Dissertation

Master in International Business Management

Taxation policies of Croatia: Proposals for implementation of preferential tax regimes on islands

Damir Budanec

Leiria, *December 2020*

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Resumo (in Portuguese)

O que causa o crescimento e o desenvolvimento de uma ilha croata? Os regimes fiscais preferenciais poderiam ser uma das soluções para os desafios das ilhas croatas sem levar à erosão da base e à transferência de lucros? O objetivo principal deste artigo foi analisar os fatores que influenciam o crescimento das ilhas croatas e sugerir possíveis soluções para aumentar esse crescimento dentro do âmbito internacional.

O artigo utilizou uma revisão de literatura para identificar os fatores que influenciam o crescimento de uma ilha croata. Uma análise de regressão multivariada de fatores específicos foi utilizada para desenvolver um modelo parsimonioso.

Os resultados indicaram que certos fatores fiscais, políticos e demográficos examinados tiveram um efeito significativo sobre o PIB de uma ilha croata, com certas limitações. As soluções possíveis para aumentar o crescimento dentro destes factores utilizando regimes fiscais preferenciais incluíam a descentralização, incentivos ao crescimento populacional e alterações na regulamentação fiscal

Palavras-chave: Projeto BEPS, regimes fiscais preferenciais, Ilhas Croatas

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Abstract

What causes growth and development of a Croatian island? Could preferential tax regimes be one of the solutions to the challenges of Croatian islands without leading to base erosion and profit shifting? The primary goal of this thesis was to analyse the factors that influence the growth of Croatian islands and suggest possible solutions for increasing that growth within the international scope.

The literature review performed identifies the several factors influencing the growth of a Country or an Island. A multivariate regression analysis of specific factors was used to develop a parsimonious model.

The results show that tax, political, demographic factors affected the GDP of a Croatian island, with certain limitations. The possible solutions for increasing growth within these factors using preferential tax regimes included decentralisation, incentives for population growth, and changes in fiscal regulations.

Keywords: BEPS Project, preferential tax regimes, Croatian Islands

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List of acronyms

ANOVA – Analysis of a variance

BEPS - Base erosion and profit shifting

CIT – Corporate income tax

DZS – Državni Zavod za Statistiku (Croatian Statistics Bureau)

EC - European Commission

EDP - Excessive deficit procedure

EU - European Union

EUR – Euro (currency)

FHTP - Forum on Harmful Tax Practice

GDP – Gross domestic product

HOP - Hrvatski Otočni Proizvod (Croatian Island Product)

HRK – Croatian kuna (currency)

IP - Intellectual property

LGU – Local self-government unit

NGO – Non-governmental organisation

OECD - Organization for Economic Co-operation and Development

R&D - Research and development

SEZ - Special Economic Zone

SME – Small and medium-sized enterprise

UK – United Kingdom

UN – United Nations

US – United States

VAT - Value-added tax

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1. Introduction

While exploring the research area of Croatian economics and taxation, the purpose of this study was to identify the factors that contribute to the development of Croatian islands and to provide solutions for fostering that development within an international scope of preferential tax regimes.

In the globalised international environment, more attention is being paid to the characteristics of economic systems, in search of potentially more prosperous ones. Fiscal, economic and various other constraints imposed on businesses and the workforce, such as the personal income tax, social security taxes, and value-added tax (VAT) have great importance in the functioning the businesses and the economy of any country. Although every country has different regulatory, economic, and tax systems, countries work to develop the optimal system for the economy.

Developing countries, like Croatia, struggle with various historical, fiscal, economic, social, and political influences, and these factors influence the economic growth and development of the country and the business culture. Economic growth can be achieved through higher exports, better technology or increases in Foreign Direct Investment (FDI). However, the international scope has to be taken into account for constructing the appropriate tax system.

Supranational identities, like the European Union (EU) and the Organization for Economic Co-operation and Development (OECD), show their recommendations and analyses through various types of documents for these purposes. As the EU unites countries in their common goal to ensure sustainable and steady development, it seeks to create a fair and secure competitive market economy as well. Even though it doesn't directly collect or set taxes of its members, it dictates certain tax rules to harmonise standards for taxation (EU, 2019).

The OECD also strives to foster prosperity, economic growth, and sustainable development through various projects, recommendations and suggestions of "best practice" policies. Both supranational identities strive for harmony, ensuring that member countries do not create regimes that could provide an unfair tax advantage for local businesses over those in other member countries (OECD, 2019).

However, tax incentives, among other measures, are a common practice in attracting FDI. Certain discrimination in tax treatment concerning the general fiscal regulations in one country contributes to enabling local businesses to foster. The OECD assesses tax regimes and states whether they are potentially harmful or not (OECD, 2015). If implemented in the right way, with the correct objectives in place, a clear purpose, and organised administration, these tax regimes can help develop undeveloped areas. Preferential tax systems can be implemented after careful consideration and research.

Croatia has one of the strongest economies in Southeast Europe, and it went through a long period of financial crises to attain its position. In the last three decades, after reaching independence, the country has developed significantly, but the numerous legislations regarding tax burden remain causing high barriers to entry (Urban, Čok, & Verbič, 2019). In the world rankings of Economic Freedom, Croatia occupies the 86th place, with the classification of a mostly unfree country (Heritage.org, 2019). Furthermore, the World Bank gave it a low ranking (51st place) on their Ease of Doing Business Index in 2020 (World Bank, 2020).

The economy of Croatia is highly service-based with 70.10% of GDP arising from the service sector. The economy is dependent on tourism (Kapusta & Wiluś, 2017), which employs 70.80% of the workforce in the country (Deskar-Škrbić & Raos, 2018). It has an immense potential of growth for its 1,777 km long coast-line and the great variety of its 1,244 islands. However, Croatia lacks investment. A study by Bilas (2019) showed that the FDI received by Croatia up until then was low and had not led to any significant economic growth (Bilas, 2019). The majority of the FDI in Croatia were invested in the production of firewood, medicines, nutrition and tobacco products (Kurtović, Maxhuni, Halili, & Talović, 2020), and not the service industry or infrastructure, which represent the biggest sector of the economy.

This thesis analyses the various factors that influence economic growth. It takes into account the international scope by proving examples of preferential tax regimes and their regulation. After the theoretical framework, the thesis includes practical analyses of growth factors and their presence in Croatia and its islands. The research that includes a multivariate analysis identifies the relevant factors for Croatian islands, and the thesis discusses the possible solutions for grasping and using the potential of Croatian islands with the right government strategies for the economic growth of Croatian islands, in terms of fiscal measures, among others, based on the results of the data.

1.1. Theme Framework

Croatia, as a developing European country, with a high Value Added Tax (VAT) and a high tax burden, is a research field under development. This thesis focuses on the Croatian islands. Therefore, their situation within the economy is analysed, along with the potential for growth of the whole country. A theoretical review helps identify factors that influence the economic growth of Croatia. The literature review incorporates these factors and summarises the challenges the country and its islands face. Statistical analyses, relevant scientific research and historical economic data help deduct these challenges.

On the other hand, the thesis explores an international scope, providing a possible solution to the fiscal policies for Croatian islands with a literature review of the body of the supranational framework governing preferential tax regimes, along with examples of zones where regimes were successfully established.

The work is tied together by a multivariate analysis of island data, with a parsimonious model that attempts to identify the factors that influence economic growth. The results provide insight into the influence of specific factors identified in the literature review on economic growth. Besides, insight into the potential of preferential regimes is gained.

The goal of this work is to identify the challenges that Croatia and its islands face, provide an international scope of preferential regimes for resolving them, and use statistical methods to analyse island data to provide possible solutions for these challenges, keeping in account the international scope. This is done in order to understand how the government and the population of the islands can change these specific factors in order to help achieve economic growth locally, by adhering to international rules at the same time.

Even though the goal of the dissertation is very narrow and specific, its purpose has a broader scope. Overall, the analysis of Croatia and its islands and the literature review provide summarised data that is useful for gaining insight on how the economy of Croatian islands functions. The international scope of preferential regimes brings an insight into new opportunities for fostering economic growth of Croatian islands. The data collected and the results obtained can be used by the Croatian government and future researchers.

Ultimately, possible solutions for increasing the growth of the islands and the suggestions of certain preferential regimes serves the Croatian government as a new tool to bring immobile income to and to help the development of the islands.

1.2. Work organisation

This dissertation is organised into six main chapters.

The first chapter introduces the topic and the goal of the research. The second chapter introduces the theoretical background of economic growth theories, defining the factors of economic growth, the theories of economic development and presenting the empirical research of various factors that are linked with growth and developments of a country. This chapter also brings the international scope to the work and analyses the various types of preferential tax regimes. After the literature review of the body of the supranational framework governing preferential tax regimes, two examples of zones where regimes were successfully established are analysed in more detail. Furthermore, the potential for implementing preferential tax regimes on Croatian islands is assessed in this chapter.

The third chapter includes a characterisation of the most significant challenges that impacted Croatia and its islands. These include historical, economic, demographic, political, and fiscal problematics. These challenges indicate the data to be used for the multivariate regression analysis.

The fourth chapter consists of the research methodology, that contains a multivariate regression analysis. The research takes a deductive approach and is of an exploratory, inductive kind. After the method explanation, the research is devised from data available on a sample of Croatian islands using the factors identified in the previous chapter.

Chapter five contains the results obtained. The thesis ends with a conclusion and a discussion in chapter six, which include interpretations, implications, limitation, and recommendations for future research.

The references and appendix are presented in chapters seven and eight.

2. Economic development of a region

In this chapter, previous research about the factors affecting economic development and growth of a region is reviewed. The chapter presents the factors of economic growth and the economic development theories, along with an empirical review of previous research that identified various other factors related to economic growth and development. Preferential tax regimes are presented, and the potential of their implementation is assessed in this chapter.

2.1. Economic growth approach

Most economists argue that there are four important factors that influence the economic growth of a region. According to Pradhan et al. (2018), these factors include the human capital available in the region, the physical capital required for economic activities, the natural resources available and technological development. Developed economies are essentially stronger in these four areas in comparison to the developing economies. The governments of developing countries pay more attention to the development of these factors (Pradhan, Arvin, & Bahmani, 2018).

Human capital development in any region pushes towards economic growth. Education of the workforce and their training in their field of work is important. The highly skilled workforce can prove to be more efficient and more productive in comparison to the workforce that is not skilled. The lack of skilled labour can lead to deterred economic growth (Teixeira & Queirós, 2016). However, as per Aparicio et al. (2016), the availability of a skilled workforce is only one factor. Availability of the physical capital is an equally important element to consider for the development of any economy. Infrastructure and capital investments are required to provide the equipment and environment for growth. Roadways, factories, machinery and the rest of the infrastructure are dependent on the physical capital. With the availability of good infrastructure, labour productivity increases as well (Aparicio, Urbano, & Audretsch, 2016).

Along with the other two factors already discussed, the natural resources available play their role in growth and development. If some natural resources are naturally available, they would be cheap to use in economic operations. Controlled costs lead to a higher level of economic operations and that in turn, increases the overall production capacity. Efficient use

of natural resources, physical and human capital becomes possible through the use of technology (Chirwa & Odhiambo, 2016). Technology can help the use of capital and resources being used in an efficient manner to control costs increase productivity. This leads to the development of competitive edge and higher productivity, which in turn benefit growth (Wolniak & Grebski, 2018).

Although various researchers have identified the four important elements for the economic growth of a region or a country, there are different economic models which consider additional elements to describe the growth of an economy.

Mercantilism is an economic model that states that wealth can be determined by reviewing the gold and trade surplus that a country has. It is a concept which advocates that economic growth is simply possible by increasing exports and accumulating gold. This model is viewed as very basic as it does not consider many other important elements (Zhang, 2018). In comparison to this, the classical theory of economic growth, as presented by Adam Smith, states that the economy of scale and specialisation can help an economy to grow (Smith & Cannan, 2003). According to Adam Smith's classical model, there are various elements in an economy which play an important role in helping it to grow. The demand and supply in the market, labour productivity, the role that trade plays in creating specialisation and the economy of scale are all involved in creating growth (McCann & Van Oort, 2019).

As per McCombie and Thrilwall, the Neo-classical theory of economic growth states that all factors including labour productivity, resources available to the workforce, and the size of the human capital, play an important role in growth. The availability of technology that the labour force can apply is a deciding factor along with the percentage of the Gross Domestic Product (GDP) that is used in investment. This exogenous model incorporates factors external to the economy (McCombie & Thirlwall, 2016).

There are some other theories of economic growth which include the endogenous growth models, the Keynesian demand-side theory and the "limits to growth" concept. Endogenous models give more importance to internal factors and indicate that the growth rate, in terms of population growth and accumulation of human capital and knowledge, has a stronger impact than the human resources and the technological growth that an economy experiences (Aghion, Comin, Howitt, & Tecu, 2016).

Keynes, however, had the stance that when the aggregate demand is high, the economy is driven towards growth. With the decrease in demand, economic growth is slowed (Jones, 2016).

The concept of “limits to growth” dictates that economic growth can be achieved by utilising natural resources and skilled labour, but it argues that there are limits to this development. These limits could be constraints imposed by law, fiscal regimes, political governance, war and size, among others. Greiner et al. argue that environmental laws pose limits to economic growth (Greiner, Semmler, & Gong, 2016). Economic growth can also be limited by transfer payments and fiscal policies (McCracken, 2006) and negatively affected by the existence of an informal economy (Khuong, Shabbir, Sial, & Khanh, 2020).

In order to provide further details on the various drivers and limits of economic growth, the following chapter provides a literature review of previously identified growth factors.

2.2. Determinants of economic growth

Apart from the theories of economic development and growth, it is important to mention other empirical research that identified factors that are linked with the growth and development of any region. These are presented in an empirical review that follows and serves as a basis for the analysis of such factors in Croatia and its islands. The analysis helps deduct the theoretical function of growth for these factor categories.

Economic growth refers to an increase in the market value of the goods and services produced by an economy (McCann & Van Oort, 2019). The conventional way to see the economic growth of a country is to measure the rate of increase or decrease in GDP.

2.2.1. Historical factors

There are various determinants of a country's economic growth that increase or decrease the GDP over time, that can cause long-lasting effects, and these are hereby categorised as historical factors. Some of these factors include war conditions, political stability, legal policies, demographic changes, pandemics and taxation systems (Li, Ma, & Chen, 2020).

When war is declared in a country, the population and their institutions suffer from consequences. Apart from the human cost, the economy of the country suffers from devastating short and long-term damages. Property and infrastructure get damaged. People lose their jobs resulting in high unemployment rates (Nunn, 2020). Businesses are shut down, creating a decline in the working population. In war situations, governments have to direct a major portion of the revenue to war funds which leaves little budget for other institutions. Many sectors, including tourism, domestic investment and foreign investments, suffer, causing another dent to the already collapsing economy (Ji, 2019).

War has a direct relation with inflation as well, which is mostly experienced when the war ends. For example, as a consequence of war, there was record hyperinflation in Hungary and Austria in 1946. Wars also increase the national debt significantly (Ma, 2019). To bear the cost of ammunition and additional military spending, the government often takes big loans from their allies. The debt further increases after the war as the government recreates and rebuilds the infrastructure. For example, the national debt as a percentage of GDP of the

United Kingdom (UK) increased to 150% during World War II and further to 240% during the 1950s (Baten & Hippe, 2018).

In some situations, if the war shifts the state from dictatorship to democracy, the economy grows due to the increased foreign, and domestic investments in the restructuring of the infrastructure. However, a war usually leaves a legacy of great debt and economic struggle (Gabardo, Pereima, & Einloft, 2017).

Countries often join economic unions that stimulate trade by reducing or removing non-tariff barriers in order to increase growth. It often occurs between neighbouring countries and is referred to as economic integration or regional integration (Nunn, 2020). Typically, the economic integration results in reduced cost of trade, wider choice variety and improved quality of goods and services. The rate of employment also increases due to the expansion of the market and cross-border investments (Ji, 2019). Economic integrations also result in improved political cooperation which solves conflict, that in turn helps maintain political stability. For example, the UK's economy grew enormously after entering the European Union, as the GDP per capita increased by 103%. The economy of the UK became more dependent on trade and the rate of trade to economic output has grown from 48% to 67%, since 1973 (Gabardo, Pereima, & Einloft, 2017).

Natural disasters and pandemics can also impact the economy. When a pandemic strikes a country, the public goes into quarantines which slow the economy down. The tourism sector collapses. The working population reduces as workers stay at home in fear that they might be infected by a co-worker (Ma, 2019). Fewer workers in industries cause a lower production which leads to long term effects. Domestic and foreign investments decrease significantly, which reduce manufacturing capacity. For example, within one month after the outbreak of SARS-CoV-2 in China, there was a record decline in the manufacturing index (Li, Ma, & Chen, 2020).

Apart from historical events that have long-lasting effects, research has identified political factors that influence economic growth. These are reviewed in the following sub-chapter.

2.2.2. Political Factors

Research indicates that political and regulatory aspects influence economic growth and development (Charfeddine & Mrabet, 2017). This sub-chapter groups various political factors that impact economic development, which are those related to regulatory habits.

Macroeconomic stability refers to the regulation of the economy that is used to reduce the effect of external shocks and in return, increases growth. According to surveys, political instability leads to higher inflations rates (Okabe & Kam, 2017).

According to Jedwab & Storeygard (2019), political stability is termed as that where politics is flexible and copes with changes. The research concluded that there is an amalgamation of economic stability and economic development when political stability is present. Furthermore, political stability leads to increases in GDP, development of rural regions and investment (Jedwab & Storeygard, 2019).

Optimal governance brings less violence. Violence and politics are often in opposition. However, the proper regulation of rules and law must be taken into account (Charfeddine & Mrabet, 2017). The World Development Report on Conflict, Security and Development showed violence was not present only in developing countries, but it had also been promoted in developed countries like the United States (US). The best solution to minimise violence is to maintain a stable political environment (Stiglitz, 2016), which can be done if the government is effective.

Government effectiveness shows how effectively the appointed persons of the government work and regulate. Economic stability that impacts growth is influenced by the effectiveness of the government. If there are negative or bad political features, they lead to bad governance. Similarly, if there are no proper regulations in place, there could be a negative impact on government effectiveness (Charfeddine & Mrabet, 2017). It is the ability and competence of the government to implement the best policies that promote a safe, just and stable environment for the development of private sectors. The better the political competence of the nation, the more growth potential is created. (Okabe & Kam, 2017).

As per Asher and Novosad (2017), public policies are the set of laws and principles upon which governments act and generate outcomes. The political aspects that affect public policy are fair strategies; in other words, the best rules to generate possible outcomes (Asher & Novosad, 2017). Public policy also constitutes certain rules, judicial acts and

constitutions. Positive regulations lead to economic growth and create efficient public policies (Abodher, Ariffin, & Saad, 2018).

The political aspects regarding the rule of law are considered important in economic development, as politics is mostly involved in setting principals (Hussain, Shah, & Ahmad, 2017). Regulatory power, and therefore, economic development, is also influenced by the degree of decentralisation. With centralisation, power and authority are centralised under the government. In decentralisation, power and authority are divided into states. The government has all the political and all the regulatory powers in centralisation, while states have the power in decentralisation (Stiglitz, 2016).

Corruption is a result of unfair political and regulatory measures. If the measures aren't positively taken, they result in corruption which leads to the grey economy and GDP distortion in some cases (Asher & Novosad, 2017).

Political and regulatory aspects impact a country in various ways and are therefore important to take into account, but they're also economic factors that influence growth and are discussed in the following sub-chapter.

2.2.3. Economy and Industry factors

The economy and the industry play a vital role in the development and growth of a country or a region. Governments strive to structure the economy in an optimal way by choosing between several types of economic systems. The traditional system involves the ancient type of economics, where traditions, customs, and beliefs determine the market, and there is usually a lack in technology (Ghisellini, Cialani, & Ulgiati, 2016). In the market economic system, the free-market is involved with no governmental role is played in it. A mixed economy involves a mixture of basic economic systems with some government involvement. Ultimately, the command economic system is controlled by the government (Eckhardt & Bardhi, 2016). Every type of economic system has the potential to increase or diminish the growth of a country (Bogoviz, Sozinova, & Ostrovskaya, 2018).

The economic structure of a nation is complex, and it includes different economic stages. The employment in each stage is directly correlated with growth. In these stages, fields are added on the basis of workload and production (Flannery & Coe, 2017). The first stage includes agriculture and gathering, and the second stage comprises manufacturing and construction. The tertiary stage consists of retail services and professional dealings. The fourth stage includes information and management. The fifth stage covers executive decision making (Popkova, Bogoviz, Lobova, & Romanova, 2018). The economic structure is important for structural learning that affects the performance of the institutions and income distribution (Constantine, 2017). Economic structures also establish the directions of the political changes (Flannery & Coe, 2017). Studies show that economy structure upgrades increase growth (Ghisellini, Cialani, & Ulgiati, 2016).

There is a direct influence of the industry on economic growth. Some industries make a great economic impact on the country, such as the import/export industry and the tourism industry. There are hundreds of countries whose economy depends on tourism to generate income and keep the stability of the economy (Bogoviz, Sozinova, & Ostrovskaya, 2018). Tourism includes and impacts the hotel industry, the industry of transport and the shopping industry, among others. Countries, with a developed tourism sector that choose to invest in tourism, experience increases in economic growth (Ahlborn & Schweickert, 2018).

Apart from economic factors, there are also demographic factors that influence the growth and development of a country. These are reviewed in the next sub-chapter.

2.2.4. Demographic factors

Demographic factors change constantly, but certain demographic attributes play a significant role in the growth of the economy (Blatt, 2019).

The economy too plays a major role in the increase and decrease of such demographics. The economy is, however, highly affected by population. The growth in population, in underdeveloped countries, sometimes leads to the decline of the economy. On the other hand, the bigger the workforce is, the higher potential there is for growth (Blatt, 2019).

Demographic characteristics of a country, such as age, gender, labour force, fertility, mortality, migration, agglomeration and population size are often disregarded by economists, but they are as important as the choice of the economic system (Wilford & Putnam, 2019).

A study that linked entrepreneurship with demographics showed that countries with a younger population have higher entrepreneurial activity. On the other hand, the growth of urban population also increases entrepreneurial activity (Almogovar-Gonzalez, Sanchez-Escobedo, & Fernandez-Portillo, 2019).

Demographic factors are important to take into account when identifying the factors of economic growth and development. There are also fiscal policies that influence growth. These are reviewed in the next sub-chapter.

2.2.5. Tax systems

The main purpose of a taxation system is to raise enough fiscal revenue that can be spent on the development and the stable functioning of the country. This includes creating a better education system with more schools, building quality hospitals to ensure better public health, building roads, railways, research institutions and industries. The revenue is also needed to pay the debt of government spending, that includes investments in the economy (Timpany & Lu, 2020).

A tax is a compulsory financial charge that is levied upon taxpayers by the government to generate revenue for government spending and public welfare (Jacob, 2018). Every state has different tax regimes. There are various types of taxes that are levied by the government, including the personal income tax, sales tax, estate tax, inheritance tax, tariffs and corporate tax etc. Personal income tax generates the most revenue in countries that have functional taxation system. All around the world, the failure to pay the taxes results in serious consequences by law (Rendall, 2018)

Some countries have a progressive taxation system which means that the wealthier are required to pay taxes at a higher rate than those with lower incomes. This seems fair as the lower-income population earns to run the economy, whereas the high-income population earns to maintain a lavish lifestyle (Lyon, Dalton, & Dalton, 2019). However, making fiscal policies is challenging. Higher taxes do provide increased revenue, but that is temporary. In the long run, the tax burden reduces as the number of taxpayers decrease. The economic activity is slowed down as people become unwilling to pay a higher tax on property, construction, manufacturing and sales (Apergis & Apergis, 2019)

VAT is a tax levied on all the goods and services at different rates. VAT actually compensates for the services and infrastructure used during the whole process from manufacturing to the sales. Data shows that 166 out of 193 countries of the United Nations employ a VAT system instead of a sales tax system. The value-added tax provides stable revenue to the government and is easy to administer a well (Jacob, 2018).

A tax haven is a term used to refer to a state that offers little tax to foreign investors. In some cases, it provides financial secrecy to the investors, which mean that it does not share any information regarding the taxes or property of the person (Niu, 2019). This makes tax havens attractive for people who are unwilling to pay the high taxes in their own country

(Timpany & Lu, 2020). The countries that are declared as tax havens have a negative influence on the economy of the nearby non-haven countries. The reason behind it is that people earn a great amount of money from a non-haven country and invest it in a tax haven so that they do not have to pay the high taxes or give the money trail (Apergis & Apergis, 2019)

On the other hand, special economic zones are the different areas of a state where the business and tax rules are different from the rest of the state. These zones are created exclusively for the development of a certain industry or region. These areas are more liberal from the political, economic, fiscal and administrative point of view (Azuara, Azuero, Bosch Mossi, & Torres, 2019). Governments provide various incentives to the investors in these zones, including incentives, business facilitation and infrastructure support (Rendall, 2018).

Creating special economic zones in specific strategic areas of the country is not a new idea, and it has proved to have a positive impact on economic growth. It provides better wages to the labour and an improved work environment. Special economic zones also attract foreign investors hence increasing employment (Lyon, Dalton, & Dalton, 2019). They also provide a chance for local investors to deal with broad economies and open new possibilities for small areas like islands. Special economic zones are a type of preferential tax regimes, which are presented later in the paper.

Other than the factors described previously, there are other factors related specifically to islands that impact economic growth. These are discussed next.

2.2.6. The particular case of the Islands

Apart from the factors historical, political, economic, demographic, and taxation factors mentioned previously, there are some specific factors that impact islands and their growth. As the focus of this thesis includes islands, these specific island factors, identified in previous research, are collected in the following paragraphs to build a basis for further analysis.

According to McKeehan & Zodrow (2017), island factors which impact economic growth are a complex network of factors that differ for each archipelago. Small economies, like those of islands, require endeavouring efforts put in by the population for an economic boost. These factors include islands size, population interaction with neighbouring trading islands or countries, infrastructural expansion routes, external and internal export and import, transport expenses, labour and workforce necessities, tourism opportunities, industrial manifestations, inland and outland distances and projects with unique strategic plans, among others (McKeehan & Zodrow, 2017).

First and foremost, tourism is the cortex of any coastal area for generating a substantial amount of revenues that can fulfil the demand of the state and also prevail contentment of revisiting amongst guests from afar. Each sojourn establishes an image of development in the minds of visitors only if they find themselves welcomed by efficient and effective services. Formation of the tourism industry in a country can have an influential impact on the economy. Moreover, it transcends all interdependencies of different sectors of the economy in relevance to tax, sales and profitability for economic analysis (Tjendani, 2019). Therefore, tourism is a tool that enables islands to generate economic growth for the whole country. As the use of local unemployed workers gains momentum facilitated by the tourist industry, it directly increases pro-tourism behaviour, which leads to trade and economic development of the region (Ribeiro, Pinto, Silva, & Woosnam, 2017).

Trade on islands encourages fiscal, financial and environmental change that leads to the development of the local community (Tosun, Kirikkaleli, & Safakli, 2020). Trade interlinks with transportation flexibility, the infrastructure of roads, and quality management of goods and the cost of distance from the origin to the area traded (Tjendani, 2019). The beneficial outcome from trade for islands is the intellectual entrepreneurship skills of the appointed workforce which downfalls other areas in the excellence of skilled labour with managerial expertise (Yang, et al., 2020).

Islands that are small, isolated and have high distances to neighbouring islands or mainland experience more difficulties in developing their economy than mainland areas (Dias, Patuleia, & de Brito, 2019). The role of the government is very important in this case, as the foreign direct investment, taxation and imports policies set by it can greatly impact the economic growth of islands (Makun, 2018).

If a state does not work on its infrastructure, small communities deteriorate. For instance, as trade has been halted through trade routes during the recent pandemic of COVID-19, many countries are entering an economic crisis. Due to blockage of export and import, small and isolated areas like islands faced medicine emergencies and food shortages. This shows the importance of trade and infrastructure on islands and how they affect the local economy (Cai, et al., 2020).

Islands form a large part of the Croatian coastal territory, and their characteristics are discussed in chapter three that starts with the analysis of Croatia as a whole and narrows the focus on the islands. In the following sub-chapters, the preferential tax regimes are analysed to propose a possible tool as a fiscal measure to develop a region and the potential of those regimes for implementation on Croatian islands is presented.

2.3. Preferential tax regimes

In order to implement certain fiscal measures that benefit small regions like the Croatian islands, the country would have to take into account the international scope. Globalisation, the removal of trade barriers, and the increased global competition create challenges for governments in this field. In response to them, the European Commission (EC) and the Organization for Economic Co-operation and Development (OECD) took action to battle potentially harmful preferential tax regimes recognising that harmful tax regimes include providing preferential tax treatment to non-residents or on activities that do not influence domestic markets (Gaigné & Wooton, 2011). Instruments like base erosion and profit shifting (BEPS) are used by multinational companies to exploit such tax regimes (Lamers, Mcharo, & Nakajima, 2013).

The EC proposed a package to tackle harmful tax competition, which included measures to eliminate distortions to the taxation of capital income and to eliminate withholding taxes on cross-border interest and royalty payments between firms, along with proposed a Code of Conduct for Business Taxation (European Commission, 1997).

The Council of Economics and Finance Ministers adopted the Code of Conduct for Business Taxation, which does not represent a binding instrument for member countries but more of a political commitment (Lang, 2016). As member countries adopt the code, they have to either rollback existing tax measures that have been identified as harmful and avoid implementing harmful measures under the standstill principle. The criteria for identifying potentially harmful tax measures were as follows (ECOFIN, 1998):

- A level of tax which is considerably lower than the general level of tax;
- Only non-residents enjoy the tax advantages;
- Tax incentives are given for activities which do not impact the national tax base and are isolated from the domestic economy;
- Giving tax benefits even when there is no real economic activity;
- The procedures for determination of profit for firms within a multinational group are derived from internationally accepted rules, especially those accepted by the OECD
- A lack of transparency

The OECD report makes a difference between acceptable and harmful preferential tax regimes with a specific focus on activities that are geographically mobile activities, like financial and other service activities, as well as intangible property. Table 1 summarises main preferential tax regimes dealt with OECD and their characteristics. Overall, the OECD and the EU try to battle preferential tax regimes, only if they prove to be harmful. Tax havens are always considered harmful.

Table 1 - Preferential tax regimes

Tax regime	**Characteristics**
Tax Havens	1. There is no or only nominal taxation for non-residents on their income. 2. There is a lack of active exchange of information with tax authorities of other countries. 3. There exists a lack of transparency. 4. There tends to be no real or substantial activity.
Preferential tax regimes	1. There is a sort of discrimination in tax treatment concerning the general fiscal regulations in a country 2. It may appear as a reduced tax base, tax rate, or even particular incentive for payment or repayment of taxes. 3. The focus is not put on contrasting the difference in tax regulations with other countries, but rather within the relevant country. 4. Only a minor level of preference is enough to classify the regime as preferential.

Source: OECD (1998)

Preferential tax regimes exist in many forms, and their theory has been studied academically, with a focus on multinational corporations, with different assumptions to provide answers about their effect on tax competition. Preferential tax regimes do not always have to be harmful. Eradicating them could cause more prevalent tax competition; consequently, their removal could be destructive (Keen, 2001).

The OECD Report (1998) defines the criteria that, once identified as "preferential," can help identify a potentially harmful preferential tax regime. In the report, the OECD presents four main characteristics of such regimes and eight supplementary characteristics that can be used to identify a potentially harmful preferential tax regime. The first four features are as follows (OECD, 1998):

1. If a country has zero or low effective tax rates on income, it draws up attention to be considered as potentially harmful with a combination at least one of other factors. If this feature is not identified, the regime is not classified as harmful.
2. Isolation from the domestic economy is the second factor that indicates that the country that offers this regime wants to protect its economy from the "ring-fenced" activity. The regime may directly or indirectly exclude residents from benefiting from the regime and indirectly or directly forbid the non-residents from participating in the domestic economy.
3. If there is a lack of transparency, it might indicate that the law and regulations of the country could be favourably applied and thus, tax treatment could be negotiable along with ineffective administration.
4. The existence of a lack of active exchange of information with the beneficiaries of the regime may serve as a valid sign that the country tends to practice harmful tax competition.

The other eight supplementary characteristics aid in assessing the key four features in more detail. The presence of the features noted below can further pinpoint to the existence of a harmful preferential tax regime (OECD, 1998):

1. The definition of the tax base could be said to be "artificial," due to unconventional and non-transparent exemptions and incentives for narrowing the tax base.
2. The companies tend not to use the international rules of transfer pricing, (the arm's length principle), which leads to the distorted tax base
3. The country of residence exempts income from a foreign source from taxation. It attracts companies only by their location and not by the business environment or other factors.
4. The tax rate or tax base is negotiable, possibly due to non-transparency in the regime
5. If there are provisions of secrecy that protect the taxpayer from tax authorities of other countries, the regime tends to be harmful
6. The existence of an enormous amount of tax treaties could be beneficial for eliminating double taxation, but it must be considered, as it could be harmful, depending on the content of those treaties
7. The country tends to advertise its regime as a way for non-residents to avoid or minimise taxes

8. The regime tends to neglect the lack of substantial activity and attracts only tax-driven activities.

Considering the OECD Report (1998), after identifying a potentially harmful regime, further analysis is required to state whether it is harmful for further action to be taken. This analysis considers whether the consequences of the existence of such regimes are economically harmful. The Report, therefore, provides additional questions that help identify this economic effect. According to the OECD (1998), these are as follows

1. "Does the tax regime tend to draw in activity from other countries to the relevant country by its preferential features rather than creating a new valuable activity?"
2. "Are the activities in the relevant country with the preferential tax regime equivalent to the income or investment?"
3. "Does the preferential tax regime serve as the primary incentive for choosing the activity's location?"

These three questions require empirical analysis and subjective evaluation of every specific case, as there are potentially other factors influencing companies' choices of participating in the tax regime. Companies choose to operate in a better business environment; due to not only tax incentives, as factors such as infrastructure, but the costs of labour and the regulatory environment all also influence the decision of where the business will be located. Therefore, a careful examination is required to state whether a regime is harmful or not.

When a regime is determined as harmful, the harmful effects of it have to be removed by the host country by either abolishing the regime wholly or changing its negative aspects. Measures can also be taken by other countries to counteract the adverse effects of the regime that is found to be harmful.

Following OECD Report 47 tax potentially harmful regimes were found in OECD member states along with 35 regulations that were identified as tax havens with additional six that responded by promising to abolish the harmful regimes.

Since then the OECD has published a few other reports. An important report was published in response to the call of the G20 finance ministers on the need for a more detailed plan in battling BEPS in 2013. The initial action plan was developed in 2013, but the final action plan was published in 2015 as a package of 15 specific and detailed action reports to tackle tax avoidance titled "The OECD/G20 BEPS Project". It was positively received by

the European Commission, stating that these measures shall be implemented within the EU consistently and coherently (European Commission, 2015).

The BEPS package contains 15 Actions that are designed to provide instruments of the domestic and international kind to enable countries to focus their taxation of profits to the places of real economic activity and value creation. In addition, it aims at providing less uncertainty for companies about international disputes with a higher amount of standardisation of international tax rules (OECD, 2015). The 15 Actions generally relate to four general types, which are summarised in Table 2.

Table 2 - Actions of the BEPS project by type

	Name	Type
Action 1	Addressing the Tax Challenges of the Digital Economy	Analytical report
Action 2	Neutralising the Effects of Hybrid Mismatch Arrangements	Domestic law best practices
Action 3	Designing Effective Controlled Foreign Company Rules	Domestic law best practices
Action 4	Limiting Base Erosion Involving Interest Deductions and Other Financial Payments	Domestic law best practices
Action 5	Countering Harmful Tax Practices More Effectively, Taking into Account Transparency and Substance	Agreed minimum standards
Action 6	Preventing the Granting of Treaty Benefits in Inappropriate Circumstances	Agreed minimum standards
Action 7	Preventing the Artificial Avoidance of Permanent Establishment Status	Revised international standards
Actions 8-10	Aligning Transfer Pricing Outcomes with Value Creation	Revised international standards
Action 11	Measuring and Monitoring BEPS	Analytical report
Action 12	Mandatory Disclosure Rules	Domestic law best practices
Action 13	Guidance on Transfer Pricing Documentation and Country-by-Country Reporting	Agreed minimum standards
Action 14	Making Dispute Resolution Mechanisms More Effective	Agreed minimum standards
Action 15	Developing a Multilateral Instrument to Modify Bilateral Tax Treaties	Analytical report

Sources: OECD (2015), Ernst & Young (2015) and author's summary

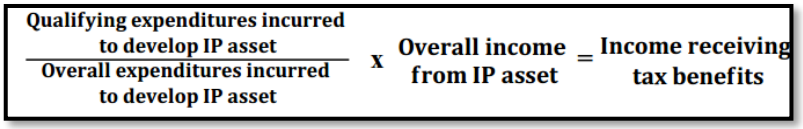
As Action 5 is the most relevant for this work, it is further described in detail. The fifth Action of the plan is titled "Countering Harmful Tax Practices More Effectively, Taking into Account Transparency and Substance." It extends the scope of the 1998 Report, by incorporating transparency and substance into the work of examining harmful tax practices performed by the Forum on Harmful Tax Practice (FHTP), and commits the forum to readdress those practices with a new scope.

The issue of substance relates to the requirement of the existence of a substantial activity of a business within the preferential regime. On the other hand, transparency relates to the compulsory spontaneous exchange on rulings between countries, specifically related

to preferential regimes. The Action plan differentiates between regimes where the companies benefit from special tax incentives as the outcome of receiving profits from intellectual property (IP), IP preferential regimes, and non-IP preferential regimes, where companies enjoy tax benefits due to the geographical mobility of their activities (OECD, 2015).

A substance in IP preferential regimes is addressed by the "nexus approach." This approach enables the calculation of the amount of income that is eligible for the tax incentives of the IP preferential regime. Since research and development (R&D) is the main activity that generates income within this type of a regime, businesses have to show to which extent they incurred qualifying R&D expenses that consequently resulted in the income from the IP asset. Qualifying expenditures are those incurred by the taxpayer or those outsourced to another entity. However, the R&D expenditures, which are not borne by the taxpayer, cannot be qualified as expenditures. The ratio is summarised in Figure 1 (OECD, 2015).

Figure 1 – Nexus Ratio



Source: OECD (2015)

As for the non-IP preferential regimes, the same principle of substantial activity requirement applies. The nexus approach would have to make a connection between the qualifying income receiving tax benefits and the core activities of the company that were performed to contribute to that income. In the Action Plan, the OECD specifies which activities may be used for various types of regimes, but in all regimes, they must be the core activities that bring income into the company under the special regime. Different non-IP regimes within the scope of the Report include headquarters regimes, distribution centre regimes, service centre regimes, holding company regimes, financing and leasing regimes, fund management regimes, banking, and insurance regimes and shipping company regimes. For example, the core activities that generate income in a holding company could be linked tasks such as critical managerial decision-making or incurring expenses for businesses within the group (OECD, 2015).

Transparency stands as the second most crucial issue in Action 5, which envelops the "compulsory spontaneous exchange of information on certain rulings." The OECD concluded that without this exchange of information, there could be a threat of BEPS.

Rulings related to the tax authorities' information given to taxpayers about their entitled tax state of affairs. The rulings within the scope of the project relate to preferential regimes, unilateral transfer pricing, cross-border, permanent establishment, conduit, and other rulings. Countries of residence of the taxpayer have an obligation to exchange rulings information with the countries where the parent company is a resident and with those that the taxpayer enters into transactions with if such exist in the ruling (OECD, 2015).

With Action 5 of the BEPS Project, the FHTP had to readdress the work on harmful tax practices taking into consideration the concepts of transparency and substance and reassess the preferential tax regimes. It assessed all preferential regimes, some IP regimes, and other non-IP regimes. The IP regimes were reconsidered, taking into account the concept of substantial activity, whereas non-IP regimes were assessed using criteria previously described, without taking the concept of substance into account. The Report shows conclusions about the regimes. The list of the IP-regimes identified is presented in Table 3.

The IP preferential regimes were assessed using the nexus approach, and they were all found to be partly or wholly inconsistent with the substance concept. These regimes were created before the report; therefore, their inconsistency was expected. The countries, where those regimes are present had to start adopting the concepts described in the Action Report, for the FHTP to assess their potential harmfulness correctly (OECD, 2015).

Table 3 - IP preferential regimes

	Country	Regime
1.	Belgium	Patent income deduction
2.	People's Republic of China	Reduced rate for high & new tech enterprises
3.	Colombia	Software regime
4.	France	Reduced rate for long term capital gains and profits from the licensing of IP rights
5.	Hungary	IP regime for royalties and capital gains
6.	Israel	Preferred company regime
7.	Italy	Patent box
8.	Luxembourg	Partial exemption for income/gains derived from certain IP rights
9.	Netherlands	Innovation box
10.	Portugal	Partial exemption for income from certain intangible property
11.	Spain	Partial exemption for income from certain intangible assets
12.	Spain – Basque Country	Partial exemption for income from certain intangible assets
13.	Spain – Navarra	Partial exemption for income from certain intangible assets
14.	Switzerland – Canton of Nidwalden	Licence box
15.	Turkey	Technology development zones
16.	United Kingdom	Patent box

Source: OECD (2019), p.18

Table 4 - Non-IP preferential regimes

	Jurisdiction	Regime	Status	Comments
1.	Argentina	Promotional regime for software industry	Not harmful	No harmful features.
2.	Australia	Conduit foreign income	Not harmful	No harmful features.
3.	Brazil	PADIS – Semiconductors industry	Not harmful	No harmful features.
4.	Canada	Life insurance business	Potentially harmful but not actually harmful	Ring-fencing implicated, but no harmful economic effects in practice. Regime is subject to annual monitoring.
5.	China (People's Republic of)	Reduced rate for advanced technology services enterprises	Not harmful	No harmful features.
6.	Colombia	Foreign portfolio investment	Not harmful[1]	No harmful features.
7.	Greece	Offshore engineering and construction	Not harmful (amended)	Ring-fencing removed. No grandfathering provided
8.	India	Deductions in respect of certain incomes of offshore banking units and international financial services centre	Not harmful	No harmful features.
9.	India	Special provisions in respect of newly established units in special economic zones	Not harmful	No harmful features.
10.	India	Special provisions relating to income of shipping companies – tonnage tax scheme	Not harmful	No harmful features.
11.	India	Taxation of profit and gains of life insurance business	Not harmful	No harmful features.
12.	Indonesia	Public / listed company regime	Out of scope	No income from geographically mobile activities.
13.	Indonesia	Investment allowance regime	Out of scope	No income from geographically mobile activities.
14.	Indonesia	Special economic zone regime	Out of scope	No income from geographically mobile activities.
15.	Indonesia	Tax holiday regime	Out of scope	No income from geographically mobile activities.
16.	Japan	Special zones for international competitiveness development	Not harmful[2]	No harmful features.
17.	Japan	Measures for the promotion of research and development	Not harmful[3]	No harmful features.
18.	Latvia	Shipping taxation regime	Not harmful	No harmful features.
19.	Latvia	Special economic zones	Disadvantaged areas regime	Subject to monitoring to ensure continued low risk of BEPS.
20.	Luxembourg	Private asset management company (Société de gestion de patrimoine familial)	Not harmful[4]	No harmful features.
21.	Luxembourg	Investment company in risk capital (Société d'investissement en capital à risque)	Not harmful[5]	No harmful features.
22.	South Africa	Headquarter company	Potentially harmful but not actually harmful	Ring-fencing implicated, but no harmful economic effects in practice. Regime is subject to annual monitoring.
23.	South Africa	Exemption of income in respect of ships used in international shipping	Not harmful	No harmful features.
24.	Switzerland – cantonal level	Auxiliary company regime (previously referred to as domiciliary company regime)	In the process of being eliminated[6]	Regular reporting on progress is provided to FHTP.
25.	Switzerland – cantonal level	Mixed company regime	In the process of being eliminated[7]	Regular reporting on progress is provided to FHTP.
26.	Switzerland – cantonal level	Holding company regime	In the process of being eliminated[8]	Regular reporting on progress is provided to FHTP.
27.	Switzerland – federal level	Commissionaire ruling regime	In the process of being eliminated[9]	Regular reporting on progress is provided to FHTP.
28.	Switzerland – federal level	Newly established or re-designed enterprises	Disadvantaged areas regime	Subject to monitoring to ensure continued low risk of BEPS.
29.	Turkey	Shipping regime	Not harmful	No harmful features.

Source: OECD (2019), p.19-20

Quite a few European countries had implemented IP preferential regimes ranging from patent, innovation and license boxes to tax exemptions on royalties, capital gains, and

income from intangible property. As new concepts of transparency and substance were introduced, the FHTP had to observe these IP regimes and to receive feedback from countries about the changes in legislation that related to those regimes and the Action plan. All of the regimes indicated in Table 3, were found to be not harmful in 2019, except for those in Colombia and Luxembourg, which were abolished by 2019 (OECD, 2019).

The preferential non-IP preferential regimes were identified in 29 countries. Most of the regimes were identified as not harmful at the time. Greece amended its offshore engineering and construction regime, whereas Switzerland had four preferential regimes, which were in the process of being eliminated. Four Indonesian regimes were still under review in 2015 but were marked as "out of scope" in 2019 (OECD, 2019). The list of all the identified non-IP regimes is presented in Table 4.

The FHTP has also recognised two regimes that aim at attracting investment in disadvantaged areas. Correctly, Switzerland and Latvia were identified as countries that had accepted such tax practices in certain regions. These specific regimes were not found to be harmful but would be monitored in the future.

Even though preferential tax regimes were not designed to give tax incentives for solely intellectual property income, the FHTP recognised that they might be a threat to the rise of BEPS.

Therefore, the FHTP made a list of certain additional criteria, which specific regimes for encouraging the growth of underdeveloped regions need to comply with in order to be labelled as low risk (OECD, 2015).

These are:

1. "The tax regime has to apply to a small region, defined by the number of inhabitants or surface, supported by the low level of development in comparison to the whole country concerning economic, social or structural aspects.
2. The regime has to be intended for the creation of employment and the attraction of tangible investment, not IP or mobile income
3. The company applying for the tax incentive should satisfy the substance criteria by demonstrating the creation of tangibles, such as assets, new jobs, and investments before receiving the tax incentives
4. The country should collect necessary information for the FHTP to be able to assess the impact of the regime, such as the number of companies enjoying the special

tax treatment, the business area of those companies and the total extent of tax relief."

Table 5 – 10 additional factors for assessing preferential regimes

Five key factors
The regime imposes no or low effective tax rates on income from geographically mobile financial and other service activities.
The regime is ring-fenced from the domestic economy.
The regime lacks transparency.
There is no effective exchange of information with respect to the regime.
The regime fails to require substantial activities.[1]
Five other factors
An artificial definition of the tax base.
Failure to adhere to international transfer pricing principles.
Foreign source income exempt from residence country taxation.
Negotiable tax rate or tax base.
Existence of secrecy provisions.

Source: OECD (2019)

The FHTP later enhanced the criteria in 2019, adding ten key factors for assessing existing preferential regimes, summarised in Table 5.

In the following paragraphs, two examples of preferential regimes already established in Latvia and Luxemburg, that successfully meet the criteria, are presented.

The Liepãja Special Economic Zone (SEZ) created in 1997 along with some other zones in Latvia, was formed to attract tangible investment, create new employment, and develop the manufacturing and service sectors in this area. The area consists of almost 40km^2, which includes a large part of the city of Liepãja, located on the west coast of the country along with the airport, seaport, and industrial zones. The 42 companies currently operating in the SEZ enjoy certain tax advantages.

However, in order to achieve the status of a company operating in the SEZ, companies must enter into a contract with the SEZ authorities, but only having previously met specific requirements. The commercial activity must be carried out within the zone, in sectors supported and approved by the government and national law. The company also must provide a 5-year investment plan providing evidence for the substantial investment of tangible and intangible kind. After approval by the Board of SEZ authorities, the company enters into a contract with the authority and receives the SEZ status upon registration (Liepãja SEZ, 2017).

Companies operating in the Liepãja SEZ enjoy several tax incentives. Instead of paying the 1,5% tax on real estate, they can receive up to 100% discount on this tax. The

corporate income tax, which usually amounts to 15%, can potentially also be reduced by up to 80%. However, the discount may not surpass between 35% and 55% of the value invested, depending on company size.

Also, the withholding tax can be discounted by up to 80% for dividends and other payments (Deloitte, 2013). Ultimately, companies can also enjoy a zero VAT tax rate and be exempt from excise and customs duty in case they operate with non-EU goods by applying for a free zone status (Liepãja SEZ, 2017). Overall, the regime is not harmful according to the FHTP, and it follows the criteria.

On the other hand, the Luxemburg preferential tax regime has also been named as not harmful, and it operates as a regional tax holiday.

The regional tax holiday in Luxemburg is an exemption from corporate income tax for up to 10 years for manufacturing entities. Companies within the industry sector that also provide services linked to manufacturing are eligible to compete to absolute decreases of the CIT. The CIT tax holidays are connected with the amount of employment created or sustained during the period if their activities are performed in specific areas of Switzerland. The tax holiday comes in the form of a tax credit of to a maximum of CHF 95.000, and CHF 47.500 for every employment created or maintained, correspondingly. The tax incentive does not discriminate against non-residents, as companies that can enjoy these benefits are domestic or foreign resident entities within the manufacturing sector. The specified 93 areas where such a regime is applied are mainly rural, or less developed urban places, within 19 cantons (regions). In addition, the information about companies enjoying these tax incentives and the total amount is gathered and published by relevant authorities every year, to enhance transparency (Ernst & Young, 2016).

The examples of the special economic zone in Latvia and the tax holiday in Luxemburg show how the implementation of preferential tax regimes can successfully be utilised to increase the economic growth of a small region. The next chapter proposes the potential of these tools for Croatian islands.

2.4. Potential for Croatian Islands

Within the factors that influence the growth of Croatian islands, there are not many factors which can be changed. Historical factors have a long-lasting impact, and their impact cannot be diminished easily. Political factors also take time to change, especially those aspects of governance and centralisation. Also, the structure of the economy is complex. Island size and distance from the land are factors which are geographical and unchangeable.

Therefore, among the work the government can do for its islands by improving tourism, the labour market and regulatory aspects, this work proposes the implementation of preferential tax regimes on Croatian islands. The islands face various difficulties that the population and businesses on the mainland do not face, but they nevertheless bring great potential for the tourism sector. Within the international scope of the BEPS Project, the criteria for creating such zones are met by Croatian islands. In addition to adhering to the ten factors presented in Table 5, Croatia would be able to implement tax regimes by following the four criteria, as is further explained (OECD, 2015):

1. As islands have a small population, the tax regime would apply to a small region, as shown by population statistics previously. In addition, some islands are, as defined by the Islands Act, undeveloped in comparison to other islands, let alone the whole country when taking into account economic, social, and infrastructural issues.
2. Immobile income is an essential aspect that has to be attracted, and therefore, the regime is created for generating new jobs and attracting investment.
3. A substance such as tangibles, assets, new jobs, and investments would have to be demonstrated by the applying companies before tax incentives could be received.
4. The country already has the law of Fiscalization in place that has a direct connection to the tax officials about companies for every receipt issued. Therefore, it would be easy to track the impact of the regime, as well as the number of companies enjoying the special tax treatment, their business activities, and the total extent of tax relief.

Overall, technically, the implementation of the preferential tax regime on Croatian islands could be established within the international scope, without being harmful. As shown in the cases of Latvia and Luxemburg, in the previous chapter, there are quite a few possibilities for the regimes to be established.

3. Economic Growth of Croatia and its islands

The theoretical basis from the previous chapter helped identify factors to be analysed and showed the possibility of establishing preferential tax regimes on Croatian islands. This chapter analyses the factors of economic growth that had an influence on Croatia and its islands and provides the possible solutions for grasping and using the potential of Croatian islands within the scope of preferential tax regimes.

These national-wide factors reflect on every part of the nation, including the islands. The analysis follows the structure of factors discussed in the previous chapter and starts with the scope of Croatia as a whole and latterly narrows the focus to the islands.

3.1. Historical factors

Croatia is a European country, the 28th member of the EU. In the geopolitical sense, it is a Central European and a Mediterranean country that is geographically located in the southern part of Central Europe and the northern part of the Mediterranean. In the north it borders with Slovenia and Hungary, in the east with Serbia and Bosnia and Herzegovina; in the south with Montenegro and in the west, it has a sea border with Italy. Croatia officially uses the Croatian language and Latin script.

Croatia exists as an independent state since the year 1992, although its history goes back a thousand years. Only after the declaration of independence in 1991, Croatia received the ability to manage the implementation of its economic development policies. These policies would, for the first time, be based on real, authentic national interests. Independence also brought a variety of new possibilities for economic development.

The Croatian Constitution has accepted the system of parliamentary government from its independence. It defines the country as democratic, sovereign, and indivisible social state that ensures equality of all citizens and secures their human rights.

The organisation of state authority of the Republic of Croatia is founded on the separation of powers, namely three powers. The legislative authority is implemented by the Croatian Parliament. The executive power consists of the Croatian Government, the

President of the country, local and regional governments. The judiciary power, represented by the Constitutional Court, the State Attorney's Office and other courts (Croatian Constitution, 2019).

The marks of Croatian history are the period after the War of Independence, the effect of the world crisis of 2008 and the accession to the European Union. A transition of the economic and tax system followed as Croatia faced severe and complex problems: aggression and occupation of some parts of the territory, the disintegration of socialism and the transition from a socialist, self-managed economic system into a market economy, and the disintegration of the former Yugoslav market.

The war in Croatia (March 1991 - November 1995) was a military conflict on the territory of the former Socialist Republic of Croatia caused by the withdrawal of Croatia from Yugoslavia. After the declaration of independence by Croatia on June 25, 1991, the Serbian population of Croatia tried to create its own state on its territory in order not to leave Yugoslavia. The Croatian side regarded this as an attempt to include the Croatian territories in Serbia (Roginek, 2019).

Initially, the war was fought between the Yugoslav People's Army, Croatian Serbs and Croatian police officers. The Yugoslav leadership of the federal army tried to keep Croatia in the country. At the time of the country's collapse, the self-proclaimed state of Serbs, the Republic of Srpska Krajina, was established on the territory of Croatia. Then the struggle between the Croatian army and the army of Krajina Serbs began. In 1992, a ceasefire agreement was signed, and Croatia's recognition as a sovereign state followed. United Nations (UN) peacekeeping troops were deployed in Croatia, which resulted in a sluggish conflict. In 1995, the Croatian Army conducted two major offensive operations, as a result of which a significant part of the territory of the RJC came under Croatian control. The war ended with the signing of the Dayton Accords, under which Eastern Slavonia was incorporated into Croatia in 1998. The conflict was accompanied by the mutual ethnic cleansing of the Serbian and Croatian populations (Kiralj, Puharić, & Čavić, 2014).

As a result of the war, Croatia achieved independence and preserved its territorial integrity. Many towns and villages were severely affected and destroyed during the fighting, and more than 180 thousand homes were destroyed (Živić & Pokos, 2004). Warfare and destruction accounted for 54% of the Croatian territory, where 36% of the Croatian population lived. The total number of deaths during the war exceeded 20,000. The damage

to the Croatian economy is estimated at 26 billion EUR. The war brought a challenging start for the new country (International Chamber of Commerce, 2003).

With the change of government in early 2000, foreign policy was reoriented towards the goal of leading the country out of international isolation and gaining candidate status for NATO and EU membership (Jović, 2006). The results were soon visible on the foreign policy front, as Croatia was admitted to NATO's Partnership for Peace and the World Trade Organization. Croatia has continued towards international integration by signing a Stabilisation and Association Agreement with the EU, joining NATO's Membership Action Plan, joining CEFTA and subsequently becoming an official candidate for EU membership (Bošnjak & Bošnjak, 2018).

From July 1st, 2013, Croatia became a full member of the European Union. It also brought changes to the law and functioning of the country, as the country had to adopt "Acquis Communautaire"; all the law of the European Union, which had until then been implemented. All Member States and candidate countries must accept certain restrictions and rules in order to preserve the stability of the European market when joining the European Union. These adaptations brought about many other changes in the economy, but opened up the country to a big market with more possibilities but also challenges of competition within the EU. In the year 2013, VAT the tax rate of 0% had to be removed as the EU allows the lowest tax rate of 5% to be used. Three tax rates were implemented, a general tax of 25%, and two reduced rates of 10% and 5% (Kramar, 2013). There are no special tax rules for islands of Croatia, and they experience the same tax rates as the rest of Croatia. Joining the EU, Croatia identified new opportunities for sustainable development of the islands but has still not implemented them (Dorotić, 2016).

The Independence War remains one of the most significant factors that had an influence on Croatia and its islands. The challenges of the country and the islands in terms of political, regulatory, economic, socio-demographic aspects, along with the present tax system, are discussed in the following sub-chapters. The political and regulatory environments are discussed in the next sub-chapter.

3.2. Political factors

Administratively, the country is divided into 20 counties of regional self-government with the addition of the capital of Zagreb. The lower administrative levels include 128 cities and 428 municipalities, which represent units of local self-government (International Monetary Fund, 2016). The 20 counties of Croatia with the additional one of the cities of Zagreb are shown in Figure 2.

Figure 2 - Croatian counties

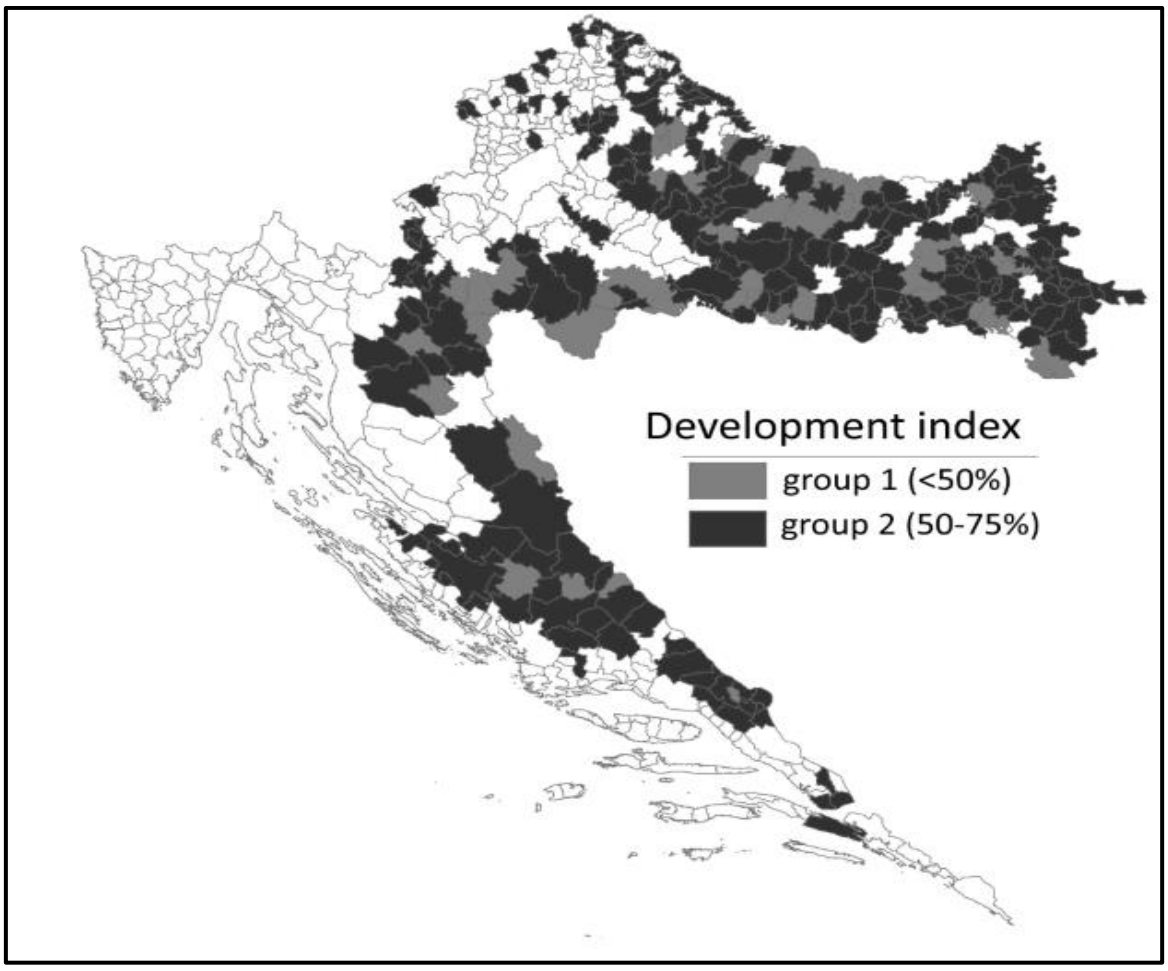
Source: d-maps (2020)

The units of local self-government (LGU) have responsibilities of organization of local urban planning, social welfare, primary health services, education, protection of the environment, and public utilities. Units of regional self-government, on the other hand, have to manage regional matters of the same responsibilities along with economic development,

infrastructure, transportation and the expansion of institutions of culture, health, and education (Vuković, 2017).

Under the Act on Croatian Regional Development (Official Gazette no. 147/14), the Ministry of Regional Development and EU Funds carried out the process of evaluating and categorizing all local and regional governments in the Republic of Croatia by the development index. Figure 3 shows the assisted areas in Croatia as classified by the development index.

Figure 3 - Assisted areas in Croatia by the development index



Source: Ministry of Regional Development and EU Funds (2017)

The development index is a composite indicator that is calculated as a weighted average of five fundamental socio-economic indicators to measure the degree of development of local and regional governments, and these are the unemployment rate, per capita income, budget revenues of local and regional governments per capita, general population movements and education rates.

It divides the local and regional governments into groups and those territorial units that have a development index less than 75% of the average are entitled to the status of assisted areas or areas of particular state concern. Currently, there are 264 out of the total of 556 local and regional government units, or 47,48% of them that qualify to enjoy the status of assisted areas, where businesses pay no corporate income tax or half of the income tax, depending on the group according to the development index. These regions also enjoy the support from EU funds (Ministry of Regional Development and EU Funds, 2017).

It is vital to notice that not one island was included in the index with the status of an assisted area. Islands belong to the regional and local government units on the coast, that also include more developed and populated areas, statistically diminishing the difference in the quality of life on islands.

The Croatian Insular Council, which is merely an association for the development of Croatian islands, pointed out that the development index does not take into account the parameters that make life and work on the islands more difficult and more expensive, and these are primarily geographical isolation and inferior transport links (Šibenik In, 2014).

Matters of fiscal decentralization were also addressed by the International Monetary Fund, recognizing that the fragmentation of the local and regional governmental structure was problematic. In Croatia, a population below 5.000 is present in 70% of municipalities and as cities and municipalities have the same expenditure responsibilities; their administrative and fiscal capacities differ. This leads to inconsistencies in the quality of public service. Communal and public services are generally the responsibilities of local and regional governments, however, since they all have limited sources of revenue, that varies by the local jurisdiction Many have to rely on the grants from the central government and EU funds. Nevertheless, around 85% of them have still not absorbed any funding from the EU funds. The lack of ability to raise enough tax revenue by local governmental units creates difficulties for citizens and businesses, as the growing existence of para-fiscal charges distorts transparency and certainty of public policy, making it harder to conduct business (International Monetary Fund, 2016).

Other research indicates that vertical and horizontal coordination of public policy is incoherent, as it seems that Croatia faces challenges of developing and measuring impact and implementation of public policies in general, which are politically influenced (Petak & Petek, 2010; Musa & Petak, 2015).

Even though foreign investors are not discriminated within the regulatory system of Croatia, its ineffectiveness poses many challenges, due to lack of transparency that exists in most sectors of the economy. The country struggles with intragovernmental coordination and inefficient public administration, which worsen the transparency in creating new regulations. Different Croatian governments have tried to fight corruption and created measures, but it seems that they failed to implement them correctly. These failures have led to the decreased trust of citizens, creating an informal economy with tax evasion practices in the country (Bejaković, Corruption and Tax Evasion in Croatia, 2014). It seems that both missions of fighting corruption and increasing the trust of citizens were not completed by the governments of the country and the government should strive for more effective strategies in combating corruption (Božić & Nikač, 2018).

The islands of Croatia experience the same regulatory and political matters as the rest of Croatia. There is an inefficiency of public administration and a lack of government services on the islands. There is a very high number of local government units in the regions that the islands belong to (Marinković, 2016). Overcoming the political and regulatory challenges could bring sustainable development to the islands, but these include nation-wide problems like centralization and excessive amounts of local government units (Dorotić, 2016).

Two of the most relevant political factors for the islands remain local government unit governance and centralization. However, it is also important to understand the economy of Croatia and its islands, the structure of the economy and the industry. These topics are therefore analysed in the next sub-chapter.

3.3. Economy and Industry factors

After obtaining its independence, Croatia's economic system became an open market economy. This change took a long time due to the burden caused by the war, which had economic consequences on the country's development as well. The change had a few phases, where the public ownership had to be transferred into state and then private. This was often done without real investment, and it had consequences in terms of ruining industries and an increase in corruption and poverty (Miroslav Krleža Institute of Lexicography, 2016).

Most of the economic problems that the country faced at the beginning of its sovereign existence had its roots from previous periods. In fact, since the late seventies, the economy of the Socialist Federal Republic of Yugoslavia was in a deep crisis, and its economy stalled. This was manifested by the high foreign debt, rising inflation, stagnating or declining of the total gross domestic product and rising unemployment. The legacy inherited from Yugoslavia was the additional burden for the newly formed country. Instead of starting with economic development, Croatia was set back with a long-term and devastating crisis, and processes of de-industrialization and the slowdown of production potential (Drezgić, Grdinić, & Blažić, 2018).

The stabilization program began in October 1993. With the adoption of the program, the conditions for economic development and the implementation of the transition process were created (Kotnik, Klun, & Grdinić, 2018).

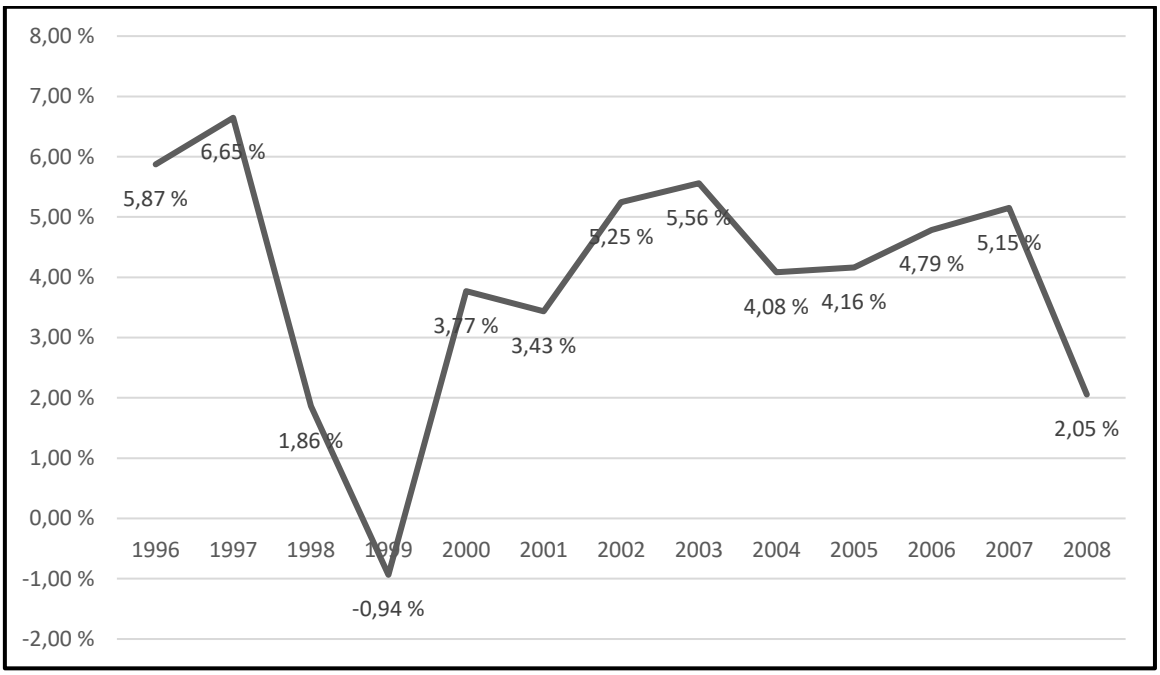
The general objectives stated in the document of the integrated stabilization program were to stabilize and strengthen the Croatian economy, to create an economic market environment and appropriate ownership structure with a smaller part of the government in the economy. The first stage of stabilization was successful. Inflation was stopped and Croatia since then had no problem with inflation. The second phase of stabilization included structural reforms to ensure long-term macroeconomic stability. The focus was on the reform of the fiscal areas, that included tax and customs reforms, to accelerate privatization, restructure the public sector, the banking system and the development of the financial system (Kotnik, Klun, & Grdinić, 2018).

Since that time, Croatia experienced positive Gross Domestic Product (GDP) growth, until the consequences of the world crisis of 2008 were experienced. In response to the crisis, the Croatian government introduced a "crisis" tax in 2009 for a year, which served its

purpose to fill the state budget, but during that period, there had been a sharp fall in consumption, increased illiquidity and an increase in unemployment (Nadoveza, Sekur, & Beg, 2016). The prolonged absence of a development strategy with the irresponsible behaviour of the authorities, and then the lack of appropriate response when the crisis has already occurred made the national economy vulnerable to the consequences of the world crisis (Deskar-Škrbić & Raos, 2018).

As the country dealt with the complications caused by war, it managed to successfully establish its economic system and achieve positive results in economic and welfare growth. According to the World Bank data, the country had overall positive GDP growth until the world crisis of 2008 gave effect. Figure 4 shows the GDP growth in percentage over the period from 1996 to 2008, and a generally positive trend of GDP growth can be seen.

Figure 4 - GDP growth of Croatia from 1996 to 2008

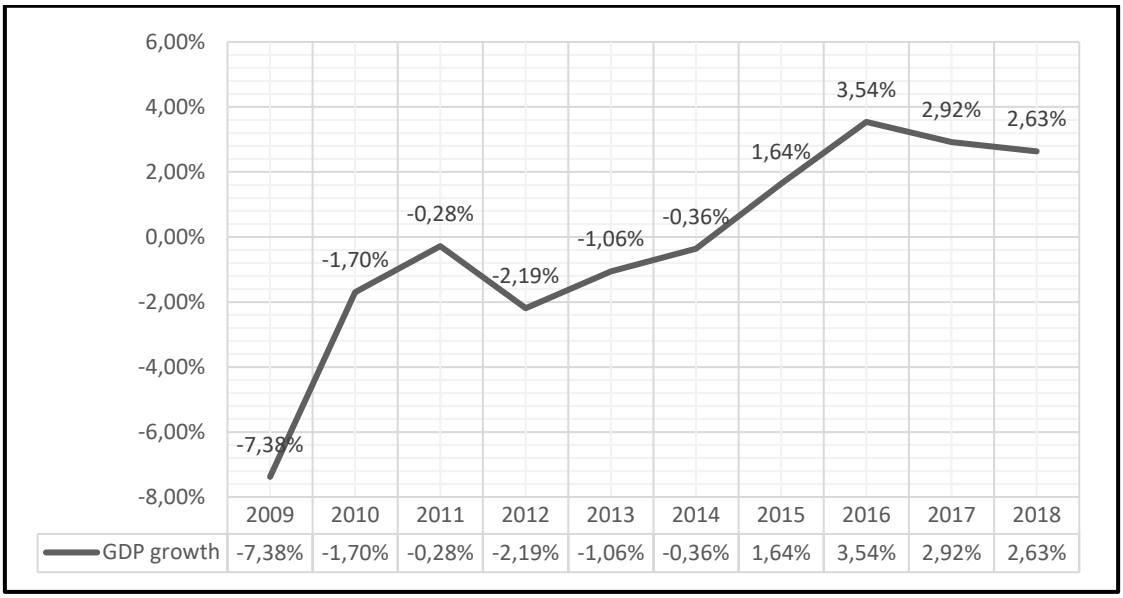


Source: World Bank (2019)

As the crisis struck in 2008, it took Croatia 6 years to reach a positive rate of GDP growth. This was a setback for the economy of Croatia, which opened its economy to the free trade in the European Union. In 2009, Croatia experienced a change in GDP of -7,38%, and the negative trend continued in 2010 with a rate of -1,70%, and rates of -0,28%, -2,19%, -1,06% and -0,36% for the period from 2011 to 2014 correspondingly (World Bank, 2020). This can be seen in Figure 5 that shows GDP growth over the period from 2009 to 2019,

suggesting that the recession lasted until 2015 when the economy reached first positive growth after the crisis.

Figure 5 - GDP growth of Croatia from 2009 to 2018



Source: World Bank (2019)

This recession had a severe effect on unemployment that had doubled throughout the recession, leaving the country with consequences of increased poverty (World Bank, 2019).

According to the statistics of the Croatian Central Bank, the gross domestic product in 2014 amounted to 43.43 million Euros, and 44,64, 46,64, 49,12 and 51,61 million Euros for the year 2015, 2016, 2017 and 2018 correspondingly. As for the GDP per capita, for the same period, it amounted to 10.247 €, 10.619 €, 11.174 €, 11.907 €, and 12.621 € correspondingly (Croatian Central Bank, 2019). Overall, there was an increasing trend in those macroeconomic indicators, even though from 2010 to 2015 it was a decreasing one. According to Eurostat, the statistical office of the European Union, Croatian GDP per capita expressed in purchasing power standards amounted to only 59% of the EU average in 2015 and 63% in 2018 (Eurostat, 2019).

From 2014 to 2018, the general government debt (public debt) to GDP amounted to the following percentage correspondingly: 113,1%, 108,0%, 95,9%, 88,9% and 82,8%. (Croatian Central Bank, 2019). Keeping in mind that these records are used to assess the state of the economy, it can be clearly seen that the economic situation in Croatia has been worsening in the period until 2015 and it started recovering afterwards.

The World Bank recommended that the country should concentrate on overcoming the economic problems by focusing on maintaining the stability of the economy through removing restrictions on the private sector that would lead to creating jobs, increasing competitiveness and improve the economic growth of the country (World Bank, 2019).

The Index of Economic Freedom published by the Heritage Foundation assesses the extent to which the society of a country ensures freedom of labour, production, consumption, and investment, by incorporating economic, political, regulatory and monetary factors. For the year 2019, in the world rankings of economic freedom, Croatia obtained the 86th place, with the classification of a mostly unfree country. Its regional ranking was 38th in Europe, and the authors indicate that the country faces challenges with investment and bureaucracy. They state that the government made some significant changes to control public debt; however, they acknowledge that the large size of the public sector reduces the possibility of economic recovery as the lack of a free developed private sector along with considerable corruption impose challenges for the country (Heritage.org, 2019).

As the citizens recognize the difficulties of the country's economy, they search for jobs outside of the country. The labour market also faces difficulties in the period of recession. Data from the World Bank records that many unemployed moved away to work outside of Croatia, as employment to population equals 47,47% in 2016, which is much lower than the average of the EU (World Bank, 2019). Even though, as new legislation was passed in 2014 to stimulate employment, especially for those younger than 30, it seems that its effect was not that efficient, as the matters in other areas were not improved (Heritage.org, 2019).

The negative GDP growth that lasted from the end of 2008 until the end of 2015 created an unfavourable economic situation in the country with a reduction in general employment rates, increased unemployment of younger generations and long-term unemployment. In addition, a decline in living standards for many citizens, the inability to find employment in their profession, the long-time of waiting for employment, inadequate wages with regard to qualification and poor entrepreneurial climate, among other things, seem to be the most critical economic parameters that pushed individuals to make a decision to temporary or permanently emigration from Croatia. On the other hand, economically attractive factors relating to higher amounts of vacancies, higher incomes, and a better business climate continue to attract Croatian citizens to more prosperous economies in many European countries as well as overseas (Župarić-Iljić, 2016).

The economy of Croatia started recovering in 2016. The recovery came because of an increase in exports, private consumption, and recovery of investment. After several years of recession, the GDP reached a growth of 2,8% in the first six months of 2016. The conditions of the labour market slowly started improving, even though there was a lack of low-skilled workers in the seasonal service sectors such as tourism, construction, and other sectors (World Bank, 2019).

Overall, the structure of the Croatian economy could be called service-based, as 69% share of the GDP is represented by the service sector, whereas industry has a share of 27% and agriculture takes only 4%. Tourism as the industry takes the highest share of the service sector, of around 20% of the overall GDP and the dominant parts of other industries are shipbuilding, pharmaceuticals, and computer technology (OECD, 2016).

The positive economic impact of tourism is the best argument that experts and politicians use in recognizing tourism as a driver of economic activity. It affects many socio-economic relations, but also has an impact on the development of the society and the economy as a whole (Perles, Ramón, Rubia, & Moreno, 2017). That is why the development of tourism should be implemented following the socio-cultural, environmental, and cultural goals, values, and aspirations of the host country. For Croatia, as well as in many countries, tourism is one of the most important carriers of economic development. It keeps the stability of the national currency, affected by the increase in GDP; it combats inflation, reduces the deficit of the balance of payments and reduces Croatia's dependence on imports, which is still extremely high (Škrinjarić, 2011). Such a share of GDP suggests a high degree of dependence of the economy on tourism and refers to the inadequate development of other sectors of the economy.

The Institute for tourism in Croatia conducted a survey in 2014 to identify the profiles of tourists and the main advantages and disadvantages of Croatian summer tourism. They found that the highest motives that attract tourists are seaside relaxation and fun. Most tourists arrive with family or partners. There are increasing trends in first-time visitors, but 69% of the respondents have already visited Croatia three or more times. Most tourists arrive by automobiles, book their accommodation directly and daily spend 66 euros per person during their stay. Most of this amount is spent on accommodation, followed by food and drinks. The guests seem to be very satisfied with natural beauties and environment, accommodation staff and service, gastronomy and money value. However, it seems that lower satisfaction is present in the quality of products of tourism, such as beaches, local

transport, cultural happenings and shopping offers (Institute for Tourism, 2014). The results of this survey indicate that even though the beauty of the coast of Croatia attracts tourists, the tourism products and public service are still underdeveloped to satisfy the needs of the tourists.

The challenge of tourism in Croatia is its seasonality. The highest touristic season period is represented only by two summer months, July and August. For the year 2012, they stood for 58% of total nights that tourists spent in various hotels, which is a much higher number than the EU average of 33%, according to Eurostat. The EU average of total nights spent in five winter months amounted to 25%, whereas in the same period tourists spend 3,7% of the total nights in Croatia (Demunter & Dimitrakopoulou, 2014).

The government of Croatia has started implementing a strategy in 2014 for developing all-year tourism by investing EU funds for developing other non-coastal locations, by improving infrastructure, promoting tourism sectors of culture, wellness, gastronomy, business and cycling (BMI Research, 2017). However, there are significant risks that impact Croatian tourism all-year-round like bad weather, natural disasters and political instability, among others (Mikulić & Sprčić, 2018)

On the other hand, the potential of Croatian islands, which account for 6% of the total land of Croatia, for contributing to the economy through tourism, agriculture, fishing has been somewhat neglected (Đogić & Cerjak, 2015). For example, out of the 66 million nights that tourists spent in Croatia in 2014, only the first top 10 islands accounted for more than 16 million of those nights, or 26% of the total (Institute for Tourism, 2014). With a significant impact on tourism, Croatian islands have the potential to bring growth for the economy at least in that sector.

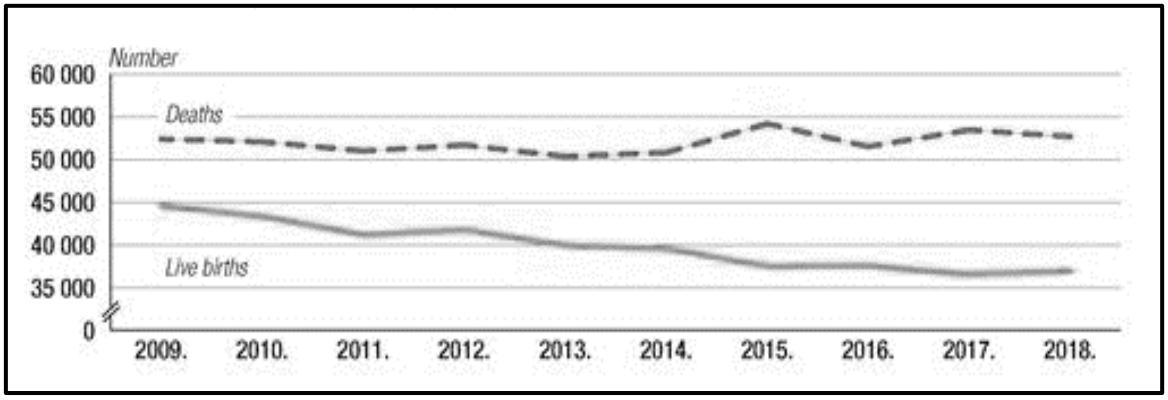
Overall, the economy of Croatia has faced particular challenges in the past several years, including negative GDP growth, rising unemployment, bureaucracy, high level of public debt, private sector shrinkage, and labour market inconsistencies among others. The relevant factors of the industry are linked to tourism and the labour market.

The theoretical framework showed that apart from the economy, demographics also play an important role in the development of a country. These challenges are, therefore, discussed in the next sub-chapter.

3.4. Demographic factors

The Republic of Croatia has over 4 million inhabitants, most of which are Croats of Christian faith. The population shows a decreasing trend from 4,28 million to 4,07 million from 2011 to 2019 (Croatian Central Bank, 2019). This was identified as an essential aspect of the World Bank. Fiscal sustainability is put at risk due to the expected decrease in population, along with the endangerment of the potential of increasing living standards. In the future, Croatia would need to adapt its health system and social protection structure, increase working abilities, and extend the working life its citizens to tackle these challenges (World Bank, 2019).

Figure 6 - Deaths vs live births in Croatia, 2009 − 2018

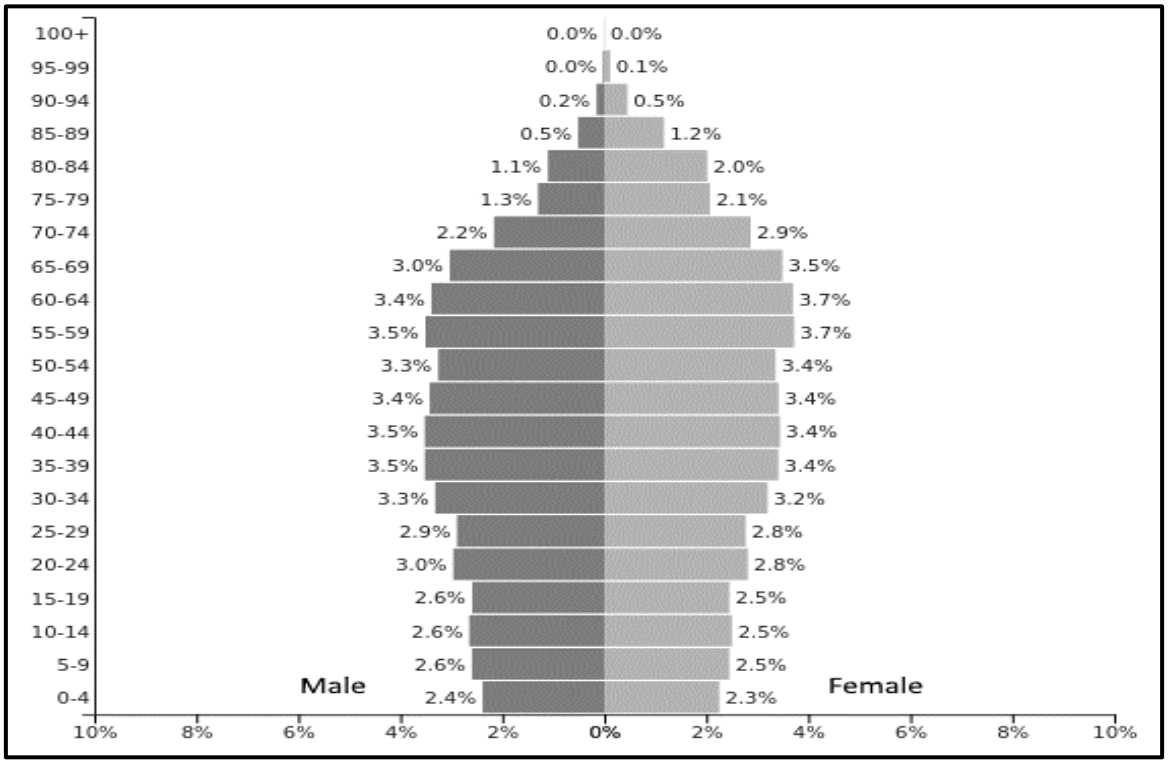


Source: DZS (2019)

Figure 6 shows the statistics of deaths and births across the period from 2009 to 2018. The trend of the number of deaths is constant, whereas the trend of the number of births is decreasing. In 2018, there was an increase in the number of live births compared to the previous year by 1.1%, but the number of deaths is still higher than births. In the same period, the birth rate amounted to 9%, and the mortality rate was 13%. From those values, it can be seen that there is a negative population growth rate of 4%, with a negative trend that prevails over the whole period and poses challenges for the Croatian economy to this day (DZS, 2019). This leaves the country with a problem of an ageing population.

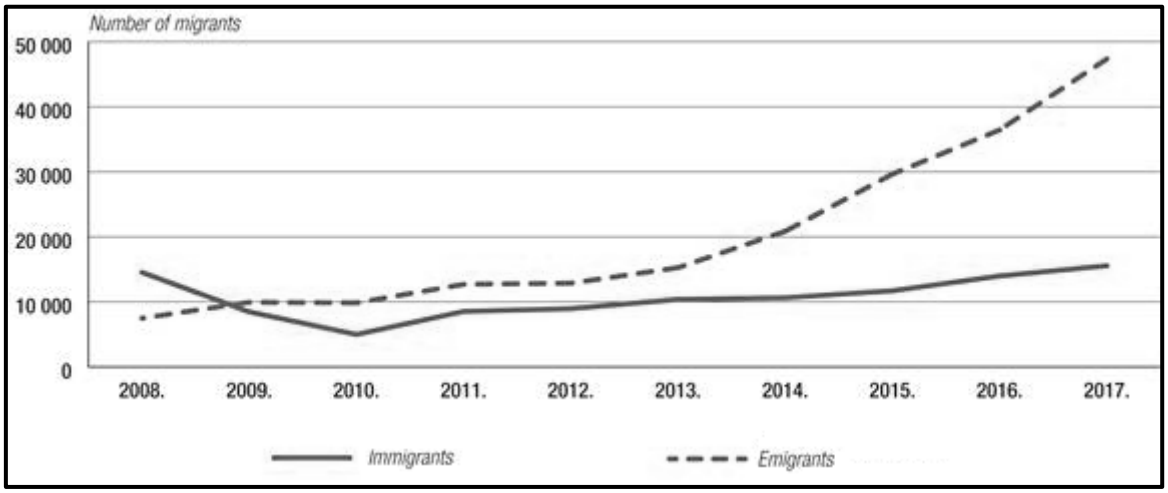
Figure 7 shows the population of Croatia estimated in 2019 and categorized by sex and age. It can be seen that the older population prevails in both genders. This also creates challenges in the future for the workforce and the sustainability of the pension and fiscal systems, as there would be many older people that retire and fewer young people that would have to work to finance the pensions.

Figure 7 - Population of Croatia by sex and age, 2019 estimate



Source: DZS (2019)

Figure 8 - Net migration of Croatian population 2008-2017



Source: DZS (2018)

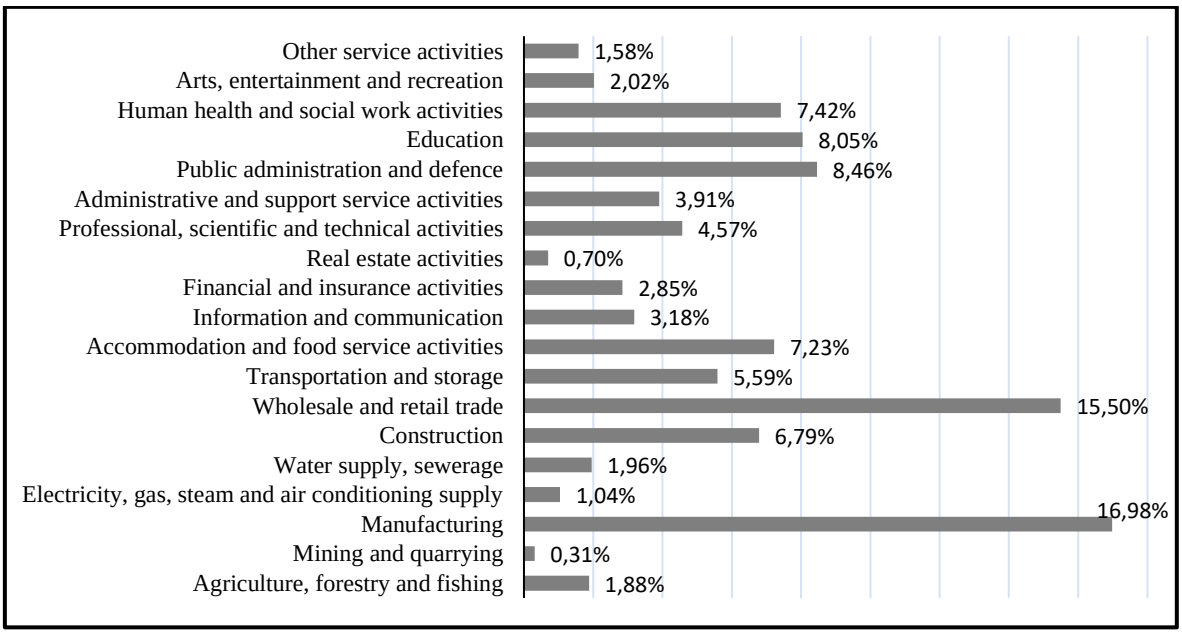
Figure 8 shows emigrant's evolution for the period 2008-2017. With a narrowly rising rate of emigration and more stable immigration, the graph suggests that emigration is another threat to Croatia. Emigration came as one of the consequences of the Independence War and

the world crisis of 2008. After joining the European Union, a significant jump in the number of migrations is already visible in 2014, when out of the total number of Croatian citizens that emigrated and the most significant number of 38,2% immigrated to Germany, 14,4% to Serbia, other 9,6% Austria and another 8,5% to Bosnia and Herzegovina (Župarić-Iljić, 2016).

Since 2009, every year, a more significant number of the population migrated out of Croatia than it migrated into Croatia. This negative trend has been increasing almost exponentially since Croatia joined the European Union in 2013. In 2017, it was recorded that 47.352 persons left Croatia, which is almost triple the amount of the year 2013 when the number of 15.262 persons was recorded (DZS, 2019). The trend of Croatian people leaving the country after the accession to the European Union can be accredited to the lack of employment within the country that motivates people to seek employment in other countries that offer better conditions (Župarić-Iljić, 2016).

Out of the 1.571.631 employed persons in September 2019 in legal entities, most were employed in the sectors of manufacturing, wholesale and retail trade, education, and public administration. (DZS, 2019)

Figure 9 - Persons in paid employment in legal entities by activities, 2019



Source: DZS (2019) and author's calculations

The breakdown of persons employed by activities in legal entities can be seen in Figure 9. Even though most of the people are employed in the manufacturing sector with a share of

16,98%, the contribution of the sectors to economic output, measured in GDP differs. This is later explained in the economic analysis of the country. Wholesale and retail trade account for 15.50% of employed persons, whereas education and public administration account for 8,05% and 8,46% accordingly.

Most of the employed population are employed in the sector of manufacturing that has been identified to face a lack of competitive advantage. This sector lags in an international context due to a lack of investment in production that has led to insufficient export possibilities because of rising international competition (Bezić, Cerović, & Galović, 2011).

The economy of islands was also severely damaged by the war and the economic crisis, as many professions and island products have disappeared. Their remoteness puts them at a disadvantage in terms of economic growth as they lag behind coastal entities (Bejaković & Mrnjavac, 2019). The main economic activity used to involve primary sector industries; however, the islanders work more in tourism ever since the war. Emigration of the population from islands to the coast increased during the war, as people were seeking shelter in bigger coastal cities (Šimunović, 1994). Another important factor that has an effect on the islands is the long-standing ageing of the population, resulting from the emigration of younger age groups and the attractiveness for retirement for older generations (Bejaković & Mrnjavac, 2019).

In general, the demographics of Croatia also reflect on the islands, and the most relevant factors are a decreasing population, which is a result of a prevailing number of older populations, immigration of younger generation to other countries and discrepancies between international competitiveness and the employment in economic sectors.

Further, the tax system of Croatia is analysed in order to determine the most relevant fiscal factors that influence growth on Croatian islands.

3.5. Tax system

The tax system of Croatia changed significantly after the declaration of independence. The reform of the tax system began in 1994 when the Law on Personal Income Tax and the Law on Income Tax was adopted, and excise duties as indirect taxes were introduced. In 1996, new customs tariffs were adopted and on 1 January 1998, Croatia introduced the VAT. These steps completed the needed tax reform. With the introduction of VAT, the Croatian tax system became compatible with the tax systems of developed countries. By including the value-added tax in its tax system, Croatia has joined several modern states that have opted for this form of general sales tax (Arbutina, 2000).

Due to the prevailing perception of Croatian people that the tax administration is ineffective, corrupt, and inefficient, tax evasion has been estimated to exist in Croatia (Bejaković, 2009). The Law of Fiscalization was introduced in 2013 that enabled the Tax Office to have access to each receipt issued using an Internet connection. Every business that dealt with cash payments and was included in the VAT system had to apply fiscalization procedures (Vlaić, 2017).

This was done to help combat tax evasion and to increase awareness of citizens for the need to pay taxes, with the goal of more stable funding of public expenses. In addition, the information exchange between tax authorities and businesses leads to more transparency. With this technique, the authorities are now able to collect specific data on businesses, including their tax liabilities at the moment they arise (Tot & Detelj, 2014).

Croatian tax regulations often change since the government changes fiscal regulations under new EU regulations, government policy changes, world organization recommendations, and political interests. In the current tax system, various national taxes include VAT and corporate income tax (CIT), as well as other taxes imposed by the county, city, and municipalities. The personal income tax is a joint tax, as municipalities partly impose it and partly does the national government (Croatian Ministry of Finance, 2020).

The current legal state of the tax system is composed of national taxes, country taxes, city or municipal taxes, joint taxes, taxes on winnings from games of change and fees for organizing award games. The current tax system of Croatia is summarized in Table 6.

Table 6 - Croatian Tax System summary

National Taxes	County Taxes
• Value-added tax • Corporate income tax • Special taxes and excise duties on: ➢ motor vehicles ➢ coffee and non-alcoholic drinks ➢ liability and vehicle insurance premiums ➢ alcoholic drinks, tobacco products, energy products, and electricity	• Inheritance and gifts tax • The tax on-road motor vehicles • The tax on vessels • The tax on coin-operated machines for amusement games
City or municipal taxes	Joint Taxes (National, county, municipal and city)
• Surtax on income tax • The consumption taxes • Tax on holiday houses • Tax on the use of public land • Real estate transfer tax	• Income tax
Taxes on winnings from games of chance	Fee for organizing award games
• Lottery games tax • Casino games tax • Betting games tax • Fees for slot machine games • Fees for occasional one-time award games	Fees for organizing award games

Source: Croatian Ministry of Finance (2020), with the author's summary

Soon after the accession to the EU, due to the excessive public deficit, Croatia had to undergo the excessive deficit procedure (EDP) of the EU. In 2015, Croatia responded by presenting its National Reform and Convergence Programs. After the evaluation of the programs by European Commission, the European Council published recommendations that stated that the convergence program was too optimistic and that there was not enough information on the procedures of fiscal-consolidation that were to be undertaken in order to decrease the deficit of the budget (European Council, 2015). The recommendations also included an introduction of property tax, improvement of compliance for VAT, resolving the fiscal subjects of the pensions and health systems and reducing fragmentation of local government units, among others (Petak & Bartlett, 2016).

With the beginning of the year 2017, the amendments to the Law on Corporate Income Tax impose a corporate income tax of 18 per cent and introduce a lower rate of 12 per cent for businesses with annual incomes lower than three million Croatian Kuna. The standard VAT rate is 25%, which, along with Sweden and Denmark, is the highest in the European Union. The reduced rate of 13% on hospitality services no longer exists in Croatia. The reduced tax of 13% is now imposed on children's car seats, electricity supply, municipal waste, urns and coffins, and certain agrochemicals, as well as food for animals other than pet food. The lowest rate of 5% is imposed on bread, milk, medicine, certain medical aids, and books (Croatian Ministry of Finance, 2020).

As for personal income tax, the new law imposes an increased basic non-taxable monthly personal allowance to 3,800 HRK from previous 2.600 HRK. The tax rates of 12, 25, and 40 per cent were abolished and replaced with 24 and 36 per cent. Monthly income up to 17,500 is now taxed at 24% and anything above that amount at a rate of 36%. Since Croatia had one of the most significant progressive tax rates, this new law was created to lower the tax burden in order to push the country's economy into development and improve its competitiveness (Deloitte, 2016).

On the other hand, the social security taxes have remained at a rate of 20% for health insurance and 15% pension insurance, and exceptions for royalties and second income of retired persons have been revised. Half of those rates will now have to be paid for those incomes. This still leaves the costs of direct employment on the same level as they have been before. Also, the new tax system enables more people not to pay income tax, with the increase of the brackets for personal allowance and their number amounts to nearly as many as there are employed persons in the country. These actions are not the best choice for a country that needs to recover economically and collect more tax revenue (Vukic, 2016). In addition, new reforms do not seem to include public administration changes, which were recommended by the IMF (Vukic, 2016). Due to an already existing high level of tax evasion and the lack of efficiency in the tax administration procedures, Croatia seems to face challenges in collecting the tax revenue, which is also represented by the share of tax revenue to GDP in Croatia is small in parallel to other countries of the EU (Petak & Bartlett, 2016).

The tax revenue breakdown as a percentage of GDP is shown in Table 7. Indirect taxes and social contributions seem to take the largest share in fiscal financing in Croatia, whereas personal and corporate income tax revenue take the lowest proportion in the total tax revenue of the country.

Table 7 - Tax revenue as a percentage of GDP in Croatia, 2019

	2011	2012	2013	2014	2015	2016	2017	Ranking 2017	Revenue 2017 (billion euros)
A. Structure by type of tax	as % of GDP								
Indirect taxes	17.2	18.1	18.6	18.6	19.2	19.5	19.6	2	9.6
VAT	11.3	12.3	12.6	12.6	12.8	12.9	13.2	1	6.5
Taxes and duties on imports excluding VAT	0.5	0.5	0.3	0.1	0.1	0.1	0.1	27	0.1
Taxes on products, except VAT and import duties	4.3	4.2	4.6	4.8	5.0	5.1	5.2	3	2.5
Other taxes on production	1.1	1.1	1.1	1.1	1.3	1.3	1.1	18	0.6
Direct taxes	6.4	6.3	6.5	6.3	6.1	6.5	6.3	25	3.1
Personal income taxes	3.4	3.7	3.8	3.9	3.5	3.6	3.3	26	1.6
Corporate income taxes	2.3	2.0	2.0	1.8	1.9	2.2	2.3	17	1.1
Other	0.6	0.7	0.6	0.7	0.7	0.7	0.6	14	0.3
Social contributions	11.6	11.4	11.2	11.8	12.0	11.9	11.9	14	5.8
Employers'	6.2	6.0	5.7	6.1	6.3	6.0	5.9	15	2.9
Households'	5.4	5.5	5.5	5.7	5.6	5.9	5.9	9	2.9
Less: capital transfers (²)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.		
Total	35.2	35.9	36.3	36.7	37.3	37.8	37.8	13	18.5

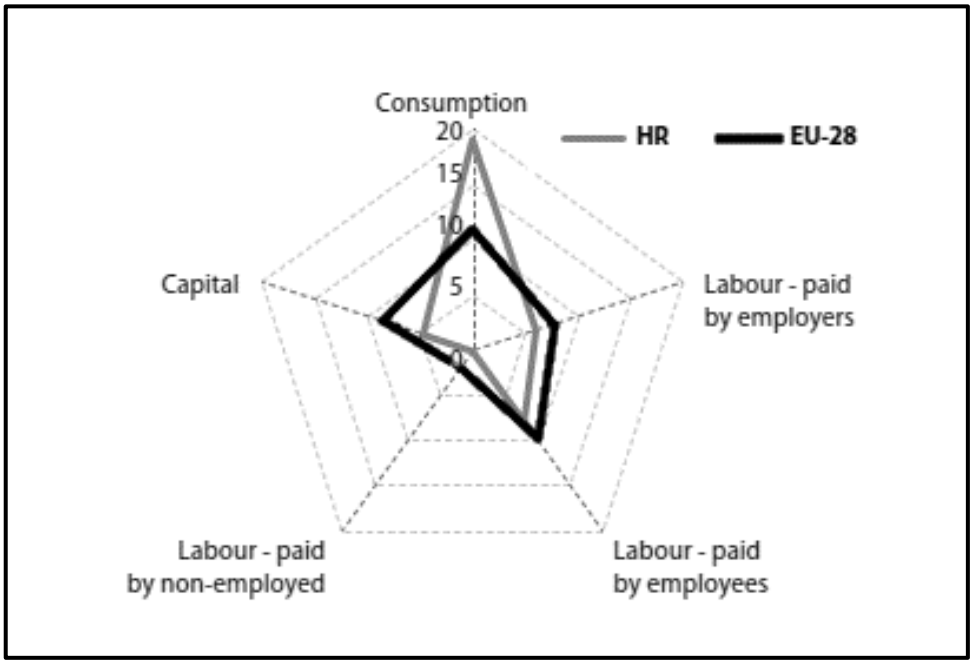
Source: European Commission: Taxation Trends in the European Union (2019)

A challenge in the current tax system is that it intensely depends on VAT and the contributions from social insurance, which together account for two-thirds of the total tax revenues. The low share of tax revenue from personal and corporate income limits the redistribution effects and constricts the financing through joint and municipality taxes. Besides, there are many tax exemptions, reliefs, and incentives that distort the tax system, giving rise to other charges, making it more complicated for both investors and citizens (Petak & Bartlett, Croatia Report: Sustainable Governance Indicators, 2016).

When compared to the EU average (EU-28), as seen from Figure 10, Croatian (marked "HR") tax revenue rely much more on VAT or Consumption taxes. In addition, tax revenue from other indirect taxes, such as capital and labour, has a much lower share in Croatian GDP, than that of the EU average.

Overall, it seems that contrary to recent research and theory on VAT in developing countries, Croatia seems to hold the highest rate of VAT in Europe, with a decreased focus on other taxes. In a complex tax system, the country relies on VAT and struggles with tax compliance.

Figure 10 - Tax revenues by category as a percentage of GDP, 2019



Source: European Commission: Taxation Trends in the European Union (2019)

These challenges also reflect on the islands. Starc and Stubbs (2014) point out that the challenges of the population of Croatian islands are rooted in the lack of local government units that would represent them. Smaller islands find it harder to raise fiscal revenue, which limits the possibilities of investment (Starc & Stubbs, No Island Is An Island: Participatory Development Planning On The Croatian Islands, 2014).

In addition, the cost of investment is higher due to the remoteness of islands and higher transportation costs associated with it. Islands that are larger and have better access have costs higher by around 10%, compared to the land, whereas smaller and more distant islands have even higher costs by almost 30% (Starc, The Islands and Their Potential, 2016).

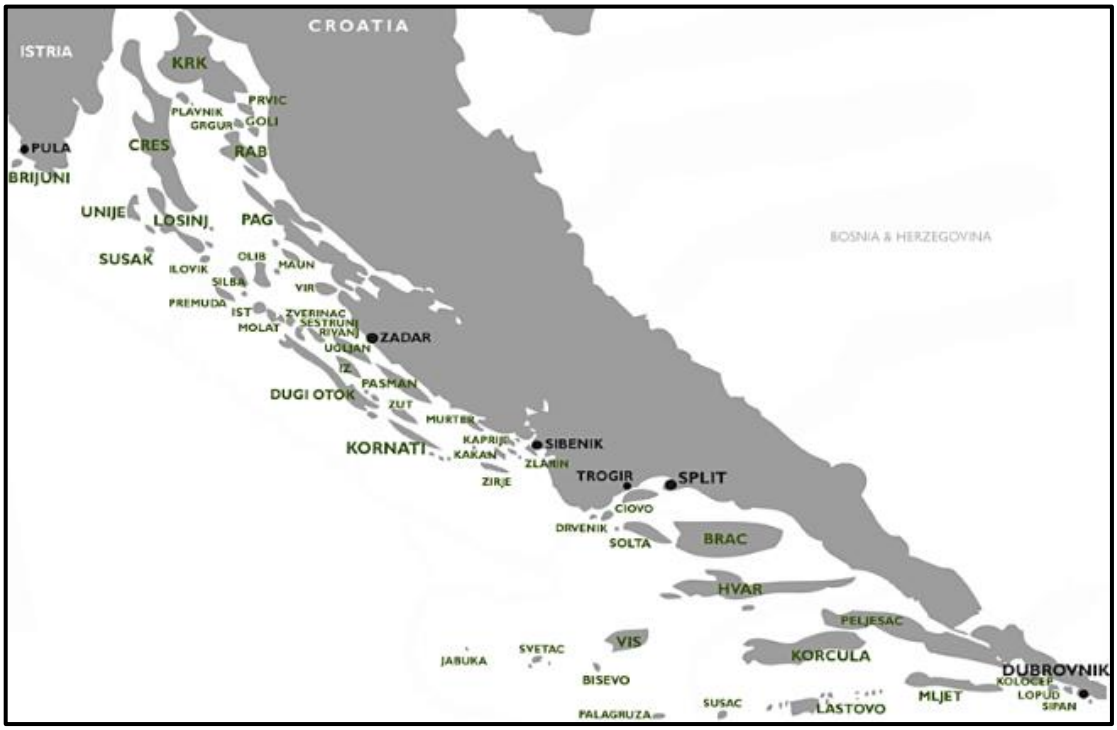
The most relevant fiscal factor for Croatian islands is the tax levied on the citizens of the islands. In order to approach this topic, an analysis of preferential tax regimes was included in the previous chapter of this thesis.

In the following sub-chapter, the specific challenges for Croatian islands are further analysed.

3.6. Challenges for Croatian Islands

The Republic of Croatia has 1,244 islands that are geographically divided into 78 islands, 524 islets, and 642 cliffs and reefs. Currently, there are only 47 permanently inhabited islands (Ministry of Regional Development and EU Funds, 2017). The total population of the Croatian islands recorded by the 2001 census amounted to 122,418 persons, whereas the census of 2011 showed a number of 124.955 island inhabitants. In ten years, there was a population increase of 2,1% or in 2.535 island inhabitants (DZS, 2011). The coast is shown in Figure 11.

Figure 11 - Croatian coastline with selected islands



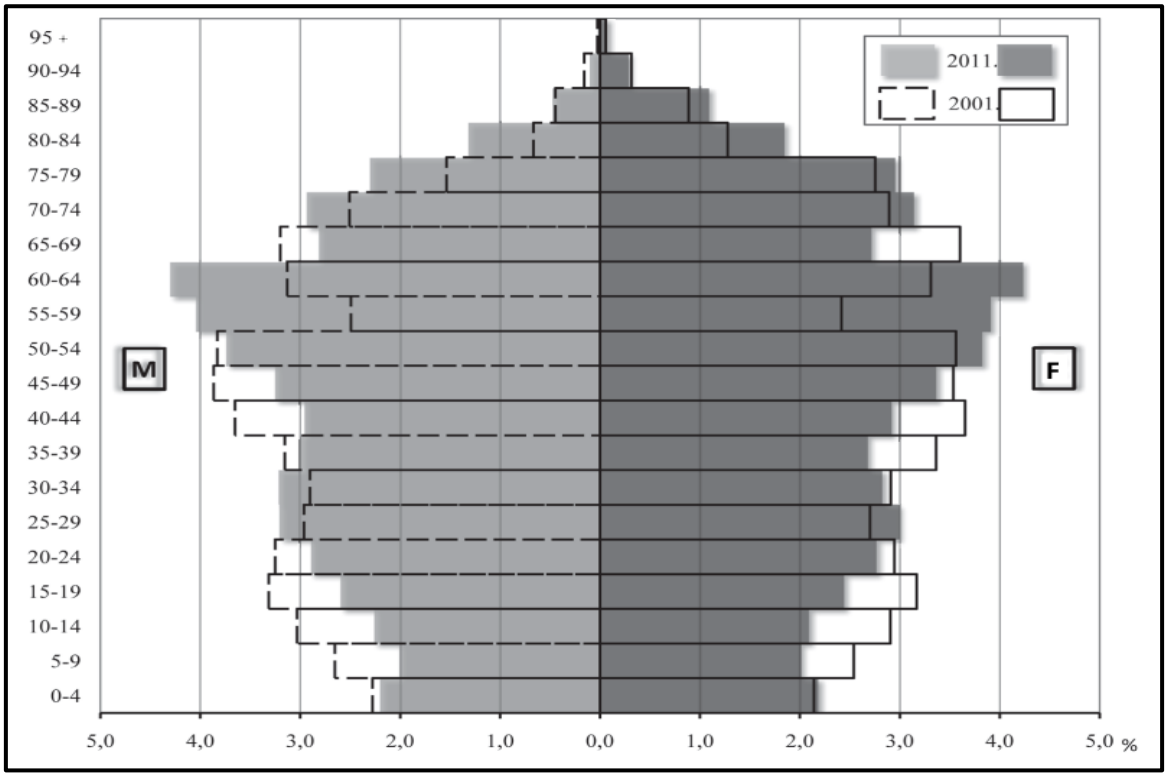
Source: Find Croatia (2019)

The coastline of the islands takes up 70% of the total length of the Croatian coastline. The islands account for almost 6% of the total of Croatian land, covering 3,259 km^2 (Lajić & Mišetić, 2013). Administratively, the islands belong to seven different counties, but only six of them contain inhabited islands. The Istria country includes the western islands, but none of them is inhabited. All the so-called Kvarner islands belong to the county of Primorje-Gorski Kotar. The county of Lika-Senj contains only the northern part of the island of Pag. The most numerous islands administratively belong to the country of Zadar. By the number

of islands, next is the county of Šibenik-Knin, followed by Split-Dalmatia and the southernmost county of Dubrovnik-Neretva (Lajić & Mišetić, 2013).

Figure 12 shows the population pyramid according to gender and age for the years 2001 and 2011, developed by Lajić and Mišetić in 2013 with census data.

Figure 12 - Population pyramid of Croatian islands, 2001-2011



Source: DZS (2011), Lajić & Mišetić (2013), p. 193, with author's translations

The narrowing of the base of the pyramid and the widening of the top part of it, indicate the demographic challenges of the islands. Over ten years, there is a trend of an increasing population of the older generation and a decreasing population of the younger generation, which can be identified in both genders. Contributing factors for this trend are also the migration of the population to bigger municipalities on the coast, and the migration from distant unbridged islands to the coast or less distant islands (Lajić & Mišetić, 2013).

Table 8 presents the population of Croatian islands to the total population of the respective counties they administratively belong to and the total share in relation to the country as a whole. The number of people living on islands represents only 2,92% of the total population of Croatia.

Table 8 - Island population with their respective counties

County	Population	Share of islanders	
	Total	Islanders	In percentage
Primorje-Gorski Kotar	286.880	39.627	13,81%
Split-Dalmatia	450.019	36.261	8,06%
Zadar	168.804	20.658	12,24%
Dubrovnik-Neretva	121.498	18.252	15,02%
Šibenik-Knin	101.466	6.044	5,96%
Lika-Senj	45.9675	3.663	7,97%
Istria	208.055	0	0,00%
Croatia Total	4.076.246	124.505	3,05%

Source: DZS (2020) and author's calculations

The share of inhabitants of islands in proportion to their counties is all below 15%. Apart from administrative challenges that arise from the lack of representation of the island population in respective counties, the islanders also face challenges of an ageing population.

The challenges that arise from the lack of self-administration on islands are the lack of government services, like schools and hospitals, and poor infrastructure. People living on islands depend on the administrative centres on the coast, and this directly influences the quality of life on the islands. Therefore, it is not surprising that the population on islands is decreasing (Marinković, 2016). The lack of primary education facilities on smaller islands also serves as an incentive for newly formed families to move away (Grgona, 2002). Out of the total population of Croatian islands, only a small amount of people is employed full time throughout the year. Some work on the land and live on the islands, and others are employed on the islands. The lack of employment opportunities on islands also influences the migration of islanders to more populated areas on the land (Starc, The Islands and Their Potential, 2016).

The economy of the Croatian islands nowadays is mostly dominated by tourism, which faces challenges of seasonality, as previously explored. Due to the lack of fertile land and labour, agriculture is not as developed. Other economic areas that are present on islands are quarrying, ship repair, and fish processing. Along with the production and distillation of wine, trade, and shipping are also notable in the economy of islands (Starc, The Islands and Their Potential, 2016). Nevertheless, the contribution of islands to the total GDP of Croatia has always been under 3 per cent (Starc & Stubbs, No Island Is An Island: Participatory Development Planning On The Croatian Islands, 2014).

This comes as a surprise because, with such a unique potential only for tourism with beautiful landscapes, natural beauties, cleanliness of the sea and geographical position, the islands already have all the potential for being an economic success. Besides, as recognized by researchers, tourists that visit the islands also have the opinion that Croatian islands have an advantage over other areas in Croatia and Europe for generating economic growth (Razović & Tomljenović, 2015).

Nevertheless, due to certain constraints expressed through governmental inefficiencies, lack of investment and constraining fiscal policies, which generally exist in the country as a whole, the potential for business and entrepreneurial growth of local population is depleting on the islands as well. Even the hotel businesses and touristic firms have to face the highest VAT in Europe, and despite that, the funds collected from tourism seem not to be adequately utilized and reinvested in tourism (Dombrovski & Hodzic, 2010).

In an interview on the issue, the Mayor of the island of Korčula, Mr Fabris stated that a reduction in VAT on islands could counteract the increased expenses the islands face due to the need for transportation of goods from the mainland. Nevertheless, he argues this would not privilege the islands, but rather equalize conditions with the mainland. Other fiscal changes, such as subsidizing transport, would also need to be incorporated to improve the conditions on the islands, especially the very distant ones (Slobodna Dalmacija, 2015).

In the same interview, Mr Nobilo, a director of a successful wine company that originates from an island, pointed out that the government does not truly recognize the isolation of islands. Apart from the lack of subsidies for transportation, she pinpointed that due to parafiscal charges, arising from ineffective budget planning by local government, their products become less competitive in comparison to the mainland firms (Slobodna Dalmacija, 2015).

Researchers have also shown that the Croatian fiscal system contains a considerable amount of parafiscal charges, the correct number of which is not known and there is no standardized way of calculating them (Bratić, Bejaković, & Devčić, 2012).

In order to implement sustainable development of the islands, the Croatian Parliament adopted the Islands Act in 1999 that categorized the islands into undeveloped inhabited islands and developed inhabited islands. The first group included 32 undeveloped islands, whereas the second included all other islands (Croatian Parliament, 1999). A list of the

undeveloped islands with their population in the year 2018, according to the 2020 estimation is shown in Table 9.

Table 9 - Undeveloped islands in Croatia

	Island	Population		Island	Population
1	Vis	3445	17	Susak	151
2	Dugi Otok	1655	18	Drvenik Veli	150
3	Mljet	1088	19	Olib	140
4	Lastovo	792	20	Rava	117
5	Iž	615	21	Žirje	103
6	Šipan	419	22	Unije	88
7	Prvić	403	23	Drvenik Mali	87
8	Silba	292	24	Ilovik	85
9	Zlarin	284	25	Premuda	64
10	Lopud	249	26	Sestrunj	48
11	Vrgada	249	27	Zverinac	43
12	Molat	197	28	Rivanj	31
13	Kaprije	189	29	Ošljak	29
14	Ist	182	30	Biševo	15
15	Krapanj	170	31	Vele Srakane	3
16	Koločep	163	32	Male Srakane	2

Source: DZS (2020)

The Act also included a definition of the sustainable development program, which would be created in cooperation of municipalities and counties with the Ministry of Reconstruction for 26 island groups, approved by the Government and financed from the Budget (Croatian Parliament, 1999). Even though all of the programs were created by 2003, their implementation was not put into action, due to a lack of human and financial resources (Marinković, 2016).

In response to a lack of financing in Croatia, researchers Miloš and Rudić (2005) proposed the use of special economic zones or free zones as instruments that would enable Croatia to encourage more efficient circulation of goods, services, capital, technology and knowledge and reduce unemployment, especially in undeveloped and assisted areas (Miloš & Rudić, 2005). On the other hand, other research showed that islands have enormous potential for long-term economic growth through fiscal measures, but only if their development should be performed following the social, ecological, cultural values of each specific island (Vidučić, 2007).

Apart from the relevant factors mentioned previously, this chapter deducted that isolation and island size are relevant island-specific factors for Croatian islands. These are used for the research, which is a crucial part of this thesis.

4. Research Methodology

This thesis takes the deductive approach for the research. The exploratory research helps lay the groundwork for future studies of Croatian islands, their growth and preferential tax regimes.

The theoretical analysis summarised the factors of growth to be analysed, establishing a theoretical growth model. Then, the literature review of Croatia and its islands established the most relevant factors to be included in the model to perform hypothesis testing in order to find a parsimonious model using a multivariate regression analysis model.

4.1. Data, method and sample

The data was collected for the year 2018, using the sources presented in Table 10.

Table 10 - Data and sources

Data set	Source
P_{2018} - island population in 2018	DZS (2020). Croatian Bureau of Statistics.
P_{2008} - island population in 2008	DZS (2009). Croatian Bureau of Statistics.
Y – Total island GDP in HRK (Croatian kuna)	DZS (2020). Croatian Bureau of Statistics, Croatian Ministry of Finance. (2020), author's calculations
X_1 – War influence - estimated war mortality rate, in persons / 1.000 of island population (permille)	DZS (2003). Croatian Bureau of Statistics, Zivic D. (2005) Institute of social sciences Ivo Pilar & author's calculations
X_2 – Average distance of an island the administration centre in km	DGU (2020). Croatian State Geodetic Administration & DZS (2020). Croatian Bureau of Statistics & author's calculations
X_3 – Employment in tourism (% of the population)	DZS (2020). Croatian Bureau of Statistics.
X_4 – Population change in a period of last 10 years in %	Authors calculations using P_{2018} and P_{2008}
X_5 – City surtax as average island surtax in %	Croatian Ministry of Finance. (2020) & author's calculations
X_6 – Island size in km^2	DGU (2020). Croatian State Geodetic Administration

This thesis aims to get more insight into the previously relatively unexplored topic by using secondary data, which involves the use of previously collected existing data for current research (Saunders & Thornhill, 2011).

Secondary data is also used to help construct a theoretical framework in exploring the topic, and to narrow down the factors affecting Croatian islands' growth through a literature

review. In addition, the OECD recommendations on BEPS provide a framework for the potential of implementing the preferential tax regimes on Croatian islands.

The multivariate analysis used to test the hypotheses uses the quantitative method to analyse secondary data collected by Croatian institutions about the Croatian islands in combination with the calculations of the author.

The dataset used, presented in Table 11, included a sample of 40 Croatian islands out of the population of a total of 47 inhabited islands in Croatia, sampled by convenience sampling. The sampling method was to include only those islands for which all data presented was available. Most of the data was provided by the Croatian Statistics Bureau, abbreviated as DZS. Other data was provided by the Ministry of Finance and the State Geodetic Administration.

The secondary data contained variables sorted by city, town or village and was grouped, calculated and/or estimated for each island by the author. Population data was collected for the years 2008 and 2018 to measure the change in a period of 10 years.

War influence was estimated as the rate of mortality for each island, calculated using the method by Zivic D. (2005), expressed in persons per every thousand people of the population of the island (permille). The average distance was calculated as an average distance of the inhabited cities, towns and villages from their respective administrative centre; the county capital.

Employment in tourism and island size were used as provided. City surtax was calculated an average value of the city surtax for all the cities, towns and villages of a given island. All islands but one had the same percentage of surtax on the whole island.

Table 11 - Island dataset

ISLAND	Y - Total island GDP (HRK)	X_1 – War influence	X_2 –Average distance the administration centre (km)	X_3 – Employment in tourism (%)	X4 – Population change (%)	X_5 – City surtax (%)	X_6 – Island size (km2)
Biševo	996.926,92	0,000053	67,65	20	-21,05	5	5,8
Drvenik mali	5.467.932,13	0,000149	29,11	32,18	61,11	8	3,3
Drvenik veli	10.233.869,19	0,000465	24	34,67	-10,71	8	12,07
Dugi otok	130.429.657,41	0,018718	19,73	30,33	-6,6	12	114,44
Hvar	749.223.850,65	0,030702	42,55	41	-0,23	0	299,66
Ilovik	8.804.022,75	0,000279	96,44	28,24	-18,27	0	5,2
Ist	13.915.257,84	0,002134	43,15	28,02	-9,9	12	9,7
Iž	47.331.298,31	0,005884	13	29,59	10,41	12	17,59
Kaprije	14.727.934,04	0,002111	15,72	32,28	32,17	6	6,97
Koločep	14.168.215,91	0,000004	7,46	28,83	-44,56	10	2,4
Kornati	1.646.721,83	0,000095	256,22	78,95	171,43	8	32,3
Krapanj	11.205.308,08	0,003499	6,92	31,18	-28,27	6	0,36
Lastovo	77.357.467,44	0,01137	99,11	33,21	-5,15	10	46,87
Lopud	22.250.034,93	0,003663	12,43	30,12	-7,43	10	4,63
Male Srakane	219.585,48	0,000005	85,6	0	0	0	0,61
Mljet	100.236.972,16	0,015128	48,63	32,72	-2,07	10	100,41
Molat	14.863.543,75	0,002187	32,48	28,43	-4,83	12	22,82
Olib	11.162.684,49	0,001553	45,26	27,14	-4,76	12	26,09
Ošljak	2i.149.058,36	0,00019	4,9	6,9	61,11	12	0,33
Pag	629.938.555,15	0,019872	31,41	35,73	7,87	0	284,56
Pašman	193.384.495,61	0,028637	22,38	30,51	4,94	12	63,34
Premuda	4.586.845,48	0,000613	53,66	23,44	10,34	12	9,25
Prvić	26.630.875,51	0,006688	8,44	33,75	-11,04	0	2,37
Rab	1.011.609.830,77	0,002546	64,81	27,99	883,97	0	90,84
Rava	9.240.362,90	0,001035	16,85	24,79	19,39	12	3,6
Rivanj	2.167.069,28	0,000232	16,01	9,68	40,91	12	4,4
Sestrunj	3.803.014,11	0,000507	19,32	18,75	0	12	11,1
Silba	21.540.682,52	0,002799	51,46	29,11	10,19	12	14,98
Šipan	37.968.761,83	0,005937	20,09	31,5	-3,9	10	15,81
Šolta	105.273.850,80	0,00409	17,5	37	14,94	0	58,98
Susak	15.931.819,48	0,000505	91,71	27,81	-19,68	0	3,8
Ugljan	11.862.176,56	0,065303	6,69	26,49	-97,56	12	50,21
Unije	9.772.640,97	0,000242	78,2	29,55	-2,22	0	16,92
Vele Srakane	343.742,21	0,000021	83,22	0	-62,5	0	1,15
Vir	221.812.382,02	0,016986	22,19	30,5	86,57	12	22,38
Vis	215.070.642,36	0,010002	56,61	38,06	-4,76	3	90,26
Vrgada	18.326.763,71	0,002556	36,96	28,51	2,89	12	3,7
Žirje	6.832.358,43	0,001831	20,93	29,13	-16,94	6	15,06
Zlarin	21.295.903,85	0,004075	6,15	32,75	2,9	0	8,19
Zverinac	3.164.862,81	0,000507	25,71	18,6	-10,42	12	4,2

4.2. Method: Multivariate linear regression

The main goal of multiple linear regression is to try to identify and model a relationship between two or more independent variables and a dependent variable by fitting a linear function to observed. There are certain assumptions that this model contains:

- Linearity: The relationship between the variables X and the mean of the variable Y should be linear.
- Independence: The variables presented should be independent of each other.
- Homoscedasticity: The variance of residual should be equal for each value X.
- Normality: The variable Y is normally distributed for any fixed value of X.

Firstly, it is considered that one variable affects another in simple linear regression.

This can be shown in the following way: Y = f (X), where Y is a dependent variable, that changes due to a function of one independent variable X. Because the assumption is that this function is linear, it can be denoted in the following way: $Y = \beta_0 + \beta_1 X + \varepsilon$,

The beta β_0 is a constant, and β_1 is the slope by which X affects Y. A constant shows the value that the variable Y would be equal to if X was equal to zero.

It is assumed that betas are real numbers, $\beta_0, \beta_1 \in R$. Also, the constant ε is assumed as an error that may be present in the function, because of simplifying the relationship. By regression analysis, the best function that describes the relationship between the two variables is identified.

The relationship is analysed using different methods like scatter plots and measures of association, such as correlation coefficients. The Pearson correlation coefficient is used for quantitative nominal variables and the Spearman's coefficient for quantitative ordinal variables.

This thesis assumes a multivariate linear model. Therefore, the theoretical function of the growth of a region is established:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_n X_n + \varepsilon,}$$

The dependent variable Y is economic growth, determined by several independent variables X, that affect the dependent variable Y by their slope β. The constant β_0 is a constant, well as the random variable ε, that is present as an error in the function.

By using multiple linear regression, more independent variables are integrated into the function, denoted by $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_{4..} + \beta_5X_5 + \beta_6X_6 + \beta_nX_n + \varepsilon$, as it was shown previously. In this model, there are multiple independent variables X, that affect the dependent variable by their slope β, as well as the random variable ε - a constant that is present as an error in the function. The ε error is assumed to have a normal distribution with a mean 0 and a standard deviation σ; $\varepsilon \sim N(0,\sigma)$.

The value of the random variable is expected ε to be equal to zero; $E(\varepsilon) = 0$. Also, ε must be a constant and have constant variance. Otherwise, there would be a heteroscedasticity problem. Ultimately, ε errors should be independent of each other; otherwise, there would be an autocorrelation problem. All these problems are tested for with statistical software.

The method of least squares is used to estimate the regression model. This method helps minimize the sum of squares of the errors. The error, in this case, is the sum of the squared differences between observed data and data estimated by the model, denoted by SSE: $SSE = \sum e_i^2 = \sum (y_i - \hat{y}_i)^2$

The total sum of squares (SST) is equal to the sum of the sum squares explained by regression (SSR) and the sum of squares of errors that do not explain the data (SSE). This is denoted as follows:

$$SSE = SSR + SST = \sum (y_i - y_\mu)^2 = \sum (\hat{y}_i - y_\mu)^2 - \sum (y_i - \hat{y}_i)^2$$

The coefficient of determination R^2, which is equal to SSR divided by SST, is calculated next. It shows a number between 0 and 1 that explains how much of the data is explained by the regression model. This method also has some additional assumptions about the predictor variables. It is assumed that independent, or predictor variables are linearly independent of each other because if this were not true, there would be a multicollinearity problem. This problem is also tested for.

Ultimately, this regression method assumes that all the data is reliable and true and that it has a roughly equal role in determining the regression coefficients and in influencing conclusions. The confidence level assumed is 95%, which indicates a 95% certainty and a significance level of 0,05.

4.3. Theoretical function of growth

The literature review helped identify some of the most relevant factors that influence the growth of a Croatian island. One factor from each category was chosen for the hypothesis testing, considering the scarce data available. Therefore, the proposed function of the growth of a region is established:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon,}$$

where variable Y is economic growth, determined by several independent variables X, that affect the dependent variable Y by their slope β. The constant β_0 is a constant, well as the random variable ε, that is present as an error in the function. The variables are identified in Table 12 as follows:

Table 12 - Variables of growth

Variable	Details
Y	Economic growth as total GDP of the island in Croatian kuna (HRK)
β0	A constant
X1	Historical factor – war influence – mortality (permille)
X2	Political factor - centralization - average distance from the administration centre (km)
X3	Economic factor – employment in tourism (%)
X4	Demographic factor - population change in a period of last 10 years (%)
X5	Fiscal factor - city surtax (%)
X6	Island specific factor – size (km^2)
ε	Constant of error

The multivariate analysis aims to find a parsimonious model which describes Y, through the aforementioned function in a significant way, including the residual analysis with all its assumptions, by including only the independent variables X that are relevant and significant.

5. Results

The descriptive statistics of the dataset of the sample of 40 islands used are presented in Table 13.

Table 13 – Descriptive statistics of the variables used

	N	Minimum	Maximum	Mean	Std. Deviation
Total island GDP in HRK	40	219585,48	1011609831,00	95173699,46	215090126,09
War influence	40	,000004	,065303	,00682933	,012268613
Average distance of an island from administration centre in km	40	4,90	256,22	42,5165	44,32621
Employment in tourism (% of population)	40	,00	78,95	28,4360	12,25682
Population change in a period of the last 10 years	40	-97,56	883,97	25,7073	145,12343
City surtax in %	40	,00	12,00	7,3000	5,07987
Island size in km2	40	,33	299,66	37,1663	66,42796
Valid N (listwise)	40				

The island with the lowest Total GDP has a value of 219,585.48 HRK, and the most developed island has a GDP of 1,011,609,831.00 HRK. On average, the islands have a mean of 95,173,699.46 HRK, which is low in the whole range and the standard deviation of 215,090,126.09 HRK shows that this variable is highly dispersed and volatile and that most islands have a rather low total GDP.

The variable War influence has a minimum value of 0.0000040, and a maximum value of 0.0653030, with a mean of 0.0068293 and a standard deviation of 0.0122686. The influence of War is not strong on the islands, as they are located far from where the critical war zone areas were present. Some were closer to those zones and were more affected by war. The mean indicates that every 6th person of every 1000 people of the population was affected by war, on average, and the standard deviation indicates high volatility.

Certain islands are much closer to their administration than others, as the variable Average distance of an island from the administration centre has a minimum value of 4.90 km and a maximum value of 256.22 km. The mean of 42.52 km and a standard deviation of 44.33 km show that on average the islands are pretty far from their administration centre.

The variable Employment in tourism, expressed as a percentage of the population has a minimum value of 0.00 %, and a maximum value of 78.95 %, showing that some islands have little or no population employed in tourism, whereas others are much more dependent on it. The mean with a mean of 28.44 %, and a standard deviation of 12.26 %, indicate that on average, more than a fourth of the population of an island is employed in tourism. The standard deviation is lower than the mean, and data is more concentrated around the mean.

The variable Population change in a period of last 10 years shows a minimum value of -97.56 % and a maximum value of 883.97 %, with a mean of 25.71% and a standard deviation of 145.12 %. The mean shows that on average, the islands have seen an increase of population, but the high variability of the standard deviation indicates that many islands have seen a high increase and others have seen a loss in population in the last 10 years.

City tax is spread in 7 categories. The city tax on the islands ranges from 0.00 % to a maximum of 12.00 %. The mean value is 7.30 %, with a standard deviation of 5.08 %, but the median is 10.00 %, showing that most islands are taxed with a 10.00 % city tax rate.

The variable Island size in km^2 shows a minimum value of 0.33 km^2, and a maximum of 299.66 km^2. The average island has a size of 37.17 km^2, with a high standard deviation of 66.43 km^2, which shows high dispersion of data.

Table 14 - Correlation of ordinal variable X_5 with Y

			Total island GDP in HRK (Croatian kuna)	City surtax in %
Spearman's rho	Total island GDP in HRK (Croatian kuna)	Correlation Coefficient	1,000	-,089
		Sig. (2-tailed)	.	,586
		N	40	40
	City surtax in % (X_5)	Correlation Coefficient	-,089	1,000
		Sig. (2-tailed)	,586	.
		N	40	40

Table 15 - Correlation of nominal variables

		Total island GDP in HRK (Croatian kuna)	War influence	Average distance of an island from administration centre in km	Employment in tourism (% of population)	Population change in a period of last 10 years	Island size in km2
Total island GDP in HRK (Croatian kuna)	Pearson Correlation	1	,299	,012	,184	,673**	,772**
	Sig. (2-tailed)		,061	,942	,257	,000	,000
	N	40	40	40	40	40	40
War influence	Pearson Correlation	,299	1	-,193	,148	-,139	,511**
	Sig. (2-tailed)	,061		,233	,363	,392	,001
	N	40	40	40	40	40	40
Average distance of an island from administration centre in km	Pearson Correlation	,012	-,193	1	,430**	,201	,011
	Sig. (2-tailed)	,942	,233		,006	,214	,947
	N	40	40	40	40	40	40
Employment in tourism (% of population)	Pearson Correlation	,184	,148	,430**	1	,126	,302
	Sig. (2-tailed)	,257	,363	,006		,439	,058
	N	40	40	40	40	40	40
Population change in a period of last 10 years	Pearson Correlation	,673**	-,139	,201	,126	1	,123
	Sig. (2-tailed)	,000	,392	,214	,439		,450
	N	40	40	40	40	40	40
Island size in km2	Pearson Correlation	,772**	,511**	,011	,302	,123	1
	Sig. (2-tailed)	,000	,001	,947	,058	,450	
	N	40	40	40	40	40	40
**. Correlation is significant at the 0,05 level (2-tailed).							

The correlation coefficients were calculated in order to show how each variable X affects the variable Y, to support the linearity assumption. Scatter plots of these relationships are presented in the Appendix.

The Spearman's correlation coefficient was calculated for the ordinal variable City surtax, and the Pearson correlation coefficient was calculated for all other, nominal variables. Table 14 shows an insignificant negative linear coefficient of -0.089 of the variable City Surtax in relationship to GDP.

Table 15 summarizes the Pearson coefficient for nominal variables in their relationship with Y. All variables X generally show a linear trend with the Pearson coefficient, some of which are considered significant for the population.

Population change and Island size express the highest correlation Pearson coefficient with the values of 0,673 and 0,772, respectively, in their relationship with GDP. Both relationships are considered significant at the 0,05 level. War influence, the Average distance from the administration centre, and Employment in tourism all have slightly lower correlations with GDP, with the values of 0,299, 0,012 and 0,184 respectively. The linear relationship of those variables with Y is not significant at the 0,05 level.

Table 16 - Variables entered and removed – Backward approach

Mode	Variables Entered	Variables Removed	Method
1	Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %, Employment in tourism (% of population), War influence[b]	.	Enter
2	.	War influence	Backward (criterion: Probability of F-to-remove >= ,100).
3	.	Employment in tourism (% of population)	Backward (criterion: Probability of F-to-remove >= ,100).
a. Dependent Variable: Total island GDP in HRK (Croatian kuna)			
b. All requested variables entered.			

Overall, all variables X have some sort of a linear relationship with Y. To find the parsimonious model the backward approach was used, where the software SPSS included all independent variables and removed the insignificant variables one by one, as shown in

Table 16. Other methods, like the forward and the stepwise approach, led to the same result, and their result is shown in the appendix; Table 22. In all cases, the software excluded the variables X_1 (War influence) and X_3 (Employment in tourism) as they have proven to be insignificant to the model.

In addition, the software helped calculate the coefficient of determination R2, which indicates how well the generated model fits the data. The coefficient shows how strong the linear relationship is, where 1 indicates a perfect model fit and 0 indicates a total absence of a relationship between the variables X and the dependent variable Y (Total island GDP) in the model provided. The coefficient R^2 is interpreted as the proportion of the total variability in the response variable Y that can be accounted by the set of predictor variables X. Table 17 demonstrates a summary of the models as variables were removed one by one.

Table 17 - Model Summary – Backward approach

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,980[a]	,960	,953	46632258,38965
2	,979[b]	,959	,953	46535344,13717
3	,978[c]	,957	,952	47048094,29182
a. Predictors: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %, Employment in tourism (% of population), War influence				
b. Predictors: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %, Employment in tourism (% of population)				
c. Predictors: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %				

The adjusted coefficient of determination (adjusted R Square) is related to R^2, it is used for judging the goodness of fit, and it enables models with a different number of variables to be compared between each other.

The first two models explain roughly the same amount of variation of variable Y as model number 3, but they include additional variables, which cause data distortion. Therefore, model number 3 best describes the movement of variable Y and has an adjusted coefficient of determination R^2 of 0,952. The model is denoted as follows:

$$\mathbf{Y = \beta_0 + \beta_2 X_2 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon}$$

The predictors of the model remain as follows: The Constant β_0, Island size in km2 ($\mathbf{X_2}$), Average distance of an island from administration centre in km ($\mathbf{X_4}$), Population change in a period of last 10 years ($\mathbf{X_5}$), and City surtax in % ($\mathbf{X_6}$). Table 18 represents the summary of removed variables, which are War Influence and Employment in tourism as they were partially correlated, and their contribution to the model was insignificant at the 0,05 level.

Table 18 – Correlation of Removed Variables

Model		Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
						Tolerance
2	War influence	,041b	,927	,361	,159	,628
3	War influence	,036c	,818	,419	,139	,632
	Employment in tourism (% of population)	-,055c	-1,332	,192	-,223	,702
a. Dependent Variable: Total island GDP in HRK (Croatian kuna)						
b. Predictors in the Model: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %, Employment in tourism (% of population)						
c. Predictors in the Model: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %						

A test used to examine whether significant variables were included in the model is the F-test, which includes the ANOVA method, as an analysis of the variance (ANOVA). The F-test is a hypothesis test that assumes a null hypothesis that states that the model includes no explanatory variables that are relevant in influencing Y: $\mathbf{H_0: \beta_2 = \beta_4 = \beta_5 = \beta_6 = 0,}$

and an alternative one that states that at least one beta is not equal to zero, meaning that at least one variable explains the Y variable in some way significantly: $\mathbf{H_1: ∃i : \beta i \neq 0.}$

ANOVA is shown in Table 19, demonstrating that the F value is the highest in the third model, where F = 195,03 than the other two models. In addition, the p-value given in the last column of the table is lower than 0,05 for all three models. Therefore, the null hypothesis is rejected, as model number 3 contains at least one variable X that explains the variable Y by its beta, at the 0,05-significance level.

Table 19- ANOVA and the Parsimonious Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1732526003128948480,000	6	288754333854824770,000	132,787	,000[b]
	Residual	71760728243132080,000	33	2174567522519154,000		
	Total	1804286731372080640,000	39			
2	Regression	1730658430737275900,000	5	346131686147455170,000	159,836	,000[c]
	Residual	73628300634804832,000	34	2165538253964848,000		
	Total	1804286731372080640,000	39			
3	Regression	1726813420194874110,000	4	431703355048718530,000	195,030	,000[d]
	Residual	77473311177206592,000	35	2213523176491617,000		
	Total	1804286731372080640,000	39			
a. Dependent Variable: Total island GDP in HRK (Croatian kuna)						
b. Predictors: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %, Employment in tourism (% of population), War influence						
c. Predictors: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %, Employment in tourism (% of population)						
d. Predictors: (Constant), Island size in km2, Average distance of an island from administration centre in km, Population change in a period of last 10 years, City surtax in %						

The coefficients of the parsimonious model (number 3) are represented in Table 20.

Table 20 - Model Coefficients - parsimonious model

Model		Unstandardized Coefficients		Stand. Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
3	(Constant)	52342349,530	18609002,222		2,813	,008		
	Average distance of an island from administration centre in km	-684028,869	178183,204	-,141	-3,839	,000	,910	1,099
	Population change in a period of last 10 years	889749,018	53717,557	,600	16,563	,000	,934	1,071
	City surtax in %	-4327478,410	1609640,662	-,102	-2,688	,011	,849	1,178
	Island size in km^2	2169480,517	119144,723	,670	18,209	,000	,906	1,104
a. Dependent Variable: Total island GDP in HRK								

By including replacing the betas and incorporating the results into the model function, the model of growth of a Croatian island is presented as Y, which shows the Total GDP of the island in HRK and is denoted as follows:

$$Y = 52342349{,}530 - 684028{,}869(X_2) + 889749{,}018(X_4) - 4327478{,}410(X_5) + 2169480{,}517(X_6) + \boldsymbol{\varepsilon}$$

The number 52342349,53 is present in the function as a constant. Variable $\mathbf{X_2}$ represents the Average distance of an island from administration centre in km, variable $\mathbf{X_4}$ represents the Population change in a period of last ten years, variable $\mathbf{X_5}$ represents City surtax in %, and variable $\mathbf{X_6}$ represents Island size in km^2. All variables X affect the variable Y with their own constant slope.

Residual analysis was used to test the assumptions of the model.

The first assumption states that the ε error is assumed to have a normal distribution with a mean 0 and a standard deviation σ; $\varepsilon \sim N(0,\sigma)$. The software SPSS was used to find standardized values of residuals and perform a non-parametric Kolmogorov-Smirnov test to see if this assumption is valid.

The hypotheses are denoted follows:

$\mathbf{H_0: \varepsilon \sim N(0,\sigma)}$ **vs** $\mathbf{H_1: \varepsilon \notin N(0,\sigma)}$

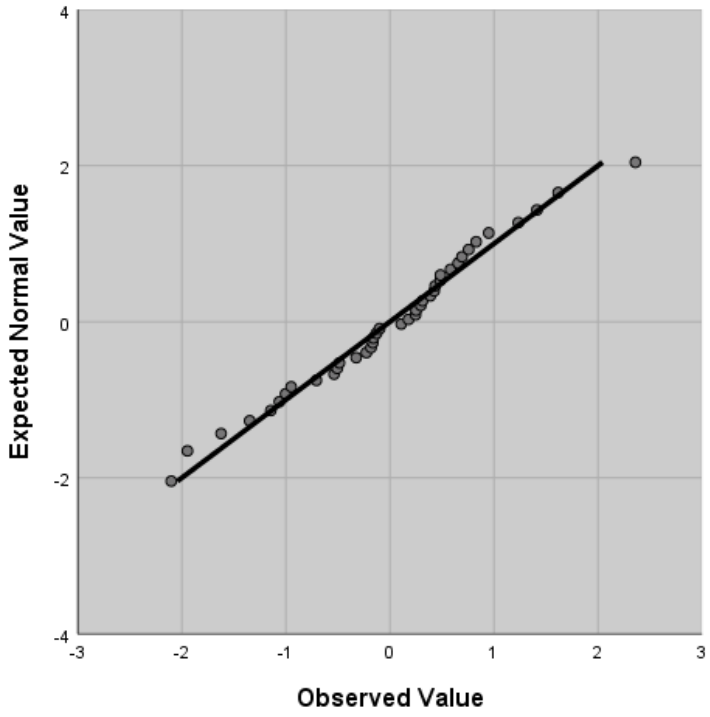
Table 21 - One-Sample Kolmogorov-Smirnov Test

		Standardized Residual
N		40
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,94733093
Most Extreme Differences	Absolute	,081
	Positive	,066
	Negative	-,081
Test Statistic		,081
Asymp. Sig. (2-tailed)		,200[c,d]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		
d. This is a lower bound of the true significance.		

The test showed that there was not enough evidence to reject the null hypothesis. Therefore, it was retained, as the test showed that the error ε has a normal distribution with a standard deviation of 0,9473 and a mean of 0.

At the 5% significance level, the p-value of 0.200 is higher than the significance level so it was concluded that the first assumption was supported and true, therefore the following expression is true: **$\varepsilon \sim N(0,\sigma)$.**

Figure 13 - Normal Q-Q plot of Standardized residuals



A Q-Q plot of standardized residual values is presented in Figure 13 to support the same assumption. The graph shows a trend of a normal distribution of residual error values because the values are concentrated around the diagonal line. There is one residual value that is far from the majority of other residuals on the right side, and the other two on the left side of the graph, which propose the existence of extreme influencing observations.

The second assumption of multivariate regression presumes that the expected value of the random variable ε has to be equal to zero; E (ε) = 0. This was provided as a given, by the use of the least square method, and this assumption is also satisfied. In addition, the ANOVA test showed a mean of residuals which was equal to zero.

The third and fourth assumptions state that ε must be constant and have constant variance. Otherwise, there would be a heteroscedasticity problem, and that the errors must be independent of each other otherwise there would be an autocorrelation problem.

The variance inflation factor (VIF) was used to test that variables included are independent of each other. The VIF shows how strong the multicollinearity is in the least-

squares' regression analysis. It gives an index value that represents how much the variance of our regression coefficient estimate increases due to collinearity. The VIF value of all X variables presented in Table 18 is smaller than 3. Therefore, there is no multicollinearity problem in this model.

Figure 14 - Standardized predicted values vs standardized residual values.

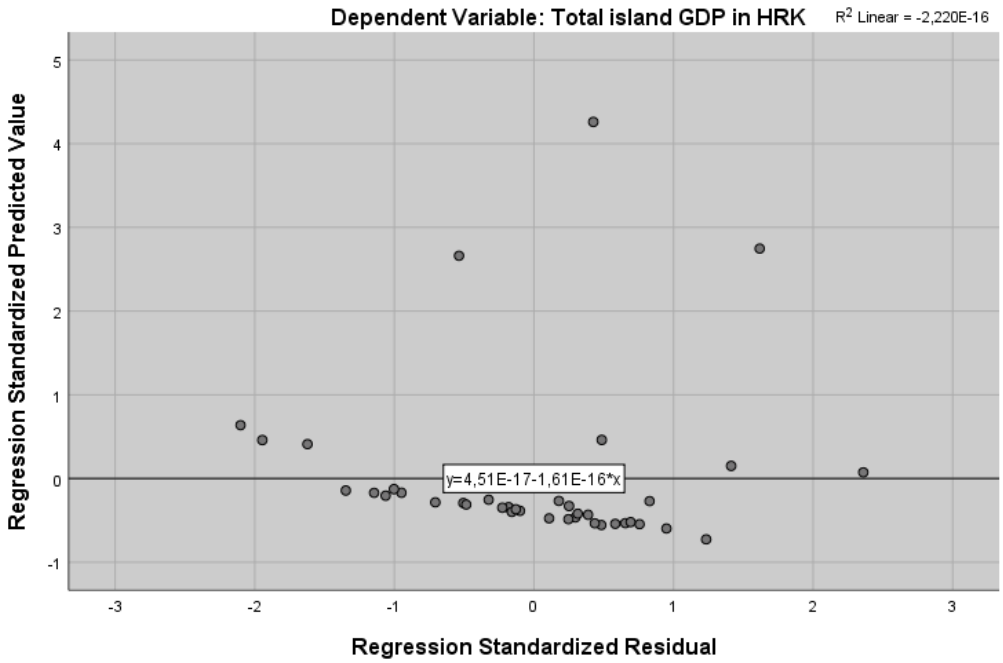


Figure 14 presents a scatter plot of standardized predicted and standardized residual values of the regression model. The graph does not show a perfectly random distribution due to some outlier values. Even though most residuals are very close to the axes, there some residuals that are very far from the majority of other residuals. Thus, there is an indication of the existence of extreme influencing observations, as previously stated in the description of the Q-Q plot.

The extreme outliers of the function were the islands of Rab, Pag and Hvar. The island of Pag had a much higher predicted than the observed value, whereas Rab and Hvar had much lower predicted than observed values. Furthermore, some islands had negative predicted values.

More than the presence of heteroscedasticity, the presence of outliers in Figure 14 indicates existence of other variables which were not included in the model that predict the growth of a Croatian island in a significant way, which should have been considered in the function.

6. Conclusion and Discussion

The challenges found through literature analysis of Croatia are numerous, and even though the islands count for a small percentage of Croatia's population, their potential for attracting investment and developing tourism, in a service-based economy, is often shadowed.

The Regression Model, which is a key result of this thesis, showed that certain variables tested for, have a significant effect on growth and development of a Croatian island, in terms of total GDP of the island, within the dataset of the sample provided. These are: Average distance of an island from the administration centre, Population change in a period of last 10 years, City surtax and Island size. The four variables are internal factors, and the results support the endogenous theory presented by Aghion, Comin, Howitt, & Tecu (2016). Centralization as the average distance of an island from administration centre being a significant factor supports the works of Dorotić (2016) and Marinković (2016) implying that Croatian islands are in need of new policies and decentralization. Small islands have lower GDP, just as presented in the book by Dias, Patuleia, & de Brito, (2019). Human capital is defined through population change, and therefore the theories of Pradhan et al. (2018) and Teixeira & Queirós (2016) are partially supported by this research, as the lack of labour or negative population would impact growth. Ultimately, the surtax was found to be a significant variable, as indicated by Makun (2018), implying that fiscal policies imposed can significantly impact the growth of an island and that preferential tax regimes could potentially be a tool for increasing GDP growth on Croatian islands.

The residual analysis showed some negative predicted values. In addition, some outliers were identified, for which predicted values were much higher or lower than the observed values. Even though the sample was small, it contained most of the statistical population of the islands; 40 out of the total of 47 inhabited Croatian islands. Therefore, these outliers needn't be dismissed, as they are an important part of the sample. Instead, they provide further insight. Specifically, the islands of Rab, Pag and Hvar had very big differences in predicted values. Specific traits of these islands shine the light on the variables that could be included in the model.

The island of Pag had a higher predicted than the observed value. This island is famous for its festivals and nightlife, often called the Croatian Ibiza. Most of the festivals are

organized by foreign companies, so the revenue does not stay on the island. Even though tourists contribute somewhat to the GDP of the island, the dominance of short-spanned festival tourism on the island often leaves little room for other types of tourism that would generate GDP. In addition, the increased prices caused by festival attendees' short presence on the island often result in decreased spending of other tourists in the summer season. The trait of this island indicates that price levels, which impact demand, should be considered in the model as certain "limits of growth". As discussed in the theoretical framework and indicated by Jones (2016), economic growth is slowed with a decrease in demand.

Also, the island of Pag experiences strong winds in the summer season that often jeopardize vacations. As recognized by Greiner, Semmler, & Gong (2016) and McCracken (2006), this outlier points to a "limits to growth" category of variables that could also be included in the model, which could also be geographical, or even the impact of natural resources, as presented by Chirwa & Odhiambo (2016)

The islands of Hvar and Rab had much lower predicted than observed values. Rab is a very peaceful island which has a ferry connection with the mainland which takes less than 10 minutes, and the ferry boat goes two times an hour. It is one of the shortest ferry trips one can take in Croatia, along with the one with the island of Pašman, which is the shortest, that also showed a somewhat lower predicted value. The shortness of travel to these islands indicates that variables like travel time or distance from the mainland by transport should be included in the model. As indicated by Aparicio, Urbano, & Audretsch (2016), availability of good infrastructure, increases labour productivity, implying the theory is to be considered in the model.

The island of Hvar is one of the oldest Croatian tourist destinations, with its old town that predates most European towns. It is the most visited island in Croatia, and there is a very high demand for it. Using the Keynesian outlook, a variable that includes demand, such as tourist visits could be included in predicting the growth of an island.

The GDP growth stalls on Croatian islands, as Croatia tends to have high barriers to entry for the market of its most significant potential; tourism. This thesis identified these barriers that Croatia and its islands face, showing that tax factors, among others, have a significant influence on economic growth. The thesis provided an international scope and used statistical methods to analyse island data in order to provide insight into the possible solutions for fostering that growth.

The multivariate regression analysis performed brought understanding about the potential of growth of Croatian islands. From the all the variables tested for, Average distance of an island from administration centre, Population change in a period of last 10 years, City surtax and Island size are significant in influencing the Total GDP of a Croatian island. Therefore, to foster growth on the islands, Croatia could address these in the following ways using preferential tax regimes:

1. Island size is unchangeable, but better connections and infrastructure could be established to ensure lower costs for islands of small size. Preferential tax regimes could attract businesses, and bring income to these zones that would ultimately increase the fiscal budget through VAT, help develop the islands and their infrastructure.
2. In order to reduce the distance from the administration centre, work could be done on decentralization by decreasing the distance of administration centres for islanders. The amount of LGUs could be reduced using technology and brought nearer to the islands to manage the islands in a more efficient and transparent way. Introducing preferential tax regimes would introduce higher control of these areas, bringing more transparency and increasing the fiscal budget.
3. Demographics play an important part in islands, where the older population is growing. Incentives could be provided to ensure population growth. Through the implementation of preferential tax regimes, many young entrepreneurs who carry out their business online would move to the islands, employ local workers, pay their taxes there and develop these small regions. Croatia already introduced the digital nomad visa in 2020 that comes into force in 2021 (Total Croatia News, 2020). By adding any sort of preferential regime, it would make the islands more attractive for digital nomads.
4. Ultimately, results show that fiscal tax reductions in terms of preferential tax regimes such as reductions in the city tax could also be a useful tool for increasing GDP of the island. Adhering to the criteria of the BEPS Project, Croatia has the potential to increase GDP growth and develop every Croatian island. For example, if a preferential regime was to be established as an exemption of the city tax, islands would experience GDP growth. The model deducted in this thesis shows that the city tax affects the total GDP of an island by a negative slope of 4.327.478,41 HRK. For islands with an existing city tax of 10,00 %, the predicted

GDP increase would be that of 43.274.784 HRK, which is roughly half of the average GDP of a Croatian island. On the other hand, VAT revenues would increase. In fact, 27 out of 40 islands used in the study experienced a lower GDP than 43 million HRK, and only 7 of them have a 0 % city tax rate. Furthermore, the islands of Pag, Hvar and Rab have a zero-tax rate, experience the highest total GDP in the sample, and their collective GDP accounts for more than two times the total GDP of all other islands combined. The dataset and the model presented in the thesis support the potential of reducing the city tax as a tool for increasing GDP growth of Croatian islands, where preferential regimes of non-IP type could be used.

The preferential tax regimes that could be established would apply to islands which are small regions and are not developed. The regimes would have to be intended for the creation of employment and the attraction of tangible investment, not IP or mobile income. There would be criteria that apply, such as the substance criteria by demonstrating the creation of tangibles, such as assets, new jobs, and investments before receiving the tax incentives. The fiscalization already in place would enable the country to collect necessary information for the FHTP to be able to assess the impact of the regime.

Certain preferential regimes, recognized as not harmful, in terms of the tax holiday, tax exemption guarantees and income tax reductions have already been established and are present in Greece, the Canary Islands, the Cayman Islands, the Falkland Islands, The British Virgin Islands and Wallis and Futuna Islands. Their purpose serves to increase the economic growth of the islands. Croatia, however, has never implemented any preferential regimes. (Council of the European Union, 2019).

Overall, the results show the potential of preferential tax regimes as one of the tools for increasing growth on Croatian islands and pave the way for further research showing the possibility of perfecting the model of growth of Croatian islands through a consideration of additional variables and data.

Even though the research provides deep insight into the potential of establishing preferential regimes in Croatia, the analyses performed are limited by the assumptions of the method and data reliability. The data available was limited, and certain estimations and calculations had to be made. Apart from estimated values, calculations of the Statistical Bureau and the author are not immune to error. The literature review performed throughout

the thesis is limited to the accuracy of data, its scarcity, and its availability at the time of writing. The method used contains certain simplifications which are prone to error.

The results obtained showed a high R^2. Due to the fact that R^2 was calculated from a sample, there is always a risk of a biased estimate. The model is not too complex, but there is always a risk of an overfit model, given that the R-squared value is very high. Sometimes an overfit regression model is good at predicting the random patterns in a sample, but it is not so effective for another sample or the whole population. Regression coefficients pose the risk of the distortion rather than showing the real relationships between the variables in the population. Also, there could be a risk caused by the form of a variable, mostly Population change, as it is calculated from two variables of the population of a ten-year period, which singularly are certainly directly correlated with the Total GDP of an island.

Internal validity or credibility is limited to the variables included in the model and the method used, as indications were found that other variables should be included. External validity or transferability is limited to only to the context of Croatian islands.

The nature of this research is exploratory, so the reliability is limited to the ever-changing context of the islands and the problems discussed in the thesis. Due to convenience sampling, and the high R squared value, there is no guarantee that a replication of the study would yield consistency, accuracy, and predictability of findings.

The recommendations for further research include the use of fewer estimates, a bigger sample, and a range of different variables from the factor categories defined in the thesis. This thesis has shown that existing data can be used in estimating the total GDP of Croatian islands. However, more accurate and less estimated data would render the model more reliable. By including the whole population of all 47 inhabited Croatian islands, the model could be generalized to the whole population. Investigating other variables with multivariate regression or using completely different methods like factor analysis, could prove useful in reducing bias risks, enabling the discovery of new phenomena about the growth of Croatian islands and bringing new insight tools like preferential tax regimes, for uncovering the great potential of these beautiful places.

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8. Appendix

Table 22 - Potentially harmful regimes

Potentially Harmful Regimes Identified in 2000			
1	Australia	Offshore Banking Units	Not Harmful
2	Belgium	Co-ordination Centres	Abolished
3	Belgium	Ruling on Informal Capital	Amended
4	Belgium	Ruling on Foreign Sales Corporation Activities	Abolished
5	Belgium	Distribution Centres	Amended
6	Belgium	Service Centres	Amended
7	Canada	International Banking Centres	Not Harmful
8	Canada	International Shipping	Not Harmful
9	Canada	Non-resident Owned Investment Corporations	Abolished
10	Finland	Åland Captive Insurance Regime	Abolished
11	France	Headquarters Regime	Amended
12	France	Logistics Centres	Amended
13	Germany	Monitoring and Co-ordinating Offices	Amended
14	Germany	International Shipping	Not Harmful
15	Greece	Shipping Offices	Not Harmful
16	Greece	Shipping Regime (Law 27/75)	Not Harmful
17	Greece	Offices of Foreign Companies	Abolished
18	Greece	Mutual Funds/Portfolio Investment Companies	Not Harmful
19	Hungary	Venture Capital Companies	Not Harmful
20	Hungary	Preferential Regime for Companies Operating Abroad	Abolished
21	Iceland	International Trading Companies	Abolished
22	Italy	Trieste Financial Services and Insurance Centre	Abolished
23	Italy	International Shipping	Not Harmful
24	Ireland	International Financial Services Centre	Abolished
25	Ireland	Shannon Airport Zone	Abolished
26	Korea	Offshore Activities of Foreign Exchange Banks	Abolished
27	Luxembourg	Provisions for Fluctuations in Re-insurance Companies	Amended
28	Luxembourg	Finance Branch	Amended
29	Luxembourg	Management companies managing only one mutual fund (1929 Holding Companies)	Harmful[8]
30	Netherlands	Risk Reserves for International Group Financing	Abolished
31	Netherlands	Intra-group Finance Activities	Amended
32	Netherlands	Finance Branch	Amended
33	Netherlands	International Shipping	Not Harmful
34	Netherlands	Cost-plus/Re-sale Minus Ruling	Amended
35	Netherlands	Ruling on Informal Capital	Amended
36	Netherlands	Ruling on Foreign Sales Corporation Activities	Abolished
37	Norway	International Shipping	Not Harmful
38	Portugal	Madeira International Business Centre	Abolished
39	Portugal	International Shipping Register of Madeira	Not Harmful
40	Portugal	External Branches in the Madeira International Business Centre	Abolished
41	Spain	Basque Country and Navarra Co-ordination Centres	Abolished
42	Sweden	Foreign Non-Life Insurance Companies	Abolished
43	Switzerland	50/50 Practice	Abolished
44	Switzerland	Service Companies	Amended
45	Turkey	Istanbul Offshore Banking Regime	Abolished
46	Turkey	Turkish Free Zones	Not Harmful
47	United States	Foreign Sales Corporation	Abolished

Source: OECD (2006), p.5

Table 23 - Model Summary – Stepwise/Forward approach

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,772[a]	,595	,585	138587181,85330
2	,967[b]	,935	,931	56423041,13609
3	,974[c]	,948	,944	50955434,92642
4	,978[d]	,957	,952	47048094,29182
a. Predictors: (Constant), Island size in km2				
b. Predictors: (Constant), Island size in km2, Population change in a period of last 10 years				
c. Predictors: (Constant), Island size in km2, Population change in a period of last 10 years, Average distance of an island from administration center in km				
d. Predictors: (Constant), Island size in km2, Population change in a period of last 10 years, Average distance of an island from administration center in km, City surtax in %				

Figure 15 - War influence vs GDP

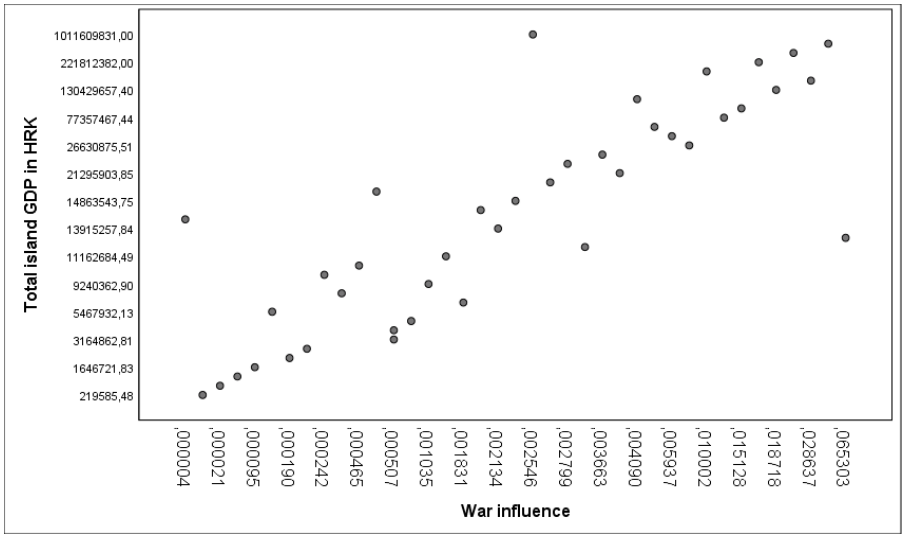

Figure 16 - Distance from administration vs GDP

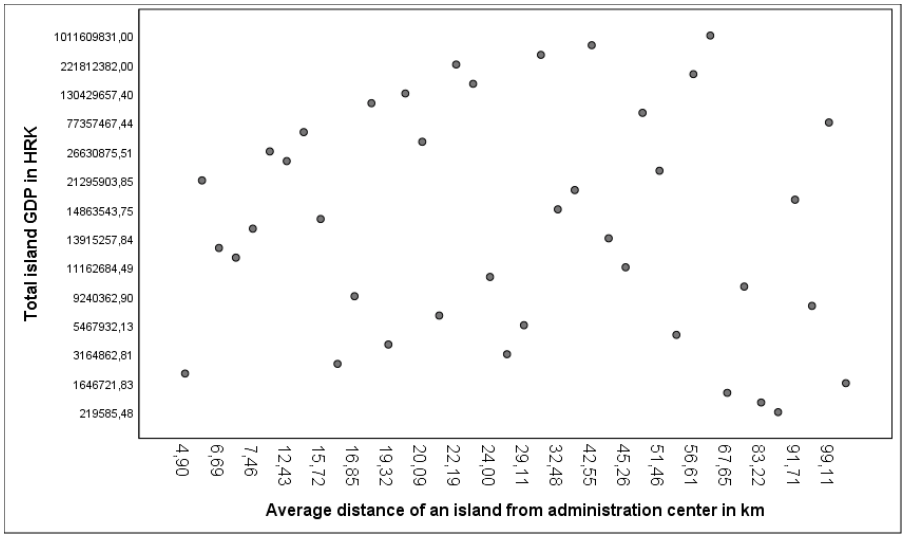

Figure 17 - Employment in tourism vs GDP

Figure 18 - Population change vs GDP

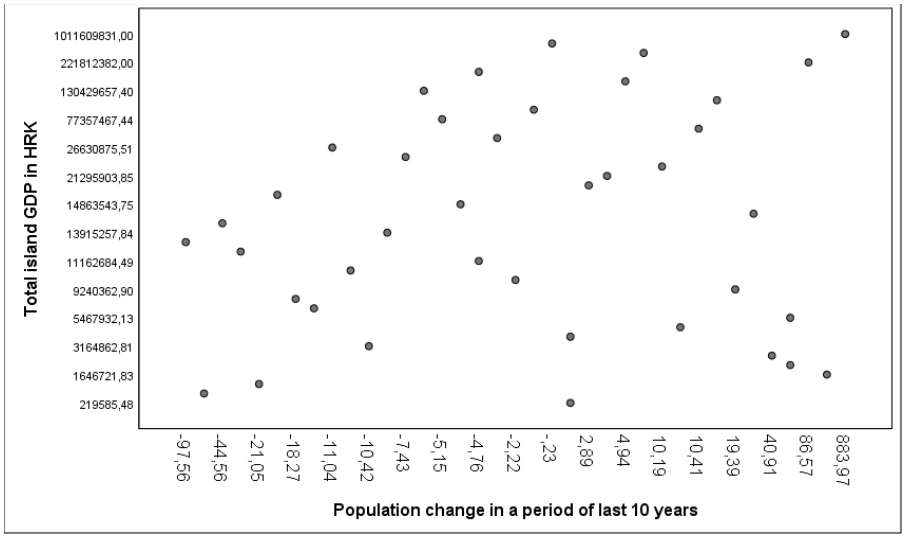

Figure 19 - City surtax vs GDP

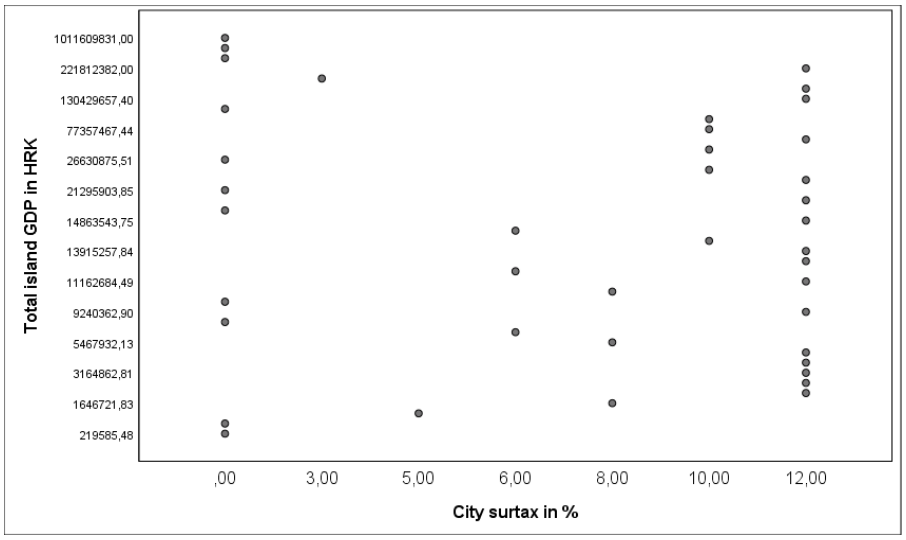

Figure 20 - Island size vs GDP