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SERVICES IN GLOBAL VALUE CHAINS – AN INSIGHT INTO THE CURRENT SITUATION IN THE EU MEMBER STATES

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Global value chains (GVCs) consist of many production processes and phases/tasks that take place in different countries. The studies of the global value chains are mainly focused on manufactured products, often neglecting the role of services. In this paper, the emphasis is on the service sector, trade in services and the measurement of their participation in GVCs in the EU member states. There are four different ways, "modes of supply", to deliver services from a producer to the final customer. Official statistics include some of these modes, whereas some are hidden within the manufacturing process. According to the descriptive statistics analysis and presented data employed, it is clear that services trade is undervalued; services represent the majority of value added in the EU's GDP, but less than half of foreign trade; domestic value added in the service sector is higher than in manufacturing, which indicates the importance of domestic resources in the creation and export of services. EU industries are highly serviced and, interestingly, services contribute to more than 30 per cent of manufacturing production, with a higher share of foreign services.

Keywords: services, trade, global value chains, EU

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INTRODUCTION

Globalisation ensures favourable circumstances for trade growth, but also for the location of production. Therefore, the production process is often split into many stages/tasks which are provided by different subjects placed in different countries. Global value chains (GVCs) comprise all activities and product development phases, from their conception to the final use by consumers. Production is very fragmented, and some parts of it are located in different places in one or more countries. The level of fragmentation is not the same for all sectors, i.e., the high-technology sectors are more involved in GVCs, while low-technology sectors participate less in such dispersion activities. Participation in such a dispersed production chain assumes a liberal trade system, a high level of cooperation among countries, easy import/export activities, but also a highly educated work force, good location, good infrastructure development, etc.

As a result of liberalised trade and investment policies, global trade has had a growing trend through the last seven decades, while the production process has become more fragmented and dispersed, not just among producers within one country, but also internationally. Both processes – trade and production – are usually studied based on the goods (manufactured products), while services remain hidden in the shadow. This is a kind of paradox, due to the fact that services represent a huge part of the economies (GDPs, gross value added, employment), but have a very small share in global trade and in GVCs. The WTO (2018) indicates that goods dominate global trade and represent about 77 per cent of the overall trade.

The growing importance of services is recognised, but insufficiently explored.

According to the General Agreement on Trade in Services (GATS), there are four different ways – modes of supply – that may be used to deliver services from a producer to the buyer. They are as follows: mode 1 (cross-border supply), mode 2 (consumption abroad), mode 3 (commercial presence) and mode 4 (the presence of a natural person) (WTO, 2020a).

The aim of this research is to analyse the importance of services in trade, their involvement in GVCs and their role in the manufacturing trade, but also to provide a more detailed analysis of the composition of services trade on the sample of EU member states. Descriptive statistics methodology was employed through analysis and segmentation of data from the OECD-TiVA database (OECD, 2018) to provide an analysis on the sample of EU member states and to establish the characteristics and scope of services in GVCs.

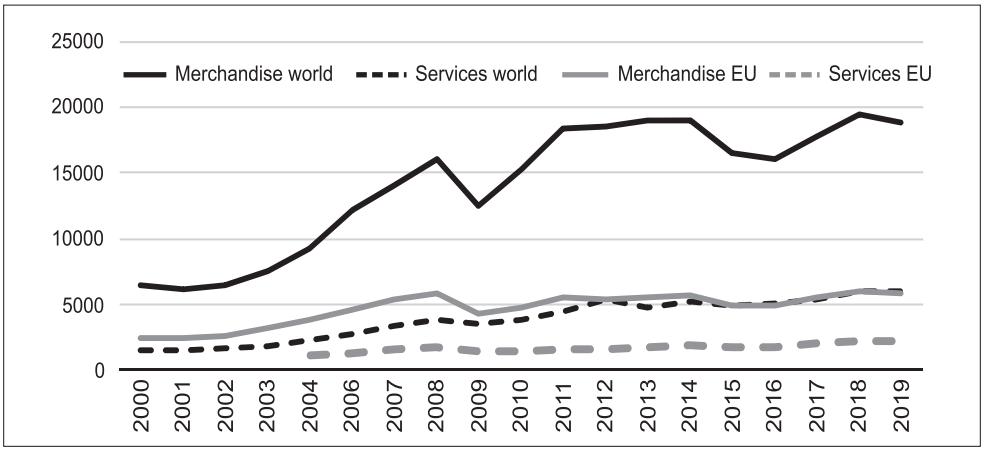
The novelty of the paper is the systematic overview of existing studies about the participation of services in GVCs and in analysing the importance of service trade in EU member states. Special emphasis was put on the indicators of services participation in GVCs through the research of domestic and foreign value added in services export, but also by analysing the share of domestic and foreign services in manufacturing exports. The paper is structured in four parts. The second chapter comprises the literature review about the recent development of services trade and GVCs. The third part of the text analyses the characteristics of trade in services for the EU member states. The paper ends with conclusions.

THEORETICAL BACKGROUND AND LITERATURE REVIEW

In 2019, the trade in goods reached a level of 18.9 trillion USD, while the trade in services was 6 trillion USD. EU export of goods was 5.81 trillion USD, and trade in services 2.2 trillion USD (WTO, 2020b).

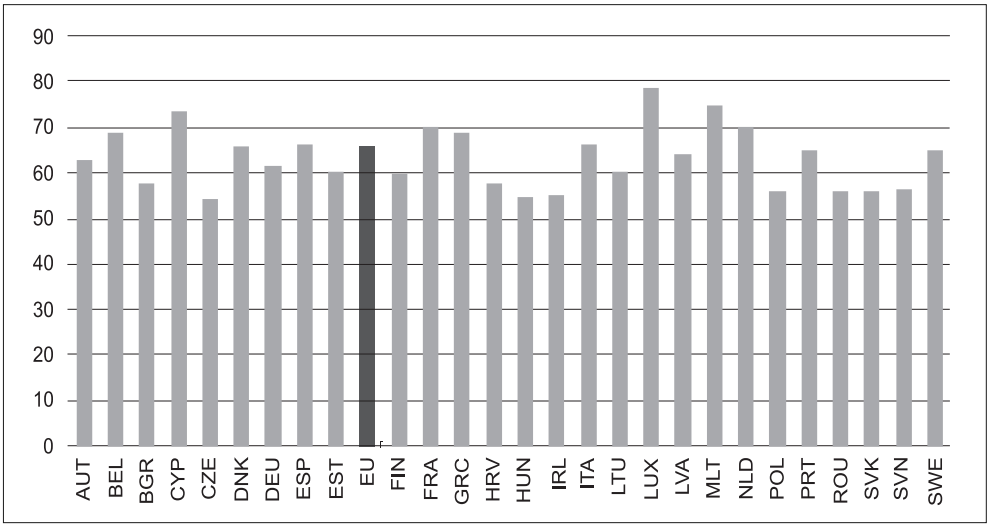
Figure 1 clearly shows the huge difference in the global export of goods vs. export of services in the last twenty years. Both paths have an increasing trend and the ratio of merchandise towards services exports decreased from 4.35 to 3.11, indicating that the value of merchandise trade is nowadays three times higher than the trade in services. The EU's paths for both, export of goods and export of services, follow the same trend, i.e., the values have increased over a 20-year period, but here it is interesting to point out that even the export of goods is higher than the export of services, and this ratio decreased from 3.51 in 2004 to 2.59 in 2019, indicating that services are more represented in total EU exports than in world exports. This is a result of the level of development of EU member states and a growing share of services in their economies.

FIGURE 1
Export of goods and services (global and EU) in the period 2000–2019 (US$ billion)



EU refers to EU27 up to 2013; EU28 from 2013–2019. Data includes intra and extra-EU exports. Source: WTO (2020b), WTO (2011).

The importance of services in GDP (Figure 2) clearly indicates that its shares are above 50 per cent and in many countries even above 60 per cent of GDP. Luxembourg, Malta and Cyprus have the highest share of services in GDP (above 70 per cent), while the EU average is 66 per cent. Because of these huge service shares in GDP, but also its incorporation in the manufacturing industry, the contribution of services value-added trade is underestimated and scarcely/rarely studied.



Abbreviations: AUT=Austria; BEL=Belgium; CZE=Czech Republic; NK=Denmark; EST= Estonia; FIN=Finland; FRA=France; DEU=Germany; GRC=Greece; HUN=Hungary; IRL= Ireland; ITA=Italy; LVA=Latvia; LTU=Lithuania; LUX=Luxembourg; NLD=Netherlands; POL=Poland; PRT=Portugal; SVK=Slovakia; SVN=Slovenia; ESP=Spain; SWE=Sweden; BGR=Bulgaria; HRV=Croatia; CYP=Cyprus; MLT=Malta, ROU=Romania.
Source: World Bank (2021), *World Development Indicators, Services value added shares in GDP*. https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS

FIGURE 2
Services value-added share in GDP in EU in 2017

Services are part of international trade, but its international dimension has rapidly increased since the 1990s due to the liberalisation of firms' cross-border activities.[1] They are indispensable in the realisation of cross-border activities (from transportation, insurance of goods to marketing activities, etc.).

Furthermore, the services trade grew; the trade costs for direct service trade are much higher than for goods due to regulatory burdens, non-tariff barriers and trade restrictions that are evident through the OECD Service Trade Restrictiveness Index (OECD, 2020).

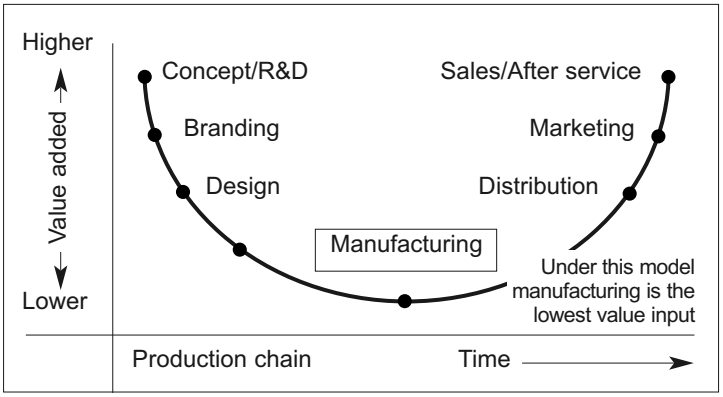
Baldwin (2016) indicates that through the implementation of nowadays-available information and communication technology, trade barriers will decrease, and the level of production dispersion will rise.

The necessity of calculating trade in value added is broadly recognised in literature (Leitner & Stehrer, 2014; Amador et al., 2015; Cieslik et al., 2016; Timmer et al., 2016). The complexity of global value chains, its coverage and specificities are presented in Gereffi and Fernandez-Stark (2011), Taglioni and Winkler (2016) and Hernández and Pedersen (2017). The newest World Development Report (World Bank, 2020) is also focused on GVCs, pointing out that they account for almost half of all trade, peaking the value of 52 per cent of global trade. Now they are at a crossroads due to many reasons: the slowing down of global growth and investments, the push towards international trade liberalisation having stalled, the COVID-19 pandemic, etc.

In a contemporary, highly integrated world, very often the industrial specialisation of countries is replaced with their specialisation in particular tasks (specific business functions). This has contributed to the huge increase of trade in intermediate products that represent a half of the world's manufactured imports and more than 70 per cent of world service imports (De Backer & Miroudot, 2013). OECD (2018) points to the role of services as an integral element of GVCs. They account for from 25 per cent to 40 per cent of the content of manufacturing exports in most OECD and G20 countries. For many countries, it is interesting that the share of foreign services value added is greater than the share of domestic services value added.

Hernández and Pedersen (2017) provide classification of activities in the value chain, where they divide them into primary and support activities. Among all activities, services are included in the downstream activities (marketing, advertising, brand management, after-sales services) and upstream activities (design, research).

➲ FIGURE 3
Smile curve of value added in GVCs



Source: Shin (1992).

Figure 3 shows the value added created at different stages of the value chain. What is interesting is that, in many manufacturing industries, values are higher at the two ends of the value chain – conception, research and development at the starting end and branding and marketing at the finishing end than the value in the middle part of the value chain – manufacturing. The value depends on several factors (e.g., labour vs. capital intensiveness, tacit knowledge, competition).

Measuring the participation of services in GVCs is more complicated because of some service characteristics, but also due to their incorporation in the manufacturing process. Low and Pasadilla (2016) describe the specificity of services and indicate the problem of their calculation. The main characteristic, they emphasise, is intangibility, making them analytically and statistically elusive. Services differ from goods because of: (1) a lack of storability, (2) impossibility of transporting them or providing them at a distance, (3) many services are customised and not commoditised and (4) intangibility. These characteristics are in a way questionable in contemporary circumstances because, with the ICT's development and its widespread use, the first and second characteristics became irrelevant. The intangibility of services remains actual today as in the past.

Heuser and Mattoo (2017) tend to explain that there are four reasons because of which services should deserve special attention. These reasons are connected with the way services are transacted, the way the services affect other downstream sectors (Figure 1) and the regulation of services trade and their role in the integration of national markets. Servicification is defined in terms of manufacturing that is highly connected with/dependant on the service sector. The production process increasingly buys service inputs, produces (service employment) and sells services (service output) (National Board of Trade, 2016). EU manufacturing is highly servicifised and in that way the manufacturing industry is gradually becoming a service industry. Heuser and Mattoo (2017) warn about inadequate calculation of service value added in manufacturing, due to the fact that in-house services are not separately included. Therefore, in manufacturing it is important to distinguish between in-house produced services and bought-in services as input in the production process. They have also found an increasing trend of service value-added share in the world's value-added export of goods and services compared to the share of services in the gross world export of goods and services.[2] Productivity depends on service intensity. Miroudot and Cadestin (2017) indicate the increase in the share of service value added embodied in exports and in the share of

service activities within manufacturing firms up to 2009, but since the crisis, these indicators have remained stable or slightly decreased. Bohn at al. (2018) point to the cross-border trade of services (direct trade) on the one hand while, on the other, they indicate the great share of domestic and foreign services in the manufacturing trade (indirect service trade, embodied service trade). Diaz-Mora et al. (2018) indicate the growing trends of foreign service content in manufacturing exports in the period from 1995 to 2011. Developing and emerging countries have recorded a larger share of foreign service value-added content than advanced countries. The foreign service value added embodied in manufacturing exports has contributed positively to more resilient exporting relationships that occur for the high, medium and low-technology industries.

Lund et al. (2019) have found that services created greater value in world trade than goods and all global value chains are becoming more knowledge intensive.

Raei et al. (2019) found that GVC-related trade has a positive impact on GDP per capita and productivity on the sample of 189 countries applying the EORA-MRIO database. Although the countries are heterogeneous, the positive impact will be higher for developed and upper-middle developing countries.

Bohn et al. (2018) pointed out the importance of services in the creation of value-added trade, stating that the evidence indicates a higher increase of trade in value added created in services than trade in value added created in manufacturing during the period 2000–2014.

Miroudot (2019, p. 1) indicates that. in the era of global value chains, it is difficult to distinguish between goods and service activities, and even the terms "de-industrialisation" and "servicification" of economies are in common use. Lanz and Maurer (2015) highlight the importance of service in manufacturing – termed "servicification" of manufacturing in developed and developing countries. They find service networks less fragmented internationally in comparison with goods value chains. Additionally, they suggest better statistical methodology to account for services by mode of supply. Some authors carried out research at the firm level (Lodefalk, 2014), while some have focused on services trade liberalisation, i.e., Lee (2019) focused his research on the impact of service trade agreements on GVC participation and found that service agreements foster GVC trade, especially in the case where agreements allow service export without domestic (local) presence.

Methodological framework

In analysing foreign trade in terms of GVCs, it is important to distinguish between foreign value added (FVA) and domestic value added (DVA) contained in the value of the gross exports of the domestic (home) economy. While the FVA refers to the value of imported inputs from abroad to produce the final goods (or services) or intermediates aimed at export, the coverage of DVA is more complex and it can be further divided into the following components:

- domestic value-added contents of final or intermediate products exported to foreign countries (direct importer) aimed at consumption or for further production in those foreign countries ("direct value-added exports");
- domestic value added exported to third countries (first exported as intermediates to the foreign partner country (direct importer) and then re-exported to the third economies; "indirect value-added exports");
- domestic value added contained in the imports of the home country (this refers to the exported intermediates to the foreign country (direct importer), and then re-imported to the home country also as intermediates and used to produce products/services for export; "reflected domestic value added") (Koopman et al., 2010, p. 14; WTO, 2021).

The participation of a particular country in GVCs refers to its involvement in the internationally fragmented production processes, i.e., it comprises trade in intermediate products. The country can produce the intermediate products that will be employed in the production process in foreign (partner) countries aimed at export (forward participation), and also the country can import the intermediates (inputs) from abroad that will be used in the production process in that country, intended for export (backward participation). The sum of forward and backward ratios gives the participation in GVCs[3] (WTO, 2021; OECD, 2019; World Bank, 2020).

If a country is upstream in the production network (first stages of production), it is likely that it has a high value of forward participation relative to backward. If a country specialises in the last steps of production (downstream), it is likely that it imports a lot of intermediate goods from abroad and therefore it has high backward participation.

The methodological framework for measuring trade on a value-added basis is still developing. The more complete and in some way official databases have been created by the WTO and OECD TiVA indicators in 2013, 2015 and 2018 and the WIOD database.[4] They are based on the International Input-Output

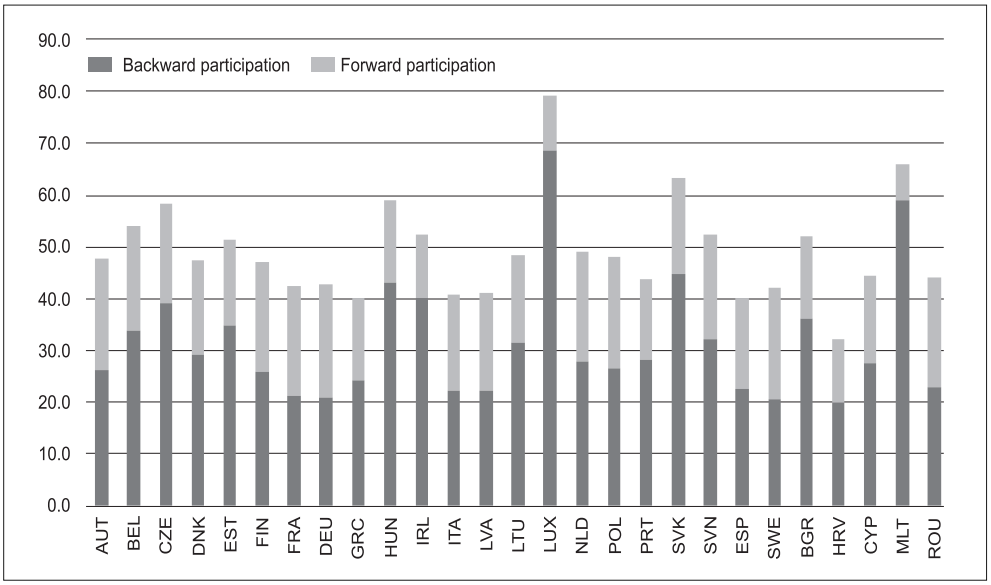
(II-O) tables that enable the origin and the use of intermediate goods and services to be identified by country and sector. II-O tables provide relevant assets for the analysis of trade verticality as they make clear the inter-sectorial nature of the modern production processes and their international connections. Thus, they take into account all backward linkages between countries and sectors present in the table, and they capture the value of imported inputs used directly and indirectly (at all stages of a country's production) in the manufacturing of exported goods (WTO/IDE-JETRO, 2011; De Backer & Miroudot, 2013).

To calculate the GVC participation index, we have employed the data about backward and forward participation from the OECD-TiVA database and this data is calculated for the total economy (Kersan-Škabić, 2019).

RESULTS

From Figure 4 it is obvious that the EU member states differ among themselves regarding their participation in GVCs. Luxembourg, Malta and Slovakia have the highest index, while Croatia's participation in GVCs is very small (just a little higher than 30 per cent), which indicates its low participation. The majority of countries have this index above 40 per cent with the domination of backward participation (imports of intermediates from other countries).

FIGURE 4
GVC participation index in the EU in 2015



Source: OECD-TiVA database, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2018_C1

The lower level of GVC participation of Croatia can be explained through its economic structure with the predomi-

nance of the tourism sector. The low level of GVC participation for Croatia indicates that it is more focused towards the import and export of final goods aimed at final consumption, while the export and import of intermediates (inputs) are relatively small. For better involvement in global or regional value chains, the foreign direct investments (FDIs) from abroad can play a very important role. The industrial sectors (especially high-tech sectors) in Croatia do not attract significant amounts of FDI from abroad (as was the case for the majority of Central and East European countries – new EU member states). Due to the inflow of FDI in the countries of Central and Eastern Europe (in the manufacturing sectors), many mergers and acquisitions took place, which created the preconditions for the reallocation of part of the production from highly developed European countries to these countries and thus these countries achieved a higher level of involvement in production chains.

Also, Luxembourg is highly involved in GVCs, even in the financial and banking sector (also the services sector), which has dominance in its economy, but Luxembourg is also the headquarters of many multinational companies due to its very favourable tax system, so they also add a contribution to its score. More specifically, the reasons for the level of GVC participation lie in the production structure and involvement of every particular sector of national economies in the international production networks.

Services trade and their value added are provided by the WIOD, OECD-TiVA, MRIO database (tables). Usually, services cover the cross-border services trade which are supplied from one territory to another; this includes about 20 economic activities according to the Balance of Payments classification.

Analysis of services sectors in the GVC framework is more complex due to:

1. the availability of data (there is no data about forward and backward participation regarding services (neither total, nor specific) in TiVA-OECD tables, so we cannot calculate GVC participation and position index for services);

2. four modes of services, where only one mode – cross-border trade – is included in the statistics, while the other three modes (consumption abroad, commercial presence and presence of natural persons) are not covered by the statistics;

3. their involvement (integration) in the value of merchandise production (and export).

For a detailed analysis of data about service inclusion in foreign trade we employed the OECD-TiVA database because this includes recent data (as of 2015), while the WIOD inter-country input-output tables comprise data ending in 2014.

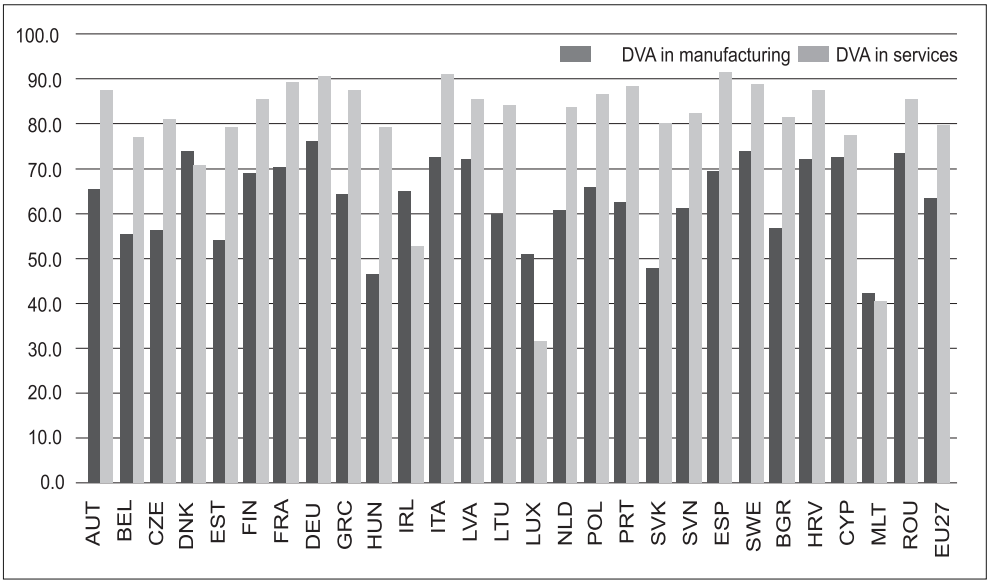
Regarding these data limitations, in the analysis of service sector participation in GVCs, we put focus on the:

- share of DVA in gross export (separately for merchandise export and for services sector) defined as domestic value added in gross exports (expressed in %) (Figure 5);
- share of DVA in export of services by specific sectors (in % of specific services gross export) (Figure 6);
- share of services in gross (total) export (Figure 7). OECD for TiVA indicators valued the gross exports at *basic prices* in line with the valuation used throughout the ICIO tables.[5] Gross export includes both cross-border flows and direct non-resident expenditure on domestic territory. Service industries include construction, wholesale and retail, hotels and restaurants, transport and communications, finance, real estate and business services, as well as public services i.e., services, ISIC Rev. 4 Divisions 41 to 98;
- domestic services value added of gross exports is the share of value added originating from all domestic service industries in total gross exports (Figure 8);
- share of domestic and foreign services value added in manufacturing exports (Figure 9) is the sum of shares of value added originating from all domestic service industries and shares of value added originating from all foreign service industries in gross exports of the manufacturing sector;
- share of foreign and domestic service value added in gross export of specific manufacturing sectors (Figure 10);
- share of foreign and domestic service value-added share in gross export of specific services sectors (Figure 11).

A very important characteristic of the gross export of services is its strong dependence on the domestic resources (value added) (Figure 5), i.e., DVA is higher in the total service sector than in the total manufacturing sector. Because of this, the service sector can be considered as less involved in the global value chain, but also that its contribution, especially regarding in-house services, is not correctly/separately statistically collected and calculated, as Lanz and Maurer (2015) also indicated. The big DVA share means that through the export of services, domestic resources can be highly/better-exploited (knowledge, technology, marketing, design, etc.).

Generally, it is common for large countries to have a higher share of domestic value added in exports, and their production is based largely on domestic resources while, on the other hand, small countries are more involved in international trade (they are more open) and, due to their constraints, have a lower share of value added of domestic sectors in exports. In the EU, a big contribution to the value of DVA and FVA has also arisen from FDIs and their sectorial distribution, educational structure of employees and the availability of technol-

ogy and knowledge required for production processes. The level of DVA and FVA cannot be unambiguously explained due to many important factors that range from resource availability to soft skills development. According to Figure 5, the share of DVA in manufacturing ranges from 39% in Malta to 75.58% in Germany. The average share of DVA in the EU27 is 62.75% in the manufacturing sector and 78.8% in the service sector.



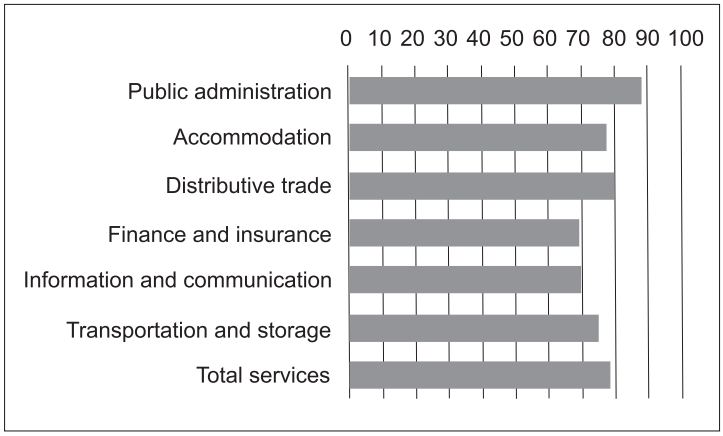
DVA is the share of domestic value added (contribution of all domestic sectors as providers of resources, skills, intermediates) in gross export separately for manufacturing products and separately for services. Source: OECD (2018), *TiVA Database*, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_ 2018_C1

FIGURE 5
Domestic value-added share in gross export in manufacturing and in services in 2016

There are many types of services, and they differ between themselves regarding the share of domestic value added as is shown in Figure 6. The highest DVA shares are characterised by the export of public administration (above 80%) and the lowest DVA share is presented in finance and insurance. This is expected due to the fact that public services are provided by national and local institutions and authorities, while the finance and insurance sector is highly integrated within the global financial framework (high share of foreign investments in that sector, many foreign banks and insurance companies are presented throughout the EU member states).

Figure 7 shows the share of services (from domestic and foreign sources) in gross exports in the EU27 (without UK). It covers just the direct export of the services sectors and does not include participation of services in manufacturing production. The share of services (including construction) in the total EU27 export varied from 33 per cent to 35.27 per cent (peak in 2009), and it reached the level of 35.10 per cent in 2015.

➲ FIGURE 6
Domestic value-added share in exports of services sectors in EU in 2016



Source: OECD (2018), *TiVA Database*, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2018_C1

➲ FIGURE 7
Services share of gross export of the EU from 2005 to 2015

Services include construction. EU refers to EU27 (without UK).
Source: OECD (2018), *TiVA Database*, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2018_C1

Figure 8 goes a step further and focuses just on the domestic services value-added participation in gross exports. A share of domestic services value added in total exports higher than 50 per cent is present in Greece, Latvia, the Netherlands, Croatia and in Cyprus (Figure 8). On the other hand, the countries with the lowest domestic service value-added shares are the Czech Republic, Slovakia, Ireland and Hungary (the share is below 30 per cent of the overall exports). These numbers in Figure 8 are higher than in Figure 7 due to the fact that Figure 8 summarises the value of domestic services value added; it consists of the direct export of services but also of the services value contained in export of manufactured goods.

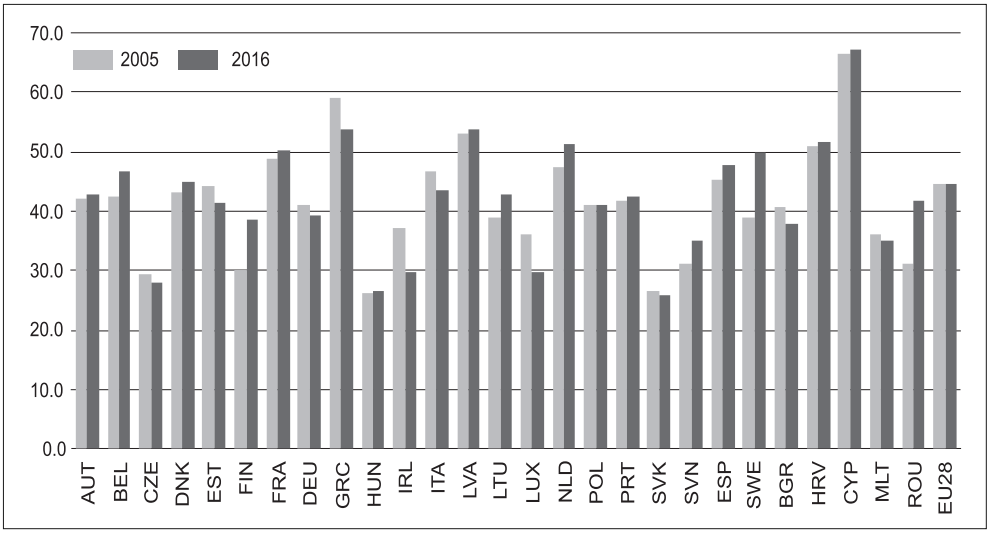


FIGURE 8
Domestic services value-added share in the total exports in the EU in 2005 and 2016

Source: OECD (2018), *TiVA Database*, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2018_C1.

Involvement of services value added (both domestic and foreign) in the manufacturing export (hidden services export) is shown in Figure 9.

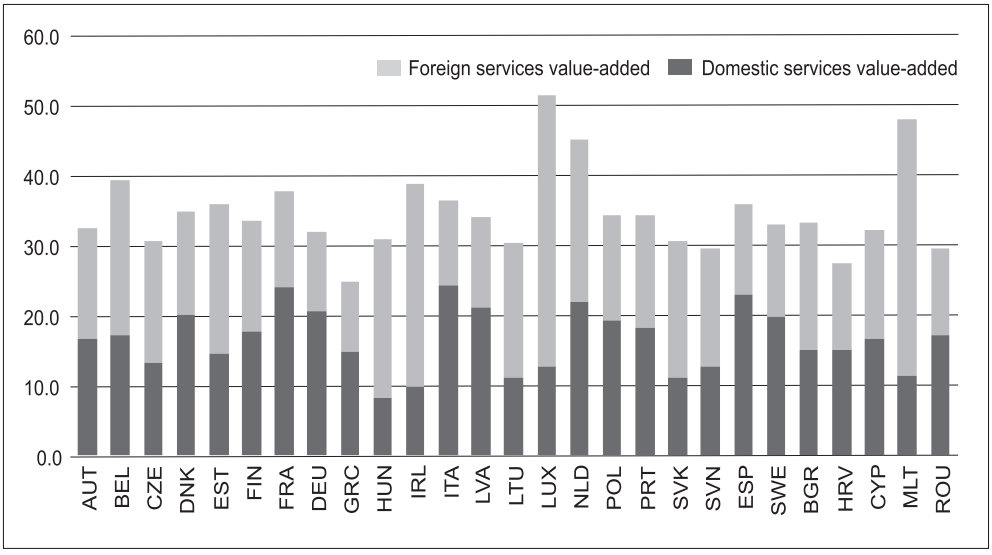


FIGURE 9
Share of domestic and foreign services value added in manufacturing export in 2016

Source: OECD (2018), TiVA Database, https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2018_C1

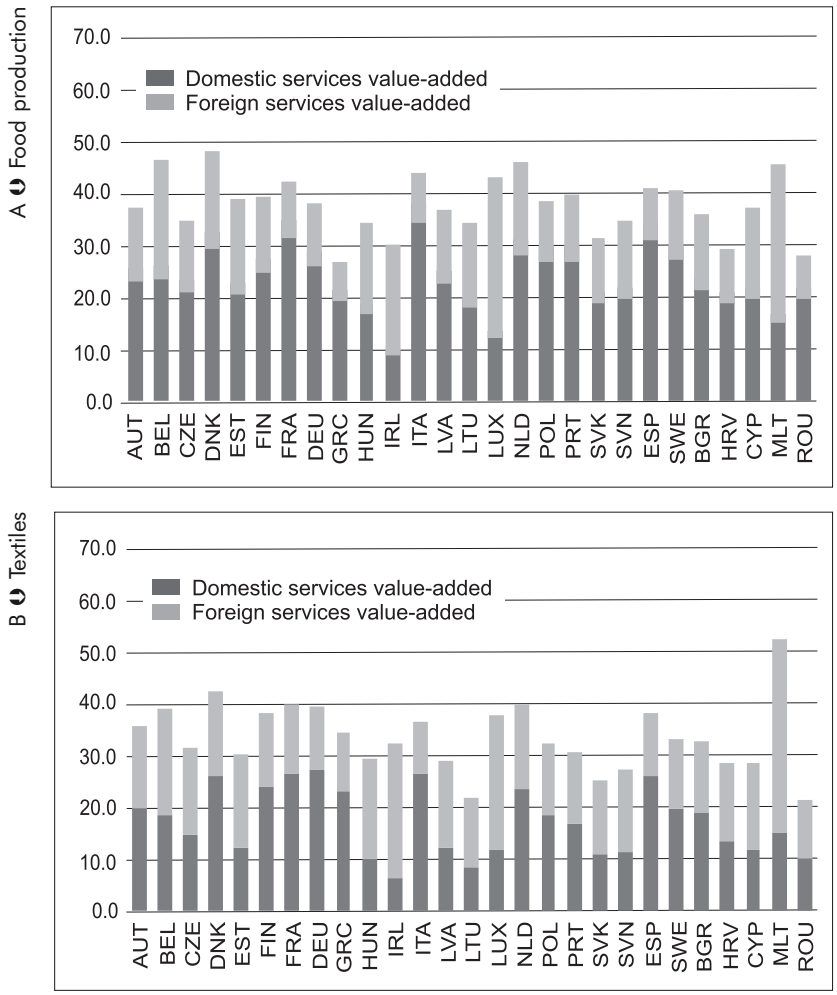
From Figure 9 we can highlight that, in the majority of countries, services contribute to more than 30 per cent of the manufacturing products value. The exemptions are Greece and Croatia, with the service value-added share in manufac-

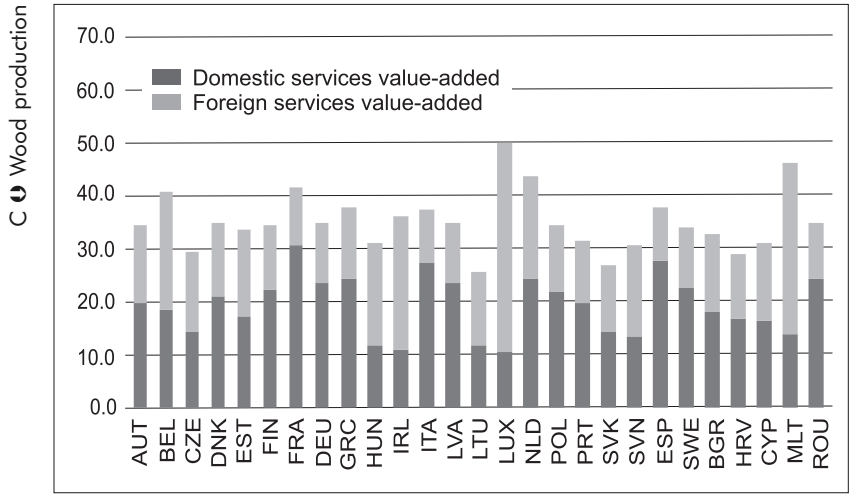
turing export below 30 per cent. Foreign services value added dominates in Luxembourg, Ireland, Malta, the Netherlands, Belgium, the Czech Republic, Estonia, Hungary, Lithuania, Slovakia, Slovenia and in Bulgaria. These findings are in line with Diaz-Mora's et al. (2018) results. The explanation lies in the manufacturing sector structure as is shown in Figure 10.

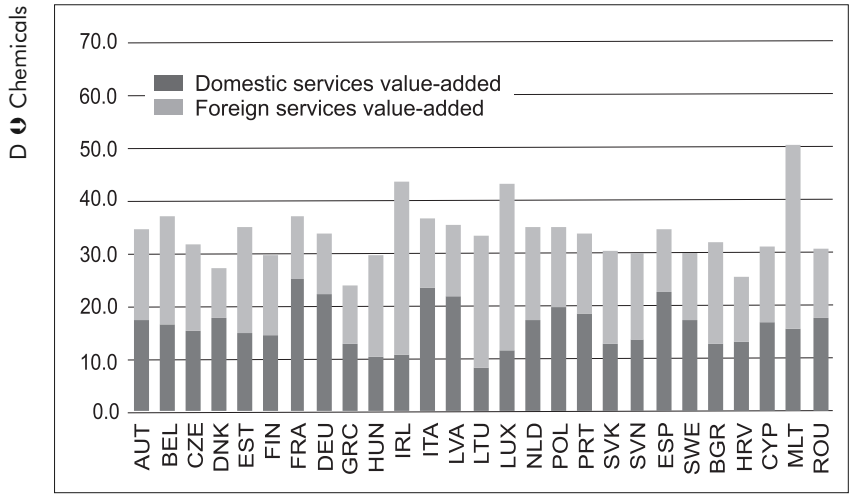
Figure 10 and Figure 11 present the share of domestic and foreign services value added in the manufacturing (Figure 10) and service sectors (Figure 11) in the EU. The OECD TiVA database covers 36 disaggregated sectors, while here we have chosen eight manufacturing sectors and six service sectors.

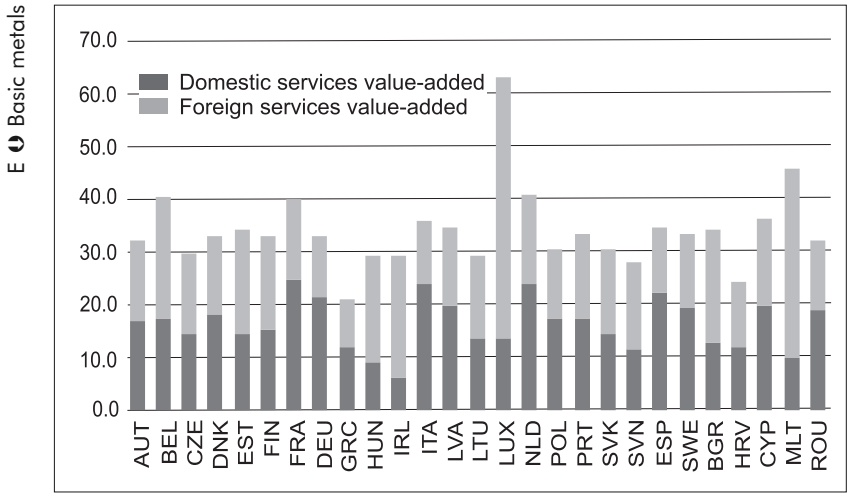
The analysis of particular manufacturing sectors leads to the obvious conclusion that there are different levels of service value-added shares in the exports of EU member states. Among the countries, Luxembourg, the Netherlands, Malta and Ireland have the highest level of servicification of particular industries (Figure 10).

FIGURE 10 A-H
Foreign and domestic service value-added share of gross export of manufacturing sectors (Source: OECD *TiVA database*)

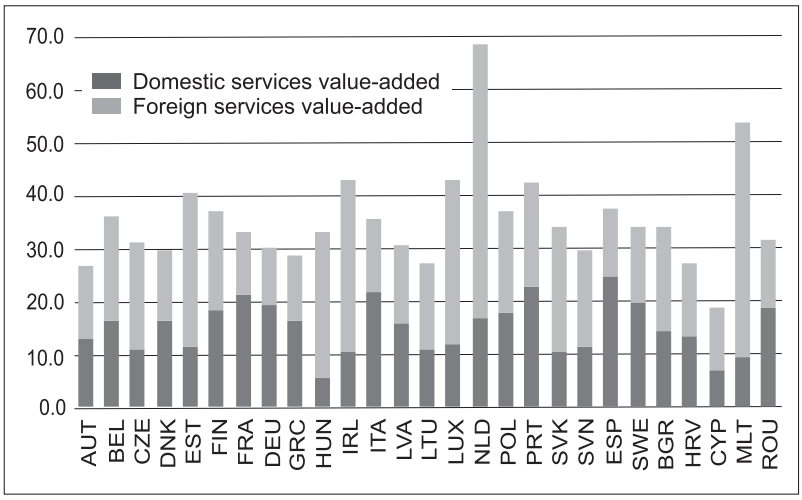



C Wood production
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Domestic services value-added
Foreign services value-added
AUT BEL CZE DNK EST FIN FRA DEU GRC HUN IRL ITA LVA LTU LUX NLD POL PRT SVK SVN ESP SWE BGR HRV CYP MLT ROU

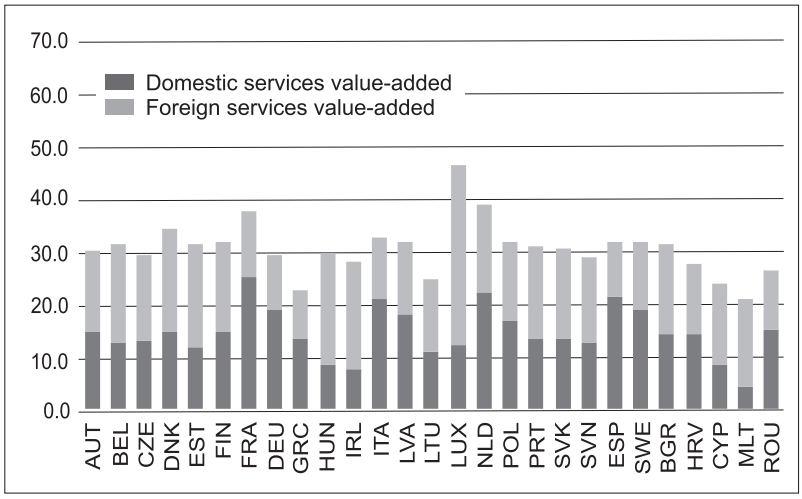

D Chemicals
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Domestic services value-added
Foreign services value-added
AUT BEL CZE DNK EST FIN FRA DEU GRC HUN IRL ITA LVA LTU LUX NLD POL PRT SVK SVN ESP SWE BGR HRV CYP MLT ROU


E Basic metals
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Domestic services value-added
Foreign services value-added
AUT BEL CZE DNK EST FIN FRA DEU GRC HUN IRL ITA LVA LTU LUX NLD POL PRT SVK SVN ESP SWE BGR HRV CYP MLT ROU

F ❍ Computers



G ❍ Machinery and equipment



H ❍ Transport equipment

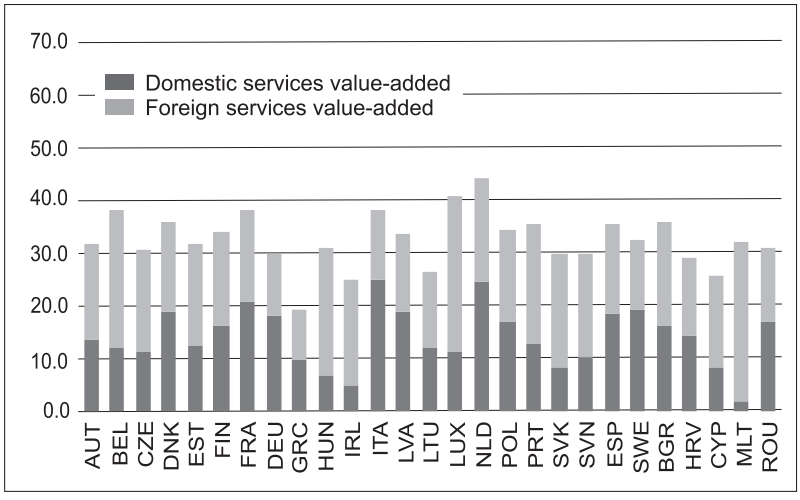


FIGURE 11 A-F
Foreign and domestic service value-added share of gross export of the service sectors (Source: OECD *TiVA database*)

D Finance and insurance activity

E Transportation and storage

F Public administration, education and health, social services

In the manufacturing production, the level of foreign services value added dominates over the level of domestic services value added.

Additionally, in analysing services exports (Figure 11) we can point out the huge share of domestic value added in the majority of countries. The exemptions are Luxembourg (distributive trade), Ireland and Luxembourg (information and communication) and Luxembourg and Malta (finance and insurance activities). The domination of FVA services appears in sectors that require high-quality skills and knowledge, i.e., soft skills (information and communication, finance and insurance activities), but also they participate intensively in global value chains. For Luxembourg the explanation can lie in the fact of big integration of the banking and financial sectors with the global financial markets (huge part of foreign assets in banks), for Ireland due to development of the ICT sector, which is also highly integrated in GVCs, and for the CEE due to attracting huge amounts of FDI in the manufacturing export-oriented sectors.

CONCLUSION

Global value chains are a strong feature of modern manufacturing processes, with services playing an important role. Services represent a huge share in the national GDPs in developed countries, but their role in foreign trade is significantly smaller, which can partially be explained by the fact that some services need physical proximity between the seller and the buyer but today, with the development of ICT, many services can be purchased/sold cross border. On the other hand, manufacturing production contains services (in-house or purchased services) that are not calculated separately, even though they are included in the value of manufacturing production and trade.

This paper is focused on the EU member states and their participation in GVCs regarding the service sector. Due to the available data, we have presented the importance of services in the GDP and foreign trade of EU member states. A particular analysis was carried out on the breakdown of services components of domestic and foreign value added, but also breaking down the services shares in manufacturing production.

The results indicate the imbalances between EU member states' participation in GVCs (based on the entire export and import) and on differences between member states due to the shares of services in GDP and in foreign trade. The services sectors export in EU member states is characterised by higher shares of domestic value added that indicate that they (services) employ more domestic resources (capital, human re-

sources, technology, etc.), but there are indications of some exemptions in some sectors, e.g. ICT, finance and insurance activities and distributive trade (but just in a few countries) with the domination of foreign services. This is a result of the size of the country (e.g. Luxembourg, Malta), but also of some specificities of economies (e.g. Ireland's economy is strongly based on ICT industries and Luxembourg is known as a banking and financial centre). The domination of domestic value added may indicate future directions for economic development, with each country having an important investment in domestic capacities so that it can create and export more sophisticated services.

EU member states have a high level of servicification, i.e., services represent more than 30 per cent of the manufacturing export where, interestingly enough, foreign services prevail over domestic ones. Luxembourg, the Netherlands, Malta and Ireland have the highest level of servicification of the particular industries which have been analysed.

Based on the conducted analysis and presented data, the importance of services in the foreign trade of services, but also of manufacturing goods, is highlighted. Services deserve special and increasing attention due to their specificities and the wide scope of different activities they include which can stand alone, but can also often be intertwined in the production process. Because of this, the value of services is undervalued in foreign trade and in the calculation of their participation in GVCs. Additional valuable remarks can arise from sectoral analysis of either the industrial sector or the service sector, which may be an area for new further research. The OECD TiVA database includes 36 sectors and 64 economies, and the available data is limited to the kind of statistical data presented in this paper. For more detailed information about the source country of a specific service sector that participates in a particular manufacturing sector, one should apply the input-output tables.

Moreover, the specificities of a country's economy can indicate in which sectors (that economy is based on, or country wants to reach more specialisation in) a detailed analysis will be of special importance and/or of national interest.

NOTES

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[1] According to the IMF's Balance of Payments and International Investment Position Manual (BPM6), which brings in some new rules in calculation of balance of payment statistics, the value of international trade in services grew as a result of the revised criteria for treating outsourced processing (so-called goods for processing).

[2] The services share of total world gross exports have remained around 20 per cent since 1980; in value-added terms they have increased from below 30 per cent to more than 40 per cent (up to 2009) (WTO, 2020b).

[3] The forward GVC participation is calculated as the ratio of domestic export of intermediates to the value of other countries' exports. Backward GVC participation is the ratio of imported intermediates from foreign countries to the value of domestic gross export (WTO, 2021; OECD, 2019; World Bank, 2020).

[4] The latest OECD-TiVA report presents indicators for 61 economies and is broken down into 34 industrial sectors (16 manufacturing and 14 service sectors). It includes the decomposition of gross exports by industry into their domestic and foreign contents, the services content of gross exports by exporting industry (broken down by foreign/domestic origin), bilateral trade balances based on flows of value added embodied in domestic final demand, intermediate imports embodied in exports, participation in GVCs via intermediate imports embodied in exports (*backward linkages*) and domestic value added in partners' exports (*forward linkages*), share of industry value added that meets foreign final demand, origins of value added in final demand, by source country and source industry, including the origin of value added in final consumption (by households and government) and in GFCF (investment by businesses) and inter-regional and intra-regional relationships (OECD, 2015).

[5] Because of this transformation of values expressed in *purchasers' prices* to *basic prices*, the total export of services in the TiVA database can be significantly higher than total exports of services reported in National Accounts (and Balance of Payments) statistics for many countries. The reason is in the main adjustments in the reallocation of the domestic *distribution margins*, (inherent in exports of goods at *purchasers' prices*) to exports of services (wholesale, retail and transportation).

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Usluge u globalnim lancima vrijednosti – pregled aktualne situacije u članicama Europske unije

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Globalni lanci vrijednosti sastoje se od mnogih proizvodnih procesa i faza/zadaća u raznim zemljama. Istraživanja o globalnim lancima vrijednosti uglavnom su usredotočena na proizvode prerađivačke industrije, često zanemarujući ulogu usluga. U ovom radu naglasak je na sektoru usluga, trgovini uslugama i mjerenju sudjelovanja uslužnih sektora u GVC-u u zemljama Europske unije. Postoje četiri načina isporuke (pružanja) usluge od proizvođača do potrošača. Službene statistike uključuju neke od tih načina, pri čemu su neki od njih "skriveni" unutar industrijske proizvodnje. Prema provedenoj analizi i dobivenim rezultatima proizlazi da je trgovina uslugama podcijenjena; usluge predstavljaju većinski udio u dodanoj vrijednosti BDP-a Europske unije, a istodobno predstavljaju manje od polovice vrijednosti vanjske trgovine EU-a; udio domaće dodane vrijednosti u sektoru usluga viši je u odnosu na sektor prerađivačke industrije, što pokazuje značenje domaćih resursa u stvaranju i izvozu usluga. Industrijski sektori u EU-u sadrže visok udio usluga u svojoj proizvodnji, pa usluge predstavljaju više od 30 % vrijednosti proizvodnje prerađivačke industrije (pri čemu veći udio pripada uslugama iz inozemstva).

Ključne riječi: usluge, vanjska trgovina, globalni lanci vrijednosti, Europska unija