



**Guidance Note:
Meeting ICP Price Data Requirements During the
COVID-19 Pandemic¹**

ICP Inter-Agency Coordination Group

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The COVID-19 pandemic brought about unprecedented challenges for compiling price data for the International Comparison Program (ICP). This note presents some guidance to assist National Implementing Agencies in meeting ICP price data requirements in the context of the pandemic and related lockdown measures.

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1. Introduction

Governments around the world have enacted a series of lockdown measures in response to the COVID-19 pandemic ranging from school and business closures to bans on public gatherings and national movement restrictions. Household spending patterns, in turn, have been affected by the lockdown measures and because of health and financial concerns. Altogether, government and societal responses to contain the pandemic have resulted in disruptions to regular national price collection activities, including those carried out as part of the International Comparison Program (ICP).

This note seeks to provide some guidance to ICP National Implementing Agencies (NIAs) on ICP price collection for the ICP 2021 cycle in the current context of COVID-19, one where the pandemic is not entirely under control, and potential disruptions to ICP price activities remain a reality. As a preamble to these recommendations, the note provides an overview and brief reminder of current ICP price data requirements. An attempt is made to describe not only the requirements as such, but also to broadly illustrate their typical implementation at the regional and national levels.

The timing of such information may be particularly beneficial to ICP NIAs, especially as ICP 2021 price collection activities around the world begin in early 2021. Furthermore, it should be noted that, given the varying regional and national responses to COVID-19, a strong case could be made for tailoring ICP price collection recommendations to specific ICP regions and economies. While the value of such tailored recommendations is not discounted (in fact, it is encouraged), there is value in having a global and common set of guiding principles and recommendations that are general enough to be of interest and relevance to economies across all ICP regions. Hence, this guidance note could even serve as a basis for any region-specific guidelines.

2. Background and context

In response to the COVID-19 pandemic and related challenges, the ICP Governing Board decided to postpone the ICP 2020 cycle to 2021. This decision was based on inputs and feedback from ICP Regional Implementing Agencies (RIAs), their communication with NIAs, and the recommendations of the ICP Technical Advisory Group. The underlying assumption behind this decision was that 2021 would be a more representative, or typical, reference year than 2020 and that national statistical activities should have largely normalized by then. As it turns out, the first-order consequence of shifting forward the ICP reference year by one year—from 2020 to 2021—is that most ICP price collection activities will now take place in 2021 rather than in 2020.

As of January 2021, the global COVID-19 situation is one where lockdown measures have been eased in some countries and restated in others following periods of less restrictions a few months back. In general, uncertainty over the pandemic's impact on ICP activities seems to have lessened relative to Q1 and Q2 of 2020. Nevertheless, global uncertainty remains over the pandemic's end, amid optimism that 2021 will see the start of the end of the pandemic and the various lockdown measures as mass vaccination programs expand.

3. Standard ICP price data requirements and implementation

Prices in the context of the ICP are collected through ICP-specific price surveys conducted in each participating economy. These price surveys are designed to suit the characteristics of the gross domestic product (GDP) expenditure aggregate under consideration. Therefore, different approaches are used for collecting prices for household consumption, government, machinery and equipment, and construction and civil engineering. In the case of household consumption, a further distinction is made in that the approach used to collect prices for private education and housing rentals is often different than for all other consumer goods and services.

For each ICP survey there is a global core list (GCL) of items, prepared by the ICP Global Office in consultation with ICP RIAs and NIAs. In addition, each ICP RIA also develops an item list for its regional comparison, which includes GCL and region-specific items (i.e., regional items) representative of consumption patterns in that region. It is worth highlighting that in most cases, the distinction between global and regional items is often irrelevant from the perspective of the ICP NIA, as price compilers at the national level often only see a single list encompassing both global and regional items without apparent distinction.

When planning ICP surveys, ICP NIAs must decide on the number of ICP items to be priced per basic heading. This decision will impact the reliability of the resulting basic heading purchasing power parities (PPPs) and depends on several factors, some of which are interrelated. These include, the relative weight of the basic heading (in terms of the fraction of, say, total household consumption it represents), the homogeneity/heterogeneity of the items within the basic heading, the degree of overlap of items across participating economies, and the overlap of items each ICP NIA identifies as 'important'.² The general ICP recommendations are that special attention should be given to ensure that basic headings with large expenditure shares have adequate item representation, more items should be priced in the case of heterogeneous basic headings and a sufficient number of items should be priced under each basic heading to ensure the proper item-overlap across participating economies. On this last point, the 'importance' indicator should also be considered.

The number of price quotes to collect per ICP item will depend on the price variation and expenditure weight of the item in question. Typically, more price quotes will be needed for items with a relatively high expenditure weight (at least presumably, since expenditure information is rarely available at the item-level) and with significant price variance over time and across space within a given economy. Ultimately, the prices reported by ICP NIAs, and used in the PPP estimation process, should be *national annual* average prices, in local currency, for the reference year. That is, the average prices reported should account for both intra-economy price variations across the economy in question ('national') and price variation over the weeks, months or quarters of the reference year ('annual').³

Ideally, the national average annual price for an item would result from a survey design premised on sampling theory with, for instance, an adequately stratified design and a hierarchical weighting scheme to average prices accordingly based on sales volume per item, outlet, and geographical area. However, arriving at national annual average prices this way is, while useful as a guiding framework, rarely feasible due to cost, time constraints and/or lack of required data (e.g., sales volume per outlet). Instead, ICP survey design decisions related to the number of price quotations, frequency of price collection and geographical scope are often a function of the ICP survey or item in question, with more simplified survey procedures in place—e.g., using purposive samples and self-weighting survey designs—but always with the goal of having a national annual average price for every item.

In practice, for many countries more frequent price collection is often reserved for seasonal items in the ICP household consumption price survey, such as fruits and vegetables, which may have different consumption patterns and prices throughout the year. For items with little to no price variation throughout the year (this may vary from one economy to the other) one-time price collection during the reference year often suffices. Certain electronics (e.g., smartphones for certain *well-known* brands), most pharmaceutical items and various non-durable households will generally fall under this category. The same applies to machinery and equipment and construction

² The importance indicator is only relevant for ICP household consumption items and is defined at the basic heading level. It is reported by each ICP participating economy. An 'important' item is one that would account for a significant share of the expenditure on the basic heading in the economy in question if item-level expenditure weights were available. Weighted PPP estimation methods, such as the one used to estimate ICP basic heading PPPs, uses the 'importance' indicator as an indication of an item's weight within a basic heading.

³ Results from the global CPI-ICP survey carried out in early 2019 by the ICP Global Office and the ICP [Task Force on Country Operational Guidelines and Procedures](#) showed that the frequency of ICP price collection around the world is primarily quarterly and to second extent monthly. In the case of CPI, price collection is overwhelming monthly.

and civil engineering ICP items, for which prices are typically collected once, generally in the middle of the year (the so-called 'mid-year prices').

Similarly, ensuring that price collection takes place across the entire geographical territory of a given economy is often more important for certain item groups than others, especially those whose price at one point in time may vary from one geographical region to the other or between urban and rural areas. This is generally less of a concern for, say, machinery and equipment and construction and civil engineering items given that most of the national price variation for these items contained in these two ICP surveys can be captured by only surveying an economy's major urban centers or even just the capital-city in the case of geographically smaller economies.

Finally, it should be mentioned that sometimes ICP price collection in a specific economy or region may fall behind the prespecified schedule. In some cases, this means that a price survey would need to be conducted outside the ICP reference year. For example, a common resolution in a situation where ICP items in a given economy could not be priced in Q1 of reference year t is to continue pricing ICP items as usual during the remaining quarters of year t and then go into the next year to compensate for the missing quarter, that is, pricing ICP items during Q1 of year $t+1$. While such scenarios are never ideal, experience has shown that they are not uncommon.⁴ In cases like these, the average prices from the quarter outside the reference year are typically extrapolated or retroplated using price movements from the item (or item group) in the *consumer price index* (CPI) that closest corresponds to the ICP item in question. Any seasonal price variations should be considered in this process, either through weighted temporal adjustment factors, with weights reflecting the quantities of the item purchased throughout the survey year, or other economy-specific mechanisms.

Collecting prices during the reference year is particularly crucial in the case of the ICP machinery and equipment and construction and civil engineering surveys given that relevant and reliable temporal price indexes to bring prices outside the reference year to the reference year are often hard to come by. In contrast, collecting data outside the reference year is quite common and often expected—typically, to ease the price collection burden on ICP NIAs—for the ICP housing volume and government compensation surveys. This is because housing volume data and government salary information for the ICP reference year can usually be collected with a lag, so there is generally no need to extrapolate or retroplate in these cases.

4. COVID-19: Challenges, guiding principles and potential responses

In the current context of COVID-19, ICP NIAs may have encountered (or could encounter) challenges while planning and carrying out ICP price collection in accordance with ICP price data requirements. Challenges could include but are not limited to difficulties in collecting ICP price data due to government-mandated closures of outlets, movement restrictions, health concerns, budgetary constraints, limited item availability resulting from shortages, and even sudden shifts in consumer spending patterns.

The guiding principles and scenarios listed below include potential responses and recommendations to some of these challenges. They are by no means exhaustive of all possible circumstances and responses. In this sense, the extent to which they apply to each ICP region and participating economy will inevitably vary from one economy to another and depend on the unique circumstances and specific nature of the ICP price survey, basic heading or even item in question.

⁴ Experience has also shown that delays in ICP price collection are often best remedied through early detection of potential delays through close communication between the respective ICP NIA and RIA, with the involvement of the ICP Global Office if needed. Solving problems related to delays in the regional price collection timeline and finding proper solutions in the case of inevitable delays is crucial given that if left unsolved they risk delaying the production timeline at the regional and even global level. Lastly, ad-hoc remedies for inevitable timeline delays at the national or regional level risk putting into doubt the soundness of ICP results. Therefore, coordinated and thought out solution should always be considered in these cases, taking into account past experiences and similar scenarios in other economies and ICP regions.

4a. Guiding principles

Prioritize price collection during 2021 (the reference year): every effort should be made to ensure that price collection for the household consumption survey, the machinery and equipment survey and the construction and civil engineering survey takes place during the 2021 calendar year. As stressed earlier, the ICP requires national average annual prices and delays in implementing timely price collection schedules—in accordance with regional and global ICP timelines—can result in challenges to meeting this requirement. The typical situation to avoid is one where the average prices collected are so far from the reference year that they cannot be deemed representative of 2021 even after being retroplated. This could be because the item(s) in question can no longer be found or there are no suitable price indexes to bring them to the reference year. Hence, resources spent on mitigating delays are often cost-effective in the long run. In the case of the inevitable delay, solutions to remediate the situation should be scrutinized and discussed with the respective ICP RIA (and the ICP Global Office, if needed), keeping ICP price requirements in mind.

Prioritize official price data sources: whenever prices are missing and/or price collection is not possible, priority should be given to price data obtained from official national sources such as the CPI in the case of the household consumption price survey, the *producer price index* (PPI) in the case of the machinery and equipment survey, and a price index that measures changes in the prices of either the inputs to construction activity in the case of the construction and civil engineering survey.⁵ While it is likely that each of these indexes will have also faced compilation challenges due to COVID-19, there may be valuable information and lessons learned from the coping mechanisms adopted to provide continuity to CPI price collection (and for other national price indexes) and estimation in the current context. Thus, positive spillovers on ICP-related work may exist, including potential cost-savings from ICP-CPI synergies.

Record metadata: the recording of ICP survey framework and item-level metadata at the national level is of utmost importance given the current circumstances. When and where possible information on the number of price quotes collected per ICP item; method, timing and frequency of price collection; number of outlets covered by outlet type and any other relevant information should be recorded early on and shared with the respective ICP RIA. If some items that would normally be available are missing, it would be useful to record any information and economy-specific circumstance that could shed light on why price collection was not feasible (including, but not limited to: the last date the item was available, the item's most recent previous price, and even information on when the item is likely to become available in the future). All metadata information will help support quality assurance activities at the regional and global levels and ultimately ensure the reliability of the published regional and global ICP results.

Keep the current context in mind while validating: the present circumstances may introduce new aspects to consider during the validation process. As a result, prices collected using collection modes other than the regular in-person surveys (e.g. online, e-mail or phone) should be carefully reviewed to ensure that ICP parameters are met. The focus should be on ensuring that the reported prices have been normalized according to the required reference unit within the quantity range specified in the ICP structured product description. This is particularly important given ongoing supply disruptions, where certain items may not be available in their usual pack size (or at all) due to shortages. Another important validation aspect to consider is that the geographic impact of the pandemic and response measures (such as lockdowns) within a given economy may not be uniform throughout

⁵ Prices from both the CPI and PPI can be obtained and used for ICP purposes if there is a proper match between the ICP-item specifications and the CPI- and PPI-item specification. Utilizing prices from the CPI is generally more straightforward than from the PPI as the ICP requires *purchaser* prices and the PPI is based on *producer* prices. Hence, prices obtained from the PPI for ICP purposes need to be adjusted accordingly. To arrive at the purchaser price concept starting from a producer price: item subsidies must be subtracted, and any non-deductible taxes added. Then, because the ICP requires purchaser prices for 'installed and ready-for-use machinery', it is also necessary to (a) add the unit cost of transporting the asset to the place where it will be used, (b) add any unit cost charges for installing the asset so that it is ready for use in production, and (c) add any discounts.

the whole territory. Therefore, attention should be given to assess how national averages for prices are calculated in order to detect anomalies, including but not limited to cases where the average price for a given ICP item is skewed towards price levels in cities and/or regions that did not experience lockdown measures.

Early coordination and active communication with ICP partners: effective coordination and communication between ICP NIAs, RIAs and the Global Office will be necessary to allow the ICP 2021 to be successful in the current global context of COVID-19. Coordination and communication are the keys to enabling much of the guiding principles listed here, from ensuring that ICP surveys follow the required timelines to confirming whether metadata are being recorded and that the proper validation is taking place, among other aspects. Given that challenges will inevitably arise while implementing the ICP at the national and regional level, efforts should prioritize the early detection of potential issues. The aim should be to tackle challenges together and early on in order to allow enough time to find appropriate and suitable solutions for all parties involved. Collaborative frameworks for the early detection of potential problems will be vital in this regard.

4b. Relevant scenarios, potential responses and recommendations

Scenario (1) - *Difficulty finding price quotations for a given item.*

Context: likely the result of government-mandated outlet closures, outlet restrictions to the public due to movement restrictions and/or shortages due to supply disruptions resulting from manufacturing delays or sudden shifts in consumer spending.

Impact: possibly all household consumption basic headings containing goods and services sold in retail outlets.

Potential Response: first, decide whether prices can be drawn from the CPI. If not feasible, then alternative data sources should be considered. For example, if the outlet where the item is typically sold has an online presence then attempts should be made to collect prices online. Particular attention should be taken to ensure that the correct item is priced, according to the required ICP-item specifications. If the outlet has no online presence or the specific item variety cannot be found online, then alternative collection methods such as e-mail or phone should be considered. Any additional fees related to the mode of price collection (e.g., unique to online or phone orders) should be recorded separately and this information should be noted to the respective ICP RIA. Lastly, prices missing due to seasonal factors should be treated as they normally would have during normal circumstances, that is, before COVID-19 and any lockdowns.

The assumption underlying this response is that outlet closures are temporary, and prices collected online, via e-mail or over the phone are the same as what you would find if outlets were open as usual, conditional on ICP-item specifications being met.

Scenario (2) - *Difficulty finding price quotations for most or all items within a basic heading.*

Context: likely due to COVID-19 measures and responses impacting a given industry or branch of economic activity in particular.

Impact: selected ICP basic headings encompassing specific service industries, e.g. ground and air transport services, restaurants, hotels, and recreational and cultural activities. Many of these were either heavily restricted, no longer being provided or experienced a severe and sudden drop in demand due to the pandemic.

Potential Response: if prices are difficult to find but are still available to some extent, then assess whether it is worth capturing prices at the risk of them being unrepresentative (e.g., deeply discounted hotels and air fare prices). In most cases, prices missing for most or all items within a basic heading could be indicative of more general issues taking place at the given point in time in which price collection took place. In such circumstances,

ICP NIAs should be cautious in accepting prices to ensure that unrepresentative prices (relative to the pre-lockdown period) are not being reported for ICP purposes.

From the regional perspective, the situation regarding these basic headings can be confusing as different economies may face different realities regarding whether restaurants remain open or closed, among other circumstances. Inter-economy validation exercises during regional ICP workshops may offer some clues on anomalies within a given economy. Still, in all cases, special attention should be given to the monitoring of price data for basic headings related to ground and air transport services, restaurants, hotels, and recreational and cultural activities. Other basic headings could also be added to this list depending on regional and national circumstances.

Upon assessing the regional situation for these basic headings, economies with too few prices collected or with collected prices that seem unrepresentative (relative to the pre-lockdown period) could be given the option to collect prices later during the year. If needed and feasible, economies could also be allowed to extrapolate/retropolate prices from more representative quarters within the reference year. In addition, eventually, (un)representativeness should be assessed against respective national accounts expenditures.

Scenario (3) – *Price collection initiated normally but was disrupted by COVID-19 and related lockdown measures.*

Context: likely a reality in ICP regions and economies that initiated price collection in early 2020. It could also be relevant when a given ICP NIA started collecting prices for the ICP 2020 before it was postponed by one year.

Impact: the range of potential applicability of this scenario spans all ICP items.

Potential Response: all prices collected before the COVID-19 disruptions should be retrieved if possible. These could then be extrapolated forward if suitable price indexes are available.⁶ Finally, extrapolated price data should only be mixed with current price data after a proper assessment of both sets have been made.

A reminder for ICP NIAs for this scenario is that items priced in 2020 should only be used for ICP 2021 if the item specifications did not change over this time period and the same items are still available in the ICP product list of 2021 (not discontinued). This is mainly a concern for the fast-evolving technology products, whose ICP item specifications are typically updated more frequently (compared to other ICP items) due to their short product cycle. Prices for such fast-evolving item prices should preferably be collected afresh in 2021.

Scenario (4) - *Price collection for a set of items, basic headings or an entire ICP survey continued 'as usual' during COVID-19 and throughout any lockdown periods.*

Context: a possibility in ICP economies that experienced few COVID-19-related lockdown measures and restrictions.

Impact: the range of potential applicability of this scenario spans all ICP items.

Potential Response: in line with the likely response for the previous scenario, all prices collected should be retrieved, if possible, and utilized if deemed adequate. Defining what is 'adequate' will be the key here. The intra-economy validation sessions during regional ICP workshops can assist in this case by helping detect anomalies such as extremely low or high prices in one economy relative to the other. Similarly, intra-economy validation activities could compare prices compiled in 2020 to those compiled in other years, including past ICP exercises

⁶ Indeed, the CPI or other price indexes could have themselves also been impacted by the COVID-19 pandemic and related lockdown measures. Hence, care should be taken when using any price index to extrapolate ICP prices. For information on the impact of COVID-19 on CPI please see, for instance: <https://statswiki.unece.org/display/CCD2/Compilation+of+CPI+in+times+of+COVID-19>

(as a rough validation measure). Doing so could inform ICP NIAs whether the prices being collected are unrepresentative or uncharacteristic (relative to the pre-lockdown period)—and if so, these prices should not be reported for ICP purposes.

5. Conclusions

The COVID-19 pandemic has brought unique challenges to implementing the ICP 2021 cycle at the global, regional and national level. This situation requires unique and alternative solutions and responses to enable the ICP 2021 to move forward and hopefully conclude in a satisfactory manner. This note attempted to support this objective by outlining the practical realities of ICP price collection, describing potential challenges to ICP price collection in the current context of COVID-19, and, finally, setting forth a set of guiding principles and scenario examples that will hopefully prove instructive for the global ICP community.

This note will be updated throughout 2021 to reflect new challenges and solutions to enable the sharing of best practices and useful recommendations across ICP regions and participating economies.