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TOURISM AND ITS IMPACT UPON THE ROMANIAN ECONOMY: AN INPUT-OUTPUT APPROACH

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Abstract

In different countries around the world, tourism is struggling to sustain economic growth in a sustainable manner. Even if Romania has an important tourism potential, in the last nineteenth years tourism didn't contribute of more than 2-3% to the national GDP. In terms of non-monetary indicators (arrivals, overnight stays, occupancy rates, average length of stay) tourism has registered a significant decline comparing with the reference year 1990. Using Input-Output analysis, known as being a useful, efficient and trustable instrument, tourism contribution to the Romanian economy was measured. The Input-Output model synthesizes the intersectoral relationships existing between hotels, restaurants and travel agencies and other economic sectors and also might predict the effects generated by different changes that could take place in an economy. Backward and forward linkages are used to describe how the increase in the production of tourism sector generates an increase in the demand for inputs from other sectors in the economy and respectively in the supply to other economic sectors. These linkages provide a general image of how tourism sector might sustain the economic growth in Romania.

Key words: tourism, economic impact, multipliers, input-output
JEL classification: D57, L83, O11

1. Introduction

Tourism industry is recognized by specialists as a sector which support and sustain economic growth recording important increases in different parts of the world. It has proven effectiveness as an agent for sustainable growth both in developed regions and in developing or poor regions (e.g. Africa or Asia). Tourism as a distinct component of the tertiary sector are closely correlated with the level and pace of growth of the economy in general and of each branch of activity, in particular trade, transport, construction, agriculture. Researchers and academics on the one hand, but also the tourism operators support the idea that tourism is a tool for economic growth.

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Over the time various methods and instrument were developed with the aim of measuring tourism contribution to economic growth of a country, namely input-output analysis, computable general equilibrium, tourism satellite account, econometric models, survey techniques and so on. For each of this instrument an important amount of data are necessary in order to comprise the economic growth induced by tourism. Romania is one of the countries who can benefit largely from tourism sector development, but in our days, its contribution to the gross domestic product is relatively small. However, it is important to use other statistical and econometric instruments to understand how the tourism sector interacts with other economic sectors. In this manner, it can be underlined the place of the tourism sector in the general economic context and its potential to sustain the economic growth and its perspective of development.

The paper is built up as follows: Section 2 presents various approaches regarding the tourism and economic growth, Section 3 describes the methodology used in measuring the economic impact of tourism; this section also presents shortly the input-output methodology used in this paper to measure tourism contribution at national level and its potential to sustain economic growth. Section 4 is basically an overview of the Romanian tourism aiming to make possible the understanding of its evolution in the last nineteenth years, also the current situation in the tourism sector and its perspective of development. Section 5 presents the economic structure and tourism sector relative importance within the Romanian economy, analysing the macroeconomic indicators in part used in the following section. Section 6 is dedicated to the calculation and interpretation of the backward and forward linkages for the Hotels, Restaurants and Travel Agencies Sector in Romania and section 7 to the conclusions.

2. Tourism and its contribution to the economic growth

The movements of people within a country and between different countries are very important for tourism, an industry that has great growth potential in the world today.

Looked through its content and in correlation with the whole national economy, tourism acts as a factor that stimulates the global economic system [Minciu, 2000, 24]. Tourism can be an engine of economic growth, and there are voices that support the fact that it is important to create partnerships between public and private sector to stimulate investment in this industry. In literature, there is a large volume of information on tourism and its development in different countries.

Tourism is not only one creator of GDP, but has an important contribution to value added [Minciu, 2000, 25]. This industry can also have an impact on natural resources in the various tourist destinations, on everyday life of these locations and also on the individuals from those areas, whether rural or urban. However, the needs of the tourism sector are both important for tourists and the local people in the destinations.

As regards the relation between economic growth and tourism, we can mention that it is important for tourism to be a support for growth. Thus, through strategies to encourage this sector, this branch of economy could be a solution to reduce unemployment, to improve the economic situation of the destination. Tourism could generate an increase in occupational choices for individuals and tourism sector improvements can lead to infrastructure development appreciated by people in local communities, but here we must take also into account the related environmental issues.

Nowadays, tourism faces different challenges, being necessary to find appropriate ways to protect the possibilities of the future generations of tourists and host communities through the measures adopted at national level. The development of tourism sector should refer also to measures aiming to comply successfully with the economic environment in continue change but also with the changes in the society in general.

Besides these issues, it is not to be forgotten the need to comply with the environmental principles, ecological balance being important in the developing process of the tourism sector. If and how tourism can contribute to economic growth is an issue that can bring many discussions and analysis, still scientists are looking for answers to this question.

Issues relating to the environment and its protection are very important for the tourism industry and also for economy and society being known that it is important first of all the changes in better of the tourists' behaviour. Tourism was favoured during the past century due to many changes, the most important being those that occurred in the sphere of transport, enabling tourists to reach almost anywhere the world, thus reducing distances significantly.

We might consider that, as a result of increased number of visitor, destinations should not consider changes in different ways in an attempt to remain in the top of the tourist preferences, because, from location to location, there are different attractions and different elements that make a destination unique.

Tourism also needs other industries, because this branch cannot develop in isolation from other components of the economy of any destinations.

There are different papers in literature that explore the relationships arising between economic growth and tourism. [Eugenio-Martín, 2004] considers the relationship between tourism and economic growth for Latin American countries for 1985-1998 (21 Latin American countries) and conduct an analysis based on a panel data approach. The authors consider two models, one tries to explain economic growth depending on the number of tourists and through the other they attempts to understand how much tourism growth depends on the rate of growth of GDP per capita and other potential determinants of tourism. Authors observed that tourism growth was associated with economic growth only in low and medium income countries, but not in high income countries. Also, for all countries, tourist arrivals are positively related with GDP per capita, international trade and life expectancy at birth, high income countries rely on GDP per capita and secondary education enrolment, medium income countries need to rely on GDP per capita and high expectancy of life and low income countries obtain higher number of tourists' arrivals if infrastructures, education and safety are developed.

Through its characteristics - service activity, high consumption of labour, intelligence and creativity - tourism participates in the creation of value added in a high proportion than the related industries in terms of the level of development [Minciu, 2000, 25]. It is well known that tourism creates demand in destinations for equipment, food, shows, entertainment etc., it creates a market for them, and it creates employment opportunities in hotels and tourism agencies, in the food industry, in various entertainment activities and different other commercial activities. Also, the tourism can create reasons to improve the infrastructure, and can bring revenue to local budgets of the various tourist destinations.

The demand for products and services in tourism depends on a number of factors, and depends on consumer behaviour. In general, some factors are related to time, income, prices etc. Revenues of tourists can influence the tourism demand. Prices are also important ele-

ments considered by tourists when they decide to spend their income, for example, within a trip.

Tourism contributes to economy in terms of volume of foreign currency entering into one country, the tax revenue level that is generated by this branch and also the generation of new employment and business opportunities. It is difficult to determine the contribution of tourism to GDP, if we have in view the large volume of data necessary, and being known the interconnections that exist between tourism and other economic sectors, namely agriculture, transport, food industry etc.

Tourist flows are useful to examine and provide information on the extent of the tourism in a country. These elements can be useful at national level in the process of creation of development policies in an area. Tourism can generate jobs in accommodation, in food industry, in entertainment industry etc., and its development can stimulate the creation of new jobs in other industries.

For sustainable development of tourism it can be underlined the need of tourism to become a priority sector of a country's economy. At national level, the sustainable development of tourism can be influenced through measures of stimulating the firms to increase the quality of the tourist supply. Moreover, different measure could be adopted to stimulate investment and create jobs.

Also, for example, it should be consider measures to increase the number of tourists, attracting tourists to spend holidays, increase contribution of tourism to revenue in the local communities etc.

Tourism should become an essential element not only at economic level but also at cultural and social level, especially for destinations development. The measures that aim the development of tourism should also aim at avoiding environmental degradation, increasing employment, attracting people in tourism etc.

Tourism sector could stimulate the increase of awareness regarding local values from a country, and we should not forget that through tourism, the local communities can enjoy increased popularity among tourists, thus being underlined the elements like beauty and cultural richness of a region, country etc.

3. Methodology used in measuring the economic impact of tourism

Basically, there are several recognized methods in measuring the economic impact of tourism: multipliers, Input-Output analysis (IO models) and more recently Computable General Equilibrium Models (CGE) models. However combing these methods (e.g. multipliers with Input-Output analysis[i]) or using other econometric models represent other possibilities to assess the tourism impact upon economy.

Traditionally the analysis of economic impact of tourism has mainly based on using **multipliers** (especially Keynesian multipliers) which connects tourism expenditure to production, incomes, employment or any other variables which presents interest. Actually the term *tourist multiplier* refers to the ratio of two changes – the change in one of the key economic variables such as output (income, employment or government revenue) to the change in tourism expenditure [Cooper et al., 1993, 116]. On the other hand, it could be stated that tourism multipliers capture the secondary economic effects (indirect and induced) of tourist expenditure [WTO, 2002, 101].

Therefore, there are a lot of multipliers of various kinds: output multiplier, employment multiplier, production multiplier, sales multiplier, income multipliers. Such multipliers

are relatively straightforward to calculate and provide a quick and simple way of assessing the overall magnitude of a change in tourism expenditure [Ennew, 2003].

Most multipliers are expressed as a ratio of total effects to the direct effect of expenditure (also called ratio multipliers). In this case there are two types of multipliers: type 1 multipliers are those that include the ratio between direct plus indirect effect to direct effect while type 2 multipliers are those including also the induced effects. Other multipliers could be calculated using the Keynesian formulas measuring the income generating in the economy by an additional unit of tourist expenditures.

The more developed and integrated the economy the tourism multipliers are more likely to be higher. The higher the value of the multiplier the greater the economic impact of tourist expenditure [WTO, 2002, 103].

However because of their oversimplification, and because they usually do not rely on a detailed description of the specificity of tourism and of the economy under study, the use of exogenous multipliers gives only approximate results [UNWTO et al., 2008, 99]. That is why the interest was moved towards the use of general equilibrium techniques – Input-Output analysis and CGE models.

Input-output analysis begins with the construction of a table, similar to the table of national/regional accounts, which shows the economy of the destination in matrix form. Each sector of the economy is shown in each column as a purchaser of goods and services from other sectors in the economy, and in each row as a seller of output to each of the other sectors. Then a series of equations are computed considering that a change in the level of final demand will create an increase in the level of activity within the economy, which manifests itself as changes in the output and sales of each sector [Cooper et al., 1993, 122].

Where sufficient additional data are available the most expanded Input-Output model is recommended to measure the economic impact of tourism on [ESCAP, 1990, 12-13]:

a. Balance of payments;
b. Gross domestic product (including income distribution among sectors and regions);
c. Employment;
d. Government budget;
e. Stabilization policies such as
    (i) Investment policy;
    (ii) Tax policy

By measuring the impact on balance of payments it can be demonstrated the relative importance of tourism as a foreign exchange earner and can be calculated the net foreign exchange earnings from tourism. As regards the contribution of tourism to GDP, it can be measured value added and income generation in tourism sector and other sectors as a result of backward linkage effects. In case of employment it can be measured direct employment in tourism sector, indirect employment in the sectors supplying inputs to the tourism sector and induced employment as a result of subsequent rounds of spending. The Input-Output technique allows also the measurement of revenues earned by the government from tourism including taxes accruing to the government as a result of an increase in the demand for goods and services of other sectors arising from higher tourism expenditures. Moreover, the investment policy could be assessed by calculating the net impact of tourism promotion on the government budget as a difference between revenues gained from tourism and expenditure incurred by the Government to sustain the total final demand of tourism.

The Input Output analysis starts by estimating the input-output coefficients also called technical coefficients. These are calculated by dividing each column of the transactions table

by corresponding column total. If x_{ij} represents the amount of inputs of sector *j* purchased from the selling sector *i*, and X_j the total output of sector *j*, the technical coefficients are determined as $a_{ij} = \frac{x_{ij}}{X_j}$. In the case of sectors, the technical coefficient matrix (A) is constructed, known as direct requirements table or Leontief matrix.

If I is the unit matrix, X is the vector of sectoral output and Y is the vector of final demand, a demand-driven input-output model of an economy can be described as following:

$$A*X+Y = X, \quad (1)$$

From where it results that:

$$X = (I-A)^{-1}*Y \quad (2)$$

Where $(I-A)^{-1}$ is called total requirements matrix or Leontief inverse matrix.

The IO analysis offers two distinctive results for each analysed sector, namely backward linkages and forward linkages. First, the backward linkage is used to indicate the interconnection of a particular sector to other sectors from which it purchases inputs. Also, increased output of sector *j* indicates that additional amounts of products are available to be used as inputs by other sectors. Backward linkages are demand-oriented [Eurostat, 2008]. Because of their property, backward linkages are also reported in the bibliography as multipliers. I-O tables generate various types of multipliers. The most used are for output, earnings, value added and employment.

The Leontief inverse matrix, described before, is the result of a matrix transformation through which multiplier coefficients can be calculated. If O is the Leontief inverse matrix, the derived backward linkage coefficients are determined as follows:

$$OBL = \sum_{i=1}^{n} O_{ij}\ ,\ EBL = \sum_{i=1}^{n} L_i O_{ij}\ ,\ IBL = \sum_{i=1}^{n} Ic_i O_{ij}\ ,\ VABL = \sum_{i=1}^{n} VA_i O_{ij} \quad (3)$$

Where OBL – output backward linkage coefficient, EBL – employment backward linkage coefficient, IBL -income employment backward linkage coefficient, VABL – value added backward linkage coefficient, L_i - matrix of employment technical coefficients (l_{ij}) determined as sectoral employment divided by sectoral output, Ic_i - matrix of income technical coefficients (ic_{ij}) determined as household income divided by sectoral output, VA_i - - matrix of value added technical coefficients determined as sectoral value added (va_{ij}) divided by sectoral output.

The forward linkage presents the intersectoral transactions, showing that an increase of total production of sector *j* increases it's total supply to the rest of the economic sectors that are suing sector's *j* product as an input in their production process (Bonfiglio et al. 2006). According to Augustinovics (1970), the forward linkage coefficients reveal the intermediate consumption as a percentage of total sectoral sales including final demand. The term forward linkage is used to indicate this interconnection of a particular sector to those to which it sells its output. Forward linkages are supply oriented [Eurostat, 2008]. The forward linkage coefficients are determined as follows:

$$OFL = \sum_{i=1}^{n} O_{ij}^{T}\ ,\ EFL = \sum_{i=1}^{n} L_i O_{ij}^{T}\ ,\ IFL = \sum_{i=1}^{n} Ic_i O_{ij}^{T}\ ,\ VAFL = \sum_{i=1}^{n} VA_i O_{ij}^{T} \quad (4)$$

Where OFL – output forward linkage coefficient, EFL – employment forward linkage coef-

ficient, IFL -income employment forward linkage coefficient, VAFL – value added forward linkage coefficient, O_{ij}^{T} - is the transposed of Leontief inverse matrix.

Multipliers are another mean of estimating the overall change in the economy due to changes in final demand. Among all the information provided by input-output, multipliers are one of the most frequently used.

The advantages of input-output analysis in comparison with other methods are as it follows [ESCAP, 1990, 11-12]:

a. It reveals the interrelationships of the tourism sector with the other sectors in the economy;
b. It provides a statistically consistent and systematic approach to understanding the economic impact of tourism on the entire economy. Despite the many limitations of the assumptions adopted in such analysis, it provides a technique for identifying and examining the total effects of tourism. The technique allows the tracing of not only the indirect economic effects of tourist expenditure, but also the induced effects as tourist expenditure filters down to various sectors of the economy;
c. It enables the determination of the relative size of the tourism sector in the overall economy;
d. It enables a comparison of the performance of the tourism industry in relation with the other sectors of the economy particularly in the areas of foreign exchange earnings, income generation, and employment creation.

There are some well known limitations of Input-Output analysis and one of this is the "restrictive assumptions" including the interactive effects between economic sectors that are ignored. In principle, these assumptions are as follows [Smeral, 2006, 95]:

- During the period of analysis, the quantity relations of the inputs (in terms of percentages of the output) are kept constant and independent of the production level. Input substitution opportunities do not exist. The assumption of a linear limitational production technique means that demand and supply elasticities are not considered. Economies of scale also are excluded from the analysis, and the profit share is constant and independent of the production level. The output of each industry is homogeneous and produced with one technology. There are no factor constraints or supply bottlenecks.
- Because of these restrictive assumptions, the results of the input-output analysis only can be applied cautiously with respect to practical problems, especially for marginal demand increases, as the input-output analysis uses average coefficients to predict marginal impacts.

Moreover, in case of tourism, the application of input-output models is further complicated by the fact that tourism consumption includes elements that do not belong to final demand but to intermediate consumption of activities developed by resident producers [UNWTO et al., 2008, 98]. More precisely in case of business tourism when the company pays for the trip expenses of its employee, these expenses are included in the intermediate consumption of companies.

The Input-Output analysis is based on the assumption that prices and wages do not change and, therefore the capacity of the economy is unconstrained by factor markets. However, a substantial increase of tourism demand does lead to changes in prices and wages. In these conditions, CGE models have been used to evaluate the economic impact of increases or decreased in tourism demand.

Computable general equilibrium (CGE) models have their historical origins in input-output methodology, but were developed to overcome the many shortcomings of IO models. [Blake et al, 2001, 2-3]. There are also some considerable differences between Input – Output models and CGE model. Unlike input-output models whose form, operation, data requirements and interpretation are widely known and agreed upon, CGE models vary in data required, assumptions and structure [UNWTO et al., 2008, 98]. CGE models include more general specifications of the behaviour of consumers, producers, investors, than those allowed in Input-Output tables.

It is recognized that the development of Computable General Equilibrium (CGE) modelling has provided economists with an alternative approach to analyzing the impact of tourism and one that has the same ability as input-output analysis to highlight the intersectoral linkages without being restricted to fixed prices and wages [Ennew, 2003].

A typical CGE model gives us impacts on a range of variables which may be of interest to policymakers. It will give a measure of the overall change in economic output, through the effect on GDP. It will also provide output results for individual industries. The impact on key variables, such as employment, imports and exports will also be part of the model's output. If the government sector is incorporated explicitly in the model being used, the effects on government revenue, spending and surplus can be determined [Dwyer et al., 2004, 9]. CGE models include other effects through factor markets and foreign currency. In doing so, the CGE models include not only the indirect effects but also the induced effects [Blake et al., 2001, 4].

Practically a CGE model represents the economy as a system of goods and services between sectors. The goods and services include both produced commodities and primary factor services (labour, land, capital). The sectors include the household sector, several industry sectors, government and the foreign sector [WTO, 2002, 104]. Flows between sectors are represented in an I-O table or social accounting matrix where each row of the I-O table corresponds to a commodity grouping, each column to a sector, and each element of the table shows the money value of usage of the relevant commodity by the relevant sector.

CGE models are used for simulating different scenarios and studying the effects or changes that occur in the basic variables. However worldwide the EGC models are rarely used in tourism, and the main reason for that is the fact that they require the availability of relevant detailed data.

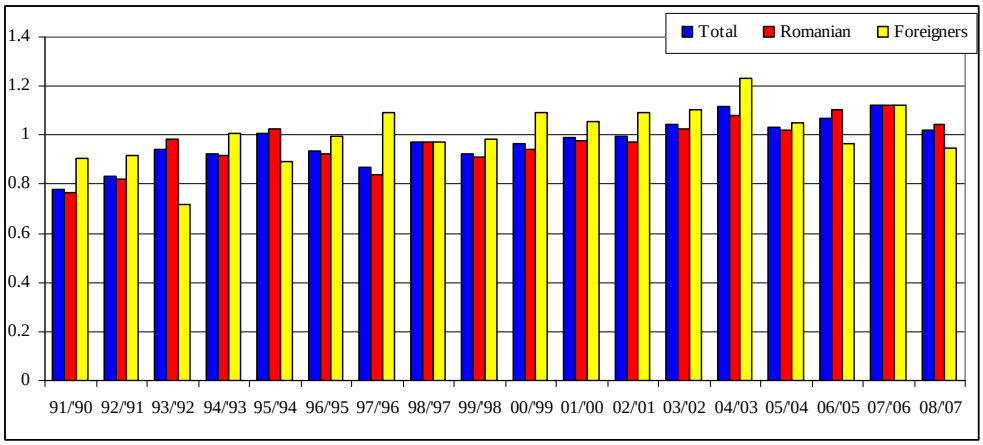
From the previous described methods used in measuring the economic impact of tourism, in this paper will used the Input-Output analysis for the case of Romania.

4. An Overview of the Romanian Tourism

Romanian tourism potential offers various opportunities for sustaining tourism sector growth. Different tourism forms were developed in the last decades starting with mountain tourism, seaside tourism, balneal tourism, cultural tourism, rural tourism, business tourism and so on. Over the years, tourism had to overcome various difficulties related to the economic, social and political context. If in the 80's Romanian tourism registered a high number of domestic and foreign visitors accommodated in the tourist establishments, in the 90's it entered on downturn slope. Thus, after a long period with a negative trend, both for Romanian and foreign arrivals, starting with 2000 the total number of tourists starts to increase.

Between 1990-1999, Romanian economy passed through a long transition period, when the economic growth was generally negative, with a negative trend registered in the gross domestic product per capita. The general economic context (high inflation, low investments, unemployment, low purchasing power, volatility of the exchange rate), the poor imagine abroad, low process of privatisation, political and social instability were few of the factor that didn't sustain the tourism development. In time, the accommodation infrastructure suffered from depreciation, especially those built on the seaside or balneal resorts. The privatisation of the tourism infrastructure (accommodation, restaurants, treatment facilities) started very late, after 2000. The Strategy concerning the privatisation of the commercial companies in tourism was approved through the Government Decisions no. 436/2001 published in the Official Gazette no. 233/2001. The privatisation process was difficult because the uncertain status of some commercial companies' patrimony.

After 2000 year, tourist arrivals have begun to increase, the Romanian economy has started to grow, the purchasing power has increased and the tourism infrastructure has been modernized to meet the western standards. Also, large hotel chains like, Marriott, Hilton, Ibis, Novotel, Golden Tulip, Ramada, Radisson, Holiday Inn has invested important amount in Romania, not only in big cities but also in mountain, balneal or seaside resorts, suggesting that the potential exists and the local market can provide the return on investments.



Source: [processed data after National Institute of Statistics]

Figure no. 1. Change in tourists' number compared with the previous year, 1990-2008

Still, the Romanian tourist has to overcome various weak points, like poor infrastructure (roads, railway, highway, airports), but also promotional budget, labour force training and so on.

During the last eighteen years, starting with 1990 until 2008, the tourists' number dropped by 42.05%, the reduction being more pronounced in the case of Romanian tourists by 47.9%. It is interesting to notice that the growth rate of the foreigners in between 1990-2008 was 2.39%.

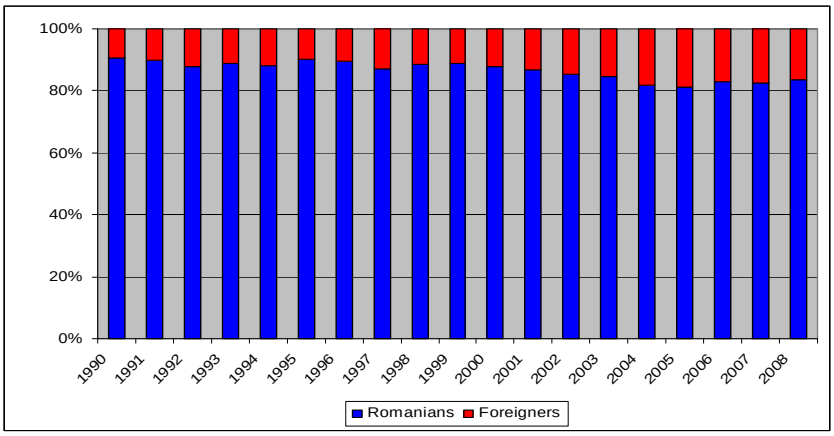
Analysing the evolution of the arrivals by destinations in between 1994-2008, the highest number of tourists were accommodated in Bucharest and other capital cities, with an average of 46.6% of total arrivals, followed by mountain resorts (14.5%), seaside resorts (12.9%), balneal resorts (11.7%), other tourist localities (13.2%), Danube Delta (1.1%).

During the past fifteen years (1994-2008), tourist flows in the Romanian destinations have experienced:

- A decline in the number of the Romanian tourists in Bucharest and other capital cities (-20.68%) and other tourist localities (-5.18%), and an increase in the Romanian arrivals in the case of balneal resorts (+0.65%), seaside resorts (+13.6%), mountain resorts (+3.96%), Danube Delta (+31.1%).
- A reduction in the foreigner arrivals for balneal resorts (-49.59%) and seaside resorts (-58.59%) and an increase in the foreign tourists number in Bucharest and other capital cities (+94.34%), mountain resorts (+63%) and three times increase for other tourist localities.
- A drop in accommodation occupancy rate at national level from 43.7% to 35%, but also in almost all destinations, like seaside resorts (from 52.3% to 46.7%), mountain resorts (from 40.3% to 24.0%), Bucharest and other capital cities (from 43.5% to 32.6%), other tourist localities (from 31.9% to 23.4%) and an increase in balneal resorts (from 47.1% to 51.1%), Danube Delta (from 26.6% to 31.5%).

In 2008, the highest number of foreign tourists comes from Germany (14.5%), Italy (11.3%), France (7.9%), Hungary (6.3%), United Kingdom (5.6%), Austria (4.8%) and Spain (4.6%).

In the same manner, the number of overnight stays dropped from 44,552 thousands in 1990 to 20,726 thousands in 2008, giving a decrease of -53.5%. Again the drop in number of overnight stays for Romanian tourists was higher (-56.9%) than the one of foreigners (-20.7%).



Source: [processed data after National Institute of Statistics]

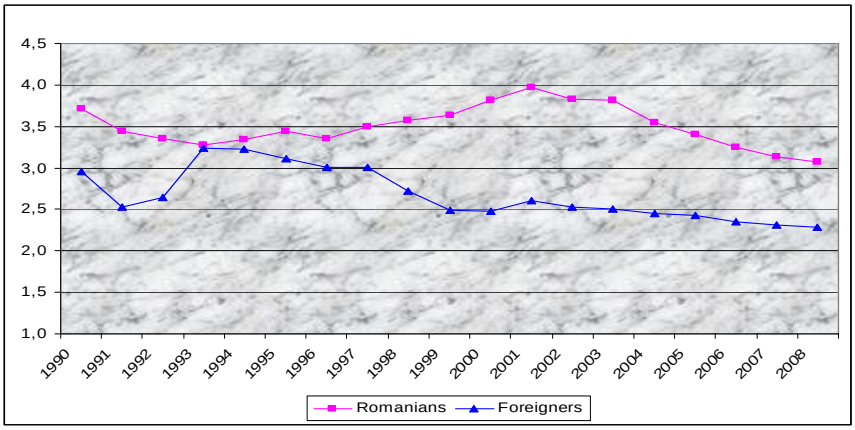
Figure no. 2. Foreigners vs. Romanians share in overnights stays registered in the Romanian establishments, 1990-2008

It is important to mention that foreign tourists (see Fig. 2) represent less than 20% from the total overnights stays. Therefore it can be concluded that *tourism in Romania is mainly based on domestic customers*. Romanian tourism share is constantly high exceeding 90% in 1990 and 1995, but decreasing to 81.1% in 2005 and 83.8% in 2008.

In the same manner with arrivals figures, from the overnight stays of foreign tourists figures point of view Germany ranks first (15.5%) followed by Italy (11.0%), France

(7.2%), Hungary (6.0%), United Kingdom (5.4%) and Israel (5.3%). These six country account for over 50% of the total overnight stays of foreign tourists in Romania.

Considering arrivals and overnight stays figures, average length of stay could be computed. Therefore in the period 1990-2008, average length of stay in accommodation establishments has significantly dropped for foreign tourists while for Romanian tourists also dropped but after a short period of increase (1996-2001). However the lowest values both for Romanian and foreigners are registered in 2008, 3.1 days for Romanians and 2.3 days for foreigners (see Fig. 3).



Source: [processed data after National Institute of Statistics]

Figure no. 3. Average length of stay for Romanian and foreign tourists (days), 1990-2008

In 2007 a Masterplan for tourism development in Romania was drafted by international consultants agreed by United Nations World Tourism Organization (UNWTO). A section of this masterplan (section D) was specially designed for estimating the economic impact of tourism. The approach used is firstly focused on estimated visitor expenditures for 2005.

Thus, it was estimated EUR 877 million representing the international visitor expenditure together with EUR 1,878 million representing domestic visitor expenditure giving a total visitor expenditure of EUR 2,755 million (see Table 1).

Table no 1. Visitor Expenditure Targets 2005-2026 (million Euro)

Year	International Visitor Expenditure	Domestic Visitor Expenditure	Total Visitor Expenditure
2005	877	1,878	**2,755**
2011	1,726	2,385	**4,561**
2016	2,947	4,058	**7,005**
2021	4,798	5,914	**10,712**
2026	7,740	8,329	**16,069**

Source: [Romania National Tourism Development 2007-2026, *Executive Summary*, p. 12]

Also, the Masterplan foresees a good perspective for visitor expenditure in the following years. Thus, international visitor expenditure is foreseen to increase to EUR 1,726 million in 2011 and EUR 7,740 million in 2021. Also, domestic visitor expenditure is expected to increase to EUR 2,358 million in 2011 and EUR 8,329 million in 2026.

According to the Masterplan estimates there are good signs for the development of tourism in Romania in the next 18 years although in the last 19 years Romania has faced a general drop in tourism flows comparing with the reference year 1990.

5. The economic structure and tourism sector relative importance within the Romanian economy

In Romania, the input-output table is performed by industries of the national economy, balancing the lead at 105 branches of activity, based on the NACE Classification Rev. 1. In addition, the National Institute of Statistics (NIS) provides the short version, the input-output tables, which include 34 branches according to the P60 classification of the Classification of Products by Activity (CPA). For our presentation, the I-O table was aggregated in 19 branches (P19), using the last available data, namely for the year 2005, expressed in constant prices and including the intermediate consumptions, and the value added elements. Due the fact that the employment data aggregated for hotels, restaurants and travel agencies were available just for 2005, the analysis was provided only for this year. Moreover, starting from 2006 NIS provides data just for "hotels and restaurants" sector, the aggregation being finished differently from the previous years when it was mentioned "hotels, restaurants and travel agencies" sector. Thus, to have a more comprehensive image on the tourism sector, it was preferred 2005 year instead of 2006 year. Also, the supply and use table was used including the final demand components, namely households consumption, government consumption, exports, gross fixed capital formation, changes in inventories.

Table no. 2 – Branches number and title

A01	Agriculture, forestry, fishery, forestry exploitation
A02	*Extractive industry:* Mining of coal and coke, Crude and product petroleum, natural gas, metal and non-metal ores, construction ores, other ores
A03	Manufacture of food products and beverages, tobacco products
A04	Manufacture of textiles, wearing apparel; leather and footwear
A05	Manufacture of wood, furniture and other industrial products, Manufacture of pulp, paper and paper products, Printed matter and recorded media
A06	Manufacture of chemicals, chemical products and man-made fibres, Manufacture of drugs, detergents, cosmetics, Manufacture of rubber and plastic products, glass
A07	Manufacture of construction materials, Metallurgy and iron and steel
A08	Machinery construction, Manufacture of electric machinery and appliances, Manufacture of electric and electronic products, Manufacture of transport equipments
A09	Electrical energy, thermal, water, gas
A10	Construction
A11	Trade
A12	Hotels, restaurants and travel agencies
A13	Transport
A14	Communications
A15	Financial services – banks and insurances
A16	Real estate activities
A17	Business services
A18	Public administration
A19	Collective, social and household services

The Input-Output (IO) table represents the starting point in estimating the output, incomes, value added and employment multipliers used in analysing the economic impacts.

The IO analysis offers important information regarding the inter-relationships existing among different industries of the national economy, final users (households, visitors, exports, government) and factors of production within an economy.

Among the sectors, aggregated previously, with the highest contribution to the national output are (see Table 3): agriculture, forestry, fishery, forestry exploitation (10.1%), manufacture of food products and beverages, tobacco products (8.84%), trade (8.54%), collective, social and household services (7.93%), constructions (7.20%), machinery construction together with manufacture of electric machinery and appliances, manufacture of electric and electronic products, manufacture of transport equipments (7.17%). Hotels, restaurants and travel agencies contribute with 2.23% to the national output.

The highest contribution to the national employment in 2005 have (see Table 3): agriculture, forestry, fishery, forestry exploitation (33.3%), collective, social and household services (11.1%), trade (10.5%), machinery construction, manufacture of electric machinery and appliances & manufacture of electric and electronic products & manufacture of transport equipments (5.5%), constructions (5.4%). It is interesting to notice that the employment share of hotels, restaurants and travel agencies is lower than the output share of only 1.43% comparing with 2.23%. Normally, tourism is a labour intensive industry, characterized by low productivities, due to reduced possibilities of mechanization and automation. Also, due to the high seasonality of the tourism activity especially in the seaside resorts and some cases in mountain tourism, some employees are part time or seasonal workers or even do not figure as employees at all (black economy). Those hidden employees might explain the increased productivity in the tourism sector. Also, a slight increase in productivity might be caused by the efficiency improvement of this activity especially after 2001.

According to the World Travel & Tourism Council (2007), in 2006, the wider Travel & Tourism Economy contributed with 4.8 % of Romania's GDP and account for 485,000 jobs, representing 5.8 % of total employment. Over the next ten years, travel & tourism in the country is forecast to achieve yearly real growth of 6.7 % in terms of GDP and 1.6 per cent in terms of Travel & Tourism employment. This would take the share of GDP and employment to 5.8 and 6.9 % respectively by 2016.

Taking into consideration the value added, the highest contribution was recorded by trade (11.41%), agriculture, forestry, fishery, forestry exploitation (11.26%), collective, social and household services (9.18%), real estate activities (8.12%). Hotels, restaurants and travel agencies bring 4,952.6 million Ron, representing only 2.17% of the total value added, one of the lowest contribution in the economy, overcoming sectors as manufacture of chemicals, chemical products and man-made fibres & manufacture of drugs, detergents, cosmetics & manufacture of rubber and plastic products, glass (1.94%), manufacture of construction materials & metallurgy and iron and steel (1.81%).

The share of hotels, restaurants and travel agencies in total incomes (2.29%) is higher than in value added, but still remains one of the lowest in the economy. In general, the tourism sector is a low paid work, Romanian tourism not being an exception in this case, the wages in hotels and restaurants are through the lowest in the economy. Thus, in 2005 the medium net wages in hotels and restaurants was 455 Ron (≈126 Euro), compared with the national average of 746 Ron (≈206 Euro), higher just than the wage in fishing of 404 Ron (≈112 Euro), but very low taking into consideration the medium net wages in financial intermediation (2,065 Ron, ≈570 Euro), extractive industry (1,246 Ron, ≈344 Euro), electric and thermal energy, gas and water (1,176 Ron, ≈325 Euro), public administration and defence (1,163 Ron, ≈321 Euro). Sectors with high income shares are collective, social and

household services (15.58%), trade (8.96%), public administration (8.41%), machinery construction & manufacture of electric machinery and appliances & manufacture of electric and electronic products & manufacture of transport equipments (7.91%), constructions (7.34%) and transport (7.32%).

Table no. 3. Sectoral contribution to the total output, employment, gross fixed capital formation, value added, exports and imports, households consumption, 2005 (%)

	Output	Employ-ment	Exports	Imports	GFCF	VA	Income	Hs. Consmp	Gv. Consmp
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A01	10.10	33.26	1.78	1.37	0.25	11.26	4.99	12.88	1.55
A02	3.98	1.84	8.16	14.05	0.00	2.30	4.10	8.45	0.00
A03	8.84	2.35	1.11	4.55	0.00	6.66	4.60	22.57	0.00
A04	2.97	6.19	21.07	13.09	0.00	2.61	5.60	3.85	0.00
A05	3.50	3.66	8.05	4.48	1.50	3.21	3.64	3.55	0.02
A06	2.96	1.10	7.78	13.86	0.00	1.94	2.57	3.05	0.00
A07	4.21	1.74	11.90	7.40	0.00	1.81	2.67	0.93	0.00
A08	7.17	5.50	24.31	36.16	49.48	6.28	7.91	7.78	0.00
A09	5.79	2.05	0.68	0.29	0.00	2.56	3.51	2.83	3.19
A10	7.20	5.41	0.60	0.45	45.76	7.07	7.34	1.16	0.78
A11	8.54	10.54	0.00	0.00	0.00	11.41	8.96	1.38	0.00
A12	2.23	1.43	1.49	1.28	0.00	2.17	2.29	5.31	0.00
A13	5.69	3.69	6.86	1.19	0.00	6.64	7.32	3.70	4.63
A14	3.51	1.09	3.05	1.02	0.00	4.73	3.41	1.93	0.10
A15	1.62	0.93	0.48	0.63	0.00	2.51	2.73	1.00	0.00
A16	6.28	0.40	0.00	0.00	0.00	8.12	0.63	14.07	0.27
A17	4.01	3.12	4.20	2.91	3.01	3.47	3.74	0.36	1.25
A18	3.46	4.65	0.00	0.00	0.00	6.07	8.41	0.00	40.44
A19	7.93	11.06	0.33	0.36	0.00	9.18	15.58	5.55	47.76

Where GFCF – Gross Fixed Capital Formation, VA –Value Added, Hs. Consmp – Households Consumption, Gv. Consmp – Government Consumption
Note: The average exchange rate in 2005, 1 Euro = 3.623 Ron
Source:[own calculations]

Hotels, restaurants and travel agencies sector in Romania remains a low paid work, having relatively low labour productivity, patterns which characterize tourism sector in general, confronting with difficulties in recruiting and retaining the labour force.

Looking at 9th column of the Table 3, the figures indicates that, in 2005 households purchased especially food products and beverages, tobacco products representing 22.57% from the total households consumption. Also, the services provided by the real estate activities represented 14.07% from the total household consumption, followed by agriculture, forestry, fishery, forestry exploitation products (12.88%), extractive industry products (8.45%). Goods and services purchased by households in the hotels, restaurants and travel agencies' services accounted a share of 5.31%, indicating a high preference of the individuals for tourism goods. The data indicates that the government didn't purchase products and services from the hotels, restaurants and travel agencies sector in 2005.

As it regards the exports, hotels, restaurants and travel agencies have one of the lowest exports potential in the economy. The share in the total exports is only 1.49%, but higher

than in the share of manufacture of food products and beverages, tobacco products (1.11%), electrical energy, thermal, water, gas (0.68%), constructions (0.60%), financial services (0.48%), collective, social and household services (0.33%). Industry branches have an essential contribution in conduct exports and in particular manufacture of textiles, wearing apparel; leather and footwear (21.04%) and machinery construction & manufacture of electric machinery and appliances & manufacture of electric and electronic products & manufacture of transport equipments (24.31%). The low share of the sector in total exports underlines low competitiveness of the Romanian tourism sector on the international market.

The export-effort for hotels, restaurants and travel agencies, provided by National Institute for Statistics and estimated as a ratio between export and domestic production, is around 11.8% in 2005 registering an increase compared to 2003 (1.4%) and 2004 (1.7%). This shows a very significant improvement of the export activity and exploiting the export potential.

In absolute figures the imports (1,644.6 million Ron) are higher than the exports (1420.9 million Ron) for the hotels, restaurants and travel agencies, meaning that the balance of payments is negative for this sector in 2005. However, the share of sector imports (1.28%) is lower than in exports (1.49%). The top importing sectors within the economy are machinery construction & manufacture of electric machinery and appliances & manufacture of electric and electronic products & manufacture of transport equipments (36.16%), extractive industry (14.05%), manufacture of chemicals, chemical products and man-made fibres & manufacture of drugs, detergents, cosmetics & manufacture of rubber and plastic products, glass (13.86%), manufacture of textiles, wearing apparel; leather and footwear (13.09%).

The import-export coverage rate for hotels, restaurants and travel agencies, provided by National Institute for Statistics and estimated as a ratio between exports and imports, is around 80.3% in 2005 increasing from 12.0% in 2003 and 16.6% in 2004. As it regards the penetration rate of the foreign products on the domestic market, estimated as ratio between imports and domestic market (production plus imports minus exports), this also increased from 10.3% in 2003 to 14.3% in 2005.

The Romanian National Bank data showed that in 2005, the balance of payments for tourism and travel was positive (+102 million Euros), the receipts being about 852 million Euros and the payments 750 million Euros. Through the components of the services balance of payments, tourism and travel component represented 20.8% of the total receipts and 16.9% of the total payments.

The NIS data indicate that for the hotels, restaurants and travel agencies, the gross fixed capital formation in 2005 was zero, probably the figures not being calculated due to lack of data. According to the Romanian National Bank, the direct foreign investments in hotels and restaurants reached 42 million Euros representing 0.2% from the total foreign investment in Romania in 2005. Greenfield investments were about 9 million Euros in hotels and restaurants sector in 2005.

Besides export earnings, international tourism also generates an increasingly significant share of government (national and local) tax revenues throughout the world [Neto, 2002]. Local business are generating fees and taxes revenues which will be used to finance other activities (like health, education, public administration) and stimulate the economy through investment in infrastructure such as airports, roads, water and sewerage facilities, telecommunications and other public utilities. This will mean the improvement of the living conditions of the local communities, increase in social overhead capital [Neto, 2002] and

support in attraction of other business generating income at local level and thus economic development of the region.

Ability of branches to steer income from fees and taxes to the state budget depends on a number of factors (e.g. level of development activity, the fees charged). As it regards the total revenues collected through value added tax (VAT), hotel industry, restaurants and travel agents contributes with around 1,806.3 million lei, representing 4.99% of the total volume. Total taxes on products revenues collected from restaurants and hotel industry travel agents represented 3.15%, while the contribution of branch A03, namely food, beverages, tobacco was 20.06% and extractive industry 19.66%. Other taxes on production paid by the branch A12 amounts to 22.3 million lei, with a total share of 1.51%. The total amount of employers' social contributions of hotels, restaurants and travel agencies is around 251.3 million lei, accounting for 1.25% of the total, one of the lowest percentages of the economy, explained by low wages in the sector, but also by the undeclared work.

6. Backward and forward linkages for the Hotels, Restaurants and Travel Agencies Sector in Romania

For analyzing the inter-sectoral linkages in the economy, backward and forward linkage coefficients were estimated, determining the role and relative importance of each sector in terms of its contribution to output, value added, income and employment.

In 2005, total output for hotels, restaurants and travel agencies reached to 13,862.8 million lei. From the total hotels, restaurants and travel agencies sales, total inter-industry sales to hotels, restaurants and travel agencies itself and other industries amounted to 2,677.4 million lei. Hotels, restaurants and travel agencies sales to final demand sectors totalised 11,185.4 million lei, including 9,764.50 million lei household consumption and 1,420.9 million lei exports.

Also, in 2005, total hotel, restaurant and travel agency's purchases included 6,281 million lei from Romanian industries (including 349.5 million from the tourism sector itself and 5,931.5 million from other branches), 4,952.6 million lei as value added (compensation of employees, other taxes on production less subsidies, gross operating surplus), and 1,644.6 million lei representing the value of imported inputs.

To produce 1 Ron output, hotels, restaurants and travel agencies purchased products and services of about 0.56 Ron worth of inputs from Romanian' sectors, including 0.031 Ron from the sectors itself, about 0.07 Ron worth of inputs from agriculture, 0.32 Ron from industry, 0.03 Ron from constructions and 0.11 from services sector. The most important sector in terms of inputs for the hotels, restaurants and travel agencies are manufacture of food products and beverages, tobacco products (0.20 Ron), agriculture, forestry, fishery, forestry exploitation (0.07 Ron), communications (0.032 Ron), constructions (0.030 Ron), manufacture of textiles, wearing apparel; leather and footwear (0.029 Ron), manufacture of chemicals, chemical products and man-made fibres & manufacture of drugs, detergents, cosmetics & manufacture of rubber and plastic products, glass (0.027 Ron), other collective services (0.023 Ron), electrical energy, thermal, water, gas (0.022 Ron), financial services (0.021 Ron).

Hotels, restaurants and travel agencies sector also has to purchase inputs from various suppliers to produce its total output. For the hotels, restaurants and travel agencies' sector, 1 Ron increase in final demand increases output in the economy by 2.45 Ron, of which 1.04 Ron (including initial 1 Ron increase), comes from the sector itself and the remaining

amount comes from other endogenous sectors: 0.30 Ron in manufacture of food products and beverages, tobacco products, 0.21 Ron in agriculture, forestry and fishery, 0.15 Ron in extractive industry. Indirect purchases necessary to hotels, restaurants and travel agencies would include especially food and beverages and tobacco products as well as agricultural and forestry products, energy sector' services.

Linkages are another means of estimating the overall change in the economy due to changes in final demand or final payments. Multipliers are derived based on direct and indirect effects arising from an exogenous change in an industry's final demand**.**

The multipliers underline the level of interdependency between various sectors of the economy and as a result, they are varying from one region to other and from one country to another. The backward and forward linkages coefficients for total output, income, value added and employment for each sector were estimated using the described methodology. Their determination is extremely important especially because they underline the importance of one sector at the national level. The ranks attached to each derived multipliers underlines the differences existing among the relative importance of each sector within the national economy.

The output backward linkage coefficient (OBL) for hotels, restaurants and travel agencies indicates that the sector is ranked on the 11^{th} place, being in the second half of the ranking of the output impacts, both direct and indirect. An increase of 1 Ron in the demand for hotels, restaurants and travel agencies results in a change in the economy's total output by 2.447 Ron. This figure represents the initial Ron increase plus 1.447 Ron in direct and indirect effects. In other words, the 2.447 Ron is composed of 1.00 Ron of direct (on the job) materials and labour, plus an additional 1.447 Ron of increased output in other related industries. This output linkage is closed to the one in manufacture of wood, furniture and other industrial products, manufacture of pulp, paper and paper products, printed matter and recorded media (2.561) and collective, social and household services (2.310).

The highest potential to generate increase in the activity of other branches of the Romanian economy is the aggregate sector A07 (manufacture of construction materials & metallurgy and iron and steel) having an OBL of 3.751, measuring the sum of direct and indirect requirements from all sectors needed to deliver one additional Ron unit of output to final demand. The second highest output backward linkage coefficient is in electrical energy, thermal, water, gas (3.712), followed by extractive industry (3.448), and manufacture of chemicals, chemical products and man-made fibres, detergents, cosmetics, rubber and plastic products, glass (3.203). The lowest output backward linkage coefficients values exhibit public administration (1.595), financial services (1.719) and communications (1.842).

The income backward linkage coefficients (IBL), presented in fourth column of the Table 4 reveals the total change in income throughout the economy from 1 Ron change in final demand for any given sector. Concerning the hotels, restaurants and travel agencies, the income backward linkage coefficient is 0.391, placing the sector on the 11^{th} from 19^{th} positions. This IBL for hotels, restaurants and travel agencies means that 1 Ron increase in the final demand would increase the income in the economy by 0.391 Ron. This sum will be paid in wages to people directly and indirectly involved in the creation of each additional Ron of output. The sectors having the greater impact on the Romanian economy are manufacture of textiles, wearing apparel, leather and footwear (0.771), followed by collective, social and household services (0.706), public administration (0.602), extractive industry (0.552). Contrary, the sectors with the lowest income backward linkages are real estate

(0.034), agriculture, forestry, fishery, forestry exploitation (0.173), manufacture of food products and beverages, tobacco products (0.219).

The value added backward linkage coefficients (VABL) represent a change in total value-added for every Ron change in final demand for a given sector. The value added multiplier provides an estimation of the additional value added to the product as a result of this economic activity. This VABL for hotels, restaurants and travel agencies (1.079) places the sector on the 11th position, a better rank than in previous types of multipliers. Higher value added backward linkage coefficients were registered in communications (1.122), machinery construction, & manufacture of electric machinery and appliances & manufacture of electric and electronic products & manufacture of transport equipments (1.130), agriculture (1.134). The first place is taken from trade (1.266), followed by public administration (1.263), real estate activities (1.231) and the last place is occupied by manufacture of construction materials, Metallurgy and iron and steel (0.728).

Table no. 4 - Backward Linkages for the Romanian economy, year 2005

	OBL	Rank	IBL	Rank	EBL	Rank	VABL	Rank
A01	2.249	**14**	0.173	**18**	0.136	**1**	1.134	**8**
A02	3.448	**3**	0.552	**4**	0.029	**10**	0.899	**17**
A03	2.705	**6**	0.219	**17**	0.013	**17**	0.922	**16**
A04	2.628	**8**	0.771	**1**	0.101	**2**	1.044	**14**
A05	2.561	**10**	0.414	**10**	0.049	**4**	1.062	**12**
A06	3.203	**4**	0.432	**8**	0.022	**15**	0.950	**15**
A07	3.751	**1**	0.370	**13**	0.028	**12**	0.728	**19**
A08	2.849	**5**	0.489	**5**	0.040	**6**	1.130	**9**
A09	3.712	**2**	0.350	**14**	0.024	**14**	0.742	**18**
A10	2.613	**9**	0.415	**9**	0.036	**9**	1.161	**7**
A11	2.038	**16**	0.333	**15**	0.046	**5**	1.231	**3**
A12	2.447	**11**	0.391	**11**	0.029	**11**	1.079	**11**
A13	2.294	**13**	0.459	**6**	0.027	**13**	1.211	**4**
A14	1.842	**17**	0.279	**16**	0.010	**18**	1.122	**10**
A15	1.719	**18**	0.451	**7**	0.018	**16**	1.204	**6**
A16	2.166	**15**	0.034	**19**	0.003	**19**	1.266	**1**
A17	2.666	**7**	0.386	**12**	0.038	**8**	1.045	**13**
A18	1.595	**19**	0.602	**3**	0.039	**7**	1.263	**2**
A19	2.310	**12**	0.706	**2**	0.059	**3**	1.210	**5**

where: OBL - output backward; IBL - income backward;
EBL - employment backward, VABL– value added backward
Source: [own calculations]

Communities often wish to know the number of jobs that will be demanded because of an increased final demand. The employment backward linkage coefficients (EBL) measure the total change in employment due to a one-unit change in the demand of employees of a particular sector. If the final demand for hotels, restaurants and travel agencies products was increased by one thousand Ron means that the demand of employees could increase by 29 persons (the increase in the demand for employment could be expressed through new jobs or overtime incurred by employees). For hotels, restaurants and travel agencies the employment backward linkage coefficient is higher than in manufacture of construction materials & metallurgy and iron and steel (0.028) or transport (0.027). The highest employment backward linkage coefficients were registered in agriculture, forestry, fishery, forestry exploitation (0.136), followed by manufacture of textiles, wearing apparel; leather and footwear (0.101) and the lowest in real estates (0.003).

Using the Augustinovics (1970) methodology, the forward linkages for output, employment, earnings and value added were determined for the case of Romania in 2005. It is to notice that the forward linkage coefficients for hotels, restaurants and travel agencies place the sector on lower positions.

The output forward linkage coefficient (OFL) for hotels, restaurants and travel agencies shows that a unit change in sector final payments will generate a total change in the total output of the economy of 1.278 units. This OFL for the tourism sector is higher just than the one in trade (1.048) and public administration (1.000), meaning that hotels, restaurants and travel agencies have a low dependence on other economic sectors. The highest dependence from other sectors in terms of output is characteristic for extractive industry (7.311), electrical energy, thermal, water, gas (4.547), manufacture of chemicals, chemical products and man-made fibres & manufacture of drugs, detergents, cosmetics & manufacture of rubber and plastic products, glass (4.037), machinery construction & manufacture of electric machinery and appliances & manufacture of electric and electronic products & manufacture of transport equipments (3.583).

Similarly, the forward linkage coefficient with respect to incomes (IFL) shows that a total change of 0.210 Ron in earnings in the economy due to a unit change in final payments of the hotels, restaurants and travel agencies sector. The IFL for hotels, restaurants and travel agencies is one of the lowest in the economy, having 17th rank. The income forward linkage coefficients computed in table above underline the importance of extractive industry (1.049), electrical energy, thermal, water, gas (0.629), manufacture of chemicals, chemical products and man-made fibres & manufacture of drugs, detergents, cosmetics & manufacture of rubber and plastic products, glass (0.623).

Table no. 5 - Forward Linkages for the Romanian economy, year 2005

OFL	Rank	IFL	Rank	EFL	Rank	VAFL	Rank
2.785	**7**	0.307	**14**	0.107	**1**	1.290	**5**
7.311	**1**	1.049	**1**	0.082	**2**	2.335	**1**
2.536	**8**	0.309	**13**	0.029	**11**	1.028	**8**
2.172	**11**	0.554	**5**	0.068	**3**	0.897	**12**
2.201	**10**	0.381	**9**	0.039	**8**	0.970	**11**
4.037	**3**	0.623	**3**	0.054	**4**	1.523	**2**
3.180	**6**	0.411	**7**	0.035	**9**	1.009	**9**
3.583	**4**	0.576	**4**	0.051	**6**	1.460	**4**
4.547	**2**	0.629	**2**	0.053	**5**	1.488	**3**
1.422	**16**	0.226	**16**	0.020	**15**	0.630	**18**
1.048	**18**	0.171	**18**	0.024	**13**	0.633	**17**
1.278	**17**	0.210	**17**	0.016	**18**	0.565	**19**
1.513	**14**	0.283	**15**	0.019	**17**	0.727	**16**
2.315	**9**	0.366	**12**	0.022	**14**	1.243	**7**
1.643	**12**	0.372	**11**	0.020	**16**	0.985	**10**
1.456	**15**	0.080	**19**	0.007	**19**	0.794	**13**
3.212	**5**	0.500	**6**	0.046	**7**	1.269	**6**
1.000	**19**	0.378	**10**	0.025	**12**	0.792	**14**
1.556	**13**	0.403	**8**	0.034	**10**	0.765	**15**

where: OFL - output forward linkages; IFL - income forward linkages; EFL - employment forward linkages, VAFL – value added forward linkages
Source: [own calculations]

The forward linkage coefficient with respect to value added (VAFL) shows that a change of 0.565 Ron in value added in the economy due to a unit change in final payments

of the hotels, restaurants and travel agencies sector. Construction and trade have one of the lowest forward value added potential as the values of the linkage coefficients are 0.630 and respectively 0.633.

The forward linkage coefficient with respect to employment (EFL) indicates that if the final payments of hotels, restaurants and travel agencies sector increases by one unit the total change in employment in the economy will be of 0.016. Agriculture, forestry, fishery, forestry exploitation (0.107), extractive industry (0.082) and manufacture of textiles, wearing apparel; leather and footwear (0.068) exhibit the highest employment forward linkage coefficient values.

In conclusion, the backward linkage coefficients for hotels, restaurants and travel agencies suggest that the sector has a medium capacity to increase total production due to the increase in final demand and a medium capacity to increase the inputs from the rest of the economic sectors.

Also, hotels, restaurants and travel agencies sector has one of the lowest forward linkage coefficients, suggesting that the increase of the sector total production generate a relatively low increase in its total supply to the rest of the economic sectors that are using tourism product as an input in their production process. The forward linkage coefficients for output, incomes, employment and value added are placed on the 17^{th} position for the first two, and the 18^{th} and respectively the 19^{th} position from the total of the 19^{th} economic branches.

4. Conclusions

Tourism could have important influences on economic and social life of countries. This sector has evolved also as a result of changes that occur in society. At national level, measures may be adopted to stimulate the growth of tourism, taking into consideration the potential of tourism to stimulate demand in other economic sectors, thereby encouraging the growth in other sectors.

The private sector can be encouraged to take part in different projects for improving the local communities' infrastructure in a way that business from tourism would benefit and also local communities' needs are satisfied.

In Romania, although tourism has registered a decline comparing with the reference year 1990, some positive trends are foreseen in the next years according to the Masterplan estimates.

Various instruments are used for measuring the impact of tourism in an economy, such us multipliers, Input Output Analysis, Computable General Equilibrium and other econometric models. Each of these methods has their own advantage and disadvantage. Also the statistical data available in a country make more feasible the application of a specific method. In the case of Romania the Input Output method was applied to measure the impact of tourism upon the economic growth. Backward and forward linkage coefficients for output, earnings, value added and employment were used to underline how the changes in final demand for hotels, restaurants and travel agencies sector will affect the entire economy. Thus, it resulted that the backward linkage coefficients are placing these tourism industries on the 11^{th} positions. In the case of output, a change of 1 Ron in the demand for hotels, restaurants and travel agencies results in a change in the economy's total output by 2.447 Ron. The income backward linkage for the tourism activity indicates that 1 Ron increase in the

final demand would increase the income in the economy by 0.391 Ron. As it regards the EBL, this indicator is 0.029 and for the EFL it reaches 0.016.

On the other hand, forward linkage coefficients indicates a relatively low potential for hotels, restaurants and travel agencies to increase the supplies for sectors which use the tourism product in their production. The output forward linkage coefficient for hotels, restaurants and travel agencies shows that a unit change in sector final payments will generate a total change in the total output of the economy of 1.278 units. The forward linkage coefficient of 0.495 is placing the sector of the 17th position from 19th, indicating that the sector has a higher capacity to create value added than output, incomes or jobs. The forward linkage coefficient with respect to employment indicates that if the final payments of hotels, restaurants and travel agencies sector increases by one unit the total change in employment in the economy will be of 0.016.

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[i] Some authors could also consider that Input Output analysis includes multipliers as they are a part of IO technique. However in the authors' opinion, multipliers are a separate method of measuring the economic impact of tourism as long as they are calculated independently from IO analysis (e.g. Keynesian multipliers).