

# The 36<sup>th</sup> Voorburg Group Meeting

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Cross-cutting topic

International trade in services by mode of supply

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## I. Introduction

The main objective of this paper is to present the experiences of the Statistic Poland in compiling data on the international trade in services (export and import of services) by the modes of supply specified by the *General Agreement on Trade in Services (GATS)*:

- cross-border supply of services (1);
- consumption of services abroad (2);
- commercial presence of a company abroad (3);
- presence of natural persons abroad (4).

Information includes: description of approach to the concept of international supply of services by modes, data sources used to compile experimental datasets, procedures applied for estimating the values of services traded internationally by modes of supply, results of data compilation as well as the challenges, which are faced by the Statistics Poland.

The experiences of the Statistics Poland in compiling information on the international supply of services by modes of supply result from the projects titled *International trade in services* which have been performed under the grant agreements with the European Commission (no of agreements: 826274-2018-PL-B2773-ITS and 879398-2019-PL-B244476-ITS) as well as from participating in the works of the *Working Group on International Trade in Services statistics (ITSS)* or the Task Force on MoS.

Moreover, the Statistics Poland participates at present in the next project under the grant agreement with the European Commission - *EBS Regulation (EU) 2019/2152 Implementation: Methodology and new data requirements (previously FRIBS Regulation)* (no of agreement 101022360-2020-PL-B5640-EBS). Taking part in the above mentioned works enabled to develop the methodology for compiling data on the international supply of services by modes of supply step by step following the recommendations which also evolved in time.

## II. Concept of international supply of services by modes

The concept of international supply of services is the key issue, which should be regarded, when the works related with the development of methodology for data compilation are undertaken. The scope of *international supply of services* is defined in the *Manual on Statistics on International Trade in Services 2010 (MSITS 2010)*. While *international trade in services* statistics covers only the services transactions between residents and non-residents (i.e. as covered in the balance of payments), the *international supply of services* is broader concept, which covers both the value of services traded between residents and non-residents as well as the value of services supplied through the operations of foreign affiliates. In compliance with the balance of payment statistics those transactions comprise the trade between the residents of the same economy.

Taking into account to the above mentioned concept as well as the existing guidelines, the algorithm for compiling data on the international supply of services broken down by modes should regard the following issues:

- the *International Trade in Services* statistics as the main data source for the value of services traded between residents and non-residents (under modes 1, 2 and 4 as well as mode 3 for construction services);
- adjustments needed to exclude the value of goods from some transactions between residents and non-residents, for example maintenance and repair services n.i.e., travel, construction and government goods and services n.i.e.;
- additional data sources needed to break down the international trade in services transactions into modes 1, 2 and 4 (as well as mode 3 for construction);
- the *FATS* statistics as the main data source for the value of services supplied through the commercial presence estimated based on the foreign affiliates statistics (FATS) as a mode 3;
- supplementary information for the *FATS* statistics (on exports, services output for instance) needed to estimate the value of services supplied to residents of host economy (rather than total output);

In case of the Statistics Poland the algorithm for compiling data on the international supply of services by modes has been evolving in time as a result of different approaches applied when the consecutive projects were performed under the grant agreements with the European Commission.

When data on the international trade in services by modes of supply was compiled, the concept of international supply of services was interpreted very broadly. The Polish affiliates running the business activity abroad (outward FATS=OFATS) were treated as they would be the residents of Polish economy while the affiliates of foreign enterprises located in Poland (inward FATS=INFATS) as they would be non-residents of Polish economy.

As a result:

- The value of services sold by OFATS abroad (not only in the host country) was counted as the Polish export, while the value of services purchased by them abroad was counted as the Polish import.
- The value of services sold by IFATS sold in Poland was counted as the Polish import while the value of services purchased by them in Poland as the Polish export.
- Moreover, the value of services provided by IFATS to or purchased from the non-residents of Polish economy were excluded from the Polish export and import of services in the international trade in services statistics.

However, the approach presented in that paper has been modified as a result of the experiences obtained within the second edition of data compilation as well as participation in the works of the *Eurostat's Task Force on Modes of Supply*. It follows the recommendations included in *Manual on Statistics of International Trade in Services 2010* and in the draft of the *Modes of Supply Compiler's Guide* as well as the availability of data necessary for compiling data on the international supply of services by modes.

Component		EDITION		
		I	II	III
Export of services				
①	services provided to non-residents by residents of national economy	+	+	+
②	services provided to non-residents by IFATS enterprises located in Poland	-	na	na

③	services provided by IFATS enterprises located in Poland to their foreign affiliated enterprise and parent companies	na	-	na
④	distributive services performed by the trade enterprises (classified into Section G by NACE Rev. 2) as a result of foreign trade in goods	+	+	+
⑤	services provided to the residents of host country by OFATS enterprises located abroad	+	+	+
⑥	services purchased by IFATS enterprises located in Poland from residents of national economy	+	na	na
<b>Import of services</b>				
①	services purchased from non-residents by residents of national economy	+	+	+
②	services purchased from non-residents by IFATS enterprises located in Poland	-	na	na
③	services purchased by IFATS enterprises located in Poland from their foreign affiliated enterprise and parent companies	na	-	na
④	services provided to residents of national economy by IFATS enterprises located in Poland	+	+	+
⑤	services purchased by OFATS enterprises located abroad from non-residents	+	na	na

Finally, regarding the recommendations presented in the above mentioned documents and the availability of data on the international trade in services as well as on the activity of Polish affiliates running the business activity abroad (outward FATS=OFATS) and on the activity of affiliates of foreign enterprises located in Poland (inward FATS=INFATS), it was assumed that:

- the value of exported services comprises the value of:
  - ① services provided to non-residents under the MoS 1, 2 and 4;
  - ② distributive services provided to non-residents due to the export of goods;
  - ③ services provided to non-residents through the commercial presence (MoS 3);
- the value of imported services comprises the value of:
  - ① services purchased from non-residents under MoS 1, 2 and 4;
  - ② services provided to Polish residents through the commercial presence (MoS 3);

### III. Data sources

The data sources used in order to compile MoS data comprise:

- *International trade in services* survey conducted on DNU-K *Quarterly questionnaire on international trade in services* and DNU-R *Annual questionnaire on international trade in services*;

- *Annual business survey of enterprises* conducted on the SP questionnaire *Annual survey on enterprises* – since 2018 year data on the activity of foreign affiliated companies located in Poland (INFATS) has been collected together with data for SBS;
- *Activity of enterprises owning the shares in entities located abroad* conducted on the KZZ Questionnaire *on enterprises owning foreign entities* with data on the activity of Polish entities abroad (OFATS);
- *Foreign Trade in Goods Statistics*;
- *International trade in services by modes of supply* pilot survey;

**International trade in services survey (ITS survey)** is the regular survey run by Statistics Poland based on the Statistical Research Program of Polish Statistics and it is carried out by Statistics Poland in co-operation with Narodowy Bank Polski.

The subjective scope of survey covers transactions in which one side of transaction (of providing/acquiring services) has its head office/domicile in Poland, whereas the other side of the transaction has its head office/domicile abroad, is international organization or diplomatic unit (embassy, consulate) of foreign country. It is not important where a service was provided but the fact of occurrence of the transaction between a resident and a non-resident (e.g. cross-border trade in services, consumption of services abroad, provision of services by individuals in the territory of another country).

The survey is carried out with quarterly and annual frequency with the use of the on-line applications for data collection:

- DNU-K - *Quarterly questionnaire on international trade in services*,
- DNU-R - *Annual questionnaire on international trade in services*.

The scope of information collected within both applications is the same. It is divided into two parts: the first one (part A) concerns services and the second one (part B) – other transactions covered by the survey i.e. merchandising, remuneration of non-residents employees or rent of land and natural resources. In case of part A, data on transactions are collected for all services specified by Extended Balance of Payments Services Classification (EBOPS 2010) at the lowest level of detail and for partner countries in accordance with Commission Regulation (EU) No 555/2012 of 22 June 2012 amending Regulation (EC) No 184/2005 of the European Parliament and of the Council on Community statistics concerning balance of payments, international trade in services and foreign direct investment, as regards the update of data requirements and definitions.

The population frame includes all residents of the national economy who run the international trade in services regardless of their organizational structure or ownership form. The residents whose revenues from international trade in services exceeded in the previous reporting year or during the current reporting year the threshold of PLN 800 000 or their expenditures from those transactions - PLN 1 000 000 are obliged to provide quarterly data via DNU-K application. The entities which do not meet these thresholds are required to comply with annual reporting obligation.

The unit data compiled within the ITS survey constitutes the main data source on the value of services provided to non-residents and acquired from non-residents for the following modes of supply:

- cross-border supply of services (1),
- consumption of services abroad (2) and
- presence of natural persons abroad (4).

**Annual business survey of enterprises** is the regular survey run by Statistics Poland based on the Statistical Research Program of Polish Statistics. The survey is carried out on annual basis.

It comprises the population of enterprises which run the following activities 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*, 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* (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) and S *Other service activities* (divisions 95 and 96).

Data on the activity of non-financial enterprises, within those also on the foreign affiliated companies located in the territory of Poland, is collected on the SP questionnaire *Annual survey on enterprises*. It comprises the enterprises with the number of persons employed 10 and more. The subjective scope of survey comprises information included in the financial statements: balance sheet and the profits and losses account. There are also collected the following information: number of persons employed, type of book-keeping system, the share of foreign capital, changes in ownership, etc. One division of questionnaire is devoted to the activity of IFATS enterprises.

**Activity of enterprises owning the shares in entities located abroad** is the regular survey run by Statistics Poland based on the Statistical Research Program of Polish Statistics. The survey is carried out on annual basis.

The scope of survey comprises all types of entities of the national economy which run the activity in Poland and own shares, affiliates or other foreign entities abroad (excluding banks, financial enterprises and institution, etc.).

Data is collected using the KZZ *Questionnaire on enterprises owning foreign entities* with data on the activity of Polish entities abroad (OFATS). The scope of collected data comprises information on the owned shares or/and stocks of foreign enterprises as well as affiliates located abroad. Moreover, information concerns the activity of affiliates: number of affiliates, primary economic activity, number of persons employed, the country of OFATS residence, net revenues for the sale of products, materials and commodities, value of imported services, products, fixed assets etc.

**International trade in services by modes of supply pilot survey** was carried out within the project *International trade in services* which was implemented under the grant agreement with the Eurostat (No. 826274-2018-PL-B2773-ITS). The main objective of pilot survey was to collect directly from enterprises engaged into the international trade in services data on the shares of each mode of supply in the international trade in services.

The pilot survey was conducted as a voluntary and supplementary module *Modes of supply services in international trade in the 4<sup>th</sup> quarter, 2018 (MoS)* to the regular quarterly ITS survey. In order to achieve the expected goals of pilot survey the on-line DNU-K questionnaire was extended once by the a.m. optional supplementary module for the 4<sup>th</sup> quarter, 2018. The sample frame as well as timetable of pilot survey were completely coherent with the solutions applied in the regular ITS survey.

The subjective scope of pilot survey concerned information on the percentage share of the value of services provided or acquired by given mode of services supply (1, 2 or 4). Respondents participating in the regular ITS survey for the 4<sup>th</sup> quarter, 2018 were asked to fill in additional, voluntary MoS module. For each service item from Part A which they reported in DNU-K questionnaire they could provide information on: the mode of services supply and the percentage share of value of a given service provided/acquired by the specified modes of supply. Respondents could report supplementary data after completing the obligatory information on: a type of service, a partner country and value of the service.

The graphic version of the MoS module

Data collected within the regular DNU-K questionnaire						Data collected within the supplementary MoS module		
No of item	Service code	Service name	Partner country's ISO code	Partner country's name	Value in PLN	Mode 1	Mode 2	Mode 4
						in%		

There was the possibility to fill in one or more cells concerning modes of supply for each combination of a kind of service, partner country and value. The similar supplementary modules were implemented in both sides of transactions i.e. for services provided to non-residents and for services acquired from non-residents.

The response rate for regular survey on international trade in services for the 4<sup>th</sup> quarter, 2018 amounted to 90,4% while for pilot survey it was 23,3%. Therefore, the results of pilot survey could not be applied directly in order to estimate the value of services exported and imported by modes of supply. In the first step data collected for individuals was corrected taking into account the Eurostat MoS Model as well as information obtained from respondents. It was analyzed once again and compared within the *Eurostat MoS Model* assuming that in case of some types of services only one mode of supply is possible, for example gas transport services by pipeline. Then the grossing-up procedure was conducted. As a result the *adjusted Eurostat MoS Model* was developed separately for export and import of services.

#### IV. Procedure for compiling data on the export of services by MoS 1, 2, 3 and 4

The following procedures are applied in order to estimate the value of exported services by the GATS modes of supply:

- 1) Compiling data on value of services provided to non-residents under the MoS 1, 2 and 4 (component ① for export side)

The value of services is compiled based on the set of final unit data obtained within the international trade in services survey (ITS survey), i.e. data collected within the *DNU-K* and *DNU-R questionnaires* as well as some services items developed by NBP (FISIM, FOB, insurance services, travels).

In the *International Trade in Services* survey data is collected at the lowest level of BoP items and country of partner of transaction. As a result each record in the dataset is assigned with the corresponding services code by BoP 12 main items (as well as sub-items) and the geographical breakdown (Intra-EU and Extra-EU). Based on the unit dataset the aggregated dataset on the value of services provided to non-residents is compiled regarding the following:

BOP ITEM	BOP SUB-ITEM	BOP ITEM NAME	INTRA-EU	EXTRA-EU	WORD



2) Estimating value of distributive services provided to non-residents due to the export of goods (component ② for export side)

The value distributive services is estimated based on data on the value of exported goods and the trade margin. The following data sources are used:

- Net revenues from the sale of materials and commodities (*SP questionnaire - part II Balance and the profit and loss account – division 2 Profit and loss account*);
- Net revenues from the sale of materials and commodities for export (*SP questionnaire - part II Balance and the profit and loss account – division 2 Profit and loss account*);
- Purchase value of sold materials and commodities (*SP questionnaire - part II Balance and the profit and loss account – division 2 Profit and loss account*);
- Value of exported goods (*foreign trade in goods statistics*);

The value of goods exported by the trade enterprises (with their primary activity in Section G) was calculated at the NACE division level with the geographical breakdown (Intra-EU/Extra-EU) based on data from *foreign trade in goods statistics*;

The trade margins in % for trade enterprises engaged in export at the NACE divisions: 45, 46 and 47 were calculated:

- The enterprises with their primary activity in Section G by NACE Rev.2, which were engaged in export of goods, were established using information on the net revenues from the sale of materials and commodities for export;
- For trade enterprises – exporters - the value of trade margin at the NACE division level (45, 46 and 47) was calculated as a difference between the net revenues from the sale of materials and commodities and the purchase value of those materials and commodities based on data from *SP questionnaire* (regarding status of enterprise);
- The trade margin in % was calculated as the ratio of the value of trade margin to the value of the purchase value of those materials and commodities;

The value of distributive services was calculated by multiplying the value of exported goods by the trade margin in % at the NACE division level with the breakdown into geographical breakdown (Intra-EU/Extra-EU).

Then the values of distributive services calculated for each division and geographical breakdown were summed up as total value of distributive services.

3) Preparing data on value of services supplied through the commercial presence (mode 3) (component ③ of export side);

The value of services supplied to the residents of host country by the foreign entities of domestic enterprises located abroad (OFATS) is calculated based on the following data sources:

- Data collected within the *KZZ questionnaire* – for compiling the value of services provided to the residents of host country

OFATS UNIT ID	COUNTRY OF RESIDENCE OF OFATS	KIND OF ACTIVITY	SHARE OF RESPONDENT COMPANY IN THE CAPITAL OF OFATS	NET REVENUES FROM SALE OF PRODUCTS, MATERIALS AND COMMODITIES PERFORMED BY OFATS	EXPORT VALUE OF OFATS

- Data collected within the *SP questionnaire* – for compiling the trade margin and the share of products, materials and commodities in total net revenues from the sale of products, materials and commodities at the NACE division level;

UNIT ID	KIND OF ACTIVITY	NET REVENUES FROM SALE OF PRODUCTS	WITHIN THAT PRODUCTS FOR EXPORT	NET REVENUES FROM SALE OF MATERIALS AND COMMODITIES	WITHIN THAT MATERIALS FOR EXPORT	PURCHASED VALUE OF MATERIALS AND COMMODITIES

Moreover, it was assumed that:

- The value of services provided to the residents of host country (export of services by MoS 3) should regard the share of Polish company in the basic capital of OFATS enterprise located abroad;
- For OFATS enterprises with their primary activity classified as services activity other than trade (Section G by NACE Rev.2) - the value of products provided in the territory of host country should be taken as a proxy for the value of services provided to the residents of host country (export of services by MoS 3);
- For OFATS enterprises with their primary activity in Section G by NACE Rev.2 – the value of trade margin from the sale of materials and commodities in the territory of host country should be taken as a proxy for the value of services provided to the residents of host country (export of services by MoS 3);
- The type of service (by BoP items) should be established regarding the primary activity of OFATS enterprise regarding the NACE-EBOPS correspondence table;
- As a proxy for country of trade the country of residence of the OFATS enterprise should be taken;

The trade margin as a percentage share of total net revenues from the sale of products, materials and commodities at the NACE division level: 45, 46 and 47 was compiled based on data collected on the *SP questionnaire*. First the value of trade margin was calculated as a difference between the net revenues from the sale of materials and commodities and the purchase value of materials and commodities. Then the trade margin as a percentage share of total net revenues from the sale of products, materials and commodities was established.

The share of products as well as materials and commodities in total net revenues from the sale of products, materials and commodities at the NACE division level was compiled. As a result the following set of data was prepared.

DIVISION BY NACE	TRADE MARGIN IN %	SHARE OF NET REVENUES FROM THE SALE OF PRODUCTS IN TOTAL NET REVENUES FROM THE SALE OF PRODUCTS, MATERIALS AND COMMODITIES IN %	SHARE OF NET REVENUES FROM THE SALE OF MATERIALS AND COMMODITIES IN TOTAL NET REVENUES FROM THE SALE OF PRODUCTS, MATERIALS AND COMMODITIES IN %

Based on data collected on the *KZZ questionnaire* the unit dataset was prepared and, then, supplemented with information on the trade margin in % and the share of products as well as the share of materials and commodities in total net revenues from the sale of products, materials and commodities.

Then for each unit in the dataset the value of services provided to the residents of host country was calculated according to the following formula:

- For OFATS enterprises with their primary activity classified as services activity, but other than trade – Section G by NACE Rev.2

EXPORT OF SERVICES BY MOS3 = SHARE IN CAPITAL × (TOTAL NET REVENUES FROM SALE – EXPORT VALUE) × SHARE OF PRODUCTS IN TOTAL REVENUES

- For OFATS enterprises with their primary activity in Section G by NACE Rev.2

EXPORT OF SERVICES BY MOS3 = SHARE IN CAPITAL × (TOTAL NET REVENUES FROM SALE – EXPORT VALUE) × SHARE OF MATERIALS AND COMMODITIES IN TOTAL REVENUES × TRADE MARGIN

Where:

SHARE IN CAPITAL (in %) – the share of respondent company in the basic capital of OFATS enterprise located abroad;

TOTAL NET REVENUES FROM SALE – the net revenues from the sale of products, materials and commodities;

EXPORT VALUE – the value of export performed by the OFATS enterprise;

SHARE OF PRODUCTS IN TOTAL REVENUES (in %) – the share of net revenues from the sale of products in total net revenues from the sale of products, materials and commodities;

SHARE OF MATERIALS AND COMMODITIES IN TOTAL REVENUES (in %) – the share of net revenues from the sale of materials and commodities in total net revenues from the sale of products, materials and commodities;

TRADE MARGIN (in %) – the share of trade margin in total net revenues from the sale of materials and commodities.

The type of services (by BoP item) and the geographical breakdown (Intra-EU/ Extra-EU) were established based on the primary activity of OFATS enterprise and the host country in which OFATS enterprise is located. Then the aggregated value of services provided to the residents of host country (export of services by MoS 3) was compiled with the breakdown into the BoP items and geography.

#### 4) Compiling data on export of services by modes of supply 1, 2, 3 and 4

In the first step the value of services provided to non-residents compiled in point 1) is distributed between modes of supply using the structure developed under the pilot survey (the *adjusted Eurostat MoS Model*<sup>1</sup>).

Moreover, the value of distributive services is added to the mode 1 for the trade related services. Then, data on the value of services provided by Polish OFATS to the residents of host country where they are located (export of services by MoS 3) is included into the final set of data.

## V. Procedure for compiling data on the import of services by modes of supply 1, 2, 3 and 4

The following procedures are applied in order to estimate the value of imported services by the GATS modes of supply:

- 1) Compiling data on value of services purchased from non-residents under the MoS 1, 2 and 4 (component ① for import side)

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<sup>1</sup> See Annex no 1

The value of services is compiled based on the set of final unit data obtained within the international trade in services survey (ITS survey), i.e. data collected within the *DNU-K* and *DNU-R* questionnaires as well as some services items developed by NBP (FISIM, FOB, insurance services, travels).

In the *International Trade in Services* survey data is collected at the lowest level of BoP items and country of partner of transaction. As a result each record in the dataset is assigned with the corresponding services code by BoP 12 main items (as well as sub-items) and the geographical breakdown (Intra-EU and Extra-EU). Based on the unit dataset the aggregated dataset on the value of services purchased from non-residents is compiled regarding the following:

BOP ITEM	BOP SUB-ITEM	BOP ITEM NAME	INTRA-EU	EXTRA-EU	WORD

2) Preparing data on value of services provided to Polish residents by INFATS (MoS 3) (② component of import side)

Information on the value of services provided to Polish residents by INFATS is established using the data collected within the *SP questionnaire*;

INFATS UNIT ID	KIND OF ACTIVITY	NET REVENUES FROM SALE OF PRODUCTS	WITHIN THAT PRODUCTS FOR EXPORT	NET REVENUES FROM SALE OF MATERIALS AND COMMODITIES	WITHIN THAT MATERIALS FOR EXPORT	PURCHASED VALUE OF MATERIALS AND COMMODITIES

Moreover, it was assumed that:

- For INFATS enterprises with their primary activity classified as services activity other than trade (Section G by NACE Rev.2) - the value of products provided on the domestic market should be taken as a proxy for the value of services provided to Polish residents (import of services by MoS 3);
- For INFATS enterprises with their primary activity in Section G by NACE Rev.2 – the value of trade margin from the sale of materials and commodities on the domestic market should be taken as a proxy for the value of services provided to Polish residents (import of services by MoS 3);
- The type of service (by BoP items) should be established regarding the primary activity of INFATS enterprise regarding the NACE-EBOPS correspondence table;
- As a proxy for country of import the country of residence of the INFATS dominant enterprise should be taken;

For non-trade INFATS enterprises the value of products provided on the domestic market was calculated as a difference between the net revenues from the sale of products as total and for export.

For trade INFATS enterprises the value of trade margin from the sale of materials and commodities on the domestic market was calculated as follows:

- The value of trade margin as total was calculated at the NACE division level: 45, 46 and 47 as a difference between the net revenues from the sale of materials and commodities and the purchase value of materials and commodities.

- Then the trade margin (in %) as a percentage share of total net revenues from the sale of products, materials and commodities was established (at the NACE division level: 45, 46 and 47).
- The net revenues from the sale of materials and commodities on the domestic market was calculated as a difference between the net revenues as total and for export (at the NACE division level: 45, 46 and 47).
- Finally, the value of trade margin on the domestic market was calculated by multiplying the net revenues from the sale of materials and commodities on the domestic market by the trade margin in % at the NACE division level: 45, 46 and 47).

The type of services (by BoP item) and the geographical breakdown (Intra-EU/ Extra-EU) were established based on the primary activity of INFATS enterprise and the country in which dominant enterprise is located. Then the aggregated value of services provided to Polish residents (import of services by MoS 3) was compiled with the breakdown into the BoP items and the geography.

### 3) Compiling data on import of services by modes of supply 1, 2, 3 and 4

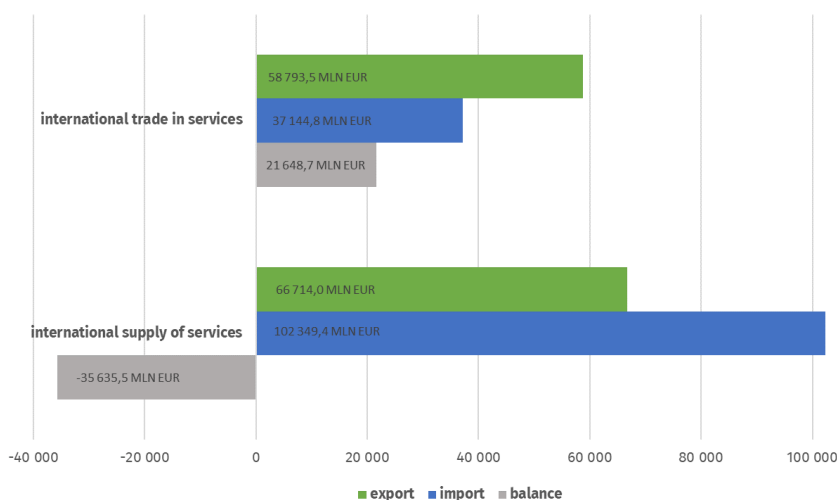
As the main data source used to distribute the value of services provided to non-residents under the *International Trade in Services* survey by modes of supply the *adjusted Eurostat MoS Model* is used.

The value of services purchased from non-residents compiled in point 1) were distributed between modes of supply using the structure developed in the *adjusted Eurostat MoS Model*<sup>2</sup>. Then, data on the value of services provided by INFATS to Polish residents (import of services by MoS 3) were included into the final dataset.

## VI. International trade in services by modes of supply – experimental results

Applying the algorithms which have been presented in the parts: IV. *Procedure for compiling data on the import of services by modes of supply 1, 2, 3 and 4* and V. *Procedure for compiling data on the import of services by modes of supply 1, 2, 3 and 4* the following results were reached.

Figure 1 Export, import and balance of trade for international trade in services and international supply of services in Poland in 2018



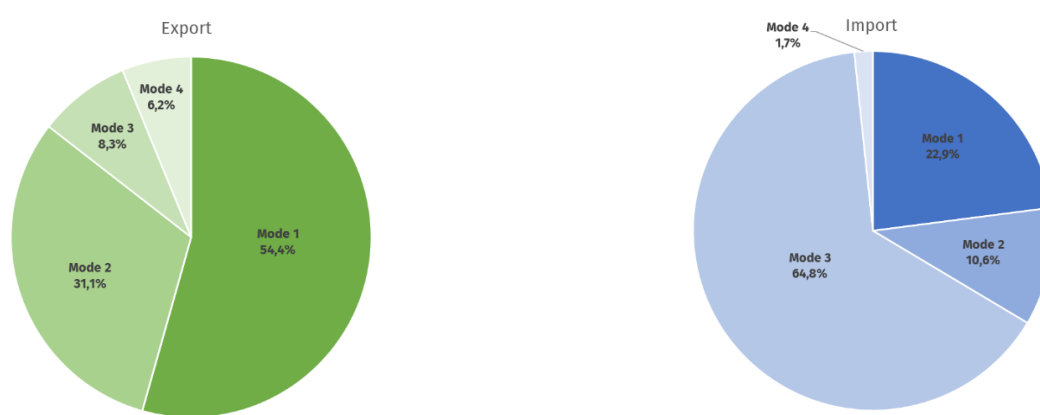
Source: own calculation based on datasets compiled under the grant agreement no 879398-2019-PL-B244476-ITS

<sup>2</sup> See Annex no 1

First of all, the approach presented in the concept of international supply of services changes the position of Poland on the world services market. When the value of services supplied by IFATS enterprises to the residents of Polish economy and the value of services supplied by Polish OFATS enterprises to the residents of their host economies are added to the value of exported and imported of services the balance of trade is reversed.

According to the international trade in services statistics in 2018 the balance of trade in services was amounted to 21,6 MLD EUR and Poland was the net services provider. After applying the approach covered by the international supply of services the balance of trade in services accounted for – 35,6 MLD EUR and, as a result, the position of Poland was changed to the net services purchaser.

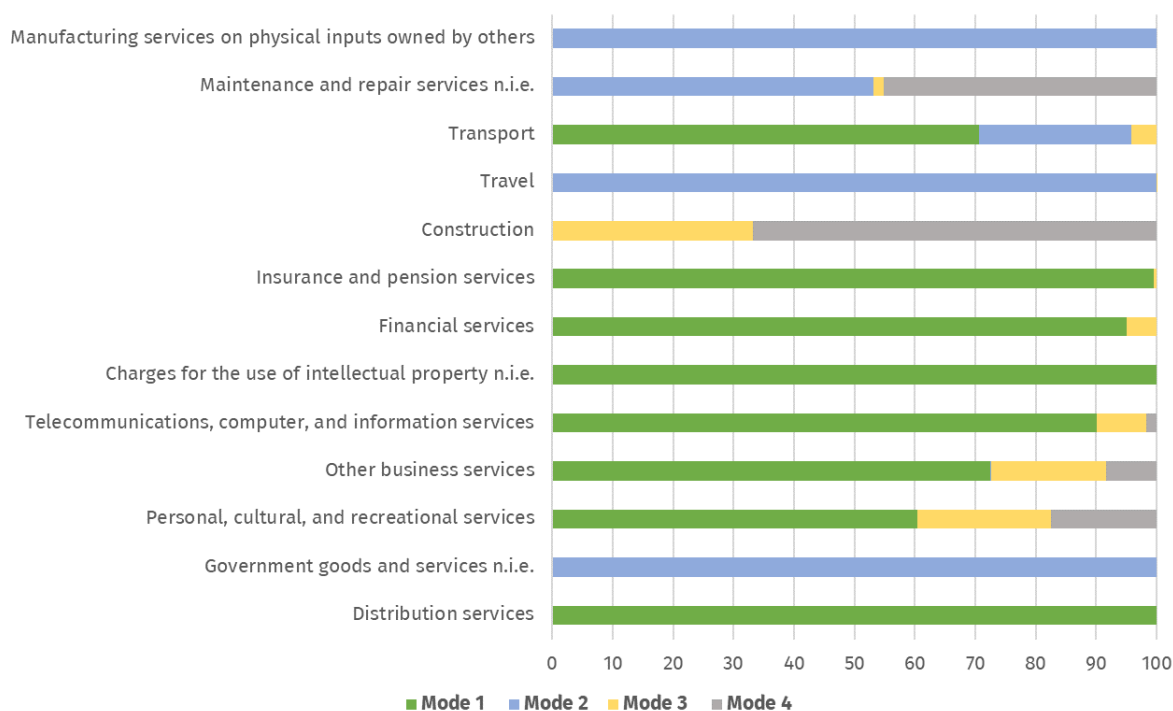
Figure 2 Structure of international trade in services by modes of supply in Poland in 2018



Source: own calculation based on datasets compiled under the grant agreement no 879398-2019-PL-B244476-ITS

Moreover, the obtained results show that in Poland the structures of export and import of services by modes of supply depend strongly on the side of transaction. In 2018 the dominant mode of supply in export the cross border trade (mode 1) was (above 54% of total value of exported services), whereas in import – the commercial presence (mode 3) (almost 65% of total value of imported services). The significant share of commercial presence in the import of services can be explained by the number IFATS enterprises located in Poland (about 26 000), especially in comparison to the number of Polish OFATS enterprises located abroad (about 2 000). The value of services supplied by Polish OFATS to the residents of host economy constitutes only a little above of 8% of total value of exported services.

Figure 3 Structure of export by modes of supply for 12 main EBOPS services items in 2018



Source: own calculation based on datasets compiled under the grant agreement no 879398-2019-PL-B244476-ITS

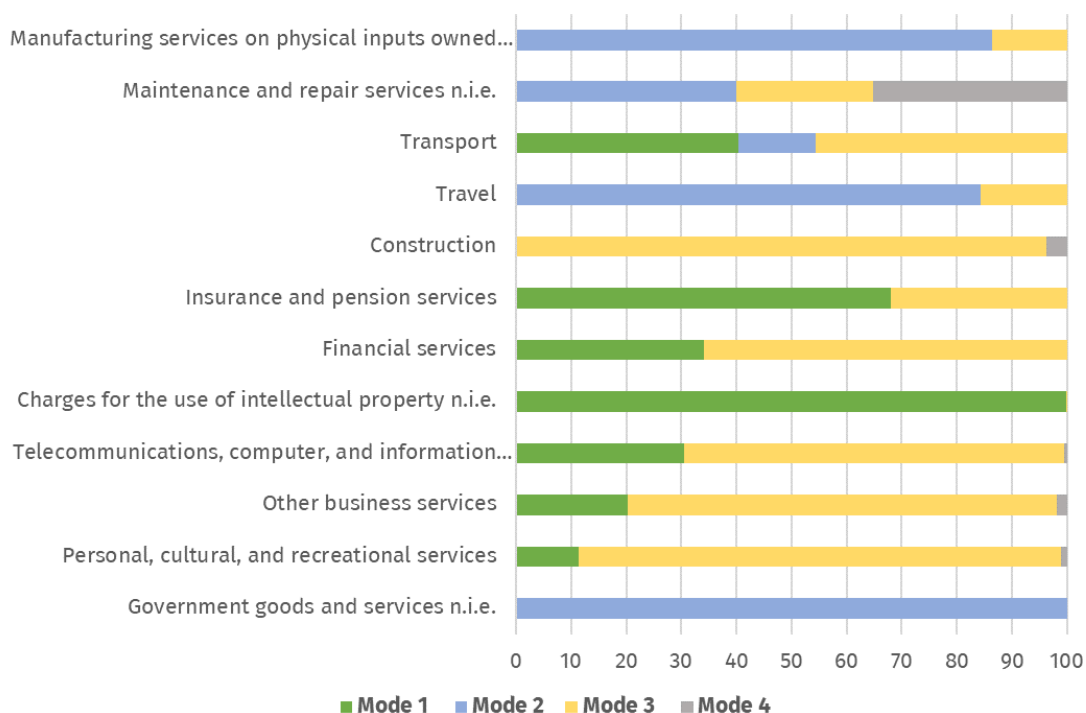
When looking into data on the export of various types of services the cross border trade is the only mode of supply in case of distributive services or charges for the use of intellectual property n.i.e. In 2018 the significant share of mode 1 was recorded also in the insurance and pension services (above 99% of export of these services), financial services (about 95% of export of these services), telecommunications, computer, and information services (above 90% of export of these services). A little lower share was observed in other business services (above 72%) or transport services (approx.. 70%).

The consumption abroad was recorded as the only mode of supply in case of manufacturing services on physical inputs owned by others, government goods and services n.i.e. and travel service. Approximately 53% of maintenance and repair services n.i.e. and about ¼ of transport services were also provided on the territory of Poland.

The biggest share of commercial presence was observed in the construction services (more than 33% of total value of export of these services) or the personal, cultural, and recreational services (about 22%) and other business services (almost 19%).

The biggest share of presence of natural persons abroad (mode 4) was recorded again in the construction services (almost 67% of export) and additionally in the maintenance and repair services n.i.e. (over 45% of export).

Figure 4 Structure of import by modes of supply for 12 main EBOPS services items in 2018



Source: own calculation based on datasets compiled under the grant agreement no 879398-2019-PL-B244476-ITS

The structure of import of services (as regards their value) by modes of supply differs from that one presented above for export of services. It is definitely more differentiated between various modes of supply. The highest share for cross border trade was recorded in case of charges for the use of intellectual property n.i.e. (almost 99,6% of total import of these services), followed by insurance and pension services (68%) and transport services (over 45%).

The consumption abroad was recorded as the only mode of supply in case of government goods and services n.i.e. whereas in case of the manufacturing services on physical inputs owned by others that mode of supply constituted above 86% of the manufacturing services on physical inputs owned by others and above 84% of travel services.

Above 96% of construction services, above 88% of personal, cultural, and recreational services and 78% of other business services was purchased by Polish residents from OFATS enterprises (by commercial presence). However, in case of the telecommunications, computer, and information services that share was accounted for 69% of import and in case of financial services – almost 66%.

The biggest share of presence of natural persons abroad (mode 4) at the level of approximately 35% was recorded again in the maintenance and repair services n.i.e.

## VII. Challenges

The procedures for compiling data on the international supply of services by modes, which have been described above, take into account most of methodological issues specified in the recommendations included in the guides. However, some additional works are still needed in order to improve the developed algorithm:



- 1) Excluding the value of goods from the services transaction recorded in the services account of balance of payment

It constitutes the promptest challenge that should be undertaken in order to fulfill the recommendations.

Regarding the scope of data collected within the ITS survey the value of goods is covered by the following services by EBOPS:

- maintenance and repair services n.i.e.,
- travel,
- construction and
- government goods and services n.i.e.;

In Poland, only in case of travel data, which is compiled by central bank, some revision for years 2010-2018 has recently been carried out. It consisted in transferring the transactions related with the purchase of commodities of high value from services trade into the goods trade. The revision concerned the commodities which have been purchased for own needs during the travel but used not only during the travel but also afterwards. Concerned are cars, boats, jewelry, computers etc. The correction was estimated based on information collected within the survey on the expenses beard by Polish residents during travels abroad as well as foreigner tourists in Poland.

For other items there is no possibility to estimate data on the value of goods, commodities or materials which could be covered by collected data.

- 2) Improving the method used for establishing the type of services supplied by commercial presence as well as their value

In the present method the type of service is established regarding the primary activity of IFATS or OFATS enterprise regarding the NACE-EBOPS correspondence table. However, for IFATS it is possible to compile more detailed information, because data on total revenues from the sale of products (goods and services), commodities and materials is available at the level of the NACE class (4-digit code). There is only the lack of information on the revenues from export at the same level of detail.

- 3) Developing the method for estimating the share of service supplied by each mode

The structure of export and import of services by modes of supply, which was used in data compilation, was compiled based on the MoS model developed by Eurostat as well as on the results of pilot survey conducted under the grant agreement no 826274-2018-PL-B2773-ITS. In order to estimate more precisely the shares of each mode of supply in the international supply of services such pilot survey should be carried out by the Statistics Poland as a regular and obligatory survey.

## Annex no 1 Adjusted Eurostat MoS Model

BOP Item	BOP sub-item	Bop item name	Mode type	EXPORT				IMPORT			
				Mode 1 (%)	Mode 2 (%)	Mode 3 (ITSS)	Mode 4 (%)	Mode 1 (%)	Mode 2 (%)	Mode 3 (ITSS)	Mode 4 (%)
SA	SA	Manufacturing services on physical inputs owned by others	2	0,0	100,0	0,0	0,0	0,0	100,0	0,0	0,0
SB	SB	Maintenance and repair services n.i.e.	2	0,0	54,0	0,0	46,0	0,0	53,2	0,0	46,8
SC	SC11	Sea transport; Passenger	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC12	Sea transport; Freight	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC13	Sea transport; Other than passenger and freight	2	0,0	100,0	0,0	0,0	0,0	100,0	0,0	0,0
SC	SC21	Air transport; Passenger	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC22	Air transport; Freight	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC23	Air transport; Other than passenger and freight	2	0,0	100,0	0,0	0,0	0,0	100,0	0,0	0,0
SC	SC31	Other modes of transport; Passenger	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC32	Other modes of transport; Freight	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC33	Other modes of transport; Other than passenger and freight	2	0,0	100,0	0,0	0,0	0,0	100,0	0,0	0,0
SC	SC3E	Pipeline transport	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC3F	Electricity transmission	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SC	SC3G	Other supporting and auxiliary transport services	2	0,0	100,0	0,0	0,0	0,0	100,0	0,0	0,0
SC	SC4	Postal and courier services	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SD	SD	Travel	2	0,0	100,0	0,0	0,0	0,0	100,0	0,0	0,0
SE	SE	Construction	3 ;4	0,0	0,0	10,0	90,0	0,0	0,0	10,0	90,0
SF	SF	Insurance and pension services	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SG	SG	Financial services	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SH	SH	Charges for the use of intellectual property n.i.e.	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SI	SI1	Telecommunications services	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SI	SI2	Computer services	1; 4	97,9	0,0	0,0	2,1	98,1	0,0	0,0	1,9
SI	SI3	Information services	1	100,0	0,0	0,0	0,0	99,7	0,0	0,0	0,3
SJ	SJ1	Research and development services	1; 4	99,8	0,0	0,0	0,2	97,0	0,0	0,0	3,0
SJ	SJ2	Professional and management consulting services	1; 4	98,0	0,0	0,0	2,0	96,9	0,0	0,0	3,1
SJ	SJ311	Architectural services	1; 4	97,4	0,0	0,0	2,6	57,7	0,0	0,0	42,3
SJ	SJ312	Engineering services	1; 4	61,9	0,0	0,0	38,1	40,6	0,0	0,0	59,4
SJ	SJ313	Scientific and other technical services	1; 4	59,1	0,0	0,0	40,9	85,0	0,0	0,0	15,0
SJ	SJ321	Waste treatment and de-pollution	2; 4	0,0	75,0	0,0	25,0	0,0	98,3	0,0	1,7
SJ	SJ322	Services incidental to agriculture, forestry and fishing	4	0,0	14,0	0,0	86,0	0,0	1,3	0,0	98,7
SJ	SJ323	Services incidental to mining, and oil and gas extraction	4	0,0	0,0	0,0	100,0	0,0	0,0	0,0	100,0
SJ	SJ33	Operating leasing services	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SJ	SJ34	Trade-related services	1	100,0	0,0	0,0	0,0	100,0	0,0	0,0	0,0
SJ	SJ35	Other business services n.i.e.	1; 4	95,0	0,0	0,0	5,0	94,4	0,0	0,0	5,6
SJ	SJ35Z	Other business services n.i.e.; Of which: Employment services, i.e., search, placement and supply services of personnel	1; 4	19,7	0,0	0,0	80,3	87,3	0,0	0,0	12,7
SK	SK	Personal, cultural, and recreational services	1; 4	77,5	0,0	0,0	22,5	90,8	0,0	0,0	9,2
SL	SL	Government services	2	0,0	100,0	0,0	0,0	0,0	100,0	0,0	0,0