

## **Sector paper**

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Mini-Presentation  
on SPPI  
for  
Renting and leasing of motor vehicles  
(ISIC 7710)  
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The main purpose of paper is to present practices and experiences of Statistics Poland when information on SPPI for enterprises classified into Renting and leasing of motor vehicles (ISIC 7710/NACE 77.11 and 77.12) are compiled.

## 1. Description and characteristics of the industry

### 1.1. Definition of the industry

According to the ISIC Rev. 4 the renting and leasing of motor vehicles is classified into the class 7710 Renting and leasing of motor vehicles (ISIC Rev.4) while in the NACE Rev.2 Renting and leasing of motor vehicles are classified into two classes:

- 77.11 Renting and leasing of cars and light motor vehicles
- 77.12 Renting and leasing of trucks

The class 77.11 Renting and leasing of cars and light motor vehicles by NACE Rev.2 includes renting and operational leasing of the following types of vehicles: passenger cars and other light motor vehicles (with a weight not exceeding 3,5 tons) without driver. This class excludes - renting or leasing of cars or light motor vehicles with driver.

The class 77.12 Renting and leasing of trucks by NACE Rev.2 includes renting and operational leasing of the following types of vehicles:

- trucks, utility trailers and heavy motor vehicles (with a weight exceeding 3,5 tons)
- recreational vehicles

This class excludes - renting or leasing of heavy goods vehicles or trucks with driver.

In **the Central Product Classification (CPC)**, the products of Renting and leasing of motor vehicles (ISIC 7710/NACE 77.11 and 77.12) are classified under class 7311 Leasing or rental services concerning transport equipment without operator in two subclasses:

- 73111 Leasing or rental services concerning cars and light vans without operator

This subclass includes:

- leasing, rental or hiring of cars, light vans etc. without driver

This subclass does not include:

- rental or hiring services concerning private cars with driver,
- financial leasing of cars

- 73112 Leasing or rental services concerning goods transport motor vehicles without operator

This subclass includes:

- leasing, rental or hiring services concerning motor vehicles without drivers, principally designed for the transport of goods (e.g., semi-trailers, tractors, lorries, freight vans and other utility vehicles)

This subclass does not include:

- renting or hiring services concerning commercial freight vehicles with driver,
- financial leasing of trucks etc.

While in **the Statistical Classification of Products by Activity (CPA2015)** the products of Rental and leasing services are classified as follows:

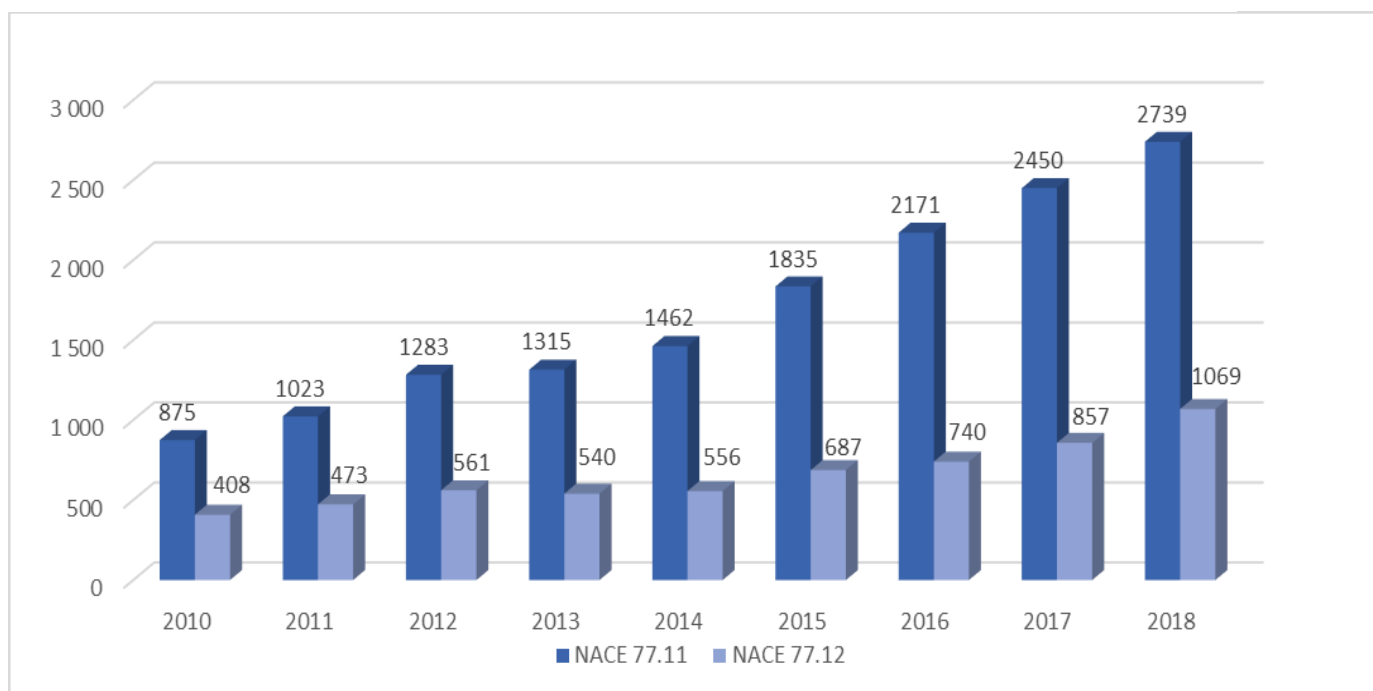
## Statistical Classification of Products by Activity (CPA)

<b>77</b>	<b>Rental and leasing services</b>	
77.1	Rental and leasing services of motor vehicles	
<b>77.11</b>	<b>Rental and leasing services of cars and light motor vehicles</b>	
77.11.1	Rental and leasing services of cars and light motor vehicles	
77.11.10	Rental and leasing services of cars and light motor vehicles	This subcategory includes: - rental and leasing services of passenger cars and other light motor vehicles, with a weight $\leq 3,5$ tons, without driver This subcategory excludes: - rental, leasing or hiring services of passenger cars with driver
<b>77.12</b>	<b>Rental and leasing services of trucks</b>	
77.12.1	Rental and leasing services of trucks	
77.12.11	Rental and leasing services of goods transport vehicles without driver	This subcategory includes: - rental, leasing or hiring services of motor vehicles, with a weight $> 3,5$ tons, without driver, principally designed for the transport of goods (e.g. semi-trailers, tractors, lorries, freight vans and other utility vehicles) This subcategory excludes: - rental or hiring services concerning commercial freight vehicles with driver
77.12.19	Rental and leasing services of other land transport equipment without driver	This subcategory includes: - rental, leasing or hiring services of other public-transport-type passenger vehicles such as buses without driver - rental, leasing or hiring services concerning other land transport equipment without operator - man- or animal-drawn passenger vehicle rental services without the services of a driver This subcategory excludes: - rental, leasing or hiring services of public-transport-type passenger vehicles with operator, - rental, leasing or hiring services of bicycles, skis, see - rental, leasing or hiring services concerning motorcycles, caravans and campers without drivers

## 1.2. Market conditions and constraints

In Poland in 2018 there were about 2739 of enterprises with their core activity classified into 77.11 Renting and leasing of cars and light motor vehicles by NACE Rev.2 and about 1069 of enterprises with their core activity classified into 77.12 Renting and leasing of trucks by NACE Rev.2. They constituted about 0,21% of total number of enterprises in total business economy<sup>1</sup>. In the same year they employed 8420 of persons into 77.11 and 3264 into 77.12 (with about 0,13% share in total business economy) and generated almost 7447072 ( in thous.) PLN into 77.11 and 2634401 ( in thous.) PLN into 77.12 (with about 0,21% share in total business economy).

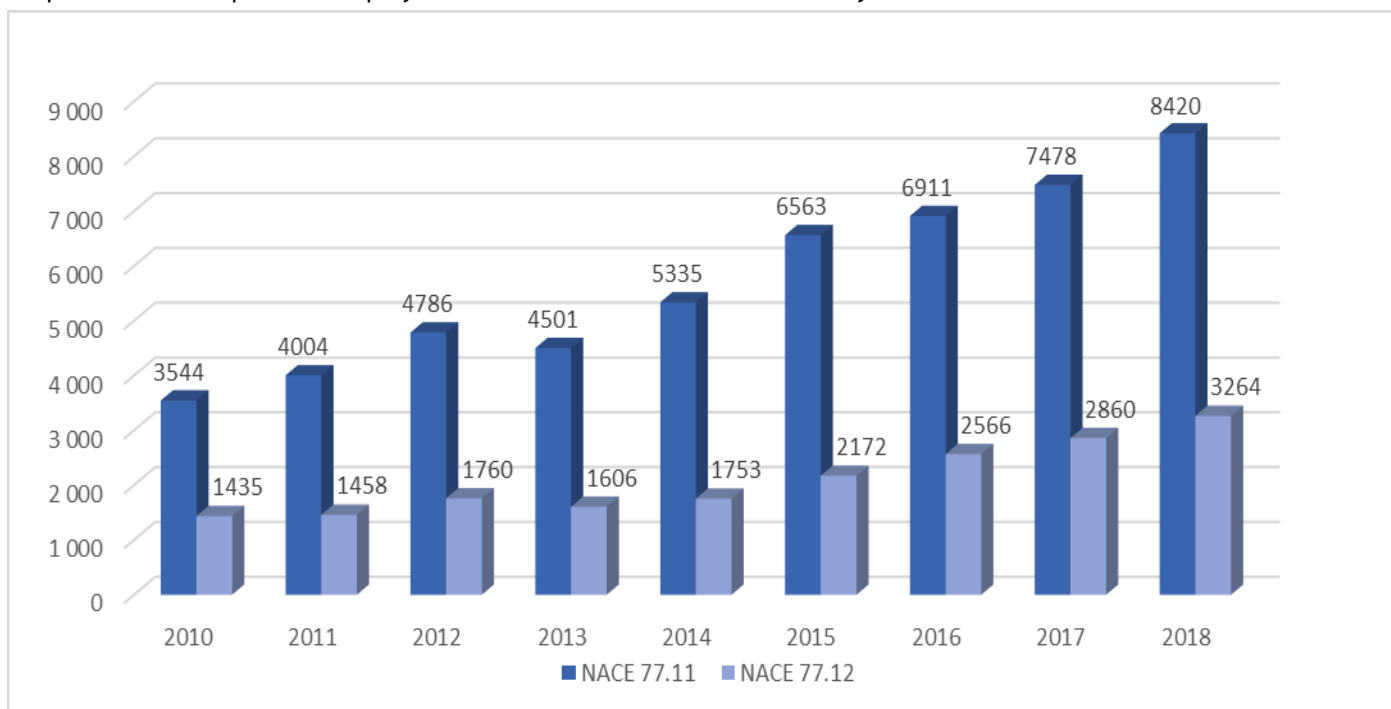
Graph 1 Number of enterprises with the core activity in NACE 77.11 and 77.12 in Poland in years 2010-2018



Source: Statistics Poland, Structural Business Statistics

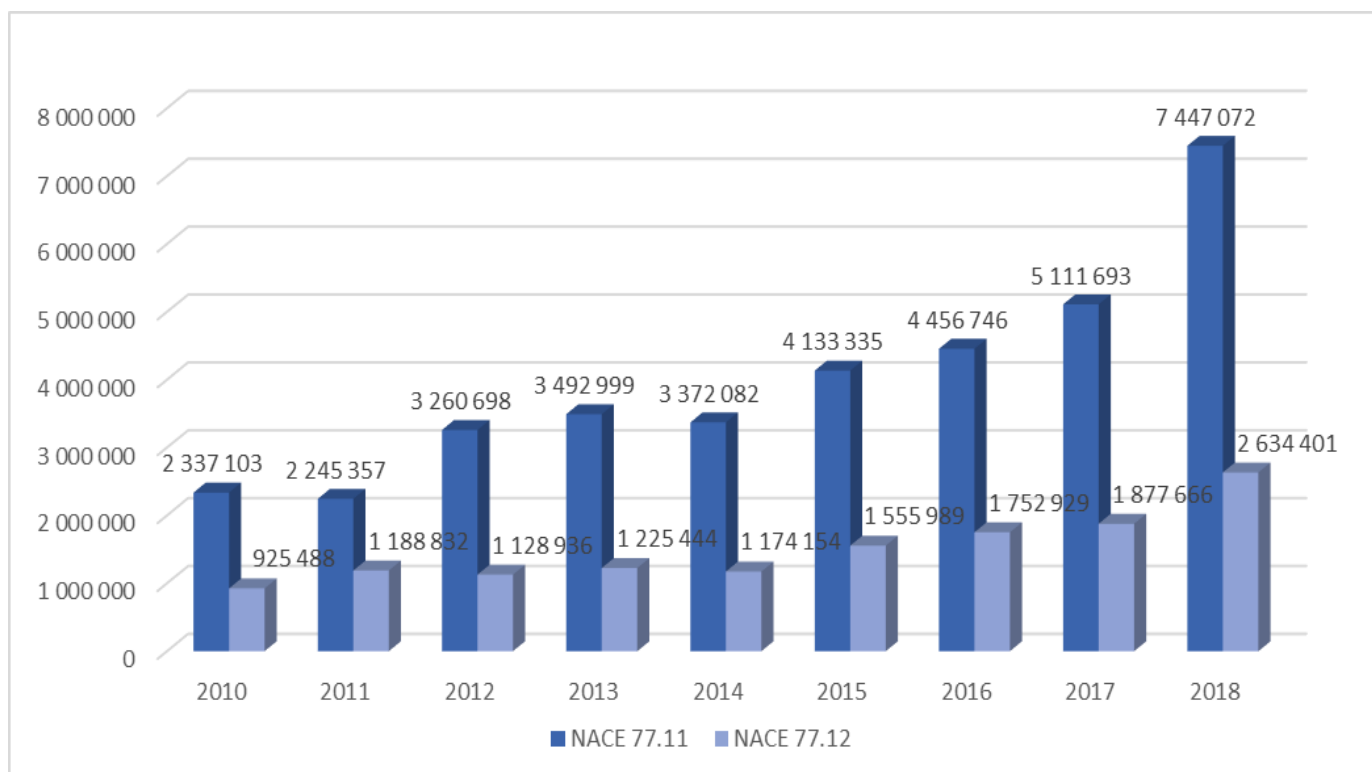
<sup>1</sup> Total business economy, except financial and insurance activities (Sections B-N, except Section K by NACE Rev.2);

Graph 2 Number of persons employed in NACE 77.11 and 77.12 in Poland in years 2010-2018



Source: Statistics Poland, Structural Business Statistics

Graph 3 Turnover in NACE 77.11 and 77.12 in Poland in years 2010- 2018 (in thous. PLN)



Source: Statistics Poland, Structural Business Statistics

In period 2010-2018 the number of enterprises engaged in (ISIC 7710/NACE 77.11 and 77.12) increased by above 213% (77.11 NACE) and 162% (77.12 NACE) In the same time the number of persons employed in these enterprises rose by 138% (77.11 NACE) and 127% (77.12 NACE) while the value of generated turnover – by more than 219% (77.11 NACE) and 184% (77.12 NACE).

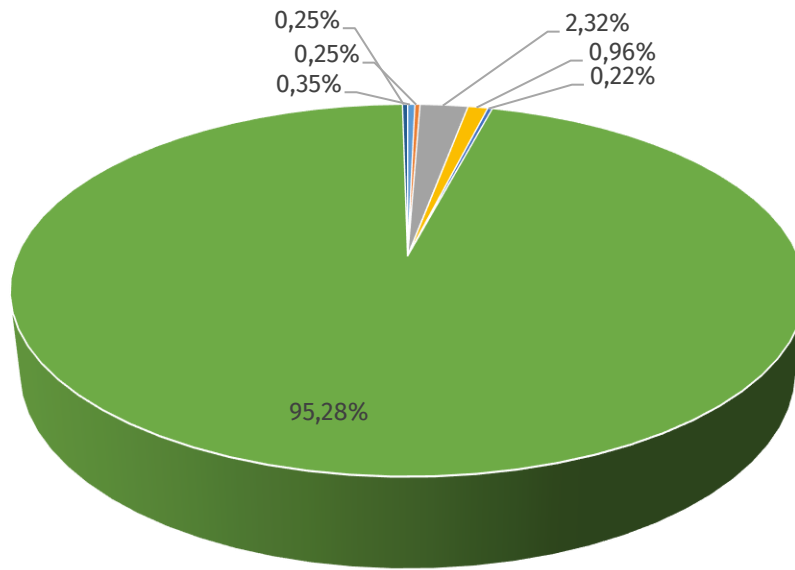
The population of enterprises classified to Renting and leasing of motor vehicles (ISIC 7710/NACE 77.11 and 77.12) is dominated by units with the number of persons employed 9 and less. In 2018 they constituted 97.2% into NACE 77.11 and 95% into NACE 77.12 of total number of enterprises into NACE 77.11 and into NACE 77.12. Simultaneously, those entities generated about 29.3% NACE 77.11 and 37.4% NACE 77.12 of turnover and employed 51% NACE 77.11 and 53% NACE 77.12 of persons employed in that industry into NACE 77.11 and into NACE 77.12.

The enterprises with the number of persons employed 10 and more are dominated by medium size enterprises (with the number of person employed 10-49) 54 units in NACE 77.11 and 46 units in NACE 77.12. Simultaneously, those entities generated about 10,67% NACE 77.11 and 31,49% NACE 77.12 of turnover and employed 51% NACE 77.11 and 26% NACE 77.12 of persons employed in that industry into NACE 77.11 and into NACE 77.12.

Basing on information collected from enterprises classified into NACE 77.11 (in compliance with their core activity) it was established in 2018 about 95% of their turnover came from the sale of services renting and leasing of cars and light motor vehicles. About 2% of turnover resulted from the wholesale and retail trade and repair of motor vehicles and motorcycle while about 1% of turnover was generated by retail trade, except of motor vehicles and motorcycles.

Basing on information collected from enterprises classified into 77.12 (in compliance with their core activity) it was established in 2018 about 70% of their turnover came from the sale of services renting and leasing of trucks. About 12% of turnover resulted from the sale of services classified into 29.10 Manufacture of motor vehicles and 29.20 Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers cars and light motor vehicles. While about 6% of turnover was generated by the wholesale and retail trade and repair of motor vehicles and motorcycle retail sale of second-hand goods in stores, about 2 % in 46 Wholesale trade, except of motor vehicles and motorcycles and 1% in 47 Retail trade, except of motor vehicles and motorcycles.

Graph 4 Structure of turnover in NACE 77.11 for enterprises in Poland in 2018 in %

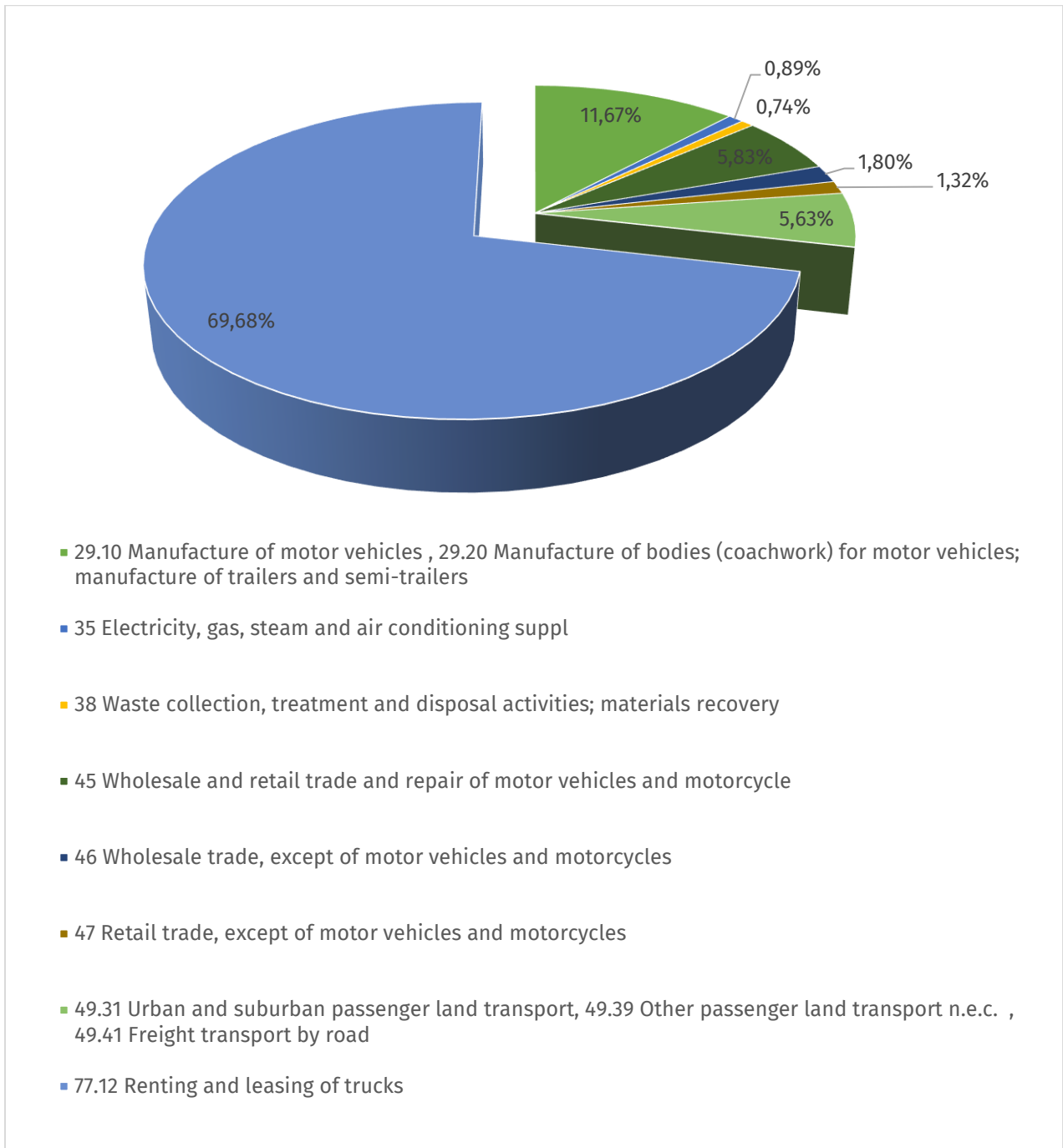


- 27 Manufacture of electrical equipment
- 33 Repair and installation of machinery and equipment
- 45 Wholesale and retail trade and repair of motor vehicles and motorcycle
- 47 Retail trade, except of motor vehicles and motorcycles
- 49.31 Urban and suburban passenger land transport, 49.39 Other passenger land transport n.e.c. , 49.41 Freight transport by road
- 77.11 Renting and leasing of cars and light motor vehicle
- 78 Employment activities

Source: own calculations on the basis of Annual survey of business activity of enterprises



Graph 5 Structure of turnover in NACE 77.12 for enterprises in Poland in 2018 in %



Source: own calculations on the basis of Annual survey of business activity of enterprises

### 1.3. Specific characteristics of the renting and leasing of motor vehicles market

The following characteristics are taken into account when the producer prices for services related to renting and leasing of cars activities are surveyed:

- There is a dynamic development of the rental and leasing market in Poland. However, renting of cars is still less popular in Poland than in Western European countries, especially by individual clients;
- On the Polish market there are branches of large international car rental companies. Smaller domestic car rental companies often only operate on the local market;
- The importance of long-term car rental is growing as an alternative to financial purchase or leasing;
- The provision of car rental services via internet is becoming increasingly popular.
- The market for car hire intermediaries (brokers) is developing, offering online choice of service provider by comparing offers;
- The renting and leasing of cars services are becoming increasingly complex (including service and maintenance of cars, administrative services);
- The car rental price is most influenced by the car class, the limit of kilometers, the rental time.

## 2. Measurement of SPPI

### 2.1. General framework

The Producer Price Index for Services (SPPI) is one of variables compiled in the European Statistical System (ESS) within the short-term statistics (output prices – D310). In compliance with the requirements resulted from STS Regulation data on SPPI are compiled quarterly for specified groupings by NACE Rev.2 and transmitted to Eurostat within 90 days after ending the reference quarter. The SPPI is not obligatory for *Rental and leasing activities* (will be obligatory according to FRIBS regulation (Framework Regulation in Business Statistics) from 2021), but Poland compiled index for NACE 77 since 2015 and transmitted to Eurostat on voluntary basis. *Renting and leasing of motor vehicles* (ISIC 77.10) consist of (according to NACE) *Rental and leasing of cars and light motor vehicles* (NACE 77.11) and *Rental and leasing of trucks* (NACE 77.12).

Data on SPPI are compiled at the NACE 77 *Rental and leasing activities*.

In Poland the survey on SPPI was launched in 2008 in order to meet to the requirements resulted from the membership in the European Union. *Rental and leasing activities* were not surveyed in the first years of the survey as the activities were not covered by the EU regulation. NACE 77 are surveyed in Poland since 2015.

In order to follow newly emerging needs of data users, new FRIBS requirements and to improve data quality in years 2014 - 2015 Statistics Poland conducted pilot study. The purpose of pilot study was to obtain from the selected group of enterprises information on the characteristics of services they provide, pricing mechanisms applied by enterprises as well as accessibility of data necessary for compilation of SPPI.

The pilot study comprised above 1 100 enterprises with the number of persons employed 10 and more which run selected business services industries, within this the *Renting and leasing of motor vehicles 77.1* as a sub-group of *Rental and leasing activities* (NACE 77). There were 29 enterprises with the core activity in NACE 77.1 (16 in 7711 and 13 in 7712) selected for pilot study but 10 responded (7 in 7711 and 3 in 7712). Information obtained from enterprises enabled to better understand the way the market of renting and leasing of motor vehicles operates. In turn it allowed to establish the pricing mechanisms applied by enterprises.

As a result the new tool for data collection has been introduced since the first quarter of 2018. Moreover, the procedure for selecting the sample frame as well as the procedure for index estimation has been changed. It will enable to collect more detailed data on level prices for services and improve data quality.

Data on SPPI are used for deflating various nominal values in current prices, for example macroeconomic variables, turnover, revenues from the sale of products, etc. They are widely used in the national accounts statistics and business statistics. Moreover, data on SPPI are used when analyses of inflation are conducted.

SPPI in Poland is B-to-All survey. The index covers services provided to customers that are enterprises or persons that represent enterprises as well as consumers. All data are based on survey, administrative data are not used.

## 2.2. Measurement issues

Nowadays, in Poland the SPPI is compiled and disseminated at the industry level, however, data on prices are collected from respondents at the product level. The SPPI is to reflect the changes in levels of prices for services received by their producers.

Basing on SPPI survey the following challenges and issues have been identified which should be considered more detailed when the SPPI for *Renting and leasing of motor vehicles* NACE 77.1 is compiled:

- The modernized C-06 questionnaire will enable to develop the SPPI with the breakdown into type and residence of client. When time series for new data are long enough Statistics Poland is going to start to compile and disseminate the SPPI with additional breakdowns. It is particularly important due to the dynamic growth in this kind of services. Prior to this more methodological and experimental works are needed. The suitable data sources for weights system should be identified and tested.
- When any changes to methodology of the SPPI survey are introduced it should be regarded that the population of enterprises with their primary activity classified in 77.1 is dominated by the units with the number of persons employed 9 and less. They generate over 31 % of total turnover in NACE 77.1.
- Enterprises with secondary activity in NACE 77.1. have a significant role in survey. In the sample for 2020 the *Renting and leasing of motor vehicles* NACE 77.1 comprised 38 enterprises with the number of persons employed 10 and more with primary activity classified in 77.1, and 18 with secondary activity in 77.1

## 2.3. Description of pricing methods and criteria for choosing the method

The survey on SPPI comprises enterprises with the number of persons employed 10 and more which run, within both the primary as well as secondary activity, the selected services industries.

The enterprises are selected purposively basing on information included in the business register (the Base of Statistical Units – BJS) as well as data collected within the business statistics, especially within the questionnaire *Annual survey on enterprises* (SP)<sup>2</sup>

The sample frame is established separately for each of services industry covered by the SPPI survey on the base of information collected within the above mentioned questionnaires as well as the business register. However, information on the revenues from the sale of products, goods and materials broken down by the kind of activity at the 4-digit class level of NACE which are collected within the SP questionnaire, are particularly useful. Basing on this information it is possible to establish the core and secondary activity of enterprises.

As a result starting from the first quarter of 2018 in the sample frame there are two groups of enterprises. The first one includes the enterprises with their core activity classified into NACE 77.1 and the second one enterprises with other core activities which report the significant share of revenues from the sale of renting and leasing of motor vehicles services (CPA 77.1).

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<sup>2</sup> The SP questionnaire is filled in by enterprises with the number of persons employed 10 and more. 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 information on turnover with the breakdown into the kind of activity at the 4-digit class level of NACE. These data are used for selecting the sample frame.

In case of *Renting and leasing of motor vehicles* (NACE 77.1) the SPPI survey for 2019 reference year comprised 58 enterprises, within this with primary activity in *Rental and leasing of cars and light motor vehicles* (NACE 77.11) - 25, in *Rental and leasing of trucks* (NACE 77.12) - 15 and enterprises with secondary activity in 77.10 - 18. The sample included 26 units with the number of person employed 50 and more and 32 units with the number of person employed between 10 and 49.

For 2020 reference year survey comprised 56 enterprises (in primary activity in *Rental and leasing of cars and light motor vehicles* (NACE 77.11) - 24, in *Rental and leasing of trucks* (NACE 77.12) - 14 and enterprises with secondary activity in 77.1 - 18. The sample included 29 units with the number of person employed 50 and more and 27 with the number of person employed between 10 and 49. The enterprise selected for survey establishes at least one services representative. However, the respondents with the number of persons employed 50 and more are obliged to provide information on at least 3 services representatives.

Data on services producer prices are collected by the use of the C-06 questionnaire which is filled in by respondents electronically by statistical website. When respondents choose their services representatives firstly they select 6-digit CPA grouping of services which should have the significant share in their turnover value. Then within such a grouping they establish the services representatives following the below recommendations:

- The service should be as representative as possible for the activity of given enterprise;
- The service should have significant share in the turnover value of 6-digit CPA grouping;
- The service should be rendered the most often, repeatable and foreseen to be produced also in future;
- The service should individual and named;
- The dynamic of price should be as much as possible characterizes the changes in price levels which take place in the grouping;

The selected representative service should be constant for consecutive reference periods. It means that in the consecutive quarters the prices should be reported for the same representative services which were selected when enterprise entered the survey. The change of representative service is possible only if the representative was not rendered any more or stopped to be representative for the given enterprise.

Till 2018 within the *Report on producer services prices* (C-06) enterprises provided information on the 6-digit CPA grouping, kind of price, unit of measure, then they described the services representative in open field in order to finally report the price level in the given and previous reference quarter as well as the reasons for their change. The number of filled-in fields and their type (open/ closed) were the same for all surveyed services industries. Moreover, the sample frame of survey covered only enterprises with their core activity. The secondary activity of enterprises was not regarded.

From the first reference quarter of 2018 data on SPPI are collected on the modernized questionnaire C-06. Currently used questionnaire consists of 22 modules. Each module is dedicated for separate services industry covered by the SPPI survey. In a given module there are as many sections as the pricing methods possible for given services industry. Comparing to the previous version of questionnaire the scope of collected information has been widened by data on type of clients and their residence. These information are necessary in order to compile the SPPI for export and the SPPI with the breakdown into the type of client. Moreover, description of services representatives has been expanded and generally, it depends on the kind of services observed. It was necessary due to the high fluctuations of level prices which were observed in case of some services industries. After analyzing price data collected within the old C-06 questionnaire it turned out that the price development very often results from the changes in quality of services rather than real prices development.

Information on SPPI for *Renting and leasing of motor vehicles* NACE 77.1 is collected within the module no 16 dedicated to *Rental and leasing activities* (without *Leasing of intellectual property and similar products*; 77 without 77.4) including *Rental and leasing of motor vehicles* (NACE 77.1), *Rental and leasing of personal and household goods* (NACE 77.2) and *Rental and leasing of other machinery, equipment and tangible*

goods (NACE 77.3). The respondents are obliged to fill in one or more modules depending on their primary and secondary activity.

The module no 16 consists of three sections:

- section no 1: direct use of prices of repeated services,
- section no 2: contract pricing method,
- section no 3: unit value method,

The variables collected when using the different methods:

- Direct use of prices of repeated services - unit of measure, type of customer, customer's location, type of price information, price in the reporting period, price in the previous period, reasons for price change, description of the service;
- Contract pricing - unit of measure, duration of the contract, customer name, type of customer, customer's location, price in the reporting period, price in the previous period, reasons for price change, description of the service;
- Unit value method - unit of measure, type of customer, customer's location, value of the sold service in the reporting period, value of the sold service in the previous period, amount of the sold service in the reporting period, amount of the sold service in the previous period; reasons for price change, description of the service;

After providing the 6-digit CPA code for the representative services respondent ticks the kind of services from the list of services. To each 6-digit CPA code the suitable names of services are assigned. Then the enterprise describes the scope of services and provides some additional information (see in Annex no 1). Each representative service has its unique number which is unchangeable during the survey. After that the responding unit fills in the suitable sections of questionnaire taking into account the applied pricing mechanism.

The Section no 1 is devoted for measuring the price development in representative services. As a result, in that section respondents are obliged to provide information on prices which are established using various pricing mechanisms. For *Renting and leasing of motor vehicles* (NACE 77.1) in that section respondent provides data necessary for the direct use of prices of repeated services method. The reported prices can come from one invoice, be calculated on the basis of few invoices, come from the list of prices or to be estimated by staff of enterprise.

The Section no 2 concerns the long-term contract pricing method. As representative service the contract signed with the given client for the period of at least 6 months should be taken. Moreover, selected contract should assume providing the same or very similar service for longer time and payments for services should be made at least once a quarter.

The Section no 3 is aimed at monitoring the prices which are calculated as quotient of value and volume of sale realized in given reference quarter within many transactions. That pricing methods can be applied if enterprise is able to provide information on the value of turnover and volume of homogenous services provided to clients.

Within the sections of module no 16 the respondents report the following information:

<b>TYPE OF INFORMATION</b>	<b>POSSIBLE OPTIONS OF ANSWER</b>	<b>DIRECT USE OF PRICES OF REPEATED SERVICES</b>	<b>CONTRACT PRICING METHOD</b>	<b>UNIT VALUE METHOD</b>
<b>UNIT OF MEASURE</b>	<i>selected from the list</i>	<b>X</b>	<b>X</b>	<b>X</b>
<b>TYPE OF CLIENT</b>	<i>enterprise, public body, individual client</i>	<b>X</b>	<b>X</b>	<b>X</b>
<b>RESIDENCE OF CLIENT</b>	<i>in country, outside country</i>	<b>X</b>	<b>X</b>	<b>X</b>
<b>CLIENT NAME</b>	<i>real name or symbol of the client</i>		<b>X</b>	
<b>DURATION OF THE CONTRACT</b>			<b>X</b>	
<b>TYPE OF PRICE</b>	<i>price from the representative transaction, average price from few comparable transactions, price from the list, price from the model estimated by respondent</i>	<b>X</b>		
<b>PRICE LEVELS</b>	<i>for the reporting and previous quarter</i>	<b>X</b>	<b>X</b>	
<b>VALUE OF THE SOLD SERVICE</b>	<i>for the reporting and previous quarter</i>			<b>X</b>
<b>AMOUNT OF THE SOLD SERVICE</b>	<i>for the reporting and previous quarter</i>			<b>X</b>
<b>REASONS FOR CHANGE IN PRICE LEVELS</b>	<i>selected from the list</i>	<b>X</b>	<b>X</b>	<b>X</b>
<b>DESCRIPTION OF THE SERVICE</b>	<i>the most important price-determining characteristics of the observed representatives according to the features specified for particular kind of services (CPA)</i>	<b>X</b>	<b>X</b>	<b>X</b>

Data collected from respondents via reporting website are validated automatically. After approving unit data provided by respondents they are downloaded to IT system of survey. In case of non-response data for given enterprise are imputed with the geometrical average of SPPIs compiled for other enterprises in given industry.

Out of 175 representative services in 77.1 reported within the questionnaire C-06 for reference quarters of 2019 most often (116 items) the direct use of prices of repeated services was indicated by respondent as the pricing method, followed by contract pricing method (56 items) and unit value method (3 items).

In order to calculate weights used for aggregation of indices data on turnover are applied. For compiling the ISIC/NACE class level indices the unit data collected within the above mentioned SP questionnaire are used. When the indices at the class level are aggregated into the higher ISIC/NACE levels the weights are calculated on the base of turnover which come from the structural business statistics. The system of weights is changed every 5 years.

The pricing methods currently applied in measuring the price development for *Renting and leasing of motor vehicles* (NACE 77.1) were selected on the basis of experiences gained within the SPPI survey as well as the results of pilot study conducted by Statistics Poland in years 2014-2015.

The results of pilot study showed that in case of *Renting and leasing of motor vehicles* (NACE 77.1) the main clients were: constant clients (58% answers "very often"), domestic clients (83% answers "very often"), private enterprises (66% answers "very often") and 60% answers "very often" for large companies. All respondents rendered repetitive services in the following quarters. Surveyed enterprises in 100% concluded long-term contracts with their clients. The enterprises in 77.1 which took part in the pilot study reported also that the most important factors which determine the price level were: the car category, limit of kilometers, rent or leasing duration.

In 2019, the main pricing methods used for *Renting and leasing of motor vehicles* (CPA 77.11 and 77.12) were: direct use of prices of repeated services, contract pricing method, unit value method. Type of main collected price were: transaction price, price from the price list, unit value. Main reasons for price changes were: changes in the currency exchange rates and market factors.

All representative services were services for domestic clients. 136 of them were services for enterprises, 37 for individual clients and 2 for public bodies. 118 representative services were classified in CPA 77.11.10 *Rental and leasing services of cars and light motor vehicles*, 18 in CPA 77.12.11 *Rental and leasing services of goods transport vehicles without driver* and 39 in CPA 73.12.19 *Rental and leasing services of other land transport equipment without driver*.

The main findings identified for measuring the SPPI in Rental and leasing services of motor vehicles (NACE 77.1)/(CPA 77.1) are presented in the table below:

The CPA code of service	Main pricing methods	Type of main collected price	Factors determining the services price (features specified for particular kind of services (CPA) in questionnaire)
77.11.10 Rental and leasing services of cars and light motor vehicles	section no 1: direct use of prices of repeated services;	<ul style="list-style-type: none"> <li>• transaction price</li> <li>• price from the price list</li> <li>• unit value</li> </ul>	Car category, mileage (limit of kilometers) rent or leasing duration, additional services included in the price (e.g. insurance), scope of the service/additional information related to the service
77.12.11 Rental and leasing services of goods transport vehicles without driver	section no 2: contract pricing method;		
77.12.19 Rental and leasing services of other land transport equipment without driver	section no 3: unit value methods		

The procedure of SPPI estimation consists of few stages:

- 1) Firstly, the basic indices for each reported services representatives are calculated with the previous quarter as the base reference period.
- 2) Then, the price indices at the enterprise level are compiled as a geometrical average of price indices for representatives reported by given responding unit. That average comprises only services representatives covered by surveyed industry. The price indices are calculated for all enterprises covered by sample frame established for given industry (also for enterprise with secondary activities).
- 3) After that the SPPI for the class ISIC/NACE level is estimated with the Laspeyres price index formula, i.e. weighted average of price indices at enterprise level. As the weights unit data on turnover at the class level kind of activity for given enterprise<sup>3</sup> are used. The index comprises indices for all enterprises in the sample frame established for given industry.
- 4) The next steps includes the aggregation of indices for higher level of ISIC/NACE levels. There is also Laspeyres price index formula used. For the group, division or section levels the calculations are carried out with the use of system of weights based on turnover values from the base year which come from the structural business statistics.

The SPPI is presented with the base of previous reference period = 100, the base year = 100 and the same reference period of previous year = 100.

### 3. Evaluation of comparability of price data with output data

The comparability of price data and output data has been analyzed regarding different aspects of statistical production: the use of SPPI data for deflating the output data and the process of data compilation.

<sup>3</sup> Data on turnover by the NACE level kind of activity can be a proxy for product level data.



In Poland the SPPI for *Renting and leasing of motor vehicles* (ISIC 7710/NACE 77.1) is not disseminated at that NACE level. However, it is calculated as a one stage of procedure described in point. 2.3. when the SPPI for *Rental and leasing activities* (ISIC/NACE 77) is compiled. As a result, in case of:

- annual data on turnover which are compiled at the ISIC/NACE class level, the SPPI at the group level is not enough;
- quarterly data on turnover which are produced at the division level the SPPI for NACE 77 Rental and leasing activities (ISIC/NACE 77) the SPPI at the division level is applied as a deflator;
- the needs of national account the SPPI for *Rental and leasing activities* (ISIC/NACE 77) is used in order to deflate the output.

However, according to the Framework Regulation in Business Statistics (FRIBS) there will be obligation to produce data on monthly index of services production (ISP). The SPPI is one of variables which is necessary to compile the ISP. On one hand, the need for compilation of SPPI on monthly basis arises. On the other hand, regarding the trends observed in prices development for business services activities, including *Rental and leasing activities* (ISIC/NACE 77), there is no need for higher than quarterly frequency of index. Therefore, in order to overcome constraint related to the lack of monthly SPPI the linear interpolation method is going to be applied. The timeliness of quarterly SPPI seems to be the next constraint put on the calculation of the ISP. The quarterly SPPI are available 60 days after ending the reference quarter and at the same 120 days after ending the reference month. It is planned that this problem will be sorted out by applying the extrapolation procedure.

Generally, regarding data sources which are used as the weights in order to compile the SPPI data on prices and data on turnover are fully coherent as for both variables data collected within the same statistical surveys for the needs of structural business statistics is used. Moreover, the same unit data are used when the sample frame for the SPPI survey is selected.

However, looking insight into the details of algorithm for compiling the SPPI for any of services industries it should be stated that data on SPPI at the class level, which are produced as a one stage of SPPI production for higher levels of NACE, are product level indices. While, due to the aggregation of class level SPPI to the group and division level indices when the turnover at industry level as the weights is applied the SPPI is compiled at the industry level. Simultaneously, data on turnover, regardless of the detail level, is compiled at the industry level. As a result, in case of data on output at the class level of NACE is not fully coherent with price data while for data at the group and division levels of NACE data are well aligned.

#### 4. Evaluation of measurement

Nowadays, Polish official statistics compiles data on turnover and producer prices for any services industries, among these also for *Renting and leasing of motor vehicles* (ISIC 7710/NACE 77.11 and 77.12), at the industry level.

After implementing the new tool for data collection as well as introducing new approach for selecting the sample the SPPI data are more accurate to measure the changes in price levels recorded by given service industry. It can be stated that nowadays the SPPI becomes closer to the concept of product level.

Despite the developments implemented in the services producers price statistics there are still many challenges Statistics Poland faces. Some of them concern very practical issues related to the procedure of data collection, such as sample selection, modification of questionnaires, but there are also conceptual issues which influence all domains of statistics, such as classification issues.