



Maintaining Representative Turnover and SPPI: Re-stratification, Re sampling, Rebasing, and Updating Weights

SAYEEDA KAMARUDDIN
SERVICES STATISTICS DIVISION,
DEPARTMENT OF STATISTICS, MALAYSIA

Overview of SPPI Compilation

- Objective of SPPI compilation is to measure the average change in prices of services produced and charged by domestic producers
- SPPI compilation in Malaysia started in 2008 with coverage limited to postal and courier & freight transport by road services
- To date, 8 subsectors have been covered with total of 35 industries at 5 digit level
- SPPI is used as a deflator for Index of Services (IoS) and GDP compilation and as a short term indicator

SCOPE & COVERAGE

2008

- Postal and courier
- Freight transport by road

2010

- Air transport
- Water transport

2011

- Information & Communication Technology (ICT)

2012

- Legal
- Accounting
- Engineering
- Real estate agent

2013

- Accommodation
- Education
- Health
- Recreation

Industries Covered

TRANSPORT

49230 Freight transport by road

50121 Transport of freight overseas and coastal waters

51201 Transport freight by air

53100 National post services

53200 Courier activities

ACCOMODATION

55101 Hotels and resort hotels

ICT

61101 Wired telecommunication services

61102 Internet access providers by the operator of wired infrastructure

61201 Wireless telecommunication services

61202 Internet access providers by the operator of wireless infrastructure

62021 Computer consultancy

63112 Data processing activities

63120 Web portals

EDUCATION

85102 Pre primary education

85104 Primary education

85212 General school secondary education

85302 College and university education

85491 Tuition centre

85421 Music and dancing school

REAL ESTATE

68201 Real estate agents and brokers

HEALTH

86101 Hospitals

86201 General medical services

86202 Specialized medical services

86203 Dental services

86901 Dialysis centre

86902 Medical laboratories

PROFESSIONALS

69100 Legal activities

69200 Accounting

71102 Engineering services

RECREATION

93113 Equestrian clubs

93116 Golf courses

93117 Bowling centre

93118 Fitness centres

93210 Amusement parks and theme parks

93297 Cyber cafe/ internet café

Notes:
Industrial clasification is using **MSIC 2008** (in conformity with **ISIC Rev.4**)

Scope & Coverage

- Concept and methodology used are based on OECD manual (Methodological Guide for Developing Producer Price Indices for Services)
- For the purpose of this survey, industrial classification is using MSIC 2008 (Ver.2) which is in conformity with the ISIC Rev.4. Meanwhile, product classification is using Malaysian Classification of Product by Activity (MCPA) 2009 which is compiled based on MSIC 2008 and United Nations Central Product Classification (CPC) 2.0.
- SPPI covers service products that are provided by businesses to other businesses (BtoB). Although service products provided to individuals are beyond the scope of SPPI, the index covers some service products (postal and courier and telecommunication services) that are provided to both individuals and businesses (BtoAll).
- The service products that are not covered are Financial Intermediation, Distributive Trade and Food & Beverages

Sampling Design

- Sample used for SPPI survey is from Quarterly Services Survey (QSS) sample
- This survey adopted a single stage stratified sampling design with establishment as the sampling unit
- The strata is divided into two basic groups as follows:
 - Primary strata for establishments which the cumulative revenue is 75% and above of the total revenue for that particular sector and were completely enumerated
 - Second strata for the rest of the establishments and subjected to sampling.

Sampling Design

- Sample size usually determined by specifying a desired coefficient of variation (CV) using an auxiliary variable that is highly collerated with the variable of interest
- The response rate based on previous data is also taken into consideration
- The formula used for the calculation of sample size is the Neyman's method

Sampling Design

- As for the SPPI, two stage sampling is adopted with establishments as the Primary Sampling Unit (PSU) and sample of fixed items per business unit constitutes the Secondary Sampling Unit (SSU)
- PSU is chosen using stratified sampling which has been described in the previous slide
- For SSU, selection of items is based on judgmental sampling, where major services produced by each industry as well as detailed description/ specifications pertaining to the unit of measurement of services produced by the establishments are identified through a preliminary survey prior to the actual survey
- The number of items are varied across the industry

Weighting Procedure

- Weights are derived based on output value of each item (5 digit industry code) from 2010 Economic Census
- Meanwhile, weights for specification item are derived based on percentage share of services based on company's total income.
- Currently, the weights is not revised and the reweighting will be done once the latest census data is available, which is the 2015 Economic Census

DISSEMINATION

- Price collection commence 15 days after the reference period with the collection duration of one month
- Subsequently, index release date is 30 days after the reference period
- The index contains basic SPPI at industrial and sector level and also released is indices in comparison with the previous quarter and the corresponding quarter of the previous year
- At the present time, SPPI is only meant for internal circulation and mainly is used as a deflator for Index of Services (IoS) and calculating the real value of output in services from nominal values

SPPI Table

	TRANSPORT AND STORAGE	NATIONAL POSTAL SERVICES	INFORMATION AND COMMUNICATION	PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES
	(2010=100)	(2008=100)	(2011=100)	(2012=100)
2008				
Q1	-	99.8	-	-
Q2	-	99.8	-	-
Q3	-	100.2	-	-
Q4	-	100.2	-	-
2009				
Q1	-	100.7	-	-
Q2	-	101.8	-	-
Q3	-	102.0	-	-
Q4	-	102.0	-	-
2010				
Q1	100.0	102.2	-	-
Q2	100.0	102.2	-	-
Q3	100.0	102.2	-	-
Q4	100.0	102.1	-	-
2011				
Q1	100.4	102.7	100.0	-
Q2	100.7	102.9	100.0	-
Q3	101.3	105.0	100.0	-
Q4	101.8	105.2	100.0	-
2012				
Q1	102.2	106.2	100.3	100.0
Q2	102.2	107.0	100.3	100.0
Q3	102.3	107.4	100.5	100.0
Q4	103.1	108.3	101.2	100.0
2013				
Q1	103.2	108.4	100.5	100.2
Q2	103.2	108.6	100.5	100.2
Q3	103.2	108.6	100.5	100.2
Q4	103.2	108.6	100.5	100.2
2014				
Q1	103.5	109.3	100.5	100.3
Q2	103.5	109.7	100.5	100.4
Q3				
Q4				

Notes: Only for meeting purpose, not to be published/shared/ quoted anywhere



SPPI Table (contd.)

(MSIC 2008)	TRANSPORTATION & STORAGE					INFORMATION & COMMUNICATION							PROFESSIONAL, SCIENTIFIC AND TECHNICAL ACTIVITIES		
	49230	50121	51201	53100	53200	61101	61102	61201	61202	62021	63112	63120	69100	69200	71102
	<i>Freight transport by road</i>	<i>Transport of freight over seas and coastal waters, whether scheduled or not</i>	<i>Transport of freight by air over regular routes and on regular schedules</i>	<i>National postal services</i>	<i>Courier activities other than national post activities</i>	<i>Wired telecommunications services</i>	<i>Internet access providers by the operator of the wired infrastructure</i>	<i>Wireless telecommunications services</i>	<i>Internet access providers by the operator of the wireless infrastructure</i>	<i>Computer consultancy</i>	<i>Data processing activities</i>	<i>Web portals</i>	<i>Legal activities</i>	<i>Accounting, bookkeeping and auditing activities; tax consultancy</i>	<i>Engineering services</i>
	(2010=100)			(2008=100)		(2011=100)							(2012=100)		
2011															
Q1	100.7	100.1	100.0	101.3	103.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-
Q2	101.1	100.2	100.0	101.3	103.8	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-
Q3	102.2	100.3	100.0	105.6	104.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-
Q4	102.8	100.8	100.1	105.6	105.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	-	-
2012															
Q1	103.6	100.7	100.0	105.6	106.5	100.8	100.0	100.2	100.0	100.7	100.0	100.0	99.9	100.0	100.0
Q2	103.8	100.4	100.0	105.6	107.7	100.8	100.0	100.2	100.0	100.7	100.0	100.0	99.9	100.0	100.0
Q3	104.0	100.4	100.0	105.6	108.3	100.8	100.0	100.9	100.0	100.8	100.0	100.0	100.0	100.0	100.0
Q4	104.0	100.4	109.0	105.6	109.7	100.8	100.0	100.9	102.7	100.8	100.0	100.0	100.0	100.0	100.0
2013															
Q1	104.1	100.4	109.0	105.6	109.8	98.4	100.0	99.6 ^R	102.7	101.2 ^R	100.0	100.0	100.3	100.5	100.0
Q2	104.2	100.3	109.0	105.6	110.3	98.4	100.0	99.6	102.7	101.2	100.0	100.0	100.3	100.7	100.0
Q3	104.2	100.3	109.2	105.6	110.3	98.4	100.0	99.6	102.7	101.2	100.0	100.0	100.3	100.7	100.0
Q4	104.2	100.3	109.2	105.6	110.3	98.4	100.0	99.6	102.7	101.2	100.0	100.0	100.3	100.7	100.0
2014															
Q1	104.7	100.3	109.1	105.6	111.3	98.4	100.0	99.5	102.7	101.2	100.0	100.0	100.3	101.1	100.0
Q2	104.8	100.3	109.1	105.6	111.8	98.4	100.0	99.5	102.7	101.3	100.0	100.5	100.3	101.3	100.0
Q3															
Q4															



AREAS FOR IMPROVEMENT

- Reweighting exercise
- Treatment of missing data
- Sample selection (subsample of Quarterly Turnover Survey)
- Enhancement of sampling plan
- Outlier treatment
- Engagement with other data providers
- Representativeness of item's specifications
- Extension of coverage

Way Forward

- Up to 2013, index has been developed for postal and courier (2008=100), transport (2010=100), ICT (2011=100) and professionals subsectors (2012=100)
- Index for real estate agents, accommodation, education, health & recreation will be developed in 2014 using 2013 as the base year
- SPPI will be reweighted once the 2015 Census data is available (by 2017)
- At present, since SPPI is under development and a new product to DOSM, it is only intended for internal use and there is a future plan to disseminate SPPI to public

THANK YOU