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Experiences in starting measurement of services in Poland



**Central Statistical Office of Poland
Trade and Services Department**

Agnieszka Matulska-Bachura

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1. Introduction

The main purpose of this paper is to present the practices and experiences of Polish statisticians which have been gained so far in developing the services statistics, especially those related with starting the measurement in services sector. In the very beginning it is recommendable to consider what should be understood under concept “measurement”. Is it enough to collect necessary data from responding units or is it needed something more? When can it be stated that the services sector is measured? My personal experiences show that access to data is not sufficient condition for monitoring any sector of economy. What benefit can we derive from flour if we do not know how to bake the cake? Therefore, as the recipe in the catering the methodology for compilation of statistical information is the crucial element in statistics.

In Poland data on services industries have already been collected within the official statistics in the beginning of 1990s. However, they have not been processed in order to monitor all services industries. The methodology for compilation data has not been developed. Whereas the processes and phenomena taking place in other sectors of national economy had been reflected in the statistical results most of services industries had stayed out of interest of statistics for a long time. The except forion to this the transport, storage, communication and trade constituted as statistical information on these industries have already been compiled and disseminated before 1990. Generally until lately the development of services statistics has been significantly slower than statistics in other sectors of economy. The boom in services statistics in Poland was recorded in the beginning of the XXIst century when the role of services sector started to increase. However, despite over two decades of efforts the services sector is still not fully unveiled research area of statistics.

Generally the measurement of production in services sector is made difficult for statisticians due to the intangible nature of products which are the output of services industries as well as the dynamic changes in that sector. At the same time the service market is one of the most heterogeneous economic area. It comprises services provided both to households, i.e. cleaning services, hairdressing services, as well as to enterprises or institutional entities, i.e. book-keeping services, architectural services. The services are differentiated taking into account the advance level of technology used for manufacturing the given service or the knowledge which is needed for its provision. Due to individual characteristics of services each of them requires separate approach when it is measured. The issues mentioned above evoke the discussion on

the methodological aspects of measuring the services sector among the statisticians all over the world sustainable.

In order to better understand the process of launching and developing the services statistics in Poland it is helpful to know the system of statistical surveys which are carried out under the official statistics. In the next section the development of services statistics in the period since 1990s is presented. Following the way the works are proceeded at the forum of the Voorburg Group in this section there are separately described surveys which obtain data used for compiling turnover and deflators as well as other surveys which provide information on services sector.

2. The system of statistical surveys of official statistics in Poland

In Poland the official statistics comprises all statistical surveys and methodological works which are conducted by the Central Statistical Office, regional statistical offices as well as other governmental entities which are engaged in the production of statistics.

In the official statistics the surveys are carried out within the following 30 statistical domains:

	Name of domain
1.	Environmental protection
2.	Organization of the State, local government
3.	National defence, public safety, justice
4.	Social economy
5.	Population, demographical processes
6.	Religion, ethnic groups
7.	Labour market
8.	Wages and salaries and social benefits
9.	Family, living conditions of population and social welfare
10.	Dwellings, municipal infrastructure
11.	Education
12.	Culture
13.	Health and health care
14.	Tourism and sport
15.	Science, technology and information society
16.	Market of raw materials, fuels and energy
17.	Agriculture and forestry
18.	Industry
19.	Construction
20.	Transport and communications
21.	Trade, hotels, catering and other selected services activities
22.	International economical relationships
23.	Results of non-financial enterprises
24.	Financial market
25.	Prices

26.	Public finance
27.	Material fixed assets and investments
28.	National accounts
29.	Regional studies
30.	Statistical frameworks

Each statistical domain specified in the table above comprises a set of surveys which usually concerns the specific industries or phenomena. However, there are some domains which provide information on total economy and the surveys cover all enterprises regardless their primary activity. One of such domain which is significant for services sector is the *Results of non-financial enterprises*. The surveys included in that domain collect mainly quantity information included in the financial statements: balance sheet and profits and losses account. The clear advantage of such surveys is that statistical results are compiled in the same way for whole the economy. It makes possible to present the role of services sector at the background of whole national economy.

What about other domains which directly concern services industries, for example, the *Education*, the *Culture*, the *Transport and communications* or the *Trade, hotels, catering and other selected services activities*? In these domains surveys collect quality data as well as some detailed financial data which characterize more comprehensively the given services industry.

All surveys conducted under the official statistic are specified in the *Programme of Statistical Surveys of Official Statistics* which is issued each year as an appendix to the Regulation of the Council of Ministries. Like each legal acts the *Programme of Statistical Surveys of Official Statistics* requires the legislative procedure which is as usual time consuming. As a result the time lag between compilation of methodology and organizational assumptions for survey and first data collection amounted for about 1,5 – 2 years.

3. The starting and development of services statistics

The starting point for measuring the services sector is contradictory. As regards the collection of data on services industries it can be said that services statistics has existed since the official statistics was established. However, the methodology for compilation of data on services industries started to be developed at the beginning of 2000s when the importance of services sector in the national economy begun to increase. Moreover, it is recommendable to underline that in the 1990s the official statistics was transformed in order to follow the economical

processes related with transition from centrally planned economy to market economy which took place in Poland.

Undoubtedly, transport, storage, communication and trade were the pioneers in services statistics. Statistical information describing those activities were regularly compiled and disseminated even before 1990. Information which were collected concerned mainly quality information: transport of goods and passengers, rolling stocks, passenger traffic, transport fleet, number of subscribers, number of outlets, the area of shops, etc. as well as revenues from the sale. Transport, communication or trade are the activities which have semi-material character due to the close connection with goods and as a result it is much easier to measure them.

Like in most countries the turnover statistics for services industries developed much earlier than producer price statistics. At the beginning of 1990s there were many questionnaires which collected data which could be used for calculating turnover for services industries, however, the statistical results were not compiled or disseminated. Data on producer prices for services industries other than transport, storage or communication started to be collected in 2009.

In the consecutive subsections the history of data collection as well as the development of methodology for data compilation are presented.

3.1. Turnover

The concept of turnover in services statistics came out in official statistics in the beginning of current century while data used for its compilation have already been available since 1990s. Nowadays the vast majority of surveys observe the economy at the industry level. However, some surveys directly collect data on turnover at the product level or obtain information which can be used as a proxy for data at this level.

3.1.1. Annual turnover at the industry level

Nowadays annual data on turnover for services sector at the industry level are compiled within the structural business statistics (SBS)¹. Data on annual turnover are compiled at the class level of NACE Rev.2.

¹ In compliance with the Regulation (EC, EURATOM) No 58/97 of the Council of 20 December 1996 as well as the Regulation (EC) No 295/2008 of the European Parliament and of the Council of 11 March 2008 concerning structural business statistics the EU's member states are obliged to produce and provide Eurostat with annual data on turnover at the class level of the NACE Rev.2 for the business activities specified in regulation, amongst on services industries.

For enterprises with the number of persons employed 10 and more the *Annual survey on enterprises (SP)* is used as the main data source for data on turnover. The survey comprises the enterprises with the number of persons employed 10 and more which run the following industries other than services classified by NACE Rev.2 into Sections: A *Agriculture, forestry and fishing*, B *Mining and quarrying*, C *Manufacturing*, D *Electricity, gas, steam and air conditioning supply* E *Water supply; sewerage, waste management and remediation activities* and F *Construction*. As regards services industries information are collected from enterprises which are classified into the NACE Rev.2 Sections: G *Wholesale and retail trade; repair of motor vehicles and motorcycles* , H *Transportation and storage*, I *Accommodation and food service activities*, J *Information and communication* (except for cultural units with legal personality), K *Financial and insurance activities* (except for banks, co-operative savings and credit unions, insurance companies, brokerage companies, investments unions and funds, pension unions and funds), L *Real estate activities*, M *Professional, scientific and technical activities*, N *Administrative and support service activities*, P *Education* (except for university education), Q *Human health and social work activities* (except for independent public health care units), R *Arts, entertainment and recreation* (except for cultural units with legal personality), S *Other service activities* (divisions 95 and 96).

The subjective scope of survey concerns information included in the financial statements: balance sheet and the profits and losses account. However, there are also collected additional information, for example number of persons employed, type of book-keeping system, the share of foreign capital, changes in ownership, etc. In order to compile data on turnover information on the net revenues from sale of products, net revenues from sale of commodities and materials as well as data on excise taxes and subsidies are used.

The survey was introduced into official statistics in 1995. During above 20 years the survey was being modified. The subjective and objective scope of survey were changed in order to obtain the present data accessibility. More details are presented in the *Table 1*.

Construction

Table 1. The changes incorporated into the SP questionnaire *Annual survey on enterprises* as regards services industries

REFERENCE YEAR	ACTION
1993	Pilot study was carried out in order to assess whether enterprises are feasible to report data on their economic activity within the SP questionnaire.
1994	The first data collection took place. The SP questionnaire was obliged to be fill in by enterprises with the number of persons employed 200 and more which run the accounting book and their primary activity is classified by NACE Rev.1 into Sections: B <i>Fishing</i> , C <i>Mining and quarrying</i> , D <i>Manufacturing</i> , E <i>Electricity, gas and water supply</i> , F <i>Construction</i> , G <i>Wholesale and retail trade; repair of motor vehicles,</i>

	<i>motorcycles and personal and household goods, H Hotels and restaurants, I Transport, storage and communication and K Real estate, renting and business activities.</i>
1995, 1996	The objective scope was widened and the enterprises with the number of persons employed 6 and more were covered. There were used two questionnaires: SP-1 for enterprises with the number of persons employed above 100 and SP-2 for enterprises with the number of persons employed between 6 and 100.
1997	One harmonized SP questionnaire was created. It was filled in by all enterprises with the number of persons employed 5 and more which run not only accounting book but also revenues and expenditures book.
1999	The objective scope of survey was changed and comprised enterprises with the number of persons employed 10 and more.
2004	The Section M <i>Education</i> (except for from university education), N <i>Health and social work</i> (except for independent public health care units) and O <i>Other community, social and personal service activities</i> (except for cultural units with legal personality) by NACE Rev.1.1. were additionally covered by survey.
2008	The NACE Rev.1.1 was replaced by the NACE Rev.2
2010	The change in the objective scope in Section J. The cultural units with legal personality were excluded.

For enterprises with the number of persons employed 9 and less information collected within the *Survey of small enterprises (SP-3)* is used to compile data on turnover. The survey comprises the enterprises with the number of persons employed 9 and less which run the following industries classified by NACE Rev.2: Sections: A *Agriculture, forestry and fishing*, B *Mining and quarrying*, C *Manufacturing*, D *Electricity, gas, steam and air conditioning supply*, E *Water supply; sewerage, waste management and remediation activities* and F *Construction*, and for services Sections: G *Wholesale and retail trade; repair of motor vehicles and motorcycles*, H *Transportation and storage*, I *Accommodation and food service activities*, J *Information and communication* (except for cultural units with legal personality), K *Financial and insurance activities* (divisions 64 and 66), L *Real estate activities*, M *Professional, scientific and technical activities*, N *Administrative and support service activities*, P *Education* (except for university education), Q *Human health and social work activities* (except for independent public health care units), R *Arts, entertainment and recreation* (except for cultural units with legal personality), S *Other service activities* (divisions 95 and 96).

Data are collected annually from the sample of enterprises (about 5%) which are selected randomly within the settled strata (groupings required by SBS Regulation with the breakdown into voivodships). Information on the kind of book-keeping, number of persons employed, salaries, the value of fixed assets, outlays on their modernization and purchase, taxes, revenues, costs, etc. are obtained. In order to compile data on turnover information on the net revenues from the whole business activity and data on excise tax are used.

The first experimental data collection took place in 1990. The pilot study was conducted as an direct interview with respondents. The data collectors filled in the questionnaire of survey together with respondents giving them guidelines how properly report data. Such specific approach was applied due to the population of survey which comprised micro-enterprises.

In the *Table 2* the changes introduced in the survey are presented.

Table 2. The changes introduced into the SP-3 questionnaire *Survey of small enterprises* as regards services industries

REFERENCE YEAR	ACTIVITY
1990	The first experimental data collection took place. As a tool DG-3 questionnaire was used. It covered natural persons which run business activity and partnerships with the number of persons employed 5 and less and were classified by NACE Rev.1. into Sections: A <i>Agriculture, hunting and forestry</i> (division 2), B <i>Fishing</i> (division 5), C <i>Mining and quarrying</i> , D <i>Manufacturing</i> , E <i>Electricity, gas and water supply</i> , F <i>Construction</i> , G <i>Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods</i> , H <i>Hotels and restaurants</i> , I <i>Transport, storage and communication</i> , J <i>Financial intermediation</i> (divisions 65 and 67), K <i>Real estate, renting and business activities</i> , M <i>Education</i> (except for group 80.3), N <i>Health and social work</i> and O <i>Other community, social and personal service activities</i> (except for division 91) by EKD. It was sample surveys with intentional selection.
1993	The selection was done basing on the National Official Business Register (REGON).
1999	The objective scope was widened and the enterprises with the number of persons employed 9 and less were covered.
2008	The results are compiled at the class level of the NACE Rev.2.

3.1.2. Annual turnover at the product level

Apart from annual turnover at the industry the structural business statistics comprises also turnover at the product level. In order to meet requirements resulted from structural business statistics it was necessary to introduce new surveys into the official statistics. The new duty concerned data on turnover with the breakdown into product and into residence of services receiver for so called business services industries.

The business services industries comprise the following industries classified by NACE Rev.2 into: *Software publishing* (58.2), *Computer programming, consultancy and related activities* (62), *Data processing, hosting and related activities; web portals* (63.1), *Legal and bookkeeping activities* (69), *Management consultancy activities* (70.2), *Architectural and engineering activities; technical testing and analysis* (71), *Advertising and market research* (73), *Employment activities* (78).

At the preparatory stage the accessible data sources were reviewed on the account of information on turnover by product. As no data which could be used for compiling turnover by product at the required level of detail were identified it was decided to implement new survey.

In years 2004 – 2007 two pilot studies which were co-financed by the European Commission took place. They were conducted on the voluntary basis. Their purpose was to test the feasibility for collecting data on turnover with breakdowns into product, type of services receiver and their residence from enterprises. It enabled to prepare questionnaires for regular survey. Moreover, it helped the enterprises to prepare their IT book-keeping systems for new responding requirements.

The details related to these pilot studies are presented in the *Table 3*.

Table 3. Pilot studies on business services

Specification	PILOT STUDY I	PILOT STUDY II
Reference year	2003	2004
Population frame	<ul style="list-style-type: none"> Industries classified by the NACE Rev.1.1 into: <i>Computer and related activities</i> (72), <i>Accounting and business activities and business and management consultancy activities</i> (74.12 and 74.14), <i>Architectural and engineering activities and related consultancy</i> (74.2) and <i>Advertising</i> (74.4) Approx. 140 thous. enterprises 	<ul style="list-style-type: none"> Industries classified by the NACE Rev.1.1 into: <i>Legal activities</i> (NACE 74.11), <i>Market research and public opinion polling</i> (74.13), <i>Technical testing and analysis</i> (74.3) and <i>Labour recruitment and provision of personnel</i> (74.5) Approx. 63 thous. enterprises
Sample	<ul style="list-style-type: none"> All enterprises with the number of persons employed 50 and more and 25% sample of enterprises with the number of persons 49 and less Above 44 thous. responding units 	<ul style="list-style-type: none"> All enterprises with the number of persons employed 10 and more and 45% sample of enterprises with the number of persons 9 and less Above 28 thous. responding units
Data collected	Turnover with the breakdown into: <ul style="list-style-type: none"> product (groupings by NACE Rev.1.1), type of type of services recipients (households and other non-commercial institutions, businesses, public sector) and residence of services recipient (in country, in EU countries covered by Euro zone, in EU countries not covered by Euro zone, non-EU countries) 	Turnover with the breakdown into: <ul style="list-style-type: none"> product (groupings by NACE Rev.1.1), type of type of services recipients (households and other non-commercial institutions, businesses, public sector) and residence of services recipient (in country, in EU countries, non-EU countries)
Questionnaires	4 different questionnaires, separate for each surveyed industry	4 different questionnaires, separate for each surveyed industry
Response rate	<ul style="list-style-type: none"> Approx. 28% as regards number of enterprises and Almost 23% as regards the number of persons employed 	<ul style="list-style-type: none"> Approx. 20% as regards number of enterprises and Almost 42% as regards the number of persons employed

The regular survey on business services was conducted first time for the reference year 2009. It comprised all enterprises with the number of persons employed 10 and more with their primary business activity classified by NACE Rev.2 into:

- Software publishing (58.2)

- Computer programming, consultancy and related activities (62)
- Data processing, hosting and related activities; web portals (63.1)
- Legal activities (69.1)
- Accounting, bookkeeping and auditing activities; tax consultancy (69.2)
- Management consultancy activities (70.2)
- Architectural and engineering activities and related technical consultancy (71.1)
- Technical testing and analysis (71.2)
- Advertising (73.1)
- Market research and public opinion polling (73.2)
- Employment activities (78)

When the *Business services* survey was launched it was planned that it would be conducted in traditional way with usage of paper questionnaires. As each of surveyed industries produces different services it was reasonable to prepare the separate questionnaire for each industry. As a result in the first edition of regular survey 10 different questionnaires were used as a tool for data collection. In 2009 the system of data collection in the official statistics was changed from paper questionnaires to electronic questionnaires filled in via statistical reporting website. Therefore, since the second edition for the reference year 2010 one harmonized questionnaire (BS) was applied in the survey on business services.

First of all, the results of survey allow to establish the structure of turnover by product. Data are used when producer prices for services are compiled. Moreover, they enable to monitor the changes in the services which are rendered by given activity.

Apart from the results of *Business services* survey in official statistics there are other information which can be used as a proxy for turnover by product. In the *Annual survey on enterprises* (SP) data on the revenues from sale of products, commodities and materials by kind of activity at the NACE class level are collected. It can be assumed that due to the detailed activity level data on turnover can be treated as data on turnover by product. The great advantage of this data source is that the survey covers almost all national economy. It allows to estimate the revenues from sale of given service in all economy opposite to revenues from sale of products produced by given services industry which is measured by turnover at the industry level. The disadvantage is that the detail level of data is not sufficient for the requirements of structural business statistics as regards business services.

3.1.3. Short-term turnover at the industry level

In Poland the short-term information on turnover at the industry level for services sector are compiled within the short-term statistics (STS)². Data are produced on the base of data collected within the *Monthly report on business activity (DG-1)* questionnaire.

The *Monthly report on business activity (DG-1)* comprises all enterprises with the number of persons employed 50 and more and the 10% sample of enterprises with the number of persons employed between 10 and 49. The survey covers the following industries classified by NACE Rev.2 into Sections: A *Agriculture, forestry and fishing* (Division 2 Forestry and logging, class 0311 Marine fishing), B *Mining and quarrying*, C *Manufacturing*, D *Electricity, gas, steam and air conditioning supply*, E *Water supply; sewerage, waste management and remediation activities* and F *Construction*, and as regards the services industries into Sections: G *Wholesale and retail trade; repair of motor vehicles and motorcycles*, H *Transportation and storage*, I *Accommodation and food service activities*, J *Information and communication*, L *Real estate activities*, M *Professional, scientific and technical activities* (except for divisions 72 and 75), N *Administrative and support service activities*, R *Arts, entertainment and recreation* (except for cultural units with legal personality), S *Other service activities* (divisions 95 and 96).

It collects information on net revenues from the sale of products, net revenues from the sale of commodities and materials, number of persons employed, value of retail trade, value of wholesale, subsidies, salaries, excise, etc. for the responding month and for period from the beginning of year. In order to compile information on turnover net revenues from the sale of products, net revenues from the sale of commodities and materials as well as data on excise tax are used. The changes in surveys are showed in the *Table 4*.

Table 4. The changes introduced into the DG-1 questionnaire *Monthly report on business activity*

REFERENCE YEAR	ACTIVITY
Before 1990	The first reference month.
1991	Implementation of NACE Rev.1. Data compiled according to both classifications: the Classification of National Economy and NACE Rev.1.
1992	Data compiled according to the NACE rev.1
1993	For services industries the objective scope comprised all enterprises with the number of persons employed 20 and more and 10% sample of enterprises with the number of persons between 6 and 20 (in case of services industries) which run industries classified by NACE Rev.1 into: Sections: G <i>Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods</i> , H <i>Hotels and restaurants</i> , I <i>Transport, storage and communication</i> , K <i>Real estate, renting and business activities</i> (except for division 73 and class 74.11), division 90 <i>Sewage and</i>

²The survey is conducted in compliance with the requirements of Regulation (EC) No 1158/2005 of the European Parliament and of the Council of 6 July 2005 amending Council Regulation (EC) No 1165/98 concerning short-term statistics.

	<i>refuse disposal, sanitation and similar activities</i> , groups 92.1 <i>Motion picture and video activities</i> and 92.2 <i>Radio and television activities</i> , division 93 <i>Other service activities</i> . The item: net revenues from sale of products was taken as a proxy for turnover. For Sections: G, H, I data compiled at the group level, for other sections – at the division level, both with the breakdown into voivodships.
1994	The objective scope was widened by the enterprises which run activities classified by NACE Rev.1 into the following: 74.11 <i>Legal activities</i> , 92.3 <i>Other entertainment activities</i> , 92.4 <i>News agency activities</i> , 92.5 <i>Library, archives, museums and other cultural activities</i> , 92.6 <i>Sporting activities</i> , 92.7 <i>Other recreational activities</i> . In the questionnaire new item: net revenues from sale of trade commodities and materials was incorporated. In order to compile data on turnover data on net revenues from sale of products and revenues from sale of trade commodities and materials were summed up.
2000	The objective scope covered all enterprises with the number of persons employed 50 and more and 10% sample of enterprises with the number of persons employed between 10 and 49. The item: revenues from sale of trade commodities and materials was deleted from the questionnaire.
2006	In the questionnaire new item: excise tax on goods of own production was incorporated. The variable turnover at current as well at basic prices was introduced. Moreover, in order to compile data on turnover for some business services at the country level the representatives were ensured for industries classified by NACE Rev.1.1 to the groups of division 72 <i>Computer and related activities</i> and division 74 <i>Other business activities</i> .
2008	The representatives were ensured for the classes of group 92.2 <i>Motion picture and video activities</i> and classes of group 74.8 <i>Miscellaneous business activities n.e.c.</i> by NACE Rev.1.1. Data on turnover at the country level were compiled for above specified industries. Data series were calculated for both classifications NACE Rev.1.1 and NACE Rev.2.
2009	Data were compiled by NACE Rev.2 only. Data for industries classified by NACE Rev.2 into: Sections: G <i>Wholesale and retail trade; repair of motor vehicles and motorcycles</i> , H <i>Transportation and storage</i> , I <i>Accommodation and food service activities</i> , M <i>Professional, scientific and technical activities</i> and N <i>Administrative and support service activities</i> are calculated at the group level and for other services sections at the division level.
2010	In the questionnaire new item: excise tax on commodities and materials was incorporated. The algorithm for calculation of turnover at the basic prices was changed.

The short-term data on turnover are to present intra-annual changes in the development of industries. Therefore, they are not disseminated as an absolute values but are used to compile monthly or quarterly indices on turnover. The data series on turnover indices for transport, communication and trade industries have been calculated since 1990s while for other services industries the algorithm for calculation of turnover indices has been elaborated in 2003 in order to meet the requirements of Eurostat concerning the short term statistics. They covered period from the first quarter 2000. The monthly turnover indices are calculated as the monthly value of turnover for a given reference period related to average monthly value for the base year. The base year is changed every five years and now 2010 is the base year.

3.1.4. Other auxiliary data sources used for imputation of annual turnover in services sector

Apart from the surveys presented in the points 3.3.1 -3.3.3 other data sources are also used to compile annual data on turnover for services industries. There are other statistical surveys, but also administrative data are also implied.

First of all, these data are used to impute information for respondents who did not report data within the *Annual survey on enterprises (SP)* or the *Survey of small enterprises (SP-3)*. For enterprises with the number of persons employed 10 and more data collected within the *Report on revenues, costs and financial result as well as outlay on fixed assets (F-01/I-01)* are applied. The questionnaire is filled in by the enterprises which are classified by NACE Rev.2 into Sections: A *Agriculture, forestry and fishing* (except for natural persons running the individual farms), B *Mining and quarrying*, C *Manufacturing*, D *Electricity, gas, steam and air conditioning supply*, E *Water supply; sewerage, waste management and remediation activities*, F *Construction*, G *Wholesale and retail trade; repair of motor vehicles and motorcycles*, H *Transportation and storage*, I *Accommodation and food service activities*, J *Information and communication*, L *Real estate activities*, M *Professional, scientific and technical activities*, N *Administrative and support service activities*, P *Education* (except for university education), Q *Human health and social work activities* (except for independent public health care units), R *Arts, entertainment and recreation* (except for cultural units with legal personality) and S *Other service activities*. Enterprises with the number of persons employed 50 and more are obliged to fill in the questionnaire quarterly while those with the number of persons employed between 10 and 49 on a half-year basis.

If there is still the lack of information on a given responding unit data on turnover are estimated with the usage of data collected within the *Monthly report on business activity (DG-1)*. For DG-1 questionnaire respondents fill in the value of monthly data for responding period, but also the accumulated value from the beginning of year to the end of reporting month. This accumulated value is used to impute annual data on turnover. Finally, if there is no data in the official statistics the annual data on turnover from VAT system hold by the Ministry of Finance are used. For enterprises with the number of persons employed 9 and less only the VAT system is possible to be applied for imputation of missing data.

3.2. Deflators

In Poland there are different price indices which can be used to deflate economic values in current prices. Regarding the methodological recommendations concerning the type of prices

indices used for deflating turnover we are obliged to take into account the type of services receiver. If the consumer is the natural persons or household it is recommended to apply consumer price indices. When the services receiver is enterprise produces prices are suggested.

When services statistics started to develop there were only one survey which produced data on producer prices for services industries. Data series on producer prices for transport and communication industries have been available since 1990s whereas on other services, for example for business services, not until 2008. Nowadays official statistics has at its disposal producer prices indices for most of business services industries as well as for transport and communication. Moreover, the accessibility of producer prices for services is improving all the time.

3.2.1. Producer prices for services

The survey on producer prices was launched before 1990, however, the first services industries – transport and communication were covered by statistics few years later. The *Report on producer prices of goods and services C-01* was a tool used for data collection. Other services industries were comprised by statistical observation in 2008.

Nowadays, there are 3 questionnaires which collect data on producer prices:

- *Report on producer prices of goods and services C-01*
- *Report on producer prices of services C-06*
- *Report on producer prices of employment services C-06/RU*

The *Report on producer prices of goods and services (C-01)* collects information on producer prices of goods and services from enterprises with the number of persons employed 10 and more which are classified by the NACE Rev.2 into Sections: A *Agriculture, forestry and fishing* (division 2), B *Mining and quarrying*, C *Manufacturing*, D *Electricity, gas, steam and air conditioning supply*, E *Water supply; sewerage, waste management and remediation activities*, H *Transport and warehouse* and division 61 (Section J) *Telecommunication*. The surveys is carried out as a purposive sample on monthly basis. In the sample of survey for the reference year 2016 there are about 290 enterprises for Section H *Transport and warehouse* and about 20 enterprises for division 61 (Section J) *Telecommunication*. The scope of collected data concerns information on producer

Table 5. The changes incorporated into the C-01 questionnaire *Report on producer prices of goods and services* as regards services industries

REFERENCE YEAR	ACTION
Before 1990	The first reference period. The population frame covered Sections C-E by NACE

	Rev.1.
1990	The population frame was widened by Section I <i>Transport, storage and communication</i> by NACE Rev.1.
1992	First publication of data on Section I <i>Transport, storage and communication</i> by NACE Rev.1.
2002	In the sample there were approx. 270 enterprises from Section I <i>Transport, Warehouse and Telecommunication</i> (by NACE Rev.1).
2016	In the sample there were approx. 290 enterprises for Section H <i>Transport and warehouse</i> and about 20 enterprises for division 61 (Section J) <i>Telecommunication</i> (by NACE Rev.2).

Moreover, apart from data collected from respondents by use of statistical questionnaires there are applied also other data sources such as: price lists, decisions or regulations on uniform prices binding in the all or a part of country.

The *Report on producer prices of services* (C-06) and the *Report on producer prices of employment services* (C-06/RU) were introduced together in 2008 with the Ist quarter of 2008 as the first reference period. The survey is conducted as a sample selected purposively from population frame. The subject of survey comprises producer prices of selected services rendered domestically to both other enterprises as well as individual customers.

Nowadays the objective scope of survey covers enterprises with the number of persons employed 10 and more which run the following industries classified by NACE Rev.2 : *Publishing services* (58), *Motion picture, video and television programme production services, sound recording and music publishing* (59), *Programming and broadcasting services* (60), *Computer programming, consultancy and related services* (62), *Information services* (63), *Real estate services* (68), *Legal and accounting services* (69), *Management consulting services* (70.2), *Architectural and engineering services; technical testing and analysis services* (71), *Advertising and market research services* (73), *Other professional, scientific and technical services* (74), *Rental and leasing services* (77), *Employment services* (78), *Travel agency, tour operator and other reservation services and related services* (79), *Security and investigation services* (80), *Services to buildings and landscape* (81), *Office administrative, office support and other business support services* (82). Data on prices indices are compiled quarterly at the class, group and division level by NACE Rev.2. The history of changes is presented in the *Table 6*.

Table 6. The changes incorporated into the C-06 *Report on producer prices of goods and services* and the C-06/RU *Report on producer prices of employment services C-06/RU*

REFERENCE YEAR	ACTIVITY
2008	The first reference quarter. The survey comprise purposively selected enterprises which run the following industries by NACE Rev.1.1: <i>Computer and related activities</i> (72), <i>Architectural and engineering activities and related technical consultancy</i> (74.2), <i>Technical testing and analysis</i> (74.3), <i>Advertising</i> (74.4), <i>Labour recruitment and provision of personnel</i> (74.5), <i>Investigation and security activities</i> (74.6), <i>Industrial</i>

	<i>cleaning (74.7).</i>
2009	The new version of NACE Rev.2 was introduced. As a result the population frame covered by NACE Rev.2: <i>Computer programming, consultancy and related services (62), Information services (63), Architectural and engineering services; technical testing and analysis services (71), Advertising and market research services (73), Employment services (78), Security and investigation services (80), Cleaning activities (81.2).</i> In the sample there were approx. 250 responding units.
2010	The objective scope was widened by enterprises classified by NACE Rev.2 into <i>Legal and accounting services (69).</i> As a result in the sample there were approx. 330 responding units.
2012	The objective scope was widened by enterprises classified by NACE Rev.2 into <i>Management consulting services (70.2).</i> As a result in the sample there were approx. 340 responding units.
2015	The objective scope was widened by enterprises classified by NACE Rev.2 into: <i>Real estate services (68), Other professional, scientific and technical services (74), Rental and leasing services (77)</i> and the groups <i>Combined facilities support activities (81.1)</i> and <i>Landscape service activities (81.3).</i> As a result in the sample there were approx. 600 responding units.
2016	The objective scope was widened by enterprises classified by NACE Rev.2 into <i>Publishing services (58), Motion picture, video and television programme production services, sound recording and music publishing (59), Programming and broadcasting services (60), Travel agency, tour operator and other reservation services and related services (79)</i> and <i>Office administrative, office support and other business support services (82).</i> As a result in the sample there were approx. 850 responding units.

3.2.2. Methodological works in the area of producer prices for services industries

The need for development of statistics on producer prices for services results mainly from increasing role of services sector in the national economy. Moreover, compilation of producer prices for services is definitely more difficult than producer prices for other economy sectors. First of all, the production of services in opposite to manufacturing of goods usually requires direct contact between producer and consumer. As a result a lot of services are unique and they are often rendered only once. The lack of comparability of services in time makes measurement of producer prices more challenging.

Basing on the experiences gained so far during the realization of survey which uses the C-06 and C-06/RU questionnaires it can be stated that in case of some services industries respondents do not have any problems with selecting repeated representative services and reporting their prices for consecutive reporting periods. Nevertheless, there are also services industries where the huge fluctuation in prices is observed. After more comprehensive analysis it turns out that the changes in prices reflect rather changes in quality than in level prices itself. The unique and unrepeated services particularly require individual approach.

In order to improve the quality of data on producer prices for services in years 2013-2016 the methodological works were conducted. At the starting point the international methodological recommendations on the compilation of producer prices indices included in *Methodological Guide for Developing Producer Price Indices for Services* were reviewed. Moreover, the

experiences of other countries which are presented within the works of the Voorburg Group were regarded.

Within the methodological works the pilot study was carried out. The purpose of study was to obtain information on the characteristics of services rendered by selected services enterprises, particularly on the factors which effect the mechanism for establishing prices. Those information allowed to better understand how the selected services industries work as well as to develop suitable methods for measuring producer prices for services.

As a tool 22 questionnaires (one for each surveyed industry) were used. The questionnaires included questions concerning the characteristics of surveyed services. The pilot study was conducted in two stages.

The first edition of pilot study comprised the services industries which have already been covered by C-06/C-06/RU questionnaires and they are classified by NACE Rev.2 into: *Computer programming, consultancy and related services (62), Information services (63), Legal and accounting services (69), Management consulting services (70.2), Architectural and engineering services; technical testing and analysis services (71), Advertising and market research services (73), Employment services (78), Security and investigation services (80), Services to buildings and landscape (81).*

The second edition was devoted to the services industries classified by NACE Rev.2 into: *Real estate services (68), Other professional, scientific and technical services (74) and Rental and leasing services (77)* as well as other services industries which were going to be included in the survey in 2016, mainly: *Publishing services (58), Motion picture, video and television programme production services, sound recording and music publishing (59), Programming and broadcasting services (60), Travel agency, tour operator and other reservation services and related services (79) and Office administrative, office support and other business support services (82).*

The conducted methodological works significantly broadened knowledge on the characteristics of various services industries and mechanism for establishing their prices. It also revealed some shortage in solutions so far applied in statistics and made statisticians aware of needs for modifications. The practical results of pilot study cover recommendations on the modifications which should be introduced in presently existing questionnaires of survey as well as methods which should be applied when questionnaires for new industries are designed.

Nowadays the recommendations compiled within the methodological works are implemented into official statistics in order to better reflect the changes in producer prices for services. The works which aim at modifying the existing questionnaires of surveys are in progress. Moreover, the results of pilot study are planned to be presented to the *Methodological Commission* (advisory and opinion body of the President of CSO). After having the opinion and comments of the *Commission* the described methodologies are subject to be modified.

3.2.3 Retail prices

The surveys on retail prices are the first which had been developed under price statistics. Generally, according to the recommendations on the compilation of index of services production (ISP) data on retail prices can be applied as a deflators when turnover concerns the provision of services to individual consumers or households or if turnover concerns the provision of services to other enterprises and there is no producer prices indices for given services industry. However, in that case some additional calculation are needed in order to adjust retail prices into producer prices indices. First of all, the changes in VAT rates have to be eliminated from retail prices indices.

The data sources for retail prices of goods and services are the following:

- quotations conducted by price collectors in selected sales outlets, in selected price survey regions;
- price lists, regulations and decisions applicable as the uniform prices ruling throughout the country or its part;
- collected prices of goods and services purchased online.

The surveys on retail prices are developed regarding the ongoing changes on the market as well new technical possibilities for data collection.

3.3. Index of services production (ISP)

The first methodological works related to the index of services production (ISP) begun in 2010. Their purpose was to establish the methodology for compilation of ISP which enables to assess the development of services sector in national economy.

The undertaken works comprised:

- review of international methodological recommendations for compilation of ISP, among this participation in the works of the Voorburg Group on services statistics,
- review of methods and experiences of other countries in obtaining the data necessary for compilation of ISP regarding the characteristics of each services industries,

- analysis of accessible data sources, including the administrative data on turnover covered by the IT system of the Ministry of Finance on value added tax (VAT).

In 2014 data from the VAT system were analyzed in order to assess the possibility for their use as an alternative data source on quarterly turnover. In the VAT system data are stored as the aggregated values from the beginning of year and there are no information on any correction introduced into VAT declarations. As a result there is no possibility for estimating data for given reference quarter. In 2015 additional analysis of unit data were undertaken but they did not resulted in any useful conclusions. To sum up, the VAT system is suitable data source for turnover but only for annual data.

Parallel to the methodological works other development works were undertaken within the grant agreement titled *Development of a methodological and statistical basis for a new indicator of services production*. It was realized with the co-financing of the European Commission. The project was carried out in the period from 1st November, 2014 till 30th October, 2015. The main objective of whole action was to develop the methodology for compilation of the services production index (ISP) using statistical methods which enable to obtain data necessary for calculation of index. The results gained within the undertaken project areas constitute the input for a new index of services production.

As a main result of action the algorithms for compiling the trade deflators as well as the ISP were established. Moreover, for years 2010-2013 data series on:

- trade deflators and trade volume indicators for wholesale trade (division 46) and trade and repair of motor vehicles (division 45) at division and group level of the NACE Rev.2,
- total trade deflator and a total volume of trade (Section G),
- indices for services production (volume indicators) for services industries classified by NACE Rev.2 into: *Wholesale and retail trade; repair of motor vehicles and motorcycles* (Section G), *Transportation and storage* (Section H), *Accommodation and food service activities* (Section I), *Information and communication* (Section J), *Real estate activities* (Section L), *Professional, scientific and technical activities (with the except forion of group 701 Activities of head offices, division 72 Scientific research and development and division 75 Veterinary activities)* (Section M) and *Administrative and support service activities* (Section N).

were calculated experimentally.

After completing the works foreseen under the grant agreement two data series on ISP were compiled. One of them was calculated with the use of turnover from statistical surveys and

the second one with the use of VAT data. The data series were compared to each other. Finally, the statistical surveys are recommended as the main data source for turnover which is used for the compilation of monthly ISP. As a result the algorithm for compilation of ISP was established. It is planned that in 2016 the developed methodologies for compilation of ISP will be presented to the *Methodological Commission* (advisory and opinion body of the President of CSO). After having the opinion and comments of the *Commission* the described methodologies are subject to be modified. In meantime, it is planned to calculate experimentally data sets on deflators and volume indicators for trade and services industries for period 2014-2015.

3.4. Other surveys with information on services sector

3.4.1. Transport statistics

As mentioned in part 3.3. *The development of services statistics* the coverage for data on services industries is differentiated. For example, in case of transport activities data on turnover as well as producer prices was available in 1990s while for business services statistics on producer prices was launched in XXIst century.

In Polish official statistics there are a lot of questionnaires which collect data on various aspects of transport industries. They mainly concern quality data as presented below.

Table 7. The questionnaires on transport and telecommunication industries

No.	Symbol	Title of form	Frequency	First reference period
1.	TK-1	Report on operating activities in railway transport	monthly	before 1990
2.	TK-2	Report on railway transport of goods	quarterly	before 1990
3.	TK-2a	Report on international railway transport of goods	yearly	before 1990
4.	TK-3	Report on railway transport of passengers	yearly	before 1990
5.	TK-3a	Report on international railway transport of passengers	yearly	before 1990
6.	TK-4	Report on operating of railway rolling stock	yearly	before 1990
7.	TK-5	Sprawozdanie o railway network	yearly	before 1990
8.	TK-6	Report on railway rolling stock	yearly	before 1990
9.	TK-7	Report on railway accidents	yearly	from 2004
10.	MT-1	Table with data on activity of metro	yearly	from 1996
11.	SG-01	Municipal statistics: local government and transport	yearly	from 2003
12.	ST-P	Poviats statistics: local government and transport	yearly	from 2003
13.	ST-W	Voivodship statistics: local government and transport	yearly	from 2003
14.	T-04	Report on road transport of goods for hire or reward	yearly	before 1990
15.	T-06	Report on passenger road transport	yearly	before 1990
16.	TD-E	Weekly questionnaire on road freight transport	weekly	from 2004
17.	ŁT-1kkp	Report on subscribers of public telecommunication network and fixed network	quarterly	from 2001
18.	ŁT-5	Report on technical measures for radio-difussion and subscribers of digital platforms	yearly	from 2001
19.	ŁT-6	Table with data on fixed network and Internet service	yearly	from 2001
20.	ŁT-7	Table with data on technical measures for radio-communication and subscribers of cable TV	yearly	from 2001
21.	ŁT-10	Report on public mobile telecommunication network	yearly	from 1995

No.	Symbol	Title of form	Frequency	First reference period
22.	ŁP-1	Table with data on technical measures for post and postal services on domestic and international market	yearly	before 1990
23.	ŁP-2	Table with data on postal services and the number of post offices	yearly	before 1990
24.	ŁP-3	Table with data on the number of subscribers of radio and TV	yearly	before 1990
25.	ŁP-4	Table with data on the number of postal operators, postal services and post offices except for Poczta Polska	yearly	From 2006
26.	LOT-1	Report on air transport	yearly	before 1990
27.	PL-1	Table with data on aircraft, passengers and freight traffic in airports	yearly	before 1990
28.	TL-1	Table with data on registered aircraft fleet in the Office of Aviation	yearly	before 1990
29.	PERN-1	Table with data on a length of pipelines and pumping the crude oil and petroleum products	yearly	before 1990
30.	T-02	Report on transport and communication services	yearly	before 1990

Nevertheless, data obtained within the above mentioned questionnaires do not comprise financial information (except T-02 questionnaire) they can be used for estimating, for example, data on turnover by product or any volume indicators for transport industries.

3.4.2. Trade statistics

The trade as well as catering are the next industries which are more detailed covered by statistics than other services. The questionnaires presented below are in use now and they are the results of modifications introduced in the space of many years. The first data collection took place in 1990s. The specified questionnaires collect data on financial aspect of activity but also obtain quality information.

Table 8. The questionnaires on trade and catering industries

No.	Symbol	Title of form	Frequency	First reference
1.	H-01/k	Quarterly survey on revenues in trade enterprises	quarterly	Q1 2000
2.	H-01a	Report on activity of shops, pharmacies and petrol stations.	yearly	before 1990
3.	H-01g	Report on network of catering establishments	yearly	before 1990
4.	H-01s	Report on retail sales and wholesale	yearly	before 1990
5.	H-01w	Report on the trade network	yearly	before 1990

The *Quarterly survey on revenues in trade enterprises* (H-01/k) collects data on revenues from sale of products, goods and materials from trade enterprises with the number of persons employed 9 and less. Data constitute supplement to data collected within the DG-1 questionnaire. It is approx. 1,9% sample.

The *Report on activity of shops, pharmacies and petrol stations* (H-01a) comprises enterprises which sale goods via network of shops, mainly retail shops and petroleum stations. Information collected concern retail sale by the class level of NACE Rev.2. It is approx. 25% sample.

The *Report on network of catering establishments* (H-01g) covers enterprises with the number of persons employed 10 and more which are classified into *Accommodation* (NACE Rev.2 55) and *Food and beverage service activities* (NACE Rev.2 56). The subjective scope comprises the number of establishments as well as the revenues from catering activity. It is full survey.

The *Report on retail sales and wholesale* (H-01s) collect data on retail sale as a total and with the breakdown into groups of commodities (consumer and non-consumer) as well as total wholesale. It covers enterprises with the number of persons employed 10 and more which are classified into Section G *Wholesale and retail trade; repair of motor vehicles and motorcycles*. It is approx. 30% sample survey.

The *Report on the trade network* (H-01w) collect information on the each outlet in the network with their characteristics (area, number of persons employed, retail sale). It covers enterprises with the number of persons employed 10 and more which run their activity via network of outlets. are classified into Section G *Wholesale and retail trade; repair of motor vehicles and motorcycles*. It is a full survey.

3.4.3 International trade in services

In 2009 the survey on international trade in services was launched by the Central Statistical Office with the cooperation with the National Bank of Poland (NBP). The purpose of survey is to compile information on international trade in services in compliance with the Regulation of Commission (EC) No 555/2012 adjusting Regulation (EC) 184/2005 of the European Parliament and Council concerning statistics on balance of payments, international trade in services and foreign direct investments as regards updating the requirements on data and definitions.

Before 2009 data on international trade was produced by the NBP on the base of system of banking payments. The enterprises which made cross-border payments exceeding set up thresholds were obliged to report banks some information on transactions which they concerned. However, due to increasing threshold the NBP was forced to seek for new data source.

The introduction of new survey into official statistics was proceeded with preparatory works. In 2008 the pilot study was conducted. It aimed at testing the questionnaire and let respondents to adjust their IT book-keeping systems to the requirements of survey. All works were done in close cooperation with staff from the NBP, especially the compilation of procedure for data control. For the reference year 2009 there were two simultaneous data sources: system of banking payments and statistical surveys. As a result it was possible to

control data and ensure the coherence between data. Moreover, the cooperation with the NBP effected positively the response rate of survey.

The regular survey is carried out on quarterly and annual basis. The questionnaires for both editions of survey are the same, only populations obliged to fill in them are different. The *Quarterly report on international trade in services* (DNU-K) is used for collecting quarterly data while the *Report on international trade in services* (DNU-R) for annual survey.

The objective scope of survey comprise all resident of national economy who participate in international trade in services, including the units of public financial sector. The quarterly questionnaire has to be filled in by residents whose revenues from providing the services to non-residents in the previous responding year or in current responding year exceeded the amount of 800 000 PLN or their expenditures on services purchased from non-residents exceeded in the previous responding year or in current responding year 1 mln PLN. Those residents who are not covered by quarterly survey are obliged to fill in the annual questionnaire.

Information collected within the surveys concerns the value of services provided to non-residents and purchased from non-residents as total and with the breakdown into various categories of services and geographical levels. The services are classified into different 12 main categories in compliance with the Extended Balance of Payments Services Classification (EBOPS2010).

Apart from data collected within the specified questionnaires other data sources are also used. These are data gained or compiled by the NBP, for example data on FISIM, insurance services or travels.

Information compiled within the survey on international trade in services confirm that in the present economic world the services sector does not know any national boundaries. The relationships between different national economies are more and more allured. Moreover, there are different modes of services supply which make the measurement of services sector more complicated.

3.4.4. Demand for services

Demand for services survey was introduced to official statistics in 2011 with the first reference year 2010. It is 5-years cycle survey which collects data from enterprises with the number of persons employed 50 and more which run industries classified by NACE Rev.2 into Sections: C *Manufacturing*, F *Construction*, G *Wholesale and retail trade; repair of motor vehicles and motorcycles*, H *Transportation and storage*, I *Accommodation and food*

service activities, J Information and communication (divisions 61-63), L Real estate activities, M Professional, scientific and technical activities, N Administrative and support service activities.

The respondents fill in the questionnaire *Report on the purchase of services* (PU) and report data on the value of services purchased outside their company as a total and with the breakdown into groups of services. Moreover, respondents provide quality data on the place of residence of their main services providers, the barriers perceived when they are interested in purchasing services or plans for purchase of services.

Before launching the regular survey the pilot study was conducted in order to assess the feasibility for collecting necessary data from respondents. The questionnaires were tested by respondents and let them prepare their IT book-keeping systems to new requirements.

Information produced within the survey allows to assess the size of demand for services. Moreover, it was possible to observe the relationships between various economy sectors as well as between services industries to each other.

4. What data on services sector can be found by data users?

As described in sections above, the official statistics has undertaken many works which aimed at developing services sector in recent years. What are their effects? What information on services sector could data users find in the statistical results in past and what data are available now?

When I started my journey with statistics (2002) there were a lot of useable data on services sector. However, the regular publication of results concerned only transport, communication and trade industries (Sections G, H and I by NACE Rev.1.1) while for other services industries the methodological rules for data production have not been developed well yet.

Data on transport, communication and trade have been officially disseminated since the beginning of 1990s. There were separate publications devoted to each of transport and communication industries, for example: *Communication – activity results, Transport – activity results, Road transport in Poland, The maritime economy in Poland*. Information on trade industries were disseminated in the yearly publication *Internal market*. Moreover, information on transport, communication and trade were could be found in the contents of monthly publications: *Statistical Bulletin* and *Information on socio-economic situation of the country*.

The first references to other than transport, communication and trade services can be found in *Internal market* for the reference year 1995. It is possible to find some data which concerned gross domestic product, output, revenues from sale, intermediated consumption, employment or the number of units. Since reference year 2003 the scope of information presented in *Internal market* has been systematically developed. In *Internal market* 2003 quarterly indices of turnover for *Computer and related activities* (72 by NACE Rev.1.1), *Other business activities* (74 by NACE Rev.1.1) were presented. The consecutive edition of publication included the results of pilot studies on demand for services and business services. Since 2005 information which reflect the situation on services sector market, such as: net revenues, costs, number of persons employed, investment inputs, have become the regular element of publication.

Similarly in price statistics data on producer prices for transport, storage and communication are available in *Prices in the national economy in 2001* while indices on producer prices for business services were presented for the first time in edition for 2010.

The development of services statistics can be also seen in data series which are provided to Eurostat. In 2002 annual data on turnover were compiled and transmitted to Eurostat within the structural business statistics for the following services industries by the NACE Rev.1.1:

SECTION G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods – at the class level	
SECTION H Hotels and restaurants	
55.1+55.2	'Hotels' and 'Campsites and other provision of short-stay accommodation'
55.3+55.4+55.5	'Restaurants' and 'Bars' and 'Canteens and catering'
SECTION I Transport, storage and communication	
60.1	Transport via railways
60.21+60.22+60.23	'Other land transport' without 'freight transport by road'
60.24	Freight transport by road
60.3	Transport via pipelines
61.1	Sea and coastal water transport
61.2	Inland water transport
62	Air transport
63.1+63.2+63.4	'Supporting and auxiliary transport activities' without 'activities of travel agencies and tour operators; tourist assistance activities nec'
63.3	'Activities of travel agencies and tour operators; tourist assistance activities nec'
64.1 1	National post activities
64.12	Courier activities other than national post activities
64.2	Telecommunications
SECTION J Financial intermediation	
65.1 1	Central banking
65.12	Other monetary intermediation-
66.01	Life insurance
66.03	Non-life insurance
SECTION K Real estate, renting and business activities	
70	Real estate activities
71.1+71.2	'Renting of automobiles' and 'renting of other transport equipment'
71.3	Renting of other machinery and equipment
71.4	Renting of personal and household goods nec

72	Computer-related activities
73	Research and development
74.11 + 74.12 + 74.14 + 74.15	'Legal activities' and 'accounting bookkeeping and auditing activities, tax consultancy' and 'business and management consultancy activities' and 'management activities of holding companies'
74.13	Market research and public opinion polling
74.2 + 74.3	'Architectural and engineering activities and related technical consultancy' and 'Technical testing and analysis'
74.4	Advertising
74.5	Labour recruitment and provision of personnel
74.6	Investigation and security activities
74.7	Industrial cleaning
74.8	Other business activities nec

After introducing new requirements since 2008 annual turnover has been compiled for the following industries at the class level by the NACE Rev.2 Sections: *G Wholesale and retail trade; repair of motor vehicles and motorcycles*, *H Transportation and storage*, *I Accommodation and food service activities*, *J Information and communication*, *K Financial and insurance activities*, *L Real estate activities*, *M Professional, scientific and technical activities*, *N Administrative and support service activities* and division 95 *Repair of computers and personal and household goods* from Section *S Other service activities*.

As for the short term statistics the development for both turnover as well as producer prices concerned mainly the services industries classified by NACE Rev.2 into: *J Information and communication*, *M Professional, scientific and technical activities*, *N Administrative and support service activities*.

For the reference year 2008 monthly data on turnover have been available at the group level for the country as a total while earlier they were produced at the division level. The reference year 2009 was the first when data were compiled at the group level for the country and for regions – voivodships. In producer prices statistics 2008 was also the first reference year for new survey which aimed at compiling indices for producer prices for business services.

5. Summary

- 1) As mentioned in the Section 3. 3. *The starting and development of services statistics* there are two parallel aspects of measurement of services sector in Poland. The first of them concerns data accessibility, the second one the development of methodology for compilation of data. Whereas data on services sector were available in official statistics over two decades ago the methods for compiling the statistical results as well as their analyses had not been developed well yet.
- 2) As a result, on one hand, it was necessary to develop the existing system of surveys on services industries in order to get data which enable to monitor the services sector. On

other hand, the methodology for compiling statistical results which characterize the services sector had to be elaborated and implemented in practice.

3) Based on experiences related with launching new surveys on services sector some recommendations can be made:

- The review of existing data sources which could be used as an alternative to statistical surveys should be conducted at the very beginning.
- Due to individual characteristics of services each of them requires separate approach. Therefore, prior to any other preparatory works related with programming new survey it is very helpful to interview respondents to get information on their activity or the way they run their book-keeping systems. It makes easier to design suitable questionnaires of survey. Moreover, respondents have possibility for preparing their IT book-keeping systems for new statistical requirements.
- Moreover, the pilot studies in order to assess the feasibility for collecting necessary data and test the questionnaires are strongly advised.

4) Based on experiences related with developing the existing surveys on services statistics the following recommendations can be made:

- All changes should be introduced separately in order to be able to assess their influence on the statistical results.
- Each modification in the sample of survey requires the analysis of minimal number of respondents in order to ensure the suitable quality of data at given level of detail.
- If data source is changed (example: *International trade in services* survey) it is advisable to get double data series for one or two reference periods in order to ensure the comparability of data.

5) Taking into account all efforts undertaken in the field of services statistics as well as the period in which all modifications were introduced it has to be stated that the development of services statistics is definitely the longterm and gradual process.

6) The suitable measurement of production in services sector is very challenging due to dynamic changes and new phenomenon taking place in economy. Therefore, the development of services statistics is ongoing and never-ending process.