Chapter 7. Accommodation and food service activities

This chapter presents practical guidance as well as main issues and challenges for compiling SPPIs for Accommodation (ISIC 55) and Food and beverage service activities (ISIC 56).

The accommodation and food sector is closely linked to the development of the tourism economy and makes a considerable contribution to economic growth, employment, enterprise demography and to development in rural, peripheral or less-developed areas. Measuring the value of accommodation and food service activities, both in current and constant prices, is therefore particularly important for countries with significant tourism activity. The sector also serves local clients and business customers.

However, it may be difficult to measure price changes at constant quality due to the bundling of services (including secondary activities classified under other industries), complexity in the pricing mechanisms employed and the burden of data collection.

The pricing mechanisms employed in the provision of accommodation and food services differ fundamentally. Consequently, the accommodation and food service industries are separately discussed in this chapter.

7.1. Accommodation (Anne-Sophie Fraisse, OECD)

7.1.1. Industry description (ISIC 55)

The accommodation division mainly comprises the provision of short-term accommodation, typically on a daily or weekly basis, for visitors and other travellers by hotels, motels, guesthouse, holiday homes, bed and breakfast etc. It also includes the supply of short-term accommodation services by camping grounds, parks as well as the provision of space and facilities for recreational vehicles and the provision of temporary or longer-term accommodation in single or shared rooms or dormitories for students, migrant and seasonal workers and other individuals. In most countries, the provision of short-term accommodation by hotels is the main focus of the SPPI. Campsite and other accommodation services are generally excluded from coverage as they have relatively small weights.

The hotel industry is a highly segmented and competitive market. First, different hotels target different market segments with a wide range of offers from luxury to economy. Second, hotels target different types of customers: business, leisure, meeting and groups, government, foreign, etc. Third, offers are also segmented by types of rooms for each individual hotel (from suite to single room). Moreover, the growing share and size of hotel brands tend to increase competition within the market. This has led to differentiated pricing mechanisms and to aggressive pricing strategies reinforced by high income elasticity of demand and the development of IT tools and electronic sales channels.

1. A higher income elasticity of demand: Spending on tourism related services generally decreases proportionally faster than consumers' income during an economic slowdown. A downturn in economic conditions is also likely to result in reduced business activity; this in turn may be reflected in fewer business trips and nights spent in hotels, as well as less corporate entertainment.[1] This can lead to some price volatility and to numerous promotions, discounts, and rebates. Furthermore, political or economic uncertainties (for example, when exchange rates change rapidly) tend to lead to a diversion of tourism demand, resulting in shifts between outbound tourism and domestic tourism.

2. IT tools and electronic sales channels: The growing importance of the Internet has led to the development of alternatives sales channels to traditional travel agencies. Hotels usually have more than one sales channel in order to increase the sales of

rooms, *e.g.* direct booking (including voice, mail, own on-line sales); online travel agencies; internet companies (*e.g.* Booking.com, Hotel.com); Global Distribution System (*e.g.* Amadeus, Galileo, Sabre) which is a reservation network in real-time owned and operated as joint-ventures by major airlines, car rentals and hotel groups; and Distribution Service Providers (DSP *e.g.* Pegasus, Leonardo) which connect hotel's reservation systems (GDS) with distributors (*e.g.* travel agencies). DSP companies provide a wide range of services including central reservation systems, electronic distribution services, commission processing and payment services, property management systems, and marketing representation services. All of these sale channels tend to strengthen market competition: Hotels have a preference for bookings made directly through their own websites rather than via intermediaries, not only to reduce intermediary costs but also to develop relationships with regular customers. However, from the buyer perspective, the non-direct booking sales channels allow the customer to compare multiple booking possibilities and prices. There is competition not only between hotels therefore, but also between different sales channels.

Price determining factors, pricing mechanisms and strategies

The price for a room (the daily room rate) is dependent on many factors, such as the calendar period, the physical specifications of the room (room size, ground/upper floor, suite/non-suite, smoking/non-smoking, room service, etc.), the specification of the hotel (location, star rating, hotel brands or independent hotel, amenities, services, number of employees etc.), the market competitors, the duration of stay, the rate of occupancy, and the number and type of guests

The number of employees is of particular importance as the accommodation industry is highly labour intensive sector with relatively low labour productivity that may lead to high labour costs.

Traditional pricing mechanisms aim to cover fixed costs including labour costs firstly and then to generate additional revenue. Therefore, hotels propose fixed room rates according to price determining factors mentioned above. Under traditional pricing mechanisms room rates may vary according to the season, but they do not vary in real time due to changes in demand. This is in contrast to newer dynamic pricing mechanisms.

Market segmentation, high sensitivity of demand and the development of IT tools and electronic sales channels have led to the development of dynamic pricing strategies in the hotel industry. Under dynamic pricing strategies, daily room rates can fluctuate according to demand and the rate for each customer segment in each of the sales channels is controlled by a revenue management system.

Dynamic pricing is one component of revenue management that includes different revenue optimising strategies (also used in the air passenger transportation industry). Revenue management combines price control, revenue flow control, distribution channel control, marketing activities and financial operations etc. (Forgacs 2010, 3). It is of particular relevance in cases where fixed costs are relatively high in comparison to variable costs. Three conditions are essential for revenue management to be applicable: *i*) a fixed amount of resource available for sale; *ii*) the services sold are subject to a time limit, after which they cease to be of value; *iii*) different customers are willing to pay a different price for using the same services.

The use of dynamic pricing in the hotel industry has led to a range of differentiated pricing mechanisms implying a wide variety of room rates within the same hotel. In other

words, room rates may behave as a spot market, as the price of the exact same room can differ from one day to another. Indeed, revenue management is a mix of different revenue maximisation strategies and procedures (*e.g.* pricing mechanisms) that aim to increase the profitability of a hotel. It can be defined as a strategy whereby a hotel sets its prices based on real-time market information and often according to types of customer (business, leisure, group, government etc.) and how much each customer segment is willing to pay at that precise moment. The main pricing mechanisms are presented below:

- The 'Required Rate of Return' mechanism involves the determination of room rates that are sufficient to cover all costs and provide a profit that meets the owners' targeted return on investment;

- The 'Relative Room Size' mechanism involves estimating the number of square metres that will be sold on an average night, and then determining at what rate each square metre must be charged to provide the desired total accommodation revenue;

- The 'Revpar' (revenue per available room) mechanism involves finding the optimal balance between the pursuit of high occupancy levels and a quest for high average room rates charged.

Beyond these three main pricing mechanisms employed by the hotel industry, it is useful to understand how hotels set prices with reference to marketing strategies, under which price adjustments are applied in response to particular market and customer contexts:

- The 'loss leader' approach involves a service price (such as a room) that is advertised at a low in order to attract customers to the point of sale with the hope that they will purchase other product or service lines;

- The 'going-rate pricing' approach involves setting prices in line with competitor prices.

- 'Prestige pricing' occurs when a hotel sets relatively high prices in order to convey or re-enforce a high quality or luxury image.

- 'Product bundle pricing' involves bundling several services (*e.g.* 'bed and breakfast') into a package and offering it at a discounted rate.

- 'Volume discounts' can be provided to hotel customers who purchase a large number of rooms at one time or over the course of a year (this is primarily relevant to enterprises). Discounts based on time refer to out of season or early booking price reductions.

- 'Last minute pricing' has grown in significance with the advent of widespread internet access.

- 'Price lining' involves pricing different service products in a service range at various levels, dependent on size and features, to increase the size of the target market.

- 'Discounts based on place' refers to the fact that there can be price differentials across different sales channels.

7.1.2. Classification aspects

7.1.2.1. Industry classification

Accommodation services, classified under section I - Accommodation and food service activities, division 55 – Accommodation, of the ISIC classification system includes the provision of short-term accommodation for visitors and other travellers. Some units may provide only accommodation while others provide a combination of accommodation, meals and/or recreational facilities. It also includes the provision of long term accommodation for students, workers and similar individuals. More precisely, division 55 of ISIC is split into:

1. Short-term accommodation activities (*e.g.* hotels, B&Bs);

2. Camping grounds, recreational vehicle parks and trailer parks;

3. Other accommodation.

Accommodation excludes activities related to the provision of long-term primary residences in facilities such as apartments typically leased on a monthly or annual basis which are classified under Section L - Real Estate Activities.

A review of the other industry classification systems by activity (NACE, NAICS, and ANZSIC) shows that they closely concord with the ISIC classification. As shown in annex A, it should be mentioned that NACE and NAICS provide a greater level of detail than ISIC. In particular, the NACE classification distinguishes between 55.10 - Hotels and similar accommodation and 55.20 - Holiday and other short-stay accommodation such as cottages, chalets, cabins, etc. In addition, some European countries have created national derivations of the NACE classification to meet their requirements. At the opposite of the spectrum, the ANZSIC classification doesn't distinguish between different types of accommodation services and provides less detail than ISIC.

7.1.2.2. Product classification

The corresponding products for accommodation (ISIC 55) are classified in the groups 631 - Accommodation services for visitors and 632 - Other accommodation services for visitors and others of the CPC. As shown in annex B, the CPA is similar to the CPC although the CPA provides slightly more detail with a separate sub-class for Sleeping cars. The NAPCS is also concordant to the CPC classification.

7.1.3. Scope of the survey

Ideally, the survey should capture price changes in the accommodation sector as a whole. However as noted previously, camping grounds, recreational vehicle parks and trailer parks and other accommodation services may be considered economically less significant than those services classified as short-term accommodation activities. Moreover, the collection of price data for these sub-sectors of accommodation services is likely to prove difficult and resource intensive and so a pragmatic decision to cover only hotels may be appropriate. Short-term accommodation activities are therefore the essential component of the SPPI for accommodation with most countries focusing on service activities provided by hotels.

As such, it should be noted that some European countries exclude Holiday and other short-stay accommodation activities (55.20 NACE) from the scope of the survey. For

example, in Ireland, a sizeable portion of accommodation supply in this class is unregistered. Furthermore, the use of administrative data generated by the taxation system is complicated by the fact that holiday or short-let accommodation services are often provided as a secondary economic activity by sole traders such as farmers. Therefore it is very difficult to identify, survey and compile statistics on these units.

The ideal survey of the hotels sector should track constant quality price change for the full range of service outputs to all end users. Business, households or leisure, government and foreign customers are the main end users of accommodation services. However in Canada it proved difficult to distinguish between government and foreign rates due to a lack of data for these two types of users. From a pragmatic approach, the survey could be produced on a BtoAll, capturing separate price data for the business and household sectors (that is by combining separate price indices for BtoC and BtoB).

Three options are then available to produce a survey on a BtoAll basis with separate price indices for BtoB and BtoC end users: *i*) Design a dedicated SPPI survey to compile a full derived SPPI; *ii*) Design a partial SPPI survey often with the scope limited to business end users to be complemented with CPI data for the BtoC component. In this case, a suitable weighting structure may be applied to weight together both the SPPI and CPI components to produce a BtoAll index; *iii*) In collaboration with the CPI unit, prices offered to business and household end users are collected as part of the CPI survey.

It should be mentioned that the CPI for accommodation (covering only consumption by households) is used by many countries as a full proxy for the BtoAll SPPI. However, as discussed in chapter 2, CPI price data need to be adjusted so that they are valued at purchasers' prices, to basic prices by deducting any taxes including VAT and trade margins prior to their inclusion in the compilation of SPPIs.

The selection of one of these three approaches should be made with reference to the following questions:

- *Do services provided to households and business users follow the same or similar price development?* Compiling separate SPPIs for different service end users is an important requirement for the national accounts when price discrimination by type of end user results in heterogeneous price developments. In the particular case of accommodation services, business guests often pay a higher price than private guests, which affects the price levels on weekdays and weekends but not necessarily the price developments of the two. Therefore, it is necessary to assess the potential for business prices to display different trends to those of households. The use of CPI data as a full proxy for the SPPI may result in reduced burden and resource requirements but the resultant index may be of reduced quality;

- *Are sufficient resources available to collect data using a dedicated SPPI survey?* A full SPPI survey is designed to fully meet the requirements of the SPPI framework. However, it may be costly in terms of resources and burden. A partial SPPI survey (complemented with CPI data) may be designed to collect prices for services not covered by the CPI (conference/meeting, hosting, business customers) and to estimate the split of turnover by product and customer type (business, personal, government); this approach will result in an index of better quality than when only CPI is used. It should also generate considerable efficiencies and cost less than a full SPPI survey.

7.1.4. Industry vs. product based SPPI

In the early stage of development of the SPPI for accommodation, a choice must be made between a product or industry based SPPI. Three questions must be considered:

1. *What is the primary objective of the SPPI?* As discussed in chapter 1, SPPIs serve two purposes that are normally not in conflict because they can often be reconciled in the SPPI development. If the primary objective for the development of an SPPI is to deflate national accounts data, then a product based SPPI would be preferable for the ideal SPPI survey (either partial or full). On the other hand, if the primary aim of the SPPI is to provide a short-term indicator of price movements then an industry based SPPI will be preferred;

2. *Is an adequate sample frame available?* One of the main difficulties in compiling a product based SPPI is the unavailability of an adequate sample frame containing turnover data at product level. These data are more generally available at the industry level;

3. *What is the importance of secondary activity in the sector?* The main advantage of a product based SPPI is its potential to cover all units producing relevant service activities whether these units are classified under accommodation or non-accommodation industries. However, weighting these different products may be difficult. The industry based SPPI refers to those business enterprises for which accommodation activity is their primary activity. Therefore, any accommodation services produced as secondary activity by business establishments classified outside the accommodation industry is missed.

7.1.5. Sample design

First, information on the market structure of the industry (the respective shares of small, large, and chain establishments) should be collected - this can usually be sourced from industry representative associations or tourism statistics. Second, the sample design will depend on whether or not separate indices for different end users are required.

Probability Proportional to Size (PPS) sampling is generally recommended in the compilation of SPPIs. This method could be applied to the accommodation by using total room revenue as the indicator of the size of units. Options for stratifying the sample, by region or size may be used to improve efficiency of the sample. A mixture of non-probability and random sampling may also be considered. This could ensure that the largest and most important units are always included in the sample, with the remaining units sampled randomly.

For example, in the U.K., the sample frame is stratified according employment size bands. Units from each stratum are sampled randomly except for the stratum containing the largest units which is fully enumerated. Prices may be collected from: *i*) an individual hotel which is not part of a chain; *ii*) the head office of a complete hotel chain – providing data for the whole chain; *iii*) individual hotels which belong to a chain but return data solely for their hotel; *iv*) the head office of a chain where other hotels within the chain were represented individually.

7.1.6. Collection of information and specification of the service

As previously discussed, data collection for compilation of an SPPI that covers both business and household users can be conducted in three ways: *i)* via either a dedicated

SPPI survey (*e.g.* Korea and the U.S.); *ii)* through the combination of a dedicated SPPI survey that is limited in scope with other existing sources such as CPI data, or *iii)* as part of the CPI survey (*e.g.* Canada). Pricing information from a variety of sources can be used to construct a price index for the accommodation sector including administrative data[2], survey data, prices collected from the internet, and prices collected for the CPI.

Initialisation phase

Collecting accurate constant quality price data for accommodation services requires that both the characteristics of the representative room(s) and room rate(s) are precisely defined.

First, during the initialisation phase, representative rooms are selected taking into account the following parameters:

- Location (capital city, seasonal location: mountain, seaside, etc.);
- Type of room (standard, executive, suite, etc.);
- Period of occupancy (weekdays, weekends, etc.);
- Date and length of stay;
- Number of guests (Double, single occupancy);
- Additional services included (*e.g.* breakfast, newspaper, use of leisure complex, etc.).

Second, the definition of the room rate must be fully defined with reference to the following:

1. Type of users: when compiling SPPIs by type of users it is important to define precisely how business and leisure room rates are identified: weekdays versus weekends, single versus double occupancy, business versus private guests;

2. Timing and frequency should be considered, keeping in mind that prices can be volatile. Different options can be used including the collection of an average room rate over the entire period (usually monthly). For the BtoAll SPPI the U.S. uses an average price for guestroom rental that covers the first 21 calendar days of the month, allowing for coverage over a large number of days, while still holding the number of weeknight and weekend nights constant;

3. Sales channels: ideally room rates for each establishment should be collected from each sales channel. However, this may be difficult and costly to implement and the identification of the most representative sales channel for each establishment may be a pragmatic solution;

4. Special events and public holidays.

In the U.K., the type of rate supplied is indicated on the survey form so as to facilitate the collection of prices for constant quality services. Three types of rates are described as follows (note that the U.K. compiles a BtoB SPPI only): *i)* Corporate Local: This applies to local businesses regularly using the hotel and known personally to the hotel sales staff; *ii)* Corporate National: This applies to businesses and government departments using the hotel chain nationally; *iii)* Preferred or Business House: This is the rate listed by booking agencies or travel agents, whereby the hotel pays commission to the agent.

Data collection

After the survey initialisation phase is completed, each respondent is asked to provide an updated price on an on-going basis for the exact same service (as defined in the initial specification). Updated price information can be provided by respondents by telephone or through survey forms returned by mail, fax, post, or online submission.

Statistics Finland, in co-operation with reservation system software providers, has developed a standardised transmission system for receiving data directly from respondent reservation systems. This automated data transmission has significantly reduced the response burden. The environment for developing an automated data transmission has been favourable in Finland due to the limited number of reservation software providers. A common Nordic approach on automated data transmission has also been designed in co-operation with the other Scandinavian countries. In addition, the EU has shown special interest in promoting the system at the EU level, and has launched an ESSnet project on automated data collection and reporting for accommodation statistics.

7.1.7. Main pricing methods

The direct use of prices of repeated services and the unit value pricing methods are most commonly employed for accommodation services.

7.1.7.1. Direct use of prices of repeated services

Collecting list prices is no longer representative of prices charged given the development of reservation systems and pricing strategies in the sector. It is highly recommended therefore, to collect real transaction prices and to distinguish between business and leisure rates when separate SPPIs for different end users are required.

The direct use of prices of repeated services covers actual transactions and quality adjustment is facilitated by the detailed specifications provided for each service activity transaction. However, the method may not allow for the collection of prices that are representative of all transactions that occur in a hotel. As noted previously, prices for the same hotel room can fluctuate on a daily basis and can also be heavily influenced by public holidays and local events. A spot price or repeat service price may not therefore be sufficiently representative. Moreover, the increased use of online booking channels has had a dramatic effect on hotel pricing strategies. Discount bookings made via the Internet may not be taken into account when using the direct use of prices of repeated services. In other words, discounts and promotions available exclusively on the internet may be missed.

7.1.7.2. Unit value

The unit value method is a valuable alternative approach that has been adopted in many countries compiling SPPIs for accommodation services. Typically an average room rate – the total hotel revenue divided by the number of occupied rooms – requires sufficiently homogenous subsets of service outputs including appropriate data on revenues and room numbers for each sub-group. For example, Sweden collects three types of average room rates which distinguish different end-users: *i)* average invoiced price per occupied room, business guests; *ii)* average invoiced price per occupied room, private guests; *iii)* conference day with full board, single occupancy.

The main advantage of this method is that representative service transactions are recorded for each type of customer. This method is employed in the U.S. in order to

overcome some of the deficiencies of the direct use of prices of repeated services discussed previously.

Consideration must also be given to the most appropriate reference period during which information is collected. Sweden collects an average rate over an entire month while Finland collects price information between the 10th and 15th day of the month. The U.S. collects an average daily rate (ADR) encompassing the first 21 days of a month in order to hold the number of weekend dates (6) within a referenced month constant from month to month. This is important since rates for weekend dates often exhibit different price behaviour than those for weekdays. Note however, that the U.S. compiles a BtoAll SPPI for accommodation. Some respondents to the U.S. survey find it difficult to report the ADR for specific room types at the property, since the standard industry practice is to track the ADR across all rooms at the property.

Product-mix is therefore the main issue when using unit value. As single and double occupancy rates may be mixed and weekday and weekend rates combined the unit value method does not allow for compilation of SPPIs by end users. Additionally, a change in the mix of room types sold may be interpreted as a price change rather than a quality change. This poses problems in producing a standard quality price index unless appropriate breakdowns of revenues and room types can be obtained.

7.1.8. Quality issues

Precise specification of accommodation services is necessary and must be kept constant over time. The control of quality change over time is easier when the direct use of prices of repeated services rather than the unit value method is employed. When collecting average room rates, special attention needs to be paid in the bundling of services. The basic service, the room, is often bundled with other services such as breakfast, room service etc., so care must be taken in accounting for any changes to bundled services.

In the U.S. quality adjustments are performed if the service output has fundamentally changed due to renovations or upgrades to room amenities. If a property undergoes a renovation, producer cost data could be used to determine the percentage of total price change that is attributable to the renovation. However, because it is very difficult to obtain producer cost data from respondents, such quality adjustments have not been implemented in practice.

7.1.9. Weighting and aggregation

The sources of weight data vary between countries and are greatly influenced by the target coverage of the SPPI – separate SPPIs for different end-users or a single BtoAll index.

Annual product level turnover data should ideally be used in the weighting schemes of SPPIs. In practice, only a limited number of countries produce annual product level information and therefore industry level data or tourism statistics (*e.g.* Sweden) tend to be used in the weighting of SPPIs.

7.1.10. Specific aspects

Only a limited number of countries compile and publish SPPIs for accommodation service activities. There are two main reasons for this: *i)* there is often little demand for a

detailed SPPI given the availability of a CPI for accommodation services, especially as volume estimates for this sector are usually calculated using the CPI; ii) index compilation faces the following challenges:

1. Costly and burdensome collection of data;

2. Development of alternative distribution channels such as online sales makes it difficult to collect representative prices covering all transactions that occur in the market. In this regard, the development of Mobile Applications designed as easy-to-use booking channels should also be mentioned and considered in the future;

3. The bundling of services.

7.1.11. Overview of national methods

Canada

Canada compiles BtoB, BtoC and BtoAll SPPIs for traveller accommodation services. These SPPIs cover establishments classified as Hotels (except Casino Hotels) and Motels (72110 of NAICS 2007) and Casino Hotels (721120 of NAICS 2007) whose annual sales from accommodation services exceeded 250,000$ CAD. Only primary activities of establishments are considered, namely the provision of rooms for an overnight or short stay without any meals or other services provided.

By definition the traveller accommodation index should cover leisure, business, government, and foreign client groups as requested by the System of National Accounts for deflation. However, distinguishing government and foreign rates has been a challenging issue due to a lack of data for these two groups. Statistics Canada has then decided to suppress these two indices and only provide SPPIs covering leisure and business groups.

Respondents are selected using the PPS method. Typically, the largest establishments are selected into the sample with a probability of 100% and the probability of selection for the remaining establishments is proportional to the total room revenue of the establishment in their tourist region.

Data is collected as part of the CPI program, where regional interviewers obtain the necessary information from respondents through visits or by phone. Interviewers visit most respondents when they are initiated into the survey sample. The purpose of the visit is to select two rooms deemed to be representative of the typical rooms rented during the month. In fact, these two rooms should best represent a double-occupancy room for leisure clients, and a single-occupancy room for business clients. After the initial visit, room rate information is collected from each respondent by telephone.

Statistics Canada uses the direct use of prices of repeated services by collecting real transaction prices. As mentioned above, data is collected as part of the CPI program: price data for leisure group are collected and adjusted for other services provided and excluding all indirect taxes; the applicable rate is the weekend rate for the third weekend of the month, booked three weeks in advance. The applicable rate for business group is the weekday rate for the third Wednesday of the month, booked three weeks in advance is surveyed.

All attempts are made to keep the specifications (*i.e.* type of rates and conditions) constant, so that only pure price changes are recorded. Interviewers request information regarding the reasons for reported price changes and details pertaining to non-standard

items included in the current price of the room (*e.g.*, meals) that would not have been covered in the price quoted for the previous month. This information is used to adjust room rates so that they always reflect prices for the same services over time.

The direct use of prices of repeated services method has the advantage of measuring effective transactions and facilitating the quality adjustment. However, this methodology doesn't take into account Internet pricing which could miss promotions and discounts.

Finland

Accommodation services are highly seasonal in Finland. Many accommodation service providers only open for the winter or summer season. In the winter, Northern Finland is very popular for different kinds of snow related activities and, in the summer, summer cottage type accommodation services are more in demand. An interesting characteristic of the Finnish hotel business is that there is no official rating system for the hotels. However, the chaining of hotels has been increased in years. In 2005, only 58% of the national hotel room capacity was held by hotel chains, whereas in 2010 the share was around 64% and increasing. Another important characteristic is that domestic (*i.e.* Finnish) guests account for the majority (over 70%) of nights spent at accommodation establishments.

Prices of hotel accommodation services are measured by both the SPPI and CPI. The SPPI accommodation price index refers to the price of a single room for one night during a weekday (reflecting representative stays by business guests) while the CPI refers to the price of a double room for a weekend (representing representative stays by private guests).

The direct use of prices of repeated services is the main pricing methods used as it can be employed relatively easily. Both real transaction and list prices are collected. The unit value method has also been considered but Statistics Finland has experienced difficulties with this approach due to the fact that many respondents cannot calculate unit values for different types of rooms (accounting systems do not provide these values automatically). Average price for all rooms were available but these mixed single, double and family rooms as well as weekday and weekend rates. This mix of different service products made it impossible to produce a constant quality price index.

Data are collected monthly between the 10th and 15th day of the month. The CPI team collects both consumer (double room, weekend) and BtoB SPPI (single room, weekday) prices as part of the same data collection process. The CPI is published as a monthly index but the SPPI for accommodation is published as a quarterly figure.

No quality adjustments are performed as it is assumed that there are no quality changes between accommodation services bought from one month to the next. It could be argued that there are differences in quality, especially in respect of holidays. Accommodation services might be more expensive during holidays (Christmas, Midsummer, Easter, etc.) as demand is higher. However, Statistics Finland has chosen to focus on the yearly changes in prices and not to make any quality adjustments.

Japan

Japan compiles price indices for service provided by hotels (mainly budget hotels), excluding food and beverage services. Japan uses the direct use of prices of repeated services and the unit value method, *i.e.* monthly revenue per effective room.

Sweden

Sweden publishes SPPIs for different end users including business guests, private guests, conference guests, and all users are published for Hotel and similar accommodation services. . This level of disaggregation is required due to the fact that business guests usually pay a higher price than private guests and price development for the two end user types differs. As the rate of occupancy is usually is lower on weekends, and especially around holidays, prices are also lower. Holidays such as Christmas and Easter have a big impact on average monthly prices. There are fewer stays by business and conference guests during the summer season time leading to price reductions during these months. Price increases can be observed in September which is the most popular month for conferences.

Therefore, the three most important price determining characteristics are the type of guests, rate of occupancy and the presence of events that increase demand for accommodation services. Some hotels also refer to the economic downturn and increased competition between hotels as reasons for lower prices.

Given that large price fluctuations, sometimes up to 50% from one month to the next, can be observed, the Average Room Rate appears to be the best pricing method for hotel rooms. A potential problem could be that single and double occupancy are mixed. Most hotels claim that the mix is constant over time and should not therefore affect price development. Rooms with two beds are often rented to just one person, for the price of single occupancy. Collecting separate prices for single and double occupancy rooms does not necessarily solve this problem.

Hotels with less than 10 employees are excluded from the SPPI sample in order to reduce burden for the smallest hotels.

Statistics Sweden employs the unit value method for pricing accommodation services. An average quarterly invoiced price is collected for the three following categories of room rates:

1. Average invoiced price per occupied room, business guests;

2. Average invoiced price per occupied room, private guests;

3. Conference day with full board, single occupancy.

Weights are derived from the Accommodation Statistics Survey that collects detail on the number of rooms occupied rooms by business, private and conference guests. The Accommodation Statistics Survey also collects the total accommodation revenues and numbers of occupied rooms, which allow for the calculation of average revenue per occupied room, known as the Average Room Rate (ARR). The ARR equates to the average invoiced price per occupied room collected in the SPPI survey. Statistics Sweden also compares the results from the Accommodation Statistics Survey to the total SPPI index as the indices should show a similar development.

United-Kingdom

According to the United Kingdom Standard Industrial Classification of Economic Activities (SIC) 2007, hotels and similar accommodation service activities are classified under section I, division 55 - Accommodation. SIC 2007 is identical to the NACE at the 4-digit class level and ISIC at the 3-digit group level.

The U.K. SPPI for hotels and similar accommodation is split into two main categories: "London" and "Rest of the U.K.". "London" has a weight of 84% within the index and the "Rest of the U.K." has a weight of 16% (for the base year 2010). Each of these categories is then split into four areas: Bedroom accommodation, daily delegate rate, 24 hour residential rate and conference/exhibition room hire.

The index uses direct use of prices of repeated services where possible, with model pricing used where this is unavailable. After prices are collected, any atypical or extreme measures are queried with the respondent to confirm that reported price changes reflect pure price change, rather than a change in the quality of service defined in the item specification.

Prices for the index are collected via quarterly questionnaires. In the sample selection, a weighted stratified simple random sampling technique is applied; where potential respondents are stratified by size (employment size band) and industry (SIC '07 classification). Turnover data for this index are collected using the Service Turnover Survey (STS).

Prices are collected from a range of hotels. The service transaction descriptions include the type and size of room being priced, facilities included in the price, any food and drink included and booking duration. Where the hotel is part of a chain the specific hotel is also detailed in the description. Currently 374 prices are collected from 126 suppliers.

The requirement to provide separate accommodation service transactions for business customers, rather than private individuals may present a challenge to respondents. Some hotels will have a separate price-list for business guests, and may even provide special reduced rates for businesses. However some hotels may not be able to distinguish between business and private rates for individual rooms. Where this is the case it is assumed that businesses and private transactions are priced in the same way. Another issue found when collecting prices for this index is that often hotels do not utilise set tariffs. Prices can change daily and are dependent on demand, availability and seasonality.

The other three categories included in the SPPI relate more directly to corporate services. For the most part the services priced relate to the hiring of facilities for meetings and conferences and are charged per delegate. Although in the case of the conference/exhibition room hire, it can difficult to collect regular prices as they can be hired out for private functions such as weddings. Where this is the case a model price can be collected.

United States

The U.S. compiles a BtoAll SPPI for accommodation services for establishments classified as Hotels (except Casino Hotels) and Motels (721110 of NAICS 2007) and Casino Hotels (721120 of NAICS 2007).

The U.S. SPPI covers all services offered to guests and the general public by hotels/motels and casino hotels that are classified as primary activities. Noted that in addition to the provision of lodging, the following activities are also included as primary activities: *i*) food and beverage services, including restaurant services, room service, and banquet and catering services; *ii*) other hotel services, including telephone services, internet access charges, laundry services, parking fees, retail sales of food or merchandise; and *iii*) casino gaming. Moreover, secondary activities are also covered.

The only services that are considered secondary to these industries are services that are not provided to the general public, such as the leasing of hotel space to a retail tenant.

Respondents, selected via PPS sampling, provide on a monthly basis price data based on their selling prices to all possible buyers (BtoAll). Consequently, the prices collected include sales to businesses as well as households. During the initial data collection period, items are selected and initial prices are collected through in-person visits by data collectors. In subsequent periods, updated price information is provided by respondents through survey forms returned by mail, fax, or online submission.

The preferred pricing method is the unit value method. As mentioned previously, the ADR for selected room types based on turnover from the provision of lodging in these rooms divided by the paid room nights during a specific time period (such as the first 21 days of the month or all days in the calendar month) is collected monthly. Room nights refer to the sum of the total number of rooms booked for all nights in the reference period. Collecting the ADR allows for the inclusion of all transactions that occurred for a selected room type, during the designated time frame. The rate charged for a specific room can vary dramatically from day to day based on occupancy levels and other market conditions. Collecting an average price based on an extended time period captures all of these transactions and is therefore very representative of on-going price development. However, some respondents may be unable to report the ADR for specific room types at the property since the standard industry practice is to track the ADR across all rooms at the property. Consequently, in instances when an ADR across all room types is collected, changes in the mix of room types sold can impact the movement of the ADR figure.

If ADR figures cannot be reported, transaction or list prices for lodging only are collected. They typically reflect the rate that would be charged on the monthly re-pricing date, which is always the Tuesday of the week containing the 13th of the month. Since these prices are collected for the same room type, price changes typically are not the result of changes in product mix. However, these types of prices are not representative of all transactions produced by an accommodation services provider. While the fees charged to certain groups (such as individual travellers, business travellers, travel agents, 3rd party booking sites, etc.) may stay constant over a period of time, accommodation providers may receive different effective prices by shifting available room inventory between these buyers. For example, if demand is low, hotels may make additional inventory of rooms available to 3rd party booking sites that pay a lower price than individual travellers. While unit value methods capture these effective price changes, transaction and list pricing methods do not. Since the output is the same regardless of the buyer type, the ideal survey should capture these shifts as price changes.

Quality adjustment is performed if the service output has fundamentally changed due to renovations or upgrades to room amenities. If a property undergoes a renovation, producer cost data could be used to determine the percentage of total price change that is attributable to the renovation. However, because it is very difficult to obtain producer cost data from respondents, such quality adjustments have not been implemented in practice.

7.2. Food and beverage service activities (Anne-Sophie Fraisse, OECD)

Only a limited number of OECD and European countries compile SPPIs for food and beverages services. The reasons for this are twofold: i) a large component of output from the food and beverage sector goes to final demand, in particular to households. Consequently, the demand for an SPPI for this sector is relatively low because a CPI can

serve as a suitable proxy. Specifically, the CPI for catering services (group 11.1 of the COICOP classification) which covers consumer food services for restaurant and mobile food services, cafeterias, take-away, beverages (class 11.1.1 – Restaurants, café and the like) and canteens (class 11.1.2 – Canteens) is extensively used by national accountants as a deflator for the sector; ii) Because, over the last decade, the primary focus for development of SPPIs has been on business services, namely services that are mainly aimed at uses other than household consumption.

Nonetheless, as for the accommodation sector, the development of SPPI for food and beverages services may be valuable for countries with an important tourism economy but also to correctly measure the value of these services, both in current and constant prices by covering business service activities that are not covered by the CPI.

7.2.1. Industry description (ISIC 56)

The food and beverage service activities division comprises the provision of meals and/or drinks fit for immediate consumption whether in bars, restaurants, cafeterias, or from take away restaurants. The division also includes the provision of meals by event and industrial catering and canteens based on contractual arrangements with the customers, for a specific period of time and/or for a specific event.

The food and beverage industry is dominated by a large number of micro and small sized enterprises (*e.g.* in Canada micro establishments (1-4 employees) represented 27.7% and small establishments (5-99 employees) represented 70.5% of the total establishments in 2011). Franchises (*e.g.* McDonalds, Starbucks, and Subway) and catering companies (*e.g.* Compass Group, Sodexho, and Elior) also play an important role in the sector.

Price determining factors, pricing mechanisms and strategies

The price that a food and beverage service producer charges for a meal or a drink depends on many factors such as the type of meal (*i.e.* breakfast, lunch, dinner, reception, etc.) or drink (alcoholic, non-alcoholic, etc.), the composition of the meal (*e.g.* appetizer, entree, dessert, and beverage), the basis of meal selection, (*i.e.* fixed-price, à la carte, buffet), the ingredients used, the service provided and the specification of the place (location, star rating, the ambience and decor of the establishment, brand (franchise), etc.), the market competitors, the type of end-users, and the number of employees.

Specifically for canteens and catering services, the duration of the contract can vary from a single event (such as banquet or a reception) to years of service (such as canteens for offices, schools, etc.). Since the type of end-user is more likely to be diverse for this type of contractual service, it is desirable to include the type of end-user (households, business, government) as a price determining factor.

Similar to the provision of accommodation services, food and beverage service activities are highly labour intensive and associated with a low apparent labour productivity that may lead to high labour costs reinforced in some instances by a lack of qualified workforce. National regulatory and legislative conditions must also need to be considered when analysing price determining factors in the sector. Likewise, volatility of commodity/input prices and of energy prices largely influenced prices in the sector.

Traditional pricing mechanisms aim to cover fixed costs including labour costs first and then to generate revenue. Therefore, restaurants and other food and beverage service producers propose fixed prices according to the price determining factors mentioned

above. A specificity of the sector is the reluctance of restaurants to frequently change their menu prices which may lead to little or no price change over consecutives periods. However, restaurants may use alternative pricing strategies such as: *i*) "early bird special offers dinner" where specials are used to entice customers to arrive at the restaurant early (bars use "happy hours" as a similar pricing strategy); *ii*) "coupons" which are used to win new customers who may be more willing to try a restaurant if offered a discounted price; and, *iii*) daily specials.

7.2.2. Classification aspects

7.2.2.1. Industry classification

Food and beverage service activities are classified under section I - Accommodation and food service activities, division 56 - Food and beverage service activities of ISIC classification system. This division includes food and beverage serving activities providing complete meals or drinks fit for immediate consumption, regardless of the type of facility supplying the service; sit-down and take-away restaurants are included, as well as bars, canteens and catering services.

The key criteria for food service activities included in this division is the fact that meals fit for immediate consumption are offered rather than the kind of facility providing them. Leased food-service locations in facilities such as hotels, shopping malls, airports and department stores are included while food service activities that occur within establishments such as hotels, civic and social associations, amusement and recreation parks, and theatres are excluded. In the latter case the food services provided would be considered a secondary activity. The provision of food or drinks that are sold through independent distribution channels, in other words through wholesale or retail trade activities (section G of ISIC) is also excluded.

Division 56 of ISIC classification system covers three main activities:

1. Restaurants and mobile food service activities;

2. Event catering and other food service activities;

3. Beverage service activities (*e.g.* Bars, pubs, coffee shops, mobile beverage vendors etc.).

As shown in annex A, the NACE classification mirrors that of the ISIC while the NAICS and ANZSIC classifications provide much greater detail for services provided by restaurants. However, ANZSIC does not distinguish between food and beverage service activities.

7.2.2.2. Product classification

The corresponding products for ISIC 56 - Food and beverage activities, are classified in the groups 633 - Food serving services, and 634 - Beverage serving services, of the CPC classification system. As shown in annex B, the CPA is similar to the CPC although the CPA provides slightly more detail. Both of these classifications are organised on an industry-of-origin basis using the criteria of the units providing those services. The more detailed NAPCS, on the other hand, uses the characteristics of the service produced which results in greater product detail.

7.2.3. Scope of the survey

Ideally the SPPI should capture constant quality price changes in the food and beverage services sector as a whole for the full range of output to all end users. It should capture separate price data by type of users for each of the following three main activities: i) Restaurant and mobile food; ii) Catering services; and iii) Beverage serving activities and capture separate price data by type of users.

Restaurant, mobile food and Beverage serving activities (classes 5610 and 5630 of ISIC)

As for accommodation services, business, households or leisure, government and foreign customers are the main end users of food and beverage services. Most surveys however distinguish only two types of end-users, business and households customers. It can reasonably be assumed that restaurant and mobile food service activities (ISIC 5610) and beverage serving activities (ISIC 5630) are not, or only slightly, differentiated by end users. In this case, price movements should not significantly differ for business and household customers (however, the weighting structure may be rather different).

From a practical point of view, it is sensible to design a survey capturing price changes on a BtoAll basis for both of these activities. Two approaches can however be considered: *i*) consistent with the SPPI framework described in this *Guide*, a dedicated SPPI survey covering all types of users can be designed; *ii*) considering the fact that most OECD and European countries compile a CPI for catering services (consistent with COICOP classification, group 11.1), the CPI may be considered as a reasonable alternative of the SPPI.[3] The main notable exclusion from the CPI for catering services is the food and drink provided to hospital in-patients. Ideally, according to the share of this service activity, it requires a special treatment within the SPPI framework.

Event catering and other food service activities (classes 5621 and 5629 of ISIC)

A survey for these two service activities would be ideally designed on a business-to-all basis (BtoAll), capturing separate price data for households and business sectors. Both households and business are end-users of event catering, while the operation of canteens or cafeteria for factories, offices, hospitals or schools (5629 of ISIC) covers mainly BtoB activities. Here again two approaches can be considered: i) a dedicated SPPI survey would be designed on a business-to-all basis (BtoAll), capturing separate price data for households and business sectors such as canteens or cafeteria for factories, offices, hospitals or schools; ii) a partial SPPI survey for the business-to-business component, perhaps complemented by CPI data for the BtoC component. In this case, a suitable weighting structure may be applied to weight together both the SPPI and CPI components to produce a BtoAll index.

7.2.4. Industry vs. product based SPPI

Ideally, the SPPI would be product based as described by the U.K. and U.S. experiences presented under the *Overview of national methods*.

7.2.5. Sample design

First, information on the market structure of the industry (the respective shares of small, large, and chain establishments) should be collected - this can usually be sourced from industry representative associations or business statistics. Second, the sample design will depend on whether or not separate indices for different end users are required.

Probability Proportional to Size (PPS) sampling is generally recommended in the compilation of SPPIs. The total revenue of units in the sample frame could be used as an indicator of their size. The sample frame may also be stratified to improve the efficiency of the sample. A mixture of non-probability and random sampling may also be considered. This could ensure that largest and most representative units are always included in the sample, with the remaining units sampled randomly.

For example, in the U.K. the sample is stratified according to employment size bands. Units from each stratum are sampled randomly except for the stratum including the largest establishments which is fully enumerated.

7.2.6. Collection of information and specification of the service

The approaches to the collection of price data and the specification of service transactions depend on the scope of the survey discussed above.

Restaurant, mobile food and beverage serving activities (5610 and 5630 of ISIC)

Collecting accurate constant quality price data requires that detailed characteristics of the representative meals and/or drinks are precisely defined. Representative service products offered during the initialisation period are selected, taking into account the following parameters:

- Type of meal (*i.e.* breakfast, lunch, dinner, reception, etc.) or drink (alcoholic, non-alcoholic, etc.);

- Numbers of courses (*e.g.* appetizer, entree, dessert, and beverage, or may consist of a single fixed price charged for all courses served);

- Basis of meal selection (*i.e.* fixed-price, à la carte, buffet);

- Any additional provisions (*e.g.* coffee, soft drinks).

Event catering and other food service activities (5621 and 5629 of ISIC)

For catering services, the additional following parameters need to be taken into account:

- Types of end-users (households and/or businesses) the services are provided to (*e.g.* reception, banquet, schools, healthcare, etc.);

- Number of people the meal is provided for;

- Number of staff working in the canteen/catering business;

- Duration of contract (*e.g.* one-off, annual, 5 year);

- Other services supplied (*e.g.* operation of vending machine, cleaning services).

7.2.7. Main pricing methods

The direct use of prices of repeated services method is commonly employed for restaurant and mobile food service activities, beverage serving activities and for event catering activities. Contract pricing may also be considered for other food service activities (5629 of ISIC) where prices are specified under contracts.

7.2.7.1. Direct use of prices of repeated services

The direct use of prices of repeated services is relatively easy to employ by directly collecting real transaction prices, list or menu prices. Respondents are asked to report menu or transaction prices for a range of specific food and beverage services offered.

It is not recommended to collect an average cheque price or an average price per person to avoid changes in product-mix from period to period. However, menu prices may not include discounting provided under special promotions, redeemable coupons, or to frequent customer or members.

7.2.7.2. Contract pricing

As previously discussed, event catering and other food service activities *(*562 of ISIC) includes the provision of meals by event and industrial catering and canteens based on contractual arrangements with the customers. The contract pricing method is recommended when contracts with specified prices are used for the provision of constant quality services covering more than one survey period. This applies particularly for BtoB food and beverages services such as industrial catering and the operation of food concessions at sports and similar facilities and operation of canteens or cafeterias (*e.g.* for factories, offices, hospitals or schools) on a concession basis.

The contract pricing method has the main advantage of allowing for easy identification of pure price change and price change due to changes in the quality the service provided.

7.2.8. Quality issues

Precise specification for the selected service transaction is necessary and must be kept constant over time.

Quality adjustments are mainly performed by using explicit methods such as judgemental method. For example in the U.S., quality adjustment is performed when the size of the specified meal has changed or if the foods offered as part of the meal have changed. It is however often difficult for respondents to provide an explicit monetary value associated with changes in quality. If the price of the service has changed along with the quality of the service, respondents can sometimes approximate the value of the quality adjustment by estimating the portion of the price change that directly results from the change in quality.

7.2.9. Weighting and aggregation

When developing a SPPI for food and beverage services, it is important to consider the availability of accurate weighting data. First, as mentioned previously, developing a BtoAll SPPI can reasonably be compiled on the assumption that the services provided and their price development, are unlikely to differ significantly between households and businesses. However, there is a possibility that the weighting structure is rather different, *e.g.* households may consume a greater portion of lower priced services. One of the main compilation challenges is the estimation of an adequate weighting scheme as product and/or end-user level weights may not be available.

Ideally, the weighting scheme for the SPPI should utilise annual product level turnover data, generally collected by means of statistical survey. However, these data are not usually readily available.

7.2.10. Overview of national methods

United-Kingdom

Under the umbrella of the SPPI for the hospitality sector, the U.K. publishes product based SPPIs for business users covering only CPA class 56.20 - Event Catering and Other Food Services, offered by units classified under the corresponding ISIC group. The CPA class provides a further breakdown: *i*) canteen for education; *ii*) canteen for industrial and office; *iii*) canteen for healthcare; and *iv*) catering services.

The index employs the contract pricing method. After prices are collected any atypical or extreme measures are queried with the respondent in order to confirm that any reported price changes in the price are pure price changes, rather than resulting from changes in the quality of specified service transactions.

Prices are collected quarterly, via questionnaires. Respondents are selected using a weighted stratified simple random sampling technique where units in the sample frame are stratified by size (employment size band) and industry (SIC '07 classification). Turnover data for this index are collected using the Service Turnover Survey (STS).

Prices are collected from a range of canteens and catering firms. Respondents are required to include only services supplied to another business, central or local government. As such, services provided to private individuals are excluded. This might prove problematic for catering companies in particular where services are provided to individuals for private functions.

United-States

The U.S. compiles two product based SPPIs for food and beverage service activities: *i*) Food and non-alcoholic beverages, and *ii*) Alcoholic beverages. Items included in these SPPIs are collected only from firms that are classified in industries outside of NAICS sub-sector 722 - Food services and drinking places. Specifically, food and beverage items are collected from firms classified in Hotels and Motels, Casino Hotels, Amusement and Theme Parks, Golf Courses and Country Clubs, and various retail trade industries.

The U.S. compiles SPPIs covering all services offered to all possible buyers. Consequently, the prices collected include sales to businesses as well as households.

Prices are collected exclusively via a SPPI dedicated survey. The PPS method is used to select respondents. During the initial data collection period, specific service transactions are selected and their initial prices are collected during face to face interviews. In subsequent periods, updated price information is provided by respondents through survey forms returned by mail, fax, or online submission. In most instances, respondents are asked to provide the published menu price for a selected meal offered at the establishment. The selected meal may include multiple individually priced menu options, such as an appetizer, entree, dessert, and beverage, or may consist of a single fixed price charged for all courses served.

For banquet and/or catering services, respondents are asked to create a realistic, hypothetical transaction or select an actual transaction that occurred in the past. In subsequent months, respondents are asked to estimate the price that would be charged to perform the same service in the current month based on current market conditions. In all cases, the price reported by the respondent should include any service fees charged for providing the selected service (such as a service charge for room service) but should exclude taxes and gratuity.

The direct use of prices of repeated services is the preferred pricing method. Since respondents are asked to report menu or transaction prices for specific food and beverage offerings (rather than an average check price or an average price per person), constant quality prices are reported. However, menu and list prices do not capture discounting that can occur due to special promotions, redeemable coupons, or frequent customer/membership discounts.
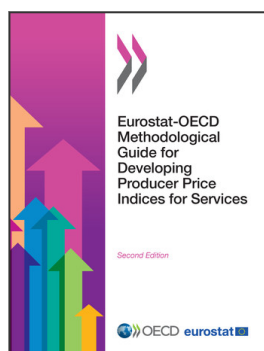
Quality adjustment is performed when the size of the meal or i the foods offered as part of the meal have changed. It is however often difficult for respondents to provide an explicit monetary value associated with the change in quality. If the price of the service has changed along with the quality of the service, respondents can sometimes approximate the value of the quality adjustment by estimating the portion of the price change that is directly tied to the change in quality.

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Notes

1. Source Eurostat. In the EU-27, the period 2007–10 showed an average fall of 2.2 % per year for hotels and a rise of 2.3 % per year for campsites. It is likely that the different developments observed for hotels and campsites can be linked to the financial and economic crisis, and the substitution of nights spent in hotels by nights spent in campsites may have been in order to lower the cost of a holiday.

2. As experienced by Finland, administrative data (VAT data) may also be a valuable source especially to separate secondary activities such as food services of accommodation businesses (that may be bundled). Statistics Finland specifies that the VAT tax rates are different for accommodation and food services in Finland (at 8% and 22% respectively). This helps to separate these two service groups when administrative data are used.

3. As mentioned previously for accommodation, CPI data, valued at purchasers' prices, need to be adjusted to basic prices by deducting any taxes including VAT and trade margins.