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REVIEW OF INDICES OF SERVICE PRODUCTION FOR OECD MEMBER COUNTRIES[1]
(An updated version of the paper presented in the 2nd STESEG meeting in June 2003)

Paper submitted by OECD[2]

ABSTRACT

The OECD's Short-term Indicators for Services Task Force (STISTF) was created to extend the range of indicators for the services sector, in particular, on a monthly or quarterly basis. As a priority, the Task Force is working on the preparation of international guidelines for a monthly (or quarterly) index of services production (ISP).

Although most OECD member countries collect some statistical information on the production activity of their services sectors, only a limited number of OECD member countries appear to cover the services sector comprehensively and with high frequency. A monthly ISP is only available for the United Kingdom (UK) and the Republic of Korea (Korea). Canada and Finland publish monthly estimates for service production activity as a part of their monthly GDP. Japan produces monthly indicators for tertiary industry, which cover both industry and services sectors. Many EU member countries such as France collect

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[1] The present documentation has been submitted by the Statistical Division after the official deadline due to resource constraints.

[2] Paper prepared by Benoit Arnaud and Eun-Pyo Hong.

monthly or quarterly information for a selected group of services industries.

This paper reviews the monthly ISP for Canada, Korea and UK, who provided comprehensive information on national practices for ISP compilation in response to a questionnaire sent by the OECD. A comparison is then made for various aspects of the ISP compilation, e.g. title and coverage of the index, type and sources of variables used to measure services production, and deflation. ISPs from all three countries are published every month within two months after the reference month, and cover a wide range of services activities, i.e. at least Categories G to O (except L) of ISIC Rev. 3. However, significant differences exist in many aspects such as compilation method, variables used to measure services production, types of deflators, etc. The paper examines these differences and argues that the issues uncovered could be relevant for other OECD countries although they are obtained from a small set of countries.

This paper also briefly covers task force progress regarding the preparation of an ISP manual which could enhance the comparability of ISPs (to be) compiled by OECD member countries. Because the development of the ISP is closely related to national account production side concepts, the paper also seeks the views of national accountants regarding the manual and the other work of the STISTF.

INTRODUCTION

1.   The Short-term Indicators for Services Task Force (STISTF) was created from recommendations flowing out of the June 2002 Short-term Economic Statistics Experts Group (STESEG) meeting. STISTF consists of fifteen members from thirteen OECD member countries and the IMF. Six members are from non-European OECD countries. STISTF members agreed to cover supply and demand indicators for short-term service activities with the monthly index of service production as a priority. Work will then be extended to short-term demand indicators for the services sector.

2.   At present, only a few OECD member countries appear to regularly measure production activity of the services sector. Monthly indices for service production (ISP) are available for the United Kingdom (UK) and the Republic of Korea (Korea). Canada and Finland publish monthly estimates for service production activity as a part of their monthly GDP. Japan produces monthly indicators for tertiary industry, which cover both industry and services sectors.

3.   The basic concepts used to compile ISPs are similar to those for the index of industrial production (IIP) or output measures of GDP. ISPs should measure net output or the value added of various services sectors, which roughly is the market value of the difference between the gross output and any cost involved to produce that output. It requires very specific and detailed statistical information to compile a reliable measure of net output. Thus, compilation methodologies can vary from country to country and/or one sector to another, depending upon the availability of the required information. For example, Canadian estimates of monthly value added are obtained from deflated seasonally adjusted data "weighted by benchmarking them to the output values of the deflated annual input-output tables using, in general, the proportional Denton method as modified by Cholette". The Korean Service Industry Activity Index (SAI) is weighted deflated turnover, where the weights are determined by the value-added of each sector in services industries. The Korean approach seems to be similar to that of the UK Index

of Services (IoS) for which "changes in gross output are frequently used as an approximate indicator of changes in net output". The UK considers that "the use of gross output as an indicator is only a proxy for what is ideally required."

4.   Index construction requires a range of different data processing in various stages. Time series methods are used to aggregate basic information together with interpolation, benchmarking, quality adjustment and balancing adjustment to national account data. Although these are all extremely important issues and there is a wide range of methods adopted by Member countries, this paper will not deal with them as they are discussed in more detail in other STESEG task forces, e.g. the STESEG task force on presentation and seasonal adjustment, and the task force on timeliness and benchmarking. The discussion in this paper will focus instead on a comparison of variables used to measure the activity, coverage, frequency and timeliness of the data, and deflators, which were collected via a detailed questionnaire prepared as a STISTF activity. This paper illustrates national practices used in the compilation of monthly measures of services production activities based on responses to the questionnaire received from a very small number of OECD member countries, in particular Canada, Korea and the UK. The paper raises a number of issues that impact on the comparability of national data and, in the concluding paragraphs, outlines areas of future task force work.

GENERAL INFORMATION

National titles

5.   National titles for various indices representing production activity for the service sector are different. It is called Index of Service (IoS) in the UK and the Service Industry Activity Index (SAI) in Korea. A production index for Japanese tertiary industry is labelled the Tertiary Industry Activity (ITIA). At the same time, it is referred to as the real value added of service industries in Canadian GDP in Canada.

Coverage of index

6.   The services sector is normally defined as activities covered in Categories G to P in ISIC Rev. 3. These are: Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods (Category G); Hotels and restaurants (Category H); Transportation, storage and communication (Category I); Financial intermediation (Category J); Real estate, renting and business activities (Category K), Public administration and defence, compulsory social security (Category L); Education (Category M); Health and social work (Category N); Other community, social and personal service activities (Category O); and Private households with employed persons (Category P). Due to the inclusion of a very wide range of activities in the services sector, coverage of the services indices frequently differs from one country to another, resulting in severe difficulties in international comparisons.

7.   There are two main issues with respect to the coverage of the index. These are coverage across sectors and coverage within the same sector. Depending upon the interest or statistical environment of each country, the index, for example, may reflect the non-financial sector or private services sector, which excludes financial intermediation or public administration, respectively. This may be due to user needs and thus the heterogeneity in coverage across the

sector may be statistically arbitrary or trivial. On the other hand, the index may not cover research and development activities of the Real estate, renting and business activities (Category K). This is a typical example of differences in coverage within a sector and depends more on the statistical environment and requires more effort to be harmonised. The exact nature of such differences in coverage and their consequences are discussed later in this paper.

8.   As Table 1 shows, the series Real value added of service industries in Canadian GDP covers NAICS 41 to 91, which is approximately equivalent to ISIC Rev. 3 activities G to P. The Canadians publish numerous indices for various groups. The UK IoS also covers almost all the categories of service activity according to ISIC Rev. 3 (i.e. Categories G to P). As Table 1 shows, the indices at Division level are also published in five aggregated groups. They are Index of Distribution (Category G), Hotels and Restaurants (Category H), Transportation and Communication (Category I), Business and Finance (Categories J and K), and Government and Other services (Categories L to P).

9.   The Korean SAI covers Categories G, H, I, J, K, M, N and O, and excludes Category L, i.e. public administration and defence, and compulsory social security. It also excludes private households with employed persons, non-profit organizations and industries, as they are unsuitable for monthly survey collection, and extra-territorial organizations and bodies. Korea compiles and publishes indices for total service activity and total services excluding financial intermediation, as well as indices for each category. It publishes indices for special classifications, called Knowledge-based services, i.e. information and telecommunication services, and other knowledge-based services. Information and telecommunication services consist of electrical communication (642) and computer related activities (72). Other knowledge-based services cover legal, accounting and tax preparation services, and market research and management consulting services (741), advertising (743), education (80), health and social work (85), motion picture, broadcasting and performing arts industries (921), library, archives, museums and other cultural activities (923). At the same time, Korea publishes indices up to 2-digit or 3-digit levels, depending on the categories.

10.   The Japanese ITIA covers Category E of industry as well as parts of Categories G, H, I, J and K. It should therefore be possible to construct an index for the services sector from the ITIA by excluding electricity, gas, heat and water supply activities. Japan also publishes various sub-category level indices from the ITIA in their publication.

Table 1: National titles of service production indices and their coverage

Country	National title of index		Coverage
	Total	Sub-category (other levels)	
Canada	Real value added of service industries in Canadian GDP	Total	ISIC Rev. 3 from G to P (approximately), which is NAICS 41 to 91
		Numerous indices are published for more than fifty different groups	
Korea	Service Activity Index (SAI)	Total	ISIC Rev. 3 from G to O except L
		- Non-financial services	SAI without financial intermediation
		- Indices for ISIC Categories G, H, I, J, K, M, N, O and for their Division levels	

		- Knowledge based service
		  - information and telecommunication services;
		  - other knowledge based services
			- electrical communication (642) and computer related activities (72)
			- research and development (73), legal, accounting and tax preparation services, and market research and management consulting services (741), advertising (743), education (80), health and social work (85), motion picture, broadcasting and performing arts industries (921), library, archives, museums and other cultural activities (923)
			- wholesale and retail trade (G), hotel and restaurants (H), transportation (60, 61, 62, 63), and other services (93)

		- Other services	
UK	Index of Services (IoS)	Total	ISIC Rev. 3, G - P
		- Distribution (IoD)	- ISIC Category G
		- Hotel and Restaurant	- ISIC Category H
		- Transport and Communication	- ISIC Category I
		- Business services and Finance	- ISIC Categories J and K
		- Government and Other services	- ISIC Categories L to P
Japan	Index of Tertiary Industry Activity (ITIA)	Total and some sub-sectors	- electricity, gas, heat and water supply; - wholesale, retail trade; and eating and drinking places; - transport and communications; - finance and insurance; and - real estate and services

NATIONAL PRACTICE ON INPUT DATA

Sources of variables

11.   The main source of information for the Korean SAI is the monthly KNSO "Current Service Industry Survey", which covers hotels and restaurants; transportation, warehouse and telecommunications; real estate, renting and business activities; education; and social work, other community, social and personal service activities. For the remainder of service industries, the SAI also uses information from the monthly KNSO "Current Wholesale and Retail Trade Survey" and data from other organizations such as financial, insurance and health institutions.

12.   While sources for the UK IoS are more diversified, they can be summarised into two main groups: survey and administrative. Survey data are collected from the "ONS monthly

inquiry into the Distribution and Service Sector (MIDSS)", "Retail Sales Inquiry (RSI)", ONS data for Household Final Consumption Expenditure (HHFCE) collected from the "Expenditure and Food Survey (EFS)", "ONS International Passenger Survey", financial data from ONS inquiry, the ONS inquiry into Non-banking Financial Institutions, and ONS data for central government and local authorities. Administrative information, on the other hand, are obtained from a very wide range of sources, i.e. value added tax returns from HM Customs and Excise (C&E), the Strategic Rail Authority (SRA), balance of payments data, data on volume of freight transported by coastal and sea-going vessels and data on the volume of inland water traffic from the Department for Transport, an index from the Civil Aviation Authority, quarterly data from the Post Office, Association of Payment Clearing Services, financial data from the Bank of England and Department for National Savings, Building Societies Commission, Association of British Insurers, Stock Exchange, Investment Property Databank, Inland Revenue, Department of Health, and the National Health Service Executive.

13.   Canada also collects information from both administrative sources and surveys, the range of different sources used being even more extensive than the UK, i.e. there are more than thirty distinct sources. The four most quoted sources in their completed task force questionnaire seem to be the "Survey of employment, payrolls and hours (SEPH)", "Monthly survey of manufacturing (MSM)", "Retail trade survey (RTS)", and the "Wholesale trade survey (WTS)".

Type of variables

14.   Two types of variables, in general, are used to collect basic information for services production activities, i.e. volume and value. Value data are converted into constant price data by relevant deflators [refer below for further discussion of deflators]. Korea makes no use of volume data but collects all the necessary information from the value data, which are mainly gross turnover and operating revenues. Both Canada and the UK, on the other hand, obtain basic information from volume data as well as from deflated value data. In order to reflect the heterogeneity of various services sectors, both countries use different types of volume data. These are illustrated below in Table 2, for example, the volume of letters and parcels delivered, employment, numbers of general dental practitioners, and number of hotel and motel rooms adjusted for vacancy rate are used. Whilst it seems that Canada makes more extensive use of volume data than the UK, employment data are utilised in the main in Canada, i.e. for Categories L, M, N, O and parts of G, I and K.

15.   Table 2 shows the existence of almost irreconcilable differences across countries in terms of variables used. For example, employment for Canada, gross turnover for the UK and value of budget outlays for Korea are used for Division 73, i.e. Research and development activities. Thus, one may wonder whether any effort to reduce the differences should be pursued or whether the differences in the variables should be kept (or encouraged) as they may reflect the differences in the social or statistical environment within each country. As has already been pointed out at other meetings, there does not exist any common terminology for similar or the same variables commonly in use. For example, Canada collects basic information on activities for Division 50 via a variable called "sales", though it is referred to as "gross turnover" in Korea and the UK. Another issue with respect to the variables used is that it is not always clear whether the variables with the same terminology share the same definition, e.g. gross turnover for both Korea and the UK.

Table 2: Variables used

		Canada	Korea	United Kingdom
G	50	Sales (value); Employment	Gross turnover (value)	Gross turnover (value)
	51	Volume sold; Sales (value)	Gross turnover (value)	Gross turnover (value)
	52	Sales (value); Employment	Gross turnover (value)	Deflated retail sales
H		Number of hotel and motel rooms adjusted for vacancy; Sales (value)	Gross operating revenue (value)	Turnover (value); Gross turnover (value) Interpolation from annual estimates of net output
I	601	Revenue freight in tonnes; Passenger revenues	Gross operating revenue (value)	Ticket holders (passenger-km); Coal and coke transported (tonne-km); Mail and parcel receipts (value)
	602	Gross revenues; Employment; Shipments (value)	Gross operating revenue (value)	Gross turnover (value); Turnover (value); Household expenditure on taxis (constant prices)
	603	Cubic metres-kilometres transported	*Not covered*	*No activity in UK*
	61	Volume loaded and unloaded; Number of passengers; Employment	Gross operating revenue (value)	International passenger revenue (value); Tanker receipts (constant prices)
	62	Number of passenger-kilometres and tons-kilometres; Employment	Gross operating revenue (value)	Index of airline services (volume)
	63	Shipments (value); Volume of grains; Employment; Real import and export (volume)	Gross operating revenue (value)	Gross turnover (value); Imports and exports (volume)[1]; Freight moved (tonne-km); Index of airport services (volume)
	64	Gross revenues; Employment; Sales (value); Number of subscribers	Gross operating revenue (value)	Volume of letters and parcels delivered; Quantity of other transactions; Gross turnover (value)
J	651	Net revenues on managed assets (value); Service charges (volume); Industry's share of stock markets' revenues based on the volume of transactions	Loan outstanding	Number of employees, of clearings by GB banks, of advances outstanding, and of advances made; Amount of loans and deposits (value); Total outstanding interest; Total liabilities (value)
	652	*NA*	*NA*	Output indices (volume); Loans and advances outstanding (value); Interpolation of end-year investment and unit trusts' net short-term assets and total investments (value); Investment and unit trusts' total purchases and total sales; Interpolation of end-year property unit trusts total net assets
	659	Interpolation and extrapolation of annual levels (volume); Net revenues on managed assets (value); Employment; Revenues on bonds and currency transactions (value); Operating expenses (value)	Credit card settlement (value)	*NA*
	66	Sales of insurance policies (value); Revenue derived from investments (value); Revenues (value)	Total assets (value); Insurance premium income	Household final consumption expenditure (constant prices); Annual net premium income (value)
	67	Volume of transactions; Sales of insurance policies (value); Net revenues on managed assets (value)	Gross value of stock transaction; Gross operating revenue (value)	Number of stockbroking transactions; Household final consumption expenditure on the administrative costs of life assurance and pension funds (constant prices); Annual net premium income (value)
K	70	Housing stock; Cash rent paid (value); Housing resale (volume)	Gross operating revenue (value)	Investment property databank 'total return index'; Number of employees[2]; Local authority non-trading capital consumption[3]; Household final consumption expenditure on rent (constant prices) + Central government subsidies[3] + Local authorities' subsidies[3] + Imputed rent of owner occupied dwellings at 1995 prices - Housing repairs & maintenance (constant prices); Number of particulars delivered to Inland Revenue regarding property/land transfer

	71	Personal expenditures on motor vehicles renting (value); Interpolation and extrapolation of annual levels (volume)	Gross operating revenue (value)	Household final consumption expenditure on self-drive car hire (constant prices); Gross turnover (value)
	72	Employment	Gross operating revenue (value)	Gross turnover (value)
	73	Employment	Budget outlays (value)	Gross turnover (value)
	74	Employment; Various indicators of legal cases and transactions (volume)	Gross operating revenue (value)	Gross turnover (value); Number of employees
L		Employment	*NA*	Number of civil servant and employees[4]; Indices of output for social security (volume), for agricultural services (volume) and for justice services (volume); Non-trading capital consumptions (constant prices); Number of staff employed; Pay of armed force (constant prices)
M		Employment	Gross operating revenue (value)	Index of output for public sector and NPISH (volume); Number of employees
N		Employment	Gross revenue from medical treatment (value)	Index of output for public sector and NPISH (volume); Number of employees adjusted for changes in productivity; Number of general dental practitioners; Number of employees[2]; Probation service output (volume); Non-trading capital consumption (constant prices)
O	90	Employment	Gross operating revenue (value)	Gross turnover (value); Number of employees[2]; Non-trading capital consumption (constant prices)
	91	Employment; Personal expenditures on religious organizations (value)	Value of budget outlays	Number of employees adjusted for changes in productivity
	92	Employment; Number of subscribers; Attendance to events; Revenues of gambling industry products (value)	Gross value of work completed; Gross operating revenue (value); Value of budget outlays; Gross ticket sales revenue	Turnover (value); Number of employees[2]; Non-trading capital consumption (constant prices); Household final consumption expenditure on recreational and cultural services: other admissions (constant prices); Household final consumption expenditure on betting and gaming (constant prices)
	93	Employment; Number of deaths	Gross operating revenue (value)	Gross turnover (value); Turnover (value)
P		Personal expenditures on domestic services and child care in the home (value)	*NA*	Household final consumption expenditure on domestic service (constant prices)

Note
1: Volume of imports and exports benchmarked to an annual series related more specifically to water transport.
2: Number of employees adjusted to take account of trend in local authority wages and salaries at constant prices.
3: Adjusted to take account of movements in wages and salaries to give constant price series.
4: Numbers of civil servants and employees adjusted to take account of trends in civil service salaries and in local authorities wages and salaries, respectively (constant prices).
NA: not applicable.

Level of information

16.   Canada collects basic information at various levels depending upon the sector or even within the same sector. For example, 2-, 3-, 4- and 5-digit levels are used for Financial intermediation. However, it seems that the 4-digit level is most widely used in Canada. The Korean SAI collects basic information at the 5-digit level for all the services sectors, except Category G, wholesale and retail trade, repair of Motor Vehicles, Motorcycles and Personal and household Goods, where the turnover index of the sector is used without modification. The

UK uses 3- to 5-digit levels of variables to collect relevant information. 3- and 4-digit levels are commonly applied for most sectors whilst the 5-digit level is used for wholesale trade. It should be emphasised that the information provided in Table 3 may not be suitable for comparisons across countries as they are based on national classifications.

Table 3: Level of variables used to collect basic information on service production activity

| | | | (digits) |
ISIC Categories and Divisions	Canada	Korea	UK
G: Wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods	3/4/5	3	3/4/5
- 50: Sales, maintenance and repair of motor vehicles, motorcycles; retail sales of automotive fuel			3
- 51: Wholesale trade and commission trade, except of motor vehicles and motorcycles			3/4/5
- 52: Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods			3/4
H: Hotels and restaurants	3	5	3/4
I: Transportation, storage and communication	3/4/5	5	3/4
J: Financial intermediation	2/3/4/5	5	3/4
K: Real estate, renting and business activities	4/5	5	3/4
- 70: Real estate activities			3
- 71: Renting of machinery and equipment without operator and of personal and household goods			3/4
- 72 (Computer and related activities),73 (Research and development),74 (Other business activities)			4
L: Public administration and defense, compulsory social security	3/4	NI	4
M: Education	4	5	4
N: Health and social work	3/4/5	5	3
O: Other community, social and personal service activities	3/4/5/6	5	3/4
P: Private households with employed persons	3	NI	2

Note
1: The levels are based on national classifications, which are not necessarily comparable with one another.
2: "NA" - information not available; "NI" - sectors not being included.
3: The underlined letter represents the most dominant level.

Activities covered in Categories or Divisions

17.   As Table 4 shows, the UK IoS covers all the activities listed in ISIC Rev.3 relevant for Categories from G to P. Some activities are thus rearranged from the existing Categories to others which appear to be more relevant for the UK. For example, hire of pleasure boats is transferred from Water transport (Div. 61 of Cat. I) to Recreational, cultural and sporting activities (Div. 92 of Cat. O) and manufacture and sale of computers or sale if pre-packaged software transferred from Computer and related activities (Div. 72 of Cat. K) to IIP or Wholesale and retail trade. On the other hand, the Korean SAI covers all the activities for only

one Category and a few Divisions, i.e. Category H and Divs. 50, 74, 90 and 93. Thus, parts of activities are not included in the SAI from the 3-digit levels of most Categories.

18. The question arises as to whether or not the differences in coverage between the Korean SAI and the UK IoS mean there are similar differences in the quality of the indices? Answer is "may be not." The activities omitted (or excluded) from each Category in the SAI may be less representative in terms of their evolution or share of total service sector activity. For example, inland water transport and non-scheduled air transport rental with operator (from Div. 61 and Div. 62, respectively) may not exist or be almost negligible in Korea. The evolution of research and experimental activities in social sciences and humanities (from Div. 73), for instance, may not differ much over time from that in natural sciences. Thus, one may not necessarily need to make much effort to harmonise coverage across the countries or to include all services activities to improve the comparability of the dynamics of the corresponding indices in the long run. Selection of various activities within a sector should be left to the discretion of national experts, provided that the resulting index adequately represents the nature of the services sector of the country.

Table 4: Activities included or excluded within Categories or Divisions

	Canada	Korea	UK
G	NA	- 50: covers all activities - 51: excludes wholesale on fee and contract basis - 52: excludes retail trade of used goods in stores, retail trade not in stores and repair services of personal and household goods	covers all activities
H	NA	covers all activities	covers all activities
I	NA	- 60: excludes transport via pipelines - 61: excludes inland water transport - 62: excludes non-scheduled air transport and airplane rental with operator - 63: excludes supporting water transport activities and all other supporting transport services - 64: excludes couriers and messengers	covers all activities relevant for Category I - 60: excludes self-drive car hire, which is covered by renting goods - 61: excludes hire of pleasure boats, which is covered by recreation (92) - 62, 63, 64: covers all activities
J	NA	- 65: excludes central bank, non-money creating institutions, investment companies and other financial intermediation -66: excludes pension fund and mutual aid organizations and reinsurance - 67: excludes administration of financial markets, other activities auxiliary to financial intermediation	covers all activities relevant for Category J - 65, 67: covers all activities - 66: excludes compulsory social security, which is covered in Public administration
K	NA	- 70: excludes subdividing of real estate - 71: excludes all renting such as passenger cars, personal and household goods, except renting of other machinery and equipment - 72: excludes other computer activities - 73: excludes those research and experimental activities on social sciences and humanities - 74: covers all activities	covers all activities relevant for Category K - 70: excludes renting of short-stay holiday accommodation, which is included in Hotel and restaurants - 71: excludes renting of accommodation, which is covered by Real estate - 72: excludes manufacture and sale of computers or sale if pre-packaged software, which are covered by either IIP or Wholesale and retail trade - 73: excludes information on in-house R&D done by companies whose principal business is not R&D - 74: covers all activities
L	NA	NI	covers all activities relevant for Category L excludes actual provision of education and health care, which are covered by Education and Health and social work
M	NA	excludes secondary and higher education	covers all activities relevant for Category M excludes regulation or administration of education departments in local authorities, which are included in Public administration
N	NA	excludes other human health activities (e.g. ambulance and midwives), veterinary activities and social work activities	covers all activities relevant for Category N excludes regulation or administration of regional or district health authorities, which are covered by Public administration
O	NA	- 90, 93: covers all activities - 91: excludes other membership organizations such as religious, political, labour and professional organizations - 92: excludes water recreation services and other recreational activities	covers all activities
P	NA	NI	covers all activities

Note: "NA" - information not available; "NI"- sectors not being included.

<u>Timeliness and frequency of variables</u>

19.   The real value added of service industries is published about two months after the reference month as part of the Canadian monthly GDP. However, information available only on a quarterly or annual basis is also used. The Korean SAI uses input data available at a monthly frequency, which are generally available about 35 days after the end of the reference month. No specific quarterly variables have been utilised unless data collection was delayed due to delays in data submission from original sources, i.e. the respondents to the survey. The SAI is then compiled with estimates of the input data from the previous month and the same month in the previous year. The SAI is thus published about 40 days after the end of the reference month.

20.   The majority of input data for the UK IoS are also produced monthly but are slightly less timely than the SAI's input data. All data from "the Monthly Inquiry into the Distribution and Service Sector (MIDSS)", i.e. the ONS's principal source of turnover data for the service sector, are available two months after the end of the reference month. The timeliness of other source data, however, varies widely. When data are not yet available, the series is forecast to the current period using Holt-Winters modelling. It also makes use of data collected only on a quarterly or annual basis. In these cases, interpolation or benchmarking methods are used to produce time series at monthly frequency. The IoS is now available about a couple of months after the end of the reference month.

DEFLATORS

21.   The Korean SAI uses a very limited set of deflators to convert value data into volume. In fact, it uses only two types of deflators: the consumer price index (CPI) and the producer price index (PPI). Canada uses their CPI to deflate value data for all sectors except Categories G and I, and Categories where no deflation is needed as volume data are used. Four deflators, i.e. CPI, Import price index (MPI), export price index (XPI) and Industrial price index (IPI), are used for Category G. In addition to the CPI and IPI, for Category I, a couple of activity specific deflators are used, i.e. radio station advertising fees and projected annual index.

22.   The UK deflating system is rather complex as they utilise a wide range of deflators to convert value data into volume. As Table 5 shows, there are eight basic price indices and several combined price indices obtained through aggregating two different types of price indices. The basic price indices represent consumers (i.e. retail price index, (RPI); household expenditure implied deflator, (HE), producers (PPI; corporate service price index, CSPI; average earning index, AEI), foreign trade sector (MPI), whole economy (GDP deflator), and special index from "Money Management Magazine". An example of combined deflators is the one compiled as a weighted average of RPI and CSPI.

23.   While some similarities exist in the use of deflators at the Division level between countries, e.g. H, 60 (I) and 90, 92 and 93 (O) between UK and Korea, it appears to be very difficult to identify common practices for all three countries. Category H and Division 92 of Category O seem to be only two cases for which three countries use common deflators. In fact, the CPI is often used in Canada where the PPI is used in Korea. There are several instances where no deflation is required in Canada as basic information is sourced from volume data.

Table 5: Deflators used to deflate the value data in Canada, UK and Korea

		Canada	Korea	UK
G		CPI, MPI, XPI, IPI	CPI, PPI	RPI, CSPI, PPI, MPI
	50	CPI, combination of IPI, MPI, XPI	CPI	Combination of RPI, CSPI
	51	Combination of IPI, MPI, XPI	PPI	Combination of PPI, MPI
	52	CPI	CPI	Deflated at source
H		CPI	CPI	Combination of RPI, HE
I		CPI, IPI, Radio stations' advertising fees, projected annual index	CPI, PPI	GDP deflator, RPI, HE, CSPI
	60	CPI, IPI	CPI, PPI	GDP deflator, RPI, HE, CSPI
	61	No deflator needed	PPI	HE
	62	No deflator needed	PPI	No deflator needed
	63	IPI	CPI, PPI	HE
	64	CPI, Radio stations' advertising fees, projected annual index	PPI	Combination of RPI, CSPI
J		CPI	PPI	GDP deflator, RPI, CSPI, Index derived from 'Money Management' magazine's UK unit trusts performance indicator, HE taking account of exchange rate variations, RPI taking account of exchange rate variations.
	65	CPI	PPI	GDP deflator, RPI, Index derived from 'Money Management' magazine's UK unit trusts performance indicator.
	66	CPI	PPI	HE taking account of exchange rate variations, RPI taking account of exchange rate variations.
	67	CPI	PPI	HE taking account of exchange rate variations, RPI taking account of exchange rate variations.
K		CPI	PPI	PPI, CSPI, HE, AEI, RPI
	70	CPI	PPI	Deflated at source
	71	CPI	PPI	PPI, CSPI, HE
	72	No deflator needed	PPI	Combination of AEI, RPI
	73	No deflator needed	PPI	Combination of AEI, RPI
	74	No deflator needed	PPI	Combination of AEI, RPI, Combination of CSPI, RPI
L		No deflator needed	Not applicable	No deflator needed
M		No deflator needed	CPI, PPI	No deflator needed
N		No deflator needed	CPI	No deflator needed
O		CPI	PPI, CPI	CSPI, HE, RPI
	90	No deflator needed	PPI	CSPI
	91	CPI	PPI	No deflator needed
	92	CPI	CPI	HE
	93	No deflator needed	CPI	HE, RPI
P		CPI	Not applicable	Deflated at source

Note   RPI: Retail price index; CPI: Consumer price index; HE: Household expenditure implied deflators; PPI: Producer price index; IPI: Industry price index; CSPI: Corporate service price index; AEI: Average earnings index; MPI: Import price index; XPI: Export price index.

CONCLUSIONS AND FUTURE WORK OF STISTF ON ISP

Conclusions

24.   This paper illustrates and compares national practices used in the compilation of monthly measures of services production activities in three OECD member countries, i.e. Canada, Korea and the UK. Comparisons were made for various criteria such as variables used to measure the activity, coverage, frequency and timeliness of the data, and deflators. The information analysed was obtained in response to a task force questionnaire. Although the analysis was based on a very small number of countries, the issues and problems identified are no doubt relevant to other countries.

25.   As Table 6 shows, there are similarities in some practices. All three countries publish monthly results within 2 months after the reference month. Input data are sourced mainly from surveys which are supplemented by administrative information. While services sectors cover a very wide range of activities, all three monthly series at least cover Categories G to O except L.

Table 6: Similarities across the countries

	Canada &UK	Canada & Korea	UK & Korea	Three countries
Estimation of value added	None	None	Use gross output as a proxy for value added	None
Frequency	Monthly	Monthly	Monthly	Monthly
Timeliness	2 months	Within 2 months	Within 2 months	Within 2 months
Coverage - Across - Within (up to Division level)	- G – P - Not available	- G – O except L - Not available	- G – O except L - 50 (G); H; 74 (K); 90, 93 (O)	- G – O except L - NA
Types of Source	Survey and administrative	Survey and administrative	Survey and administrative	Main source is survey but administrative sources are used as complementary
Types of variables - Across - Within (up to Division level)	- Value and volume - Value and volume: 63, 64 (I); 65; 70 (K); 92 (O) - Value: 66, 67 (J), P	- None - Value: 66 (J)	- None - Value: G, H, 72 (K), 93 (O)	- None - Value: 66 (J)
Level at which input data are collected	Various levels are used	None	None	None
Deflators - Overall - Consumer - Producer - Consumer and producer - Producer and other deflators	- CPI, PPI (or IPI) and other deflators - H; 66, 67 (J); 92(O) - None - None - 51 (G)	- CPI and PPI (or IPI) - 52 (G), H, 92 (O) - None - 60 (I) - None	- CPI and PPI - H; 92, 93 (O) - 90 (O) - 60 (I) - None	- CPI and PPI (or IPI) - H, 92 (O) - None - None - None

Note: other deflators are MPI, XPI, GDP deflator, etc.

26.   There are significant differences, which are summarised below:

- Compilation methodologies: Canada uses value added converted from gross output, though the UK and Korea, in general, use gross output directly;
- Titles for the measure of service production activities;
- Coverage of monthly indicators: Categories G to P are covered by Canada and UK but Categories L and P are excluded by Korea; and inclusion of sub-sectors or various activities within an activity are different across countries;
- Types of variables: use of value and volume data, different terminologies for the same or similar variables, and possible differences for the same terminologies;
- Types of deflators used to convert value data to volume.

27.   With regard to the harmonisation of these differences, participants at the second STESEG meeting held in June 2003 and the second STISTF meeting in February 2004 thought that it would be advantageous if the title revealed the nature of indices, e.g. ISP. At the same time, agreement on definitions for services indicators is considered to be essential. However, differences in national practices could be tolerated due to the many limitations in regards to data availability, resources, priorities, statistical environment, etc. In particular, national classifications are difficult to harmonise in the short-term. The preference is therefore to develop monthly ISPs with clear consideration of user needs such as business cycle analysis and the compilation of quarterly national accounts.

Future work of STISTF on ISP

28.   At present, the focus of STISTF work is the preparation of a manual of international guidelines for a monthly (or quarterly) ISP as a priority. The main issues for this task are two-fold:

- to aid the harmonisation of compilation methodologies, definitions and titles for key variables of short-term service production; and
- to recommend suitable variables to be used to measure the output of various short-term services activities. This includes value measures and their appropriate deflators, direct volume measures and a range of possible proxy variables which may be suitable under certain circumstances.

29.   The final version of the ISP manual is scheduled to be prepared by the end of 2006. A principal objective of the manual is to provide official statisticians with practical guidelines to compile monthly (or quarterly) ISPs, rather than to discuss various methodological aspects of measuring services activities. Thus, it will borrow from or quote relevant paragraphs from a number of existing publications such as the SNA 1993 and the Eurostat Handbook on price and volume measures in national accounts. STISTF will also consult and coordinate its outputs with other discussion groups such as the Joint OECD-Eurostat Task Force on PPIs and the Voorburg Group.

30.   At present, country representation within STISTF consists mostly of statisticians involved in the production of short-term economic indicators with the exception of Canada and the UK whose representatives are national accountants. Given that compilation of an ISP is closely related to production side concepts of the national accounts, it would be useful for the

taskforce to gain further information about methods used within service industries for OECD countries who currently produce quarterly national accounts by the production method. Furthermore, some effort should be made to coordinate work on this topic at the international level between national accounts working groups and the STISTF.

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