



ICP AND THE ROLLING PRICE SURVEY APPROACH

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**4th Meeting of the International Comparison Program (ICP)
Technical Advisory Group (TAG)**

**October 28–29, 2019
World Bank, 1818 H St. NW, Washington, DC**

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Introduction

Improvements in the coverage and timeliness of ICP regional and global comparisons have led to a greater usage of PPPs and a growing demand from users and would-be users for more frequent comparisons.¹ With this development in mind, the Friends of the Chair in their evaluation of ICP 2011 for the United Nations Statistical Commission (UNSC)² recommended that the ICP reduce the interval between reference years from six years to three years by adopting the rolling price survey approach (RPSA)³. The UNSC endorsed the recommendation at its 47th session in March 2016⁴. Reference years were now to be every three years and the RPSA was to be the means to bring this about. The next reference year would be 2020, three years after the latest reference year 2017. And, to the extent possible, the regional and global comparisons for 2020 would be made applying the RPSA.

The task of determining how to implement the UNSC's recommendation was given to the ICP Taskforce for Country Operational Guidelines and Procedures. So far the Taskforce has met four times: three times at the World Bank in Washington (October 25, 2017; March 2, 2018; and September 27, 2018) and once at the OECD in Paris (May 3, 2019). A fifth meeting is scheduled for October 29, 2019 at the World Bank in Washington. This paper, which summarises progress to date, will be presented at that meeting.

Discussion on implementation at the first four meetings focused on the issues that global and regional coordinators needed to address when switching to the RPSA. During the fourth meeting, it became obvious that there would not be sufficient time to implement the RPSA in ICP 2020. There would be time to commence implementation but completion would have to wait for a later reference year, most likely 2023. This conclusion was reinforced by the information provided to the Taskforce during the meeting on how regions proposed to make their comparisons for ICP 2020. All but two regions indicated that they would continue applying the standard benchmark approach (SBA)⁵ they had used for ICP 2017 and earlier comparisons. Discussion at the fifth meeting of the Taskforce is expected to focus on the formulation of a strategy that accommodates both the postponement of RPSA implementation to ICP 2023 and the retention of the SBA for ICP 2020. The strategy pursued will depend on whether the paper's assertion - that implementation requires all regions to adopt the approach - holds up under scrutiny.

The paper

The paper elaborates the previous paragraph. It opens with an explanation of how the RPSA operates during which the major steps of implementation are identified and introduced. It continues by comparing summaries of how regions collected data for ICP 2017 with summaries of how they propose to collect data for ICP 2020. It closes with some comments relevant to ICP 2023.

¹ Prior to ICP 2005, the reasons given for not using PPPs were that country coverage was poor, results were published too late and comparisons were not frequent enough. ICP 2005 and ICP 2011 covered 146 and 177 countries respectively and their results were published three years after the reference year. Only the frequency issue remains to be resolved.

² <http://unstats.un.org/unsd/statcom/47th-session/documents/2016-9-FOC-group-on-evaluation-of-2011-round-of-ICP-E.pdf>.

³ Originally the approach was called the "rolling benchmark approach". This was subsequently changed to the "rolling survey approach" (see second edition of Eurostat-OECD Methodological Manual). It is currently referred to as the "rolling price survey approach" which is more precise.

⁴ http://unstats.un.org/unsd/statcom/47th-session/documents/Decisions_final_unedited.pdf.

⁵ Consumer goods and services are priced in each quarter of the reference year. Housing services, government services and capital goods are priced once either in the reference year or retrospectively in the year following the reference year.

The explanation of how the RPSA works draws heavily on the experience of the European Union (EU) and the OECD. The EU-OECD region is the only region to use the approach at present. Of particular relevance to ICP implementation of the RPSA is the experience of the European Union between 1999 and 2013 when, for organisational purposes, participating countries were divided into groups that had to be closely coordinated so that they could be combined in a single comparison. On the basis of this experience the paper maintains that, if the ICP is to adopt the RPSA, all regions will have to implement the approach and all will have to work closely together and respect a common timetable. Drawing up the timetable is one of three steps described in the paper under implementation. The other two concern the collection of consumer prices and the employment of temporal adjustment coefficients (TACs). The three steps are all part and parcel of the RPSA.

The paper includes an example of the timetable for an ICP survey cycle under the RPSA (Table 5). It is similar to the one followed by the European Union (Table 3) and covers a range of activities: the overall planning of regional surveys and the global survey, the compilation of regional product lists and core product lists, and the collection, validation and evaluation of price data. From start to finish a survey takes between 30 to 36 months to complete. When placed in the context of ICP 2020 it can be seen that the plans and guidance being prepared by the Taskforce could not have been ready in time for implementation in ICP 2020. Taskforce discussions only started in October 2017, while the timetable has implementation beginning in the first quarter of 2018. (As this would have been the first time that regions other than the EU-OECD region employed the RPSA, perhaps implementation should have been programmed to begin even earlier – the last quarter of 2017 - to allow more time for preparatory groundwork.)

The paper emphasises the importance to the global comparison of close coordination between regions and strict adherence to the global timetable. These prerequisites are not new, they underpinned the global comparisons of 2005, 2011 and 2017. But, if the ICP is to adopt the RPSA, coordination between regions will need to be even closer and adherence to the global timetable even stricter than previously. This could be an impediment to some regions switching to the RPSA given that they are autonomous and have different administrative and financial constraints. Reluctance to change to the RPSA on the part of one or more regions would be a serious obstacle to implementation because, as stated earlier, all regions have to adopt the approach. As the paper explains, this is to ensure that the inter-region validation of the prices of the products priced across all regions in order to link the regions in the global comparison will be timely and exhaustive. It is meeting the requirements of inter-region validation that complicates ICP implementation of the RPSA.

Tables and annexes

Eight tables accompany the text. They are grouped together after the text for convenience. Two annexes are attached to the paper. Annex 1 lists the current data requirements of EU, OECD and ICP comparisons. It serves primarily as an aide-memoire. Annex 2 explains in detail the data underlying the EU comparisons for 2020, 2021, 2022 and 2023 and the OECD comparisons for 2020 and 2023.⁶ It supplements the explanation of the RPSA in the text.

Background

The RPSA was developed by the European Union and the OECD in the early 1990s when their comparisons were made every five years⁷ in parallel with ICP comparisons (1980, 1985 and 1990). The approach was designed specifically to meet two objectives: the increase in the frequency of comparisons desired by users within the European Commission and the OECD Secretariat and the easing of response burden demanded by participating countries. The same objectives that the ICP is being pressed to meet globally. They were achieved through the

⁶ The annex has been updated. In previous papers it covered EU comparisons for 2017, 2018, 2019 and 2020 and OECD comparisons for 2017 and 2020.

⁷ This required participating countries to collect a substantial amount of detailed data every fifth year: just as countries participating in recent ICP comparisons have had to collect a similar volume of data every sixth year. A number of influential participants resented this demand for additional data. It invariably had to be funded either in whole or in part from their regular budget thereby consuming resources that they felt would be better spent meeting national data requests. They expressed a reluctance to continue their participation unless there was some levelling of the five-year spike (peak) in data requirements. This coincided with a call from users within the European Commission and the OECD Secretariat for a shorter period between reference years.

introduction of continuous price collection and by spreading the collection of prices for a reference year over three years centred on the reference year.

Continuous price collection made it easier for participating countries to include the data collections for EU and OECD comparisons in their national data collection programmes. It also fostered continuity of expertise in their national statistics institutes, expertise which was often dissipated during the five year gap between reference years. Collecting prices for a reference year over three years allowed more time for the creation of product lists which led to a more balanced selection of products and improved product specifications. It also allowed greater flexibility in the design of survey frameworks: they could better tailored to suit the outlet distribution profiles of the products being priced. And, while it did not reduce response burden in terms of the amount of data to be collected, it made it easier for countries to shoulder the burden. These are advantages from which the ICP would benefit by adopting the RPSA. The easing of response burden is an important consideration for the ICP given that making comparisons every three years instead of every six doubles the amount of data that participants are asked to provide. It is for this reason that the UNSC recommended that the reduction in the interval between reference years be achieved with the RPSA.

Depending on how data collection is organised, comparisons with the RPSA can be made either every year or every three years. Since 1990 comparisons have been made every year for the European Union (1991, 1992, 1993, etc.) and every three years for the OECD (1993, 1996, 1999, etc.). The OECD is in the process of moving to annual comparisons.

As mentioned earlier, the European Union's experience between 1999 and 2013 is especially relevant. During this period countries participating in EU comparisons were divided into groups. The groups had to be coordinated and supervised by Eurostat⁸ so that they could be combined in one comparison covering all EU member states and EU candidate countries. The situation that Eurostat faced then is similar to that which the ICP faces now, namely, how to combine the groups/regions in a single/global comparison employing the RPSA.

Regions are combined using inter-region linking factors derived from the prices they collect for core products – core products being the goods and services that have been selected to be priced over all regions. Regions collect and validate the prices of core products of a given type at the same time as they collect and validate the prices of their regional products of the same type. Core food products, for example, are priced at the same time as regional food products. After intra-country validation and intra-region validation, the prices for core products go through an additional validation at the global level – the inter-region validation - whereby core product prices are edited and verified across regions. Like the other levels of validation, inter-region validation should be undertaken as soon as possible after price collection in order to have sufficient time to verify and correct the outliers identified and avoid having to discard them mechanically through lack of time. Discarding prices of core products that are outliers just because they are outliers could adversely affect the integrity of the inter-region linking factors. This is prevented by all regions collecting and validating the prices of core products at the same time.

Rolling price survey approach

The RPSA makes comparisons employing a mix of current data and extrapolated and retroplated data as shown in Table 1. PPPs are calculated with prices that have been collected in the reference year t or prices that have been collected in the year $t-1$ or the year $t+1$. Prices surveyed in year t can be used directly in the calculation of the PPPs, but those surveyed in year $t-1$ and year $t+1$ have to be either extrapolated or retroplated to year t before they can be included in the calculation. The extrapolation or retroplation is done at the basic heading level with TACs.

Price collection is cyclical. The price surveys are repeated every three years. The prices of goods and services surveyed in year $t-1$ are resurveyed in year $t+2$; those surveyed in year t are resurveyed in year $t+3$; and those surveyed in year $t+1$ are resurveyed in year $t+4$. The products to be priced and their specifications are updated and revised between surveys. So, for example, the products priced in year $t+2$ will not necessarily be the same

⁸ The Statistics Office of the European Union.

products or have the same characteristics as those that were priced in year t-1 even though they are from the same product group.

In theory the approach could be employed to collect prices for all types of goods and services comprising final expenditure on GDP but in practice it is not. The European Union and the OECD only use the approach to collect prices for consumer goods and services, the most demanding of the data collections. It is not used to collect prices for housing services, government services and capital goods⁹. Prices for these goods and services are collected either in the reference year or retrospectively in the year following the reference year. They are collected every year for EU annual comparisons¹⁰ and every three years for OECD three-year comparisons.

The RPSA is employed only for household consumption because, while EU and OECD countries usually have consumer price indexes (CPIs) with sub-indexes that can be extracted to serve as TACs with which to extrapolate or retroplated the prices collected for consumer products, they generally do not have measures that can provide suitable TACs for the other types of product priced. The situation is expected to be the same in the other regions with participating countries having TACs only for consumer goods and services. In adopting the RPSA, these regions, like the EU-OECD region, will only price household consumption over three years. Housing services, government services and capital goods will continue to be priced in the reference year or retrospectively in the following year.

Household consumption

For their comparisons the European Union and the OECD divide the goods and services comprising household consumption into six parts. Each part constitutes the product list for a price survey. The surveys are listed in Table 2 together with a summary of the types of product each survey covers. Two price surveys are conducted each year: one in the second quarter of the year, the other in the fourth quarter of the year. The prices collected are mostly point-in-time capital city prices which are subsequently converted to national annual average prices.¹¹

Each survey has five phases - the preview, planning and pre-survey phase; the product list and survey guidelines creation phase; the price collection and intra-country validation phase; the inter-country validation phase; and the evaluation phase – as shown in the generalised EU timetable for the survey cycle in Table 3. For survey 1 and survey 2 preparation starts in year t-2, price collection takes place in year t-1 and processing ends in year t. Once the cycle is established, in any calendar year work is underway on all six surveys: the two surveys of the previous year are being finalised; the two surveys of the current year are being carried out; and the two surveys of the following year are being prepared.

Successful completion of each phase requires close cooperation between organisers and participants. To this end, organisers and participants in EU comparisons meet twice a year, in March and September, with organisers visiting participating countries once every two years. Organisers and participants in OECD comparisons meet once every two years with organisers visiting participating countries on an ad hoc basis: OECD comparisons cover a wide geographical dispersion of countries and resources are limited. In addition, the whole survey operation for EU comparisons is carried out with on-line tools developed by Eurostat that allow organisers and participants to follow the entire process of product list creation, price collection, price validation and PPP calculation which helps to ensure that they start and finish each phase on time.¹²

Temporal adjustment coefficients

⁹ Machinery and equipment, residential and non-residential buildings, civil engineering works.

¹⁰ Except machinery and equipment which are priced every two years.

¹¹ - The point-in-time capital city prices are converted first to national average prices with spatial adjustment coefficients then to annual national average prices with temporal adjustment coefficients. The spatial adjustment coefficients like the temporal adjustment coefficients are usually based on price data taken from the CPI.

¹² The on-line tools also allow participants to view each other's data. This provides transparency and fosters the building of trust between them which is important. A country's PPPs depend not only on its own price data but also on the price data of all other countries in the comparison. Its PPPs can therefore be adversely affected by errors in the data of other participants. A country needs to be able to satisfy itself that this is not the case.

The European Union and the OECD apply the TACs in two ways. First they convert the point-in-time prices collected in the year t-1, the reference year t and the year t+1 to annual prices. The annual prices are used to calculate basic heading PPPs for each year. The TACs are then applied to extrapolate the PPPs of the basic headings priced in t-1 (but not priced in t or t+1) to t and to reproject the PPPs of the basic headings priced in t+1 (but not priced in t-1 or t) to t. Providing the CPI sub-index selected as TAC and the basic heading it is to adjust are sound, the accuracy of the extrapolation or reprojectation - that is, the degree to which the adjusted PPPs are close to the PPPs that would have been calculated had prices been collected in the reference year – will depend largely on the strength of the correlation between the coverage of the sub-index and the coverage of the basic heading.

The correspondence between the two is generally high for EU and OECD countries as their CPIs and the basic headings comprising household consumption are based on the same classification (COICOP¹³). Even so, not all basic headings are covered and not all CPI data are applicable for comparison purposes because their price concepts are different. A good example of the latter is the full market or total price concept for medical goods and services required for PPPs and the price actually paid by households required for the CPI. For such basic headings participating countries are still expected to provide TACs, if not from their CPI database then from another source. More generally when there is no sub-index that exactly matches a basic heading, participating countries are expected to select a sub-index, or an aggregation of sub-indices, that closely approximates the basic heading in question. The matching process involves an element of subjectivity.

Timetable

The RPSA works for EU and OECD comparisons because organisers and participants have agreed on a timetable which they strictly follow. The timetable used for EU comparisons is particularly detailed with the five phases of Table 3 broken down into steps as shown in Table 4. The table also identifies who is responsible for each step – organisers or participants or both. The EU timetable allows very little catch up time which is to be expected with annual comparisons to be made. The OECD timetable is more flexible as comparisons are three yearly, but this will change as the OECD moves to annual comparisons.

EU comparisons 1999 - 2013

Prior to 1999, the six price surveys covering household consumption were organised directly by Eurostat but in 1999 the number of countries participating in EU comparisons jumped from 20 to 31, which at the time was too many for the six surveys to continue to be managed centrally. Organisation was decentralised. Participating countries were divided into three groups and later, when the number of participants rose to 37, into four groups. Each group was headed by a group leader selected from among the countries in the group. The group leader was responsible for drawing up the group's product lists for the surveys in consultation with the other members of the group; visiting group members to ensure uniformity of product selection and pricing procedures; and editing the price data provided by group members.

The group leaders together with Eurostat were responsible for making sure that the product lists for the groups had a sufficient number of overlap (core) products at each basic heading so that comparisons could be made across groups. Eurostat oversaw the collaboration between groups and ensured a harmonised approach to the surveys by the groups. Group leaders met together twice a year, in early spring and early autumn, and twice a year with their groups, three or four weeks after the group leaders' meeting. Group leaders also attended the group meetings of other groups. The groups were discontinued in 2013.¹⁴ Now the six surveys are managed centrally through a contractor overseen by Eurostat.

The period 1999 to 2013 is of interest because there are similarities between the EU setup as it was then and the setup the ICP is currently endeavouring to put in place.¹⁵ Then (as now) each of the six surveys took around 30

¹³ "Classification of Individual Consumption According to Purpose (COICOP)", Classification of Expenditure According to Purpose, United Nations, New York, 2000.

¹⁴ More details about the groups and the survey process can be found in Chapter 5 of *Eurostat-OECD Methodological Manual on Purchasing Power Parities*, OECD, ISBN 978-92-64-18923-2

¹⁵ The situations are not exactly the same. The groups were artificial constructs and not autonomous entities as are ICP regions. Group comparisons of themselves were not meaningful and were not published whereas regional comparisons

months to complete and each had the five phases identified in the generalised EU timetable for the survey cycle in Table 3. The phases were broken down into steps as shown in the generalised timetable for an EU survey in Table 4. Using these generalised timetables as templates, generalised timetables that show how the survey cycle and survey steps could be ordered for ICP comparisons have been derived. These timetables can be found in Table 5 and Table 6. They cover both the global comparison and the regional comparisons on the understanding that the breakdown and pricing of household consumption is the same for all regions. The two tables are for illustrative purpose only. They are not fully synchronised with each other and will require further pruning and ordering to be operational. This is especially so in the case of Table 6.

Survey cycle phases

Table 5 covers the five phases of a survey cycle. It is assumed that there will be three surveys – one survey a year – and that price collection will be quarterly over the survey year. Table 6 lists the steps of a survey together with who carries out the steps and when the steps are taken in relation to when prices are collected. Here too it is assumed that price collection will be quarterly over the survey year. Each survey will take around 30 to 36 months to complete.

From Table 5 it can be seen that in the reference year t , when the planning phase and the product list creation phase for survey 3 are underway, work continues on surveys 1 and 2: the intra-region validation phase, the inter-region validation phase and the evaluation phase in the case of survey 1 and the price collection and intra-country validation phase in the case of survey 2. In terms of the survey steps in Table 6 this means that in t steps 01 to 15 are being undertaken for survey 3; step 16, price collection and intra-country validation, is underway for survey 2; and steps 17 to 28 are being carried out for survey 1. Once the cycle comes round for the second time, recommencing in $t+1$, coordinators at all levels will be occupied with all three surveys each and every year of the cycle.

Table 6 is based on the assumption that there will be two regional coordinators' meetings a year, one in March the other in September, and that these meetings will be followed by regional meetings, also in March and September. It reflects the close collaboration and co-ordination that the surveys require between all parties involved: between countries within a region and between regions in the global context. In particular, the timely inter-region validation of core products will require regions to price the same basic headings at the same time. If they do not, and inter-region validation of core products is delayed until all regions have completed their price surveys, inter-region validation could become a mechanical exercise. Failure to verify outliers thoroughly is likely to be detrimental to the integrity of the inter-region linking factors. If regions are unable to implement the RPSA in unison to the degree required by the validation of core product prices, perhaps the prices of core products should be collected by a special survey undertaken by all regions at the same time.

The RPSA worked for EU comparisons during the fourteen years reviewed because Eurostat, group leaders and participating countries agreed on the timetable together and then strictly kept to it. This practice continues today. Each year, in November, Eurostat reviews the survey timetable with participants. Coordination between the groups was also supported by the on-line tools mentioned earlier. These remain in use.

Implementation – First step

Implementation starts by dividing household consumption into three equal parts and assigning each part to one of the three survey years. Division should be based on expenditure – that is, each survey year should cover roughly one third of household final consumption expenditure – with products grouped by type (durable goods, semi-durable goods, non-durable goods, services) and outlet distribution profile.

The requirements of the global comparison are an important consideration when making the division. From the perspective of the global comparison, it is essential that regions have a harmonised approach to price collection, that they price a sufficient number of core products and cover all basic headings, and that the inter-region validation of the prices of core products is timely and thorough. In terms of the RPSA this means that neither the

are both meaningful and published. The groups were linked using overlap products which were defined as products selected to be priced in two or more groups. ICP core products are selected to be priced in all regions, although that does not mean they are.

division of household consumption into parts nor the choice of year in the survey cycle each part is to be surveyed should be left to the regions to decide for themselves by themselves. Otherwise it is likely that each region will have its own survey cycle and that the inter-region validation of the prices of the core products will have to wait until all regions have completed their price collections which, as already mentioned, could jeopardise the integrity of the inter-region linking factors.

To avoid this all regions should follow the same survey cycle. Together they can either agree on their own schedule of surveys or agree to adopt the EU-OECD survey cycle which is tried, tested and well-established. In addition to the EU-OECD survey cycle, adopting the EU-OECD practice of conducting two surveys a year and collecting point-in-time prices may be worth considering as it will ease the response burden of participants and make it easier for them to meet regional and global deadlines. Point-in-time prices are converted to annual prices with TACs.

Throughout the paper it is assumed that regions (other than the EU-OECD region) employing the RPSA will collect prices over the four quarters of each of the survey years and the annual average price will be the unweighted average of the quarterly average prices. The assumption that regions will continue to collect prices quarterly when following the RPSA is paradoxical given the reliance of the approach on TACs. If TACs are good enough for extrapolating and retropolating basic heading PPPs, are they not also suitable for converting point-in-time prices to annual average prices? If they are, why not collect point-in-time prices? If they are not, what does that say about their suitability with regard to adjusting the basic heading PPPs of non-reference years?

Switching to point-in-time prices has its advocates. Peru, for example, proposed during a LAC meeting on the RPSA that, instead of pricing the basket of consumer products every quarter during the reference year, the basket should be divided into four parts and that a different part be priced each quarter. In other words, each product in the basket would be surveyed only once and not four times (except seasonal products which would be priced each quarter). The single quarter prices would be converted to annual prices with TACs. The advantage of pricing the whole basket quarterly is that, by comparing prices between quarters, errors can be identified and rectified. This advantage is lost under Peru's proposal but the loss is offset by the reduction in response burden. The proposal deserves further consideration.

Implementation – Second step

The second step towards implementation is matching the basic headings and TACs. In EU comparisons the coefficients are used first to convert the point-in-time prices to annual prices for the year in which they were collected. The annual prices are then used to calculate basic heading PPPs for the year. The TACs are then applied to extrapolate or retropolate the PPPs of the basic headings priced in non-reference years to the reference year. In other ICP regional comparisons, prices are collected quarterly and annual prices are calculated as the unweighted average of the four quarterly average prices. In which case, if the RPSA is adopted, the TACs will be employed only to extrapolate and retropolate the basic headings of non-reference years. And, unless there is a change in the order that price surveys are conducted between survey cycles, the basic headings that will be extrapolated and the basic headings that will be retropolated will stay the same from one survey cycle to the next - a potential bias?

The reliability of the RPSA depends on the degree to which the coverage of the TACs matches the coverage of the PPPs that they are to adjust. The greater the difference in coverage between the sub-index and the basic heading PPPs the weaker will be the correlation between them and the accuracy of the adjusted PPPs questionable. The coefficients are generally CPI sub-indexes or aggregations of CPI sub-indexes. The problem to be faced in this respect is that many of the countries participating in the ICP do not have CPIs that are sufficiently detailed to construct a sub-index specific to each of the 110 ICP basic headings comprising household consumption. For many of the basic headings, these countries they will not be able to provide a sub-index that exactly matches the basic heading. Instead they will have to provide a sub-index that closely approximates the basic heading.

One option is to use the sub-index specific to another basic heading covering similar type of products: such as adjusting the PPPs for the basic heading *other bakery products* with the sub-index specific to the basic heading *bread*. Another option, and probably the one more usually employed in practice, is to move up the classification hierarchy and use a sub-index covering a broader range of goods or services than that covered by the basic

heading: for example, using the sub-index for the expenditure class *bread and cereals* to adjust the PPPs for the basic heading *other bakery products*. Note that the expenditure class also includes the basic headings *rice, other cereals and flour, and pasta products and couscous*.

Neither option is optimal, but at least with the second the sub-index includes, in theory at least, the goods or services covered by the basic heading. Moving one step up the hierarchy as in the example above is probably permissible as the adjustment is only over one year. But it is hard to justify moving further up the hierarchy and using a sub-index with a much wider coverage, such as the expenditure group *food*, instead. Nevertheless in practice this is what may have to be done.

As will be seen later, Africa, Asia and LAC employed TACs in ICP 2017. An audit of the indexes that their countries chose as TACs and of the basic headings for which they were chosen could provide the basis for guidelines on selection and matching. It would also provide insight into the quality of the extrapolations and retranslations anticipated under the RPSA.

Implementation – Third step

Drawing up the global timetable and the regional timetables is the third step towards implementation. The global timetable is the master timetable giving the deadlines, such as the delivery dates of the various data sets required for the global comparison, that have been agreed by the global coordinator and the regional coordinators. It ensures that all regions are in unison, marching in step, in time, to the same tune. The regional timetables give the region-specific timelines agreed by the region's regional coordinator and national coordinators. They dovetail with the global timetable respecting the same deadlines. Adherence will ensure that participating countries too are in step, in time, marching to the same tune.

Drawing up the timetables involves working backwards and forwards in a top-down bottom-up series of iterations. The starting point is the proposed publication date of the global results. To begin with the timetables should not be too ambitious. Their schedules can be tightened up in later rounds when participants have become familiar with the approach. It is important to recognise what countries think is or is not feasible. A region may have to divide its countries into two tiers: those that can meet the global deadlines and those that cannot and have to be introduced into the comparison at a later date. How countries respected deadlines in previous comparisons may indicate how they can be expected to respect deadlines in future comparisons.

The generalised timetables in Tables 5 and 6 cover both global and regional comparisons on the assumption that the treatment of household consumption is the same for all regions. If this assumption does not hold with each region having its own survey schedule, the complete list of core products for the reference year t will have to be decided in $t-2$ before price collection begins and inter-region validation of core products may have to wait until the first half of $t+2$. Defining core products two or three years before they are to be priced does not seem good practice as products can drop out of the market to be replaced by new ones that may not be available in all regions or no longer comparable. As core products will not necessarily be priced in the same year this could complicate the inter-region validation as their prices may require temporal adjustment prior to validation. Apparent error may be due to the coefficient and not the observation.¹⁶

ICP 2020

In response to the UNSC's recommendation that the interval between reference years be reduced from six to three years using the RSPA, all six ICP regions have confirmed that they will start making comparisons every three years beginning with ICP 2020, but they will not necessarily employ the RPSA to do so. The RPSA is seen as the means to an end and not the end itself. The desired end of a shorter period between reference years can be reached with approaches other than the RPSA. Africa, Asia, and the Commonwealth of Independent States (CIS) do not intend to apply the RPSA in their comparisons for ICP 2020. Instead they will continue to employ the SBA as in previous comparisons. LAC does plan to use the RPSA as does Western Asia which has begun to make annual

¹⁶ The PPPs of a country depend on the data of all countries and its PPPs can be adversely affected by errors in the price data of other participants. The quality of a country's PPP can also be influenced by the suitability of the temporal adjustment coefficients employed by other.

comparisons using a variant of the approach. EU-OECD already employs the approach. Summaries of how regions collected data for ICP 2017 and how they propose to collect data for ICP 2020 can be found in Table 7.

The table has two boxes for each region. The first shows how the region collected data for ICP 2017 and the second shows how it proposes to collect data for ICP 2020. The capital letters in the table – “H” for household consumption, “R” for household rentals, etc. – identify the year of collection and, unless indicated otherwise, the year to which the data refer. When the collection year and reference year differ, the year to which the data refer is put in parentheses. For example, Africa collected housing rentals and housing volumes for 2017 in 2018. In the table this is indicated by “R (2017)” and “V (2017)” in the column for 2018. Prices for household consumption that are extrapolated or retropolated are identified by an arrow: “H→” for extrapolation; “←H” for retropolation. Africa, Asia and LAC priced consumer goods and services for ICP 2017 in 2017 and 2018. The prices collected in 2018 were retropolated to 2017: hence the “←H” in the column for 2018. For Western Asia and EU-OECD the table shows the data collected (or to be collected) for their annual comparisons. The data used for ICP 2017 and to be used for ICP 2020 are those in *italics*. Prices of machinery and equipment are surveyed every two years for EU comparisons and every three years for OECD comparisons.

From the table it can be seen that regions (other than Western Asia and EU-OECD) collected data for ICP 2017 either in the reference year (2017) or retrospectively in the following year (2018). Prices for consumer goods and services were collected quarterly and annual prices were calculated as the unweighted average of the four quarterly average prices. The prices collected for other goods and services were either annual prices or mid-year prices. Regions (except LAC, Western Asia and EU-OECD) intend to retain this approach for their ICP 2020 comparisons. Prices for household consumption will be collected over the four quarters of 2020 which avoids the need for TACs unless there is slippage as there was in ICP 2017. Housing rentals and mid-year prices for machinery and equipment and construction inputs will also be collected in 2020. Housing volumes and the compensation paid to government employees will be collected in 2021.

LAC following the RPSA will price one third of the basket of consumer goods and services in 2019, another third in 2020 and the final third in 2021. Prices will be collected quarterly and the basic heading PPPs for each year will be calculated with the average annual prices obtained by averaging the average quarterly prices for the year. Basic heading PPPs for 2019 will be extrapolated to 2020 while the basic heading PPPs for 2021 will be retropolated to 2020. Otherwise data collection will be the same as in other regions: housing rentals and mid-year prices for machinery and equipment and construction inputs collected in 2020; housing volumes and compensation of government employees collected in 2021.

Western Asia collects housing rentals, compensation of government employees and prices of machinery and equipment and construction inputs annually. Housing volumes are collected once every three years in line with ICP reference years. Under household consumption fast evolving technology items are priced annually as are water supply; electricity, gas and other fuels; passenger transport by rail, road and air; and postal, telephone and telefax services. Prices for other consumer goods and service were surveyed in 2016 for ICP 2017 and will be surveyed again in 2020 for ICP 2020. They have not been surveyed in the intervening years. Basic heading PPPs for household consumption for these years are obtained by extrapolating or retropolating the basic heading PPPs for 2016 or 2020.

EU-OECD will collect prices for a third of the basket of consumer goods and services in 2019, for another third in 2020 and for the remaining third in 2021. The prices surveyed will be capital city point-in-time prices which will be converted to national annual average prices with spatial and temporal adjustment coefficients. Basic heading PPPs for 2019 will be extrapolated to 2020 while the basic heading PPPs for 2021 will be retropolated to 2020. Housing rentals, housing volumes, compensation of government employees and construction prices will be collected in 2020. Prices for machinery and equipment will be collected in 2019 and 2021 by EU countries and in 2020 by OECD countries.

ICP 2023

It is clear from the previous section that, except for EU-OECD, LAC and possibly Western Asia, regions will not be employing the RPSA in ICP 2020. The SBA will be the principal approach. Implementation of the RSPA will have to wait until ICP 2023 at the earliest. Table 8 plots the five survey phases for household consumption for the SBA in ICP 2020 and for the SBA and the RPSA in ICP 2023. For the SBA there are two versions. The first version, SBA

1, has the collection of prices for household consumption starting and finishing in the reference year and TACs are not required. This is what regions using the SBA plan to do for ICP 2020 (and maybe 2023 as well if the RPSA is not adopted). The second version, SBA 2, is a proposal made to the Taskforce. It has the collection of prices starting in the third quarter of the reference year and finishing in the second quarter of the following year. TACs will be needed to replot the prices collected in the first two quarters of year that follows the reference year back to the reference year.

The proposers argue that it is preferable from the perspective of future RSPA implementation that regions intending to employ the SBA in ICP 2020 should comply with the second version rather than the first. Experience from previous comparisons suggests that slippage is almost inevitable. Under the first version price collection will creep over into the year following the reference year and TACs will need to be applied as they were in ICP 2017. The second version formalises the slippage, fosters the use of TACs and, by spreading data collection over two years, eases the response burden on participants and the demands on their budgets. Regions applying the SBA should be encouraged to collect prices for household consumption in line with this version - the introduction of the RSPA by stealth.

Irrespective of which version of the SBA regions decide to employ, Table 8 indicates that, if the RSPA is to be adopted in ICP 2023, implementation would have to start in the first half of 2021 when ICP 2020 is engaged in either price collection (SBA 2) or intra-region and inter-region validation (SBA 1). This probably not the optimal time to be planning a change of horses. Before implementation can begin, that is before planning for the first survey year commences, certain prerequisites will have been met. Either all regions will have agreed to implement the RPSA or, if they have not, agreement will have been reached on how the regions employing the RPSA and the regions employing another approach (most likely the SBA) will work together to produce the global comparison. Agreement will also have been reached on: the division of goods and services comprising household consumption into three (or more) parts; the year in which their prices are to be surveyed; a preliminary draft of the global timetable; and a provisional set of global guidelines on the selection and matching of TACs.

Before closing a question that needs to be asked, if only sotto voce, is whether or not the ICP should adopt the UNSC's recommendation to employ the RPSA to make more frequent comparisons. Reducing the interval between reference years from six years to three years doubles the amount of data to be provided by participants. The RPSA, by spreading the collection of consumer prices over three years and using TACs to centre prices collected in non-reference years on the reference year, eases the response burden on participants. The efficacy of the approach depends on the quality of the prices to be adjusted, the depth of detail of the CPIs from which the TACs are to be extracted and the correlation between the coverage of the TACs and the coverage of basic headings with which they are paired. As already mentioned, many of the countries participating in the ICP do not have CPIs that are sufficiently detailed to construct a sub-index specific to each of the basic headings comprising household consumption. They will have to use as TACs sub-indexes with a much broader coverage than desired thereby producing comparisons of questionable reliability.¹⁷ The SBA (version 1) avoids this (providing there is no slippage) and global coordination is easier to organise than it is with the RPSA.

Given that the RPSA is unlikely to be implemented in ICP 2020, and possibly not in ICP 2023 also, perhaps its adoption by the ICP should be considered a long-term objective to be introduced gradually allowing regions to grow into it.

¹⁷ Both the European Union and the OECD experienced teething problems when first employing the RPSA. Inconsistencies between reference years led to the credibility and usefulness of their comparisons being questioned.

Table 1: Data collection under the rolling price survey approach

Surveys	Year t-1	Year t	Year t+1	Year t+2	Year t+3	Year t+4
Household consumption						
01. Prices consumer goods and services	X→			X→		
02. Prices consumer goods and services		X			X	
03. Prices consumer goods and services			←X			←X
Other surveys						
04. Housing services		X			X	
05. Government services		X			X	
06. Prices capital goods		X			X	
Other data						
07. Temporal adjustment coefficients	X	X	X	X	X	X
08. GDP expenditure weights		X			X	
09. Annual average exchange rates		X			X	
10. Annual average resident population		X			X	
Publication of results for reference year t			Preliminary	Intermediate	Final	

The table has two reference years, year t and year t+3, three years apart. As explained in the text, prices for consumer goods and services for a reference year are collected over three years: t-1, t and t+1 for reference year t; and t+2, t+3 and t+4 for reference year t+3. Prices not requiring year-to-year extrapolation or retropolation are indicated by "X". Prices requiring year-to-year extrapolation or year-to-year retropolation are indicated by "X→" or "←X".

With the exception of the surveys under household consumption, "X" indicates the year to which the data collected refer but, it does not necessarily indicate the year in which the data are collected. Either in part or in whole, data on housing services, government services and capital goods can often be collected retrospectively, in year t+1 for t and in year t+4 for t+3.

The estimates of GDP for the reference year t are compiled first in t+1 and finalised in t+3. (The corresponding years for the reference year t+3 are t+4 and t+6.)

Preliminary estimates of PPPs, price level indexes and volume indexes for the reference year t are published in t+1; intermediate estimates are published in t+2; and the final estimates in t+3. Until they are finalised PPPs and price level indexes can and do change. Once finalised they do not change though, as national accountants keep on refining their estimates of GDP, the weights and volume indexes will continue to change. (For the reference year t+3, results are published first in t+4, then in t+5 and finally in t+6.)

Table 2: EU and OECD survey cycle

Cycle	Survey	Coverage
First year	01. Food, drinks and tobacco	Food; non-alcoholic beverages; alcoholic beverages; tobacco.
	02. Personal appearance	Clothing; cleaning, repair and hire of clothing; footwear; goods and services for personal care; personal effects.
Second year	03. House and garden	Materials for the maintenance and repair of the dwelling; household appliances; glassware, tableware and household utensils; tools and equipment for house and garden; non-durable household goods such as products for routine cleaning and maintenance; telephone and telefax equipment; audio-visual, photographic and information-processing equipment; games, toys, hobbies, gardens, plants, flowers and pets; newspapers, books, stationery and drawing materials; electrical appliances for personal care.
	04. Transport, restaurants and hotels	Personal transport equipment; spare parts and accessories, fuels and lubricants for the operation of personal transport equipment; equipment for sport, camping and open-air recreation; catering services; accommodation services.
Third year	05. Services	Maintenance and repair services for the dwelling; water supply; fuels other than electricity and gas; domestic and household services; maintenance and repair services for personal transport equipment; transport services; postal services; telephone and telefax services; maintenance and repair services for major durables; veterinary and other services for pets; recreational and cultural services; other services not specified elsewhere.
	06. Furniture and health	Furniture, furnishings, carpets and other floor coverings; household textiles; medical products, appliances and equipment; out-patient services.

Electricity, gas, housing, hospital services and education are not included in the survey cycle as they are surveyed annually by the European Union and once every three years by the OECD. Other consumer goods and services, such as narcotics, combined passenger transport, major durables for outdoor and indoor recreation, games of chance, package holidays, prostitution, social protection, insurance, FISIM and other financial services, are also not included in the survey cycle either. This is because it is difficult to specify and price products for them that are comparable across countries. Reference PPPs are used for the basic headings containing these goods and services.

Table 3: Generalised EU timetable for the survey cycle with reference year t (2020, 2023)

Year	Half year	Survey 1	Survey 2	Survey 3	Survey 4	Survey 5	Survey 6
t-2 (2018) (2021)	1st	Preview, planning and pre-survey		<i>Evaluation</i>	<i>Inter-country validation</i>	<i>Price collection and intra-country validation</i>	<i>Creation of product list and survey guidelines</i>
	2nd	Creation of product list and survey guidelines	Preview, planning and pre-survey		<i>Evaluation</i>	<i>Inter-country validation</i>	<i>Price collection and intra-country validation</i>
t-1 (2019) (2022)	1st	Price collection and intra-country validation	Creation of product list and survey guidelines	Preview, planning and pre-survey		<i>Evaluation</i>	<i>Inter-country validation</i>
	2nd	Inter-country validation	Price collection and intra-country validation	Creation of product list and survey guidelines	Preview, planning and pre-survey		<i>Evaluation</i>
t (2020) (2023)	1st	<i>Evaluation</i>	Inter-country validation	Price collection and intra-country validation	Creation of product list and survey guidelines	Preview, planning and pre-survey	
	2nd		<i>Evaluation</i>	Inter-country validation	Price collection and intra-country validation	Creation of product list and survey guidelines	Preview, planning and pre-survey
t+1 (2021) (2024)	1st	<i>Preview, planning and pre-survey</i>		<i>Evaluation</i>	Inter-country validation	Price collection and intra-country validation	Creation of product list and survey guidelines
	2nd	<i>Creation of product list and survey guidelines</i>	<i>Preview, planning and pre-survey</i>		<i>Evaluation</i>	Inter-country validation	Price collection and intra-country validation
t+2 (2022) (2025)	1st	<i>Price collection and intra-country validation</i>	<i>Creation of product list and survey guidelines</i>	<i>Preview, planning and pre-survey</i>		<i>Evaluation</i>	Inter-country validation
	2nd	<i>Inter-country validation</i>	<i>Price collection and intra-country validation</i>	<i>Creation of product list and survey guidelines</i>	<i>Preview, planning and pre-survey</i>		<i>Evaluation</i>

Table 4: Generalised timetable for an EU survey of consumer prices

Phase	Step	Who	When		
			Month vis-à-vis month of price collection	Survey 1 of year t	Survey 2 of year t
Preview and planning	01. First discussion of main issues at group leaders' meeting	Group leaders; Eurostat; OECD	t-13	Mar (t-1)	Sep (t-1)
	02. Main issues discussed at group meetings	NSIs; group leaders; Eurostat; OECD	t-13	Mar (t-1)	Sep (t-1)
	03. Preview questions sent to NSIs	Group leaders	t-11	May (t-1)	Nov (t-1)
	04. Preview answers sent to group leaders	NSIs	t-8	Aug (t-1)	Feb (t)
	05. Planning decisions prepared by group leaders' meeting	Group leaders; Eurostat; OECD	t-7	Sep (t-1)	Mar (t)
	06. Planning decisions agreed at group meetings	NSIs; group leaders; Eurostat; OECD	t-7	Sep (t-1)	Mar (t)
Pre-survey and product list creation	07. Pre-survey product list ready	Group leaders	t-5	Nov (t-1)	May (t)
	08. Pre-survey	NSIs	t-4 to t-3	Dec (t-1)-Jan (t)	Jun-Jul (t)
	09. Draft group product lists ready	Group leaders	t-2	Feb (t)	Aug (t)
	10. First draft of European product list ready	Eurostat	t-2	Feb (t)	Aug (t)
	11. First draft European product list discussed at group leaders' meeting	Group leaders; Eurostat; OECD	t-1	Mar (t)	Sep (t)
	12. Second draft European product list ready	Eurostat	t-1	Mar (t)	Sep (t)
	13. Second draft European Product list discussed at group meetings	NSIs; group leaders; Eurostat; OECD	t-1	Mar (t)	Sep (t)
	14. Follow up meeting of group leaders	Group leaders; Eurostat; OECD	t-1	Mar (t)	Sep (t)
	15. Final European product list ready	Group leaders; Eurostat	t-1	Mar (t)	Sep (t)
Price collection and intra-country validation	16. Price collection and intra-country validation	NSIs	t to t+2	Apr-Jun (t)	Oct-Dec (t)
	17. Price file and sections 1,2, 3 and 5 of survey report sent to Eurostat	NSIs	t+2	Jun (t)	Dec (t)
Validation	18. Data cleaning and checking	NSIs; group leaders	t+2 to t+3	Jun-Jul (t)	Dec (t)-Jan (t+1)
	19. 1 st European Quaranta table calculated	Eurostat	t+3	Jul (t)	Jan (t+1)
	20. Spatial adjustment factors sent to Eurostat	NSIs	t+3	Jul (t)	Jan (t+1)
	21. Analysis of 1 st European Quaranta table	NSIs; group leaders	t+3 to t+4	Jul-Aug (t)	Jan-Feb (t+1)
	22. 1 st European Quaranta table discussed at group leaders' meeting	Group leaders; Eurostat; OECD	t+5	Sep (t)	Mar (t+1)
	23. 1 st European Quaranta table discussed at group meetings	NSIs; group leaders; Eurostat; OECD	t+5	Sep (t)	Mar (t+1)
	24. 2 nd European Quaranta table calculated	Eurostat	t+6	Sep (t)	Mar (t+1)
	25. Continuation of validation	NSIs; group leaders; Eurostat	t+6	Oct (t)	Apr (t+1)
	26. Approval of survey results and closure of validation	NSIs; group leaders	t+6	Oct (t)	Apr (t+1)
	27. Section 4 of survey report sent to Eurostat	NSIs	t+7	Nov (t)	May (t+1)
Evaluation	28. Group leader survey reports to Eurostat	Group leaders	t+9	Jan (t+1)	Jul (t+1)
	29. Evaluation at group leaders' meeting	Group leaders; Eurostat; OECD	t+11	Mar (t+1)	Sep (t+1)
	30. Evaluation at group meetings	NSIs; group leaders; Eurostat; OECD	t+11	Mar (t+1)	Sep (t+1)

Table 5: Generalised ICP timetable for the survey cycle with reference year t (2020, 2023)

Year	Half year	Household consumption		
		Survey 1	Survey 2	Survey 3
t-2 (2018) (2021)	1st	Regional and global planning; timetables		
	2nd	Creation of product list with core products; defining survey guidelines		
t-1 (2019) (2022)	1st	Price collection; intra-country validation	Regional and global planning; timetables	
	2nd		Creation of product list with core products; defining survey guidelines	
t (2020) (2023)	1st	Intra-region validation; inter-region validation of core products	Price collection; intra-country validation	Regional and global planning; timetables
	2nd	Evaluation		Creation of product list with core products; defining survey guidelines
t+1 (2021) (2024)	1st	<i>Regional and global planning; timetables</i>	Intra-region validation; inter-region validation of core products	Price collection; intra-country validation
	2nd	<i>Creation of product list with core products; defining survey guidelines</i>	Evaluation	
t+2 (2022) (2025)	1st	Price collection; intra-country validation	<i>Regional and global planning; timetables</i>	Intra-region validation; inter-region validation of core products
	2nd		<i>Creation of product list with core products; defining survey guidelines</i>	Evaluation
t+3 (2023) (2026)	1st	<i>Intra-region validation; inter-region validation of core products</i>	<i>Price collection; intra-country validation</i>	<i>Regional and global planning; timetables</i>

Table 6: Generalised timetable for an ICP survey of consumer prices

Phase	Step	Who	When
Preview and planning	01. First discussion of main issues at regional coordinators' meeting	Global and regional coordinators	Sep (t-2)
	02. Main issues discussed at regional meetings	NSIs; global and regional coordinators	Sep (t-2)
	03. Preview questions sent to NSIs	Regional coordinators	Nov (t-2)
	04. Preview answers sent to regional coordinators	NSIs	Feb (t-1)
	05. Planning decisions prepared by regional coordinators' meeting	Global and regional coordinators	Mar (t-1)
	06. Planning decisions agreed at regional meetings	NSIs; global and regional coordinators	Mar (t-1)
Pre-survey and product list creation	07. Pre-survey product list ready	Regional coordinators	Apr (t-1)
	08. Pre-survey	NSIs	May-Jun (t-1)
	09. Draft regional product lists ready	Regional coordinators	Jul (t-1)
	10. First draft of global product list ready	Global coordinator	Jul (t-1)
	11. First draft global product list discussed at regional coordinators' meeting	Global and regional coordinators	Sep (t-1)
	12. Second draft global product list ready	Global coordinator	Sep (t-1)
	13. Second draft global product list discussed at regional meetings	NSIs; global and regional coordinators	Sep (t-1)
	14. Follow up meeting of regional coordinators	Global and regional coordinators	Sep (t-1)
	15. Final global product list ready	Global and regional coordinators	Oct (t-1)
Price collection and intra-country validation	16. Price collection and intra-country validation	NSIs	Jan-Dec (t)
Validation	17. Data cleaning and checking	NSIs; regional coordinators	Apr (t)-Feb (t+1)
	18. 1 st global and regional Quaranta tables calculated	Global and regional coordinators	Feb (t+1)
	19. Analysis of 1 st global and regional Quaranta tables	NSIs; global regional coordinators	Mar (t+1)
	20. 1 st global and regional Quaranta tables discussed at regional coordinators' meeting	Global and regional coordinators	Mar (t+1)
	21. 1 st global Quaranta table discussed at regional meetings	NSIs; global and regional coordinators	Mar (t+1)
	22. 2 nd global and regional Quaranta tables calculated	Global and regional coordinators	Apr (t+1)
	23. Continuation of validation	NSIs; global and regional coordinators	Apr-May (t+1)
	24. Approval of survey results and closure of validation	NSIs; regional coordinators	Jun (t+1)
Evaluation	25. Country survey reports sent to regional coordinator	NSIs	Jul (t+1)
	26. Regional coordinators' survey reports sent to global coordinator	Regional coordinators	Jul (t+1)
	27. Evaluation at regional coordinators' meeting	Global and regional coordinators	Sep (t+1)
	28. Evaluation at regional meetings	NSIs; global and regional coordinators	Sep (t+1)

Table 7: Data collection by region for ICP 2017 and ICP 2020

AFRICA	ICP 2017			
	2016	2017	2018	2019
Household consumption (H)		H	←H	PUBLICATION OF 2017 RESULTS
Housing rentals (R)			R (2017)	
Housing volumes (V)			V (2017)	
Government compensation (G)			G (2017)	
Machinery and equipment (M)		M	M (2017)	
Construction and civil engineering (C)			C (2017)	
National accounts expenditures (E)	E (2015)	E (2016)	E (2017)	
CPIs, deflators, population, exchange rates	X	X	X	

AFRICA	ICP 2020			
	2019	2020	2021	2022
Household consumption (H)		H		PUBLICATION OF 2020 RESULTS
Housing rentals (R)		R		
Housing volumes (V)			V (2020)	
Government compensation (G)			G (2020)	
Machinery and equipment (M)		M		
Construction and civil engineering (C)		C		
National accounts expenditures (E)	E (2018)	E (2019)	E (2020)	
CPIs, deflators, population, exchange rates	X	X	X	

ASIA	ICP 2017			
	2016	2017	2018	2019
Household consumption (H)		H	←H	PUBLICATION OF 2017 RESULTS
Housing rentals (R)			R (2017)	
Housing volumes (V)			V (2017)	
Government compensation (G)			G (2017)	
Machinery and equipment (M)			M (2017)	
Construction and civil engineering (C)			C (2017)	
National accounts expenditures (E)	E (2015)	E (2016)	E (2017)	
CPIs, deflators, population, exchange rates	X	X	X	

ASIA	ICP 2020			
	2019	2020	2021	2022
Household consumption (H)		H		PUBLICATION OF 2020 RESULTS
Housing rentals (R)		R		
Housing volumes (V)			V (2020)	
Government compensation (G)			G (2020)	
Machinery and equipment (M)		M		
Construction and civil engineering (C)		C		
National accounts expenditures (E)	E (2018)	E (2019)	E (2020)	
CPIs, deflators, population, exchange rates	X	X	X	

Table 7: Data collection by region for ICP 2017 and ICP 2020 (contd.)

COMMONWEALTH OF INDEPENDENT STATES	ICP 2017				PUBLICATION OF 2017 RESULTS
	2016	2017	2018	2019	
Household consumption (H)		H			
Housing rentals (R)					
Housing volumes (V)			V (2017)		
Government compensation (G)			G (2017)		
Machinery and equipment (M)		M			
Construction and civil engineering (C)		C			
National accounts expenditures (E)			E (2017)		
CPIs, deflators, population, exchange rates	X	X	X		

COMMONWEALTH OF INDEPENDENT STATES	ICP 2020				PUBLICATION OF 2020 RESULTS
	2019	2020	2021	2022	
Household consumption (H)		H			
Housing rentals (R)					
Housing volumes (V)			V (2020)		
Government compensation (G)			G (2020)		
Machinery and equipment (M)		M			
Construction and civil engineering (C)		C			
National accounts expenditures (E)			E (2020)		
CPIs, deflators, population, exchange rates	X	X	X		

LATIN AMERICA AND CARIBBEAN	ICP 2017				PUBLICATION OF 2017 RESULTS
	2016	2017	2018	2019	
Household consumption (H)		H	← H		
Housing rentals (R)			R (2017)		
Housing volumes (V)			V (2017)		
Government compensation (G)			G (2017)		
Machinery and equipment (M)			← M		
Construction and civil engineering (C)			← C		
National accounts expenditures	E (2015)	E (2016)	E (2017)		
CPIs, deflators, population, exchange rates	X	X	X		

LATIN AMERICA AND CARIBBEAN	ICP 2020				PUBLICATION OF 2020 RESULTS
	2019	2020	2021	2022	
Household consumption (H)	H (1/3)→	H (1/3)	← H (1/3)		
Housing rentals (R)		R			
Housing volumes (V)			V (2020)		
Government compensation (G)			G (2020)		
Machinery and equipment (M)		M			
Construction and civil engineering (C)		C			
National accounts expenditures (E)	E (2018)	E (2019)	E (2020)		
CPIs, deflators, population, exchange rates	X	X	X		

Table 7: Data collection by region for ICP 2017 and ICP 2020 (contd.)

WESTERN ASIA	ICP 2017			
	2016	2017	2018	2019
Household consumption (H)	<i>H</i> →	→	→	PUBLICATION OF 2017 RESULTS
Housing rentals (R)	R	<i>R</i>	R	
Housing volumes (V)			<i>V (2017)</i>	
Government compensation (G)	G	<i>G</i>	G	
Machinery and equipment (M)	M	<i>M</i>	M	
Construction and civil engineering (C)	C	<i>C</i>	C	
National accounts expenditures	E (2015)	E (2016)	<i>E (2017)</i>	
CPIs, deflators, population, exchange rates	X	X	X	

WESTERN ASIA	ICP 2020			
	2019	2020	2021	2022
Household consumption (H)		← <i>H</i> →		PUBLICATION OF 2020 RESULTS
Housing rentals (R)	R	<i>R</i>	R	
Housing volumes (V)			<i>V (2020)</i>	
Government compensation (G)	G	<i>G</i>	G	
Machinery and equipment (M)	M	<i>M</i>	M	
Construction and civil engineering (C)	C	<i>G</i>	G	
National accounts expenditures (E)	E (2018)	E (2019)	<i>E (2020)</i>	
CPIs, deflators, population, exchange rates	X	X	X	

EU-OECD	ICP 2017			
	2016	2017	2018	2019
Household consumption (H)	<i>H (1/3)</i> →	<i>H (1/3)</i>	← <i>H (1/3)</i>	PUBLICATION OF 2017 RESULTS
Housing rentals (R)	R	<i>R</i>	R	
Housing volumes (V)	V	<i>V</i>	V	
Government compensation (G)	G	<i>G</i>	G	
Machinery and equipment (M)	M (2015,2017)	<i>M</i>	M (2017,2019)	
Construction and civil engineering (C)	C	<i>C</i>	C	
National accounts expenditures	E (2015)	E (2016)	<i>E (2017)</i>	
CPIs, deflators, population, exchange rates	X	X	X	

EU-OECD	ICP 2020			
	2019	2020	2021	2022
Household consumption (H)	<i>H (1/3)</i> →	<i>H (1/3)</i>	← <i>H (1/3)</i>	PUBLICATION OF 2020 RESULTS
Housing rentals (R)	R	<i>R</i>	R	
Housing volumes (V)	V	<i>V</i>	V	
Government compensation (G)	G	<i>G</i>	G	
Machinery and equipment (M)	M	<i>M</i> (2019,2021)	M	
Construction and civil engineering (C)		<i>C</i>		
National accounts expenditures	E (2018)	E (2019)	<i>E (2020)</i>	
CPIs, deflators, population, exchange rates	X	X	X	

Table 8: ICP 2020 Standard Benchmark Approach (SBA) Versions 1 and 2;
ICP 2023 SBA Versions 1 and 2, Rolling Price Survey Approach (RPSA)

	2019				2020				2021				2022				2023				2024				2025							
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
ICP 2020																																
Household consumption SBA 1	Yellow	Yellow	Blue	Blue	Red	Red	Red	Red	Green	Green	Green	Green	Pink	Pink																		
Household consumption SBA 2			Yellow	Yellow	Blue	Blue	Red	Red	Red	Red	Green	Green	Green	Green	Pink	Pink																
Housing services					Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey																				
Government services					Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey																				
Capital goods					Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey																				
ICP 2023																																
Household consumption SBA 1													Yellow	Yellow	Blue	Blue	Red	Red	Red	Red	Green	Green	Green	Green	Pink	Pink						
Household consumption SBA 2															Yellow	Yellow	Blue	Blue	Red	Red	Red	Red	Green	Green	Green	Green	Pink	Pink				
Household consumption RPSA																																
Survey 1									Yellow	Yellow	Blue	Blue	Red	Red	Red	Red	Green	Green	Pink	Pink												
Survey 2													Yellow	Yellow	Blue	Blue	Red	Red	Red	Red	Green	Green	Pink	Pink								
Survey 3																	Yellow	Yellow	Blue	Blue	Red	Red	Red	Red	Green	Green	Pink	Pink				
Housing services																	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey								
Government services																	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey								
Capital goods																	Grey	Grey	Grey	Grey	Grey	Grey	Grey	Grey								

- Yellow - planning, timetables, project guidelines
- Blue - regional product lists and core product lists, survey guidelines
- Red - price collection and intra-country validation
- Green - intra-region validation of regional and core products, inter-region validation of core products
- Pink - evaluation
- Grey - all phases

Annex 1 Current Data Requirements Of EU, OECD and ICP Comparisons⁽¹⁾

Data	Survey	Frequency of collection		
		EU	OECD	ICP
Prices	01. Food, drinks and tobacco	Every three years	Every three years	Every six years
	02. Personal appearance	..	..
	03. House and garden	..	..
	04. Transport, restaurants and hotels	..	..
	05. Services	..	..
	06. Furniture and health ⁽²⁾	
	07. Machinery and equipment	Every two years	..	..
	08. Construction projects	Every year	..	..
	09. Compensation of government employees ⁽³⁾
	10. Hospital services	..	..	..
	11A. Housing	..	..	Every six years
Quantity and quality indicators	11B. Housing ⁽⁴⁾
	12. Education	..	..	..
Expenditures	13. GDP expenditure weights	..	..	Every six years
Other	14. Spatial adjustment coefficients ⁽⁵⁾	Every six years ⁽⁶⁾
	15. Temporal adjustment coefficients	Every year	Every year	Every six years
	16. Global rate for VAT paid on capital goods ⁽⁵⁾
	17. Global rate for tips to waiters and hairdressers ⁽⁵⁾
	18. Annual average exchange rates	..	Every three years	Every six years
	19. Annual average resident population	..	..	..

⁽¹⁾ EU comparisons are made every year; OECD comparisons are made every three years; ICP comparisons are made every six years.

⁽²⁾ Pharmaceutical products, medical goods, therapeutic appliances and out-patient medical services but not in-patient medical services.

⁽³⁾ Collective services, government-produced hospital services and government-produced education services.

⁽⁴⁾ Countries with small or unrepresentative rent markets provide data on the housing stock instead of prices.

⁽⁵⁾ Not required from countries participating in OECD and ICP comparisons as they report national prices with non-deductible VAT and tips as appropriate.

⁽⁶⁾ Spatial adjustment coefficients are reported each year but only for the consumer price surveys conducted in that year. They have to be updated at least once every six years.

Annex 2 Rolling Price Survey Approach

The annex contains two tables with explanatory notes. Table A shows the data on which the EU comparisons for 2020, 2021, 2022 and 2023 will be based and Table B shows the data on which the OECD comparisons for 2020 and 2023 will be based. Each comparison uses either new data collected for the reference year or data “rolled over” from a previous year or “rolled back” from a subsequent year. To illustrate how the data are combined, the notes explain in detail how the PPPs and real expenditures for 2020 will be obtained. The PPPs and real expenditures for 2021, 2022 and 2023 will be similarly calculated.

Table A: Input data for EU comparisons for reference years 2020 to 2023

Data	Survey	Reference year			
		2020	2021	2022	2023
Prices	01. Food, drinks and tobacco	2021-1	2021-1	2021-1	2024-1
	02. Personal appearance	2021-2	2021-2	2021-2	2024-2
	03. House and garden	2019-1	2022-1	2022-1	2022-1
	04. Transport, restaurants and hotels	2019-2	2022-2	2022-2	2022-2
	05. Services	2020-1	2020-1	2023-1	2023-1
	06. Furniture and health	2020-2	2020-2	2023-2	2023-2
	07. Machinery and equipment	2019, 2021	2021	2021, 2023	2023
	08. Construction projects	2020	2021	2022	2023
	09. Compensation of government employees	2020	2021	2022	2023
	10. Hospital services	2020	2021	2022	2023
	11A. Housing	2020	2021	2022	2023
Quantity and quality indicators	11B. Housing	2020	2021	2022	2023
	12. Education	2020	2021	2022	2023
Expenditures	13. GDP expenditure weights	2020	2021	2022	2023
Other	14. Spatial adjustment coefficients	2019, 2020, 2021	2020, 2021, 2022	2021, 2022, 2023	2022, 2023, 2024
	15. Temporal adjustment coefficients	2019, 2020, 2021	2020, 2021, 2022	2020, 2021, 2022	2022, 2023, 2024
	16. Global rate for VAT paid on capital goods	2020	2021	2022	2023
	17. Global rate for tips to waiters, etc.	2020	2021	2022	2023
	18. Annual average exchange rates	2020	2021	2022	2023
	19. Annual average resident population	2020	2021	2022	2023

Notes on Table A

The PPPs and real expenditures for 2020 will be calculated with:

- The national or capital city prices for the consumer products covered by surveys 01 and 02 that were collected respectively in the first and second halves of 2021. The capital city prices have been converted to national prices with the spatial adjustment coefficients reported in 2021 for the two surveys. The national prices have been converted to annual prices with the temporal adjustment coefficients for 2021. The annual prices have been used to calculate PPPs for 2021 for the basic headings covered by the two surveys. These basic heading PPPs for 2021 have been taken back to 2020 with the temporal adjustment coefficients for 2020.
- The national or capital city prices for the consumer products covered by surveys 03 and 04 that were collected respectively in the first and second halves of 2019. The capital city prices have been converted to national prices with the spatial adjustment coefficients reported in 2019 for the two surveys. The national prices have been converted to annual prices with the temporal adjustment

coefficients for 2019. The annual prices have been used to calculate PPPs for 2019 for the basic headings covered by the two surveys. These basic heading PPPs for 2019 have been advanced to 2020 using the temporal adjustment coefficients for 2020.

- The national or capital city prices for the consumer products covered by surveys 05 and 06 that were collected respectively in the first and second halves of 2020. The capital city prices have been converted to national prices with the spatial adjustment coefficients reported in 2020 for the two surveys. The national prices have been converted to annual prices using the temporal adjustment coefficients for 2020. The annual prices have been used to calculate PPPs for 2020 for the basic headings covered by the two surveys.
- The national annual (2019 and 2021) prices for machinery and equipment covered by survey 07 that were collected in Q2 2019 and Q2 2021. The prices are without VAT. Those for 2019 have been adjusted by the global rate for non-deductible VAT actually paid on capital goods in 2019 that was reported in 2020 (survey 16). Those for 2021 have been adjusted by the global rate for non-deductible VAT actually paid on capital goods in 2021 that was reported in 2022 (survey 16). The basic heading PPPs for machinery and equipment are estimated by extrapolation and retropolation using the basic heading PPPs for 2019 and 2021.
- The national annual (2020) prices for construction projects covered by survey 08 that were collected in Q2 2020. The prices are without VAT. They have been adjusted by the global rate for non-deductible VAT actually paid on capital goods in 2020 that was reported in 2021 (survey 16).
- The national annual (2020) prices for compensation of government employees producing hospital services and collective services from survey 09 that were reported in 2021.
- Either the national annual (2020) prices for rents from survey 11A or, if the rent market is small or unrepresentative, data on housing stock from survey 11B that were reported in 2021.
- Data on student numbers by education level (survey 12) for 2020 extracted from the joint EU-OECD-UNESCO education data base.
- The GDP expenditure weights (survey 13) for 2020 that were reported in Q3 2021 for the preliminary calculation, in Q3 2022 for the intermediate calculation and in Q3 2023 for the final calculation.
- The global rate for tips (survey 17) for 2020 reported in 2022. This has been used to adjust prices paid in restaurants and cafés (survey 04) and to hairdressers (survey 02), which were reported without tips.
- Average annual exchange rates (survey 18) for 2020 compiled by the European Central Bank and the International Monetary Fund.
- Average annual resident population (survey 19) for 2020 extracted from EU and OECD population data bases.

Table B: Input data for OECD comparisons for reference years 2020 and 2023

Data	Survey	Reference year			
		2020	2021	2022	2023
Prices	01. Food, drinks and tobacco	2021-1			2024-1
	02. Personal appearance	2021-2			2024-2
	03. House and garden	2019-1			2022-1
	04. Transport, restaurants and hotels	2019-2			2022-2
	05. Services	2020-1			2023-1
	06. Furniture and health	2020-2			2023-2
	07. Machinery and equipment	2020			2023
	08. Construction projects	2020			2023
	09. Compensation of government employees	2020			2023
	10. Hospital services	2020			2023
Quantity and quality indicators	11A. Housing	2020			2023
	11B. Housing	2020			2023
Expenditures	12. Education	2020			2023
	13. GDP expenditure weights	2020			2023
Other	14 Spatial adjustment coefficients				
	15. Temporal adjustment coefficients	2019, 2020, 2021			2022, 2023, 2024
	16. Global rate for VAT paid on capital goods				
	17. Global rate for tips to waiters, etc.				
	18. Annual average exchange rates	2020			2023
	19. Annual average resident population	2020			2023

Notes on Table B

The PPPs and real expenditures for 2020 will be calculated with:

- The national prices for the consumer products covered by surveys 01 and 02 that were collected respectively in the first and second halves of 2021. The national prices have been converted to annual prices with the temporal adjustment coefficients for 2021. The annual prices have been used to calculate PPPs for 2021 for the basic headings covered by the two surveys. These basic heading PPPs for 2021 have been taken back to 2020 with the temporal adjustment coefficients for 2020.
- The national prices for the consumer products covered by surveys 03 and 04 that were collected respectively in the first and second halves of 2019. The national prices have been converted to annual prices with the temporal adjustment coefficients for 2019. The annual prices have been used to calculate PPPs for 2019 for the basic headings covered by the two surveys. These basic heading PPPs for 2019 have been advanced to 2020 using the temporal adjustment coefficients for 2020.
- The national prices for the consumer products covered by surveys 05 and 06 that were collected respectively in the first and second halves of 2020. The national prices have been converted to annual prices using the temporal adjustment coefficients for 2020. The annual prices have been used to calculate PPPs for 2020 for the basic headings covered by the two surveys.
- The national annual (2020) prices for the capital goods covered by surveys 07 and 08 that were collected in Q2 2020. The prices include non-deductible VAT.
- The national annual (2020) prices for compensation of government employees producing hospital services and collective services from survey 09.

- Either the national annual (2020) prices for rents from survey 11A or, if the rent market is small or unrepresentative, data on housing stock from survey 11B that were reported in 2021.
- Data on student numbers by education level (survey 12) for 2020 extracted from the joint EU-OECD-UNESCO education data base.
- The GDP expenditure weights (survey 13) for 2020 that were reported in Q3 2021 for the preliminary calculation, in Q3 2022 for the intermediate calculation and in Q3 2023 for the final calculation.
- Average annual exchange rates (survey 18) for 2020 compiled by the European Central Bank and the International Monetary Fund.
- Average annual resident population (survey 19) for 2020 extracted from EU and OECD population data bases.