

Development and experience of Hong Kong's participation in the International Comparison Programme

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Background

- *History of Hong Kong's participation in ICP*
- *Set-up of ICP team of Hong Kong*

Background:

History of participation in ICP

- Hong Kong has participated in 1980, 1985, 1993, 2005, 2009 (update), 2011, 2015(update) and 2017 round of ICP.
- Selected as one of the 18 **Ring Economies** (4 in Asia Pacific) for global comparison in 2005 round
- Selected as the **Base Economy** of the Asia Pacific Region starting from 2011 round

Background: Set-up of ICP team

Name of Implementing Agency:

Census and Statistics Department, HKSAR (C&SD)

Head of Agency: Commissioner for C&SD

National Coordinator (NC) : Assistant Commissioner for C&SD

Branches involved:

Price Statistics Branch

- Price data collection for Household, Construction, Machinery and Equipment and Housing Rental

National Income Branch (1)

- Data collection for Government Compensation
- Compilation of GDP figures and Housing Volume

Background: Set-up of ICP team

Manpower support for ICP

Senior Statistician / Statistician / Research Manager:
Coordination of various activities of ICP

Statistical Assistants (contract staff)

Assist in indoor data collection and data validation, under supervision of Statistician / Research Manager

Survey Interviewers (contract staff)

Assist in price data collection, under supervision of Census and Survey Officers

Preparation before data collection

- *Review on product list*
- *Design of survey framework*
 - *Assessment of product items*
 - *Pricing frequency*

Review on product list

- To ensure sufficient number of product items can be priced for each COICOP basic headings
- If necessary, suggestions can be made based on the situation of Hong Kong for ADB's consideration

Availability of products in some BHs

Name of Basic Heading	No. of items in product list	No. of items available in HK	% available in BH	Remark
Other fuels	3	0	0%	Most households are using electricity/piped gas as energy sources
Motor cars	19	3	16%	Many specified models of motor cars are not available in HK.
Telephone and telefax services	18	6	33%	Many of the specified phone and Internet plans in list are not available in HK.
...
Shoes and other footwear, Passenger transport by air, Paramedical services, Recording media, Garden and pets ... etc.	-	-	100%	All products are common and can be found in HK.

Design of survey framework (Product availability)

- Evaluate the availability of individual items in product catalogue according to the Structured Product Descriptions (SPDs) provided by ADB.
- Rule of Thumb: Products that are not common in Hong Kong are excluded from survey framework as considered as not representative.
- Some examples:
 - 11031213220 - Women's Muslim Headgear, WKB
(Not widely available in general outlets.)
 - 11045310220 - Kerosene, BNR
 - 11045310320 - Charcoal, BL
 - 11045310420 - Firewood, BL
(Not widely available as most households are using electricity/piped gas as energy sources)

Designing survey framework (Pricing frequency)

- Rule of Thumb: **60 quotations** per item, 5 quotations per month as requested by ADB
- Based on experience of 2011 ICP and 2016 updating:
 - Products with **high** Coefficient of Variation (變異系數) in prices → collect quotations from more outlets
 - Products which prices are **relatively stable** → lower pricing frequency (e.g. bi-monthly/quarterly)
- Survey framework will be reviewed as necessary during data collection

Pricing frequency in 2017 ICP

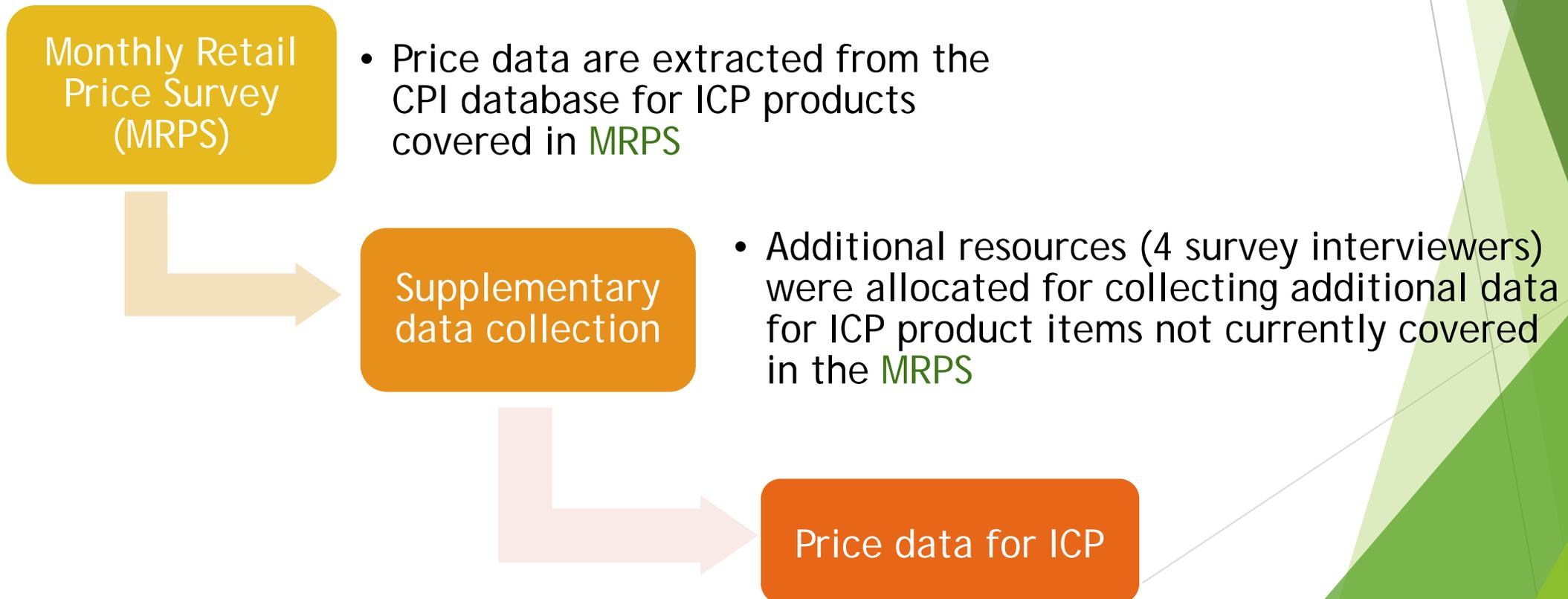
Pricing frequency	Examples	No. of product items priced
Monthly	Food, clothing and electronic goods	475
Bi-Monthly	miscellaneous goods, wine	159
Quarterly	pharmaceutical items, haircut services	44
Annually	school fees, boys' school shirts	2
Total		680

Data collection

- *Household products (HH)*
- *Construction (CNS)*
- *Machinery and Equipment products (M&E)*
- *Housing Rental*
- *Government compensation*

Household product (HH)

Data collection of household products was planned to synchronise with the regular **Monthly Retail Price Survey (MRPS)**, which is the regular survey conducted by C&SD for CPI compilation.



CAPI System

- The Computer Assisted Personal Interviewing (CAPI) system is used in data collection of MRPS.
- CAPI System may capture detailed product specifications (with additional information e.g. photos, barcode)
- Streamline business process
- On-spot computation and validation
- Facilitate fieldwork operation, administration and management
- Price data can be exported from the CAPI system for ICP data processing

Data collection other than MRPS

- Some products were identified as suitable for price collection through the Internet
 - Transport fees
 - Postal fees
 - Education fees
 - Travel/hotel package
- Due to resources limitation, more items may be collected through the Internet in 2020 ICP if possible

Identify suitable items for internet pricing

- 11081110110 - Postage of a letter, domestic

Section 1 : LOCAL MAIL

1.1 LETTERS & PACKETS (NON-BULK)			
Weight not over	Small Letter	Large Letter	Packet
	(\$)	(\$)	(\$)
30g	2.0	3.7	5.2
50g	3.0		
100g	-	5.0	
250g	-	7.3	7.5
500g	-	13.7	14.0
1 Kg	-	-	28.0
2 Kg	-	-	45.0
	(Weight Limit : 50g)	(Weight Limit : 500g)	(Weight Limit : 2kg)

Intra-economy validation

Price data are validated before submission to ADB

For price data collected in MRPS, they are first validated based on some **general validation rules in CAPI**:

- ▶ completion checks (e.g. price > 0; correct unit of measurement must be reported)
- ▶ comparison of price with last month (reasons should be provided for large % changes)

Intra-economy validation

- Additional price checking will be performed for each ICP product according to ADB's requirement.
- Criteria of validation:
 - Min/Max ratio
 - Coefficient of Variation (CV)
 - No. of quotations collected compared to survey framework
- Quotations of product items with **low Min/Max ratio** or **high CV** will be checked.
- If necessary, more resources will be allocated to those product items.

Validation tools

- To facilitate the data validation work, VBA program using excel is used to generate reports.
- A screenshot:

Quotation collected compared to framework	
100% or above	620
75% to 99%	52
50% to 74%	8
0% to 49%	0
Total Number of Items	680

- Status of each product can be easily referred:

ICP Product Code	Product name	Quotation in survey framework	No. of quotation collected	Average Price	CV	Min / Max
110111101100	White rice #3, BNR	60				
110111101140	White rice #7, Prepacked, BL	60				
110111101170	White rice #10, Prepacked, BL	60				
110111101190	Premium rice #2, Prepacked, BL	48				

Some difficulties encountered

- *Transform the data collected into the format of ICP data for submission*
- *Difficulties in finding suitable products matching the SPDs*

Transform the collected data to the format of submitted data of ICP

- Hong Kong does not use the ICP APSS software package of ADB.
- While price data collected are mainly captured in the CAPI System, it is not practicable to input the price data to APSS manually (> 30,000 quotations collected).
- A tailor-made VBA program is prepared for transforming data output of CAPI into the format of the output of APSS.

Prepare MRPS File

Prepare Statistics Table

Generate the full list

Compare with CPI

Data Files to ADB

Difficulties in finding suitable products

Some product items specified by ICP are not easily to be found in Hong Kong, even though their SPDs look quite basic and general.

- 11011230130 Mutton chops & 11011230140 Lamb, chops

Mutton chops



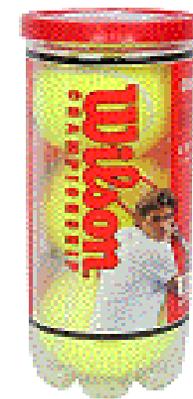
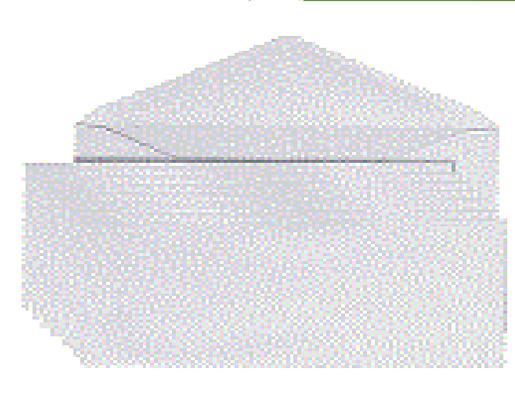
Lamb chops



- Major difference is age, but in Hong Kong, such information is not readily available, even not from the suppliers
- We can only rely on the descriptions given in the package of products, but no further confirmation can be done.

Difficulties in finding suitable products

- 11095111020 - Envelopes, pack of 12, WKB
 - Envelopes are common products, but package size is pack of 20 in Hong Kong (vs SPD: pack of 12)
 - Therefore Hong Kong cannot price this item.
- 11093111610 - Tennis balls, multipack, WILSON
 - SPD: “Regular-duty” tennis balls for “soft court” balls designed for use on **clay courts**.
 - In Hong Kong, we only have “Extra-duty” or “hard court” balls designed for use on **hard or grass courts**.
 - Therefore Hong Kong cannot price this item.



Construction

Price data collection covering:

- *Labour*
- *Materials*
- *Equipment Rental*

Construction - Labour

- In Hong Kong, Census and Statistics Department regularly compiles *Average Daily Wages of Workers Engaged in Public Sector Construction Projects as Reported by Main Contractors (ADW)*, which is an official wages statistics published in monthly basis.
- *Website link:*
<https://www.censtatd.gov.hk/hkstat/sub/sp210.jsp?productCode=B1050013>
- The hourly rate of wage of various type of construction labour can be derived directly from ADW.

Collection of administrative data

Wage data for public sector construction projects is collected by administrative forms provided by various Works Departments in the Government.

The following information are collected for different type of construction workers (e.g. concreter, carpenter, bamboo scaffolder, bricklayer, etc.):

- ▶ No. of workers engaged in each calendar day in a month
- ▶ Total no. of man-day by type of workers
- ▶ Daily wage rate: include basic daily wages plus guaranteed allowance per day and paid leave
- ▶ Include all construction workers employed by contractor & his sub-contractors

Administrative forms



Architectural
Services



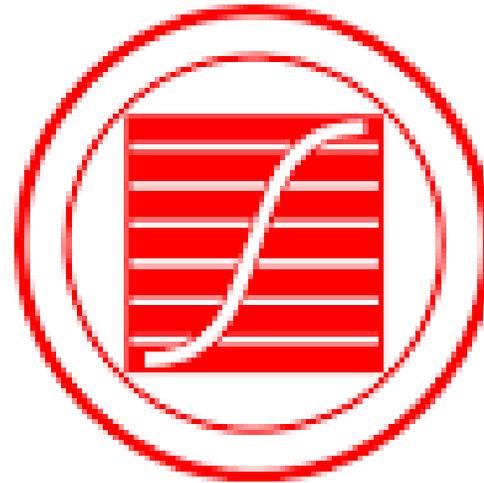
Drainage
Services
Department



Civil Engineering
and Development
Department



Electrical and
Mechanical Services
Department



Census and Statistics
Department

Construction - Materials

- ▶ Price data collection of construction materials was synchronised with the regular **Building Material Wholesale Price Survey (BMWPS)**.
- ▶ BMWPS is a regular monthly survey, which collects price data for compilation of :
 - ▶ A) Index Numbers of the Costs of Materials used in Public Sector Construction Project (BMCI)
Website link:
<https://www.censtatd.gov.hk/hkstat/sub/sp330.jsp?productCode=B1060007>
 - ▶ B) Average Wholesale Prices of Selected Building Materials
Website link:
<https://www.censtatd.gov.hk/hkstat/sub/sp330.jsp?productCode=B1060005>
- ▶ These statistics are mainly used for calculating compensation to contractors engaged in public sector construction projects for cost fluctuation adjustment in building materials.

Construction - Materials

- For ICP items which are currently covered in the **BMWPS**, their price data are extracted from the BMWPS for ICP purpose.
- For items not currently covered in the **BMWPS**, they will be introduced for data collection through the same survey for the particular time period.

Construction - Equipment rental

- In Hong Kong, we do not have any regular price data collection regarding construction equipment rental
- We have difficulties in finding suitable companies for price data collection:
 - The SPDs of these items are model-specific
 - Subject to the location and duration of the construction projects, the rental cost of equipment may vary largely
 - Data of “hourly” cost is hard to be collected
- Only limited number of items in equipment rental are collected

Machinery & Equipment (M&E)

- In Hong Kong, we do not have any regular price data collection programme for machinery and equipment
- Much difficulties are noted in finding suitable products for data collection for M&E:
 - *Availability of M&E products*
 - *Meeting structured product description (SPD) for unspecified brands*
 - *Pricing vehicles via model no.*

Availability of M&E products

- Hong Kong is a **service economy**, there is not much industrial production nowadays. It is thus not easy to find certain types of M&E which activities are not common in Hong Kong.
- In addition, some M&E products specified by ICP require the **unique models**, which may not be readily found in Hong Kong.
- While Hong Kong does not have regular price data collection for M&E, it is relatively difficult for us to find suitable suppliers for price data collection, as compared to household and construction products.

Difficulties in meeting SPD for unspecified brands

- Apart from items which are model-specific, ADB also required economies to price items with similar specifications as “unspecified” items.
- For some general items, important SPD were matched and suitable products could be identified for pricing:
 - 1501112210: Desktop monitor (21.5” LED) - Unspecified
 - 1501112130: Laser printer: colour (256 MB) - Unspecified



Difficulties in meeting SPD for unspecified brands

- However, many unspecified items could not be priced:
 - SPD of these items involved a large number of specifications, which are too specific for finding an exact model (even only matching some “important” specifications).



Item Variable	Item Description	Important Specifications
Code:	15.01.11.2.01.630	
Name:	Electronic digital theodolite (26 x magnification) Unspecified	
Make (and nationality):	Unspecified	
Model:	Unspecified	
Specifications:	Metric Imperial	
Magnification of telescope:	26x 26x	Yes
Two side LCD display 7 segments:	yes yes	Yes
Sensitivity of level vials : plate/circular:	60 in/2mm, 10 in/2m 60 in/2mm, 10 in/2m	Yes
Plummet : image/magnification:	3x 3x	Yes
Plummet : field of view:	3 degrees 3degrees	Yes
Plummet : focussing range:	0.5 m to infinity 1.6 ft to infinity	Yes
With tilt sensor vor vertical angle correction:	yes yes	Yes
With visible laser point:	yes yes	Yes
Objective lens:	40 mm 1.6 in	Yes
Compensating range of tilt sensor:	plus/minus 3 minutes plus/minus 3 minutes	Yes
With standard equipment package:	yes yes	
Battery type:	4 x AA 4 x AA	

Difficulties in pricing vehicles

- Vehicles may have very similar specifications but different model no. in different economies
- Example: 1501121060: Van - V W (Germany)
 - SPD model: Transporter Delivery Van (T30/SWB)
 - HKG model: Transporter 340 DSG Trader
- Since specifications of the model found in Hong Kong were not fully matched with those in SPD, the price of this product is dropped after validation in Aug 2018 as advised by ADB.



Volkswagen

Housing Rental

- In Hong Kong, Census and Statistics Department conducts a **Rent Survey** on a monthly basis.
- **Rent Survey**: collect data on private rental for the compilation of Private Housing Rent Index in **CPI**
- It is a *supplementary survey* to **General Household Survey (GHS)** - A survey which collect data on the labour force and population characteristics

Rent Survey - Coverage

General Household Survey (GHS)

- Target population
 - Land-based non-institutional population of Hong Kong, covering about 99% of the Hong Kong Resident Population
- Sampling unit:
 - Housing units in the frame of quarters maintained by C&SD

Rent Survey

- Target population
 - Private renter households identified in GHS
- Collect data of private domestic dwellings:
 - Rent
 - Saleable floor area
 - Tenure of accommodation

Additional data requirements for ICP

Urban / Rural

- No such breakdown as Hong Kong is a relatively small urban city

Quality indicators

- Mainly electricity, water supply, private toilets
- No differentiation on dwelling facilities as most dwellings in Hong Kong include all these basic facilities

No. of bedrooms

- Additional questions are added in the Rent Survey regarding no. of bedrooms for each enumerated household

Additional data requirements for ICP

- While “apartment” type of dwellings are most common in Hong Kong property market, “Houses” and “Traditional Dwellings” are not common in Hong Kong.
- As a result, only data of nine items as “Apartments” (with different no. of rooms and floor areas) were collected and submitted.

Item Code	Item Name
Houses	
1104111101	Single-detached house, 120-180 m ²
1104111102	Single-detached house, 191-240 m ²
1104111103	Single-detached house, 241-360 m ²
1104111104	Single-detached house, 361-460 m ²
1104111116	Single-detached house, 90-119 m ²
1104111105	Attached house (row house), 80-120 m ²
1104111106	Attached house (row house), 121-180 m ²
1104111107	Attached house (row house), 181-240 m ²
1104111117	Attached house (row house), 50-79 m ²
Apartments	
1104111108	Studio apartment, 15-35 m ²
1104111110	One-bedroom apartment, 40-60 m ²
1104111111	One-bedroom apartment, 61-80 m ²
1104111118	One-bedroom apartment, 20-39 m ²
1104111112	Two-bedroom apartment, 60-80 m ²
1104111113	Two-bedroom apartment, 81-120 m ²
1104111119	Two-bedroom apartment, 40-59 m ²
1104111120	Three-bedroom apartment, 60-80 m ²
1104111121	Three-bedroom apartment, 81-120 m ²
1104111122	Three-bedroom apartment, 121-160 m ²
Traditional Dwellings	
1104111114	Traditional Dwelling, 25-75 m ²
1104111115	Traditional Dwelling, 76-120 m ²

Government compensation

- Data of government compensation are collected by identifying **respective government occupations** based on specifications of each occupation in list, and compile the compensation package of those government occupations.
- Data on base pay and on actual social contribution for different levels of seniority can be calculated from the respective staff pay scale. For other compensative package, relevant data can be compiled based on administrative data from the Treasury Department.
- For certain occupations in quasi-government units, direct data returns are obtained from the units concerned.

Government compensation

Some difficulties:

- The civil service structure in Hong Kong tends to be **more general** and each rank might be responsible for a range of duties rather than **specific single task** as specified in each ICP occupation.
- Active discussions with relevant government units are required to identify suitable government ranks with their major work duties that correspond to the ICP specifications.
- Different options of remuneration packages and fringe benefits, especially for more senior staffs are available. Imputation may be required for some benefits (e.g. defined benefit pension, in-kind benefits).

Expenditure weights using GDP data



Expenditure weights using GDP data

- In ICP exercise, the shares of different GDP expenditure components are used as weightings for various price items.
- In expenditure approach (as adopted for ICP), GDP comprises the following major components:
 - A. Private consumption expenditure (PCE)
 - B. Government consumption expenditure
 - C. Gross capital formation
 - D. Net exports of goods and services

Data sources for GDP by expenditure approach

A. Private Consumption

1. External merchandise trade statistics
2. Visitor expenditure survey
3. Annual/quarterly economic surveys
4. Household expenditure survey (2014/15)
5. Household survey
6. Government revenue statistics
7. Administrative data

B. Government Consumption

1. Government accounts data and income

C. Capital Formation

1. External merchandise trade statistics
2. Annual/quarterly economic surveys
3. Government accounts data
4. Administrative data

D. Exports and Imports

1. External merchandise trade statistics
2. Visitor expenditure survey
3. Annual/quarterly economic surveys
4. Household survey
5. Administrative data

Challenges for compiling expenditure weights

Challenge 1

- Data on expenditures by basic heading required for ICP are generally available from the GDP compilation system.
- For certain basic headings, the expenditure breakdowns required by ICP are **relatively less significant or at more refined** product level than those available in our existing framework.
 - In such cases, estimates on breakdown at refined level would be made by making reference to supplementary data sources, e.g. data from the 2014/15 round of the Household Expenditure Survey (HES), imports and re-exports statistics with detailed commodity breakdown.

Challenges for compiling expenditure weights

Challenge 2

- The expenditure weights for compiling CPI and the weights derived from PCE statistics in GDP **can be different**. Besides the reference periods concerned, one reason for the difference is that there are some services components not covered in the CPI weights.

Expenditure share	PCE (2017)	CPI (2014/15)
Food, water, beverage, clothing, housing and fuels	35%	50%
Health, transport, communication, and other goods and services	65%	50%

Challenges for compiling expenditure weights

- For example, the financial intermediation services rendered to borrowers and depositors do not involve explicit charges (hence not covered in CPI), and are estimated in GDP framework by multiplying the stock of loans/deposits by the average interest margin of different types of borrowers/depositors (known as “reference rate” method).
- Another example is that some non-profit making institutions provide services which are available for free or at reduced prices to households (hence much smaller weights in CPI). The value of these services would be estimated by the input costs of production in GDP framework.

Price validation
after data submission:
Inter-economy validation

Inter-economy validation

- After reviewing and comparing the price data submitted by various economies, ADB will provide comments on the price data submitted (in particular the “**High Priority**” items) for further price validation
- For those items, checking will be done:
- For individual **quotations**:
 - (1) Corresponding product specification
 - (2) Type of outlet
- For **overall statistics** of the items, review will be done by:
 - (1) Comparison with related CPI data (at group level)
 - (2) Dispersion of price data (Min/Max ratio & CV)
 - (3) Comparison with last round of ICP
 - a. Average price ratio (to all economies)
 - b. Average price ratio (to high income economies)

Price validation after data submission

- For items which price data are checked in order, remarks will be provided to ADB.
- For items which price data may require revision:
 - (1) Further data collection
 - (2) Dropping some existing quotations of the item which are dubious
 - (3) Dropping the price of a specific itemare all feasible options.
- Data collection results will be further discussed during ICP regional workshops before confirmation.

Participation in the 2020 ICP

- The United Nations Statistical Commission (UNSC) instituted the ICP as a permanent element of the global statistical programme to be conducted recurrently on a **3-year cycle**.
- The coming round of ICP exercise will be conducted with 2020 as the benchmark year.
- As informed by ADB in August 2019 workshop, price data collection for household items will start in January 2020, and the other items starting Q2 2020 by phase.
- Hong Kong will start the preparation for participation in the 2020 ICP exercise soon, with a view to launching the data collection for household items in January 2020.
- In view that the ICP exercise will be conducted recurrently in the future, it is essential to retain the knowledge and experience gained in undertaking the ICP activities.

~End of presentation~

Thank you