

**Czech University of Life Sciences Prague**

**Faculty of Economics and Management**

**Department of Economics**



**Diploma Thesis**

**The prediction of travel and tourism economic  
impact in Azerbaijan**

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## DIPLOMA THESIS ASSIGNMENT

B.Sc. Nurlan Nuriyev, BSc

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Thesis title

**The prediction of travel and tourism economic impact in Azerbaijan**

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### Objectives of thesis

The main objectives of the thesis is to analyze the past and current state of travel and tourism industry, its share in main economic indicators (GDP, employment, FDI and so on) and its perspectives for future. Also, the main purpose of the study is to analyze whether the impact of tourism on economic growth of the country will increase and will be able to solve some of the economic and social problems, or it will not meet expectations of government and entrepreneurs. The logical structure of the work.

The thesis will consist of two main chapter – theoretical and practical. In theoretical chapter author will describe the travel and tourism industry, its main characteristics, and its role in the economy, which impact it may have on country's development, what are main trends in tourism and what is its future. In the practical chapter, the author will make a common overview of the tourism industry in Azerbaijan together with a more detailed analysis of tourism industry indicators (contribution to GDP, contribution to employment, visit exports, investments). The author will define main factors that impact on tourism economy in the country using statistical models (e.g. correlation index). This will help to see which factors will enhance the development of tourism. The author will also analyze state programs of tourism development and main strategies. Using data collected from public and international databases author will predict the economic impact of tourism and travel industry in Azerbaijan. The forecast will be made using econometric prediction models.

### Methodology

The secondary data will be collected from the official government websites such as State Statistics Committee of Azerbaijan Republic and Ministry of Culture and Tourism of the Republic of Azerbaijan, from international tourism organizations databases and reports covering last 20 years. The scope of research will include such indicators as tourism contribution to GDP, capital investment in travel and tourism, employment in the tourism sector, foreign tourists spending and others. Collected data will be analyzed and based on the tendencies of growth of these indicators appropriate econometric model will be chosen. Using mentioned econometric model author will create a forecast that will show how travel and tourism impact on the economy of Azerbaijan will be changing during next 9 years and will analyze possible scenarios and risks.

## The proposed extent of the thesis

60 – 80 pages

## Keywords

tourism, economic growth, contribution to GDP, contribution to employment, investment, tourism international receipts, polynomial regression model, governmental regulation, tourism impact, economic diversification.

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### **Declaration**

I declare that I have worked on my diploma thesis titled "The prediction of travel and tourism economic impact in Azerbaijan" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any their person.

Prague on 28.03.2018

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### **Acknowledgment**

I would like to thank Ing. Petr Procházka, MSc, Ph.D. and all other persons for their advice and support during my work on this thesis.

# **The prediction of travel and tourism economic impact in Azerbaijan**

## **Abstract**

Tourism is one of the sectors that is used to diversify the economy and to support economic growth. Its potential is emphasized by many economists what make it the core of many state strategic programs of development. The goal of the thesis is to predict the tourism impact on Azerbaijan's economy and to identify its future trends basing on the analysis of current state of travel and tourism sectors.

The theoretical part of the thesis presents approaches to the definition and main characteristics of travel tourism industry, internationally accepted classification of tourism industries, analysis of the role of tourism in economy interpreted by researchers, what is the character of the impact that tourism has on the economy and how it's measured. In addition, the theoretical part includes a description of actual trends and future perspectives of tourism which may impact regional and national tourism in different countries all over the world. Practical part presents the results of statistical analysis of tourism sector in Azerbaijan and researches aimed to identify factors that have an influence on the economic role of tourism in the country. Another research represents the forecast of direct tourism contribution to GDP of Azerbaijan which can be adjusted with certain economic and political risks. According to the researches author suggested two main scenarios of the tourism development that takes into consideration intensification of its economic impact.

**Keywords:** tourism, economic growth, contribution to GDP, contribution to employment, investment, tourism international receipts, polynomial regression model, governmental regulation, tourism impact, economy diversification

# **Předpověď ekonomického dopadu cestovního a turistického ruchu v Ázerbájdžánu**

## **Abstrakt**

Cestovní ruch je jedním z odvětví, které se používá k diverzifikaci hospodářství a podpoře hospodářského růstu. Jeho potenciál je zdůrazněn mnoha ekonomy. Cílem diplomové práce je předpovědět dopad turistiky na ekonomiku Ázerbájdžánu a identifikovat její budoucí trendy založené na analýze současného stavu cestovního a turistického ruchu.

Teoretická část představuje základní definice, hlavní charakteristiku turistického průmyslu, mezinárodně uznávané klasifikace odvětví cestovního ruchu a analyzuje, jak roli cestovního ruchu v ekonomice interpretují výzkumní pracovníci, jaký je charakter dopadu cestovního ruchu na ekonomiku a jak je to měřeno. Teoretická část dále obsahuje popis aktuálních trendů a budoucích perspektiv cestovního ruchu, které mohou mít vliv na regionální a národní cestovní ruch v různých zemích po celém světě. Praktická část prezentuje výsledky statistické analýzy cestovního ruchu v Ázerbájdžánu a výzkumu zaměřeného na identifikaci faktorů, které ovlivňují ekonomickou roli cestovního ruchu v zemi. Další výzkum představuje předpověď přímého příspěvku cestovního ruchu na HDP Ázerbájdžánu, které může být podrobena určitým ekonomickým a politickým rizikům. Na základě výzkumů jsou navrženy dva hlavní scénáře vývoje cestovního ruchu, které berou v úvahu zintenzivnění jeho ekonomického dopadu.

**Klíčová slova:** cestovní ruch, hospodářský růst, příspěvek k HDP, příspěvek k zaměstnanosti, investice, mezinárodní příjmy z cestovního ruchu, polynomiální model, vládní regulace, dopady cestovního ruchu, diverzifikace ekonomiky

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**List of abbreviations**

WTTC – World Travel and Tourism Council

UNWTO – United Nations World Tourism Organization

GDP – Gross Domestic Product

TLGH – Tourism-Led Growth Hypothesis

ELGH – Export-Led Growth Hypothesis

EU – European Union

OECD – Organisation for Economic Co-operation and Development

# 1. Introduction

Most of developing countries used to build their economy on the available resources, but they have a drawback – they can be exhausted, especially if it is mineral resources. Developing countries with such valuable resource as oil characterized with a very high growth rate of GDP, but living conditions, social benefits, health, and education indicators in many cases stay low. In order to avoid oil curse countries work on diversifying the economy, implementing better regulation services and investing into public services. Service industries like tourism, finances, IT, engineering and technologies, transport and others usually used for economic diversification. Tourism plays an important role here due to its value-added content, labor productivity, and the multiplier effect.

The tourism industry is one the most highly profitable and dynamic sectors of the economy. It has a significant share in global GDP, world investments, employment and consumer spending. This sector performs primarily macroeconomic functions in the economy and can stimulate socio-economic development of tourist reception areas, and consequently the national economy by creating added value, thus affecting the growth of gross domestic product, by increasing of the foreign currency inflows from tourist services, stimulating the development of entrepreneurship and infrastructure, creating new jobs and increasing the income of the tourist regions and shaping budget revenues of local governments.

Azerbaijan became an important regional player and crucial transportation hub in just a decade thank oil export, but during recent years the main priorities of its economy are economic diversification. Revenues from oil sector are used to boost development of the regions, creating a good business environment, attracting investments. Understanding of the big potential of the tourism industry, the government began to allocate a special place for tourism in state programs since 2006 and increase its engagement and budgeting for this sectors.

Growing investments and interest to the tourism industry as one of the factors of diversification requires the detailed analysis of its development specifics, a factor that impacts it together with forecasts that will help to identify future trends and determine the direction of new programs and strategies.

## **2. Objectives and methodology**

### **2.1. Objectives**

The goal of this research is to predict the tourism impact on Azerbaijan's economy and to identify its future trends basing on the analysis of current state of travel and tourism sectors. Particularly, to see if tourism can play the significant role in economic diversification, what is its potential and whether it can attract capital investments to the country. Main objectives that will help to achieve this goal are next:

- To learn the theoretical aspects of travel and tourism industry and principles of measuring its indicators;
- To understand how scientists evaluate the role of tourism in the growth of the economy;
- To analyse how tourism was developing in Azerbaijan from the beginning of XXI century and especially in the last decade;
- To look over government programs of tourism regulation that offer strategic plans for the sector;
- To identify which factors catalyse the tourism impact on Azerbaijan's economy;
- To predict the tourism economic impact on Azerbaijan's economy and describe main future trends and perspectives.

Diploma thesis aims to answer next research questions: 1) What drives the development of tourism in Azerbaijan? 2) How will significant tourism sector be for Azerbaijan's economy in the long-term perspective?

### **2.2. Methodology**

The thesis is divided into two parts: theoretical and practical. The theoretical part is based on qualitative methods like analysis, synthesis, analogy, deduction, induction, generalization, classification. The review of available sources allowed to generalize and interpret the most common approach to the definition of travel and tourism economy, its role in the economy on different levels. An important role in this analysis plays not only specialized literature but also materials provided by World Tourism Organization and The World Travel and Tourism Council. These organizations make the deepest researches, obtain and analyze statistics from countries and

regions all over the world, that is why they should be taken into consideration in the theoretical review of the explored phenomena.

Main aspects of critical literature analysis are next:

1. Demonstration of the social and scientific significance of given issues;
2. Determining the context and scope of given issues for the needs of the undertaken project research (looking for answers to the questions: What they concern and in what categories are included issues specified in the subject of the work?);
3. Determining the circumstances of the occurrence of the issues raised in the literature on the subject in a given area and at a given time and familiarizing with the assumptions and results of similar research to the undertaken research project (searching for answers to the following questions: Who, where, when, why and how did research on a similar topic?);
4. An indication of epistemological gaps and possibilities to enrich the existing arrangements for a given topic.

Practical part was built on the base of two main methods – statistics analysis based on secondary data collected from official sources (mainly from Azerbaijan Statistical Office and WTTC) and econometric models. Statistical analysis helped to collect high-quality data sorting it according to the purposes of research – this data was used to describe past and the current state of tourism in the country. Econometric models that were used is Granger causality test and polynomial regression. Granger causality test is a method that helps to identify the causality between two variables and to find patterns of correlation. Using it author identifies which factors have the biggest impact on tourism in Azerbaijan. The second method is polynomial regression model which was chosen basing on the available data and its characteristics. This type of econometric model was accepted as a formal description of the dependence of the phenomenon or the economic process (phenomena, processes) from the factors that shape them, expressed in the form of a single equation or system of equations. Equations defined: explained variable, explanatory variables (non-random or random) with fixed economic content, structural parameters and specified type of functional relationship between an explanatory variable and explanatory variables. The model was used to predict the economic impact of tourism on GDP of Azerbaijan and later was interpreted with emphasis on possible scenarios of tourism development and trends.

## **3. Theoretical part**

### **3.1. Definition and main characteristics of travel and tourism**

#### **industry**

XX century was the most dynamic in the human's history in the history of human civilization. At this period science was the main driving force of the progress. The developing of technologies and globalization penetrated all spheres of human's life and resulted in revolutionary changes in economy and society. Tourism was no the exception – in a very short time it grew from the phenomenon of marginal social and economic importance into one of the largest and most modern industries of the global economy.

Tourism has many definitions and the reason for this is its interdisciplinarity and the fact that tourism is a psychological, social, economic, spatial and cultural phenomenon. The author will concentrate on this definition from the economic point of view. The classical definition was offered by W. Hunziker (1951) who define tourism as a set of relationships and activities that appear during the travel and visitor's stay in certain place unless visitor will settle in this place and begin to work. United Nation World Tourism Organization (UNWTO) offered definition that is currently used quite often: tourism is all activities of persons that travel and stay for recreational, professional or other purposes for no more than a year without a break outside of their everyday surroundings, excluding trips where the main purpose is job or the form of active rest away from permanent residence (Role of the International Recommendations for Tourism Statistics 2008, 2017).

This definition was mainly created to simplify tourism statistics and was accepted by many agencies and organizations, but it is too common and describe only aspects of demand without taking into account consequences that a tourist trip causes both in the areas of emissions and reception of tourist traffic (supply). That is why to analyze tourism from the economic point of view it is better to use another definition: tourism take place when person travel and stay temporarily and voluntarily outside their everyday environment, and also include particular economic and social interactions between tourism subjects, direct service providers, local people and tourists themselves, unless the main purpose of their trips is activity rewarded in the visited

place (Middleton, 2011). This definition emphasizes the fact that, from one side, tourism is the form of consumption of different goods and services provided during travel and in the place of temporary stay and, from another side, covers the entire sphere of production and marketing of these goods and services.

Thereby word “tourism” is used to name the whole industry which includes sectors that provide products/services consumed by visitors.

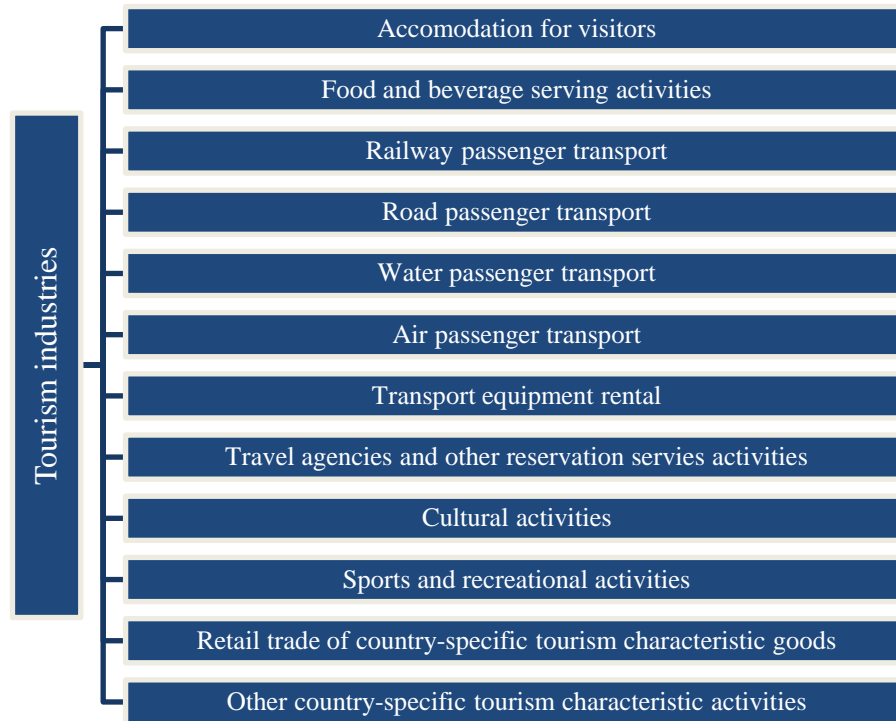
O’Brien (2011) describe two basic views on the definition of the tourism industry. Leiper (1979) and Davidson (1994) were the first who tried to justify term “tourism industry” and they underlined that tourism is not industry but consist of many industries connected with each other by a common goal to satisfy the need of tourists. In their opinion companies related to tourism do not produce similar products and do not use similar technologies, therefore tourism industry defers from standard classical industries and cannot be compared with them. Another view is that tourism should be seen as an industry because the condition of talking about tourism industry is a share of turnover related to the service of tourists in the turnover of all economic activities (O’Brien, 2011). The less radical view is represented by Devabalane (2013) who see using the term tourism industry as justified and important if it refers to companies deliberately undertaking coordinated activities aimed at servicing tourists. The classification criterion - as opposed to opponents of the treatment of tourism as an industry - is not technology, but the issue of dependence, organizational complementarity, and coordination of individual companies' activities, sharing responsibility for management and planning of tourist flows (Devabalane, 2013).

The easiest way to classify tourism as a traditionally understood industry is to consider the production of various goods that meet the needs of tourists as the classification criterion. However, in tourism, there are entities that produce products intended almost exclusively for tourists needs and entities that offer products intended for tourists only partly (Prasad, 2010). Tourists consume various goods and services that are produced by many sectors of the economy – that is why it is hard to unite them into one separate industry.

Beaver (2010) define travel and tourism industry as a vast group business aimed to provide necessary or desired products and services to travellers. UNWTO (2015) identify tourism industries as activities that produce tourism characteristic products or as industries that comprise

all establishments for which the principal activity is a tourism characteristic activity. There are twelve basic tourism industries (Figure 1).

**Figure 1. Tourism industries by UNWTO**



Source: Methodological Notes to the Tourism Statistic Database (2015)

This classification is accepted internationally and demonstrate the complexity of tourism. Each of these industries produces characteristic products or services that follow two main criteria – expenses on the product should be a significant share of total tourism expenses and also represent a significant share of the supply of the product in the economy (Middleton, 2011). In other words, products of mentioned industries will not exist (there will not be any need for supply) if there are no tourists (no demand). Each of industries produces a certain product to satisfy various needs of the traveler and also linked to other sectors of the economy, so its product may be consumed by residents of the country.

Terms “tourism industry” and “tourism economy” frequently used and synonyms. Nevertheless, WTTC (2017) offers to use “tourism industry” to name a group of entities that



produce strictly touristic products and to use “tourism economy” for a group of industries that produce goods and services that can be consumed by tourist.

In statistical reports and databases (UNWTO, WTTC) as well as in literature (Middleton, 2011; Lyon, 2012; Sharpley, 2014; Tribe, 2016 and others) authors use the practical and convenient term “travel and tourism” (e.g. travel and tourism sector/industry/economy). In this case, travel and tourism are interdependent concepts. Travel is the activity of travellers who move from one place to other for work, healthcare, to visit family or friends, not for a long period of time (anywhere for any purpose and duration). Tourism refers to the movement of the person for recreational purpose and usually to places with some tourism potential (Prasad, 2010). Hence tourism is a subset of travel because travel is more broad than tourism.

To understand tourism better it is important to underline the difference between traveler, visitor, and tourist. Traveler is the most broad concept and defines any person that moves between geographic locations for any purpose and any duration. The visitor is a traveller that leave his usual environment and moves to some destination for any purpose except a job in the resident entity. In addition, the duration of visitor’s stay in the destination cannot be longer than a year. Visitors usually divided according to the duration of their stay – those who spend at least one day at the destination (tourists) and those who don’t spend the night and leave the destination at the same day (excursionists) (Sharpley, 2014). These differentiations caused by the volume of tourist infrastructure usage, because typical tourists use accommodation services, need more food services and more attractions and activities.

Tourism society (2017) in Great Britain implemented popular term “visitor economy” which is wider than tourism industries but not officially defined yet. Visitor economy includes overall demand and supply in all the sectors within which visitor activity and its direct and indirect consequences upon the economy take place. This type of economy comprises activities and expenditure involved in supplying products and services for visitors by both the private and public sectors (Tourism society, 2017)

Travel and tourism industry may be researched on the different scale depending on the type of tourism. UN and UNWTO (2015) recommended three main concepts of tourism: internal, national and international. Before describing these concepts it is important to mention types of tourism defined by Hall and Page (2014): domestic, inbound and outbound tourism. Domestic

tourism includes activities of resident visitors that take place in their home country and that become the part of the domestic or international trip. Inbound tourism is about activities of non-resident visitors in the destination country. Finally, outbound tourism includes activities of resident visitors outside their home country (Hall & Page, 2014).

Domestic and international outbound tourism together with activities of visitors is the part of internal tourism. National tourism consists of domestic and international outbound tourism while international tourism comprises inbound and outbound tourism. Each of these types characterized by different subjects of expenditures: internal tourism include expenditures in a country or some economy, national tourism – expenditures of domestic tourists inside and outside the country of residence, international tourism – expenditures made by tourists outside their home country. International tourism also comprises activities of non-resident visitors as a part of the domestic and international trip but from the perspective of their country of residence (UNWTO, 2015). These definitions are important for comparing statistics of travel and tourism sector and widely used in statistical databases.

Basing on the literature review (Middleton, 2011; Lyon, 2012; Tribe, 2016; Hall & Page, 2016) author highlights next main characteristics of the tourism industry:

1. The tourism industry is intangible, but based on tangible products. For instance, paintings in the Dresden gallery are tangible, but transportation there, guiding services, accommodation services are intangible.
2. Tourism industry comprises economic and non-economic elements. It generates revenue for the government, offer employment opportunities, but it is hard to measure some of its effects (e.g. attitude of local people, degradation of culture or extra-usage of natural resources).
3. The tourism industry is differentiated due to numerous activities it includes and variety of entities that involved in the production of tourist product (hotels, restaurants, local people, politics, international organizations and so on).
4. Tourism industry considered to be fragile, so political, economic or social crisis may have a longlasting effect.
5. Most of the tourist products are perishable which means that if they will not be used in time, they cannot be saved for next period.

6. The tourism industry has unlimited possibilities. Tourism can develop almost everywhere – in the desert, in abandoned industrial objects, in the places of natural and man-made disasters, etc.
7. The tourism industry is multidisciplinary because it is linked to other sectors of the economy and even to the environment. Hence, this sector has many stakeholders.
8. A lot of resources for tourism industry are inexhaustible which can guarantee its stability (e.g, mountains, seaside). But tourism may be the reason for resource's degradation and minimization.

These characteristics emphasize the complexity of tourism economy and also shows how deeply it is connected to other sectors of the economy. Besides the fact that scientists still arguing about definition “tourism industry” or “tourism economy”, travel and tourism sector are developing intensively. Tourism had remarkable growth during the last 70 years and became one of the largest industries in the world that play a significant role in many economies.

### **3.2. The role of travel and tourism industry in the global, regional and local economy**

Analyzing the role of tourism in the economy it is important to underline that:

1. Tourism is a permanent and important element of the structure of the needs of modern man,
2. The tourism industry is characterized by a constant upward trend, both on the supply and demand sides,
3. Tourism is the source of prosperity for many areas of management and an active factor of social and economic development of less developed regions,
4. Tourism is a permanent element of state policy and international cooperation (Sharpley, 2014).

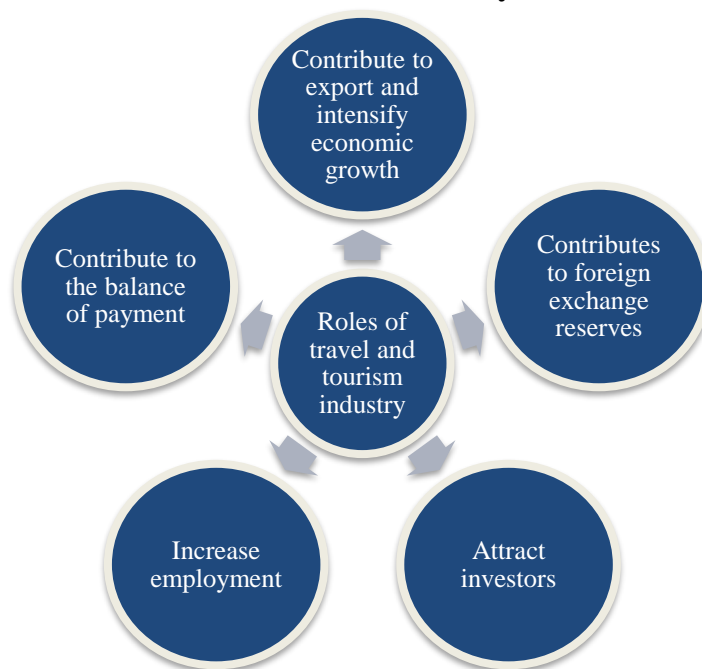
The significance of tourism in the modern world is evidenced by data on the size of tourist traffic and the accompanying economic effects, which are published by the most important international tourism organizations (e.g. WTO, WTTC) and economic organizations (e.g EU, OECD). Numerous reports of these organizations indicate the increasing importance of tourism

in the global economy and favorable forecasts for its development, at least in the next two decades (Brida, Cortes-Jimenez & Pulina, 2014).

The report made by World Travel and Tourism Council (WTTC, 2017) presents key factors of the economic impact of tourism and travel. First of all, in 2016 travel and tourism sector had a significant direct contribution to GDP equal to 2306 billion USD (3,1 percent of global GDP) and according to forecasts, it will increase by 4 percent till 2027. Secondly, the total contribution (direct and indirect) contributed 7613,3 billion USD to the world economy (10,2 percent of global GDP). Tourism and travel industry-supported 292 million of jobs which is 9,6 percent of total employment – this means that 1 of 10 employed people work in tourism. The tourism industry has become the world's fourth export industry after fuels, chemicals, and food – in 2016 visitor exports generated 1401,5 billion USD what is equal to 6,6 percent of total exports (Travel and tourism economic impact, 2017).

Main roles of the tourism industry in the economy are represented in Figure 2. All of these roles are connected with each other. For example, new investors help to create new attractions that offer more places for work and enhance tourist to visit destination and spend their money consuming goods and services produced by local or regional industries and so force.

**Figure 2. Main roles of travel and tourism industry in the economy**



Source: Ohlan (2017)

First of all, tourism industry **contributes to export and intensify economic growth**. Balaguer and Cantavella-Jorda (2002) presented the tourism-led growth hypothesis (TLGH) which derived from export-led growth hypothesis (ELGH) and was aimed to prove that expansion of international tourism activities stimulates economic growth. ELGH postulates that economic growth can be generated not only by increasing the amount of labor and capital within the economy but also by expanding exports. TLGH was validated in Spain and later in many other countries (e.g. South Korea, Taiwan, Turkey, Latin America countries) (Brida & Pulina, 2014).

ELGH suggests that exports contribute to economic growth by improving efficiency in the allocation of the production factors and by expanding their volume. Efficiency increase when external and internal competition is expanding and when there are positive externalities for other sectors of the economy caused by integrating technical knowledge and skills (Ohlan, 2017). International tourism differs from the usual export product, because not product move out of the country but consumer come to the country to consume tourist product. In case of TLGH international tourism is the source of export and as an export activity, it facilitates the long-run growth through different channels. First of all, author of the hypothesis underlines faster growth of the economies that benefit from tourism specialization. Secondly, an increase in tourism receipts will relieve foreign exchange constraints. In this situation, extra resources positively impact import of capital goods which usually become the boost of domestic investments. Finally, development of travel and tourism industry (especially organizing the unique supply of touristic products) increase competition at international level and at the same moment will enhance economic growth. This will be possible with the help of efficient use of tourism resources, investments, accumulation of human capital, etc.(Cortes-Jimenez & Pulina, 2009).

A complementary goal of TLGH is to analyze the relationship between tourism and economic growth to answer the question whether tourism activity leads to economic growth or economic expansion drives tourism growth. It may appear that there is a bidirectional relationship between tourism and economic growth (Brida, Cortes-Jimenez & Pulina, 2014). Nevertheless, many emerging countries try to use successful models of tourism and economic growth of developed countries.

Development of tourism gives the certain area (country, region, city, village) opportunity **to reduce unemployment** because tourism is a labor-intensive industry. Labor-intensive industry produces goods and services that require a big amount of employees. Travel and tourism industry provides jobs that require developed professional skills and appropriate education and job with minimum qualifications. The last group of jobs helps many people to become employed even if they had difficulties in other sectors. For example, it may refer to young people, migrants, women with family responsibilities that look for a part-time job, etc.(UNWTO, 2017).

Most of the tourism industries are built on interactions between customers and employees, thereby the skilled and trained manpower is a core element of the success of travel and tourism business. However, employment in tourism industry sometimes has cons like unstable employment, low job status, long antisocial working hours and low pay. This becomes the reason for difficulties in recruiting suitable staff and of high staff turnover which have a negative impact on quality of services and customer satisfaction. Tourism development help to offer more jobs, but the way in which staffs are treated by managers and tourists should be the issue of social equality and justice (Aynalem, Birhanu & Tesefay, 2016).

Travel and tourism industries contribute to labor market directly and indirectly. Direct employment opportunities appear in entities that support tourism directly (e.g. in hotels, restaurants, travel agencies, palaces, museum, cruise lines, resorts and so on). Indirect opportunities appear when tourism supports other activities indirectly (e.g. construction companies that may build tourist facilities or infrastructure, restaurant suppliers, marketing agencies and so on). In travel and tourism sector the greater proportion of income derived from salaries paid to the employees and from serving the needs of tourists. Two main challenges of labor in the tourism sector are unequal treatment and poor salary and working conditions (Inkson, 2017).

The growing demand for labor in the tourism sector has an impact on labor migration. Properly governed labor migration can help to replenish the lack of high-skills and low-skills employees, increase labor market efficiency and diversify population in the destination. Migrants may bring new skills and knowledge to countries that could make companies more competitive (Baum, 2012).

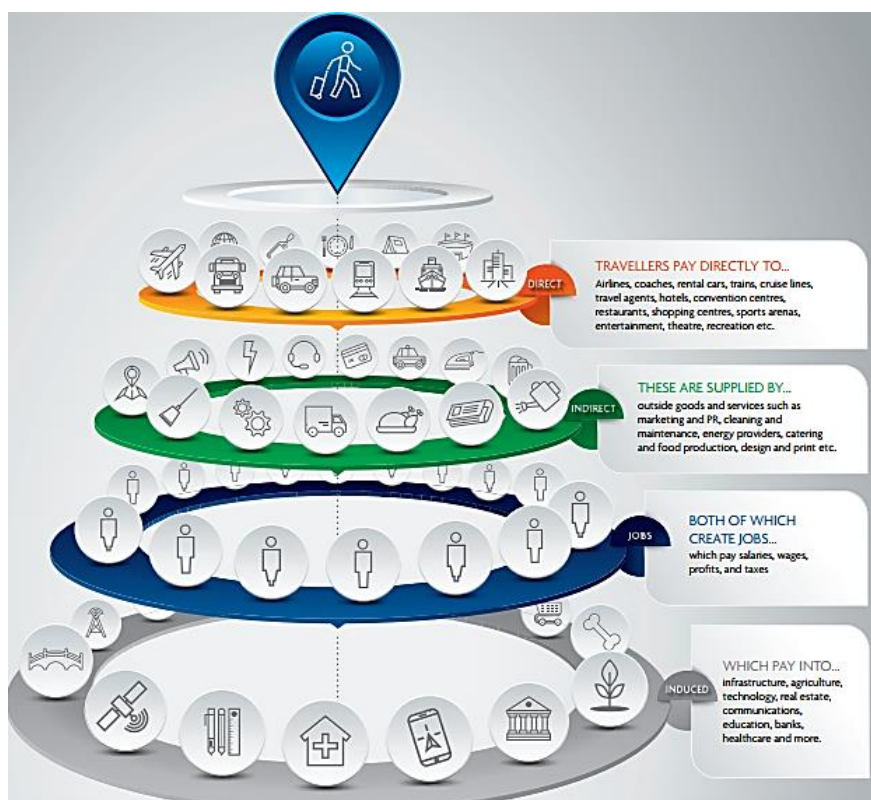
International tourism as export product impacts economic growth by **increasing the level of investment**. When destination become popular and more and more tourists are going there, it becomes attractive for investors. In case if some city or resort develop tourism intensively and income from this sector is growing, transnational companies (TNC) may think about investing into building chain hotels or chain restaurants, building amusement parks, creating new directions for transportation services (new flights, bus lines, etc.) (Middleton, 2011).

Foreign companies make a decision about investing based on three factors: ownership (benefits to compete effectively with local companies), location (benefits to locating in the host country) and internalization (benefits form directly controlling the business activity). Foreign direct investment (FDI) in tourism is not very high, but still, statistics show the growth of FDI in many countries which is concentrated in accommodation, restaurants and car rental. Tourism-related FDI is reorienting towards developing countries where TNC see the potential for expanding their activities (Fauzel, Seetanah & Sannasse, 2016). FDI in tourism may help countries with emerging economy to decrease the effect of adverse development gap between developed and developing countries. Direct investments give the possibility to improve or to build infrastructure (e.g. international airports, highways, hotels and modern technologies) that will be the keystone both of tourism development and economic growth. In addition, taking into consideration lack of needed facilities and infrastructure in developing countries, FDI may be the highly effective tool for transferring the trade, knowledge, and technologies that will affect economic growth (UNCTAD, 2007).

Another role of the tourism sector in the economy is a **positive impact on the balance of payments**. The balance of payment is a list of all transactions made between residents (domestic economy) and non-residents (abroad) in a given reporting period. Tourism has its own share in country's balance of payments. If annual expenses on tourism are growing faster than GDP, the significance of tourism for foreign currency inflows and expenses also increases. The balance of tourism being the part of the balance of payments helps to compare the value of goods and services sold to the foreigners with goods and services purchased by the residents during their trips abroad. In other words, tourism balance is a compilation of the value of tourist consumption in foreign incoming tourism and foreign outbound tourism or, to sum up, in international tourism of certain country (Ohlan, 2017).

The way how tourism can correct the balance of payments deficit is by earning needed currency in international trade. Usually, international trade involves different currencies. For example, when Azerbaijan companies buy goods or services from Great Britain, they need to pay in sterling. Since the currency in Azerbaijan is manat, the national bank needs to purchase sterling in international currency using gold or hard currency. So country needs to have a reserve of such foreign currencies to support global trade activity. Foreign currencies may be acquired in the export of goods and services, FDI, donations, and tourism. Tourism may be treated as a form of export and as a source of flow of hard currencies that may be used to maintain country's currency reserve stock (Inkson, 2017).

**Figure 3. The direct, indirect and induced impact of tourism spending**



Source: Travel and Tourism economic impact. WTTC research (2017)

World Travel and Tourism Council (WTTC) in their researches presented the common model of tourism contribution to the economy (Figure 3). This model help to visualize the flow of tangible and intangible resources. In the beginning, travellers purchase touristic products and pay



directly to companies which refer to tourism directly or indirectly (airlines, hotels, cruise lines, travel agencies, shopping centers, trains, theatre, etc.). This process insure direct economic contribution of travel and tourism sector and reflects “internal” spending (how much did residents and non-residents spend on tourism) and government “individual” spending (how much did government spend on tourism) (WTTC, 2017).

Purchased by tourists goods and services are produced by companies or other entities that are supplied by other sectors of the economy (marketing and PR, cleaning services, catering and food production, construction, communication, etc.). Both groups of industries with the direct and indirect contribution of tourism create jobs. At these jobs, people get salaries, wages and pay taxes. Finally, taxes paid to the government are used to complement the budget and develop infrastructure, agriculture, technology, education, healthcare, protect the environment, etc. (Figure 3).

The role which travel and tourism industry plays in economic growth is evaluated on the base of comparing statistical information collected by the government, international and regional political, economic and tourism organizations.

### 3.3. Main indicators of the travel and tourism sector

Indicators of travel and tourism sector used to analyze internal industry’s processes and its impact on the economy. These indicators are based on statistical data which retrieved by local, regional and international authorities.

**Table 1. Level of collecting statistical data for travel and tourism sector.**

Level	Authorities	Example of statistical data	Reports
<b>Local</b>	Government and administrative units (National committees)	Number of visits (border traffic), number of overnight stays, number of different types of accommodation facilities and their usage, tourists expenditures, investments and so on	Statistic national and regional yearbooks common for all industries and spheres of life and specifically for tourism, Online databases, and others

<b>Regional</b>	Regional economic and political organizations (The Statistical Office of European Union, Organisation for Economic Co-operation and Development (OECD))	Number of visits (border traffic), number of overnight stays, occupancy and capacity of accommodations, establishments, tourists expenditures, investments and others	Tourism Satellite Accounts in Europe, Culture and tourism - cities and greater cities, Eurostat regional yearbook, OECD Travel Trends and Policies and others
<b>International</b>	International organizations and organizations (The World Travel & Tourism Council (WTTC), World Trade Organization (WTO), United Nations, World Tourism Organization (UNWTO))	Contribution to the economy, researches related to different fields of the travel and tourism sector, mainly comparative data (in percentage), countries and industries with highest indicators (e.g. world's top tourism spenders, world's top tourism destinations) and others	Travel and tourism economic impact (for world, regions and particular countries), UNWTO Tourism Highlights, UNWTO Annual Report, Yearbook of Tourism Statistics

Source: created by the author

Each country collects statistical information related to all industries, population, social life, politics, international relationships and so on. Usually, this information is represented in online databases or publications. These data are related to aspects of tourism that can be measured and related to touristic and non-touristic sectors. It usually includes absolute indicators but quite often represent relative indicators that aimed to compare data and understand it better. Almost every country in the world has its statistical committees. Regional organizations that represent interests of some countries (for instance, European Union, OECD) also collect statistical data by their own or by grouping and transferring data provided by each of country-members. Reports of such organizations may have inaccuracies if there are no common standards for collecting data or if countries prefer not to make some data available externally. International organizations usually have more financial and human resources for collecting, adaptation and

analysis of data from all over the world. Hence, their report is more analytical with the presentation of comparative analyses of main tendencies in travel and tourism industry. Most of such actual reports are hard-to-reach due to their importance for international expansion, politics, competition and for certain stakeholders (Tourism towards 2030, 2011).

Statistic data for tourism predominantly divided into two groups – data for demand and for supply. Data related to supply is represented by such indicators as a number of accommodation establishments and bed-places, number of restaurants, museum, and galleries, other natural and architectural attractions, etc. Data related to demand is represented by such indicators as arrivals of tourists, nights spent in accommodation, tourists expenditures, number of trips by purpose, length, nationality, age, occupancy of tourists, etc. In order to make it possible to collect and analyze data, all organizations standardize statistic data according to international requirements (UNWTO, 2015).

For example, Eurostat collects statistics on the demand for tourist in relation to the number of tourist trips made (and the number of overnight stays during such trips) and divide statistics to trips by destination country, length of stay, type of accommodation, the type of transport, expenditures. The data is also analyzed in terms of sociodemographic features of the tourist, such as sex, age group, education, household income, professional status. To collect such data European Union had to provide common ways of collecting data by each of EU country. The methodology also adapted to UNWTO requirements (Eurostat, 2018).

For researches connected with tourism, there is also the possibility to use various data from different official sources or from different parts of the same source. Usually, in tourism researches next data (indirectly related to tourism) is used for analysis:

1. Structural business statistics - can be used to obtain additional information on tourist flows and the economic performance of certain tourism-related sectors;
2. Employment data in the tourism industries broken down by working time, employee status, age, education level, gender, employment persistence and seniority with the same employer (annual and quarterly data);
3. Data on tourism receipts and expenditure on individual tourism from the balance of payments;
4. Transport statistics (for example, air passenger transport).

These data usually placed in non-touristic sectors of the database but it is significant if there is a need to analyze the whole travel and tourism business or its impact on other spheres of life. Particularly, the economic impact of tourism is measured in terms of its effect on income, employment, investment and development; and balance of payment (Hall & Page, 2014).

Effect on income is measured by contribution to GDP. There are a direct and total contributions to GDP. The direct contribution is GDP generated by industries that deal directly with tourists, including hotels, travel agents, airlines and other passenger transport services, as well as the activities of restaurant and leisure industries that deal directly with tourists. This indicator is equal to all travel and tourism spending made by described industries. Total contribution includes not only tourism industries but also by industries where tourism have indirect and induces impact. Direct contribution to employment is equal to the number of direct jobs within tourism industries. Impact on investments and development measured by the indicators of travel and tourism investment. Finally, to analyze the effect on the balance of payment visit exports is used. Visitor exports include spending within the certain country by international tourist for trips made both with leisure and business purpose and spending on transport (WTTC, 2017).

Depending on the objectives of the research and sources of data, indicators may be adapted and created by comparison of existed statistics. Statistic data on travel and tourism industry can be used not only for analyzing the current state of this business and its role in world economy, but also for predictions and forecasts of future trends and perspectives. Predictions help to define ways and directions of economic development.

### **3.4. Actual trends and future perspectives of tourism**

The tourism industry is developing intensively and have certain trends that define its current characteristics and its future perspectives: the importance of brand marketing for destinations, changes in tourists needs and preferences, new types of economies (e.g. sharing economy), sustainability and others.

In the process of current globalization, promotion and marketing of destinations is a key tool for competing in a very demanding market, both on the regional, national, and global scale.

Tourism and the modern tourist market is located in the forefront of the global economy, however, it requires extremely well thought-out, consistent and consistent marketing activities. The success in terms of creating and promoting the brand of the area and the tourist offer can be achieved thanks to several necessary factors, including:

1. The common definition of the region/area of tourist reception, with an identifiable brand, a coherent program of tourism development and the concept of promotional activity;
2. Cooperation and integration of activities and involvement of many entities in the creation, financing, promotion, and sale of tourist products within a given area;

The cooperation of public and private entities in creating a coherent brand of a given area and effective promotion may also be helpful in the important issue of current tracking of trends in tourism as well as in the area of new communication tools and communication channels.

During last decades there have been significant changes in the development of tourism and in the prevailing trends on the tourist market. XX century brought significant changes in the history of mankind, related to broadly understood civilization development - an increase in affluence and awareness of societies, change of lifestyle and working conditions, development of transport means, change of ways and motivation of spending free time. Tourism is “a phenomenon of our time” and it has become an active factor in social and economic development, a constant element of the structure of the needs of modern man and his family, dynamic economy with a constant upward trend, both on the supply and demand sides, source of prosperity for other areas of management and activation of towns and entire regions, a permanent element of state policy and international cooperation. Therefore, it plays a very important role in the world.

Changes in tourist trends from the demand and supply side show clear tendencies of interest in the natural environment and active forms of learning about it. The interest in the three “S” (sun, sea, sand) is falling, and interest in active forms of spending free time is increasing, and there is a gradual departure from mass tourism for individual tourism, characterized by diverse, specific needs resulting aspirations, necessity to maintain physical and mental condition, practice the hobby and experience strong impressions.

There is also a marked increase in the importance of people’s own security and well-being during the trip. The demand for various forms of qualified and specialist tourism is increasing. The structure of the tourist product changed due to the change in the motivation of traveling and

the desire to experience an adventure - nowadays sport, recreation, cultural, archaeological and historical attractions, natural values, the desire to return to the roots are the main motivation for tourism. The importance of ecology in tourism is growing, which is reflected in the interest in traveling to rural and forest areas. Rural tourism and agrotourism are becoming increasingly popular among both tour operators and tourists, and ecotourism is already a major tourism industry in Europe and the world. The demand for weekend tourism is increasing and a further increase in business trips and motivational tourism is observed. In general, it should be emphasized that almost all of the above-mentioned tendencies and motivations strive to develop qualified, specialized and ecological tourism.

The European Commission has prepared a report on future trends that should be taken into account when planning tourism development and marketing strategies in cities, countries, and regions. These trends are demographic changes, safety, active and healthy recreation, the need of emotions and impressions, information and communication technologies, awareness of sustainable development, increasing role of sharing economy.

The aging of the society means that a group of rich consumers from the older generation will have more importance in tourism. Representatives of this group are demanding, travels a lot and will continue to do so, expect a high quality of service and packaging services, among which health tourism will be an important segment for it. Increasing the life expectancy and greater wealth of this age group will have a huge impact on demand in the tourism sector. The population aged 50-65 will become more and more important for the market, free from family commitments and affluent, seeking new entertainment and impressions.

It is important for visitors to feel safe during the trip. It was assessed that the significance of this factor will increase taking into consideration global terrorist threat. It seems, however, that even the largest acts of terrorism have a small impact on the number of global journeys. Concerns about security, however, lead to the selection of closer and more accessible directions. Security is, therefore, one of the main reasons for choosing the direction of travel.

An active way of spending time during the trip is getting more and more popular: there is a resignation from existing consumer habits. Visitors opt out of passive products (one week stay in one place without additional attractions) and choose those that provide more activity, focused on spending time actively. It deepens, especially. At the same time, people become more and more

aware that health care is better than treatment, and thus the interest in wellness trips increases. This is mainly due to the increase in stress in life and the desire to reach for the methods of eliminating the threat of stress.

Consciousness related to environmental protection will continue to grow. This results in an increased demand for places where development is sustainable, in which nature and local residents play a special role in providing hospitality. Tourists will prefer places where the local population willingly accepts them, offering a warm welcome, home cooking based on local tradition, information related to the history and life of the local community. Demography, frequency and time of travel, quality of service requirements, ways of providing information and reservations, expenses - these and other factors should be taken into account when planning the development of infrastructure and tourist services.

It is important to take into consideration changes in the business environment that impact on future of the tourism. Nowadays, successful companies work on creating the excellent customer experience. Before, travel suppliers have been trying to gain consumer loyalty by offering different programs and schemes. Now managers are thinking about making the customer experience the paramount core of the company. Travel companies should leverage an increased awareness of customer expectations, re-imagined technology strategy, and differentiated offerings to provide desired travel experiences.

The importance of the Internet and its use to acquire information, as well as the purchase of tourist products and services will continue to grow. Travel is more often planned individually, not with the help of travel agencies. It is favored by much better access to information and ease of self-construction of travel packages, lower prices of air tickets and changes in sales systems, as well as the desire to escape from organized trips that do not provide sufficient intimacy. Increasing use of information and communication tools by tourists is an important information for the tourist sector about the need to use these techniques for a marketing message.

During last decade the role of sharing economy is constantly growing. The rapid growth of the peer-to-peer and shared usage platforms is creating new marketplaces in such industries as transportation, accommodation, travel, and dining, etc. Peer-to-peer tourism services offer alternatives to traditional tourism activities - for example, renting part or all of one's residence to stay there for some night during the trip (platform Airbnb, Couchsurfing) or providing private

transportation services in a personal vehicle (Platform Uber, Lyft). Usage of technological innovations makes sharing economy highly competitive. People are increasingly open to the idea of sharing resources, as well as to new flexible work opportunities that create a supply of service providers using applications. Tourism consumers are more comfortable with digital experiences and have come to expect them in many transactions.

Summarizing, travel and tourism industry is an important part of the economy, because it makes a significant contribution to many sectors by producing part of GDP, creating new places for a job, enhancing investments and playing the role of “activator” for many other sectors. The definition of the tourism industry is discussed by many scientists and specialists but there is no single approach to it. World Tourism Organization define tourism industries as activities that produce tourism characteristic products or as industries that comprise all establishments for which the principal activity is a tourism characteristic activity. Tourism may penetrate too many sectors, so for statistical analysis, the type of impact of tourism (direct, indirect, induced) is taken into consideration. There are many sources of data that give possibility to make researches in travel and tourism industry to identify its role in economic phenomena, see dependencies between tourism and other sectors of economy, be able to present main trends and tendencies and include tourism as important component to the strategic plans and statements of local, national, regional and international development. The impact of tourism on economic growth is widely discussed in the tourism-led growth hypothesis which has been already validated in many countries. Countries with emerging economy try to repeat the success of developed countries in tourism to intensify economic development and attract investors. Still, every model of tourism industry should be always adopted to local features of the market and well-planned. A combination of forces, including shifts in the global economy, game-changing innovation, geopolitical turmoil, natural disasters, pandemics, and rising consumer demands reshaped the travel landscape. New trends define future perspectives for tourism industries and require its changing and adaptation. International organizations emphasize the importance of tourism industry in economic growth and predict increasing of its contribution to GDP, employment, visitor exports and investments globally. Nevertheless, the author will try to confirm this specifics of industry and predictions in the next two chapters using the case of Azerbaijan.



## **4. Practical part**

### **4.1. Relations between the tourism industry and Azerbaijan's economic growth**

#### **4.1.1. Overview of the tourism industry in Azerbaijan and analysis of tourism sector's indicators.**

Rich historical and natural resources turned into important foundations of tourism development in Azerbaijan. During its history country was always at the cross of caravan routes (including The Great Silk Road) which stimulated travellers, researches, traders, artisans and pilgrims to visit this region. Current territory of Azerbaijan was mentioned in works of Greek and Arabian scientists and later in Middle Ages, it was shown on maps of European cartographers and travellers. Localization at the crossroads of Eastern and Western civilizations affected the development of transport network and favorable conditions for tourism. Caravan trade for a long period of time was the main source of income for this region thus authorities were contributing to the building and maintaining of needed infrastructure, the safety of traders and their leisure. In XIX century the industrial oil production by mechanical means began and made Azerbaijan attractive for specialist all around the world. Many countries opened consulates in Baku to ensure their financial, economic and commercial interests (England, France, Germany, Iran, Turkey, etc.). The increased amount of visitors causes the appearance of hotels, restaurants, cinemas, roads and other infrastructure. During the Soviet time, educational and recreational tourism was developing very intensively inducing the growth of inbound and domestic tourists. Tourism in it different forms (recreational, medical, business) became an important part of people's life (Gasanov, 2013).

After Azerbaijan became independent in 1991 tourism was left out of attention for some time. Only serious of reforms at the beginning of XXI century laid the foundation of current travel and tourism industry. In 2002-2005 Governmental Program of Tourism Development in the Republic of Azerbaijan allowed to create good conditions for tourism, began integration into international tourism market, increased the competitiveness of the national tourist product. In 2002 there were only 94 hotels in the whole country. The aim of the mentioned program was also

the education of specialists in the tourism sector in order to provide needed human resources to the labor market. The government invested in first international tourist exhibition to share experience and learn more from other countries which were developing tourism industry actively (Azertag, 2018). Subsequent development programs allowed to intensify significantly the growth of tourism in the country. These programs will be described in more detail in the next subsections of the thesis.

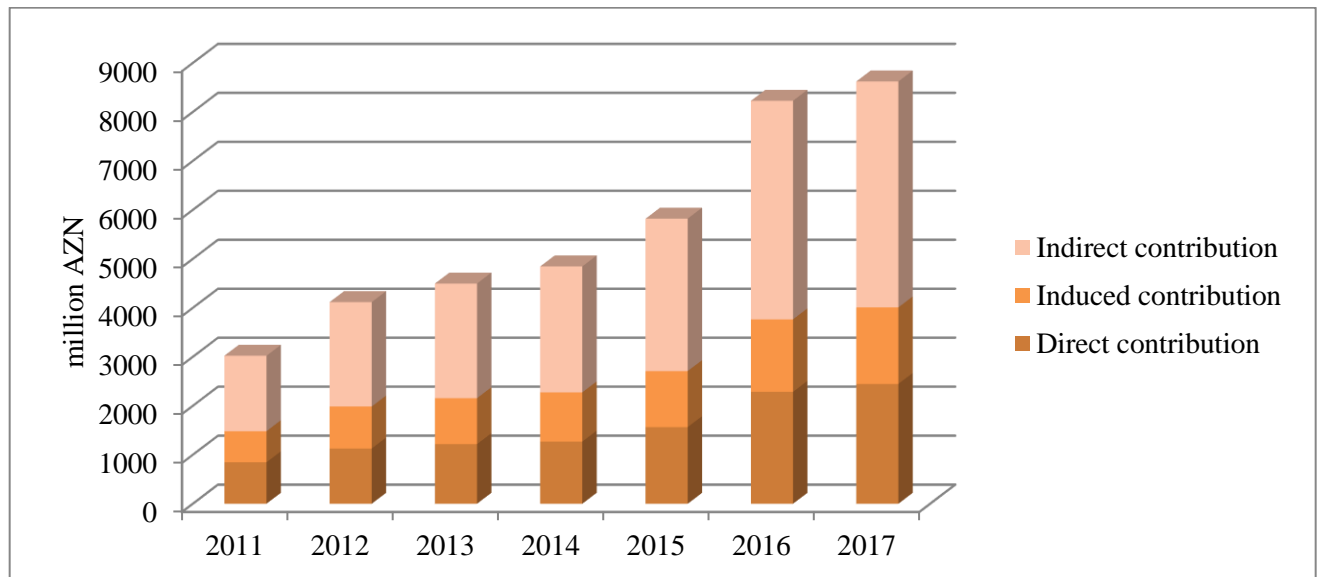
For the year 2017 tourism industry of Azerbaijan is in the 17th place in the world ranking by long-term growth, on the 33<sup>rd</sup> place by growth and on the 53<sup>rd</sup> place by relative size. The growth of travel and tourism's direct contribution to GDP of Azerbaijan is 7 percent that is higher than in Romania, Bulgaria, Ukraine, Russia, Turkey. The growth of direct contribution to employment in Azerbaijan is 6 percent that is higher than in Iran, Ukraine, Armenia, Romania, Belarus, Russia, Turkey (WTTC, 2017).

In 2017 total contribution of travel and tourism was 8628,8 million AZN which is 15,1 percent of total GDP and the direct contribution was 2446,4 million AZN, which is 4,2 percent of total GDP. Total contribution consists of direct, indirect and induced contribution. All indicators were growing very intensively during last 6 years. The direct contribution of tourism industries (income from accommodation, transportation, tourist attractions, cultural, sports and recreational services) to GDP increased 2,8 times, indirect contribution (investments, government spending, the impact of purchases for suppliers) increased 3 times in 2017 compared to 2011. The induced contribution that includes spending of direct and indirect employees increased 2,4 times (Figure 4).

Presented trends show the growing role of tourism in country's economy which corresponds to government's strategy of increasing service sector share in the economy. Azerbaijan is a major economic player in the Caucasus region due to its great oil and natural gas reserves, but as in many other countries that developed its economy basing on oil, government working on a long-term strategy to get away from resource curse and be able to maintain good living standards when resources will be exhausted. The industry still has the biggest share in GDP – 51,68 percent in 2016, but just 10 years before this indicator was 68,7 percent. The share of service sector increased from 23,79% in 2006 to 42,28% in 2016 (The World Bank, 2018). As

tourism is a part of service sector it is considered to contribute to the realization of government’s strategy.

**Figure 4. Travel and tourism contribution to GDP of Azerbaijan in 2011-2017**

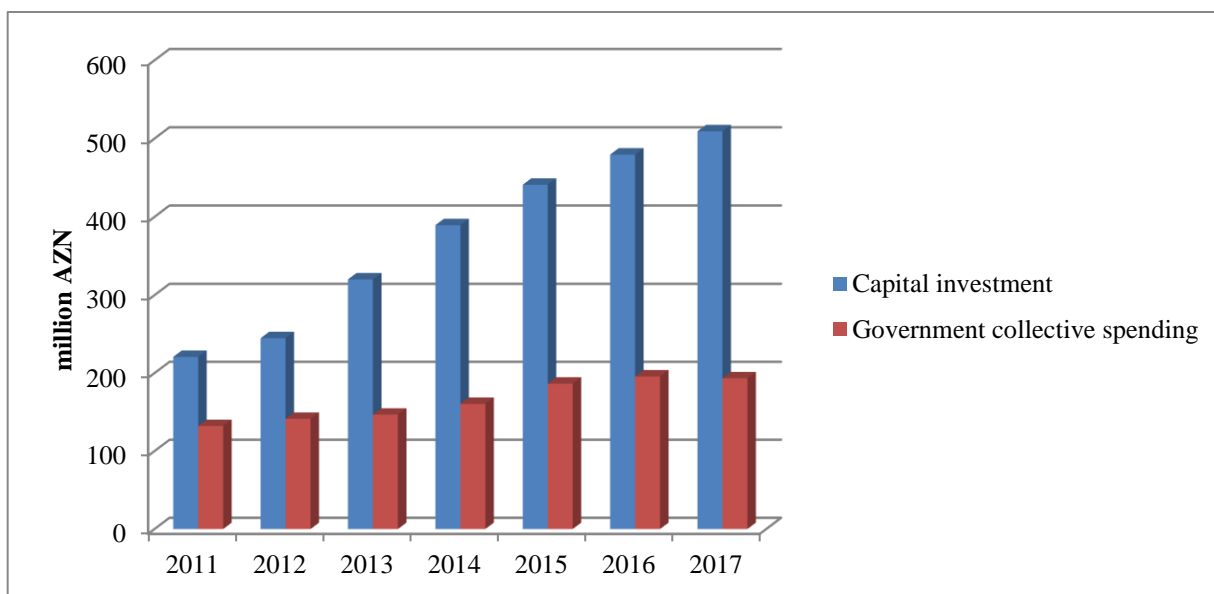


Source: created by the author based on WTTC (2017)

The constant growth of tourism economy contribution to GDP is a consequence of realization of government’s programs of tourism development, an organization of international events like Formula 1 Grand Prix of Europe in 2016, European Games in 2015, Eurovision Song Contest in 2012. Most of the infrastructure was built for these events – Baku Crystal Hall was built specifically for Eurovision and later it became the place for grand concerts of famous singers and for international sports competitions, The Village of Athletes and Baku Olympic Stadium were built for European Games in 2015. The building of sporting objects costs around 1 billion AZN. These events helped to promote the country and interest potential tourists. Azerbaijan is trying to make the most of its natural resources. For example, in 2013 new mountain resort Shahdag was opened and in 2017 it was named one of the most modern and popular resorts for outdoor activities in the CIS countries. Intensive development of tourism industries became possible due to investments which also show positive statistics (Figure 5).

Capital investment includes all kinds of spending on new tourism assets (e.g. accommodation, transport, leisure facilities, restaurants) was 509,3 million AZN which is 2,3 times more than in 2011 (Figure 5). The biggest growth of investments began from 2012 and was related to mentioned before international sports and cultural events. The increasing number of tourists, fast economic growth, competitive production costs, cheap and qualified labor make tourism sector in Azerbaijan very attractive for investors which were only looking at energy sector lately (Santandertrade, 2018). The growth of investment was also caused by changes in legislation that helped to improve the business environment and offer a solid legislative framework for the protection of foreign investors (Embassy of the Republic of Azerbaijan, 2013).

**Figure 5. Capital investment and government collective spending in tourism economy in Azerbaijan**



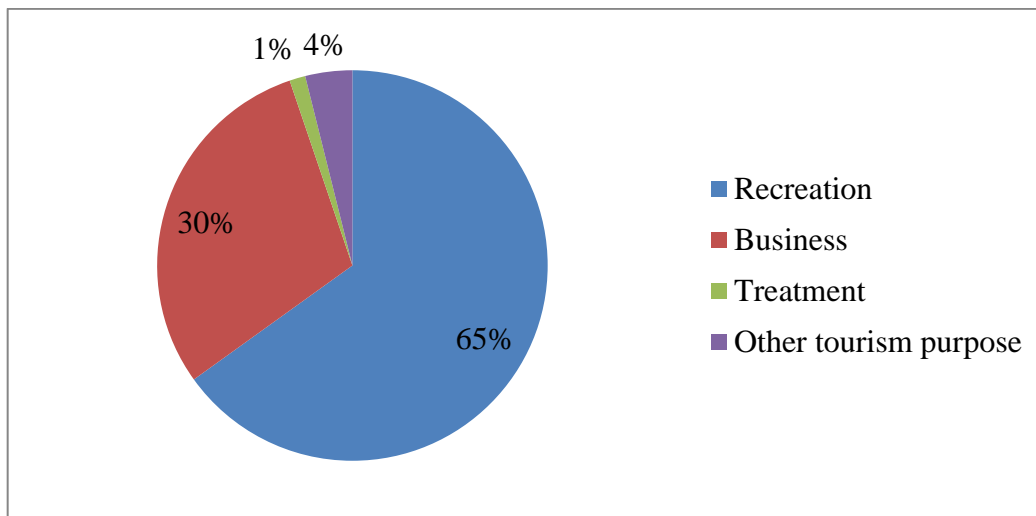
Source: created by the author based on WTTC (2017)

Government supports tourism sector and its investments increased from 132 million AZN in 2011 to 193,3 million AZN in 2017 (Figure 5). The main field of governmental investments are tourism promotion, visitor information services, and various public services. Government sponsors creating new tourism routes, new travel packages, development of infrastructure that still need improvement, an organization of international tourism exhibitions, an organization of

international or regional events, etc. National Tourism Promotion Bureau was opened in 2017 and its goal is working on better quality of tourist services and promote Azerbaijan abroad. One of its projects is BakiCityCard that will allow tourists to have discounts for tourist destinations and public transport, and opening new six tourist information centers in Baku (CBC, 2018).

The share of government in building “Shahdag” Winter and Summer tourism complex was 30% and the project cost was 506 mln. USD. The creating of the complex was initiated by Ministry of Culture and Tourism that also attract investors for the construction of “Water & Fire” tourism complex with the project cost of 200 million USD.

**Figure 6. Main purposes of domestic and foreign tourists in Azerbaijan**



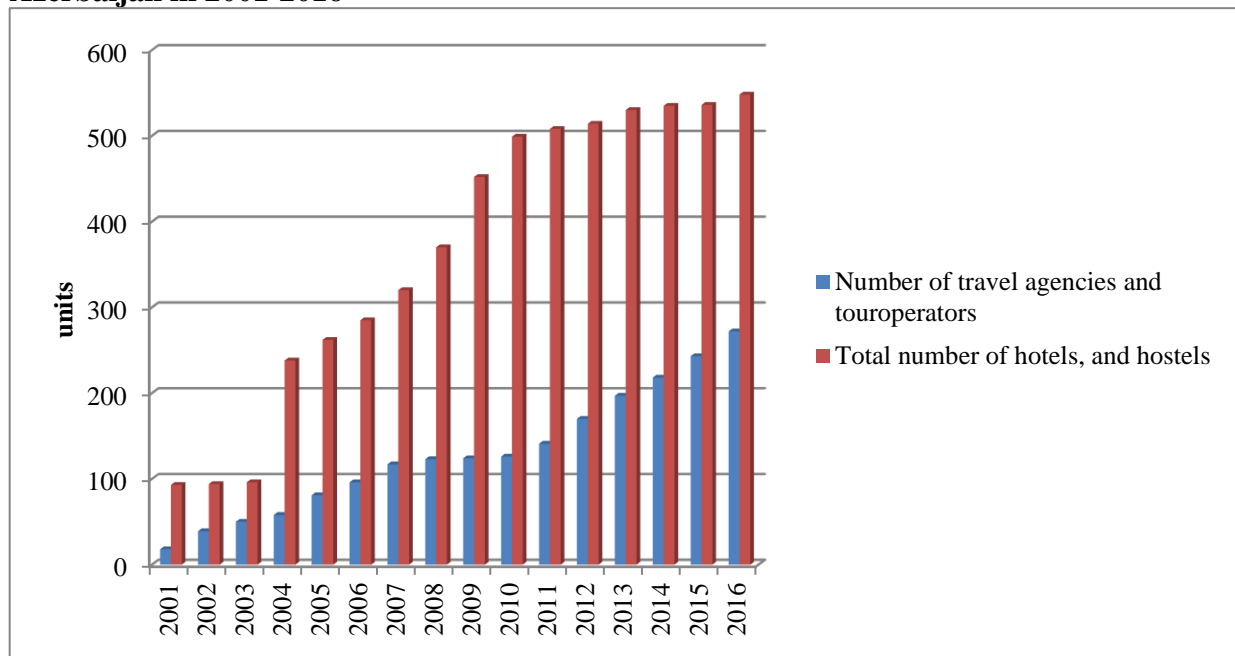
Source: created by the author based on The State Statistical Committee of The Republic of Azerbaijan (2018)

Other projects initiated by private companies are: construction of tourism, sport and resort center in Khachmaz region (project cost 110 mln USD, project payback period 15 years), construction of “Qasr” resort in Goy-Gol region (project cost 11,7 mln USD, project payback period 6 years), construction and development of the Naftalan Health and Recreation Centre in Naftalan city (project cost 12,3 mln USD, project payback period 8 years), construction of tourism resort complex in Vandam village (project cost 10,7 mln USD, project payback period 8 years), construction of “EDELWEISS residence” – Hotel and Business Centre (project cost 155,5

mln USD, project payback period 10 years) and many others (Polish Agency for Enterprise Development, 2013). Most of the investment projects and government strategies focused on business and recreational tourism because these are main purposes of tourists (Figure 6).

Due to data provided by Statistical Committee of Azerbaijan 65% tourists in 2016 traveled in Azerbaijan with recreation purpose (e.g. visiting historical cities, resting on the seaside, skiing in mountains). 30 % of tourists were travelling for business purpose (Figure 6). Travel spending for leisure travel in 2016 generated 80,6% of direct tourism economy contribution to GDP while business travel spending generated 19,4% of direct contribution (WTTC, 2018). Development of leisure tourism is intensified due to different picturesque landscapes and various climatic zones. Business tourism is the result of Azerbaijan’s economic growth and attractiveness of energy sector for investors. Baku has a lot to offer to business tourists with its 5-star hotels, business centers, good infrastructure, investments projects (PWC, 2018). The developing of tourism sector naturally accompanied by enlargement of such tourism assets as travel agencies and accommodation objects.

**Figure 7. Number of accommodation objects and travel agencies and tour operators in Azerbaijan in 2001-2016**



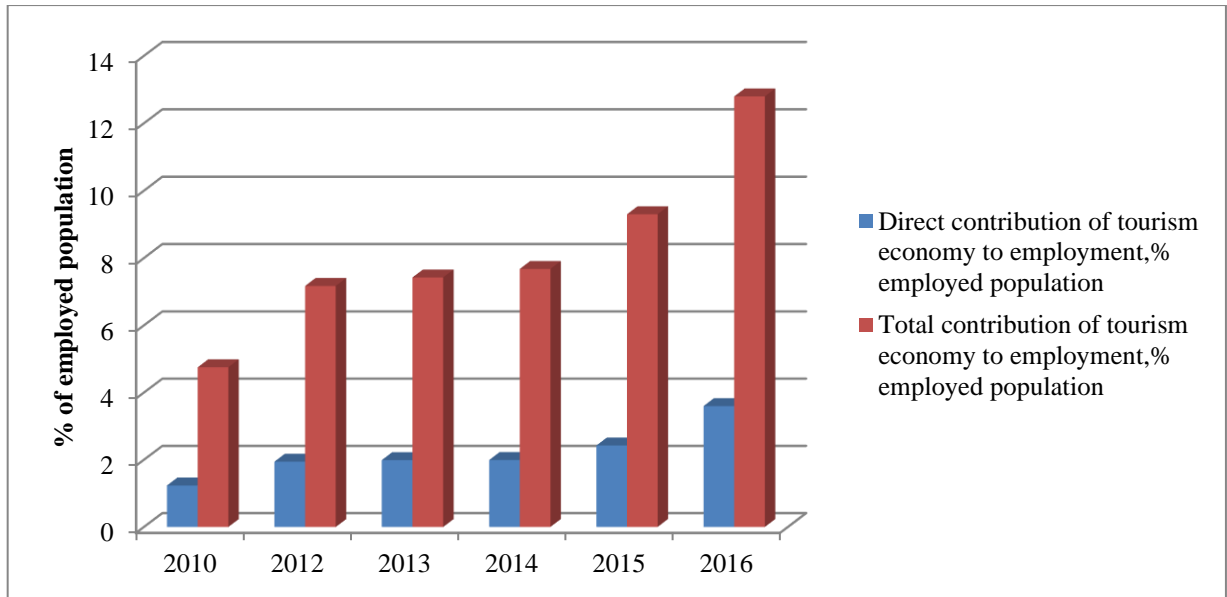
Source: the figure was created by the author based on The State Statistical Committee of The Republic of Azerbaijan (2018)

The number of hotels and hostels in Azerbaijan in 2016 was 6 times bigger than in 2001. The number of travel agencies and tour operators became 16 times more for the same period. The biggest increased of mentioned objects was noticed in 2004 after the beginning of the implementation of the first tourism development strategy and in 2008-2010 when the country began to work on its direction to increase the share of the service sector (Figure 7). All of these objects mainly concentrated in Baku, but with the development of tourism in regions, situation may change in future. During 2008-2010 first international hotel chains entered Azerbaijan's market. Currently, there are such hotels as Four Seasons, Fairmont, Kempinski, JW Marriott, Hilton, Jumeirah, Holiday Inn, Park Inn, Intourist Hotel Baku, Hyatt, Sheraton, The Landmark Hotel Baku, and QafqaZ Hotels & Resorts. The presence of these branded hotels positively affect the image of the country and help to maintain and increase the quality of accommodation services because local hotels are aiming to be competitive with them (PWC, 2018).

As Azerbaijan still stay unexplored for foreigner and its infrastructure in some region is not very good, foreign tourists keen to use services of travel agencies and tour operators. Additionally, they provide services for outbound tourists as people in Azerbaijan began to travel abroad more frequently due to the increase in population's income. Although a number of accommodation objects and travel agencies is growing, sometimes there are situations when demand is higher than supply (Azertag, 2018).

Intensive growth of tourism sector in Azerbaijan has a very positive effect on employment. The direct contribution of tourism economy was 1,2 percent of the employed population in 2010 and only in 5 years it became 3,6 percent. The total contribution to employment in 2016 was 12,8 percent that is 2,3 timed bigger than in 2010 (Figure 8).

**Figure 8. The direct and total contribution of tourism economy in Azerbaijan**



Source: the figure was created by the author based on WTTC (2017)

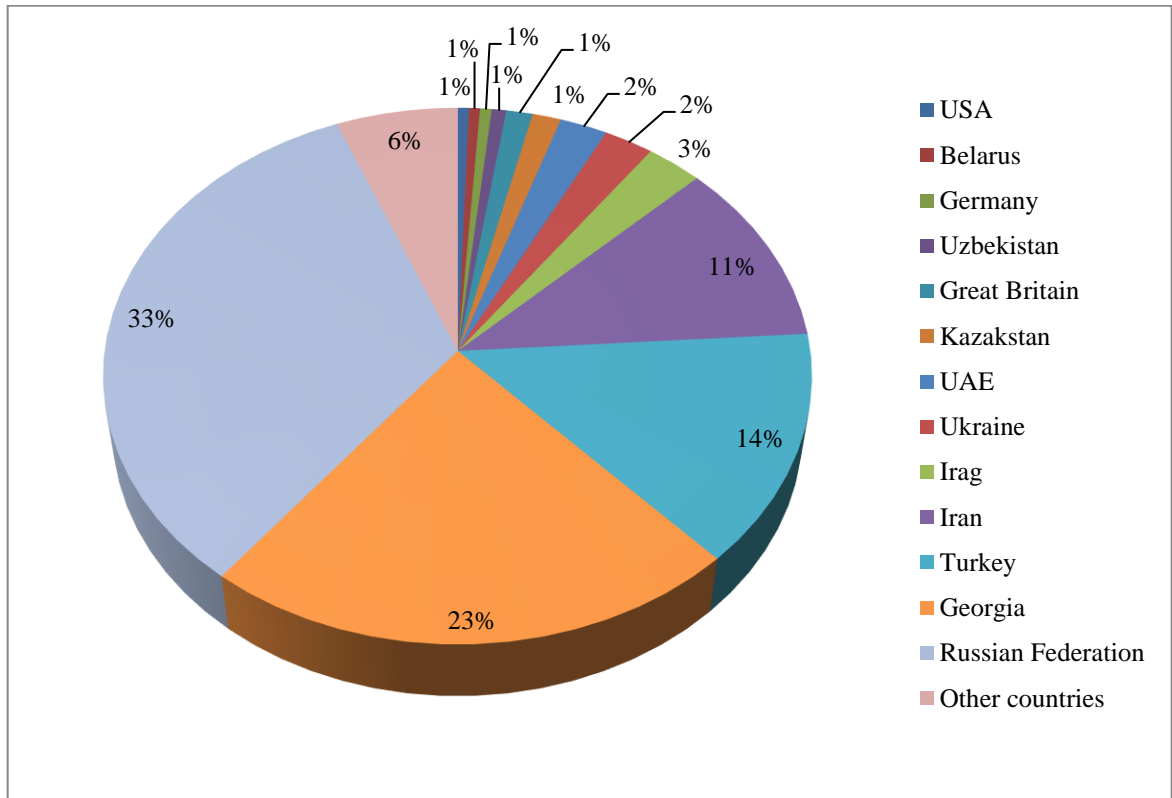
Tourism sector offer jobs for people with different education and skills – from maids to managers of hotels and directors travel agencies. What is important for Azerbaijan at this stage of tourism development is improving the quality of services and one of the way to do this is to improve qualifications of workers in the tourism sector. For example, in 2017 training program for workers from tourism sector was organized in Baku and big regional cities in cooperation with British Council (CBC, 2018). Tourism helps to decrease the unemployment rate and this “help” become more and more important year by year. Development of the tourism in the regions can be one of the ways to eliminate regional differences in living standards which a still very big in Azerbaijan.

Most of the tourists that arrived in Azerbaijan are from Russian Federation (33 percent), Georgia (22 percent), Turkey (14 percent), Iran (11 percent), Iraq (3 percent), Belarus and UAE (2 percent each). Additionally, there is a big amount of tourists from Ukraine, Germany, United Kingdom, Kazakhstan, Uzbekistan, USA (Figure 9). Russian Federation and Georgia during the last decade remain the main source market for tourism sector of Azerbaijan. The number of tourists forms UAE increased from 346 in 2008 to 53 thsd. persons in 2016, the number of tourists from Iraq increased from 646 to 62 thsd. Persons and the number of tourists from Saudi



Arabia increased from 416 to 8 thsd. persons. (The State Statistical Committee of The Republic of Azerbaijan, 2018).

**Figure 9. Number of arrived tourists by country in 2016 in Azerbaijan**

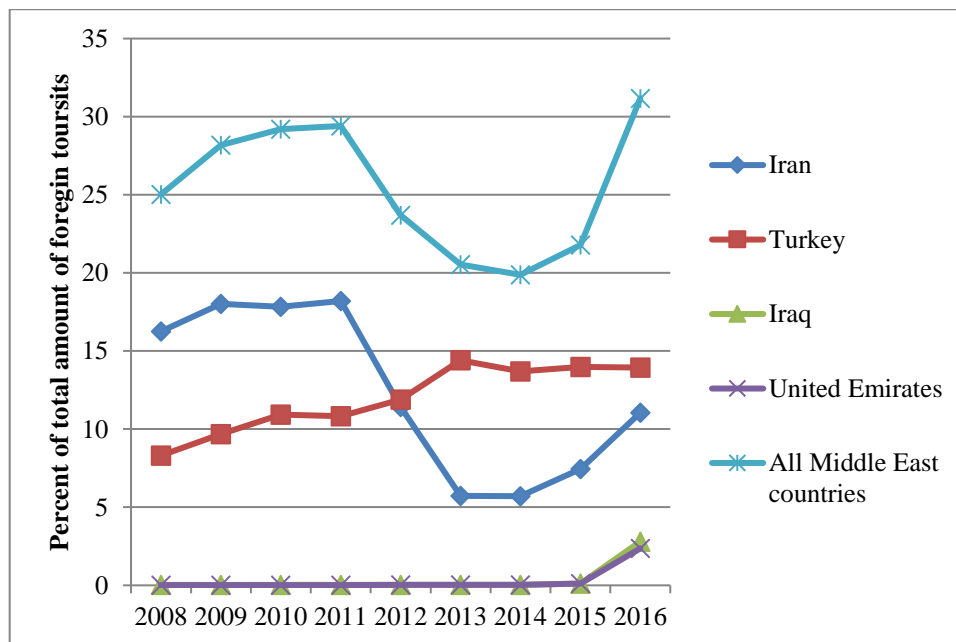


Source: figure was created by the author based on The State Statistical Committee of The Republic of Azerbaijan (2018)

At the beginning of XXI century, CIS countries were the main source market for tourism sector of Azerbaijan due to strong social and political relationships between these countries that were kept from the times of Soviet Union. But later, when tourism industry began to get up from the knees and government began to work more intensively on the promotion of the tourism, political and economic relations with European and the Middle East countries, the number of tourists from other countries began to grow. Tourists from Turkey, Iran, and UAE were interested in visiting Azerbaijan for leisure and business purposes and their motivation was also strengthened by the fact of similar cultural values (the same religion).

In 2017 State Agency for Public Service and Social Innovation issued the electronic via application procedure called ASAN Visa which simplified the process of getting a visa for a citizen of 93 countries, therefore the number of foreign tourists from other countries should noticeably increase in the coming years. The number of foreign tourists also increased because of the double devaluation of Azerbaijan in 2015 – especially for tourists for the Middle East it became profitable to spend their vacations in Azerbaijan (Ministry of Foreign Affair, 2018).

**Figure 10. The share of tourists from the Middle East in the total amount of foreign tourists arriving in Azerbaijan**

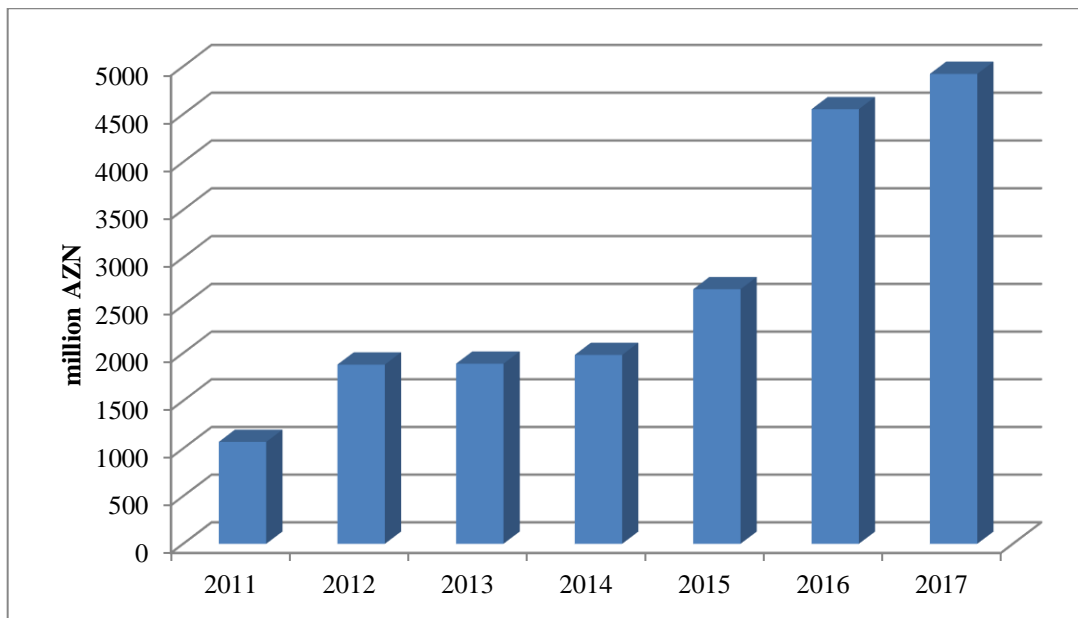


Source: the figure was created by the author based on The State Statistical Committee of The Republic of Azerbaijan (2018)

During last decade the share of tourists from Middle East countries was not stable. In 2008 it was 25 percent and the indicator was growing till 2011, but later there was decline to 20 percent. In 2016 the share of tourists from this region increased up to 31 percent due to reasons discussed before. Middle East countries that have the biggest impact on Azerbaijan’s inbound tourism are Iran, Turkey, United Emirates and Iraq. In 2016 tourists from Iran and Turkey made 11 percent and 14 percent of all foreign tourists arrived in Azerbaijan (Figure 10). There are also countries that do not have a big impact on Azerbaijan’s inbound tourism but have very good

tendencies. For example, the number of tourists from Saudi Arabia increased 18 times at period 2008-2016, tourists from Bahrain – 20 times, Kuwait – 10 times (The State Statistical Committee of The Republic of Azerbaijan, 2018). Since tourists from this countries used to spend more money for tourism, such tendencies may predict the increase of common tourist expenditures in Azerbaijan.

**Figure 11. Tourist expenditures of foreign tourists in Azerbaijan in 2011-2017**



Source: the figure was created by the author based on WTTC (2017)

Each country is interested in attracting tourists that spend more money while traveling. According to statistics represented by World Tourism Organization, the top world tourism five spenders are China, United States, Germany, United Kingdom and France (UNWTO, 2017). Foreign tourists in Azerbaijan spent 4921 million AZN in 2017 which is 4,6 times more than in 2011 (Figure 11). Tourist expenditures made by foreigners also called visitor exports or international tourism receipts and they are usually used for analysis of tourism economy contribution on economic growth. Inbound tourist expenditures generated 16,9% of total exports in 2017 (WTTC, 2017).

It is important to underline that foreign visitor spending made 73,4% of travel and tourism contribution to GDP while domestic spending made 26,6% of the contribution. Azerbaijan people

prefer to travel abroad and their main destination is Georgia which accepted 1 million of tourists from Azerbaijan in 2016 (WTTC, 2017).

After the dissolution of Soviet Union, new independent countries had similar problems and were on the similar stage of developing a new economy. Long-lasting economic, political and financial crisis was managed by them in a different way and at the beginning of XXI century they were on their way to democratic and capitalistic states working on developing all sectors of the economy. Analysis of the data about main indicators of tourism economy in Azerbaijan and CIS countries in 2016 shows how they coped with tourism sector (Table 2).

**Table 2. Comparison of main indicators of tourism economy in Azerbaijan and CIS countries in 2016**

Country	Direct contribution to employment (% share of total employment)	Total contribution to Employment (% share of total employment)	Direct contribution to GDP (% of GDP)	Total contribution to GDP (% of GDP)	Investment (Capital investment)(% of exports)	Visitor Exports (Foreign spending) (% of exports)
Azerbaijan	3,7	13,1	4,11	14,56	2,77	16,9
Georgia	6,79	23,41	8,12	27,14	3,55	40,8
Armenia	3,34	12,48	3,81	13,97	4,45	28,03
Russia	1,2	4,66	1,26	4,97	2,14	3,49
Ukraine	1,35	5,02	1,52	5,61	1,85	2,91
Belarus	1,78	5,48	1,91	5,91	2,21	3,3
Kazakhstan	2,08	5,98	1,9	6,19	5,44	3,94
Moldova	0,87	2,94	1,01	3,36	2,17	8,28
Kyrgyzstan	1,34	3,74	1,39	3,86	3,82	16,49
Uzbekistan	0,85	2,68	0,99	3,07	2,1	1,42

Source: the table was created by the author based on WTTC (2017)

According to data in Table 2, Azerbaijan is one of the leaders in tourism development in Caucasian region and among CIS countries. In the Caucasian region Georgian is on the first place by the importance of tourism in the national economy as its tourism contribution to GDP was 27,14 percent of GDP and its tourism contribution to employment was 23,41 percent of total employment in 2016. Visitor exports are 40,8% of total export and it is on the 4<sup>th</sup> place in the

world by the growth of travel and tourism economy (WTTC, 2018). The success of developing tourism sector explained by implemented government programs, intensive promotion abroad and simplification of the visa regime with European Union. Georgia doesn't have many mineral resources so service sector is in priority. Armenia is on the second place among CIS countries by visitor exports and also have high indicators of tourism contribution to the economy. In other post-soviet countries listed in the table, tourism didn't become the rapidly growing and important sector of the economy. Tourism Kazakhstan had the biggest total contribution to GDP and capital investment was higher than in Azerbaijan and Georgia which may be the result of a service-oriented long-term strategy for the economy. The most insignificant contribution of tourism economy is in Moldova, Uzbekistan, Kyrgyzstan, Russian and Ukraine (Table 2). The advantages of countries in the Caucasian region are localization, diversity of natural tourist resources and the size of the territory, because it is much more easier and less costly to build or to improve infrastructure (roads, railways, public and tourist facilities) on the smaller territory than in such big countries as Russia, Kazakhstan, Ukraine and so on where much bigger investments are needed.

Summarizing Azerbaijan has all the necessary ingredients of a tourist-friendly country: hospitable people, rich cultural, historic and religious diversity, beautiful natural scenery, delicious cuisine and exotic foods, and many more. Tourism sector became one of the fastest developing segments of the economy with immense potential and opportunities. It is, moreover, assigned an important role in the enunciated aspirations of the government towards the diversified economy. Government regulation became one of the most important stimuli of tourism development.

#### **4.1.2. Governmental regulation of tourism development**

Although Azerbaijan has all needed resources and a great capacity to develop tourism, on this stage main goal of government should be creating competitive tourism business to give a point of sector's growth. This can be done by implementing relevant infrastructure projects in the direction of turning available capacity into opportunities as well as developing it.

Development of tourism in independent Azerbaijan began from the adoption of the law "On tourism" in 1999 and continued in the state programs "On the development of tourism

during 2002-2005 and 2010-2014”, forming Ministry of Culture and Tourism of the Republic of Azerbaijan and finally “Strategic Road Map for the development of specialized tourism industry in the Republic of Azerbaijan”.

The main results of the government program “On the development of tourism during 2002-2005” were favorable conditions for the development of tourism, the foundation for ensuring integration in the international tourism market, increased the competitiveness of the national tourist product. Within this program hotels meeting international standards were built, a number of leading international investment companies were involved in the tourism sector. Experts of the company “Caspian Group Consulting”, which won the tender conducted by the Ministry of Culture and Tourism of the Republic of Azerbaijan, prepared plan for the long-term development of tourism within the framework of the grant provided by the US Trade and Development Agency, as well as on the basis of feedback and suggestions of specialists invited from Turkey, employees of the Ministry. Additionally, work was carried out to improve the training of personnel in the field of tourism, the increase in the number of beds, the development of various types of tourism, the opening of tourist information centers, tourism exhibition and festivals were organized to promote tourism (Gasnov, 2011).

The main goal of the program “On the development of tourism during 2010-2014” was the formation of a tourism industry that meets modern economic, social and environmental requirements, and ensuring the transformation of the tourism industry into one of the pillars of the country's economic development. For execution objectives of the program, government declared 2011 a year of tourism. At this time many of projects invested by government and by private companies were completed and first big international events took place, Baku acquired its modern look, thanks sports events people all over the world heard about Azerbaijan, a lot of tourist destinations in the capital and in regions were rebuilt. The program was aimed to create good conditions for the development of small and medium business in order to provide a wide choice and healthy competition, which should lead to lower prices (Ministry of Culture and Tourism of the Republic of Azerbaijan, 2018).

In 2016 President signed a new document “Strategic Road Map for the development of specialized tourism industry in the Republic of Azerbaijan” which is intended to make tourism even more significant part of the economy. One of the main goals of this program is to make

Azerbaijan one of the most attractive touristic destination in the region up to 2025. A government plan to conduct actions in four main directions (Center of Analysis of Economic Reforms and Communication, 2018).

The first direction is global: increase the usage of the tourist potential of the whole country, which today is mainly concentrated in Baku. Authorities plan to create until 2025 an infrastructure management mechanism that will be different from the current one, to promote the country abroad by providing more information about tourists destinations, facilities and certain types of tourism (especially winter tourism). The goal is the more rational usage of the available potential (Ministry of Culture and Tourism of the Republic of Azerbaijan, 2018).

The second direction is working directly with the target audience (with tourists that visited the country for the first time). It is important to eliminate difficulties that tourist may have applying for a visa, buying tickets, looking for tourist information, getting to the tourist destination. When the promotion of tourism will be established and management mechanism will be on the appropriate level, time come to the creation of special tourist and recreational zones. One of the points of the program from this direction - the simplification of the procedure for obtaining foreign tourists visas was finished in January 2017. The third direction is supporting regional tourism. The Road Map noted the need to invest in stimulating health, winter, and eco-tourism (Ministry of Culture and Tourism of the Republic of Azerbaijan, 2018).

Finally, the fourth direction envisages the creation of educational programs and the improvement of standardization and certification procedures to the appropriate level. As a result, by 2020 the sphere of tourism will allow generating 293 million AZN of direct and 172 million AZN of indirect investments in the GDP of Azerbaijan. Moreover, additional 25,000 new jobs will be created. The government estimated the needed amount of investments for realizing described goals as 350 million AZN. Other target indicators that government plan to achieve until 2020 are next:

1. The increase of overnight stays of foreign tourists in hotels and accommodation types of the city Baku tentatively from 0.8 million overnights in 2015 to at least 3.65 million overnights in 2020,
2. Increasing the duration of each tourist's stay on average from 2 to 3 days,

3. An increase in the number of citizens of foreign countries accommodated in hotels and hotel-type facilities in Baku, from 0.5 million in 2015 to 0.9 million in 2020, and an increase in the number of unplaced foreign citizens from 0.8 million in 2015 to 1.5 million in 2020,

4. An increase in the use of health facilities from current 40 percent to 65 percent (use of health facilities in Naftalan is foreseen),

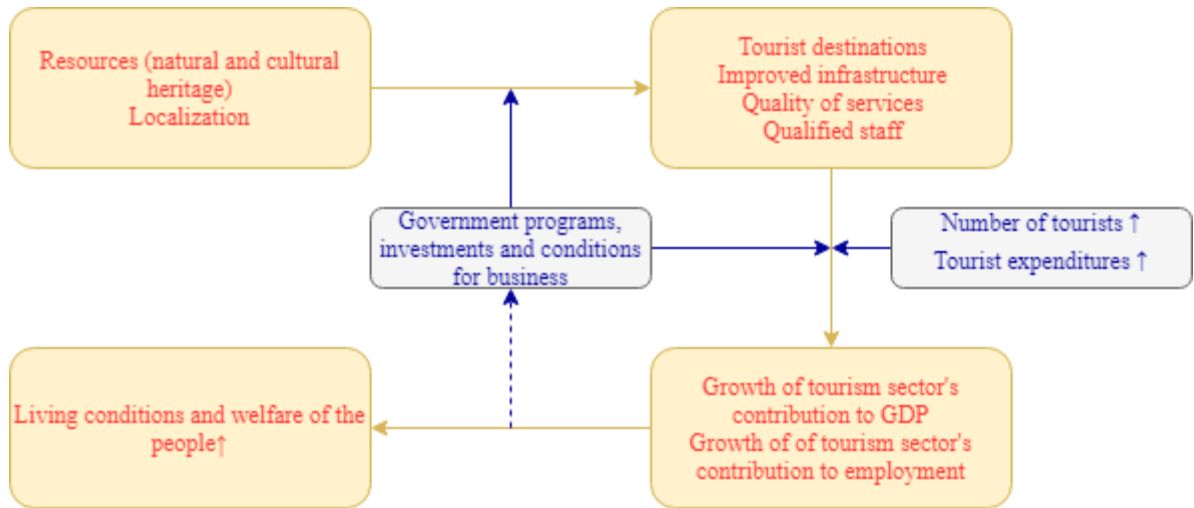
5. The attraction of more than 180 thousand tourists to the "Great Silk Road" and points located on other cultural and tourist routes (Center of Analysis of Economic Reforms and Communication, 2018).

Described targets are quite ambitious but in case of sufficient funds that will be invested into tourism sector, they may be achieved. Government plan to work on intensive marketing strategy for national tourist product, to work on the quality of services in order to stimulate the increase of quantitative indicators. An important part of the program is diversification of the tourist product that will help use more efficiently tourist potential of Azerbaijan. In addition, it will help to increase the number of overnight stays and expenditures because tourists will be offered more things to do and more destinations to visit.

The process of tourism development in Azerbaijan can be generalized in one simple scheme (Figure 12). Rich natural and cultural heritage together with good localization are not enough to stimulate tourism economy. Catalysts of forming tourism industries are efficiently implementing government programs, investments and legislation that ensure good conditions for business. After these catalysts appear, the basic element of tourism will be created - tourist destination with appropriate infrastructure adopted for tourist needs, a certain quality of services that will form the image of the tourist product, qualified staff that will be able to manage the quality of services and customer's satisfaction. After this stage, the number of tourists and their expenditures should grow which will affect the growth of tourism economy's contribution to country's GDP and employment. Positive tendencies in the growth of GDP and employment are one of the most important factors of the improving of living conditions and the increase of the welfare of the people. In order to increase the contribution of tourism economy authorities need to go back again to government programs and investments (public and private).



**Figure 12. Tourism development scheme in Azerbaijan**



Source: created by the author

After some of the circles in the scheme on Figure 11 tourism industry should become self-sufficient and the engagement of government will be minimized. Good conditions for business and growing income from tourism will make this industry attractive not only for domestic but also for foreign investors, thereafter more players will appear on the market and competition will positively influence prices and the quality of services. In case of Azerbaijan, this period of the self-sufficient industry may not come soon due to the big government's interference and control of all industries.

All programs and strategies on the development of tourism sector based on some predictions of the future progress of the sector's indicators in order to estimate opportunities, chances and possible achievements taking into consideration available resources. But before the forecast could be made it is important to identify which variables should be taken into consideration for the forecast.

## **4.2. Identification of main indicators that affect tourism impact on Azerbaijan's economy**

The economic impact of the tourism industry is usually measured by international organizations (WTTC, UNWTO) in the direct contribution of travel and tourism economy to GDP. In case of Azerbaijan, 73,4% of direct tourism contribution to GDP is spending of foreign tourists (or international tourism receipts). This indicator is calculated basing on expenditures made by foreign tourists (for international transport and for other goods and services). International tourism receipts are a dependent variable which depends on many qualitative and quantitative factors. For example, foreign tourist spending may depend from the diversity of tourism product offered by the city or region, purchasing behavior of the tourists, by the number of tourists, the scale, and effectiveness of promotion, infrastructure, the image of the destinations and many others. Unfortunately, analysis of statistical data on The State Statistical Committee of The Republic of Azerbaijan, World Travel and Tourism Council and World Tourism Organization showed that quantitative indicators of such qualitative factors are not provided periodically. But there are certain quantitative factors that can be considered as independent variables.

Due to many researches (Lyon, 2012; Aynalem, Birhanu & Tesefay, 2016; Page, 2013; Davidson & Michael, 2010; Buhalis, Darcy & Ambrose, 2012) international tourism receipts may depend on next indicators: number of arrived foreign citizens, travel costs (e.g. number and value of sold package tours, prices for hotels), the volume of investments in tourism industries, duration of the stay. Such economic indicators as inflation and exchange rates may also impact on tourist expenditures. Author has chosen 9 independent variables to measure the strengths of their relations with the change of international tourism receipts:

1. Number of foreign citizens arrived in Azerbaijan,
2. Number of package tours sold to foreigners,
3. Value of package tours sold to foreigners,
4. The volume of investment in tourism industries,
5. Number of overnights of foreign tourists
6. Number of accommodated persons that spent more than 3 days in Azerbaijan,
7. Amount paid to hotels and similar establishments for rooms by foreign citizens,

8. Inflation rate
9. Exchange rate

One of the models that is used to investigate causality between two variables is Granger causality analysis (or Granger causality test). This model is frequently used by scientists in works about the relation between international tourism and economic growth (Tang and Aboserda, 2014; Eeckels and Filis, 2012; Ohlan, 2017; Fauzel and Seetanah, 2016). Causality is connected with the idea of cause-and-affect. Test is checking whether variable X is causal to variable Y, so researcher need to check if X is the cause of Y or Y is the cause of X. Using this statistical model author can determine if the change of one variable is the result of the occurrence of the other variable and what is the scale of their relation. In this way, the author will identify what is the strongest catalyst for tourism international receipts.

Author state the null hypothesis ( $H_0$ ) that the volume of investments has the biggest impact on changing the tourism international receipts. The alternative hypothesis ( $H_1$ ) is one of the other variables impact significantly the direct tourism contribution to GDP. The formula of Granger causality test is represented on equation 1 and 2 (Tang and Abosedra, 2014). The calculations were made in MS Excel and presented in Appendix 8.1.

$$y(t) = \sum_{i=1}^{\infty} \alpha_i x(t-i) + c_1 + u_1 t$$

$$y(t) = \sum_{i=1}^{\infty} a_i y(t-i) + \sum_{j=1}^{\infty} \beta_j y(t-j) + c_2 + v_2(t)$$

Raw data and results of autocorrelation for preliminary calculations are represented in Appendix 8.1. Further calculations are represented in table 3 and table 4. Table 3 consist of the results of the first part of the test and show correlation between the size of the tourism international receipts and other factors – it help to understand that the change of the tourism international receipts does not cause the change of listed factors.

**Table 3. Granger causality test. The dependence of independent variable from dependent variable**

Independent variables	2010	2011	2012	2013	2014	2015	2016
Number of foreign citizens arrived to Azerbaijan	0,73407 266	0,447299 323	0,554996 097	0,875324 421	0,833920 895	0,7719595 43	0,846213 479
Number of sold package tours foreigners	0,89384 478	0,188918 2	0,765122 632	0,890898 154	0,702665 544	0,4829689 56	0,629987 83
Value of sold package tours to foreigners	0,49953 023	0,277303 31	0,652676 411	0,864824 885	0,699677 521	0,6315463 88	0,407369 508
The volume of investments in tourism industries	0,22985 675	0,291582 716	0,434011 512	0,558580 633	0,771169 616	0,8135664 26	0,726474 775
Number of overnights of foreign tourists	0,78327 511	0,023184 907	0,242787 947	0,556273 186	0,621429 197	0,7030083 71	0,668150 232
Amount paid to hotels and similar establishments for rooms by foreign citizens	0,95364 272	- 0,311199 44	0,445574 634	0,663567 277	0,576525 622	0,7362459 69	0,922014 971
Number of accommodated persons that spent more than 3 days in Azerbaijan	0,87661 253	- 0,066457 58	0,268339 17	0,516523 909	0,582470 075	0,6994014 33	0,664741 831
Inflation rate	0,47257 787	- 0,661997 41	- 0,240469 23	- 0,228453 32	- 0,871522 42	- 0,6696553 08	- 0,437283 18
Exchange rate	- 0,68714 89	- 0,600797 64	- 0,553388 91	- 0,946338 75	- 0,756235 31	- 0,0774381 79	0,248629 12

Source: created by the author

Table 4 consist of the results of the second part of the test and show correlation between the size of the tourism international receipts and other factors but it help to see whether the change of listed factors not cause the change of the tourism international receipts.

**Table 4. Granger causality test. The dependence of dependent variable from independent variables**

Independent variables	2010	2011	2012	2013	2014	2015	2016
Number of foreign citizens arrived to Azerbaijan	- 0,30596 08	0,080896 367	- 0,133172 34	0,246644 018	0,458715 29	0,7211470 55	0,846213 479
Number of sold package	0,10508	0,487191	-	0,221869	0,224657	0,3765119	0,629987

tours foreigners	762	125	0,069008 77	527	451		83
Value of sold package tours to foreigners	- 0,47806 33	- 0,330793 3	- 0,884080 99	- 0,380060 98	- 0,098992 98	0,1736543 63	0,407369 508
<b>The volume of investments in tourism industries</b>	<b>0,44219 378</b>	<b>0,958242 487</b>	<b>0,781727 697</b>	<b>0,761063 715</b>	<b>0,843066 257</b>	<b>0,7933046 11</b>	<b>0,726474 775</b>
<b>Number of overnights of foreign tourists</b>	<b>0,42183 993</b>	<b>0,959228 097</b>	<b>0,751637 019</b>	<b>0,731458 932</b>	<b>0,769255 222</b>	<b>0,7128016 85</b>	<b>0,668150 232</b>
<b>Amount paid to hotels and similar establishments for rooms by foreign citizens</b>	<b>0,52706 761</b>	<b>0,974067 916</b>	<b>0,743413 703</b>	<b>0,795658 493</b>	<b>0,799399 61</b>	<b>0,8236370 53</b>	<b>0,922014 971</b>
<b>Number of accommodated persons that spent more than 3 days in Azerbaijan</b>	<b>0,42368 318</b>	<b>0,972220 75</b>	<b>0,751598 371</b>	<b>0,728516 295</b>	<b>0,785350 938</b>	<b>0,7306073 61</b>	<b>0,664741 831</b>
Inflation rate	0,36555 717	- 0,180674 54	- 0,186176 51	0,098176 111	- 0,570124 79	- 0,7072601 74	- 0,437283 18
Exchange rate	0,42011 676	0,896015 404	0,614490 502	0,580866 777	0,596066 344	0,3523155 84	0,248629 12

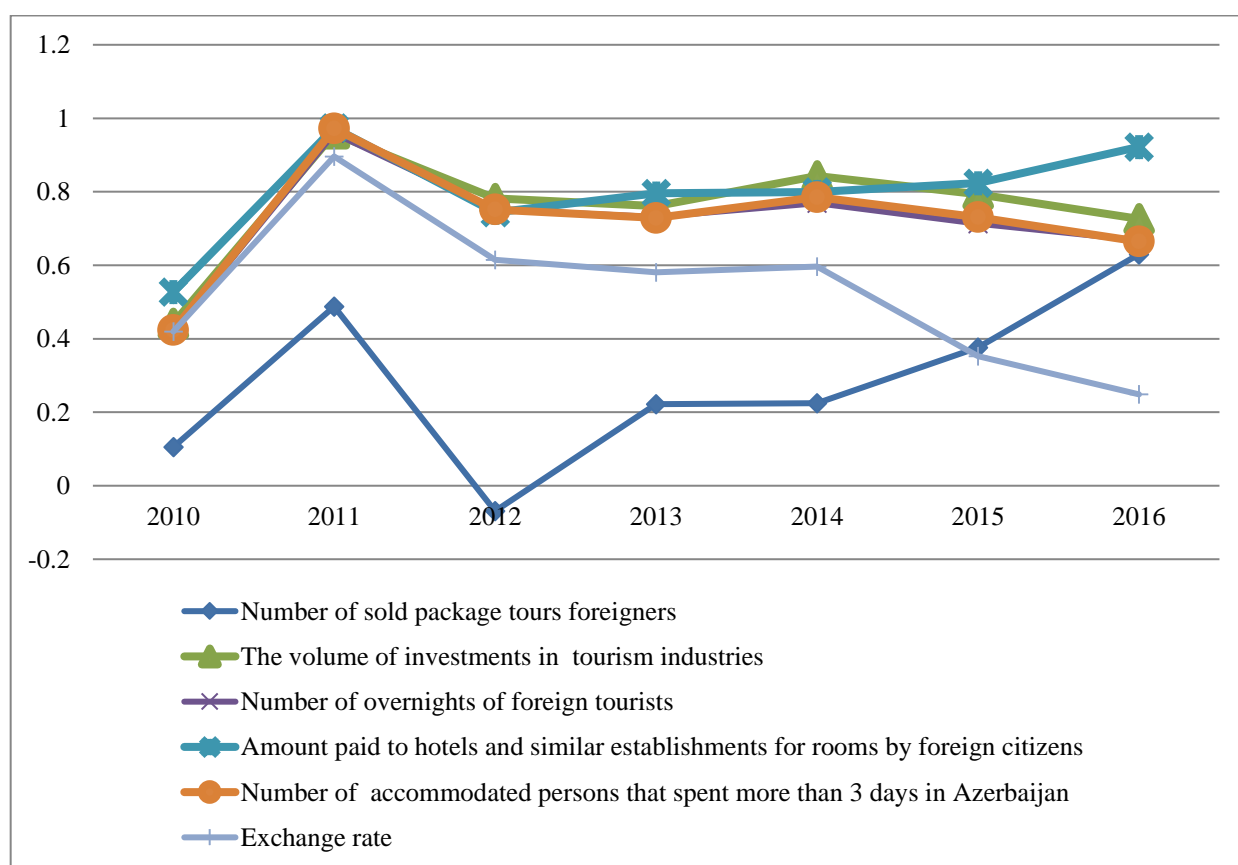
Source: created by the author

According to the results of calculations, the most significant catalysts of change international tourism receipts are the volume of investments in tourism industries, the amount paid to the hotels and similar establishments by foreign tourists and number of accommodated persons (Figure 13). The null hypothesis is verified.

Granger causality test shows the change of mentioned indicators causes in the certain scale the changes of tourism international receipts which are the main element of direct tourism contribution to GDP. During last 10 years investments were one of the most important factors of tourism development in Azerbaijan as they do in all other countries at the development stage of tourism product lifecycle. They are the key factor of all large-scale projects (e.g. of ski-resort or recreation center, business center, renovation of the airport, the building of big entertainment centers like stadium or music hall) that usually attract more tourists than small tourist destinations without appropriate infrastructure. If government create a good business environment, projects in different industries become more attractive for foreign and domestic investors. In addition, the

deciding factor is positive trends and predictions of tourism industry indicators which shows the possible perspectives and add value to investments. The analysis of programs relate to tourism development showed that government of Azerbaijan understand the importance of this factor and significant part of their spending in tourism sector planned to be used for the promotion of the tourism product for tourists and for investors together with preparing investment projects and cooperation with international development enterprises.

**Figure 13. The dependence of tourism international receipts from chosen variables**



Source: the figure was created by the author based on table 3 and 4

Another two factors that have an impact on tourism international receipts - the amount paid to the hotels and similar establishments by foreign tourists and number of accommodated persons – display the considerable role of accommodation industry in tourism economy of Azerbaijan. The cost of accommodation services is really high in Azerbaijan (especially in Baku

and resorts) which affect the average cost of travel within the country (CBC, 2018). This is something that authorities plan to deal with by creating more hotel and hotel-type objects to maintain healthy competition and as a result lower prices. From one side, high prices and good quality of services may attract more tourists from developed countries that used to pay more (e.g. tourists from Western Europe and the Middle East). During last 10 year the number of tourists from these countries significantly increased (The State Statistical Committee of The Republic of Azerbaijan). The high costs of accommodation services also can be related to the intensive development of business tourism where tourists ready to pay more. Nevertheless, in 2016 still, 33% of foreign tourists came from Russia and this country is one of the main source markets for tourism economy. According to last researches, Russian people plan to spend for a week of vacation around 1000 USD while half of it will be the cost of living in the 3-star hotel (Azertag, 2018). Lower prices may attract more tourists from this country and in this case budget will be spent on other tourism services.

Summarizing, tourism economy in Azerbaijan is developing very intensively during last 10 years. After Azerbaijan became independent there was a long period of stagnation of this industry, but beginning from 2002 government started to work on the implementation of new programs and projects that were aimed to revive tourism. Rich natural, cultural and historical heritage laid the foundation of the industry and government and private investments allowed to start their efficient usage. The economy of the industry is based on oil industry but the experience of other countries shows that long-term growth requires the development of service sector. Azerbaijan is moving in this direction, therefore tourism economy became one of the priorities in economic strategies and plans. One of the evidences is simplified visa regime issued in 2017. Tourism sector not only contribute to GDP, it also creates new jobs and encourage the improvement or sometimes building of infrastructure that may have an impact on living conditions of people. Tourism industry indicators show positive trends growing contribution of travel and tourism economy to country's economic growth. The total contribution of the tourism sector to GDP in 2016 was 14,56% which make Azerbaijan one of the leaders in tourism not only in Caucasian region but also among CIS-countries.

Actual government programs on the development of tourism are aimed at stimulating not only quantitative indicators like a number of arrived tourists, tourism expenditures, duration of

the stay but also on the quality of the provided services that are the core of industry's success. The depreciation of the local currency in 2015 and 2016 have vastly improved the price competitiveness of Azerbaijan as a tourism destination, however high-quality services may have a long-term effect. Promotion activities now oriented on CIS-market, from which the most part of tourists arrive and on Middle East region where potential tourists are interested in Azerbaijan as a destination for business and leisure tourism.

The author put the hypothesis that tourism international receipts which are the core of tourism contribution to GDP and it was verified with the help of Granger causality test. Investments are one of the main catalysts of the tourism industry at the current stage of tourism product of Azerbaijan.

Every strategy, development program or investment project include analysis of future trends and forecasts in order to be able to estimate and characterize perspectives of certain entertainment. In the next chapter, author will introduce the prediction of the changes of tourism contribution to GDP in Azerbaijan during the next 10 years.

## **4.3. Prediction of the economic impact of the tourism industry in Azerbaijan**

### **4.3.1. Prediction model description and interpretation**

Most of programs, strategies, budgets, and plans are built based on forecasts that help to set realistic goals and increase chances of their achievement. Forecasting is foreseeing that allows to evaluate perspectives of phenomena's development, manage available resources and estimate the probability of possible risks. Predictions became the driving force of decision-making process in many sectors of the economy and help to consider many factors what is even more important in the situation of instability of world economy (Harvey, 2011). Forecasts are the connecting link between theory and practice.

There are many ways to make a prediction, for example, plan or hypothesis, but in the economy the reliability of the forecast matters. Therefore, scientists in XX century began to work on statistical methods that will ensure the accuracy of forecast and offer more tools for creating successful economy strategies and avoid crises or at least help in dealing with them. The results



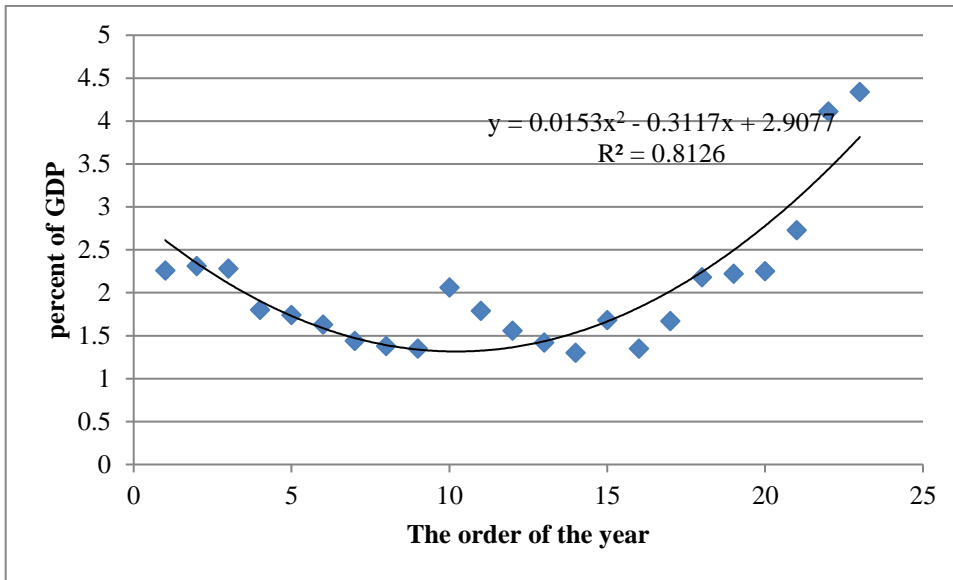
of this work made laid the foundation of econometrics – branch of economics that aims to give empirical content to economic relations or in other words to provide quantitative analysis of some economic phenomena. The main subject of econometrics is an econometric model – a mathematical model that establish quantitative interrelationships of economic objects and processes with the help of mathematical and statistical research methods (Gershenfeld, 2003).

There are two main statistical approaches to economic forecasting – time-series and structural economic models. The difference between them is that time-series methods use past data to predict the future using economic theory as a guide to variable selection, while structural economic models begin from formal economic theory and try to translate it into empirical relations. Time-series models are much smaller with a handful of variables, while structural models are very big with hundreds of variables. Time-series models forecast the variable(s) of interest by extrapolating past policies into the future (Watson, 2001). Taking into consideration the available data and objectives of the paper author will use one of time-series models to predict the direct contribution of travel and tourism economy to Azerbaijan’s GDP.

The choice of time-series model depends on the data that will be used as past factor, the type of the variable’s trend, seasonality, available tools (programs) and so on. The right choice allows getting more precise forecasts. Trendline and R-squared are some of the ways to see which of the model will be the most appropriate for forecasting phenomena (Shumway & Stoffer, 2011).

The author used data related to the direct contribution of travel and tourism economy to Azerbaijan’s GDP from 1995 to 2017. The dependent variable is a direct contribution to GDP and the independent conditional variable is the year. The purpose of the forecast is to see how direct contribution of tourism economy to GDP of Azerbaijan will change during period 2018-2027. Tests in MC Excel showed that the highest R-squared for selected data is for polynomial trend (in this case a statistical measure is maximally close to the fitted regression line) (Figure 14).

**Figure 14. The polynomial trend of travel and tourism direct contribution to GDP of Azerbaijan**



Source: created by the author, WTTC (2018).

Polynomial econometric model is the nonlinear time-series model based on multiple (small number of factors) or stepwise (a large number of factors) regression, aimed to model nonlinear relationship between the independent and dependent variables. Equation 3 shows the linear form of the model (Draper, 2012).

$$y_t = \alpha_1 t^2 + \alpha_2 t + \alpha_0 + \varepsilon_t \quad (3)$$

Calculations made in MS Excel using the data analysis tool are represented in Appendix 8.2 and the model is represented on equation 3.

$$y_t = 0,016407t^2 - 0,34482t + 3,112953 \quad (3)$$

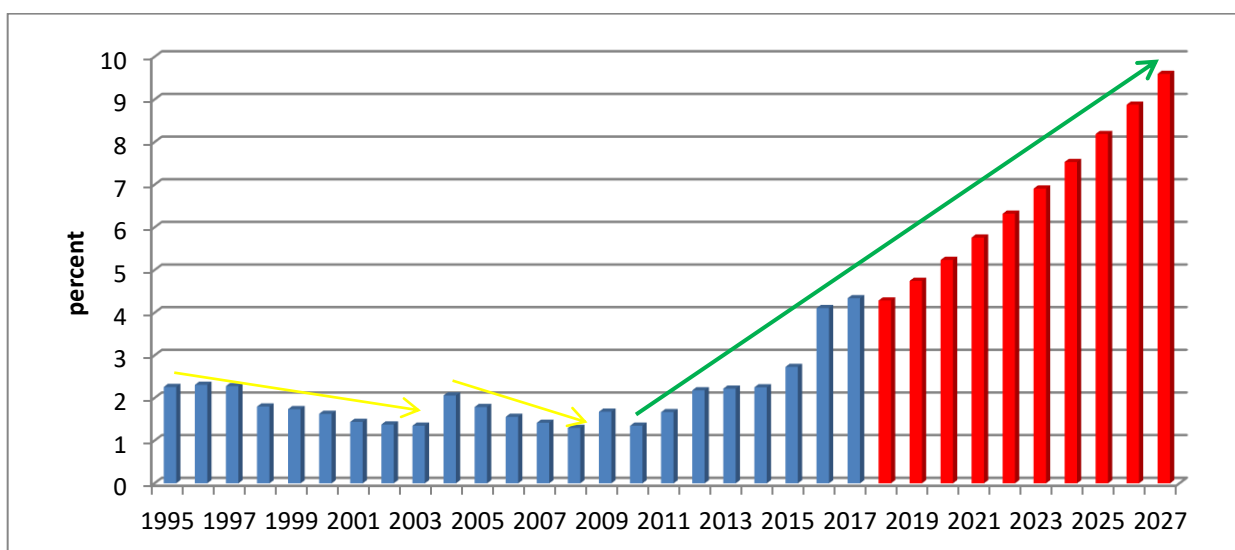
There are also certain regression statistics (Appendix 8.3) that used to describe how well the equation fits the data and evaluate the reliability of the forecast. The correlation coefficient (multiple R) is 0,9 which means that there is strong dependence between independent and dependent variables. R squared that is named also the coefficient of determination is also high –

0,82 which mean that 82 percent of the values fit the model and only 18% of variation is not explained by the model. Adjusted R squared is mostly used in case of a bigger number of variable and aimed to describe the more precisely how well model fits the data. The standard error is 0,35667 and it informs us how the experimental values deviate from the average of the expected size.

It is important to verify the model to see whether the results of the forecast are random or no. The method to do this is rejecting the null hypothesis which states that the value of parameters in the model is not statistically significant. The null-hypothesis can be rejected if the p-value is less than alpha level (Gordon. 2015). The established alpha level is 0,05 – author wanted to be 95% confident in research. Appendix 8.3 shows that p-value is for each of the parameters of the model is much lower than 0,05, so null-hypothesis can be rejected - the value of parameters in the model is statistically significant.

Conducted calculations helped to forecast future changes of the direct contribution of tourism economy to GDP in Azerbaijan which are represented in figure 15. Due to forecasts, the share of tourism industries in GDP will increase from 4,11percent in 2017 to 9,6 percent in 2027 with a possible deviation of indicators  $\pm 0,35\%$ . This forecast is 3,7 percent higher that WTTC forecasted for Azerbaijan because according to its prediction the direct contribution will increase up to 5,9 percent in 2027 (WTTC, 2017).

**Figure 15. The prediction values of travel and tourism contribution to GDP of Azerbaijan.**



Source: created by the author, Appendix 8.2

Figure 15 shows a positive trend of the indicator that began in 2010 and grew intensively. In 1995-1997 the direct contribution was around 2 percent but it was decreasing till 2003 with next splash of increase in 2004-2005 According to forecasts this tendency will continue in future.

#### **4.3.2. Analysis of predicted tendencies**

The results obtained in forecasting process shows a positive future trend that underlines the growing importance of tourism sector in service sectors of Azerbaijan's economy. Strong support of the government and launched investment mechanism that attracts more and more domestic and foreign investors may guarantee the high credibility of the forecast. The increase of tourism direct contribution to Azerbaijan's GDP will be followed by the increase of indirect and induced contribution of this sector to the country's economy.

The economy of Azerbaijan will have next benefits in case of further development of tourism sector:

1. The increase of monetary inflow into the region (including an inflow of foreign currency),
2. The increase of investment attractiveness of tourism industry and the economy as a whole,
3. The increase of competitiveness index of travel and tourism sector,
4. The increase of tax collection of the host region,
5. Improvement of the quality of tourism infrastructure together with other (mostly public) infrastructural objects that can be used by tourists and by local people,
6. Positive impact on regional economies,
7. New jobs in tourism and related sectors and as a result the increasing contribution to employment,
8. Acceleration of urbanization,
9. Reviving local cultural values, traditions, handicrafts, etc.,
10. Stronger and more recognizable brand of Azerbaijan on global tourism market.

All of those benefits emphasize the versatility of tourism sector, its growing role in the economic and social life of the country. Moreover, tourism is developing in synergy with other sectors, which means that its interaction with other industries or interaction of other industries

with tourism produces a greater total effect than the sum of individual efforts. The growing of tourism sector means the promotion of its natural and historical resources, promotion of the achievements of the country in economic development, promotion of cultural heritage. The rising interest to the country together with the progress of business tourism will have a positive impact on other sectors because the results of investments will be more evident for potential stakeholders.

Though, such positive forecasts presented in certain numbers and possible perspectives should be adjusted taking into consideration possible risks that can affect significantly foresight made for travel and tourism economy. Three main groups of risks that may cause the negative tendencies in the tourism contribution to GDP and tourism sector in common are: economic, political and social.

Main economic risks are high dependence on mineral resources and banking sector crisis. The dependence on mineral resources (oil products) makes Azerbaijan vulnerable to global drops in oil prices. For example, a decrease in oil prices in 2015-2016 negatively impacted economic growth, budget revenues, the balance of payments, local currency and foreign exchange reserves. This situation made production costs in many sectors higher and caused a drop in foreign investment in 2017. In addition, devaluation of the local currency which may have positive impact on tourism in short-time perspective (products and services will cost less for tourists that arrive in Azerbaijan with USD or other currency), but in long-term perspective, if devaluation will continue it will have negative impact on realization programs of tourism development (e.g. decrease of funds). Changes in global oil market caused banking sector crisis. In 2015-2016 in Azerbaijan, some small banks were closed due to FX-denominated debt. Although International Bank of Azerbaijan that hold 40% of total bank assets began to implement restructuring plan in 2017, the reduction of foreign funding and raising of funding costs is expected in 2018. According to the Euler Hermes Economic Research (2017), Azerbaijan has a high risk of non-payment by companies which is not favorable for economy and tourism specifically.

Political risks are first of all high regional political instability due to the growing wealth disparity, conflict with Armenia over the Nagorno-Karabakh and authoritarian political regime. Conflict in the Nagorno-Karabakh territory is still pending and may have a splash in case of the unpredicted popularization of nationalism idea or political games. Political instability inhibits the

development of the regional economy and affects Azerbaijan's rating in international economic reports. Regional political instability is the barrier to national economic development. Only using the potential of all regions and alignment of regional differences can guarantee long-term economic growth. The authoritarian political regime does not promote the development of free capitalistic relations and usually accompanied by bureaucracy and corruption. Worsening of political issues will have a bad influence on the business environment in economy and tourism specifically.

Social risk is the possibility of Islamic radicalization. Azerbaijan has a long history of religious pluralism, nevertheless, growing wealth disparity and Islamic propaganda online may have a very negative impact on tourism. The number of tourists from the Middle East is growing each year and some politicians see security risks here. After the simplification of visa regime boosted the increase of the number of tourists from Iran, Iraq, United Arab Emirates, Saudi Arabia. This situation should not be accepted stereotypically, but analyzed according to possible risks, so certain security should be higher in tourism destinations and objects like airport and hotels.

Taking into consideration current state of the economy and described risks represented forecasts may defer from the real numbers. The significance of the risk factors will depend on the actions that government will take to extinguish negative effects of this factors and on the scale of changes on the global market of oil product as the dependence of Azerbaijan's economy from it is still very strong. Devaluation of the currency and intensive promotion of tourism product of the country which was diversified by new tourist destination in Baku and regions will support the increase of tourism contribution to GDP of Azerbaijan in the next 3-4 years, so forecasts can be evaluated as realistic. However, later the long-term forecast has more chances to defer significantly if there will be no political and economic stability in the country.

## 5. Results and discussion

Analysis of the travel and tourism sector of Azerbaijan allows affirming that it has big potential and this potential is noticed not only by government but also by local and foreign investors. The evidence is the increase in the pace of development of all indicators of the industry (contribution to GDP, employment, exports structure, capital investments, inbound tourism, tourist expenditures and so on).

Azerbaijan becomes more and more competitive on the tourist markets at the level of Caucasian region and CIS countries with perspective to become also a popular destination for tourists from Europe. State strategy aimed to make tourism one of the booster of economic growth make it one of the priorities for authorities. The economic impact of the tourism is one of the biggest comparing to rest of post-Soviet countries. The main competitor is Georgia, which achieved good results but didn't have such good conditions as Azerbaijan have – budget based on the oil sector.

The economic impact of tourism sector can be measured in the size of international tourism receipts or in another word foreign tourists spending because this type of income makes 75% of total contribution to GDP. Author choose nine indicators that may impact international tourism receipts to analyze which of them have the biggest impact. The results of Granger causality test proved that the most significant catalysts of change international tourism receipts are the volume of investments in tourism industries, the amount paid to the hotels and similar establishments by foreign tourists and number of accommodated persons. Therefore, the income from the tourism sector is provided by the increasing number of arrived tourists, but at the same time intensification of the inbound tourism is caused by diversification of tourism product. More diversified and attractive tourist products and services were created thank public, private and public-private investments.

The forecasting of the direct contribution of tourism economy to GDP presented positive trend that should keep going in the period 2018-2027 as a continuation of all entrepreneurships, projects, and investments made in the last eight years. Forecast made on the base of the appropriate econometric model is based on historical data for 22 years and the possible error is no

significant. Nevertheless, indicators are strongly depended on the probability of occurrence of certain risks.

In case if actual trends of tourism development will be maintained due to the forecasts the direct contribution of tourism economy to Azerbaijan's GDP will increase from 4,34 percent in 2017 to 9,6 percent in 2027. Such increase will impact indirect and induced contribution of tourism through related industries and especially results of infrastructural projects that will create better infrastructure not only for tourists usage but also for local people.

According to the results of researches, the author suggests two main scenarios of tourism development in Azerbaijan that will have an impact on economic growth. The first scenario is about developing tourism industry by attracting private investments, conducting tourism-oriented events in the framework of governmental national and regional development programs (e.g. in the framework of Strategic Road Map for development of specialized tourism industry in Azerbaijan), and realization of investment projects in regions creating territories of special tourist recreational economic zones. The most significant advantage of this scenario is lack of the need for additional financial and organizational spending from the government. Nevertheless, there is high risk of uncertainty of the volume of private investment in the conditions of the economic crisis, the possible termination of financing programs, uncoordinated actions of authorities or responsible for tourism industry coordination departments, which related to the length and complexity of departmental approvals, expertise and other procedures that affect business environment.

Taking into consideration the current state of tourist product life cycle in Azerbaijan, this scenario may be not as effective as it is expected to be because in this case funds will be directed to certain investment projects – not to the industry as a whole. This approach will not guarantee the attraction of a sufficient amount of extrabudgetary funds for the development of the country's tourist complex.

The second scenario is about developing tourism industry using program-target method with a significant role of government regulations. The main advantage of this scenario is that it allows to implement the mechanism of state support of priority tourism industries, manage and coordinate all main stakeholders of the programs. In this approach, it is easier to analyze the effectiveness of all actions and to consolidate significant financial resources on certain



perspective tourism sectors to use budgetary funds efficiently. The partnership of private and public sector still important as it will be the step to self-regulation of the tourism economy. The main goals of this scenario are ensuring the participation of public institutions in developing solutions for the design and creation of promising tourist and recreational clusters, creating new jobs, building up domestic demand and developing regions. The risk of this scenario is insufficient funds form the budget especially in case of such macroeconomic risks as growing inflation, bank sector crisis, devaluation. In case of success of the second scenario, the economic impact of tourism will increase significantly as it a will have a bigger share in Azerbaijan's GDP, enhance the development of other sectors of the economy and support their supply and demand.

The analysis of the development of tourism sector made in the previous chapter proves that in Azerbaijan at this stage second scenario has more chances for success. During last 15 years mainly public sector was investing in tourism and was the initiator of the biggest investment projects. Azerbaijan keeps the course on diversification of national economy which should be the tool of decreasing country's dependence on mineral resources. Export of oil brings income that should be invested into future economic growth and tourism will have an important role here in future.

## 6. Conclusions

The tourism industry is in the spotlight of many types of research, organizations, companies, governments. The reason is its huge potential and perspectives of positive impact on the economy at local, regional national and global levels. International tourism organizations and a lot of economists work on tourism theoretical aspects and interpretation of its indicators to be able better analyze it as a sector of the economy and to prove the positive impact that it may have for developed and developing countries. This goal is not easily practicable due to the complexity of tourism economy and its strong connections with other sectors of the economy.

The main roles of travel and tourism industry are an increase of employment, the attraction of investors, contribution to the balance of payment, contribution to the foreign exchange reserves, contribution to export and intensifying of economic growth. The tourism-led growth hypothesis that was verified and proved in many countries. According to this hypothesis, export contribute to economic growth by improving efficiency in the allocation of the production factors and by expanding their volume and international tourism is special type of export (special, because product do not move from the country, but consumer visit country to consume the product).

The tourism sector in Azerbaijan characterized by its increasing direct, indirect and induced contribution to economic growth. Government is working on long-term strategy to get away from resource curse and be able to maintain good living standards when resources will be exhausted, so tourism is one of the sectors in priority. The constant growth of tourism economy contribution to GDP is a consequence of realization of government's programs of tourism development, an organization of international events like Formula 1 Grand Prix of Europe in 2016 or European Games in 2015. Tourists mostly travel to Azerbaijan with recreation purpose and significant part of tourists visit country due to the business purpose. The number of hotels and hostels in Azerbaijan in 2016 was 6 times bigger than in 2001. The number of travel agencies and tour operators became 16 times more for the same period. In addition, the growing number of big recreational centers in mountains and on the seaside had a positive impact on employment – 12,5 % of the active population employed in the tourism sector.

The main source market for the tourism sector are Russia, Georgia, Iran, Turkey, UAE. Tourists from these countries have the biggest share in the structure of inbound tourism. New mores simplify visa regime and attractiveness of tourism sector caused the increase of tourists from the Middle East. Tourist expenditures also have a positive trend - foreign tourists in Azerbaijan spent 4921 million AZN in 2017 which is 4,6 times more than in 2011. The main competitors of Azerbaijan on tourism market are Georgia and Armenia – these countries have similar natural resources and tourism is in bigger priority as there are no mineral resources that can bring income like it take place in Azerbaijan with oil. The competitive advantage of Azerbaijan may be the better business environment and government spending.

Researches based on analysis of data with the help of econometric models presents that main factors that influence tourism impact on the economy of Azerbaijan are the volume of investment in the tourism industry and tourist expenditures on accommodation services. If the government creates a good business environment, projects in different industries will become more attractive for foreign and domestic investors. In addition, the deciding factors for investors are positive trends and predictions of tourism industry indicators which shows the possible perspectives and add value to investments.

According to the forecasts made by the author, the direct contribution of travel and tourism industries to GDP will grow up to 9,6 percent in 2027. The main risks that may affect the future of tourism and suggested foresights are an economic crisis that author connected with economy's dependence from the situation on the global oil market, political instability caused by Nagorno-Karabakh conflict and wealth disparity.

Azerbaijan may follow two scenarios of tourism development: one with a predominance of private investments and another with a predominance of public investments. Both of them have advantages and disadvantages based on possible risks for tourism economy, but in case of the current state of tourism in Azerbaijan, the most acceptable scenario is public regulation of the industry in the framework of strategic programs and cooperation with private companies as strengthening and support of investments. With the predicted growth of economic impact of the tourism sector, tourism may become self-regulated and the role of the state will be decreasing when the industry will have a strong position in the country and region.

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## 8. Appendix

### 8.1. Granger causality test. Preliminary calculations

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Tourism international receipts</b>	883,533	1023	1121	1010	1100	1390	1285	1379	1451	1377	1392
Number of foreign citizens arrived to Azerbaijan	1262,0	1332,7	1898,9	1830,4	1962,9	2 239,2	2484,1	2508,9	2 297,8	2006,2	2 248,8
Number of sold package tours foreigners	237	2411	3695	3474	3706	4284	5367	4 599	4 343	1 918	6 768
Value of sold package tours to foreigners	50,5	258,6	1937,2	1740,2	4390,2	4 712	3893,5	3153,4	2 347,8	812,3	5 640
The volume of investments in tourism industries, million manats	0,193	0,242	0,22	0,375	0,445	0,672	1,182	1,188	1,245	1,679	2,863
Number of overnights of foreign tourists	557315	573090	636678	561343	568056	673811	803089	821552	802549	958 939	1 406 264
Amount paid to hotels and similar establishments for rooms by foreign citizens	35 945,1	52 579,2	60 994,4	46 280,9	47 889,2	61 808,5	79 769,6	84 583,7	83 476,5	86 578,8	111 188,1
Number of accommodated persons that spent more than 3 days in Azerbaijan	596071,8	631003,742	707101,72	61649 8,875	62796 6,745	682573 ,872	897088 ,382	914307 ,188	897312 ,345	105226 1,979	152647 0,963
Inflation rate	8,4	16,6	20,8	1,4	5,7	7,9	1	2,4	1,4	4,2	4,2
Exchange rate	0,9	0,9	0,8	0,8	0,8	0,8	0,8	0,8	0,8	1	1,6
	Lag				7	6	5	4	3	2	1
	Autocorrelation				0,0752 0453	0,9532 02574	0,0471 96598	0,5321 49395	0,8104 29755	0,66446 6879	0,7837 80816
Number of foreign citizens arrived to Azerbaijan					- 0,9460 513	- 0,8035 5401	- 0,2769 4687	- 0,2075 68955	- 0,4088 32072	- 0,54516 999	- 0,8174 41081
Number of sold package tours foreigners					- 0,1609 679	- 0,1958 3068	- 0,0998 50301	- 0,3497 13725	- 0,1765 128	- 0,47195 7423	- 0,0152 45061
Value of sold package tours to foreigners					- 0,9701 986	- 0,8246 0249	- 0,9555 8407	- 0,9244 4657	- 0,3250 6094	- 0,26787 6746	- 0,4363 38703
The volume of investments in tourism industries, million manats					- 0,9409 9107	- 0,9132 31869	- 0,9555 49373	- 0,9626 81495	- 0,8927 60721	- 0,85688 7605	- 0,9374 50934
Number of overnights of foreign tourists					- 0,1432 073	- 0,2878 2242	- 0,7815 89916	- 0,9363 16775	- 0,8145 49836	- 0,70470 8307	- 0,8910 57071
Amount paid to hotels and similar establishments for rooms by foreign					- 0,1218 026	- 0,0445 61705	- 0,0866 6232	- 0,8725 29473	- 0,7508 06076	- 0,66383 9026	- 0,8619 94327

citizens											
Number of accommodated persons that spent more than 3 days in Azerbaijan					- 0,0764 032	- 0,1740 6806	- 0,5525 11355	- 0,9226 13189	- 0,7981 77957	- 0,70893 8251	- 0,8754 33482
Inflation rate					- 0,2033 67	- 0,6742 0437	- 0,2390 3072	- 0,1088 8146	- 0,6874 6035	- 0,03525 6474	- 0,3506 746
Exchange rate					- 0,7624 929	- 0,5270 4628	- 0,4029 1148	- 0,3261 6404	- 0,2739 9831	- 0,23622 7796	- 0,7963 20826

## 8.2. Polynomial regression model calculations

Rok	t	t <sup>2</sup>	Direct contribution to GDP, % of GDP	Y <sub>tp</sub>
1995	1	1	2,26	2,78454
1996	2	4	2,31	2,488941
1997	3	9	2,28	2,226156
1998	4	16	1,8	1,996185
1999	5	25	1,74	1,799028
2000	6	36	1,63	1,634685
2001	7	49	1,44	1,503156
2002	8	64	1,38	1,404441
2003	9	81	1,35	1,33854
2004	10	100	2,06	1,305453
2005	11	121	1,79	1,30518
2006	12	144	1,56	1,337721
2007	13	169	1,42	1,403076
2008	14	196	1,3	1,501245
2009	15	225	1,68	1,632228
2010	16	256	1,35	1,796025
2011	17	289	1,67	1,992636
2012	18	324	2,18	2,222061
2013	19	361	2,22	2,4843
2014	20	400	2,25	2,779353
2015	21	441	2,73	3,10722
2016	22	484	4,11	3,467901
2017	23	529	4,34	3,861396

2018	24	576		<b>4,287705</b>
2019	25	625		<b>4,746828</b>
2020	26	676		<b>5,238765</b>
2021	27	729		<b>5,763516</b>
2022	28	784		<b>6,321081</b>
2023	29	841		<b>6,91146</b>
2024	30	900		<b>7,534653</b>
2025	31	961		<b>8,19066</b>
2026	32	1024		<b>8,879481</b>
2027	33	1089		<b>9,601116</b>

### 8.3. Regression statistics

Multiple R	0,90841 7							
R squared	0,82522 2							
Adjusted R square	0,80682 4							
Standard error	0,35666 7							
Observations	22							
ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	2	11,41206	5,7060 3	44,8547077 7	0,0000063 62			
Residual	19	2,417017	0,1272 11					
Total	21	13,82908						
	<i>Coefficients</i>	<i>Standard error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95,0%</i>	<i>Upper 95,0%</i>
Intercept	3,11295 3	0,297722	10,455 9	0,00000000 2554	2,4898132 63	3,73609 3	2,489813	3,736093
Parameter	-0,34482	0,05431	- 6,3490 7	0,00000431 331	0,4584863 31	- 0,23114	-0,45849	-0,23114
Parameter	0,01640 7	0,002119	7,7436 54	0,00000027 093	0,0119726 59	0,02084 2	0,011973	0,020842