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Tourism in global value chains- the case of Central and East European countries

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Abstract. The paper investigates the involvement of tourism in global value chains in the EU's new member states by analysing the proportion of domestic and foreign added value in tourism exports, as well as their shares in domestic and foreign demand. According to the OECD TiVA database, by applying secondary data analysis, the results show that Croatia has achieved the highest share of inward FDI stock in tourism out of total FDI stock, which aligns with tourism's significant contribution to Croatia's GDP; the domestic added value dominates in domestic export with the share of foreign added value reaching a maximum of 25%. The econometric analysis confirms positive impact of FDI inward stock and number of employed in accommodation and food services on the domestic value added. The Granger causality test is employed to find out the interrelation between supply and demand variables on domestic value added in the sector of accommodation and food services. Positive impact is found for different groups of employed persons, expenditures in accommodation and food services, and the number of beds in all accommodation units. The results indicate the importance of tourism, as well as domestic production capabilities and capacities.

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JEL Classification: F14, F21

1. INTRODUCTION

The globalisation process has enabled significant capital flows among countries worldwide, resulting in the reallocation of production activities. This has led to the creation of interconnected production processes aimed at exploiting location characteristics to achieve high profitability. Foreign direct investments (FDI) serve as channels for bringing foreign capital into various areas of a host country's economy. Investors from abroad select investment locations based on factors such as available resources, resource prices, market size, educational structure, distance, cultural proximity, etc. (Behrman, 1969; Dunning, 1977; Horstmann & Markusen, 1992; Kogut & Singh, 1988; Hofstede et al., 2010).

The EU represents a vast market with significant foreign capital flows. In 2022, the net outward FDI stock amounted to €9,382 billion, while the inward investment stock was €7,715 billion, both slightly lower

than in 2021 (Eurostat, 2023). The EU accounts for more than one-third of global FDI and is the source of over 40% of outward FDI flows. In addition to extra-EU investment flows, intra-EU FDI flows are crucial, especially from Western EU countries to Central and Eastern European (CEE) member states. These FDI flows span various sectors from manufacturing to service sectors.

The activities of multinational corporations (MNCs) have led to the creation of global value chains through the fragmentation of production processes across different countries. Countries can participate in these global production chains by either importing intermediates from abroad and integrating them into production goods and services for export (backward participation) or exporting intermediates to foreign producers for inclusion in the production of goods and services for export (forward participation). Participation in global value chains (GVCs) is typically analysed at the total economy or industry level.

Services are less frequently studied in global value chain research due to their unique characteristics, such as representing a minor part of global trade compared to merchandise trade. Additionally, services are non-storable, non-transportable, often customised, and intangible, making their analysis more complex (Low and Pasadilla, 2016).

Tourism is highly dependent on the liberalization process and has also experienced high inflows of foreign capital (foreign direct investments), so it is interesting to find out how foreign capital has contributed to the creation of value chains in tourism.

In this paper, the focus is on tourism services and the aim is to analyse foreign direct investments in tourism and, as a consequence, tourism involvement in global value chains in the EU's new member states. Specifically, we will research the impact of FDI inward stock on the domestic value added in tourism. This will be followed by the inclusion of other supply and demand side variables on the DVA. Tourism is developing across the EU, but its significance differs among member states. On the global level, tourism represents 7.4% of global GDP, while in some EU members, it represents above 10% of GDP. High tourism dependency is especially true in countries of South Europe, i.e., in Croatia, tourism represents 20% of GDP.

The aspects of the value chain in tourism have been researched from various perspectives (Romero et al., 2024; Tejada et al., 2011; Sutomo et al., 2022; Gössling & Lund-Durlacher, 2021; Pantelidis, 2010). The analysis is usually country-specific case studies, and they are focused on one aspect of GVC. According to our knowledge, there is no existing analysis that covers GVC in accommodation and food services that is done on the group of EU member states. The contribution of this paper is in (1) the comprehensive approach and using the OECD TiVA database for calculating the participation in the value chain and (2) coverage - the sample includes the Central and East European (CEE) countries (EU member states)[1] (3) creation of an econometric model for DVA determinants; (4) connecting the supply and demand side factors through the Granger causality with the DVA.

The statistics sources for measures of trade in value added (TiVA) don't provide data for tourism as such; indeed, the OECD provides data for the accommodation and food service activities (OECD, 2024). The methodology framework was chosen because it is based on input-output analysis, which is the best way to find out the connections and flows of value added between sectors and countries. The group of countries is selected to affirm the different significance of tourism in the CEEs' economies and also some common/different trends of value chain participation.

The paper is structured as follows: Section 2 presents the literature review of scientific papers related to the issues of FDI in CEE countries and tourism in GVCs. Section 3 explains the methodology and data

[1] Cyprus and Malta are excluded from the analysis due to the (un)availability of data.

used in the empirical research, and the results of the empirical analysis. The last section offers the discussion with conclusion.

2. LITERATURE REVIEW

Research on global value chains in tourism is scarce. Because value chains result from FDI inflows, we will focus our analysis on articles dealing with FDI in the tourism (or accommodation and food service) sector and then articles focusing on creating value chains in tourism.

Countries in Central and Eastern Europe have attracted varying amounts of FDIs and differ in terms of the sectoral structure of FDI. The motivation for FDI inflows began with the privatisation processes in these countries, followed by their market characteristics. Simionescu (2018) researched the impact of European integration on the FDI inflows in Romania, and Hintošova et al. (2018) researched the determinants of FDI inflows in Visegrad countries.

Research on FDI in tourism can be approached from the perspectives of the motives of home country investors (multinational companies, MNCs) to invest in hotels in foreign countries (Santos, 2016), or from the perspective of the impact of FDIs in the tourism sector on host economies, influencing economic, environmental, and developmental aspects. The determinants of FDI inflows have been widely researched since the 1980s by Dunning and McQueen (1982), often highlighting the importance of specific factors such as tourism friendliness, cultural proximity, and language. The second part of the article deals with the impact of tourism on innovation (Romero & Tejada, 2019), technological upgrades in the hotel industry (Romero et al., 2024), the environment (Romero, 2019; Gössling & Lund-Durlacher, 2021); on the competitiveness (Gavurova, et 1., 2020).

Cró and Martins (2020) analysed the factors that influenced inward FDI in France from 2000 to 2017 in the hospitality industry by applying gravity models. They found that the income of France and investor countries, taxes, and labour costs positively impacted FDI flows, while the opposite was true for the distance between countries. The results show that France is particularly successful in attracting FDI in the hospitality industry from French-speaking countries with a common border and cultural proximity to France. Paul et al. (2022) analysed the impact of FDI inflows on tourism outcomes in 46 Asian countries using different econometric techniques. They found a positive correlation between foreign direct investment and the number of international tourist departures in all models except the POLS model. In the GMM model, they found a significant negative association between foreign direct investment and international tourism spending and between FDI and international tourism receipts (as a percentage of total exports) but a significant positive relationship between FDI and international tourism. Their analysis covers a 25-year period.

The importance of EU membership for the global value chain participation of the new EU member states has been explored, but mainly from the perspectives of the general or manufacturing industry. Leitner & Stehrer (2014) found that vertical specialisation intensified in most of the EU's new member states and that stronger participation in global production processes enhances performance. Their results indicate that export growth and the degree of vertical specialisation tend to reinforce each other. Cieslik, Bieganska, and Sroda-Murawska (2016) proved that countries with stronger links to Western European countries are more integrated, and most exporters from Central and Eastern Europe are positioned in the downstream part of the production process. Grodzicki and Geodecki (2016) explain that the core-periphery model in Europe is based on the contribution of particular groups of countries to the value chain. They warn that GVC participation accelerates deindustrialisation processes and that CEE countries are in a better position than Southern countries due to their continued dependence on foreign capital and technologies.

The issue of the global value chain in tourism is under-researched and is usually analysed from a few perspectives (greenhouse gas emissions, sustainable development), typically on a country-level basis.

Firstly, how can we define the value chain in tourism? Some authors relate value chains to hotel chains and opening subsidiaries in many countries (Santos, 2016); some research connects value chains with tour operators (Romero et al., 2024; Brida et al., 2015); some articles consider innovation in tourism as part of the tourism value chain (Romero et al., 2024); some emphasize the governance of tourism (Tejada et al., 2011; Sutomo et al., 2022) and also accommodation as part of tourism value chains (Gössling & Lund-Durlacher, 2021; Pantelidis, 2010). The involvement of tourism in the global value chain is explored in transportation (Gössling et al., 2012), food and beverages (Palmer, 2004), entertainment and attractions (Richards & Munsters, 2010), retail (Aguirre, 2004), digital platforms, and booking services (Ye et al., 2009; Bilan et al., 2024). GIZ (2020) also differentiates the micro, meso, and macro dimensions of the value chain in tourism. There is no unique approach to the value chain in the tourism sector, but here we will focus on the GVC aspects, i.e., domestic and foreign value added in accommodation services.

Due to the globalization process and liberalisation of trade, as well as significant foreign investments in the tourism sector, imported products and services play an important role in the quality of tourism services. Governance in tourism GVCs has been researched by Tejada et al. (2011) through regional case studies in Andalusia (Spain) that identified the main patterns of governance in the tourism industry. They also considered variations in ways of upgrading GVCs depending on governance patterns. Varvaressos (2018) contributed by applying literature review techniques to conceptual issues and managerial aspects of the tourism system and value chain. He emphasized that tourism should be observed as a system that includes interrelated elements, and the model of the value chain in tourism can be implemented at business and destination levels where tourists are the focal point in the value chain in international tourism. Sutomo et al. (2022) considered tourism value chains (TVCs) that include tourism development and planning. They applied a Systematic Reviews and Meta-Analyses protocol to search for and select relevant literature to synthesise a general TVC framework. They found that the TVC concept is applicable on various scales and in different types of tourism with slight practical differences. This term complements supply logic, destination logic, global value chain, and tourism global value chain, providing a theoretical contribution for future studies to improve the body of knowledge of TVC and tourism development and planning. Liu (2022) provides a critique of research on tourism value chains, noting inadequate attention to the role of geography. According to his research, the tourism value chain is subject to a carrier-driven pattern of governance rather than producer or buyer-driven. Konishi (2019) developed the GVC map and estimated the ripple effect of the tourism boom on Japan's economic development based on input-output tables.

Romero and Tejada (2019) researched the tourism value chain from the perspective of the role of intermediaries in innovation in the tourism sector. They conducted an analysis based on a survey of tourism SMEs in Spain and found that dependence on traditional tourist agencies decreases marketing innovation, while the existence of tourism intermediaries can be advantageous for innovation through boosting ICT and quality standards in the hotel industry. Santos (2016) conducted a case study analysis using a fuzzy set qualitative comparative analysis method based on the Accor hotel chains and found that the presence of French tourists, geographical proximity, language, and following business people abroad positively influenced their FDIs. A bright spot in this analysis is the finding that international hotels should not focus solely on market size but should instead exploit their competitive advantage in specific locations.

From the mentioned perspectives, it is clear that there is no unique approach to defining the value chain in tourism. Additionally, to the best of our knowledge, no research covers the group of Central and East European Countries.

3. METHODOLOGICAL APPROACH

The concept of global value chain participation includes two perspectives: backwards and forward participation, as explained by Koopman et al. (2010). Backward participation is the ratio of foreign value added to the home country's export (measuring the import of intermediates and their share in domestic exports), while forward participation is the ratio of intermediate products exported and employed in the production process in foreign (partner) countries in the foreign country's export.

The methodological framework for measuring trade on a value-added basis has been developed and includes the official databases of the WTO, OECD TiVA indicators, and the WIOD database. These databases are based on the International Input-Output (II-O) tables, which enable the identification of the origin and use of intermediate goods and services by country and sector. II-O tables provide valuable assets for analysing trade verticality as they illustrate the inter-sectorial nature of modern production processes and their international connections. They consider all backward linkages between countries and sectors present in the table, capturing 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).

The approach to value chains in tourism is even more underdeveloped due to the lack of specific data for that sector. Therefore, the focus will be on data for accommodation and food services.

The methodological approach involves the statistical analysis of secondary data based on input-output tables. Applying a value-added approach to tourism provides a more comprehensive understanding of tourism's relationship to globalization compared to conventional trade statistics in several ways:

- Holistic measurement: Conventional trade statistics often fail to capture the full economic impact of tourism, as they typically focus on direct transactions and overlook indirect and induced effects. A value-added approach considers the entire supply chain, including the contributions of various sectors that support tourism, such as transportation, food services, and entertainment.
- Economic interdependencies: By using a value-added approach, researchers can better understand the interdependencies between tourism and other sectors of the economy.

The analysis is conducted in two steps: firstly, based on the TiVA OECD industry classification D55T56 Accommodation and food service activities (which includes 55 and 56 according to ISIC Rev.4.), the involvement of tourism in GVCs will be measured through the analysis of foreign and domestic value-added shares in gross exports, as well as their importance for foreign and domestic demand. Secondly, a panel data analysis is employed to analyze the impact of the FDI inflow on the domestic and foreign value added in tourism. The main research questions are: Does the FDI inward stock (or flows) influence tourism participation in global value chains? What are other relevant variables that impacted the domestic value-added share in tourism?

The countries included in the analysis are: Bulgaria, Czech Republic, Croatia, Hungary, Estonia, Latvia, Lithuania, Poland, Slovakia, Slovenia, and Romania. The period covered in the analysis is 2006-2020.

4. RESEARCH AND RESULTS

4.1. Participation of tourism in global value chains

According to the WTTC's latest annual research (2024) in 2022, the Travel & Tourism sector contributed 7.6% to global GDP (WTTC, 2024). The significance of tourism in the CEE region differs among countries. For the observed EU member states the share of tourism in GDP is even higher. The highest level, where above 25% of GDP arises from the tourism sector, is in Croatia, with a growing trend,

while the lowest level is in Poland, with a share of 4% (Figure 1). The tourism shares in gross value added was 4.5 at the EU level varying from above 11% in Croatia to below 3% in Slovakia.

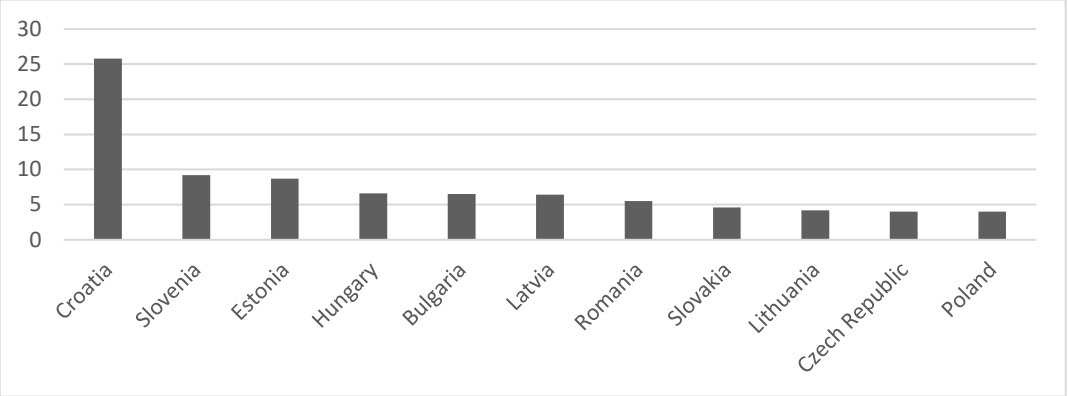
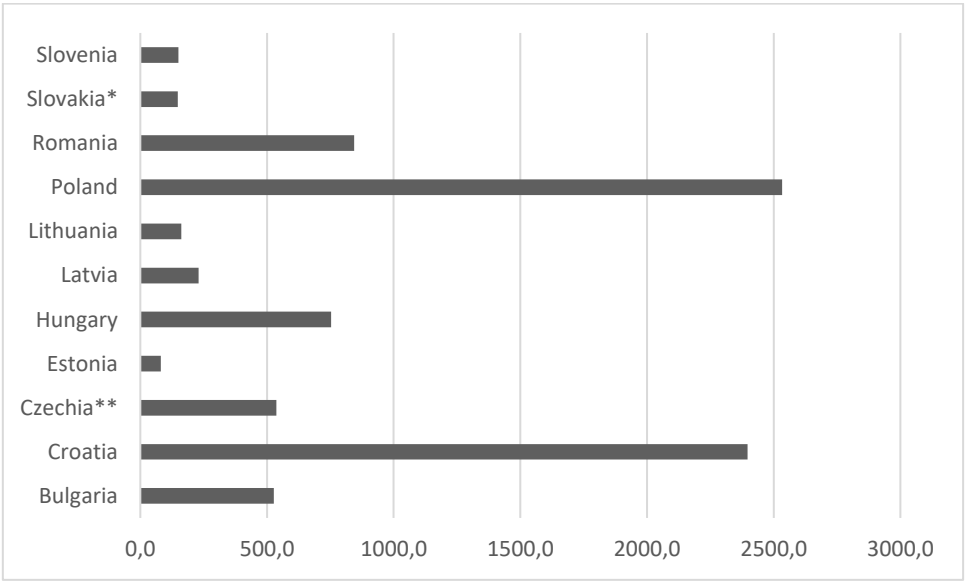


Figure 1. Share of travel and tourism in GDP in the Central and East EU member states in 2022

Source: Statista (2024). Travel and tourism share of GDP in the EU by country. Retrieved from https://www.statista.com/statistics/1228395/travel-and-tourism-share-of-gdp-in-the-eu-by-country/

The CEE countries have also attracted different amounts of FDI in accommodation and food services activities (Figure 2), with values ranging from 80.2 million EUR (Estonia) to 2532 million EUR (Poland).

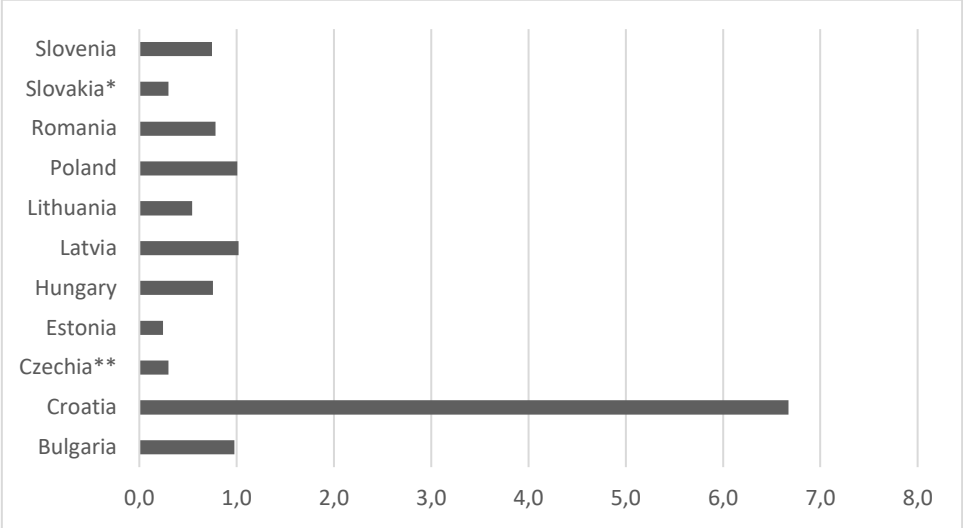


* data refers to 2020; ** data refers to 2021

Figure 2. FDI inward stock in the accommodation and food service activities in the CEE countries in 2022 in EUR m

Source: WIIW (2024). FDI database. Retrieved from http://wiiw.ac.at/fdi-database.html

The share of FDI inward stock in the sector of accommodation and service activities in total FDI inward stocks (Figure 3) is highest in Croatia (6.7%) and lowest in Estonia (0.2%).



* data refers to 2020; ** data refers to 2021

Figure 3. FDI inward stock in the accommodation and food service activities in the CEE countries in 2022 in % of total FDI inward stock

Source: WIIW (2024). FDI database. Retrieved from http://wiiw.ac.at/fdi-database.html

From the insight into FDI in accommodation and food service it is obvious that Croatia is highly dependent on tourism with the highest share of tourism in GDP and also the highest share of FDI inward stock in that sector.

The involvement in GVCs is measured through the analysis of foreign and domestic value-added shares in gross exports but also with their importance for foreign and domestic demand.

The highest share of foreign value added (FVA) in gross export (Figure 4) is recorded in Hungary (26% in 2020), and the lowest in Romania (12.2%). The average values for the EU27 member states were 15.2% in 1995, 18.7% in 2010, and 19.2% in 2020. FVA for the EU27 (considering just the extra-EU export) goes from 5% (in 1995) to 7.1% (in 2020).

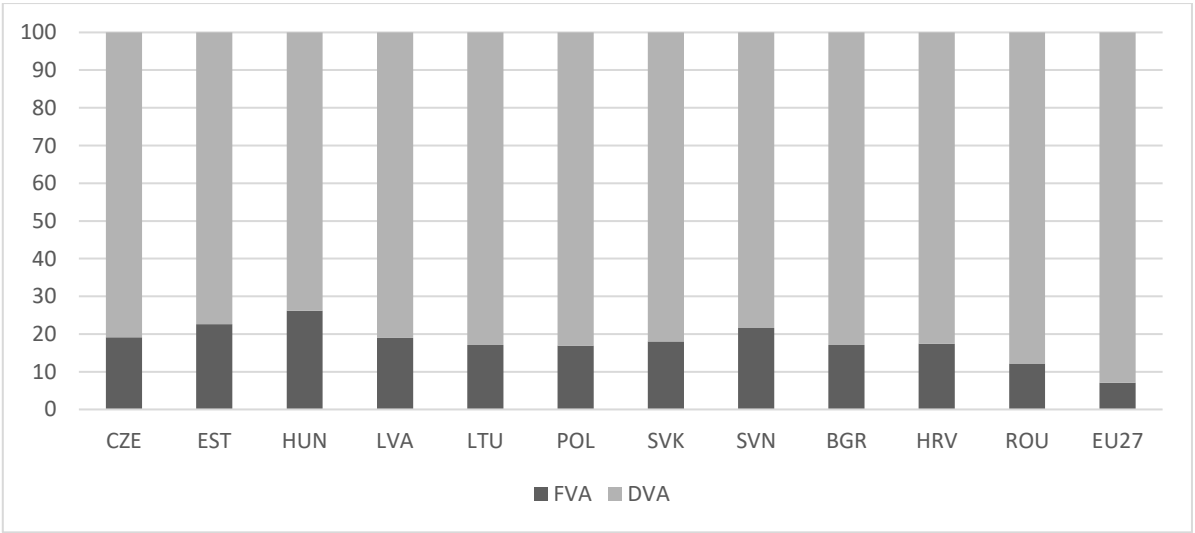


Figure 4. Share of FVA and DVA in gross export of Accommodation and food service activities (D55T56) in 2020 (in %)

Source: OECD. (2024). Trade in value added. https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1#, author's calculations.

In the industry of accommodation and food service activities, the dominance of domestic value added (DVA) in export is obvious. The DVA shares vary from 73.8% (Hungary) to 87.8 % (Romania). The data for the EU27 refers to the extra-EU trade and domestic (meaning the EU value added) represents 92.9% of the gross export (Figure 4). This indicates that domestic supply chains have a high significance in the creation of products and services purchased by tourists. Looking at the indirect DVA, the most important sectors that make major contributions to tourism are business services, wholesale and retail, food products and agriculture (WTO, 2019, p. 62).

The interesting is to go in deep analysis in the time period but also to include the shares of FVA in domestic final demand and DVA in foreign final demand (Figure 5).

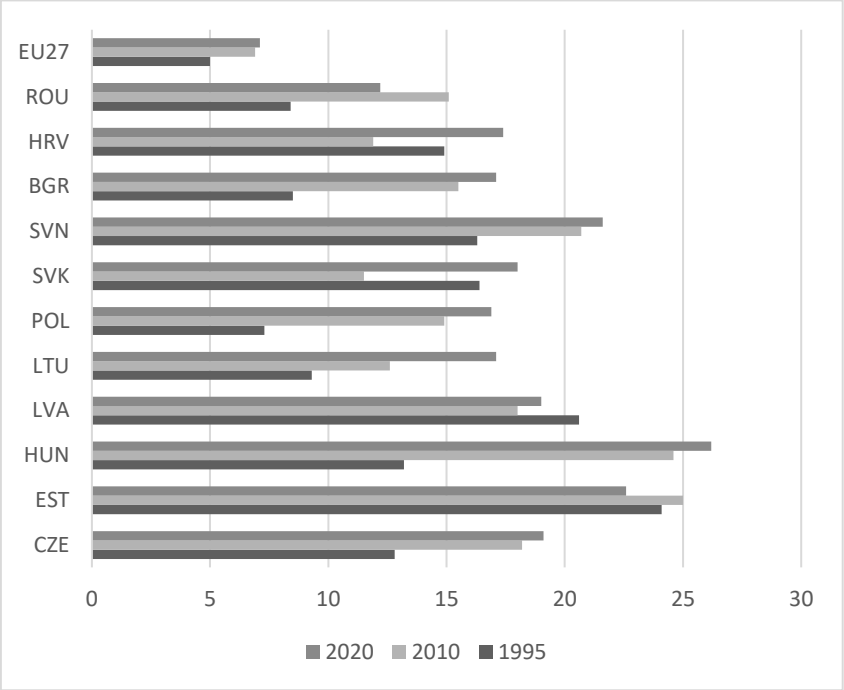
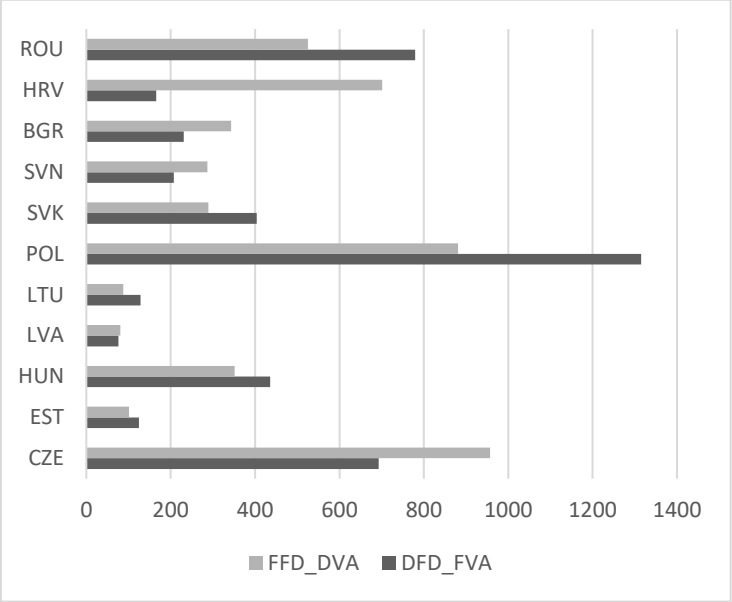


Figure 5. Share of FVA in gross export of Accommodation and food service activities (D55T56) from 1995 to 2020 (in %)

Source: OECD. (2024). Trade in value added. https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1#



DFD_FVA: Foreign value added embodied in domestic final demand
FFD_DVA: Domestic value added embodied in foreign final demand

Figure 6. Foreign value added is embodied in domestic final demand, and domestic value added is embodied in foreign final demand in EU27 in 2020 in USD mil

Source: OECD. (2024). Trade in value added. https://stats.oecd.org/Index.aspx?DataSetCode=TIVA_2022_C1#

Regarding the value of FVA presence in domestic final demand (Figure 6), it is highest in Poland, Romania and the Czech Republic while on the other hand, the highest value of domestic value added embodied in foreign final demand is in the Czech Republic in 2020. Such situation is result of export performance, the importance of tourism in specific EU member states, but also of MNC's investments activities.

4.2. Determinants of domestic value added in tourism

As tourism serves as a source of huge income revenue for some countries, it is an important service sector; the intention of national economies is to increase the share of domestic products that are offered to tourists. Vrh (18) highlighted that domestic value added in exports represents a key measure of a country's global competitiveness.

The analysis is done by employing panel data analysis where we constructed model with the dependent variables: domestic value added. The independent variables are: FDI inward stock (in accommodation and food services), workforce, number of beds (in all accommodation units), tourists' expenditure in accommodation and food service.

An increase in domestic value added in exports can be a sign of the gain from participating in GVCs (Beverelli et al., 2019). Yu and Luo (2018) highlighted the determinants of the growth of DVA in China: productivity enhancement, research and development, capital formation, and the interactions between R&D inputs and vertical specialization. However, those papers are focused on industrial products, and the situation with services is quite different, so it won't be appropriate to include the same variables. Because of this, we have constructed the model with a combination of supply and demand factors that can influence DVA in the tourism sector.

On the supply side, the optimistic scenario would include the domestic resources employed in tourism activities. In this analysis, we will focus on the workforce characteristics because tourism is a highly labour-intensive activity, and FDI inwards stocks as the foreign capital provide the basic precondition for the development of high-quality hotel accommodations. The number of beds is also a measure of supply capacities (and tourist infrastructure). On the demand side, the variable expenditure of tourists is an important factor that generates domestic production.

For the workforce, we will include the data about employment in the accommodation and food services that are directly reflected in tourism, but we should be aware that the number of employed persons in passenger transport, culture, sport and recreation are also connected with the tourism activity (indirectly). Their share connected with tourism isn't possible to calculate, so they won't be included in the analysis. Due to the fact that the complexity of the sector creates significant diversity in employment opportunities and the wide range and level of skills required in the tourism workforce, we will include different groups of employed persons because employed with different education levels contribute to different segments of tourism activity, i.e. tourism doesn't require only high-level employed (OECD, 2024a). Three groups of employed are included in the analysis: one group is employed with a level Less than primary, primary and lower secondary education (levels 0-2); the second group is Upper secondary and post-secondary non-tertiary education (levels 3 and 4), and the third group is Tertiary education (levels 5-8), Eurostat, 2024)

The regression model is:

$$DVA=a+\beta\, FDIit+\gamma\, EMPLit+\delta\, EXPit+\gamma BEDit+ +\epsilon it$$

Where DVA is the share of domestic value added in the tourism export (in %), FDI is the inward stock of foreign direct investments; EXP is tourist expenditure of non-residents; EMPL is a variable that describes the educational level of employed persons in accommodation sector (we will include three categories: low-skilled EMPLp, medium-skilled EMPLs and high-skilled workforce, EMPLte); BED is number of beds in the host country (in all accommodation units) and εit is the error term that includes country- and time-specific attributes.

DVA is expressed in per cent, as a share of gross export, while other variables are expressed in nominal terms (EMPL in the number of persons employed; EXP in euro; BED in the number of beds), and because of this, we convert all independent variables in logarithm form to obtain log-linear model and for easier explanation of interrelation. The sources of data are Eurostat (2024), OECD (2023) and WIIW (2024). The expectation is that all independent variables can have a positive impact on the DVA, i.e. if one independent variable increases, it will impact the increase of DVA.

We have employed dynamic panel analysis for the period from 2006 to 2020. Estimation with the dynamic model allows the dynamics of the underlying processes, which can be crucial in obtaining consistent estimates of the remaining parameters (Bond, 2002). Turning the lagged dependent variable, except that which alleviates rigidity in the adjustment, also reduces the problem of omitted variables. In the panel data model, we have included just two variables: FDI inward stock (FDIs) and total employment (EMPLt) in accommodation and food services. The rest of the variables are included in the Granger- causality between specific variables and DVA due to the different time series availability.

Table 1

GMM dynamic panel data, one-step system GMM (dependent variable: domestic value added)

	Model
Log FDIs	2.497228 (0.6659872)***
logEMPLt	3.010799 (0.886749)***
logFDIs L1.	-5.08224 (0.7667027)
LogEMPLt L1	5.440579 (0.9233929)***
Log FDIs L2	5.469498 (0.8616245)***
LogEMPLt L2	-2.817402 (0.9123195)
Number of observation	103
Number of instruments	11
AR(1) (p-value)	-4.66 (0.000)
AR(2) (p-value)	1.89 (0.054)
Sargan test	56.35 (0.000)

The model includes constant variables. Standard errors are in parenthesis.
***P statistically significant at 1%. **P statistically significant at 5%. *P statistically significant at 10%.
Source: author's calculations

The model indicates that both variables of our interest: FDI inward stock and employment have positive and significant impact on the DVA in tourism export. We have also included two lags of independent variables and we found that FDIs L2 has even higher impact on the DVA than FDIs from the current year, while FDI s L1 isn't significant. Number of employed persons from the previous year also positively impact on DVA from current year.

To find out if there is a causality of all identified variables on DVA, we employed the Granger causality test. Granger-causality tests are carried out by regressing Xt on its own lags and on lags of Yt. Lag length should be less than one-third of the total time period to avoid the over-identification problem. Therefore, we decided to use 2 lags.

Table 2

Granger causality- Domestic value added (dependent variable)

Explanatory variables	Coefficients	Explanatory variables	Coefficients	Explanatory variables	Coefficients
logFDIs	1.333058 (0.1197853)***	logEMPLp	3.202002 (0.2902327)***	logEMPLs	2.909622 (0.6017152)***
L1. log FDIs	1.157156 (0.0537688***	L1.logEMPLp	1.433093 (0.0972719)***	L1. logEMPLs	0.3086124 (0.4735836)
L2.logFDIs	2.302792 (0.0535445)***	L2.logEMPLp	3.139175 (0.3054925)***	L2. logEMPLs	2.507791 (0.5782982)***
No. of observations	103	No. of observations	90	No. of observations	117
No. of groups	11	No. of groups	11	No. of groups	11
No. of instruments	9	No. of instruments	9	No. of instruments	9
Arellano-Bond test for AR(1) in first differences	-3.27 (0.001)	Arellano-Bond test for AR(1) in first differences	-3.05 (0.002)	Arellano-Bond test for AR(1) in first differences	-5.67 (0.000)
Arellano-Bond test for AR(2) in first differences	2.71 (0.07)	Arellano-Bond test for AR(2) in first differences	2.09 (0.036)	Arellano-Bond test for AR(2) in first differences	2.06 (0.039)
Hansen J-test of overidentifying restrictions	12.91 (0.074)	Hansen J-test of overidentifying restrictions	12.75 (0.078)	Hansen J-test of overidentifying restrictions	12.81 (0.074)
WALD test	22853 (0.000)	WALD test	82534 (0.000)	WALD test	35179 (0.000)

(standard deviation in parenthesis)
***P statistically significant at 1%. **P statistically significant at 5%. *P statistically significant at 10%.
Source: author's calculation.

Table 2

Granger causality- Domestic value added (dependent variable) cont

Explanatory variables	Coefficients	Explanatory variables	Coefficients	Explanatory variables	Coefficients
logEMPLte	2.054614 (0.7973978)**	logEXP	1.623369 (0.5270619)***	Log BED	1.527589 (0.0679612)***
L1. logEMPLte	1.850966 (0.7009632)**	L1.logEXP	0.5610832 (0.4772726)	L1.Log BED	0.7259452 (0.0567132)***
L2. logEMPLte	1.686032 (0.818701)*	L2.logEXP	1.186348 (0.5220786)*	L2.Log BED	1.348921 (0.0620008)***
No. of observations	111	No. of observations	81	No. of observations	125
No. of groups	11	No. of groups	11	No. of groups	11
No. of instruments	9	No. of instruments	9	No. of instruments	9
Arellano-Bond test for AR(1) in first differences	-5.59 (0.001)	Arellano-Bond test for AR(1) in first differences	-3.42 (0.000)	Arellano-Bond test for AR(1) in first differences	-3.56 (0.000)
Arellano-Bond test for AR(2) in first differences	2.83 (0.05)	Arellano-Bond test for AR(2) in first differences	1.71 (0.088)	Arellano-Bond test for AR(2) in first differences	1.52 (0.128)
Hansen J-test of overidentifying restrictions	12.87 (0.076)	Hansen J-test of overidentifying restrictions	12.78 (0.073)	Hansen J-test of overidentifying restrictions	12.83 (0.079)
WALD test	23697 (0.000)	WALD test	20997 (0.000)	WALD test	17356 (0.000)

(standard deviation in parenthesis)
***P statistically significant at 1%. **P statistically significant at 5%. *P statistically significant at 10%.
Source: author's calculation.

4.3. Discussion

The analysis presented in this study provides insights into the factors influencing domestic value added (DVA) in tourism. The first variable of interest is Foreign Direct Investment (FDI). We included data for inward FDI stock, as FDI flows fluctuated during the covered period, while value-added data (DVA or FVA) are derived from the FDI stock (cumulated FDI values in a particular country). As expected, this variable positively impacts DVA. Tourism development in the EU's new member states largely relies on foreign investments in hotels (including chains) and related tourism sectors.

Employed persons are also a significant component of DVA. We found the greatest impact from those employed with low and medium skill levels, reflecting the need for various types of skills and educational attainment in tourism. This is also a consequence of the workforce structure in this sector, where most jobs do not require high levels of skills or knowledge (typically acquired through tertiary education). A structural issue in the EU labour market has emerged: countries are increasingly struggling to find a workforce with the appropriate skills, which are insufficiently available in the domestic labour market. As a result, these positions are often filled by migrants, not only from other European countries but also, more frequently, from outside the EU (particularly from Asia). This is a specific issue that warrants further exploration, namely, how migrants impact tourism development in EU member states and to what extent they contribute to the creation of domestic added value in the economy, both in general and specifically in tourism.

The variable of tourist expenditure also has a positive impact on DVA, although its effect is weaker—though still significant—compared to that of employed persons. Tourist expenditure includes costs for accommodation, dining (restaurants/cafes), transport, package arrangements, and other tourism-related spending (excluding durable and valuable goods). Given the broad scope of this expenditure, it can also affect FVA, which is incorporated into the supply of domestic markets.

The number of beds in domestic accommodation units reflects, on the one hand, domestic private investments in real estate, but, on the other hand, it is a prerequisite for accommodating tourists. Part of the accommodation is provided by large international hotel chains, where FVA is reflected, but the majority of units are still owned by domestic small-scale private renters.

The global tourism production network is complex and extends beyond the scope of this analysis (Nurse et al., 2017). However, this research contributes to the scarce literature on tourism's participation in GVCs. Including all relevant factors that indirectly impact tourism would be challenging, as it requires the application of input-output tables and because tourism expenditure is not a precise variable (available from statistical reports) but is mostly estimated through various surveys on foreign tourist spending. Nevertheless, a more detailed analysis, including an input-output model, would provide a clearer picture of the interrelationships among domestic sectors and tourism.

5. CONCLUSION

Tourism is highly dependent on international environmental conditions, with globalisation creating a favourable framework for its development but also making it vulnerable to global disturbances. In the last five years, the world has faced the COVID-19 pandemic and Russian aggression in Ukraine, both of which have strongly impacted tourism, especially the pandemic with travel restrictions in place.

This paper took a different approach by examining the integration of tourism into global value chains rather than focusing on traditional tourism metrics like arrivals, overnight stays, and revenue. While there is literature on value chains in tourism, there is no unified approach to the issue. This paper explores the domestic and foreign added value components in tourism exports and final domestic and foreign demand.

Foreign direct investments (FDI) play a significant role in creating tourism value chains, with this analysis focusing on the new EU member states to draw conclusions about FDI levels and integration into

global value chains. Croatia was found to be the most dependent on tourism, with a clear link between FDI in accommodation and food services and tourism's GDP importance.

The study also analysed the share of domestic and foreign added value in gross exports, with domestic added value dominating, indicating strong domestic value chains. The share of foreign-added value decreased in 2020 due to the pandemic, with all countries (except Latvia) experiencing this decline. In the econometric part of the analysis, we found a positive impact of FDI inward stock and employed persons on the domestic value added in tourism. Additionally, through causality testing, we found a positive impact of all the included variables on domestic added value, with lagged independent variables also proving to be significant in many cases.

This research provides a systematic overview of integrating accommodation and food services into global value chains, focusing on analysing domestic and foreign added value (i.e. available indicators). Given that there are no similar studies including the group of new EU member states, it can be considered pioneering research.

There are limitations to the research due to the availability of data at the tourism sector level for both FDI and backwards and forward participation in global value chains. The latest available data (input-output tables) pertain to the 2020 pandemic, which should certainly be considered, as data for subsequent years will undoubtedly be different.

This analysis has opened up areas for further research. A significant contribution would be to investigate the role of domestic sectors in domestic value added in tourism exports, as well as the role of various sectors in foreign value added included in domestic final demand.

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APPENDIX

Table 1

Summary statistics

Variable	Obs	Mean	Std.Dev.	Min	Max
dva	165	82.20303	4.286542	72.2	90.3
logFDIs	141	10.03083	1.22289	7.68708	12.35667
logEMPLt	143	4.503252	0.881045	2.912351	6.044057
logEMPLp	134	2.116509	0.8270448	0.0953102	3.453157
logEMPLs	143	4.243743	0.9271185	2.451005	5.70877
logEMPLte	141	2.432955	0.818076	0.9555114	4.55703
logBED	159	12.22301	1.067315	10.10598	13.96209
logEXP	99	13.29395	1.170333	11.22703	15.93164

Table 2

Correlation matrix

Variable	dva	logFDIs	logEMPLt	logEMPLp	logEMPLs	logEMPLte	logBED	logEXP
dva	1.0000							
logFDIs	0.1035	1.0000						
logEMPLt	0.1945	0.7612	1.0000					
logEMPLp	0.0675	0.7227	0.8942	1.0000				
logEMPLs	0.2153	0.7464	0.9967	0.8749	1.0000			
logEMPLte	0.1364	0.7309	0.8414	0.7727	0.8021	1.0000		
logBED	0.1433	0.8606	0.8795	0.7856	0.8790	0.6998	1.0000	
logEXP	0.2293	0.6810	0.9022	0.7927	0.8950	0.8041	0.7870	1.0000