ICP, provide a review of the effectiveness of the 2005 survey process, and conclude with a summary of steps to be taken to improve the data collection for the ICP 2011. The survey framework to be implemented in 2011 will build off requests from data users to have more information about the national scope of the data collection; especially the price levels between urban and rural areas. The survey framework will also guide the regions in determining the products to be priced, their definitions, and the number to be priced.

The next section will introduce the conceptual framework that first defines the difference between the target and ICP populations of prices and products. This concept guides the selection of products to be priced which will be explained in Section 3. Each country will want to include products widely consumed and considered representative of its price and consumption patterns. However, what is important in one country may not be so in another. Therefore, each country will need to agree to also price products that may be comparable with those in other countries even though it may not be important to their economy. The comparison of "like with like" or comparability is the heart of the ICP.

Section 4 will review the steps taken to determine the number of products to be priced within each basic heading. This is a crucial step because the PPPs for individual products vary considerably even within the same basic heading. When there is a large variation in within country product PPPs by country within a basic heading, then more products need to be selected for the price collection. Smaller numbers of products need to be selected for pricing from basic headings where there are only small differences in the product PPPs.

Section 5 presents the determination of the sampling frame and the selection of outlets for price collection. The number of outlets, the type of outlet, and their location and distribution across the country all need to be considered. Guidelines are provided for each of these steps.

The chapter concludes (chapter 6) with a review of steps to be taken for the 2005 ICP to improve the survey framework.

## Section 2. Conceptual Framework for Price Collection

The discussion begins with an elementary review of the target population of the ICP and how that relates to the estimation of PPPs. The **target population** is the national GDP of each country and its component aggregates. The goal is to compare the national GDP's and components by converting them to a common currency. The process starts by building up the GDP expenditures in each country from the basic heading level as defined in Chapter 3. The total expenditures for a given basic heading are essentially the summation of all of the transactions (price times quantity ) that take place during the year for every product included in the basic heading added across products, or $\sum\sum PQ$.

This can include hundreds to thousands of different products with the number increasing as characteristics such as type of packaging, quantity and quality variables such as brands are used to more precisely define each product. In addition, there may be thousands or millions of individual transactions taking place each year.

The **target price** for each product in a basic heading is the national annual average which is a weighted average of the price of each transaction and the quantity purchased at that time.

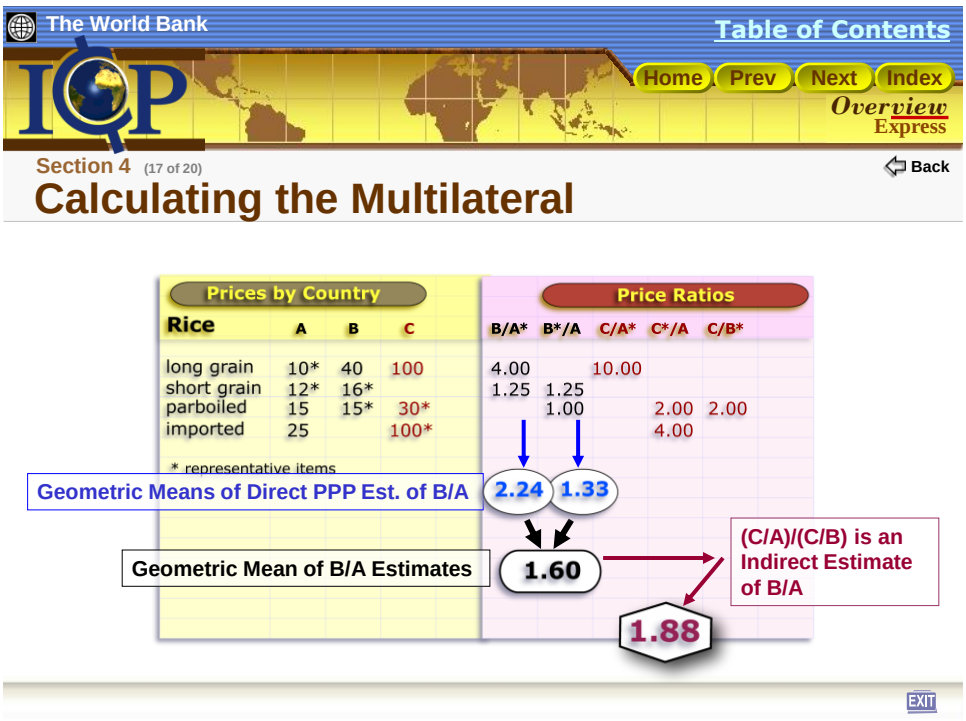
$$\overline{p_i} = \frac{\sum_j \left(p_{ij} q_{ij}\right)}{\sum_j q_{ij}} = \sum_j w_{ij} p_{ij} \qquad \text{where} \qquad w_{ij} = \frac{q_{ij}}{\sum_j q_{ij}}$$

The first step in the estimation of PPPs is to define the characteristics of the products so they can be compared by matching "like with like" to compute the PPP for each product which is ( $P_{ai}/P_{bi}$ ) for countries (a) and (b).

The **target PPP at the GDP** level between any two countries is the weighted average of the product PPPs across all products. Chapters 6 and 7, respectively, provide the methodology used to average product PPPs to the basic heading level and from there to the GDP.

Suppose there were only three countries in the world, and the rice basic heading contained a total of 4 products. Table 1 provides an example showing the national annual average prices for each country in its national currency. Methodology described in previous chapters describes how these product PPPs are combined to form the basic heading PPPs. The asterisks are used to identify those products that are an important part of the country's consumption for the rice basic heading. While long grain rice is important for country A, it is less important than other rice products in countries B and C. However, countries B and C submitted prices for long grain because it was still available.

**Table 1. Product PPPs within a basic heading**




The target population, prices, and PPPs set the stage for the survey framework. The reality for the ICP is that:

- There can be considerable variability between the product level PPPs within a country. Note that the product PPPs for $p_i^B/p_i^A$ range from 1.00 to 4.0. Price levels for different products vary depending on consumer preferences, volume of sales, income level of households, and location in the rural/urban domains. This points out that the subset of products to be priced need to represent the overall price levels and variation in each country. The variation between the product PPPs will vary by basic heading. For example, the egg basic heading contains very homogeneous products while others such as garments and motor cars are very heterogeneous. This means different numbers of products need to be defined for each basic heading depending on the variability of the product PPPs.
- Not every product in say country A can be found in countries B or C, etc. In other words, there is only a subset of products within each country that can also be found in other countries. The size of this subset is influenced by the level of detail used to describe the products. For example, rice is consumed in every country; however, long grain rice, prepackaged with no broken kernels may not be available in every country. The goal is to select products from the overlapping subset that have relative price levels that represent the entire basic heading whether or not they are eligible for pricing for PPPs.
- It is not possible, even within the domain of overlapping products, to obtain a price for each one in every country. Furthermore, products are not of equal importance to every country. Within each basic heading there will be products widely consumed in Country A with price levels that are representative of the general expected

level —especially for products not in the domain that overlaps with products in other countries. In addition, there will be products that may be available in Country A, but not consumed widely and perhaps also not found in all parts of the country. However, these may be important in other countries. For these reasons, the process to define the product characteristics, and to choose those to be included in the comparison are important.

- With thousands of transactions taking place, it is not practical to collect individual transaction prices. This has two consequences. First, the quantities of each product purchased are not available which means weights are not available for averaging product PPPs to the basic heading level. The second consequence is that prices are obtained from outlets where purchases are made. The total number of outlets exceeds what can be included in the price collection. The requirement for national annual average prices means that decisions will have to be made about locations within the country where price collection will take place, the choice of outlets within those locations, and the frequency of data collection.

The next section describes the process to describe the characteristics of the products to be priced. This process takes into account the fact that basic heading PPPs are essentially the average of the PPPs based on individual products. The goal when defining the products is to select those that collectively will provide the basic heading PPP that would be an unbiased estimate of the target population PPP. The overall reliability of the PPPs at the level of the basic heading is dependent on the product specifications, the number of products priced, where they are priced, and the number of countries that provide the prices.

Before starting the process to define the product specifications, it will be necessary to have some targets for the number of products to be priced within each basic heading. Section 4 will then outline the process to determine then number of products to be priced followed by section 5 that provides the requirements for the sample frame.

## Section 3. Determining Product Specifications

### *Structured Product Definitions*

A new approach for product classification and identification was developed for the 2005 ICP. This approach is based on a new international product coding system and a process to describe price determining characteristics using Structured Product Descriptions. These Structured Product Descriptions (SPDs) provided a standardized process to create the detailed specifications for products to be priced.

The first step was to harmonize existing classifications for household consumption items. This included the OECD-Eurostat Classification of Expenditures on the GDP as described in Chapter 3, and the Classification of Individual Consumption for Purpose established for Household Budget Surveys (COICOP). The OECD-Eurostat classification served as the base classification structure for the 2005 ICP to assign products to basic headings. The OECD classification included 222 basic headings. For ICP purposes, this was considered to be too detailed, especially for developing countries. As a result, the 222 Basic Headings were combined into 155. The

COICOP classification structure was mapped to the OECD structure of 155 basic headings so that countries using the COICOP classification structure could be integrated into the ICP process.

The next step after the OECD and COICOP classifications were harmonized was to add detail about price determining characteristics for products within each basic heading. The starting point was the coding system established by the US Bureau of Labor Statistics (BLS) for the Consumer Price Surveys for the Consumer Price Index. This is commonly referred to as the BLS checklist which is used during the price collection stage to identify the specifications of the products being priced. The BLS checklist is designed in such a way that it contains lists of characteristics that describe products in a consistent way. Each BLS checklist contains a list of characteristics describing a cluster of similar products within a basic heading. In some cases the product cluster was the same as the basic heading. For example, there was only one BLS product cluster each for the rice and fresh milk basic headings. However, there were several product clusters for the garment basic heading where there were separate product clusters for men, women's, and children's clothing.

The characteristics related to each BLS product cluster were used to form SPDs. There was one SPD for each product cluster within a basic heading. Annex A shows two examples of SPDs. The first is for fresh milk basic heading which is represented by one SPD. The second SPD is for women's clothing which is one of several product clusters in the garment basic heading, each represented by an SPD. In other words, there are separate SPDs for men's and children's clothing. A review of these two examples illustrates the different number of combinations of price determining characteristics that can be used to define individual products.

The initial SPDs for each BLS product cluster were prepared by the Global Office. The next step was a review by the regional coordinators to ensure the product characteristics reflected the realities of the countries in their regions. The SPDs were updated to reflect the input from the regions. For example, type of milk—cow or buffalo—was added to the milk SPD.

The SPDs can be used to define a large number of different products, even for a basic heading as homogeneous as rice. Rice includes white and brown rice, long, medium and short grain, varieties such as basmati sometimes sold under a brand name in a variety of package types and sizes. Quality can enter into the definition, for example, varying percentages of broken rice.

The SPDs contain the following classification variables:

- Quantity and Packaging: Simply the units in which the product is sold. The specification should provide a range of number of units, or their size or weight, that determines the product to be priced. The price per unit may be different if a liter of milk is priced vs a .25 liter container.
- Source: Usually identifies whether the product is produced domestically or imported.
- Seasonal availability: Important for fruits and vegetables and indicates whether the product is available around the year or only seasonally.
- Product characteristics: The contents of this section vary depending on the product. The number of characteristics depends on the heterogeneity of the products being specified. Note the example of women's clothing as an example.

- Brand/label name: Brands play an important role in the specification of products. International brands and model numbers may by themselves completely define a product. However, the characteristics of even branded products should be defined because they can be sold in different sizes or models. The Brand identifier should be viewed as an additional characteristic that is superimposed on an otherwise complete product specification. The following table from the ICP Handbook defines the role of brands in product specifications.

**Table 2. The Role of Brands in Product Specifications.**

<table>
<tr><th></th><th colspan="2">Specification names a single international brand or a cluster of international brands</th><th>Branded product, but brand not named in specification</th><th>Product without any brand</th></tr>
<tr><td>Brand value</td><td colspan="3">Some brand value exists</td><td>No brand value</td></tr>
<tr><td rowspan="2">Product searched for by price collectors</td><td colspan="2">Actual brand(s) and model(s) as specified; they should be found in most or all countries in the region</td><td>National or local brands which have a reputation only within a country or locality</td><td>Products without a brand name</td></tr>
<tr><td>One single brand</td><td>One out of a cluster of named brands</td><td>One out of a set of unnamed brands widely known within the country or locality</td><td>An unbranded product whose name or label, if any, has no significance to the buyer</td></tr>
<tr><td>Typical selling point</td><td colspan="2">The reputation of the producer and assumed quality of the product</td><td>The reputations of the producer, shop or other outlet and assumed quality of the product</td><td>Low price</td></tr>
</table>

Brands can have a significant price affect because of perceived or real quality differences. A general guideline is that price comparisons should only be made between products within the brand stratum. In other words, if a product with the same specifications has an international brand name in one country and is brandless in another country, they should be considered to be different products and not directly compared. Another guideline, however, is to exercise caution when including international brands is to ensure they are consumed widely by the consumers. In some cases, branded products may be comparable between countries, but be consumed by only a tiny number of consumers because it is a luxury item.

***Using SPDs to define product specifications (PSs)***

The recommended process for each region to determine the product specifications using the SPDs was for each country to first map their CPI products to the SPDs. Each mapping determined a product specification. Each country submitted this initial set of Product Specifications (PS) to

their regional coordinator. The regional coordinator reviewed these PSs to determine where there was overlap, or where a change or additional price determining characteristics would result in a product described in such a way that several countries could provide prices. This was an iterative process repeated several times and culminated in a meeting of the national coordinators where they agreed upon the final specifications of the products to be priced.

This iterative process is based on some complex concepts underlying the preparation of the product specifications. Products can be very tightly specified with absolute characteristics to be met for matching. An alternative is to tightly specify some characteristics, but leave some latitude to the price collectors for others. For example, the rice specification may call for long grain rice, but leave it to the price collector to determine the type and size of container and record those values along with the price. This provides the opportunity for the country to provide more prices, however, it can produce more variability into the matching exercise unless prices are adjusted for example to standard quantities or package weights.

A pre-survey is an important part of the process to define product specifications. The final test of a product specification is to determine if price collectors in each country can actually find and price the same product. A lesson learned from the ICP 2005 is that many products had to be re-defined after the first data collection because the review of the prices revealed that products were not tightly specified leading to different products being priced. In some cases, problems occurred when translating the product specifications into the local language.

Another guideline is that a picture is worth a thousand words. Where possible, photographs of the products should be part of the data collection package

***Important and less Important Products (Representative and non representative products—per Eurostat-OECD)***

It should be clear by now that comparability of the products being priced is an essential principle underlying the estimation of PPPs. A dilemma facing the ICP since its beginning is that even though a product may be available in several countries, it may only be important or a significant part of the consumption in a few countries. While rice is a staple in some countries, bread, cereals and meat may be more important in others. Should the product PPP for a type of rice consumed widely in country A but not in country B receive equal weight with the type more important in country B? To overcome this dilemma, the OECD-Eurostat practice is for each country to classify every product being considered for inclusion in the price collection into one of two categories—representative, or not representative but still comparable. A representative or important product is one that accounts for a significant share of a country's expenditures within a basic heading. The representative or non representative classification is determined for products within the basic heading and is country specific.

Each country will want to price products that are purchased by a large proportion of its population and account for a significant part of the total expenditures of the basic heading. While some of these products may be available in other countries, those countries may have other products more important to their economy. For this reason, the EKS$^{*}$ method was developed whereby countries

classify each product as representative or non representative. This provides a form of weighting as shown in table 3 below.

This example illustrates a binary comparison between two countries. There are 14 products,1-10 are Important in country J, products 8-12 are Importantin country K, and products 8-12 are Important in both countries. Prices were provided for products 13 and 14, but they were less Important in both countries. Note that the relative weight each product PPP receives is dependent on the classification of importance and the number of products priced. Product PPPs are computed by first using product prices that were representative for country J, and again for products important for country K. The geo mean of each column provides an estimate of the PPP of county K to J. The geo mean of these two estimates becomes the binary PPP between the two countries. If there are more countries, the EKS procedure is employed and brings in the less important products if they were representative in other countries.

Note that **Product PPPs carry more weight as a country provides fewer prices.** Also note that the PPPs for products 8, 9, and 10 carry more weight than the other products.

The underlying principle guiding the use of the important/less important coding is that it also provides a form of weighting for the more important products.

**Table 3. Illustration of the use of representativity and the number of products priced.**

| **Product** | **Country J** | **Country K** | **$J^*/K$** | **$J/K^*$** | |
|---|---|---|---|---|---|
| 1 | Rep | Non rep | ppp | | |
| 2 | R | N | ppp | | A. Each product PPP for country K carries twice weight of each product PPP for country J<br>B. PPPs for products 8,9, and 10 carry more weight that the other product PPPs.<br>C. Products 13 and 14 not used in binary comparison— will enter as indirect comparisons in EKS* |
| 3 | R | N | ppp | | |
| 4 | R | N | ppp | | |
| 5 | R | N | ppp | | |
| 6 | R | N | ppp | | |
| 7 | R | N | ppp | | |
| 8 | R | R | ppp | ppp | |
| 9 | R | R | ppp | ppp | |
| 10 | R | R | ppp | ppp | |
| 11 | N | R | | ppp | |
| 12 | N | R | | ppp | |
| 13 | N | N | | | |
| 14 | N | N | | | CPRD will include PPPs for products 13 and 14. |
| | | | PPP $J^*/K$ | PPP $J/K^*$ | |
| | | | Geo Mean $J^*/K$ and $J/K^*$ | | |

As noted in table 1, the measurement of basic heading PPPs becomes increasingly sensitive to the choice of products the more the patterns of relative prices diverge from country to country. Table 4 shows how relative prices may be derived from the national . The prices in columns 2 to 4 of table 4 are the national prices converted into the currency of Country A using the basic heading PPPs for countries B and C, or 2.356 and 88.42 respectively. Country A is the base, therefore, its PPP is 1.0. The prices in column 5 are the average international prices or the geometric averages of the converted national prices. The prices in columns 6 to 8 are the relative prices where the relative price is defined as the national price divided by the average international price for that product.

**Table 4. Variability in relative prices**

| Product | National prices converted into the currency of A using the basic heading PPPs | | | International price (geometric average) | Relative prices (National price divided by the international average price) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | A | B | C | | A | B | C | | Rel Std |
| 1 | 10 | 17.82 | 18.10 | 14.78 | 0.67 | 1.21 | 1.22 | 1.00 | .31 |
| 2 | 18 | 18.68 | 8.48 | 14.18 | 1.27 | 1.32 | 0.60 | 1.00 | .40 |
| 3 | 15 | 16.98 | 14.48 | 15.45 | 0.97 | 1.10 | 0.94 | 1.00 | .08 |
| 4 | 12 | 8.49 | 10.86 | 10.34 | 1.16 | 0.82 | 1.05 | 1.00 | .17 |
| 5 | 12 | 10.19 | 20.36 | 13.55 | 0.89 | 0.75 | 1.50 | 1.00 | .40 |
| 6 | 8 | 6.37 | 6.33 | 6.86 | 1.16 | 0.93 | 0.92 | 1.00 | .14 |
| PPP A = 1 | 1.00 | 2.36 | 88.42 | Geometric average | 1.00 | 1.00 | 1.00 | 1.00 | |
| | | | | Relative STD | .22 | .25 | .30 | | |

Two main points need to be made from this example. The list of products should be balanced meaning that each country should have products whose relative prices are both above and below average. The other point is economic theory shows that relative prices and quantities are generally negatively correlated. In other words, products with large expenditures will have lower prices than specialty items. This implies that important products should have prices below average.

All countries provided the representativity/non representative indicators for all products that they priced for the ICP 2005. However, the concept was not well understood because some countries classified all products as representative even for those difficult to find to price. There was no correlation between the price levels and the representativity indicator—one expects the representative products to have lower price levels than the other products priced. For that reason, the representativity indicators were not used in the Asia, Africa, Western Asia, and South American comparisons.

However, it is clear when reviewing the PPPs and expenditure patterns across countries that every attempt be made to use the concept in ICP 2011. The concept will be simplified to indicate whether the product is important or less important to the basic heading. Guidelines follow:

- Although expenditure weights may not be available for individual products, general knowledge should be used to determine the products that account for the larger portion of the basic heading expenditures. Cheddar cheese may sold in all stores, but Brie only in specialty shops, therefore, cheddar would be considered to be representative. A key point is that the relative size is the contribution to the basic heading expenditures, not the overall expenditures.
- Products that overlap those in the CPI should generally be considered to be representative.
- Shop keepers can provide advice on which products are the volume sellers.
- Prices should be collected for both representative and non representative products that are available. However, the final decision about whether a product is representative or non representative should be made during the data validation stage.

***Review of product specifications during data collection***

It is essential that the product specifications be reviewed after the first data collection using the diagnostics from the Quaranta and Dikhanov tables described in Chapter___. However, table 4 above can be used to show how to evaluate each product. The variability of the relative prices for product 2 ranges from .6 to 1.32 with a relative standard deviation of .40. This is a signal that either the product specifications are too "loose" or that one or more countries have miss-interpreted some of the specifications. The specifications for any product resulting in relative prices with relative standard deviations above .30 should be thoroughly examined. In some cases, it may turn out that the product is not comparable and will be removed from the list or redefined for the next round of data collections.

**Section 4. Determining the number of products to price.**

The overall reliability of the PPPs at the level of the basic heading and higher levels aggregation depends on the interaction of three factors:

- The numbers of products to be priced within each basic heading which will depend upon the heterogeneity of the basic heading;
- The numbers of products for which countries actually collect prices which is a reflection of the amount of overlap of available products:
- The numbers of outlet prices collected for each product for which price surveys are actually undertaken.

At the same time that the product specifications are being developed, attention also needs to be given to the number of products to be priced in each basic heading, and also the number of countries that will be able to price them.

The purpose of this section is to illustrate the sources of variability inherent in the estimation of PPPs and how to use the knowledge about the variability to set targets for the number of products each country should try to price within a basic heading.

Table 4 above illustrates the variability of the relative product prices within the basic heading by country. This variability is measured by the relative standard deviation of the relative prices within each country which is .22 for country A and .25 and .3, respectively for countries B and C. Even though the sample of products is not from a random selection, the principles of sampling theory can be used to determine the number of products to price—annex A provides a useful overview. The goal is to price enough products that the sampling error of the mean is within a target level of precision.

Table 5 provides some examples of the relative standard deviations from ICP 2005 and a target number of products to price.

**Table 5. Target number of products to price**

| Product | Relative STD of relative price ranges over countries | Target number of products | Number in 2005 Ring |
|---|---|---|---|
| Electricity | .03-.05 | 3 | 5 |
| Rice | .10-.20 | 10 + | 6 |
| motorcars | .15-.25 | 10-45 | 30 |
| Fresh/frozen seafood | .20-.25 | 10-45 + | 10 |
| Garments | 3.0-3.5 | 25-100 | 68 |
| Pharmaceuticals | 2.5-3.5 | 25-100 | 43 |

Electricity is usually furnished by a very small number of providers; therefore, there is very little variability in the rates as evidenced by the relative standard deviations ranging from .03 to .05 across countries. With these small deviations, a country may only need to price 3 items to be 90 percent confident the resulting PPP is within 5 percent of the target. Products such as milk and eggs also exhibit very little price variability.

The relative price levels for rice are more variable across countries ranging from .10-.20. This suggests that more than 10 products be priced unless the country or region is willing to accept a level of precision at the 10 percent rather than the 5 percent level.

Another point to be considered at this point is the relative importance of the basic heading. If the basic heading is an important part of the consumption basket, then a country will want to have a precise measure of the relative prices. Therefore, the country or region would want to target a number of products to achieve a 5 percent level of precision. However, if the basic heading has a

very small weight, then the target level of precision can be increased to 10 percent so that the resources can go towards the more important basic headings.

A final point to consider is that not every country will be able to price every product. For that reason, the target number of products will need to be increased so that each country can price the minimum number. In other words, as the size of the overlap domain decreases, it will be necessary to define more products so that each country can submit prices for a minimum number.

## Section 5. Sample design and determining the number of price observations.

The purpose of this section is to provide the guidelines to determine the number of price observations to estimate the national average prices as well as the type of outlets and their locations where the prices will be collected. As stated in the introduction, the target price is the weighted average of the prices at which the product is sold during different times of the year and over the country using the quantities purchased by month and location. In other words, this implies the sample must relate to the entire country and to the entire year. In some countries, there are auxiliary data that can be used to calibrate capital city data to the country and a point in time price to the entire year. Chapter ___will provide the methods to compute the national average prices for these cases.

While the data collection must provide a national annual average price, each country must work within the framework of information available to make up a sampling frame and select the desired outlets. A starting point is the frame established for the CPI. (See the Practical Guide to Producing Consumer Price Indices—Sampling Procedures)

It should be noted that the required sample size is not dependent on the size of the country, but on the heterogeneity of prices across the retail markets. The greater the price variability across the markets, the larger the sample is required for the same level of precision.

Many countries have distinctive rural and urban sectors that exhibit very different pricing patterns and levels. In these cases, the sample size for both the rural and urban price collections should be large enough to provide reliable estimates for each sector. Countries should use information from the most recent household expenditure survey to determine the relative coverage of the urban and rural sectors. Annex B provides an overview of the rural expenditures as a percent of the total for selected countries and product categories. Note that rural expenditures make up a large portion of the total for food items. It is also quite likely that the products consumed by the rural areas may not be the same as those consumed in urban areas. On the other hand, it is also likely that some of the products to be surveyed such as motor cars are only available in urban areas.

Probably the single largest source of questions about the 2005 ICP was about the degree of the urban/rural price coverage. Annex C provided in response to those questions shows the urban/rural coverage by country. This shows that there was a lack of consistency in the coverage of the rural areas, which led to questions about the reliability of the data for some purposes. Therefore, a goal for ICP 2011 is to improve the coverage of the rural areas.

The selection of the outlets is especially important because different products have different distribution profiles. Some products are sold mostly in supermarkets, but may also be available in a range of other outlets from specialty shops to local traditional markets. Prices for the same product can vary from outlet type to outlet type because of varying circumstances such as service provided. For these reasons, the selection of outlets should take into account the different types of outlets and their relative share of the overall expenditures. This will usually require expert judgment because of the lack of a sample frame with expenditures by outlet or outlet type. Some guidelines or considerations follow for the selection of outlets:

- The first consideration is that the selection of outlets by type should be in proportion to the volume of their sales of the products to be surveyed.
- The next consideration is the variability of the prices within and between outlet types. The guidelines provided in Annex A regarding the sample size apply here as well and should be used to determine the number of outlets to be included in the price collection.
- The third consideration is the location of the outlets, especially the urban/rural domains. Again, the number of outlets by location should be in proportion to each area's share of the volume of sales.
- A final consideration is to determine the number of outlets or price observations that should be collected. Information about the variability of the prices is needed and decision need to be taken about the desired level of precision following the guidelines in Annex A.

The advantage of selecting outlets by type and location by volume of sales is that it provides a self weighting sample, therefore, simplifying the estimation of the national average price.

In response to the questions coming from data users, countries will be asked to provide the following indicators for each product price.

**Table 6. Outlet type and location indicators**

| **Outlet Types** | | |
|---|---|---|
| | **Types** | **Examples** |
| 1 | Large shops | Supermarkets, hypermarkets, department stores, etc. |
| 2 | Medium & small shops | Minimarkets, kiosks, neighborhood shops, grocery stores, convenience stores. etc. |
| 3 | Markets | Open markets, covered markets, wet markets, etc. |
| 4 | Street outlets | Mobile shops, street vendors, etc. |
| 5 | Bulk and discount shops | Wholesale stores, discount shops, etc. |
| 6 | Specialized shops | Supply shops, hardware shops, furniture shops, etc. |
| 7 | Private service providers | Taxi cabs, hotels, restaurants, private schools, private hospitals, etc. |
| 8 | Public or semi-public service providers | Water suppliers, electric power companies, public schools, public hospitals, etc. |
| 9 | Other kinds of trade | Online (Internet) shopping sites, catalogue orders, etc. |

In an ICP context, the required precision will depend on the relative importance of the product in the total expenditure in the basic heading. This is liable to vary from country to country so that different sizes of sample may be appropriate in different countries. The variability of the prices between outlets will also itself tend to vary between countries. The appropriate size of sample depends on the net result of a set of interacting factors. It is a matter on which national coordinators may wish to consult with regional coordinators. It must also be remembered that a product PPP is the ratio of the estimated average prices in two different countries. It might not be optimal for one country to spend a lot of resources achieving a high degree of precision in its estimated price for some particular product if other countries do not, or cannot. This is a matter which may call for some collective discussion and some general guidelines at a regional level. Such guidelines would have to be specific to a particular set of countries and particular set of products.

The difficulty and costs of collecting an outlet price could vary significantly between different types of product. When it is difficult to collect prices for a particular type of product, say because the product is not very common and found only in a very few widely dispersed outlets, it may be judged to be cost effective not to try to collect any prices for that product and concentrate on collecting prices for products that are more important and readily available. Such a strategy may increase the total number of price observations but risks introducing bias.

## Section 6. Summary

The concept of representativity based on the importance of the products will be used in the 2011 ICP which means this be determined by every country for every product priced. The Important/less Important coding should also be a part of the data validation exercise to ensure it is applied consistently across countries.

Since the importance coding will be finalized during data validation, countries will also be asked to price items they consider to be less important. Some simple guidelines should be that they price less important items available in the outlets being surveyed for the important products; they should not go to great expense to search out each one.

Guidelines based on the statistical variability of relative prices of products within basic heading were provided to determine the number of products to be priced. These along with the relative share of the basic heading to the total contribute to the decision about the number of products. Similar principles also apply to the number of individual price observations to obtain.

The final significant requirement is to provide an indicator for every price observation that indicates the outlet type and the urban/rural dimension.

**Annex D** provides the diagnostics from the 2005 Ring comparison that can be used as a guide to determine the number of products to price by basic heading. The column showing country relative standard deviations provides the variability in the relative prices across products within country—the larger the relative STD, the more products should be priced. The second column of relative STDs provides the measure of variability of the relative prices for each product across the countries. Levels above .30 indicate that there is either a great deal of heterogeneity across the basic heading or that some products were not tightly specified to ensure comparability across countries. In some cases such as the garment basic heading that is very heterogeneous, consideration should be given to splitting the basic into men, women, and children's clothing.

A final point is that the importance designation as well as the product specifications should be an integral part of the data validation exercise.

## Annex A. Framework [i]

This annex provides the framework to determine the number of product specifications to be prepared by basic heading, the target number countries should price, and the number of price observations to be made for each product. The number of price observations will translate into the number of outlets to be selected for the price survey.

The main purpose of this annex is to examine the relationship between the size of the sample, whether it be the number of products to be priced or the number of price observations and the probable margin of error, or precision, attached to the national annual average price or the basic heading PPP. The same points about margin of error also apply to the desired level of decision for the estimated basic heading PPPs. This analysis draws on classic sampling theory. The central limit theorem states that if a population has a finite variance $\sigma^2$ and an arithmetic mean $\mu$ then the distribution of the sample mean in repeated random samples drawn from that population approaches the normal distribution with a variance of $\sigma^2 / n$ and a mean $\mu$ as the sample size $n$ increases. The sample mean provides an unbiased estimate of the population mean. The probability of the sample mean not deviating from the population mean by more than a certain amount can then be derived from the area under the normal curve. In this way, probable margins of error can be attached to sample means. An explanation of sampling errors and confidence intervals can be found in any textbook on probability and statistical theory.

In practice, the population standard deviation, $\sigma$, will not be known but may be estimated from the sample itself, from other samples drawn from the same population, or in other ways, as explained below. It is convenient to replace the estimated value of the standard deviation, $s$, by its value relative to the estimated mean, $m$: i.e., $s / m$. This is the relative standard error as measured during price collections to determine the national average price. It also applies to the relative standard deviations of the relative prices as evaluated in the Quaranta and Dikhanov tables.

It is then possible to construct tables showing, for example, the minimum size of sample needed to ensure that the probability of the sample mean deviating from the population mean will not exceed some specified amount. Such a table is shown below.

The table is constructed on the assumption that a 10 % level of significance is required. Its use may be illustrated by the following example. Suppose that the estimated relative standard deviation, $s /m$ ,is 0.2 or 20% (second column) and also that the required precision level is 5% (first row). The entry in the first row and second column is 45. This means that a sample of 45 is needed to ensure that there is 90 % probability that that the sample mean does not deviate from the population mean by more than 5%.

**Sample sizes by target precision and relative standard deviation, with 10% significance level**

| **Target precision %** | **Estimated relative standard deviation : *s / m*** | | | | |
|---|---|---|---|---|---|
| | .05 | 0.1 | 0.2 | 0.3 | 0.4 |
| | **Number of products or number of price observations** | | | | |
| 5 | 3 | 10 | 45 | 100 | 176 |
| 10 | 1 | 3 | 10 | 25 | 100 |
| 15 | | 1 | 5 | 10 | 20 |
| | | | | | |

The greater the variance in the population, the lower the level of precision in the estimated mean for any given size of sample. Conversely, the larger the size of the sample, the higher the level of precision in the estimated mean achieved for any given variance in the population. The size of sample needed to achieve a given level of precision, say 5% , may increase sharply with the relative standard deviation: for example, when *s / m* increases for 0.2 to 0.3 the minimum sample size needed more than doubles from 45 to 100.

## Annex B. Rural expenditures as a percent of total, selected countries and products

| BASIC HEADING ITEMS | Senegal | S. Africa | India | Indonesia | Brazil | Kazakhstan | Yemen |
|---|---|---|---|---|---|---|---|
| Rice | 51.28 | 43.71 | 67.31 | 57.24 | 24.76 | 45.88 | 36.30 |
| Other cereals, flour and other products | 63.44 | 54.06 | 63.18 | 69.92 | 34.06 | 66.33 | 60.84 |
| Bread | 25.54 | 32.37 | 36.36 | 30.88 | 9.61 | 33.44 | 3.53 |
| Other bakery products | 68.66 | 15.58 | 51.80 | 40.30 | 16.61 | 37.75 | 34.16 |
| Pasta products | 23.30 | 18.61 | 34.65 | 37.91 | 20.29 | 51.18 | 23.97 |
| Beef and veal | 13.25 | 29.50 | 60.05 | 24.00 | 19.94 | 33.90 | 23.29 |
| Pork | 8.48 | 18.81 | 65.26 | 55.76 | 32.08 | 35.12 | 0.00 |
| Lamb, mutton and goat | 31.39 | 17.01 | 53.20 | 46.05 | 29.41 | 79.06 | 33.72 |
| Poultry | 14.40 | 34.59 | 57.49 | 32.04 | 21.36 | 31.09 | 31.61 |
| Other meats and meat preparations | 46.37 | 19.34 | 68.68 | 16.35 | 20.99 | 24.11 | 20.61 |
| Fresh, chilled or frozen fish and seafood | 27.42 | 16.31 | 68.68 | 44.34 | 30.50 | 34.62 | 22.85 |
| Preserved or processed fish and seafood | 46.07 | 41.22 | 59.20 | 50.66 | 15.83 | 20.67 | 31.03 |
| Fresh milk | 50.35 | 22.82 | 55.59 | 24.68 | 22.91 | 47.41 | 90.13 |
| Preserved milk and other milk products | 17.38 | 30.88 | 49.99 | 22.85 | 13.13 | 40.41 | 50.10 |
| Cheese | 1.23 | 13.41 | 0.00 | 3.79 | 13.08 | 19.77 | 17.69 |
| Eggs and egg-based products | 5.34 | 33.41 | 56.37 | 41.30 | 23.90 | 34.67 | 29.43 |
| Butter and margarine | 7.05 | 24.41 | 46.47 | 11.04 | 13.62 | 40.19 | 51.42 |
| Other edible oil and fats | 41.80 | 37.28 | 57.76 | 51.48 | 24.20 | 43.78 | 34.01 |
| Fresh or chilled fruits | 42.81 | 26.59 | 48.22 | 39.20 | 15.10 | 27.22 | 28.27 |
| Frozen, preserved or processed fruit and | 71.07 | 18.19 | 45.98 | 44.43 | 28.67 | 27.89 | 35.03 |
| Fresh or chilled vegetables other than po | 31.33 | 29.96 | 57.24 | 48.99 | 26.41 | 34.49 | 30.46 |
| Fresh or chilled potatoes | 26.79 | 38.46 | 66.31 | 50.71 | 23.77 | 42.08 | 30.91 |
| Frozen, preserved or processed vegetabl | 19.85 | 31.57 | 59.37 | 45.20 | 18.16 | 42.07 | 31.41 |
| Sugar | 48.32 | 47.72 | 61.93 | 53.15 | 29.83 | 44.48 | 44.66 |
| Jams, marmalades and honey | 32.00 | 21.23 | 27.76 | 20.95 | 19.40 | 45.15 | 36.16 |
| Confectionery, chocolate and ice cream | 20.27 | 14.41 | 48.26 | 19.30 | 11.76 | 38.17 | 45.14 |
| Food products n.e.c. | 41.94 | 27.50 | 56.42 | 35.98 | 18.72 | 37.95 | 39.13 |
| Coffee, tea and cocoa | 50.33 | 31.18 | 48.59 | 45.55 | 22.88 | 44.24 | 45.78 |
| Mineral waters, soft drinks, fruit and veg | 16.93 | 22.58 | 29.32 | 13.76 | 11.01 | 29.76 | 20.22 |
| Spirits | 27.10 | 20.02 | 60.25 | 80.09 | 13.07 | 45.77 | 0.00 |
| Wine | 23.04 | 26.13 | 79.00 | 47.24 | 16.60 | 34.52 | 0.00 |
| Beer | 22.35 | 34.65 | 38.20 | 28.95 | 13.37 | 25.03 | 0.00 |
| Tobacco | 48.75 | 23.65 | 62.12 | 48.87 | 13.68 | 34.53 | 27.31 |
| Clothing material, other articles of clothi | 31.57 | 27.61 | 63.07 | 43.78 | 12.92 | 28.91 | 33.56 |
| Garments | 40.00 | 26.02 | 55.92 | 42.74 | 12.75 | 34.11 | 29.89 |
| Cleaning, repair and hire of clothing | 28.58 | 10.77 | 58.69 | 36.92 | 9.16 | 13.55 | 33.84 |
| Shoes and other footwear | 29.79 | 27.41 | 50.99 | 40.29 | 12.69 | 36.71 | 31.85 |
| Repair and hire of footwear | 31.25 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 30.28 |
| Actual and imputed rentals for housing | 25.95 | 18.57 | 1.99 | 25.29 | 8.52 | 0.00 | 9.41 |
| Maintenance and repair of the dwelling | 59.64 | 14.70 | 63.09 | 37.73 | 13.69 | 0.00 | 21.49 |
| Water supply | 15.80 | 8.71 | 18.71 | 8.66 | 3.50 | 18.45 | 18.26 |
| Miscellaneous services relating to the dw | 0.00 | 7.09 | 0.00 | 0.00 | 12.01 | 2.23 | 61.10 |
| Electricity | 6.30 | 16.99 | 36.61 | 29.57 | 8.55 | 32.82 | 10.88 |
| Gas | 6.08 | 54.03 | 35.12 | 25.25 | 17.19 | 40.62 | 39.78 |

## Annex C: Outlet Information by Location

| Country | Outlet information by location | |
|---|---|---|
| | Region or State/ Province | Urban/ Rural |
| Bangladesh | 23 districts (out of 64) | urban (37 markets) and rural (20), mostly included in CPI |
| Bhutan | 20 districts + 2 big cities | two cities, 21 urban towns, all major rural areas |
| Brunei Darussalam | 3 districts | small country |
| Cambodia | capital + 5 province cities | Urban |
| China | 11 large cities | primarily urban |
| Hong Kong, China | throughout economy | urban and rural |
| Macao, China | entire area | |
| Taiwan, China | 16 survey areas | urban and rural (8 cities and 34 towns/townships) |
| Fiji | two cities + 4 towns | small country |
| India | 22 states | 31 urban centers collect on everthing 201 rural villages collect only on food, clothing and footwear, education |
| Indonesia | 28 provinces to represent urban-rural; West-East Indonesia; Java-outer islands; and large-medium cities. | |
| Iran, Islamic Rep. | 30 provinces | urban in 30 provinces (30 capitals + 50 other cities) and rural in 28 provinces (62 villages) |
| Lao PDR | capital + 7 provinces | urban in capital and 4 provinces and rural in 3 provinces |
| Malaysia | 14 states | urban (36 capita and urban centers) and rural (15 rural centers) |
| Maldives | capital + 4 other islands | small country |
| Mongolia | capital + 21 provinces | urban (capital + two cities) and rural (19 provinces) |
| Nepal | four domains (mountain, hill, terai, Kathmandu) | urban (14 centers) and rural (17) |
| Pakistan | 4 provinces | urban (35 cities and 71 markets) |
| Philippines | 17 regions | urban for capital and urban/rural for other regions |
| Singapore | throughout economy | small country |
| Sri Lanka | 24 districts | urban and rural (17 districts have both, 3 have only urban and 4 have only rural) |
| Thailand | 16 provines and capita | urban |
| Vietnam | 20 provinces | urban and rural |
| Argentina | Grand Buenos Aires | urban |
| Bolivia | Capital + 3 cities | urban |
| Brazil | 6 major cities | urban |
| Chile | capital and 12 cities | urban |
| Colombia | Capital + 3 major cities | urban |
| Ecuador | 2 major cities | urban |
| Paraguay | Gran Asuncion | urban |

| | | |
|---|---|---|
| Peru | Capital + 4 cities | urban |
| Uruguay | Capital + 4 cities | urban |
| Venezuela, RB | Grand Caracas | urban |
| Austria | capital city | urban |
| Belgium | capital city | urban |
| Germany | capital city | urban |
| Luxembourg | capital city | urban |
| Netherlands | capital city with main urban areas | urban |
| Czech Republic | capital city | urban |
| Hungary | capital city | urban |
| Poland | capital city | urban |
| Slovak Republic | capital city | urban |
| Slovenia | capital city | urban |
| Switzerland | capital city | urban |
| Denmark | capital city | urban |
| Finland | capital city | urban |
| Ireland | capital city | urban |
| Sweden | capital city | urban |
| United Kingdom | capital city | urban |
| Estonia | capital city | urban |
| Latvia | capital city | urban |
| Lithuania | capital city | urban |
| Iceland | capital city | urban |
| Norway | capital city | urban |
| France | capital city | urban |
| Greece | capital city | urban |
| Italy | capital city | urban |
| Portugal | capital city | urban |
| Spain | capital city | urban |
| Cyprus | capital city | urban |
| Malta | capital city | urban |
| Bulgaria | capital city | urban |
| Romania | capital city with main urban areas | urban |
| Turkey | capital city | urban |
| Australia | capital city with main urban areas | urban |
| Canada | capital city with main urban areas | urban |
| Japan | capital city with main urban areas | urban |
| Korea, Rep. | capital city with main urban areas | urban |
| Mexico | capital city with main urban areas | urban |
| New Zealand | capital city with main urban areas | urban |
| United States | capital city with main urban areas | urban |
| Israel | capital city with main urban areas | urban |
| Albania | capital city | urban |
| Bosnia and Herzegovina | capital city | urban |
| Croatia | capital city | urban |
| Macedonia, FYR | capital city | urban |
| Montenegro | capital city | urban |
| Serbia | capital city | urban |
| Armenia | throughout country | |

| | | |
|---|---|---|
| Belarus | | |
| Kazakhstan | | |
| Kyrgyz Republic | | |
| Moldova | | |
| Azerbaijan | capital city | urban |
| Ukraine | | |
| Georgia | | |
| Russian Federation | | |
| Tajikistan | food throughout country, but others in Dushanbe | |
| Angola | 9 provinces | province capital plus two to three rural areas accessible from the provincial capital |
| Benin | all 12 departments | urban (urban centers) and rural (village closest to urban centers) |
| Botswana | every Census district has at least one collection center (32, 52% population & 69% consumption) | all town/city (100%), some urban villages (63%) and rural villages (4%) |
| Burkina Faso | 10 regions | region center and adjacent rural area with largest population within a radius of about 20 km |
| Burundi | 7 zones | urban (urban centers) |
| Cameroon | all 10 regions | urban (10 urban centers) and rural (10 rural areas) |
| Cape Verde | 3 islands | urban and rural in all three islands |
| Central African Republic | 7 administrative regions/10 prefectures | urban (urban centers) and rural (rural locality closest to urban centers) |
| Chad | 8 regions | urban and additional rural markets |
| Comoros | all 3 islands | urban and rural (331 towns/villages) |
| Congo, Dem. Rep. | 11 provinces | urban (10 centers) and rural (10 centers) |
| Congo, Rep. | 11 departments | urban (6 centers) and rural (20 locations) |
| Cote d'Ivoire | capital + all 9 other regions (by rural/urban) | urban (10 region centers) and rural (9 largest prefectures near region centers) |
| Equatorial Guinea | 6 provinces/8 municipality | urban/rural |
| Egypt, Arab Rep. | 11 gvernorates (66 collection centers) | 2 governorates have urban (6 each) and 9 have both (3 urban &3 rural each) |
| Ethiopia | 13 regions | Addis + 12 urban areas + new rural areas |
| Gabon | five zones plus two largest cities | urban (123 outlets) and rural (only weekly markets 7) |
| Gambia, The | all 8 regions/8 local government area | |
| Ghana | 10 regions | 41 urban + 19 rural markets |
| Guinea | capital and 4 zones | urban and rural (one region capital and one rural weekly market nearby for each zone) |
| Guinea-Bissau | capital and 7 regions | urban and rural (except for capital all regions have both) |
| Kenya | all regions | Nairobi (10 areas) + 15 urban centers + 10 new rural centers |
| Lesotho | all 10 regions | urban + additional 1 or 2 villages for each region |
| Liberia | all 5 regions | urban (five region largest towns) and rural (rural area surrounding largest town) |

| | | |
|---|---|---|
| Madagascar | 6 provinces | urban (7 large urban centers, 8 other urban centers) and rural (25 rural locations) |
| Malawi | all 27 districts (except Island of Likoma) | 4 cities and 29 rural centers (6 total for districts with the 4 cities and one each for other districts) |
| Mali | capital and 8 regions | urban and rural |
| Mauritania | 13 regions | urban (13 regional centers) + rural (5 rural centers in 3 regions) |
| Mauritius | all 10 districts | urban and rural |
| Morocco | 8 regions | urban (8 regional centers) and rural (14 rural markets) |
| Mozambique | 4 provinces | urban (4 cities) and rural (2 villages in each province) |
| Namibia | 3 zones (9 out of 13 regions) | capital + surrounding rural areas |
| Niger | capital + 7 administrative regions | urban (capita1 + 7 region centers) and rural (7 largest rural weekly market nearby) |
| Nigeria | 6 zones | 46/23 rural/urban centers sampled within 6 zones & by urban/rural (to have five price obs per center per item) |
| Rwanda | capital and all 12 provinces | urban (capital + 12 province centers + 3 other cities) and rural (one location in each province) |
| Sao Tome and Principe | 2 islands/8 districts | urban (29 centers) and rural (14 centers) |
| Senegal | 5 regions | urban (8 centers) and rural (5 centers) |
| Sierra Leone | 4 provinces/regions | urban (5) and rural (3) collectio n centers |
| South Africa | 9 provinces | urban (50 collection centers) |
| Sudan | 16 states (northen Sudan) | urban (28 largest markets in state capital cities+one additional market in other town for each state) and rural (additional two rural village markets for each state) |
| Swaziland | 10 towns | urban (10 centers) and rural (9 centers) |
| Tanzania | 7 zones (11 regions) | urban (11 out of 20 CPI centers) and rural (one center each for the same 10 regions, each with 4 villages having weekly markets) |
| Togo | capital + 5 regions | urban and rural |
| Tunisia | 7 regions/24 governorates | urban and rural |
| Uganda | capita and 4 zones | urban (six urban centers + one more in Northern zone) and rural (eight centers) |
| Zambia | all 9 provinces(41 districts) | urban (10 centers) and rural (38 centers) |
| Zimbabwe | all 10 provinces | urban (88 centers) and rural (32 centers) |
| Bahrain | | urban |
| Egypt, Arab Rep. | 3 regions | urban/rural |
| Iraq | capital and several large cities | urban |
| Jordan | 3 regions/all kingdom governors (12) | urban/rural |
| Kuwait | | urban |
| Lebanon | 5 regions | Mostly urban with some coverage of rural towns |
| Oman | 6 regions | urban |
| Qatar | 3 regions | urban |

| | | |
|---|---|---|
| Saudi Arabia | most regions | mostly urban with some rural coverage (Bedouin villages) for some groups |
| Syrian Arab Republic | Damascus metropolitan area | mostly urban with relatively low coverage of rural areas |
| Yemen, Rep. | most regions | mostly urban with some rural coverage for some groups |

**Prices for consumption only. Housing, health, education, government and gross fixed capital formation are not included.**

*** Prices used in PPP:**

**N national representative**

**U primarily urban**

**C only capital city**

**Annex D: Summary Table**

| Item Level Details | | | | |
|---|---|---|---|---|
| Item Code | Item Name | Number of products priced | Geo mean of country STDs | Geo mean of product STDs |
| 99.11.01.11.1 | Rice | 6 | 0.211 | 0.265 |
| 99.11.01.11.2 | Other cereals, flour and other products | 7 | 0.156 | 0.187 |
| 99.11.01.11.3 | Bread | 4 | 0.126 | 0.211 |
| 99.11.01.11.4 | Other bakery products | 8 | 0.223 | 0.240 |
| 99.11.01.11.5 | Pasta products | 6 | 0.171 | 0.219 |
| 99.11.01.12.1 | Beef and veal | 14 | 0.150 | 0.162 |
| 99.11.01.12.2 | Pork | 11 | 0.143 | 0.137 |
| 99.11.01.12.3 | Lamb, mutton and goat | 8 | 0.082 | 0.117 |
| 99.11.01.12.4 | Poultry | 9 | 0.162 | 0.163 |
| 99.11.01.12.5 | Other meats and meat preparations | 19 | 0.244 | 0.223 |
| 99.11.01.13.1 | Fresh, chilled or frozen fish and seafood | 10 | 0.226 | 0.271 |
| 99.11.01.13.2 | Preserved or processed fish and seafood | 7 | 0.177 | 0.196 |
| 99.11.01.14.1 | Fresh milk | 5 | 0.067 | 0.097 |
| 99.11.01.14.2 | Preserved milk and other milk products | 6 | 0.180 | 0.213 |
| 99.11.01.14.3 | Cheese | 6 | 0.185 | 0.212 |
| 99.11.01.14.4 | Egg and egg-based products | 2 | 0.046 | 0.146 |
| 99.11.01.15.1 | Butter and margarine | 5 | 0.166 | 0.233 |
| 99.11.01.15.3 | Other edible oils and fats | 7 | 0.201 | 0.224 |
| 99.11.01.16.1 | Fresh or chilled fruit | 12 | 0.236 | 0.246 |
| 99.11.01.16.2 | Frozen, preserved or processed fruit and fruit - based products | 8 | 0.224 | 0.228 |
| 99.11.01.17.1 | Fresh or chilled vegetables other than potatoes | 10 | 0.286 | 0.278 |
| 99.11.01.17.2 | Fresh or chilled potatoes | 3 | 0.077 | 0.155 |
| 99.11.01.17.3 | Frozen, preserved or processed vegatables and vegetable - based products | 15 | 0.250 | 0.261 |
| 99.11.01.18.1 | Sugar | 4 | 0.181 | 0.255 |
| 99.11.01.18.2 | Jams, marmalades and honey | 4 | 0.162 | 0.207 |
| 99.11.01.18.3 | Confectionery, chocolate and other cocoa preparations | 7 | 0.238 | 0.271 |
| 99.11.01.19.1 | Food products n.e.c. | 7 | 0.220 | 0.243 |
| 99.11.01.21.1 | Coffee, tea, and cocoa | 7 | 0.241 | 0.271 |
| 99.11.01.22.1 | Mineral waters, soft drinks, fruit and vegetable juices | 7 | 0.160 | 0.192 |
| 99.11.02.11.1 | Spirits | 7 | 0.153 | 0.211 |
| 99.11.02.12.1 | Wine | 9 | 0.157 | 0.192 |
| 99.11.02.13.1 | Beer | 5 | 0.158 | 0.191 |

| | | | | |
|---|---|---|---|---|
| 99.11.02.21.1 | Tobacco | 7 | 0.059 | 0.100 |
| 99.11.03.11.1 | Clothing materials, other articles of clothing and clothing accessories | 11 | 0.266 | 0.265 |
| 99.11.03.12.1 | Garments | 68 | 0.265 | 0.256 |
| 99.11.03.14.1 | Cleaning, Repair and Hire of Clothing | 4 | 0.170 | 0.233 |
| 99.11.03.21.1 | Shoes and other footwear | 22 | 0.275 | 0.269 |
| 99.11.03.22.1 | Repair and Hire of Footwear | 2 | 0.068 | 0.188 |
| 99.11.04.31.1 | Maintenance and repair of the dwelling | 7 | 0.204 | 0.229 |
| 99.11.04.41.1 | Water supply | 0 | | |
| 99.11.04.51.1 | Electricity | 5 | 0.061 | 0.109 |
| 99.11.04.52.1 | Gas | 5 | 0.056 | 0.153 |
| 99.11.04.53.1 | Other fuels | 2 | 0.169 | 0.237 |
| 99.11.05.11.1 | Furniture and furnishings | 18 | 0.220 | 0.245 |
| 99.11.05.12.1 | Carpets and other floor coverings | 3 | #NUM! | 0.227 |
| 99.11.05.13.1 | Repair of furniture, furnishings and floor coverings | 2 | #NUM! | 0.184 |
| 99.11.05.21.1 | Household Textiles | 13 | 0.196 | 0.227 |
| 99.11.05.31.1 | Major household appliances whether electric or not | 20 | 0.221 | 0.212 |
| 99.11.05.32.1 | Small electric household appliances | 8 | 0.151 | 0.162 |
| 99.11.05.33.1 | Repair of Household Appliances | 0 | | |
| 99.11.05.41.1 | Glassware, Tableware and Household Utensils | 17 | 0.238 | 0.245 |
| 99.11.05.51.1 | Major Tools and Equipment | 3 | 0.116 | 0.164 |
| 99.11.05.52.1 | Small tools and miscellaneous accessories | 5 | 0.144 | 0.204 |
| 99.11.05.61.1 | Non-durable Household Goods | 13 | 0.259 | 0.257 |
| 99.11.05.62.1 | Domestic services | 2 | 0.215 | 0.345 |
| 99.11.06.11.1 | Pharmaceutical products | 43 | 0.302 | 0.274 |
| 99.11.06.12.1 | Other Medical Products | 4 | 0.214 | 0.269 |
| 99.11.06.13.1 | Therapeutic Appliances and Equipment | 7 | 0.243 | 0.279 |
| 99.11.06.21.1 | Medical Services | 6 | 0.282 | 0.373 |
| 99.11.06.22.1 | Dental Services | 3 | 0.223 | 0.282 |
| 99.11.06.23.1 | Paramedical Services | 5 | 0.224 | 0.264 |
| 99.11.07.11.1 | Motor car | 30 | 0.151 | 0.147 |
| 99.11.07.12.1 | Motor cycles | 5 | 0.070 | 0.113 |
| 99.11.07.13.1 | Bicycle | 2 | 0.074 | 0.123 |
| 99.11.07.22.1 | Fuels and lubricants for personal transport equipment | 7 | 0.118 | 0.179 |
| 99.11.07.23.1 | Maintenance and repair of personal transport equipment | 10 | 0.225 | 0.277 |
| 99.11.07.24.1 | Other services in respect of personal transport equipment | 4 | 0.153 | 0.285 |
| 99.11.07.31.1 | Passenger transport by railway | 5 | #NUM! | 0.212 |
| 99.11.07.32.1 | Passenger transport by road | 4 | #NUM! | 0.251 |
| 99.11.07.33.1 | Passenger transport by air | 3 | 0.100 | 0.327 |

| | | | | |
|---|---|---|---|---|
| 99.11.07.34.1 | Passenger transport by sea and inland waterway | 0 | | |
| 99.11.08.11.1 | Postal Services | 5 | 0.242 | 0.305 |
| 99.11.08.31.1 | Telephone & Telefax Services | 11 | 0.428 | 0.407 |
| 99.11.09.11.1 | Audio-visual, photographic and information processing equipment | 19 | 0.200 | 0.193 |
| 99.11.09.14.1 | Recording media | 5 | 0.167 | 0.197 |
| 99.11.09.15.1 | Repair of audio-visual, photographic and information processing equipment | 3 | 0.113 | 0.186 |
| 99.11.09.21.1 | Major Durables for outdoor and indoor recreation | 2 | 0.153 | 0.229 |
| 99.11.09.31.1 | Other recreational items and equipment | 10 | 0.227 | 0.225 |
| 99.11.09.33.1 | Gardens and Pets | 4 | 0.150 | 0.223 |
| 99.11.09.41.1 | Recreational and sporting services | 4 | 0.205 | 0.279 |
| 99.11.09.42.1 | Cultural services | 10 | 0.253 | 0.296 |
| 99.11.09.51.1 | Newspapers, books and stationery | 17 | 0.299 | 0.287 |
| 99.11.10.11.1 | Education | 0 | | |
| 99.11.11.11.1 | Catering services | 44 | 0.312 | 0.305 |
| 99.11.11.21.1 | Accommodation services | 7 | 0.131 | 0.221 |
| 99.11.12.11.1 | Hairdressing salons and personal grooming establishments | 7 | 0.232 | 0.232 |
| 99.11.12.12.1 | Appliances, articles and products for personal care | 17 | 0.290 | 0.290 |
| 99.11.12.31.1 | Jewellery, clocks and watches | 4 | 0.179 | 0.190 |
| 99.11.12.32.1 | Other personal effects | 9 | 0.192 | 0.224 |

[i] See Chapter 7, ICP Handbook for more details