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International Comparison on Business Registers and Distributive Trade Statistics

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Abstract: This paper compares business registers and distributive trade statistics between the EU and other selected countries. It shows the various differences in the methodologies. The comparative study is carried out in three parts. The first part is general business registers, focusing on data sources, statistical units, and classification. It shows each country uses both administrative and statistical data, or statistical data to create and maintain them. The second part consists of structural surveys on distributive trade, focusing on statistical units, coverage, classification, and variables. The main differences are statistical units. The basic statistical unit is broadly divided into the enterprise and the establishment. The third part is estimation of distributive trade value added in national accounts. Each country adopts different methods to compile the data.

The views expressed in this document are those of the authors and do not engage the European Commission

INTERNATIONAL COMPARISON ON BUSINESS REGISTERS AND DISTRIBUTIVE TRADE STATISTICS

by Sung Hee Han

1. Introduction

Business surveys are conducted to collect information on the structure, activity, competitiveness and performance of enterprises. The data are mainly provided for compiling various economic statistics, and for establishing and evaluating economic policy. Businesses use the data in order to understand their markets and to compare their activities and performances with other businesses.

Most countries have developed their statistics according to a specific tradition and situation. Though each country has a different statistical system and tradition, the methodologies to compile statistics are more and more harmonised as it is important to compare statistical data internationally. There are for example the System of National Accounts (SNA) and International Standard Classification of All Economic Activities (ISIC) of the United Nations (UN), and various regulations of the European Union (EU) as international statistical standards.

Recently, the EU has made two notable regulations on business statistics. One is Council Regulation (EEC) No 2186/93 of 22 July 1993 on Community coordination in drawing up business registers for statistical purposes, the other is Council Regulation (EC, EURATOM) No 58/97 of 20 December 1996 concerning structural business statistics including distributive trades. These regulations will have a great deal of influence on EU member states and other countries under EU influence.

There are differences between the UN recommendations and EU regulations. The most important difference between the two international institutions is statistical units. The UN recommends the establishment as a basic statistical unit, whereas the EU is more favourable to the use of the enterprise while proposing as a second best the use of the "kind of activity" unit.

Globalisation of the world economy is increasing international comparisons in the field of statistics. At the moment, it is useful to compare the different methodologies used by various national statistical institutes for compiling business statistics.

This study focuses on general business registers, and statistical units, classifications in structural statistics on distributive trade, and the estimation of distributive trade value added in national accounts. Distributive trade is vital in the economies of most countries, involving more than 10 % of GDP, providing a substantial source of employment. The countries for which comparisons are made are the EU and other selected countries, such as, Australia, Canada, Japan, New Zealand, the Republic of Korea, and the United States.

Table 1. Business registers

	EU	AUSTRALIA	CANADA	JAPAN	NEW ZEALAND
Data sources	.Administrative data .Register inquiries .Survey feedback	.Administrative data (from employee withholding taxes) .Ad hoc register surveys .Survey feedback .Personal & mail profiling of larger enterprise groups	.Administrative data .Register inquiries .Survey feedback	.Establishment and enterprise census .Survey feedback	.Administrative data (GST data from the Inland Revenue Department) .Register survey (Annual business frame update survey) .Survey feedback
Statistical units	.Legal unit .Enterprise .Local unit	.Legal entity .Enterprise group .Management unit .Establishment .Location .Enterprise will be added in the near future	.Enterprise .Company .Establishment .Location	.Enterprise .Establishment	.Enterprise .Accounting unit .Geographic unit
Coverage	.All enterprises, legal units, local units	.All employer businesses	.All employer businesses	.All establishments	.Enterprises with annual GST turnover of more than $30000
Classification	.NACE Rev.1 .The 1-digit and 2-digit level are the same as ISIC .17 sections, 60 divisions, 222 groups, 503 classes	.Australia and New Zealand Standard Industrial Classification, 1993 (ANZSIC) .ANZSIC is based very closely on ISIC	.Canadian SIC 1980; will adopt 1997 North American Industrial Classification (NAICS) .NAICS: 20 sectors, 93 subsectors, 309 industry groups, 720 industries	.JSIC .JSIC is based on ISIC .14 sections, 99 divisions, 463 groups, 1324 classes	.ANZSIC .ANZSIC is based very closely on ISIC
Ancillary activities	.A specific code is allocated in the NACE Rev.1 for holding companies	.A specific code allocated in the ANZSIC for holding companies	.A sector is allocated in the NAICS for management activities of companies and enterprises .Ancillary units are classified based on their primary activities	.Not specified	.A specific code allocated in ANZSIC for holding companies
Updating	.At least annual	.No regular register-wide updating program; larger enterprise groups are updated every 1-2 years; agriculture & manufacturing are updated annually from census feedback	.Month	.Every 3 -5 years	.Data from IRD is received monthly but updating may be done whenever new information is received

Table 2. Structural surveys on distributive trade

	EU	AUSTRALIA	CANADA	JAPAN	NEW ZEALAND
Name of the surveys	.Wholesale and retail trade survey	.Retail activity survey .Wholesale activity survey	.Annual wholesale and retail trade survey	.Census of Commerce	.Annual enterprise survey
Statistical units	.Basic unit:Enterprise .Other:Local unit	.Management unit	.Establishment for wholesale trade and location for retail trade .Collection unit: head office of companies	.Establishment	.Accounting unit
Coverage	.All enterprises included in the NACE Rev.1 section G (wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods)	.All management units classified in the ANZSIC division F (wholesale trade), G (retail trade) .Not specified for commission trade	.All establishments/ locations for wholesale merchants/retailers classified in the NAICS sector 42 (wholesale trade), 44-45 (retail trade) .Not specified for commission trade .Repair activities are classified in the sector 81 (other services)	.All establishments (wholesale merchants and retailers) classified in the JSIC section I (wholesale and retail trade, and restaurants) .Commission trade is included in the section I, but is excluded from the coverage .Repair activities are classified in section L (services)	.All enterprises with annual GST turnover of more than $ 30 000, classified in the ANZSIC division F (wholesale trade), G (retail trade) .Not specified for commission trade
Periodicity	.Every year(5 years for some variables)	.Every 5-7 years	.Every year	.Every 3 years	.Every year
Classification	.3 divisions, 19 groups, 77 classes .Wholesale and retail trade for motor vehicles are classified in the same higher level .Integrated manufacturing and retailing are classified to manufacturing	.6 subdivisions, 19 groups, 79 classes .Motor vehicles are separated into wholesale and retail trade .Integrated manufacturing and retailing are classified to manufacturing	.14 subsectors, 44 industry groups, 130 industries . Motor vehicles are separated into wholesale and retail trade .Integrated manufacturing and retailing are classified in retail trade	.12 divisions, 49 groups, 153 classes . Motor vehicles are separated into wholesale and retail trade .Integrated manufacturing and retailing are classified in retail trade	.6 subdivisions, 19 groups, 79 classes . Motor vehicles are separated into wholesale and retail trade .Integrated manufacturing and retailing are classified to manufacturing
Level of data precision .National level .Regional level	.Class .Group	.Class .Class	.Industry .Industry	.Class .N.A	.Division NAZIC .Not published

	EU	AUSTRALIA	CANADA	JAPAN	NEW ZEALAND
Breakdown of turnover by different kinds of activities	.By 4 types of activities (agriculture, forestry, fishing, industrial activities; trading activities; intermediary activities; service activities)	.Retail retail and wholesale sales by commodity, service income by type, commission income by type, rent leasing and hiring income	.Not specified	.Not specified	.By industrial groups
List of the variables by the different kinds of statistical units	.Enterprise {Every year} production data(turnover, gross margin, operating surplus, purchases, etc.), dat relating to capital accounts (investment), employment, breakdown of turnover by type of activity {Every 5 Years} operating cost, information on forms of trading by enterprises, breakdown of turnover by product type, information on types of suppliers and customers .Enterprise {Pilot study} financial surplus, exports, imports, intangible fixed assets .Local unit {Every year} wages and salaries,employment,tangible investment {Every 5 years} turnover, sales space	.Management unit production data(turnover by commodity, service income by type, commission income by type, rent leasing and hiring income, changes in stocks, purchases, expenses, wages and salaries, etc.) , financial data(assets, liabilities), mark up on commodity sales	.Establishment/ location production data(turnover, commission revenue and other revenue, changes in stocks, purchases, expenses, wages and salaries, etc.) , revenue by class of customer, location and provincial distribution	.Establishment /enterprise production data(turnover, change in stocks, purchases, expenses, wages and salaries, etc.), employment, retail sales by type of distribution, information on types of suppliers and customers, sales space, etc.	.Accounting unit production data(turnover, change in stocks, purchases and other operation expenses, wages and salaries, etc.), data relating to capital accounts(investment), financial data(assets, liabilities)
Sample units	.Enterprise	.Management unit	.Company	-	.Accounting unit
Data collection	.Mail	.Mail based survey under Statistics Act	.Diskette, mail or telephone	.Enumerator	.Mail survey with telephone follow-up
Other related survey	.Financial statements survey (Northern European countries collect production data and financial data through annul enterprise survey)	.Annual economic activity survey .Financial statements survey	.Annual retail chain and department store survey .Annual surveys of vending machine operators and direct sellers .Quarterly survey of financial statements	.Annual enterprise activity survey (coverage: 50 or more workers and capital over ¥ 30 mil.) .Commerce survey (every 6 years, small and medium enterprises) .Financial statements survey	.Census of distribution (every 5 years)

Table 3. Estimation of distributive trade value added in national accounts

EU	AUSTRALIA	CANADA	JAPAN	NEW ZEALAND	RE
-First stage production approach by annual wholesale and retail survey -Second stage added missing data, hidden labour, in kind -Final stage checked by trade margin by products approach (supply and use table), and expenditure approach	-Income approach	-Income approach -Production approach -Trade margin by products (supply and use table)	-Output trade margin by products approach (commodity flow method) -Value added rate .basic year:used the one of I/O table, and estimate the correction coefficient, the difference of value added rate between I/O table and business statistics .intermediary year:used the one based on business statistics and the correction coefficient	-Production approach by annual enterprise survey	-Output trade m (commo method -Trade annual -Value used the

2. Business Registers

2-1. Data sources

Business registers for statistical purposes are one of the most important components in a survey process and for statistical infrastructure. They provide sample frames by defining the business population. In addition to providing survey frames, the registers can be extended to measure and control the burden of responses, and can produce business demographic data, such as the business equivalent of births, marriages, deaths, and prosperity.

There are two types of data for compiling statistical business registers, that is, statistical data and administrative data. Statistical data is obtained from business surveys, whereas, administrative data is obtained from administrative authorities. The most commonly used administrative data sources are tax registrations (in particular VAT), and registers kept by the Social Insurance Board.

The main advantage of administrative data is to reduce the response burden of businesses. Such data are cheaper than direct collection, in particular when the response burden is included as a real cost item in the comparison of costs. In addition, data reported may be more accurate because of intensive data checks by administrative authorities.

Otherwise, there are many disadvantages for using them such as; discrepancy between administrative concepts and statistical concepts, access to administrative data, integration of administrative and survey sources, risks with respect to stability, timeliness, reference number systems, and so on.

On the other hand, the advantages of statistical data are that they are more relevant and stable, and timeliness, whereas, the disadvantages are the increase in the response burden of businesses and survey budgets.

The use of administrative data for statistical business registers is relatively recent and still not frequent because of the diversities of the statistical systems and traditions in most countries. The legal systems are different. Some countries are centralised, others are decentralised. In some countries access to administrative data is easy, whereas in others this is not the case. Common identifiers are used throughout all administrations in certain countries.

Most countries in the EU are using administrative and statistical data to create and maintain the statistical business registers because of the absence of a totally reliable single source. Especially, France, the United Kingdom and the Northern European countries have made intensive use of administrative data. Germany also is developing a business register using administrative data.

Countries other than EU member states, such as, Australia, New Zealand, Canada, and the United States are using administrative and statistical data , whereas Japan and the Republic of Korea are using only statistical data.

Though there are many problems in developing statistical business registers by using administrative data, as above, and with various national statistical institutes having different statistical systems and traditions, there is a new world-wide trend to use administrative data. One of the reasons for the trend is that national statistical institutes have had the responsibility to reduce the statistical response burden of businesses, and have reacted to changes in the statistical environment.

2-2. Statistical units

The main objective of statistical business registers is to provide a survey frame to be used in various business surveys. National statistical institutes need the information related to production data (turnover, purchase of goods and services, other operational costs, wages and salaries, etc.), employment, research and development, environmental data, financial data (profit and loss accounts and balance sheets of assets and liabilities), etc, from businesses for economic analysis. These data are generally obtained from different levels in large multi-units enterprises. Therefore it is desirable to establish several types of statistical units for collecting these data from enterprises.

Most countries generally adopt the enterprise, and the establishment or local unit as standards for statistical units, though they use different terminology. The ISIC uses the term "local unit" for a unit that engages in one or more activities at one location, and the term "establishment" for a unit that engages in only one activity at one location.

The term "location" used in the definition of the local unit and the establishment can be interpreted in two different ways. First, there is the pure location in the narrow sense of the word, i.e. a specific site. The other interpretation of location may be the combination of all locations belonging to an enterprise within the entire area covered by a smallest category of the regional classification used for the statistics in question.

In practice, the term "establishment" is used in both situations by national institutes, even if they engage in one or more activities at a single location or geographic area.

The EU and the United States are adopting legal unit, enterprise and local unit as the statistical units.

An enterprise cannot exist without the legal basis of legal units. The legal form or category of the legal unit is very useful information not only for eliminating ambiguity in identification searches, but also as the possible criterion for selection or stratification of surveys. Hence, it is useful to involve the legal unit as standard units. Administrative sources provide information on the creation and existence of legal units in all countries.

The standard units of Australia, Canada and New Zealand reflect hierarchical business structures in large and complex enterprises:
(1) Australia : legal entity, enterprise group, management unit, establishment, and location.
(2) Canada: enterprise, company, establishment, and location.
(3) New Zealand: enterprise, kind of accounting unit, and geographic unit (activity unit).

The term "enterprise group" in Australia is a similar concept to the ISIC enterprise. Australia, Canada, and New Zealand have the management unit, the accounting unit, and the company between the enterprise and the establishment(New Zealand: geographic unit). The "establishment" can be interpreted as the broad concept of the ISIC establishment or local unit. The "location" can be interpreted as the narrow concept of the ISIC establishment or local unit.

Japan uses enterprise and establishment, and the Republic of Korea uses establishment. The term "establishment" used in Japan and the Republic of Korea could be interpreted as the narrow concept of the ISIC establishment or local unit.

2-3.Classification

Statistical units and industrial classifications are the two pillars supporting business statistics. While statistical units aggregate statistical information about businesses, industrial classifications classify the aggregates by the similarity of economic activities.

Statistical Classification of Economic Activities in the European Community (NACE Rev.1); North American Industry Classification System (NAICS) for Canada, Mexico, and the United States; Australia and New Zealand Standard Industrial Classification (ANZSIC); Japanese Standard Industrial Classification (JSIC); and Korean Standard Industrial Classification (KSIC) are comparable with the ISIC. All classifications cover all the activities defined within the boundaries of economic production. The structures are composed of hierarchies.

NACE Rev.1 is in line with ISIC Rev.3 at the European level. The first and second levels are the same as ISIC Rev.3. The third and fourth levels are subdivided according to European needs. NAICS has striven for comparability with the 2-digit level of ISIC. It employs a 6-digit coding system in which the first two digits designate the sector (ISIC section), the third digit designates the subsector (ISIC division), the fourth digit designates the industry group (ISIC group), the fifth digit designates the industry (ISIC class), and the sixth digit represents individual country-level national industries.

ANZSIC is based very closely on ISIC Rev.3 omitting a few industries which do not occur in Australia but disaggregating a number of ISIC Rev.3. For practical purposes ISIC Rev.3 can be easily derived from ANZSIC by reordering and aggregating. The structure of ANZSIC comprises four levels, division, subdivision, group, and class.

JSIC is based on ISIC Rev.3, though it differs somewhat from this classification. It is divided into more detail from the second level to the fourth level compared with the EU and other countries' classifications.

KSIC is almost in line with ISIC Rev.3. The structure of KSIC comprises five levels. The first, second and third levels are almost the same as ISIC Rev.3. The fourth level is subdivided by national needs. The fifth is a national level.

To support principal and secondary activities, economic entities perform ancillary activities, such as accounting, transportation, storage, purchasing, sales promotion, repair and maintenance, etc. Thus, ancillary activities are those that exist solely to support the main productive activities of an entity by providing non-durable goods or services for the use of that entity.

To cover all the productive activities of an entity, it is required to measure the intermediate costs of ancillary activities. The ISIC recommends treating ancillary activities as follows:
(1) If ancillary activities are carried out for the benefit of a single entity, these activities, and the resources involved in the activities, should be included as an integral part of the activities and resources of the parent unit.
(2) However, where the principal activities of the statistical unit and the supporting ancillary activities are located in different geographical areas, in terms of the areas used for statistical purposes it may be desirable to gather separate supplementary data in respect of the ancillary activities concerning those variables that are to be classified according to those geographic areas.

The examples of ancillary units are a central administrative office, warehouses, garages, repair shops, electric power plants and accounting or computer departments which the primary serves their parent units.

NACE Rev.1 of the EU, ANZSIC, the 1980 Canadian classification and the 1987 United States classifications have a specific code for management activities of holding companies. Further to this specific code, NAICS classifies ancillary units based on their primary activity. Japan and the Republic of Korea do not have any specific code for ancillary units.

2-4. Other remarks

The main purpose of statistical business registers is to provide a survey frame and a stratified sample. Therefore it is desirable to cover all economic entities. The EU, Japan, the Republic of Korea and the United States cover all entities. Australia and Canada exclude self-employed, and New Zealand excludes enterprises with annual GST turnover of less than $30 000.

The EU and other countries have identification variables, stratification variables, and demographic variables in common. The EU has an "ancillary status" code for local units to enable statistical analysis to reallocate the cost of ancillary activities to the activities for the benefit of which they are pursued.

The data are generally updated at least every year. Japan updates every three-five years. The Republic of Korea updates manufacturing quarterly.

3. Structural surveys on distributive trade

3-1. General remarks

Distributive trades generally cover retailing and wholesaling as conventionally known plus the motor trades. Distributive trades relate to the activity of purchase and resale of products without any significant further processing. The common identity of businesses engaged in this activity is derived from the very specific nature of the product of their activity, and the commercial service, that consists in providing users with goods which they sell at the desired place and time, and in the quantity, form and assortment required. In terms of the economy, the distributive trades are the vital organ via which goods are distributed. They play an important role in meeting the needs of consumers, and in helping to constrain price increases.

Wholesale trade includes resale of new and used goods to retailers, to industrial, commercial, institutional or professional users, or to other wholesalers. Generally, the enterprises which make up wholesale trade are of medium size but on average larger than those involved in retail trade.
Retail trade includes the resale of new and used goods to the general public for personal or household consumption or utilisation, by shops, department stores, stalls, mail-order houses, etc. This is a highly significant industrial sector in respect of employment and value-added in the economy. Generally, retailing is characterised by a relatively high proportion of small enterprises. However, larger enterprises are important in terms of turnover. These may be regional chains or more important in their total effect.

3-2. Statistical units

All countries have structural surveys on distributive trades, though the names of these surveys, their coverage, and their periodicity are different. The statistical units can broadly be divided into two types of units, that is, enterprise and establishment or local unit.

The main advantages of using the enterprise as a basic statistical unit are the data availability and the reduction of the response burden.

An enterprise records complete business accounting for both its internal use and external use. In addition the enterprise makes their own decisions on management, strategy, employment of resources, financing, etc. So the enterprise is most likely to be able to answer questions on the entire unit's activities, that is on persons employed, turnover and purchases of goods and services, operating results, acquisitions and disposals of tangible and intangible assets, the various trading links with other enterprises, turnover from exports, purchases of imported goods, etc.

The disadvantages of the enterprise as a basic unit are as follows: (1) it is less homogeneous than the establishment regarding the activity and location, and (2) it needs additional survey for regional data. Large and complex enterprises have multiple economic activities and they may have many local units. Some countries need regional data for regional economic analysis.

On the other hand, the advantages and disadvantages of the establishment as a basic unit are opposite to those of the enterprise. It would be necessary to develop a collection strategy to cover ancillary units in a multi-establishments enterprise. It is more homogeneous and is suitable for regional data. However, it limits data availability and increases the response burden compared with the enterprise as a basic unit. In this case, if the enterprise is adopted as a collection unit, it can reduce the response burden.

Recently, the EU has issued a regulation on business statistics including distributive trades. This regulation is expected to have an impact on EU member states, especially in the improvement in the quality of business statistics. The main contents related to distributive trade statistics are as follows: (1) this covers all enterprises and all local units classified in the NACE Rev.1 section G (wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods), (2) the basic statistical unit in distributive trades is the enterprise, (3) the periodicity is yearly (for some variables every 5 years), and (4) the variables are included in production data, the data relating to the capital account, breakdown of turnover by type of activity, etc.

The EU has adopted the enterprise as a basic unit for the following reasons: (1) most member states have adopted it as a basic unit, and (2) a homogeneous production unit in production processes is less important in distributive trades compared to manufacturing and mining.

In the services sectors involving distributive trade, the local unit as a basic unit may be relevant only for employment and geographic data.

The EU adopted the enterprise as a basic unit, but has specified the local unit as a unit for regional data; wages and salaries, employment, tangible investment, and turnover is also broken down by 4 types of activities for homogeneity of activities. These supplements are helpful for producing regional data and maintaining the homogeneity of activities.

Australia and New Zealand have adopted management unit and accounting unit. Its adoption recognises the existence of a management/accounting unit in large businesses e. g. a division, or a branch, of a business, and the availability of accounting data at this organisational level. They break down turnover by different types of activities. They have not adopted the establishment (or local unit) for collecting regional data. However, New Zealand has adopted the geographic unit as a basic unit for short term indicators.

Canada uses the establishment for wholesale trade and the location for retail trade as a statistical unit to reflect their operational industrial structure.

They choose the company as a collection unit. This reduces the response burden for the businesses. They classify ancillary units of multi-establishments enterprises based on their primary activity. Therefore, there is no concern regarding the exclusion of intermediate costs related to ancillary units.

The United States uses the local unit as a basic unit. They choose the enterprise as a collection unit and treat ancillary units like Canada.

Japan and the Republic of Korea uses the establishment as a statistical unit. They treat ancillary units according to primary activities of an enterprise.

3-3. Coverage

The main differences in the coverage of the EU and other countries on distributive trade statistics are as follows: (1) are all enterprises including self-employed covered by distributive trade ? (2) how are commission trade, repair of motor vehicles, motorcycles and personal and household goods treated ?

The EU, Japan and the Republic of Korea include all enterprises and all establishments (local units). Other countries exclude self- employed or very small enterprises. Other countries other than the EU exclude commission trade. Canada, the United States and Japan each exclude the repair activities.

The EU covers all enterprises and all local units classified in the NACE Rev.1 section G (wholesale trade and retail trade; repair of motor vehicles, motorcycles and personal and household goods). They have a specific code for commission trade within the section G.

Australia covers all employer enterprises excluding self-employed classified in the ANZSIC division F (wholesale trade), division G (retail trade). They cover repair of motor vehicles, motorcycles and household goods, however they exclude commission trade.

New Zealand covers all enterprises with annual GST turnover of more than $30 000. They treat the rest like Australia.

Canada and the United States cover all employer enterprises excluding self-employed classified in the NAICS sector 42 (wholesale trade), sector 44-45 (retail trade). They do not have a specific code for commission trade, and have a specific sector for all repair activities.

Japan covers all establishments excluding the restaurants classified in the JSIC section I (wholesale and retail trade, and restaurants). Though they have specific codes for commission trade within the section I, they do not collect the data. They treat repair activities separately like NAICS.

The Republic of Korea covers all establishments classified in the KSIC section G (wholesale trade and retail trade; repair of motor vehicles, motorcycles and personal and household goods). They treat commission trade like Japan.

3-4. Classification

Distributive trades engage in resale of new or used goods without further processing. Generally, distributive trades are classified by the range of products. Differences between the structures of the EU and other countries can be found at all levels of the classifications.

At the highest level, the EU and the Republic of Korea classify wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods into the same first level. Japan classifies wholesale and retail trade into the same first level with restaurants. Other countries classify wholesale and retail trade separately.

The EU and the Republic of Korea treat motor vehicles without separating wholesale and retail trade into the same higher level. On the other hand, other countries treat them into wholesale and retail trade separately.

As mentioned above, the differences of the coverage on distributive trade relate to commission trade and repair activities. Furthermore, each country classifies integrated manufacturing and retailing differently; take the case of bakeries, furniture, and custom tailoring, in which the manufacture of the product and its retail sale occurs in the same unit at the same location.

NACE Rev.1, ANZSIC and KSIC treat integrated manufacturing and retailing into manufacturing. NAICS and JSIC classify them into retail trade. NACE Rev.1, NAICS and KSIC have a specific code for retail sale not in stores. JSIC has a specific code for wholesale trade related to general merchandise.

In NACE Rev.1, wholesale trade is classified by the range of products and retail trade is classified by the types of outlet stores and specialised retail sale of new goods is further subdivided by the range of products sold. It divides the section G into 3 divisions 3, 19 groups, and 77 classes.

In ANZSIC, wholesale and retail trade are classified by the range of products. ANZSIC divides wholesale and retail trade into two first-level divisions. The division F (wholesale trade) is divided into 3 subdivisions, 9 groups, 41 classes, and the division G (retail trade) is divided into 3 subdivision, 10 groups, 38 classes.

In NAICS, wholesale trade is classified by durable and non durable goods and retail trade is classified by the range of products and the types of outlet stores. It divides wholesale and retail trade into 2 sectors (the first-level). The sector 42 (wholesale trade) is divided into 2 subsectors, 17 industry groups, 69 industries, the sector 44-45 (retail trade) is divided into 12 subsectors, 27 industry groups, 61 industries.

In JSIC, wholesale and retail trade are classified by the range of products. The section I (wholesale and retail trade, and restaurants) is divided into 12 division, 49 groups, and 153 classes, except the restaurants.

In KSIC, wholesale and retail trade are classified into the same way used in NACE Rev.1, because both systems are in line with ISIC Rev.3. The section G is divided into 3 divisions, 17 groups, 36 classes.

3-5 Variables

Business statistics lie on the intermediate stage between business accounting and national (or regional) accounts. While business statistics collect economic information from businesses belonging to a geographic area or a particular industry, the data from business statistics is one of the main sources for national (or regional) accounts. Therefore the variables and the related concepts in business statistics are expected to link as far as possible to those between business accounting and national (or regional) accounts.

In these studies, the comparison of business accounting practices are excluded because of limited data. The EU has undertaken important work to increase the coverage of statistical information in most business fields, since the beginning of the 90's. One of the major guidelines was to achieve a link between the statistical concepts and business accounting standards, which derive from the Fourth council Directive. The Fourth council directive established a simultaneous coordination of national provisions concerning the presentation and content of annual accounts and annual reports. This coordination enables statisticians to gather useful information at the European level and to collect accurate and reliable data from the published accounts.

The EU, Australia, and New Zealand, which adopt enterprise type as a statistical unit, gather large number of variables through business accounting of enterprises, such as production data, the data relating to capital accounts (investment) or financial data (assets and liabilities). On the other hand countries, which adopt establishment type as a statistical unit, generally collect production data.

The EU collects the data from different kinds of statistical units as seen in table 2. They collect the data relating to the breakdown of turnover by product type and information on types of suppliers and customers for compiling trade margins by products five yearly. It is intending to carry out a pilot study collecting the data relating to financial surplus, exports and imports, etc.

Australia collects production data, financial data, retail and wholesale sales by commodities, and mark up on commodity sales, etc. New Zealand collects production data, the data relating to capital accounts and financial data, etc.

Canada collects production data, revenue by class of customer and location and provincial distribution from companies. Japan collects production data, retail sales by type of distribution and information on types of suppliers and customers from establishments. The Republic of Korea collects production data from establishments. The United States collects production data from enterprises.

3-6 Other remarks

Distributive trade is vital in the economy of most countries in respects both of GDP and employment. Both wholesale and retail trades are subject to very rapid structural changes. It is desirable to observe the structure and operation on distributive trade periodically.

The EU, Canada, New Zealand and the United Stated conduct business surveys on these fields yearly, the Republic of Korea conducts them every two years. Japan conducts the census every three years, and Australia conducts them every seven or eight years.

The EU and other countries except New Zealand have a financial statements survey for financial data. Some countries of the EU collect production and financial data simultaneously.

Canada has structural surveys related to retail chain and department stores, vending machine operators and direct sellers. New Zealand conducts the census of distribution every five years. Japan has additional surveys for compiling at enterprise-level. The Republic of Korea conducts the census simultaneously with the business register survey every three years.

Canada and the United States are adopting a collection unit as a sampling unit. The target population comprises the establishment (or local unit) and the sampling frame consists of the company. The statistical unit in the EU and other countries is the same as a sampling unit.

There are several types of data collection modes for business surveys, such as, mail, telephone, face-to-face, and electronic.

The mail mode has lower costs and a higher non response rate than the face-to-face mode. Generally the telephone mode is used to reduce the nonresponse rate.

Japan and the Republic of Korea collect data using interviewers. The EU and other countries are using the mail mode for data collection, either as a single mode or in combination with the telephone and electronic mode.

Recently, information technologies have advanced at a very fast pace. Businesses are storing their information on electronic media. This raises the possibility that businesses might transfer data directly from their electronic files. Electronic data interchange (EDI) is a new mode for data collection. It reduces the response burden and costs, and increases data availability. Some countries are using this mode in other surveys.

4. Estimation of distributive trade value added in national accounts

Distributive trade is a significant sector in the national economy. The value added by the distributive trades accounts for more than 10% of total GDP in most countries.

There are several ways to estimate value added on distributive trade: the business statistics approach (the production and income approach), the expenditure approach, the trade margin by product approach, and the commodity flow approach.

The business statistics approach allows the opportunity of measuring value added by the production (production, intermediate consumption) and income (wages and salaries, gross operating surplus, indirect taxes, subsidies) approaches. It provides detailed and consistent information on the different items needed to calculate value added. However the weaknesses of the business statistics approach are the lack of exhaustiveness which can arise due to the underdeclaration of turnover by businesses, hidden labour, etc.

The expenditure approach is measured by the value of goods and services for final use, minus the value of imports. In principle, it should not be deficient due to evasion, since the data relates to the expenditure of consumers rather than their income. However, the expenditure gives an estimate of turnover, and to obtain value added it is necessary to find other sources in order to estimate intermediate consumption.

The trade margin by product approach is only feasible for countries that construct supply and use tables. The total value of trade margins is one estimate of the output of distributive trade activities. This approach gives an estimate of output, but does not directly give an estimate of

value added; it is necessary to deduct intermediate consumption to obtain value added, and a suitable source for intermediate consumption needs to be found.

An alternative way of determining the output of wholesale and retail activities is to estimate based on trade margins by product, using the commodity flow approach. This approach gives an estimate of the output of distributive trade, but does not directly give an estimate of value added. The value added is estimated by using Input- Output table and business statistics.

The EU basically recommends the business statistics approach. However this approach is not exhaustive as mentioned above. Therefore the EU suggests it is useful to compare the results derived from the business statistics approach with the corresponding estimates obtained from the trade margins by product approach and the expenditure approach for consistency checks .

Australia adopts the income approach for estimating value added, Canada adopts the business statistics approach and the expenditure approach. New Zealand and the United States use the business statistics approach. Japan and the Republic of Korea use the commodity flow approach.

5. Conclusion

As mentioned above, a comparative study has been carried out in the fields of general business registers and distributive trade. These studies show how statisticians have made efforts to find their optimal statistical methods responding to the changes of statistical environments.

It seems that many national statistical institutes continuously improve their statistical business registers through using administrative data in order to reduce the response burdens and budgets.

Globalisation of the world economy is increasing the importance of the international comparison in the respect of business statistics. Statistical units and classifications should be harmonised for international comparisons. All industrial classifications are comparable with ISIC for international comparisons. However, the basic statistical unit is broadly divided into the enterprise and the establishment. Though there is approximate concordance between them, it is difficult to compare precisely the data compiled at enterprise-level and that at establishment-level.

As the EU adopts the enterprise for production data and the local unit for regional data as basic units, many countries in advanced countries are adopting the enterprise as a basic unit.

The international institutions including the UN and the EU, and national statistical institutes should continue the study to find the optimal statistical unit on service industries involving distributive trade. Furthermore, statistical cooperation between international institutions and national institutes should increasingly be reinforced.

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