INBOUND AND OUTBOUND TOURIST FLOWS: ASSESSMENT OF THE IMPACT OF INTERNAL AND EXTERNAL FACTORS

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ABSTRACT

This paper is devoted to identifying and assessing the factors that have the most significant impact on the outbound and inbound tourist flows of countries. Hypotheses are put forward and tested about the sensitivity of outbound flows to changes in certain macroeconomic factors of countries, as well as the significant impact of events occurring at the state or regional level on the inbound flows. Regression-correlation analysis of time series allowed to obtain quantitative estimates of the degree of macroeconomic factors influence to the outbound flows of the number of countries and to identify the most influencing factors. The dynamics of inbound flows was analyzed in terms of jumps in the increase or decrease of the flow as a reaction to certain activities of a negative or positive nature. Relevant for modern tourism collapse due to COVID-19 pandemy impact trends in the rate of recovery of tourist flow are estimated.

Keywords: COVID-19, Tourist Flows, Inbound Tourism, Outbound Tourism, Regression-Correlation Analysis, Macroeconomic Factors.

JEL Classification: L93, L83.

INTRODUCTION

The tourism industry was considered to be one of the most dynamic and able to adapt relatively easily to any external influences. The COVID-19 pandemic has caused an extremely negative impact on the world economy, but tourism appeared to be the most vulnerable to its negative influence on society. Closed borders, the abolition of air travel, limited or completely cancelled inland transport, accommodation and catering establishments being almost illegal – these are just the first crisis manifestations having engulfed the service sector. The World Tourism Organization expects the volume of tourist services to fall from 58 to 80% (UNWTO; 2020).

Tourism can be regarded as an important driver of economic growth globally and locally. Over the last 50 years, the tourism sector has been characterised by rapid development, with a constant annual growth, except in 2009. On average, the tourism sector (OECD, 2020) provided 4.4% of GDP, 6.9% of employment and 21.5% of services exports. For most countries where tourism is a priority, it plays a significant role in generating revenue, foreign exchange earnings, creating jobs (including the related fields), improving infrastructure and terrain. In 2019, the tourism sector was characterized by 3.5% growth, outpacing the 2.5% growth of the world economy for the ninth consecutive year. Over the past five years, the sector has created one in four jobs, making travel and tourism a development priority for many countries (WTTC, 2020).

Scientific studies focus (Hall, 2010; Faladeobalade, 2014) on gaining significant benefits from tourism development – huge income, strengthening national currencies, solving problems with the balance of payments, reducing unemployment and increasing wages are the most crucial among them. In the context of sustainable economic development, the potential of the tourism economy growth is determined by its impact on foreign exchange earnings, raising state taxes and local fees, as well as the active involvement of local communities, administrations, and service providers.

The vast majority of researchers pay attention to the impact of tourism on the economic development of individual destinations, stimulating economic growth, obtaining revenues and non-cash contributions by a particular country or a region.

At the same time, the reverse problem of the country's economic situation impact on the volume of tourist flows, or the influence of local and global events on the tourism industry development is studied much less frequently. Indeed, the growth or decline of the tourism industry depends significantly on the general state of the country's economy and on events occurring both within states and on entire continents. Various factors can have both positive and negative effects on tourism development (Baiev et al., 2019).

The destruction of recreational areas, natural and cultural monuments, the general decline in economic growth, rising unemployment, currency devaluation

and more were the consequences of negative affairs around the world. For example, over the last two decades, the destructive natural disasters with a devastating effect on tourism development took place in Romania (2002), Italy and Indonesia (2004), and in France (2016). The examples of hostilities and terrorist attacks that negatively affected tourist flows are: the 9/11 events in the United States (2001), rebellions in Spain (2004), Egypt (2011), and Ukraine (2014). Tourism has also experienced the devastating impact of pandemics: bird flu (2003), swine flu (2009), and the current COVID-19 (the end of 2019-2020) (Polinkevych et al., 2021; Volosovych et al., 2021, pp.5-6)

The global economic crisis of 2008-2009 caused the most significant negative impact, felt by almost all sectors of the economy. In particular, the tourism industry faced a reduction in international arrivals by 4% and a decrease in revenues by more than 6% (Faladeobalade, 2014). That is why scientists emphasize the importance of paying attention to financial security issues both at the level of an individual enterprise and at the level of industry and country (Khovrak & Petchenko, 2015).

However, many global and local events have a positive effect on tourism and can be described as stimulating (Horyslavets et al., 2018). It is important that the events of this category and their occurrence, as well as the consequences, are mostly predictable. Holding the Olympic Games or similar international competitions, football or tennis championships accelerates the pace of economic development, promotes investment in infrastructure, strengthens the image (Polinkevych & Kamiński, 2018) of individual territories or forms a strong brand of cities and countries.

The main benefits from these events for tourism are: a significant increase in tourist flows (namely inbound ones), extra income for the host country (Boiko et al., 2018), improved transport infrastructure, attracting investment and creating additional jobs. Holding the events of international and especially local level allows to build small towns, to improve the image of a district, thereby stimulating tourists to visit localities in the future. Obviously, it is not always possible to predict accurately the economic consequences of competitions or championships and obtain economic benefits (for example, the 1996 FIFA World Cup in the United States was resulted in $4 billion losses) (Hall, 2010). However, the events of such level bring benefits usually in the medium and long term.

Thus, it seems appropriate to study the impact on the tourism industry development from the side of, firstly, the events occurring in a particular country, region or around the world; secondly, the influence of macroeconomic indicators of the country's development on tourism dynamics. These two areas, respectively, involve the study of the inbound and outbound flows dynamics, as the most characteristic indicators of a country's tourism activity.

The purpose of the study is, firstly, to determine the relationship between inbound tourist flows and local/global events; secondly – to define the nomenclature and obtain a quantitative assessment of the impact of certain macroeconomic factors on the volume of outbound tourist flows.

This study combines theoretical and practical aspects of research. In particular, the theoretical analysis of scientific works covering the interaction of tourism with the general socio-economic and political development (Stec & Grzebyk, 2020) of the world and individual countries has identified the main research areas. They are primarily devoted to studying the impact of tourism on the general economic development of countries and individual territories. The relationship between tourism and globalization, the development of mobile technologies, global and local events, national policies on tourism demand, etc. is being studied, albeit to a lesser extent. Theoretical analysis allowed determining the main study areas. This, in turn, enables to form a practical aspect of the study, namely, obtaining quantitative characteristics of the impact of events of different levels on inflows and the correlation of outflows with macroeconomic factors in the country.

The article has the following structure: the first section analyzes the theoretical background of tourism impact on economic development and identifies factors that affect the dynamics of tourist flows, highlighting the two main scientific areas. The second section discusses the main methods that allow to determine the relationships between events and tourism development, as well as to assess the degree of correlation of macroeconomic factors with the volume of outbound tourist flows. The third section of the study is devoted to the analysis of international arrivals in the period of 1995-2020 with the definition of lags for tourism recovery; establishing the relationship between global or local events and the dynamics of incoming tourist flows with highlighting their positive (negative) shifts; correlation and regression analysis of the macroeconomic factors' impact on outbound tourist flows in 10 European countries.

LITERATURE REVIEW

Tourism has become a driving force and a significant factor in economic performance for many developed and developing countries, which confirms the special relevance of studying the patterns of tourism development and determining the factors that affect it (Kozmenko et al., 2015; Okhrimenko et al., 2019; Antonenko et al., 2020; Melnychenko et al., 2020). Due to the research of various scientific schools and individual authors, the problems of tourism development are formulated, the role and place of tourism in the world economy is indicated, proposals and recommendations for its further growth are suggested.

The economic consequences of tourism have been mentioned in the works of the world's leading scientists, and the time span of research suggests that this issue has become particularly active since the mid-90s. This can be explained by the active growth rates of this industry both in separate regions and in the world.

Sadler & Archer (1975) identify the main advantages and disadvantages of tourism development in poor countries. According to Wanhill (1983), tourism helps to improve the local economy's indicators. However, most publications of this nature focus on specific regions, such as the works of Henry and Deane (1997), Gartner & Holecek (1983), Ahlert (2009), Seetanah (2011), Mayer & Vogt (2016), Brauer, et al., (2019).

Pye & Lin (1983) review the results of quantitative studies of the economic impact of tourism on the Asian countries development: the Philippines, Hong Kong, Sri Lanka and Korea. According to these authors, the economic benefits from tourism should be characterized by tourist arrivals and currency exchanges. Socci, et al., (2016) perform the sectoral analysis of tourism impact on other national industries in the Apennine Peninsula using the index of interaction between various economic sectors. These papers consider the importance of studying the impact of tourism and its economic influence in the short and long term forecasts.

As the tourism sector stimulates the economy in many countries, the increase in tourist flows leads in turn to a positive economic effect through the gross domestic product (GDP) growth and improved workforce opportunities, reducing inflation expectations and unemployment (Manzoor et al., 2019; Mihajlović & Krželj– Čolović, 2014; Honey & Gilpin, 2009).

The study (De Vita & Kyaw, 2016) proves that the positive effect of tourism development is observed for middle- and high-income countries, while in the countries with low economic development, tourism does not contribute to GDP growth. At the same time, there is a group of researchers who refute the hypothesis of economic growth due to the tourism development alone.

Integrative reflection of economic, social and cultural phenomena in tourism allows us to talk about its positive and negative consequences in economic, social and environmental terms (Cohen, 1978; Vaughan, 1990; Dwyer, 2015). In this aspect, the social responsibility of both representatives of the tourism business and tourists is important. Experts emphasize that socially responsible companies are able to stimulate sustainable development, as they develop and implement various initiatives in the field of environmental protection, staff development, consumer awareness (Trynchuk et al., 2019; Činčalová, 2020; Glonti et al., 2020). At the same time, the role of universities, which train future socially responsible consumers of tourism, is extremely important (Khovrak, 2019).

Thus, the field of scientific publications is mainly limited to studying tourism impact on economic, social or other aspects of activity, while the impact

of internal and external factors on tourism is covered insufficiently. Among the works that systematize this problem, the most interesting, in our opinion, is the review of Khan et al. (2020), which covers both sides: the impact of tourism on the country development and the analysis of numerous factors that directly affect the tourism sector. In particular, it is important to identify factors that have had a positive and negative impact on tourism development. Original culture, security level, developed infrastructure, changes in visa rules, price-performance ratio, country's image, the state's attitude to tourism, price levels, language barriers, etc. are among them:

The connection between terrorism and the dynamics of tourist flows was established by Corbet, et al., (2019). This is confirmed by the study of Krachkovskiy & Danilchuk (2012), based on the statistics of 1980-2011 and providing an expert assessment of the influence degree of such factors as economic crises, catastrophes, pandemics, population growth, changes in household incomes on the growth of tourist flows.

Ma, et al.*,* in their work (2020) note that there is a direct relationship between natural events (earthquakes, tsunamis, floods) and tourist flows, which is confirmed by a decrease in the number of tourists in places of natural disasters. The same, there is a link between declining international arrivals and man-made events (financial, political crises or disasters related to tourist safety).

The events of the end of 2019 - 2020, caused by the coronavirus, were actively reflected in the scientific field. In this regard, scientists have focused on how the impact of global events changes not only the economy but also certain areas, especially tourism (Iacus et al., 2020; Rosello et al., 2020; Rutynskyi & Kushniruk, 2020; Wen et al., 2020).

However, it seems necessary to obtain quantitative estimates of the impact of global and local events on inbound tourist flows, as well as to conduct a correlation analysis of the influence of certain macroeconomic factors on the dynamics of outbound tourist flows. It is expedient to study the dynamics of international flows, as they are the main indicators of the country's tourism industry development.

H_1 - The positive or negative impact of events occurring in a country or region, affects mainly inbound tourist flows

H_2 - Correlation between outflows and certain macroeconomic factors of the country exists.

The stages and objectives of the study will be defined as follows:
- To identify events that have negatively or positively affected the development of tourism in countries or regions;
- To assess the degree of negative impact of events on inbound tourist flows;
- To assess the degree of positive impact of events on inbound tourist flows;
- To estimate the terms of relaxation of inbound flows;

- To determine the main macroeconomic factors that affect the volume of outbound tourist flows;
- To obtain quantitative estimates of the correlation degree for each factor with the volume of outbound tourist flows;
- To obtain quantitative estimates of the impact of each factor on the change of outbound flows using the methods of correlation-regression analysis.

Tourism, as a priority area, is able to accumulate significant financial resources and ensure economic growth. However, given the spread of the COVID-19 pandemic, it is important to identify trends in tourism recovery, taking into account the impact of global/local and macroeconomic factors that have the most significant influence on tourism flows.

METHODOLOGY

The important issue for data analysis is the formation of research criteria for identification. It enabled us to select countries among their large number in the world and to get reliable information and validate results.

The report uses a mixture of quantitative data of which the main sources were the World Travel and Tourism Council and the United Nations World Tourism Organisation as well as academic literature and information from relevant websites covering tourism development and the factors that affect it.

This study is an empirical study using secondary data. The annual data from 2001 to 2019 of 10 countries, namely France, Germany, Italy, Poland, Bulgaria, Georgia, Romania, Ukraine, Turkey, Egypt. The main sources were official statistics from the websites of the respective countries.

Data for tourist arrivals and tourism receipts were obtained from the World Tourism Organization (UNWTO, 2020). All data are open and published on the websites of statistical services of selected countries.

The main research method should be considered the analysis of time series, which is one of the main statistical methods. Estimates of a chain absolute or relative growth rate allow recording monotony or jumps in the dynamics of the studied indicators. Time intervals were chosen from 5 to 23 years, depending on a particular task. In order to test the hypothesis of the impact of macroeconomic factors on the outflows volume, the data of the 2018 spatial sample for 10 countries were additionally analyzed. Selection of macroeconomic factors that most significantly affect the volume of outbound flows within the countries, the assessment of the correlation degree between them and indicators of tourist flows, the estimation of multicollinearity, as well as the quantitative analysis of impact parameters were performed by correlation-regression analysis. This method gives the opportunity to evaluate the level of interconnection (the coefficient of determination), its type (direct, inverse) and the effect of the factor influence on the value being determined (the coefficient

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of regression). Due to the sufficiently high multicollinearity between the factors, the multifactor regression analysis and the construction of appropriate models appeared to be irrelevant.

RESULTS AND DISCUSSIONS

Dynamics of Tourist Flows

For the past 30 years, the World Travel and Tourism Council (WTTC, 2020) has been researching the economic impact of travel and tourism in 185 countries. Figure 1 represents the dynamics of inbound and outbound tourist flows since 1995. The chart shows that the number of travellers has almost tripled in 25 years, and tourism has become a powerful branch of international trade in services, which is growing steadily (see Figure 1).

Source: UNWTO (2020)

FIGURE 1
THE DYNAMICS OF INTERNATIONAL TOURIST FLOWS, BILLION VISITS

The dynamics of both inbound and outbound flows is sensitive to the effects of economic crises (2003 and 2009), but if the volume of world trade fell by 11.9% in 2009, the inbound and outbound tourist flows decreased only by 4.1% and 1.4% respectively, and since 2010 they have shown a strong recovery until 2020.

However, in the short term, the development of tourism is ambiguous, due to the impact of the COVID-19 pandemic and, as a consequence, the fall of the world economy. Insurance companies are no exception, which have to adapt their strategies to market demands during pandemics and crises (Dankiewicz et al., 2020; Velichko et al., 2020). It should be noted that insurance companies are forced to quickly adapt to the crisis and changes, bearing in mind customers'

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capabilities and demands (Polinkevych & Kamiński, 2020, p.21) and include COVID-19 risk in the insurance contract. In addition to the traditional accident insurance, insurance against cancellation\interruption of tours, health insurance, medical expenses insurance, insurance against terrorist attacks during travels, carrier liability insurance, insurance against the risk of the complete cessation of companies' activity because of the inability to organize tourist travels due to force majeure circumstances, etc. (Kozmenko & Abramitova, 2015, p.113).

The latest edition of the UNWTO World Tourism Barometer (UNWTO, 2020) shows that the almost complete isolation imposed in response to the pandemic has reduced the number of international tourists in May by 98% compared to 2019. In the context of the COVID-19 pandemic, the global travel market will decline by 58-78% in 2020 (Vnukova et al., 2020, p.53). This leads to a decline in the number of tourists by 300 million and a loss of revenue from international tourism by $320 billion, which is more than three times the loss during the global economic crisis of 2009.

The loss figures for the tourism industry, nonetheless, need to be analyzed not only in terms of the decline rate in tourism flows, but also in the light of the industry's recovery experience from previous falls, such as in 2009. Significant reductions in demand for travel services in late 2008 and early 2009 were abrupt at the time, but the recovery in tourist flows was fairly rapid, with 2009 showing a total 4.1% drop in tourist arrivals. Demand for tourist services was largely delayed, and 2010 showed a record increase in tourist arrivals by 6.8%. At the same time, the global financial crisis led to a less sharp decline in the world GDP in 2009, for the first time since World War II, but the pace of recovery in 2010 was much slower, despite huge anti-crisis support measures. Thus, the world GDP in 2009 decreased by 2.3%, and its growth in 2010 was only 2.5%, *i.e.* the GDP in 2010 actually barely reached the level of 2008, while the resumption of tourist flows in 2010 allowed exceeding the rate of tourist revenues in 2008 by 2.4%. The statistics of changes in outbound tourist flows are even more significant – with the 1.4%decline in 2009, while the recovery was rapid and strong, 8.6% growth in 2010, which exceeded the pre-crisis figure of 2008 by 7.1%.

It can also be stated that the growth of tourist flows is outpacing and stronger than the growth of economic indicators in general – for example, the record growth of the international tourist arrivals by 7.2% in 2017 occurred against the background of half the growth of the world GDP by 3.3%.

Thus, the tourism business demonstrates shorter time lags of change and a stronger rate of recovery after the fall due to the economic crisis.

Inbound Tourist Flows: Sensitivity to Local and Global Events

Events of various scales are a unique attraction for tourists, starting from authentic local festivals to international fairs or major world events such as the Olympic Games, World Cups, tennis, hockey, song contests and more.

Events (for example, sports, cultural, business ones) are becoming an increasingly important tourism motivator, occupying a prominent place in the development and marketing of most areas and helping to increase the competitiveness of tourist destinations. Such events have the potential to act as catalysts for local development, as well as to provide a number of economic, social, environmental and other benefits (OECD, 2020).

The main characteristics of local events are the time interval of their holding, predictability and focus on the result (starting from obtaining certain economic benefits, ending with the formation of a strong image and brand). Seasonality is a consistent feature for local events, which depend on the human factor – and namely they were mentioned above. For example, the Olympic Games are held once every 4 years in winter or summer, or the Grand Slam tournament (4 tournaments during each season).

The proposed events aim to increase their attendance, thereby contributing to the growth of tourist flows. However, there are events that are difficult either to be predicted or assessed by the consequences of their occurrence.

Let's consider the impact of local adverse events on incoming tourist flows. It is obvious that global negative events affect the inflow of tourist to the countries approximately equally, reducing the purchasing power of potential travellers and the attractiveness of international visits in general, which is demonstrated, for example, by a simultaneous decrease in tourist arrivals to almost all countries in 2001 as a result of the 09/11 terroristic attack in the United States or the 2008-2009 global economic crisis. Nevertheless, table 1 demonstrates that this decrease is significantly smaller than other sharp drops in inflows to some countries that are not associated with global negative factors. We shall consider some other cases of such falls, comparing them with local events that occurred in these countries. Tables 1 and 2 show the dynamics of tourist arrivals (column 3) in the countries where the negative/positive events for tourism took place (mentioned in column 2), and column 4 reveals, for comparison, the rate of change of the international tourism receipts in the corresponding year.

Table 1 INFLUENCE OF LOCAL NEGATIVE FACTORS ON INBOUND TOURIST FLOWS			
Country, year	Negative factors	Decrease of a local inbound flow	Fall/rise in international tourism receipts, the corresponding year
USA, 2001	Terrorist acts on September 11 (the 9/11)	-8%	-0,1%
Romania, 2002	Flood	-3%	+3%

Singapore, 2003	SARS-1 - atypical pneumonia	-31%	-1%
Canada, 2003	SARS-1 - atypical pneumonia	-13%	-1%
China, 2003	SARS-1 - atypical pneumonia	-10%	-1%
Hong Kong, 2003	SARS-1 - atypical pneumonia	-9%	-1%
Italy, 2004	Blackout 2003 - a large-scale energy disaster (affected 56 million people, stopped the subway, rail transportation, tourism activities)	-6%	+11%
Indonesia, 2004	Tsunami in the Indian Ocean (180 thousand people dead)	-6%	+11%
Egypt, 2011	Revolution, resignation of President Hosni Mubarak	-32%	+6%
Ukraine, 2014	Military conflict in the eastern Ukraine, annexation of the Crimean peninsula	-48%	+5%
Egypt, 2016	Kogalymavia flight crash, 224 dead, cancelling charter flights from Russia, Great Britain and other countries	-42%	+4%
Turkey, 2016	Attempted military coup Prohibition of charter flights from Russia due to the downing of a Russian bomber	-23%	+4%
France, 2016	Flood in May-June 2016 Terrorist attack in Nice on the day of the national holiday – the Bastille Day (July 14, 2016)	-2%	+4%
Source: own presentation based on Knoema, (2020)			

It should be noted that the negative local events had a rather weak impact on the dynamics of outflows, except for events related to quarantine measures for SARS-1 - SARS in 2003, when citizens arriving from countries affected by the epidemic were forced to undergo a 14-day obligatory quarantine.

We also see that local adverse events have little or no effect on the dynamics of international tourist arrivals, in contrast to the global economic crisis, when the decline in the world tourist flows was 4%, given the growth in previous years on average by 6%. This is due to the possibility of redirecting global tourist flows in case of local unrest in certain regions or countries to other destinations, and the inability to prevent a significant decline in purchasing power caused by global economic stagnation.

It's time to discuss now local positive events for tourist arrivals. It is clear that such activities as the Olympic Games, song contests or other popular events increase significantly the interest of potential tourists to the host country

(Mustafina et al., 2018; Prymak et al., 2020), and this interest can have a "prolonged effect", giving a significant impetus to the accelerated development of inbound tourism for the next few years. Table 2 shows the most illustrative examples of such a positive impact.

Table 2 INFLUENCE OF LOCAL POSITIVE FACTORS ON INBOUND TOURIST FLOWS			
Country, year	Positive factors	Increase of a local inbound flow	Fall/rise in international tourism receipts, the corresponding year
Italy, 2006	2006 Olympic Games in Turin	+12	+6%
United Kingdom, 2011	The wedding of Prince William and Kate Middleton	+4%	+6%
New Zealand, 2012	The discovery of the Hobbiton in the scenery of the movie saga "The Lord of the Rings"	+6%, 2013	+6%
Azerbaijan, 2012	Eurovision Song Contest 2012	+27%	+4%
Sweden, 2013	Eurovision Song Contest 2013	+8%, 2014 +15%, 2015	+6%
Denmark, 2014	Eurovision Song Contest 2014	+20%	+4%
South Korea, 2018	Winter Olympics in Pyeongchang	+15%	+7%
Israel, 2019	Eurovision Song Contest 2019	+11%	+5%
Source: own presentation based on Knoema, (2020)			

Obviously, the country's success in increasing the flow of tourists due to positive events is not automatic, an event should be used properly. In addition, the growth of tourist flows due to this event should be compared not only with global trends, but also with the average growth rate in the country itself. That is why, for example, the 4% increase in UK tourism in the wedding year of Prince William and Kate Middleton came after a very modest increase of 0.34% in the previous 2010.

Therefore, Hypothesis 1 of our study has the following conclusions. First, there is a relationship between events that occur globally or locally and inbound tourist flows, in contrast to outbound flows, which are weakly correlated with the event impact factor. In support of the hypothesis, we can also say that the negative influence of local events has less impact on international tourist arrivals than the impact of global ones, and is characterized by a delayed response lag.

Positive events of a global or local nature significantly affect the dynamics of inbound tourist flows, with a faster and at the same time shorter response time to the event.

Outbound Tourist Flows: Determining the Impact of Macroeconomic Indicators

As mentioned above, the study of tourism impact on the world economy and individual regions development is extremely popular among researchers. However, the inverse problem of studying the factors influencing the formation of tourist flows is little studied and also seems interesting.

This section aims to establish correlations and obtain a quantitative assessment of the impact of some macroeconomic factors on outbound tourist flows. It is assumed that the number of travellers abroad depends on the overall financial condition of the country, and outbound tourist flows must respond to changes in certain macroeconomic factors.

In order to test the hypothesis of the existence of a correlation between outflows and macroeconomic factors, as well as to obtain quantitative estimates of such a relationship, we used statistical data of both time series and spatial sampling of the studied indicators.

Outbound flows from ten countries were studied: France, Germany, Italy, Poland, Bulgaria, Georgia, Romania, Ukraine, Turkey, and Egypt. Countries were selected on the following grounds:

- Economically developed European countries with large outbound tourist flows
- European developing countries
- Popular tourist countries among Europeans

To conduct a simple correlation analysis and find the dependence between the number of tourists leaving the country and its macroeconomic state, the following indicators (factors) were selected:

- Inflation rate (%)
- GDP per capita (USD)
- Average wage (USD)
- Net savings in GDP (%)

Indeed, according to the UN recommendation, GDP is the main indicator that measures the volume of national production. Tourism is considered to be a profiling industry if it generates more than 8% of the country's GDP and more than 10% of the region's GDP. According to the world's largest catalogue of open and public data Knoema (2020), in 2018, tourism generated about 2/3 of the country's GDP in some regions of the world (Seychelles – 67.1%, Maldives – 66.4%). Among Ukraine's neighbours, Georgia's tourism contributed the most to the country's GDP (33.7%). According to these sources, the contribution of tourism to Ukraine's GDP in 2018 was 5.4%. The direct contribution of tourism

to employment was 1.3% in Ukraine (alongside with total contribution of 4.9%), in Georgia – 8.6% (total contribution – 29.5%), in the Seychelles – 26.8% (total contribution – 66,7%).

Inflation rates, average wages and savings are factors that are likely to directly affect a country's ability to travel.

Correlation matrices including all indicators were built both for the time series according to the data of each studied country, and the spatial sample by countries according to the data of 2018. Table 3 presents a correlation matrix based on the dynamic series of observations of the outflow and macroeconomic factors of Ukraine (Knoema, 2020) (2014-2018), which were supposed to have a correlation.

| Table 3 CORRELATION MATRIX ACCORDING TO THE TIME SERIES OF THE INDICATORS IN UKRAINE				
	Outbound flow	Inflation rate	GDP per capita	Average wages
Outbound flow	1			
Inflation rate	-0,448595	1		
GDP per capita	0,3359582	-0,66401	1	
Average wages	0,5270899	-0,71568	0,976444	1
Source: own computation				

The analysis of the correlation matrix was performed in terms of the adequacy of the correlation direction and the correlation degree:

- "number of departures – inflation rate": A inverse correlation (increase in inflation causes a decrease in outflow from Ukraine), which should be considered logical following the pair "determined indicator – the influencing factor", but the degree of this connection is low (R=-0.45);

- "number of departures - GDP per capita": direct correlation (GDP growth per capita causes an increase in the outflow), which should be considered logical, if the outflow is a tourist one, the degree of correlation is low (R=0.34);

- "number of departures – average wage": direct correlation (increase in wages causes increase in outflow), the degree of correlation can be considered significant (R=0.53).

Multicollinearity (a high level of correlation between macroeconomic factors) was noted, which hinders us from building a multifactorial regression model.

Despite the low degree of correlation between the volume of outflows with selected macroeconomic factors, simple regression models proving the dependence between the number of departures and inflation, GDP per capita and average wages were built (see Figure 2).
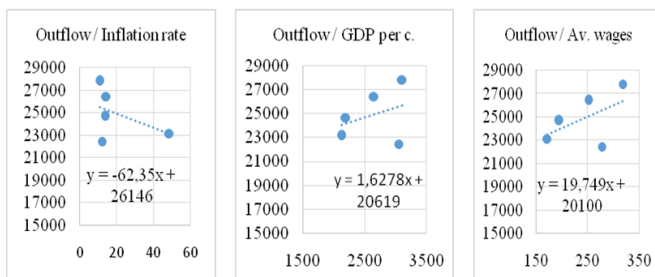
Source: own computation

FIGURE 2
SIMPLE REGRESSIONMODELS OF DEPENDENCEOF THE NUMBER OF PEOPLE LEAVING UKRAINE ON MACROECONOMIC FACTORS

The obtained results can be explained as follows:

- Dependence of the outflow on inflation: the trend determines the year of 2015, when the inflation rate in Ukraine reached 48.7%. The correlation is weak, but the direction is inversed and logical. According to these estimates (angular coefficient of the regression equation) every 1% increase in inflation causes a drop in outbound flows by 62 thousand people (or 0.22%).
- Dependence of outflow on GDP per capita: as already noted, the level of correlation is low, but if this is not taken into account, it is possible to estimate the regression equation, namely, an increase in GDP per capita of $1 causes a growth in outbound flow by 1.6 thousand people (or 0.01%).
- Dependence of the outflow on the average wagein Ukraine: the degree of correlation with this factor is the highest of the studied and in accordance with the angular coefficient of the equation, the average wage growth by $1 causes an increase in outbound flow by 19.75 thousand people (0.07%).

A similar analysis, namely, the construction of simple regression models of the dependence of outflows on macroeconomic factors and a quantitative assessment of the impact of these factors on the number of people leaving the country (Knoema, 2020) was conducted for 10 more countries (for each separately). The results are presented in table 4.

Table 4 RESULTS OF CORRELATION-REGRESSION ANALYSIS BY COUNTRIES						
Country	Growth (fall) of outflow depending on macroeconomic factors *					
	Inflation rate, 1%		GDP per capita, 1$		Average wages, 1$	
	R	Thousands of people(%)	R	Thousands of people(%)	R	Thousands of people(%)
France	-0,13	-195	-0,19	-	0,74	11 (0.04%)

		(0.73%)		0.095(0.0004 %)		
Germany	0,19	1929 (1,78%)	0,33	1,03 (0,0009%)	0,67	18,55 (0,02%)
Italy	-0,04	-80 (0,24%)	0,92	1,17 (0,0035%)	0,61	14,08 (0,04%)
Bulgaria	-0,06	-36 (0,54%)	0,66	9,35 (0,14%)	0,78	9,35 (0,14%)
Poland	-0,66	-846(6,61%)	0,52	1,083 (0,01%)	0,89	15,19 (0,12%)
Romania	-0,31	-436 (2,07%)	0,87	2,72 (0,01%)	0,94	17,78 (0,08%)
Georgia	-0,39	-71 (2%)	0,6	0,84 (0,02%)	0,88	6,9 (0,19%)
Ukraine	-0,45	-62 (0,22%)	0,33	1,6 (0,01%)	0,53	19,75 (0,07%)
Turkey**	0,5	207 (2,48%)	0,13	0,15 (0,0018%)	-	-
Egypt	-0,69	-143 (2,3%)	0,91	1,6 (0,03%)	0,91	8 (0,13%)
Source: own computation * estimated regardless of the correlation degree (correlation coefficient R); ** insufficient data						

To identify specific trends, an assessment was made even when the correlation between the dependent indicator (the number of people leaving the country) and the macroeconomic factor that is expected to affect it was weak or virtually absent.

Table 4 shows the following ratios for each factor (inflation, GDP per capita and average wage): correlation coefficient R, change in outflow (thousand people), change in outflow (as a percentage of total outflows).

Generalized conclusions about the research are:

- Outflows of developed countries, such as France, Germany, Italy, as well as Bulgaria, do not ultimately depend on the dynamics of inflation in the country. The inflation rate in these countries is quite low and stable;
- Several countries appeared to be the most sensitive to inner inflation: Poland (an increase in inflation by 1% causes a decrease in outbound tourist flows by 6.61%), Egypt (1% inflation reduces outflow by 2.3%), Romania (2.07% decrease) and Georgia (2% decrease);
- The increase in GDP per capita by $1 significantly correlates with the outbound flow of Italy, Romania and Egypt;
- Decrease (increase) in average wages is a macroeconomic factor that most affects the outflow for all countries. When the wages increase by $1, a significant positive shift in outbound tourist flows is observed in almost all countries studied.

In order to clarify the obtained results and conclusions, the dependence of the outflow from macroeconomic factors was estimated according to the spatial sample data, namely, the data of 2018 were used as a starting point. Preliminary analysis suggested that the factor of net savings in GDP may also have a

significant impact on the dynamics of outbound tourist flows. Table 5 presents a correlation matrix based on the data for ten countries, with an estimate of the correlation between the number of departures and the four selected factors.

Table 5 CORRELATION MATRIX ACCORDING TO THE SPATIAL SAMPLE(10 COUNTRIES, 2018)					
	Outflow	GDP per capita	Average wages	Inflation rate	Net savings in GDP
Outflow	1,0000				
GDP per capita	0,7290	1,0000			
Average wages	0,7800	0,9958	1,0000		
Inflation rate	-0,3145	-0,5544	-0,5330	1,0000	
Net savings in GDP	0,3577	0,4806	0,4904	-0,4017	1,0000
Source: own computation					

The results of testing the correlation of the number of people leaving the country and macroeconomic factors according to the spatial sample are:
- GDP per capita (R≈0.73) – strong correlation;
- Average wage (R=0.78) – strong correlation;
- Inflation (R≈– 0.31) – weak inverse correlation;
- Net savings in GDP (R≈0.36) – weak correlation (not analyzed for some countries).

Thus, the factors of the inflation rate and net savings in GDP were excluded from the further analysis, as they showed a low degree of correlation with the dependent indicator. It seems appropriate to assess the implications for outflows at a change of 1% for two factors - GDP per capita and average wage, especially given the significant range in their values in different countries. Table 6 demonstrates the results of the obtained estimates.

Table 6 ASSESSMENT OF THE IMPACT OF CHANGES 1% OF FACTORSON THE VOLUME OF OUTBOUND TOURIST FLOWS									
Factor		Ukraine	France	Georgia	Bulgaria	Poland	Romania	Italy	Germany
Sensitivity of outflow to change by 1%	GDP per capita	0,18%	0,17%	0,84%	1,29%	1,31%	1,58%	1,39%	0,43%
	Average wages	0,23%	1,55%	0,60%	1,02%	1,6%	0,98%	1,3%	0,77%
Source: own computation									

For all countries studied, there is an increase in outflow caused by 1% increase in average wages. The confident interval of fluctuations in the growth rate of the country's outflow due to the wage factor increase can be surely stated (from 0.23% in Ukraine to 1.6% in Poland).

The one-year lag input into the model increases the level of correlation of the outflow rate with the average wage factor for the countries with the largest outbound flows (excluding Ukraine): France, Italy, Germany and Romania.

The dependence of the outflow growth on the increase in GDP per capita by 1% is also present, but the degree of correlation vary significantly in different countries and is generally lower compared to the correlation "outflow – average wage". Fluctuations in the outflow increase compared with the GDP per capita growth by 1% were kept within the range from 0.17% (France, with almost no correlation) to 1.58% (Romania).

Though, it is not possible to investigate purely the dependence of the outflow growth rate on the overall level of economic development of the country due to the presence of a sufficient number of other factors that affect this indicator.

The first reason that is difficult to take into account is the different forms of statistics provided by countries and, consequently, the unclear structure of the outflow. Namely, what percentage of all people leaving the country are persons who can be defined as "tourists"? A significant part of the outflow in such countries as Poland, Romania, Ukraine makes labour migration. (Dluhopolsky et al., 2019; Yakovleva et al., 2019, p. 33). For example, Ukraine is among the top ten donor countries for international migrants in the world. According to various estimates, the number of migrant workers reaches 4 million people. At the same time, about 2.6-2.7 million people may be outside the country at the same time.

Labour migration from Romania is huge, too. According to the World Bank (2020), between 3 and 5 million Romanians go to work in Germany, the United Kingdom, Italy and Spain.

According to the Main Statistical Office of Poland (Stat.gov, 2020), since the country's accession to the European Union, about 2.5 million people have gone abroad in search of work.

From the list of chosen countries, according to the United Nations report (UN, 2020), the top-largest donors of international migration include Ukraine, Poland, and Germany. But these reports summarise migrants, permanently residing in other countries, without an analysis of short-term migration – the number of those who temporarily leave and return home.

Secondly, the level of wages differs quite significantly (see Figure 3), so, its growth by 1% in Ukraine makes about $3, and in Germany – $45. Therefore, with such growth, a German citizen has the opportunity to use the services of a low-cost airline, even buy a round trip (a flight) and become a tourist.
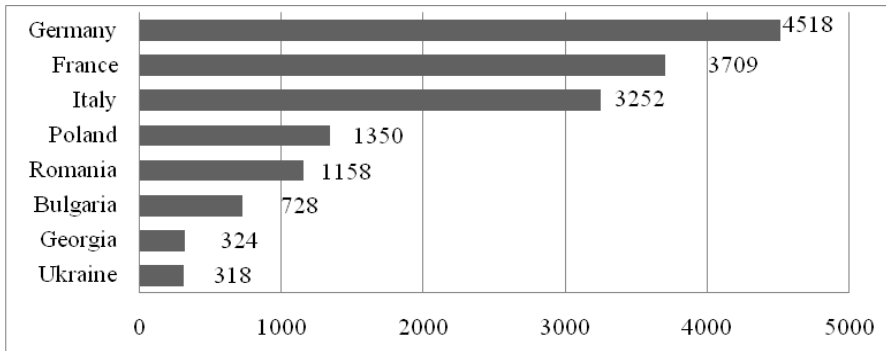
Source: built by the authorsbased on Knoema, (2020)

FIGURE 3
THE AVERAGE WAGES IN2018, SELECTED COUNTRIES

Thethirdreasonisthedifferentpotentialforincreasingtheoutboundtouristflows , notonlyby quantitative estimates, but also by different qualitative factors and characteristics of the population of a certain country. Figure 4 represents the share of outflow in the total population of the analyzed countries.
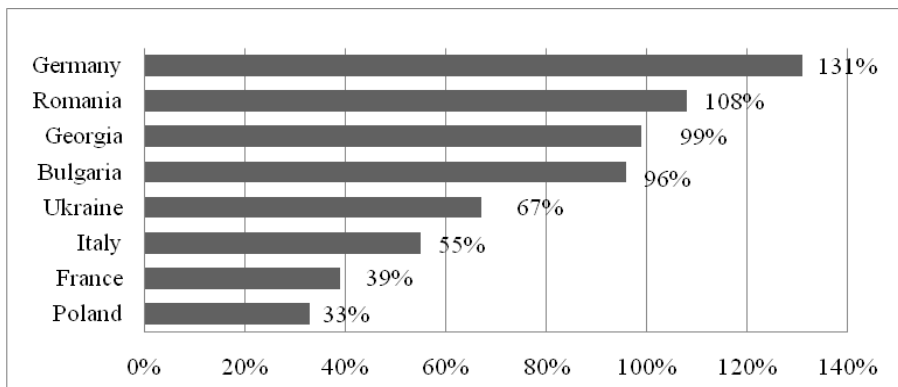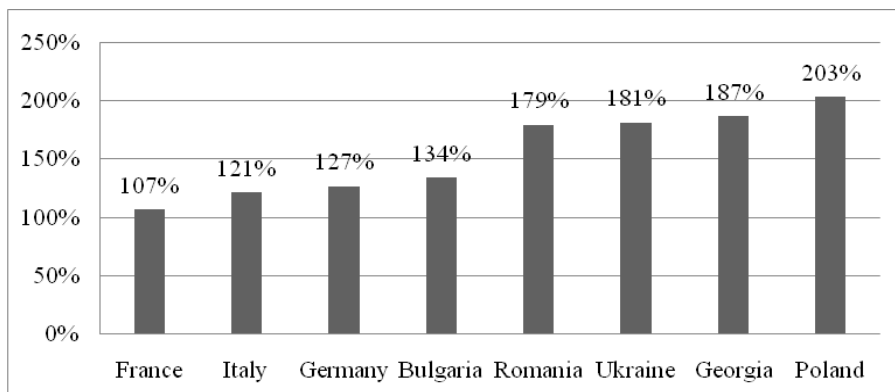

Source: built by the authorsbased on Knoema, (2020)

FIGURE 4
THE RATIO OF OUTFLOW AND TOTAL POPULATION, SELECTED COUNTRIES

Can it be said that the potential for growth of the outbound (including tourist) flows of the countries occupying the last two positions, namely France (39%) and Poland (33%), is approximately the same? Definitely not. France has its own special situation: it is an emigrant country, because 8.2 million citizens, or 12.3% of its population, are people born in other countries. At the same time,

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the French, having such an opportunity, prefer to rest in their country. Therefore, the change in the rather strong existing outflow from France (about 27 million people) is the smallest among the studied countries (an increase by only 7% over 10 years) (see Figure 5).

Source: built by the authorsbased on Knoema, (2020)

FIGURE 5
THE OUTFLOW GROWTH DURING 10 YEARS (2009-2018), SELECTED COUNTRIES

During the same period, Poland's outflow has more than doubled (since 2004 it has been a member of the EU, and since December 2007 it has joined the Schengen area). In addition, the system of statistics of outbound tourist flows has changed.

Bulgaria and Romania have a lot in common, being the EU members since January 2007, but not part of the Schengen area, and they are post-Soviet countries. But the outflow of Romania has almost doubled during the study period, and made a 34% surplus in Bulgaria. Bulgaria is an anti-immigrant country that, according to the European Commission (2020), received only about 50 migrants who arrived in Europe in 2015-2017. That is, the approximately total inflow to Bulgaria can be considered as a tourist one, but the outbound travels refer to migration. The population of the country in 2018 was only 7024 thousand people. Jobs in Bulgaria are mainly concentrated in tourism and are seasonal; the accession to the EU has simplified and accelerated the process of labour migration. Bulgaria's outflow is the most sensitive in terms of the percentage change in GDP per capita and average wages among all the countries studied.

Romania is one of Ukraine's closest neighbours, so ethnic border interactions, makes the significant outflow share (more than 5% of the total inflow to Ukraine). The problem of labour migration from Romania is widespread, and since the country's accession to the EU, this process has only accelerated. Romania's outflow is 8% higher than the country's total population.

It is estimated that more than 3 million Romanians work in the European Union (14% of the total outflow). Therefore, a significant part of the outflow from Romania is formed due to labour migration, rather than tourist travel.

Thus, in accordance with the tasks and the proposed hypothesis 2, there is a correlation between outbound tourist flows and macroeconomic factors. Based on the analysis of time series conducted for 10 countries, the different degrees of correlation between the outflow rate and macroeconomic factors (GDP per capita, inflation, average wages, net savings in GDP) were discovered.

The most significant correlation between the number of people leaving the country and the average wage factor was found. There is a correlation between outflows and the level of GDP per capita, but the degree of correlation vary a lot for different countries and is generally lower compared to the correlation "outflow – average wage".

The previous hypothesis of a significant correlation between outflows and macroeconomic factors such as inflation in the country and net savings in GDP was not confirmed, although the assessment of correlation coefficients according to the spatial sample showed an adequate inverse depending on "outflows – inflation" and a direct depending on "outflows – net savings in GDP". The logic of correlations between the factors themselves do really exist.

CONCLUSIONS

The importance of tourism for the economic development of both individual countries and the world economy is undeniable. Accumulating significant cash inflows, creating jobs, stimulating infrastructure, tourism has helped to improve the economic and social condition of states. The events caused by COVID-19 focused not only on the dependence of economies on tourism development, but also on the existence of a link between global and local events and the tourism sector development. As the scientific literature covered this area insufficiently, and given that the regional aspect prevailed in the majority of studies, the current study creates a theoretical basis for further research of the impact of global and local events on the dynamics of international tourist flows.

The practical contribution of this work is not only to establish the relationship between global and local events and the dynamics of inbound tourist flows, but also to quantify this impact on local and international flows. The negative influence at the local level does not always worsen the values of international tourist arrivals, even contributes sometimes to their improvement. In addition, due to negative local events, the tourist flows may be redistributed to other regions. Therefore, it should be concluded that inbound tourist flows are the most vulnerable to local conflicts directly related to the security of stay in the host country or region (hostilities, conflicts, disasters) – a drop in the number of

entrants may be from 23% (Turkey, 2016) to 48% (Ukraine, 2014). The period of the of local tourist inflows resumption depends on the conflict duration and the tourist attractiveness of the region.

At the same time, the positive impact of local events on the inflow growth is short-lived and less significant (maximum 27%, Azerbaijan, 2012) and depends on a set of measures to promote the future event and the quality of the host organization.

Proving the hypothesis of the existence of a correlation between outbound tourist flows and macroeconomic factors also adds a practical aspect to the presented work. The most significant factors influencing the outbound flows are the average wage and the level of GDP per capita.

The analysis of the coefficients of pairwise linear regression gave the quantitative estimates of the sensitivity of outbound flows to changes in the factors influencing them; namely, it was determined that an increase in the average wage by 1% causes the outflow surplus from 0.23% to 1.6 %. Including the one-year lag into the model increases the level of correlation of the number of departures with the average wage factor, mainly for countries with the largest outflows.

Quantitative estimates of the parameters of paired regression models demonstrated the outflow growth interval in the range between 0.17% and 1.58%, with the GDP per capita factor growth by 1%.

The results of an empirical study of 10 countries allow us to conclude that the impact of selected macroeconomic indicators on outbound tourist flows for each country will be different. This is due to both the level of economic development of a country and the nature of the outbound tourist flows (for example, labour migration, family ties in border areas, etc.).

Some limitations of the presented study were due, firstly, to the peculiarities of statistical reporting, different in each country, which is based on the variety of forms. Secondly, it was not possible to obtain information for the selected time period for all selected countries, which in turn limited certain economic and statistical calculations.

The question of the relationship between environmental factors and the dynamics of international tourist arrivals, as well as the expansion of macroeconomic indicators to assess their impact on tourist flows will be the scope of further research.

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