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**TAXATION AND ECONOMIC GROWTH: EMPIRICAL
EVIDENCE FROM BALKAN COUNTRIES**

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Declaration

I hereby declare that I am the author of the master's thesis: Taxation and Economic Growth: Empirical evidence from Balkan countries, under the supervision of Jean François Brun, PhD. All the sources that I have used have been identified and referenced in the thesis.

Olomouc, 28/05/2019

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The aim of this project is to develop a better understanding on how direct, indirect and other taxes affect economic growth in Balkan countries. Furthermore, the research will try to explore what are the main challenges in taxation system of these given economies, the obstacles the tax administration is facing and the actions that have been taken to improve these issues. The analysis will use quantitative methods and will be based on secondary annual data that is available on statistical tables of national and international organizations.

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Abstract

The transition process in the Balkans carried a significant amount of changes in the political, economic and institutional context. Fiscal reforms were one of the main changes which have been implemented during a short period of time, especially in the Western Balkan region. The aim of this paper is to develop a better understanding of how direct and indirect taxes affect economic growth in selected Balkan countries for the years 2000-2016. In order to investigate the relationship between taxes and growth, I apply panel data estimation techniques by using secondary data obtained from a few sources. The results of this project suggest that individual income taxes do not have a significant effect on growth, while corporate income tax shows a positive and significant effect only when adding new control variables or addressing a potential endogeneity issue in the model. Additionally, taxes on property show a strong negative impact on growth. Most importantly, taxes on international trade are positively correlated with economic growth which indicates the fact that most of the governments in the Balkans are still dependent on revenues that are coming from trade-related taxes. Overall, these countries should reconsider the potential challenges that can come with trade liberalization and should try to focus more on managing taxes more efficiently, in order to positively affect economic growth in the future.

Keywords: Economic growth, Taxes, Panel data, Balkan countries

TABLE OF CONTENTS

1. INTRODUCTION	1
2. LITERATURE REVIEW	2
2.1 Theoretical literature review.....	2
2.2 Empirical literature review	4
3. ECONOMIC GROWTH IN THE BALKANS.....	6
4. TAXATION TRENDS AND PERCEPTION OF TAXES IN THE BALKANS	9
4.1 Taxation trends over the past few years in the Balkan countries.....	10
4.2 Direct taxes in the Balkans	13
4.2.1 Personal Income Tax.....	13
4.2.2 Corporate Income Tax.....	14
4.2.3 Property Tax	15
4.3 Indirect taxes in the Balkans	15
4.3.1 Value Added Tax	15
4.3.2 Excise Duties	16
4.3.3 Customs duties.....	16
4.4 Perception of taxes in Balkan countries.....	17
5. DATA AND METHODOLOGY	19
5.1 Data and definition of variables	19
5.1.1 Dependent variable.....	20
5.1.2 Independent variables	21
5.1.3 Control variables	22
5.2 Methodology	24
6. RESULTS, LIMITATIONS AND FUTURE RESEARCH.....	25
6.1 Empirical results	25
6.2 Robustness Check	33
6.2.1 Excluding countries who are part of the Eurozone	33
6.2.2 Additional control variables.....	33
6.2.3 Using lagged values of tax variables.....	34
6.2.4 Testing for endogeneity.....	34
6.3 Limitations and future research	37
7. CONCLUSION.....	39
REFERENCES	41

List of tables

Table 1. Government and tax revenue in the Balkans as a share of GDP (%), 2014	11
Table 2. Description of variables	20
Table 3. Descriptive statistics	26
Table 4. Correlations (covariances) of variables.....	27
Table 5. Hausman test results	27
Table 6. Modified Wald test for groupwise heteroskedasticity	28
Table 7. Wooldridge test	28
Table 8. Regression results using fixed effect model	29
Table 9. Description of instruments	35
Table 10. Regression results for different models	36

List of figures

Figure 1. The average rate of GDP per capita growth in the Balkans (2000-2016).....	8
Figure 2. Direct and indirect taxes in the Balkans as a share of GDP (%), 2012	12
Figure 3. The share of direct and indirect taxes divided by income group.....	13
Figure 4. CIT rates in the Balkans, 2018	14

LIST OF ACRONYMS & ABBREVIATIONS

BiH	Bosnia and Herzegovina
CIT	Corporate Income Tax
EU	European Union
FDI	Foreign Direct Investment
GRD	Government Revenue Dataset
IMF	International Monetary Fund
OECD	Organization for Economic Cooperation and Development
OLS	Ordinary Least Square
PIT	Personal Income Tax
SASS	Statistics and Survey Section
TGS	Taxes on Goods and Services
TIT	Taxes on International Trade
TP	Taxes on Property
UCC	Union Customs Code
UNODC	United Nations Office on Drugs and Crime
VAT	Value Added Tax
WB	Western Balkans

1. INTRODUCTION

The 1990s was a decade of major economic and political changes in the Balkan region. Over the past few years and along with these changes, governments have been facing many challenges when trying to achieve economic growth and stability in their countries. These changes were accompanied by fiscal reforms, which have been seen as a way to increase additional funds for public expenditure. In general, taxation has an important role in a country not only because it can increase the revenue for government spending, but can also affect economic growth, ensure price stability, redistribute income, address different environmental issues and change human behavior. Moreover, Fjeldstad (2013) emphasizes the importance of taxes in development, considering the fact that collecting domestic revenue can be the key step for many developing economies in order to reduce aid dependency and strengthen the state capacities. Kmezic (2015) states that Western Balkan countries (WB) in particular, continue to be aid dependent and developing economies. Imports continue to surpass exports and these costs are largely being covered by external financial flows in the region.

In order to have better and effective tax systems, countries should consider how different type of taxes affect the growth rate of the economy. There have been international ongoing debates about whether taxes have a positive or a negative impact on economic growth, in different developed and developing countries because of the fact that it depends on numerous factors, macroeconomic policies, and different country characteristics. Many empirical studies (Arnold, 2008; Johansson & Heady & Arnold & Brys & Vartia, 2008; Macek, 2014; Easterly & Rebelo, 1993; Furceri & Karras, 2009; Xing, 2011) analyzed this issue in both developed and developing countries, however the results remain ambiguous as there is no clear consensus on the exact relationship between taxation and growth.

The aim of this project is to develop a better understanding of how direct and indirect taxes affect economic growth in selected Balkan countries for the years 2000-2016. In order to conduct empirical research, I will apply panel data estimation techniques by using secondary data obtained from a few sources. Moreover, I will perform different robustness checks to my model by adding new variables to the data, using lagged values of tax variables, testing for endogeneity by performing an IV/GMM estimation of the fixed-effects, and creating a smaller sample with countries who are not part of the euro area in the Balkans.

The Balkan region covers the country of Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Serbia, Kosovo, Montenegro, North Macedonia, Slovenia, Greece, Romania and the European part of Turkey (Krieger, 2012).¹ In this study, I exclude Turkey since geographically only 3% of the country is considered to be in the Balkan region. I also fail to include Kosovo, because of the lack of data that exists in the official statistics for the years 2000-2016.

The rest of the paper is structured as follows: section 2 will provide the theoretical and empirical literature review. Section 3 will provide a short review of the economic growth in the Balkans starting from the 1990s until the beginning of 2019. Section 4 will show an overview of the taxation system and trends in Balkan countries and a brief reflection on the individuals' perceptions towards the tax system in specific countries. Section 5 will provide the specification of the data and the research methodology used, while section 6 will be focused on the descriptive statistics of the variables, the regressions and the interpretation of the results. Section 7 will provide a conclusion of the study.

2. LITERATURE REVIEW

In this section, I will shortly review the existing theoretical and empirical literature on the relationship and impact of taxes on economic growth, by also including the latest observations on which type of taxes have the most detrimental or favorable effect on the growth rate of the economy.

2.1 Theoretical literature review

There have been many theoretical studies about the effect of taxes on the growth rates of the economy. Considering that this paper is focused more on the empirical evidence of the study we will briefly mention some theories starting with the neoclassical growth theory. The theory, developed by Solow (1956) and Swan (1956) shows how the growth rate of the economy does not depend on tax policies but it is built upon exogenous values of technical progress. Nevertheless, they can have a small effect during the transition to a steady-state economy. In this case, it was

¹ From this group of Balkan countries, Bulgaria, Croatia, Slovenia, Greece, and Romania are member states of the European Union. Albania, North Macedonia, Montenegro, Serbia, and Turkey are candidate countries while Bosnia & Herzegovina and Kosovo are potential candidates.

considered that governments who charge higher tax rates will have slower growth rates in the long run, because of the interruption they cause in technological progress. The Solow theory is not supported by many first-hand observations, considering that we have not seen much convergence of countries toward the same growth rates when they maintain comparable technologies as it was predicted by these theories. As an example, the empirical work done by Lee, Pesaran & Smith (1997) for 102 countries with a time period of 29 years explains how these countries are rather showing divergence and not convergence, as it was suggested in the neoclassical theory. Having in mind these issues, we see authors that have created other theories which try to explain growth rates that do not necessarily depend on exogenous variables as technological change. These variables are innovation, knowledge and human capital. According to a paper by Arrau (1989), if human capital positively affects the growth rate, then high-income taxes will have an unfavorable effect on growth. Households will invest less because they carry a higher level of the tax burden.

Furthermore, Barro (1990) uses the endogenous growth model by incorporating productive public spending. In this analysis, he created an inverted U shape which explains that tax policies have a non-distortionary effect on growth only up to a certain tax threshold, though after a specific point, a distortionary impact is caused by taxes that can rather harm or slow down growth. He also concluded that growth can be different depending on the use of different types of public expenditure.

Additionally, King & Rebelo (1990) worked on an endogenous growth model, where they argue that public policies have a major effect on the growth rates of the economy. Tax rates can not only stop growth but can also make countries go backward for very long periods. According to the authors, this is true for both open and closed economies. Generally, the endogenous growth theories have received criticism when it comes to difficulties in measuring the variables and proving the assumptions in recent empirical research (see Krugman, 2013).

In the past decades, we have seen that some theories are focusing more on the limitations to economic growth, especially from an environmental perspective. For instance, “The limits to growth: The 30-year update” by Meadows, Randers & Meadows (2004), explains how the growth rates of GDP are decreasing in many regions and countries because they are constrained by the

environmental degradation and the unsustainable use of natural resources. Tax structures need to be improved in order to have an effect on producers or consumers behavior. As an example, authors mention the enforcement of logging taxes which could be used to show the real cost of using wood products for industrial purposes (Meadows, Randers, & Meadows, 2004).

Furthermore, they argue that without the support of policymakers and individuals who want the change to really happen, we will continue to see an increasing number of economic, environmental and social costs that will cause global crises, inequality, and conflicts in the future. As in other theories, this research received a lot of criticism especially by other economists, policymakers, and business people. The main arguments state that the authors underestimate the progress of technology and the solutions that it can bring to the environmental problems while others believe that there are few assumptions made and poor methodology used which do not follow the current reality.

Considering these studies, we can say that neoclassical growth theory has been the most popular theory throughout the years, especially because it has put together different determinants of growth and has given the scientists the chance to test the economic theory and improve knowledge, although in reality part of the growth was always left unexplained.

2.2 Empirical literature review

There have been many empirical analyses on the relationship between taxation and economic growth and the results are rather ambiguous for different samples of countries and different time periods. On one side of the coin, taxes can have a positive effect of growth rates of the economy because they can increase the government expenditure for better transport, environment, education or other services while on the other side, it can have a negative impact on the economy because of the distortion effect they carry when these taxes are increased. There are many papers (Arnold, 2008; Canavire-Bacarreza, Martinez-Vazquez & Vulovic, 2013; Barro, 1991; Easterly & Rebelo, 1993; Hakim, Bujang & Ahmad, 2013; Johansson, Heady, Arnold, Brys & Vartia, 2008; Furceri & Karras, 2009; Koester & Kormendi, 1989; Lee & Gordon, 2005; Macek, 2014; Gemell, Kneller & Sanz, 2008; Xing, 2011) that have tried to explain more about the relationship between growth rates and taxes whereas some focus more on the level of taxes while others on the structure of taxes.

Gemell, Kneller & Sanz, (2008) came into conclusion that fiscal policies do have an impact on growth, but the effect is rather small and short term, depending if the changes in fiscal policies are persistent in the long run. Another paper by Bakija & Narasimhan (2015) found no evidence of a long term impact of taxes on growth or real GDP per capita. As a consequence, the effect of taxation on the economic growth might be temporary or short term, which however it contradicts with many research papers that have studied the relationship between these variables.

While this may be true, Macek (2014) focused on the effect of individual taxes on economic growth in OECD countries during the years of 2000-2011, where he found that these type of taxes show a negative relationship with the product growth rate. However, no significant effect was found when it comes to taxes on the property. In order to increase economic growth, OECD member states should reduce corporate and personal income tax and that can be compensated by a rise in indirect taxes, which in this case are considered to be less detrimental for growth. Another study done on OECD countries recommended that corporate and personal income taxes have the worst effect on economic growth, while immovable property tax has the least negative effect on growth (OECD, 2010).

Easterly & Rebelo (1993) argue that the link between taxes and growth is rather weak. When it comes to the distinction between rich and poor countries, they emphasize that developing countries are more affected by indirect taxes such as trade taxes, and income taxes can be essential for developed countries. Furceri & Karras (2009), study the effect of how higher taxes affect growth but also which type of taxes have a negative/positive impact on GDP. They concluded that an increase in tax rates by 1% of GDP, will have a decrease in GDP per capita to -1%. Furthermore, most of the direct and indirect taxes show negative impacts on GDP per capita.

Another empirical analysis done by Arnold (2008) for 21 OECD economies draws conclusions over the link of the growth rates and type of taxes included. To be more specific, this author states that corporate taxes have the most detrimental effect on GDP per capita, compared to property taxes which have the most positive effect. Johansson, Heady, Arnold, Brys & Vartia, (2008) find similar results with recurrent taxes on immovable property being the most favorable for growth although in practice they are not very attractive since in general, they carry more difficulties for government agencies when it comes to giving a fair value on properties to determine taxation.

On the contrary, an interesting paper written by Xing (2011) does not give any significant confirmation that some types of taxes are more important to growth than others. The author does not find that taxes on income show better results than taxes on consumption or that there is a significant difference between corporate income taxes and personal income taxes. Additionally, by using Pooled Mean Group estimator the property tax can have a better effect on the level of income per capita but this is true only for a smaller group of countries in the sample.

As a summary, most of the empirical papers that I found are focused on developed countries, especially OECD and US states, and much less on developing economies. The reason can be either the lack of data, the size of the informal economy and tax-to-GDP ratio which is lower in developing countries. However, these papers allow us to understand that we need to be more attentive when we give final interpretations of what is better for growth, and what is not. The results can be different when using other methodology, different samples, or adding more information to the data.

Overall, there is empirical confirmation that different tax regimes can have a significant impact on the growth rates of GDP. While this might be true, there is a lack of sufficient evidence on how different types of taxes affect economic growth in the Balkan countries. Therefore, in the sections below I will try to address this issue in depth and try to answer this question by contributing more on the current empirical evidence that exists on the relationship of taxes and economic growth.

3. ECONOMIC GROWTH IN THE BALKANS

The period of the 1990s brought many crucial economic, political and social consequences in the Balkan region today. Since the collapse of Yugoslavia and the end of communist rule in Eastern Europe in general, many Balkan countries struggle with achieving stable growth rates in their economy. The economic reforms which were implemented during the transition of countries to market economies combined with unstable political conditions not only carried a significant drop in real GDP, but also deteriorated the rates of employment, health status, and education. All these effects were much worse in former Yugoslavian countries compared to other Central and Eastern European states (Uvalic, 2012).

Throughout the 1990s, Balkan countries like Greece, Romania, and Bulgaria experienced very low growth rates combined with other difficulties in its macroeconomic aggregates too. Their recovery started from 1996-1997 in Greece and Bulgaria as a consequence of incorporating some changes in the macroeconomic policies and structural reforms, while according to Constantin, Goschin & Danciu, (2011) the growth in Romania started to improve only from the beginning of 2000, when the country opened the accession negotiations with the EU.

Over and above that, during the 1990s the Western Balkan countries received a huge amount of aid coming from EU and other developed countries as well, which was mainly including humanitarian and emergency programs while later the focus of aid shifted towards the sectors of energy, transport, water and other parts of the economy.

Unfortunately, there are many cases where aid was used for personal interests of the government officials instead of trying to improve the transition process and the economic growth in different countries, especially because of the lack of transparency, poor capacities of the institutions, and bad management. Moreover, authors argue that some countries have created a dependency on international aid (at one point aid accounted for 10% of GDP in Kosovo) which creates difficulties for creating sustainable economic growth in the Balkans (see Idris & Strachan, 2017). Therefore it is recommended that developing countries should focus more on domestic resources, especially taxes (Touray, 2014).

Starting from 2000, Balkan countries experienced better growth rates of GDP, including the countries who were far behind, namely the Western Balkans. High growth rates came as a result of the increased presence of international finance in the region (Bartlett & Prica, 2012). There was an expansion of foreign banks in the Balkans, who gave a huge amount of loans to households and businesses which at the same time allowed for an increase in the number of goods and services imported. Unfortunately, this situation created current account deficits because the value of exports did not increase as much as the value of imports. Since the deficit was being dependent on foreign inflows, the financial crisis of 2008 affected the Balkans by slowing down the growth of the economy and also reducing the FDI and remittances (see Bartlett and Prica, 2012). As an example, the economic activity after the crisis was reduced by around 7 percent in Croatia, 5.7 percent in Montenegro and 3.5 percent in Serbia (Berthomieu, Cingolani & Ri, 2016).

However, it is important to mention that international institutions such as IMF have been continuously supporting many Balkan countries during the period of the financial crisis. In 2009, IMF agreed to give the country of Romania around \$17.1 billion loan in order to improve financial stability and fiscal consolidation, \$4 billion loan to Serbia and around \$1.1 billion (Stand By Agreement) to Bosnia and Herzegovina.

Therefore, the negative impact of the financial crisis could have been much more significant, without the international interventions in the Balkan region. On the other hand, the majority of the Balkan countries were also affected by the Eurozone recession of 2012, which indicates the strong dependence of these countries on the financial and economic situation of the EU countries. After 2012, the growth rates of Balkan countries have remained at 2.5 on average (Figure 1).

Figure 1. The average rate of GDP per capita growth in the Balkans (2000-2016)



Source: Author's calculations based on the World Bank data

On the other hand, the situation in the Western Balkans continues to be worse than in other countries when we consider the social, economic and institutional challenges in the system today. One of the explanations for the poor economic performance is the absence of strong competitiveness in the Balkans. Most of the countries cannot cover the huge amount of imports because of their export structures and weak production which creates challenges for them to access new markets and compete with other economies.

As World Bank (2019) concluded, this region is continuously dealing with internal and external risks, including the trade and geopolitical disputes that are slowing down the implementation process of many different reforms.

In the past years, the situation somehow recovered, but this is due to a decrease in imports because of the reduced demand as a consequence of the global crisis rather than an improvement in export production. Moreover, the increased share of unemployed people because of the skill mismatches and weak education systems (Sondergaard, Murthi, Abu-Ghaida, Bodewig & Rutkowski, 2011), poverty and informal sector have also put many constraints in creating sustainable economic development in the region. For instance, unemployment among young adults continues to be one of the biggest challenges for Bosnia & Herzegovina, and Greece too. Around 60% of young adults are considered to be unemployed in Bosnia and Herzegovina (Mrsic, 2018). Similarly, the youth unemployment rate in Greece was 58.3 percent in 2013, according to OECD (2019).

On the other side, a World Bank report (2017) shows that around 33.9 percent of the population lives under poverty rate in Albania (calculated as US\$ 5.5/day, 2011 PPP for the year of 2016). These countries could perform significantly better if they focus more on trying to support the quality of institutions, good governance, and a better human capital base that would help them to catch up with other developed countries in Europe (Murgasova, Ilahi, Miniane, Scott, & Hollar, 2015). Lastly, advancing reforms in the areas such as labor taxation (e.g. by lowering the burden of taxes on low-income workers) would be crucial not only for economic growth but also for the creation of jobs, especially in Western Balkan countries (World Bank, 2019). More specifically, there is a general need to improve fiscal policies by making them more progressive when it comes to personal income tax (e.g. by introducing higher rates for high incomes) in order to achieve higher standards of living that are comparable to the ones of the EU countries (World Bank, 2019).

4. TAXATION TRENDS AND PERCEPTION OF TAXES IN THE BALKANS

Here I will provide a short review of the major trends and development of the tax systems for different Balkan countries by looking at specific types of taxes and their share on the overall GDP. I will also provide a brief reflection on the individuals' perceptions towards tax system in their country and what can we do to improve people's perceptions towards taxation, which on one hand, can have a significant effect on raising tax revenues as a share of a country's total GDP.

4.1 Taxation trends over the past few years in the Balkan countries

The transition process in the Balkans carried a significant amount of changes in the political, economic and institutional context. Fiscal reforms were one of the main changes which have been implemented during a short period of time, especially in the WB. These countries have tried to develop a fiscal system that is comparable to the one of EU countries by incorporating and improving the main types of taxes: Personal Income Tax, Corporate Income Tax, and VAT, especially because of the motivation of some of these countries to join the European Union in the future.

To be more specific, in the past years there has been a tendency to reduce the corporate income tax in order to attract FDI and make businesses more competitive while, on the other hand, increase the indirect taxes such as VAT. Bulgaria, Croatia, Greece, Romania, and Slovenia have already built similar tax systems since they joined the EU years ago, while other countries face more difficulties in creating a better system especially if we consider their current administrative and institutional capabilities.

On the other hand, tax revenues are the largest source of government revenue in the Balkan countries (Table 1). They have increased during the period 2000-2016 for most of the countries except for Macedonia, Slovenia, Croatia and Romania where there has been a slight decrease of 1-3% of total tax revenues. At the same time, in almost all countries there have been a decline in tax revenues during the financial crisis of 2007-2008 and then again at the end of 2012. Having said that, the income from tax revenues is mainly composed of indirect taxes which are much greater than the revenues coming from direct taxation in all Balkan countries (Figure 2). It starts with Bosnia and Herzegovina where indirect taxes account for 20.0 (% of GDP) to Romania with 13.0 (% of GDP).

In contrast, direct taxes are the lowest in Bosnia and Herzegovina and Kosovo (3.0% of GDP). This distribution is not only true for the Balkan countries, but also for all low and middle-income countries (Figure 3) who have been dependent on indirect taxes whereas for high-income economies the division between these types of taxes is more or less 50:50 (McNabb & Boucher, 2014).

Table 1. Government and tax revenue in the Balkans as a share of GDP (%), 2014

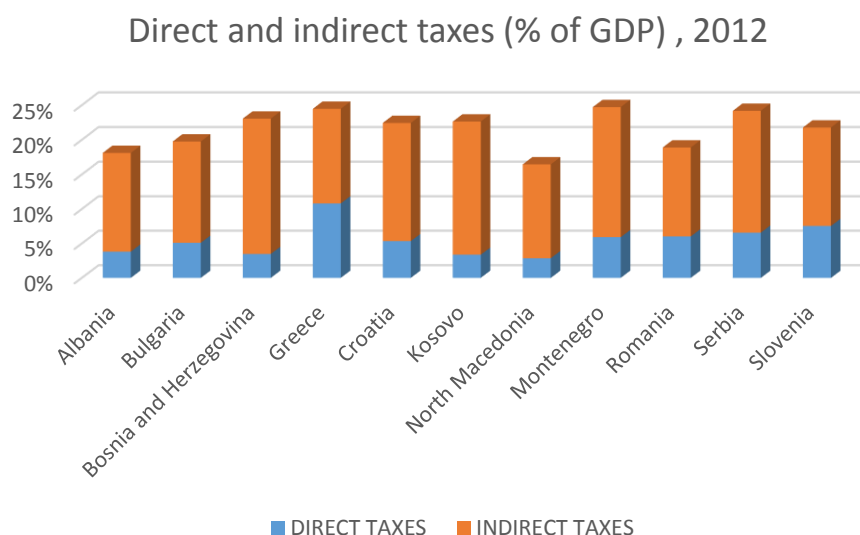
	Government revenue	Tax revenue
Albania	26.2	23.9
Bosnia and Herzegovina	43.8	37.7
Bulgaria	36.6	28.2
Croatia	40.2	35.5
Greece	46.8	35.8
Kosovo	23.9	20.8
North Macedonia	27.5	24.5
Montenegro	43.3	39.0
Romania	33.5	27.6
Serbia	39.7	35.0
Slovenia	44.3	36.1

Source: ICTD / UNU-WIDER Government Revenue Dataset 2018. Note: Tax revenue includes social contributions. The values for Romania are for the year of 2012.

These results are also confirmed for member states of the European Union where the mean tax burden of the states is balanced between indirect taxes (13.0%), direct taxes (12.6 %) but also social contributions (13.2%) (Stoilova, 2017). However, indirect taxes still play a major role in the budget of the new members of the EU, compared to the oldest members who rely more on direct taxation (Hutsebaut, 2014). One of the reasons why direct taxes are lower in the Balkans could be that there are a lot of people who work in the informal sector and who don't have a legal contract which remains one of the biggest challenges for the economic development of many countries in the Balkans.

To collect direct taxes can be more demanding and costly for the tax administration. If we consider their limited capacities and resources, other taxes such as import tariffs can be easily collected by customs authorities at the border of each country although in the recent period countries are shifting their focus towards consumption taxes (VAT), as it is suggested by international institutions such as IMF or the World Bank.

Figure 2. Direct and indirect taxes in the Balkans as a share of GDP (%), 2012

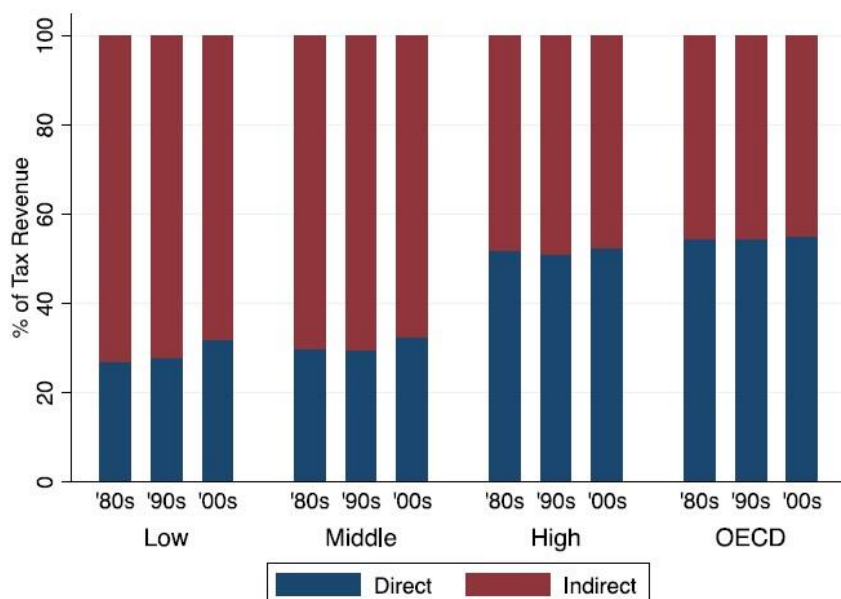


Source: ICTD / UNU-WIDER Government Revenue Dataset 2018 and author's calculations.

According to a paper by Besley & Persson (2014), in many different countries the size of the shadow economy is negatively linked to income taxation. If the government of a country who has a large share of shadow economy attempts to increase taxes, the revenue coming from income taxation might fall significantly as a result of this increase. Moreover, taking into account that these businesses or owners do not have formal bookkeeping where they record all transactions according to accounting standards, it is very difficult to determine their actual revenue in order to tax them. Thus, the last paper suggests that it is very important to have an increase in formality, and government action can have an impact during this process because economic growth alone may not bring a higher level of formality in the country.

Another important reason for the low share of direct taxes in the Balkans could be that aid flows continue to be high (mainly for the Western Balkan countries) in this geographical designation and therefore these countries have a lower motivation to work towards better taxation systems and citizens as well are less likely to change their behavior towards tax compliance or increase their willingness to pay income taxes in their region. As a consequence, we have a low share of taxes (as a percentage of GDP).

Figure 3. The share of direct and indirect taxes divided by income group²



Source: McNabb & Boucher (2014)

4.2 Direct taxes in the Balkans

4.2.1 Personal Income Tax

Personal income tax rates remain low in most of the countries of the Balkan region. Bosnia & Herzegovina, Bulgaria, Romania, and Serbia apply flat rate taxes of 10% while Albania, Kosovo, Greece, Slovenia, Croatia, Montenegro, and North Macedonia use progressive income taxes starting from 4% in Kosovo to the highest values of 50% in Slovenia and 40% in Croatia.

North Macedonia has introduced the progressive tax rate in January 2019, in replacement of a 10% flat rate tax for the last 10 years. The reform was suggested in order to create more fairness in the system and to reduce the differences between the incomes of different people. On the other hand, Kosovo is considered to have progressive taxation even though the highest income tax rate possible is only 10%. In general, the Western Balkans have the lowest personal income taxes in Europe (Arandarenko & Vukojevic, 2008). Today, most of the countries are trying to move towards progressive taxation although the progress has been slow, either because of the limited

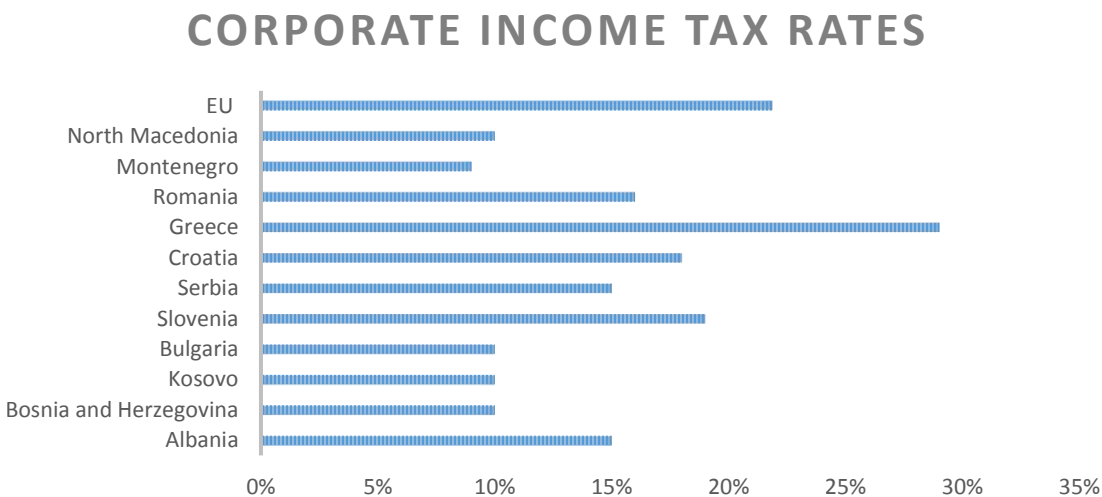
² The classification of countries of the world is according to GDP per capita levels in historic purchasing power parity (PPP) by adding a specific category for OECD economies (McNabb & Boucher, 2014).

capacities of different government institutions or because of the advantages of using a simple system with flat tax regime.

4.2.2 Corporate Income Tax

In order to attract investments and capital, most of the countries in the Balkans apply very low CIT rates. According to a report by Tax Foundation organization (see Bun, 2018), the Western Balkans offer one of the lowest rates in the world. It starts with Montenegro which has the lowest CIT rate of only 9% whereas other countries offer similar rates of 10%-16% except for Croatia, and Slovenia who have slightly higher rates than others in the region (Figure 4). Over and above that, Greece applies the highest rate (29%) which surpasses the EU average of 21%, and that unquestionably imposes a greater tax burden on companies and businesses by making them less competitive than others.

Figure 4. CIT rates in the Balkans, 2018



Source: National government data and author's calculations.

On the contrary, many countries have different tax incentives for particular sectors or specific activities in order to encourage individuals and small businesses to create positive benefits for the economy. As an example, Croatia reduces the CIT rate to 12% for entrepreneurs with a profit lower than 400,000 EUR a year. Slovenia offers a 0% tax rate for corporates or businesses whose activity is somehow associated with investments in pension funds and plans. Lastly, North Macedonia applies the 0% rate to companies who reinvest their profit in their business activities.

4.2.3 Property Tax

The property tax is enforced on real estate properties which is mostly managed by local governments or municipalities of different countries in the Balkans. In the WB they were introduced in the last period with very low rates starting from 0.1% to 1%, depending on the type of the real estate or the location of the property. However, in some particular cases e.g. in Montenegro, the rate of the property tax can go up to 5.5% for hotels that are built in the coastal regions (KPMG, 2016). On the other hand, the introduction of the property tax by the government in Croatia in the past years has caused many debates and discussions on how much this would increase the total tax burden for citizens in general. This process motivated a full tax repeal, after many unfavorable reactions and pressure from the citizens and the civic society in Croatia.

Except for Greece, all Balkan countries accumulate revenues from property taxation which account for less than 1% of GDP. In general, property taxes should be administered more efficiently by including higher rates that would reflect the size and the actual use (e.g. commercial or residential) of different properties, which could also lead to a higher share of revenues in GDP.

4.3 Indirect taxes in the Balkans

4.3.1 Value Added Tax

VAT it's one of the most important type of taxes in the Balkans, considering that it carries the highest share of the total tax revenues ranging between 20% to 30% (Alla, 2017). The standard rate varies between 17%-24% which is similar to the rates of the EU countries. In general, we observe the trend of an increasing rate over the years since it is the highest earning tax not only in the Balkans but in the EU countries too. According to a paper by Holzner (2016) these increases of the VAT rate followed by reductions in social contributions can positively have an effect on growth of the exports and import substitution especially in the Western Balkans, considering that most of the countries do not have the choice of a currency devaluation because of the phenomenon of the euroisation. Besides that, almost all governments offer reduced rates for certain food products, pharmaceuticals, tourism related services or other except Bosnia and Herzegovina which doesn't apply any lower rate than 17%. However, in Bosnia and Herzegovina there is a value-added tax exemption for particular services including educational, insurance and financial services.

4.3.2 Excise Duties

Excise duty, known also as a sin tax is a tax applied on specific goods which are considered bad, unhealthy or harmful to the society such as tobacco and alcohol products. Around 2% of GDP in the WB comes only from tobacco excise profits which is higher than the EU average (approximately 0.55% of GDP). This could be due to the fact that the Balkans have the highest smoking prevalence in Europe where around 30-40% of adults smoke (Crosby, 2017). During the past few years, all Western Balkan countries have been constantly increasing the rates of excise duties which has been considered as a way of reducing the demand for these products, especially for tobacco.

On the contrary, the increase of excise duty rates in Montenegro has been seen as a way of reducing the fiscal deficit of the government. Unfortunately, the increase in prices has contributed to a possible increase in the informal economy too. According to the World Bank, around half of the tobacco products used, come from informal sources in order to avoid taxation (Crosby, 2017). On the other hand, most of the Balkan countries are applying written procedures and structures of excise taxes (e.g. by including specific and ad valorem excise duties) that are similar with the EU directives but which do not necessarily translate to a better tax enforcement efficiency, especially when we think about the Western Balkan region and its institutions.

4.3.3 Customs duties

Most of the Balkan countries have set duties which are based on the EU legislation, by including trade policies that incorporate low rates of customs duties. Montenegro applies the ad valorem rate starting from 0% to 30%, while Macedonia has low rates (under 23%) for all industrial products. BiH has been also reducing the customs rates with the EU states up to 90% for certain products considering their motivation to join the union in the future. On the other side, members of the EU including Bulgaria, Croatia, Slovenia, Greece and Romania trade goods and services which are free of duty by implementing the Union Customs Code (UCC) which allows for no customs duties between the borders of EU countries and by also applying a common set of rules for imports coming from outside of EU. Starting from the year 2000 until the end of 2016, we observe the trend of reducing revenues coming from taxes on international trade. Balkan countries who are part of the European Union, have already shown insignificant tax revenues as a share of

total GDP while non EU countries, for instance, Serbia has an average revenue coming from taxes on international trade which is almost 2% of total GDP.

4.4 Perception of taxes in Balkan countries

In recent years, most of the Balkan countries have tried to simplify their tax regimes and apply similar procedures that are in accordance with EU directives and procedures, however little has been done to see what are the tax perceptions in the region. This matter is in particular very important, especially because it can support the creation of a better tax system based on people's perceptions but also it can help to reduce the overall tax evasion that continues to be a major problem in many Balkan countries. According to Feld & Frey (2002), perception of taxes is important because the relation between the government authorities and taxpayers represent a contract that is built upon a complex interaction that has the aim to maintain a fair and reciprocal relationship between them.

Taxes continue to be perceived as an overall burden in Southeast Europe (Balkan Monitoring Public Finance, n.d). The transition towards a market economy in many Balkan countries has been followed by a poor provision of public services and a limited capacity of tax administrations to collect different types of taxes. According to a World Bank paper by Leibfritz (2011), if tax officials are known for being unexperienced and continue to show unprofessional behavior, citizens will be more motivated to avoid taxation or even try to bribe the tax inspectors.

An interesting study done by Bird & Martinez-Vazquez (2008), shows that tax effort can be increased when we have a more responsive and legitimate country, which stands true for both developed and developing economies. If this is not the case, companies and other individuals will continue to enter and carry economic activities in the informal sector which can create a serious obstacle for economic growth. Results from a survey done by EBRD, show that unfair competition coming from the shadow economy is considered to be the dominant barrier for many industries in the Western Balkans (Kresic, Milatovic & Sanfey, 2017). While some businesses avoid taxation payments and other obligations in the country, the firms in the formal sector argue that they are facing many tax and insurance payments which discourages them to continue competing with informal industries.

As an example, informal employment in Bosnia and Herzegovina continues to be large as a consequence of high labor taxation, therefore there is a need to lower the labor tax wedge in order to remove the unfair competition (Llaudes, Benedek, Atoyan & Jankulov, 2015). Another survey done in Albania concluded that in general, citizens do not perceive the current tax system as fair. This was particularly true when they were asked about progressive tax rates on personal income (Muceku & Balliu, 2017). As a consequence, this perception might lead them to generally avoid taxation and increase the share of the informal economy in Albania.

On the other side, respondents in Slovenia argue that regular changes and modifications in the legislation are considered burdensome for small and medium enterprises and simplification of the tax system and better online services such as e-tax would definitely reduce the administrative burden for different tax-payers in the country (Ravšelj, Kovač, & Aristovnik, 2019). These measures would contribute to a better business environment and support an informative and up-to-date tax system in Slovenia.

In case of North Macedonia, a publication done by CRPM (2014) shows that the main reasons for the presence of tax evasion are the tax burden that comes from the difficulties related to taxation procedure, low quality of public services, labor costs and other. Moreover, the majority of the respondents believe that having better tax inspections can improve or increase tax revenues. In Croatia, respondents agree that the total tax burden should be reduced for citizens and the structure of the taxes must be changed (Šimović, Blažić & Štambuk, 2014). However, the authors acknowledge the fact that there might be a lack of tax knowledge among participants, considering that they did not reach an agreement for some general tax issues or statements, for instance, when it comes to the term of regressivity.

So far, we can see that there is a need to invest in education and raise awareness about tax collection and the functions of the tax administration in different countries. People who have better education and knowledge about taxes, can also have better and positive attitudes towards tax compliance. This statement has been confirmed by many studies that have found a relationship between tax compliance and education (e.g., see Kasipillai, Aripin & Amran, 2003). According to OECD and FIIAPP (2015), better education can not only contribute to higher revenue, but also it can establish a long term commitment to the public welfare and its relation with public

spending. This overall, can also have an effect in reducing the total share of the shadow economy in a country, and thus improve the incentives to engage in the formal sector. Moreover, there is a need to generally deliver better public services by the governments of different countries in the Balkans. Many studies have recognized the fact that people's perception about the fairness of the tax system has a very important role in deciding whether taxpayers will fulfill their tax obligations or not (e.g., see Palil, Akir & Ahmad, 2013). In order to improve people's perceptions towards taxation, countries should focus more on improving tax collection and strengthen the government regulations by introducing ongoing inspections when it comes to businesses who work in the informal sector and who violate taxation laws. On the other side, by delivering better services governments will raise awareness about the benefits of paying taxes but also will encourage taxpayers to report corruption and bribery in different tax administrations. This overall, can have a significant effect on raising tax revenues as a share of a country's total GDP.

5. DATA AND METHODOLOGY

In this section, I will provide information regarding the data sources, variables and the model that was used to investigate the relationship between taxation and economic growth in Balkan countries.

5.1 Data and definition of variables

My empirical study is based on annual data obtained from different sources. All tax variables are taken from the Government Revenue Dataset (GRD) which is published from UNU-WIDER. In case of missing data, I use the Eurostat database for EU member states while for non-EU countries, I use official documents published by the Ministry of Finance for different Balkan countries. GDP growth rate per capita, government expenditure, real interest rate, unemployment rate and control of corruption are obtained from the World Bank.

The main limitation when it comes to data availability is the short period of years that is available regarding tax information for most of the Balkan countries. The study covers the period from 2000-2016 on annual basis. The choice of dependent and independent variables is driven by theoretical relevance and empirical evidence in the literature. A short description of the variables is provided in Table 2.

Table 2. Description of variables

Abbreviation	Unit	Description	Source
Dependent variable			
GGDP	%	Growth rate of GDP per capita	World Bank
Independent variables			
PIT	% of GDP	Total income, capital gains and profit taxes on individuals	ICTD Government public revenue Dataset
CIT	% of GDP	Total income and profit taxes on corporates	ICTD Government public revenue Dataset
TGS	% of GDP	Total taxes on goods and services	ICTD Government public revenue Dataset
TIT	% of GDP	Total taxes on international trade	ICTD Government public revenue Dataset
TP	% of GDP	Total taxes on property	ICTD Government public revenue Dataset
Control variables			
RIR	%	Real interest rate	ICTD Government public revenue Dataset
GOVEXP	% of GDP	General government final consumption expenditure	World Bank
UNEMP	% of labor force	Unemployment rate	World Bank
CoC	Estimate	Control of corruption	World Bank

5.1.1 Dependent variable

GGDP is the dependent variable in our model. In order to measure economic growth we use the GDP per capita growth, which is the increase in the total value of goods and services produced by an economy, divided by its total population. The variable is also used in many other empirical papers that study the effect of taxes on economic growth (see Canavire-Bacarreza, Martinez-Vazquez & Vulovic, 2013; Furceri & Karras, 2009; Lee & Gordon, 2005; Stoilova, 2017; Widmalm, 2001). Put differently, this indicator is most often used when we want to measure the overall success of an economy. Altogether, Balkan countries are growing at 3.1% on average for

the period of 2000-2016. Albania has one of the strongest growth rates in the Balkans, where GDP growth per capita is 5% on average.

5.1.2 Independent variables

Personal income taxes (PIT) mainly include the salary, dividends or other income that is generated from different individuals during a year. The effect of personal income tax on economic growth is dependent on many factors including tax evasion and tax rates in different countries, but in many cases, this tax is expected to be negative because of the distortion effect they can create when it comes to investment incentives or resource allocation.

For instance, the paper by Macek (2014) finds that personal income taxes have a detrimental effect on economic growth in OECD countries and thus in order to increase the growth rates of the economy, these countries should reduce income taxation. On the other hand, even though *PIT* is the main type of tax in the US, according to Kalas, Mirovic & Andrasic (2017) this variable has an insignificant effect on the growth of GDP. *Corporate Income tax (CIT)* is imposed by the government on the profits and income of companies. This variable is expected to show a negative relationship with economic growth considering the fact that corporate taxation lowers the company profits and the possibility of reinvesting this money in the size of the capital stock, output or to boost the productivity of the business. Baranova & Janickova (2012) argue that high corporate taxation can create a competitive problem especially for small economies which are classified as investment recipient countries.

Their study finds evidence that corporate taxation in countries who are early EU member states has a negative effect on long term growth. Johansson, Heady, Arnold, Brys & Vartia, (2008) confirm similar results showing that corporate taxation has one of the worst effects on economic growth. *Taxes on goods and services (TGS)* mainly involve the sales tax, VAT, turnover taxes and excise taxes. In recent years, many countries have started to focus on the value-added tax considering that it has become a well-known instrument that can significantly affect economic growth or increase the growth rate of GDP. A study from Simionescu & Albu (2016), found that in 5 countries in Central and Eastern Europe, value-added tax has a positive relationship with economic growth. However, an analysis done by Nantob (2014), found an insignificant effect of taxes on good and services as a whole, by using panel data with 47 developing countries.

Therefore, the relationship between these type of taxes and economic growth remains inconclusive especially for developing economies. *Taxes on international trade (TIT)* are primarily composed of export and import duties, but they may also include exchange taxes. Throughout the years, we have seen that developed countries are more focused on income and consumption taxes while developing economies collect and rely much more on international trade taxes. Despite the fact that IMF has always tried to support countries that shift away from trade taxation, empirical evidence has shown that these reforms do not always necessarily translate into positive effects on growth rates of GDP (McNabb & Boucher, 2014). *Taxes on the property (TP)* are taxes that are applied on the ownership or transfer of the property and are usually collected and managed by the local governments of the jurisdiction in which the property is located. Taxes on the property often show positive effects for countries who have built a strong tax mix over the years.

For instance, Arnold (2008) found that these types of taxes have the most positive impact on the growth rate of GDP for 21 OECD countries. On the other hand, a paper by Arduin, Laffer, & Moore (2012) strongly supports the idea that property taxes reduce economic performance and create a greater burden on a state's productive sector when it's compared to other types of taxes. If this is the case, applying a state wide consumption tax would be much more beneficial for job creation and economic growth of a country than using the current property tax revenue system. Moreover, strong negative effects of property taxes on economic growth were also found in other papers, for instance, see Gale, Krupkin, & Rueben, (2015).

5.1.3 Control variables

Real interest rate (RIR) is the lending interest rate adjusted for inflation as measured by the GDP deflator. The rate is one of the most important instruments which can affect economic growth because it can stimulate the use of resources or on the other side it can be seen as a high cost that discourages investments. Put differently, economic growth decreases when we have higher interest rates which can reduce investments and later reduce the overall demand. The latest empirical studies have concluded different results when it comes to the relationship between interest rates and economic growth. According to Bosworth (2014), this relationship is not very strong while Saymeh & Orabi (2013) support a positive relationship between the real interest rate and GDP or the national income. *Government final consumption expenditure (GOVEXP)* involves

the public spending that is used to purchase goods and services. Many empirical papers have studied the effect of government expenditure on growth but the results remain ambiguous. However, in theory, we rather see authors that have supported the conclusion that public expenditure has a negative impact on growth, especially if we consider the distortionary effect of taxes. Romero-Avila and Strauch (2008), supported this idea by taking into account the evidence they found in a panel data analysis, where government size which is measured by government expenditure, has a negative impact on the growth rate of GDP.

However, the empirical paper by Wu, Tang & Lin, (2010) concluded that government spending has a significant positive effect on economic growth and this remains true, no matter how we determine government size and growth. In our study, we control for government expenditure so we can capture or control for potential interactions they can have with our tax variables. *Unemployment rate (UNEMP)* reflects the percentage of the labor force that is actively looking for employment but it is still considered unemployed in the last four weeks. This macroeconomic variable has been studied by many papers considering that it has an important effect on the economic growth, but also because if it's not addressed properly, it can create major socio-economic problems especially in developing economies.

Okun (1962), was one of the first who confirmed the relationship between growth and unemployment, where he found a negative relationship between unemployment and production growth rate or output. In economics, this has been known as Okun's law. However, there have been some papers who did not find empirical evidence that necessarily support the Okun's law (see Meyer and Tasci, 2012; Gordon, 2010). As a result, a consensus has not been reached, when it comes to the link between growth and unemployment, either when it's analyzed within a country, or across countries. *Control of Corruption (CoC)* represents a macroeconomic variable that indicates how much the use of public power by elites and government officials, is exercised for private interest and personal gain.

The estimate ranges from -2.5 (indicating a weak control of corruption) to 2.5 (indicating a strong control of corruption). During the past few decades, many empirical studies have concluded that corruption has a significant and detrimental effect on the economy of a country. Corruption is especially widespread in developing countries, and it's often considered to be a normal

phenomenon and an integrated part of everyday life (Hors, 2000). According to the author, the decrease in the level of corruption is highly being dependent on the economic development of a country. Moreover, Cieřlik and Goczek, (2018) suggest that the lack of corruption not only has a positive effect on the economic growth, but can also promote investments. The presence of corruption, on the other hand, shows negative and significant impact on human capital, entrepreneurship, government expenditure, environment and income distribution which can continuously hinder the development process of different economies (Sturm, 2013).

5.2 Methodology

In this subsection, I will present the general model that was used to assess the impact of the tax structure on economic growth in Balkan countries for the time period of 2000-2016. The countries included in this analysis are Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Serbia, Montenegro, North Macedonia, Slovenia, Greece, and Romania. I decide to use panel data estimation techniques due to a variety of reasons. First, the techniques allow me to capture the unobserved heterogeneity of Balkan countries over time by overcoming a potential problem of bias. Second, I can explore and examine different dynamics in the panel data, which would be challenging to identify if I would work with a cross-sectional dataset (Dougherty, 2016).

The model applied is as follows:

$$GGDP_{it} = \alpha + \beta_1 PIT_{it} + \beta_2 CIT_{it} + \beta_3 TP_{it} + \beta_4 TGS_{it} + \beta_5 TIT_{it} + \beta_6 RIR_{it} \\ + \beta_7 GOVEXP_{it} + \beta_8 UNEMP_{it} + \beta_9 CoC_{it} + \mu_i + \varepsilon_{it}$$

where i denotes the country and t the time period. In this model, the regression analysis will investigate the relationship between dependent and independent variables. In detail, I will identify the main effect that independent variables have on the dependent variable. In this case, the response variable $GGDP_{it}$ is the GDP per capita growth, α is the constant term, PIT_{it} is the personal income tax, CIT_{it} refers to corporate income tax, TP_{it} is the tax on property variable, TGS_{it} represents the taxes on goods and services, TIT_{it} stands for taxes on international trade, and then I control for RIR_{it} which is real interest rate, $GOVEXP_{it}$ is the government expenditure, $UNEMP_{it}$ refers to unemployment rate, CoC_{it} is the control of corruption, μ_i is the unobserved country fixed effect and lastly, ε refers to the error term. Stata, version (14), is the

main econometric program that will be used to execute all econometric tests in this study. I deal with a balanced panel.

6. RESULTS, LIMITATIONS AND FUTURE RESEARCH

In this section, I will provide the most important results of the conducted empirical study with regard to used methodology and data for Balkan countries, but I will also discuss possible limitations and recommendations for future research directions in this area of study.

6.1 Empirical results

We start by looking at the descriptive statistics which are presented in table 3. The average growth rate of GDP in the Balkan countries is equal to 3.1 percent, whereas the minimum value that was recorded during the years of 2000-2016, is a negative rate of around 9 percent. This rate was reported in Greece, as a consequence of the debt crisis and the Great Recession in the late 2000s. Further on, the maximum value stands at 10 percent, which was recorded in the country of Romania. Among the tax variables, the tax on goods and services has the highest share in GDP with a maximum value at 22.0 percent or an average of 14 percent, whereas taxes on the property have the lowest contribution as a percentage of GDP.

In general, I can say that Balkan countries depend more on indirect taxes considering that direct taxes such as personal income tax accounts for a maximum of 7 percent, as a share of GDP. It is interesting to note that the unemployment rate has a high variation in Balkan countries considering that it ranges between 4.3 percent to 37.2 percent with a mean value of 17 percent. Furthermore, the real interest rate mean score is 5.62 percent with a minimum value of negative 12.5 percent and a maximum value of 17.4 percent.

Government expenditure as a share of GDP varies noticeably between different Balkan countries. As we can see from the table, it has a mean value of 18.4 percent and a range that starts from 9.6 percent to around 30 percent of GDP. When it comes to control of corruption, the mean shows a negative value of 0.1, which indicates that, in general, the governments in Balkans have a relatively weak control of corruption. The minimum value of -1.1 was estimated in Serbia in the year of 2000.

Table 3. Descriptive statistics

VARIABLES	N	Mean	SD	Min	Max
GGDP	170	3.1	3.5	-8.9	10.0
PIT	161	3.4	1.4	0.2	6.9
CIT	161	1.8	0.8	0.0	4.1
TP	142	0.5	0.4	0.0	2.8
TGS	169	14.1	2.6	8.9	22.0
TIT	169	0.9	1.1	-0.0	6.6
RIR	147	5.6	4.7	-12.5	17.4
UNEMP	170	17.1	8.7	4.3	37.2
GOVEXP	168	18.4	3.5	9.6	29.9
CoC	160	-0.1	0.4	-1.1	1.0
Number of id	10	10	10	10	10

Even today, citizens of Serbia classify corruption as one most the most important challenges of their country, together with poverty and unemployment (UNODC, SASS, & Statistical Office of the Republic of Serbia, 2011).

On the other hand, the maximum value of 1.05 is observed in Slovenia which can be considered as one of the least corrupted countries in the Balkans. From 2000 to 2016, the country has scored an average value of 0.9, in controlling corruption. Next, I take into consideration the correlations between variables which are presented in table 4. I use the matrix in order to see whether any pair of our independent variables are highly correlated with one another.

If the correlation coefficient is equal to 0.8 or above, I will avoid using these specific variables in the same specification as it may lead to a spurious regression. However, I do not find any strong correlation between variables, as all of them show a correlation coefficient that is lower than 0.6, therefore I consider that I do not have a collinearity problem in the model.

Table 4. Correlations (covariances) of variables.

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) GGDP	1.00									
(2) PIT	-0.22	1.00								
(3) CIT	0.13	-0.02	1.00							
(4) TP	-0.26	0.46	0.01	1.00						
(5) TGS	-0.08	-0.03	-0.30	-0.03	1.00					
(6) TIT	0.25	-0.01	-0.42	-0.20	-0.20	1.00				
(7) RIR	-0.32	-0.35	0.18	-0.00	-0.32	-0.14	1.00			
(8) GOVEXP	-0.27	0.42	-0.32	0.17	0.36	0.14	-0.26	1.00		
(9) UNEMP	-0.03	-0.28	-0.56	0.03	0.11	0.49	0.11	0.31	1.00	
(10) CoC	-0.20	0.57	0.23	0.03	0.03	-0.47	-0.03	0.25	-0.46	1.00

Having in mind that the use of ordinary least squares (OLS) in this model will generate inconsistent results based on the significant F-test where fixed effects are non-zero, I decide to apply a fixed effect model. Hausman test results support this model, based on the fact that I can reject the H0 at the .05 level, and therefore I conclude that random effect model is not appropriate for this analysis (see table 5).

Table 5. Hausman test results

<p>Test: Ho: difference in coefficients not systematic</p> $\chi^2(9) = (b-B)'[(V_b - V_B)^{-1}](b-B)$ $= 18.41$ <p>Prob>chi2 = 0.0307</p> <p>(V_b-V_B is not positive definite)</p>

Furthermore, I apply the modified Wald test for groupwise heteroskedasticity and the Wooldridge test for serial correlation. As a result of heteroskedasticity, meaning that the variance of the errors is not constant in different observations, I will apply robust standard errors in this model (table

6). When it comes to the Wooldridge test, I do not find evidence of the first-order autocorrelation in the panel data (table 7).

Table 6. Modified Wald test for groupwise heteroskedasticity

Modified Wald test for groupwise heteroskedasticity in fixed effect regression model H0: $\sigma(i)^2 = \sigma^2$ for all i chi2 (10) = 75.67 Prob>chi2 = 0.0000

Table 7. Wooldridge test

Wooldridge test for autocorrelation in panel data H0: no first-order autocorrelation F(1, 9) = 0.519 Prob > F = 0.4897
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The estimation results of this model are presented in the table below (Table 8). Based on the F test, the variables are statistically significant at all levels and 79% of the variance is explained by the differences across panels. *Individual Income Tax (PIT)*, *Corporate Income Tax (CIT)* do not have a significant effect on the economic growth in the Balkan countries. The results of *PIT* can be explained by the fact that personal income taxes have a relatively lower share in countries' total GDP. As a consequence, they play a smaller role especially in Western Balkan countries due to the fact that these countries continue to have a high share of informal markets, relatively low rates of taxes and high level of exemptions which might interrupt the real effect of these type of taxes on GDP growth rates during these years. Similar results were found in Latin American countries where Canavire-Bacarreza, Martinez-Vazquez, & Vulovic (2013), found that personal income taxes have an insignificant effect on the growth rate of the economy.

As mentioned before, *CIT* is also statistically insignificant according to the fixed effect model, which contradicts the theoretical studies who claimed that corporate taxes discourage the growth rates of GDP. Similar results were confirmed by Kalas, Mirovic & Andrasic (2017), who found that these two types of taxes do not have a significant impact on economic growth. Moreover, these results confirm the fact that direct taxes such as corporate and individual income tax have much lower importance than indirect taxes such as taxes on goods and services and taxes on international trade for countries in the Balkan region. However, there is a reason to believe that the results might change if countries would reduce the tax fraud and increase tax compliance in

the region. The efficiency of collecting corporate income tax has been considered low in many countries in the Balkan region, such as Albania, Bosnia & Herzegovina and Serbia (Atoyan et al., 2018). As suggested by theory, the reason for the low efficiency could be the political instability and the growing polarization in the region (Aizenman, & Jinjark, 2008). Western Balkan region has been continuously considered to have a high polarization that is constraining the capacities of these countries to effectively implement reforms or different tax policies, which would help them increase the revenue coming from corporate and individual income tax.

Table 8. Regression results using fixed effect model

VARIABLES	Fixed Effect Model
PIT	0.21 (0.49)
CIT	0.73 (0.53)
TGS	0.39* (0.18)
TP	-3.10** (1.00)
TIT	3.68*** (0.54)
RIR	-0.52*** (0.07)
GOVEXP	-0.94*** (0.15)
UNEMP	0.34** (0.10)
CoC	5.39** (1.76)
Constant	9.66* (4.87)
Observations	121
Number of id	10
R-squared	0.63

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Taxes on goods and services (TGS) show a positive relationship with economic growth. The significant relationship is confirmed at .1 level. One unit increase in taxes on goods and services will cause an increase in the GDP growth rate per capita by 0.39 percentage points. The effect of this variable is smaller when I compare it to other significant effects of tax variables. However, the results are in agreement with IMF (2011, 2015) reports where they state that indirect taxes such as VAT are usually considered to be more growth-friendly for the economy of a country. Similar results are found in the paper by Simionescu & Albu (2016), where they conclude that in 5 countries in Central and Eastern Europe, VAT has a positive relationship with economic growth. One of the reasons why taxes on goods and services (e.g. VAT) have a positive effect on growth is because it is considered to be more neutral when it's compared to other types of taxes, as it doesn't create distortions by promoting the local production and it doesn't create additional costs when it comes to the production of goods and services (Brun & Diakite, 2016).

Taxes on international trade (TIT) are statistically significant at all levels. It is interesting to note, however, that these type of taxes are positively correlated with economic growth. One unit increase in the share of taxes on international trade will be translated into 3.68 percentage points increase in the GDP growth rate. Although countries are continuously being encouraged to reduce or remove trade-related taxes especially by international institutions such as the World Bank or IMF, the results indicated here show that these type of taxes are actually stimulating growth. One possible justification for this link between trade-related taxes and growth could be that higher tax rates can generate more revenues that can be used in sectors that cause positive externalities for the economy, and thus support growth (Yanikkaya, 2003). A paper by McNabb and LeMay-Boucher (2014), recognizes the fact that countries who are moving away from trade taxes in the direction of consumption or income taxes are not necessarily facing positive effects on growth rates of GDP. This could be due to the fact that they are still dependent on revenues that are coming from trade-related taxes, as compared to countries who have already build a strong tax mix over the years and who have a very low share of trade taxes in their annual revenues.

As it is mentioned in Baunsgaard and Keen (2010) paper, revenue recovery for middle income and low-income economies who have been going through trade liberalization has been very difficult and poor. The present results raise doubts when it comes to the real impact of trade taxes on the growth rate of the economy and point out potential challenges that can come with trade

liberalization and future tax policies in different Balkan countries. I believe that further analysis needs to be done to better understand this complex relationship between trade-related taxes and growth, by taking into account different country characteristics such as the level of development, level of dependency on the primary sector, size of the country, population growth rate, and so on.

From all tax variables, *taxes on property (TP)* are the only type of taxes that have a negative impact on real GDP growth. On this matter, one unit increase in taxes on property will cause a decrease in GDP growth rate by 3.10 percentage points. Strong negative effects of property taxes on economic growth were also found in other papers, for instance, see Gale, Krupkin, & Rueben, (2015). Balkan countries should try to focus more on managing these taxes more efficiently, either by including higher rates that would reflect the real size and the actual use (e.g. commercial or residential) of different properties, or by trying to improving the compliance which could lead to a higher share of revenues in GDP and that could reduce the negative effect of these type of taxes on economic growth.

When it comes to control variables, *government expenditure (GOVEXP)* is significant and has a negative effect on growth. The same impact was found in the paper written by Guseh, (1997) who has concluded that government expenditure has a detrimental effect on the economic growth in most of the developing countries. This relationship can somehow reflect the costs of financing deficit for different countries over time or it can be related to another growth reducing effect which is not exclusively shown in the model (Romero-Avila, & Strauch, 2008). After the financial crisis, the deficit and the debt have been increasing sharply in many Balkan countries and many of them experienced challenges in taking back control, when it comes to public finances (Koczan, 2015). It is also important to mention the fact that the efficiency of government spending is continuing to be low, especially in the Western Balkan region (Atoyán et al. 2018). Moreover, the results indicate the fact that governments are taking away resources from investments and productive activities which are continuing to be unfavorable for the growth of the economy.

Real interest rate (RIR) has a negative relationship with economic growth at its significant at .01 level. For every one unit increase in real interest rate, the response variable will be decreased by 0.52 percentage points. The interest rate in this model represents a cost factor that is discouraging investments and thus, the growth rate of the economy. Moreover, the variable has been considered

as one of the main constraints for businesses in the Western Balkans, for the reason that it is creating limited access to finance and it is preventing firms and their activity to promote economic growth in the region (Moder & Bonifai, 2017). The link between economic growth and the interest rate is also confirmed in the paper written by D'Adda & Scorcu, (1997).

On the contrary, a positive relationship between *unemployment rate (UNEMP)* and economic growth is proven to be present in the model. Based on these results, we are facing a "jobless growth" in the Balkan countries, as it was stated many times in different reports of the institutions such as World Bank or the International Labor Organization (e.g., see Cazes, & Nesporova, 2006). As long as, the growth rate of GDP is not accompanied by the growth rates of productivity and labor force, unemployment will continue to rise or stay at the same level as before. According to Okun's law, in order to decrease the unemployment rate, the GDP must increase by around 2% faster than the growth rate of the potential GDP (Bernanke, 2012). As an example, if the potential growth rate of GDP in Montenegro is 2%, the real GDP should increase by around 4%, if we want to have a 1% decrease in unemployment.

Control of corruption (CoC) has a positive impact on economic growth. One unit increase in this variable will cause 5.39 percentage points increase in growth rate of GDP per capita. Similar results are found in the paper by Cieřlik and Goczek (2018), who suggest that the lack of corruption has a positive effect on the economic growth of a country. As we can see from this result, government actions can promote growth. This is particularly important, because corruption has always been considered as one of the main problems in the Balkan countries. According to Transparency International data, most of the countries do not see any significant improvements in combating corruption. North Macedonia faces the biggest challenge, considering the fact that the country fell from the 90th position in the year of 2016 to 197 position in 2017, according to the annual rank of countries in the Transparency International Index table. Despite the fact that this relationship should be studied in more detail, by incorporating other macroeconomic variables and different historical events, I can conclude that governments in the Balkans should work more in supporting economic reforms and political institutions that reduce corruption, and therefore increase economic growth in the region.

6.2 Robustness Check

In order to evaluate the robustness of the main findings, I will perform different robustness checks to the model by adding new variables to the data, using lagged values of tax variables, testing for possibilities of an endogeneity issue in the model, and creating a smaller sample with countries who are not part of the euro area in the Balkans.

6.2.1 Excluding countries who are part of the Eurozone

One potential scenario could be a division of the sample between countries who are part of the eurozone and those who are not. Considering the fact that, from this sample, only 2 countries are part of the Eurozone (Greece and Slovenia) I will only present the results from non-eurozone countries in order to see how the results change from the original model. Moreover, it is important to point out the fact that Greece and Slovenia are also the countries with the highest income in the Balkan region.

In table 10, we can see that the results continue to be very similar, with no changes in significance level or in the sign of the relationship between different variables, except that taxes on goods and services become statistically insignificant (Model 1). No significant effect of excise and value-added taxes was also found in the paper by Mohammed, Omoniyi & Ali (2018), when using Granger Causality and OLS techniques. Taxes on property continue to have the largest and the most negative effect on economic growth, while taxes on international trade are positively linked to growth. Additionally, government expenditure, unemployment rate, real interest rate, and control of corruption show almost identical effect on GDP growth rate, when it's compared to the original model.

6.2.2 Additional control variables

Having in mind that growth rate of GDP can be affected by many other factors, I will include additional control variables in the fixed effect model. I have added foreign direct investments, and savings as potential determinants of economic growth. Based on the correlation matrix (presented in appendix 1) I do not find any strong correlation when adding the new variables as all of them show a correlation coefficient that is lower than 0.6, therefore I decide to keep them in the same model. The estimation results from table 10 (Model 2), show that corporate taxes become statistically significant at 0.1 level and have a positive coefficient as before. If corporate

income taxes increase by one unit, the GDP growth rate goes up by 0.83 percentage points. A positive relationship between corporate taxes and growth in both short and long run was also found in the paper by Adarmola & Ayeni-Agbaje (2015). On the other hand, the inclusion of foreign direct investments and savings in the model, do not show a significant relationship with economic growth. Moreover, other tax and control variables show similar effect on GDP growth rate, when it's compared to the original model.

6.2.3 Using lagged values of tax variables

Following the experience of other authors (Clist & Morrissey, 2011) I perform a regression using lagged values of tax variables (t-1), in order to see whether taxes have dynamic effects on growth, or to put differently, to investigate whether there is a predetermined relationship between these variables. As we can see from table 10 (Model 3), in general, the results indicate that using past values of tax variables do not significantly affect economic growth, except for taxes on international trade which show a positive link with the dependent variable. Therefore, I can say that in general, current GDP growth per capita is explained by current values of tax variables. Moreover, the significance and the sign of the relationship of control variables remains the same when I use lagged values of taxes.

6.2.4 Testing for endogeneity

As I cannot, so far exclude the possibility of an endogeneity issue in the model, I have performed an IV/GMM estimation of the fixed-effects with possible endogenous tax variables, in order to see how results differ from the original model. In this situation, I consider that not only tax variables cause an effect of GDP growth rate, but also GDP growth rate might cause a different impact on tax variables. In order to correct for a possible endogeneity problem in the model, I have instrumented the endogenous variables using IV methods. Having in mind that finding strong instruments for tax variables is challenging, I have managed to use lagged values of endogenous variables, mean years of schooling, and savings as instruments that can solve the issue of endogeneity (Table 9). These variables do not have a direct impact on GDP growth per capita (Appendix 2). Lagged values of tax variables were often used as instruments in other papers that study the impact of taxes on economic growth (e.g., see Stoilova, 2017). After performing the Sargan-Hansen test of overidentifying restrictions, I fail to reject the null at .01 and .05 level,

therefore, I conclude that I have valid instruments (they are not correlated with the error, and other omitted instruments are properly excluded from our equation).

Table 9. Description of instruments

Abbreviation	Unit	Description & Source
laggedTGS, laggedPIT	% of GDP	t-1 lagged (past period) values of the endogenous tax variables (ICTD Government public revenue Dataset)
MYS	Years	Mean years of schooling (UNDP)
S	% of GDP	Savings (World Bank)

Moreover, I also apply an underidentification test of the version of the Kleibergen & Paap (2006), to see if the equation is identified, and the results show that we strongly reject the null that the equation is underidentified. Although the model is identified and valid, the weak identification test suggests that we have weak instruments for the endogenous variables. As mentioned before, finding strong instruments for tax variables is very challenging, therefore I decide to keep the options that I currently have. The estimation results of the new model are presented in the table below (Model 4) while the estimation results of the endogenous variables can be found in the Appendix 2. Based on the F test, the variables are statistically significant at .01, .05 and .1 level. The sign of the relationship and the significance level of all variables remains the same except for *TGS* variable who now becomes statistically insignificant at all levels and *CIT* variable who presents a positive and significant relationship with economic growth in the Balkan countries.

On the other hand, I observe a stronger effect of *TP* on GDP growth rate per capita and a slightly weaker effect of *TIT* on GDP growth rate per capita, when it's estimated with an instrumental variable (IV) technique. To be more concrete, one unit increase in the share of taxes on the property will be translated into 3.57 percentage points decrease in GDP growth rate while for the unit increase in the share of taxes on international trade will cause an increase in GDP growth rate for 3.41 percentage points.

Table 10. Regression results for different models

VARIABLES	Model 1	Model 2	Model 3	Model 4
PIT	0.17 (0.59)	0.20 (0.58)		0.34 (0.91)
CIT	0.66 (0.81)	0.83* (0.44)		1.00* (0.57)
TGS	0.29 (0.24)	0.48** (0.20)		0.40 (0.44)
TP	-4.77** (1.81)	-2.97*** (0.77)		-3.57*** (1.13)
TIT	4.01*** (0.53)	3.82*** (0.45)		3.41*** (0.87)
RIR	-0.54*** (0.08)	-0.53*** (0.07)	-0.61*** (0.06)	-0.56*** (0.14)
GOVEXP	-0.97*** (0.14)	-0.86*** (0.12)	-1.07*** (0.29)	-0.97*** (0.20)
UNEMP	0.25* (0.10)	0.33** (0.10)	0.32*** (0.08)	0.41*** (0.10)
CoC	5.72** (1.99)	5.40*** (1.38)	6.30* (3.40)	5.53*** (1.98)
FDI		-0.03 (0.12)		
S		0.02 (0.07)		
Lagged.PIT			0.04 (0.72)	
Lagged.CIT			0.76 (0.49)	
Lagged.TGS			-0.06 (0.25)	
Lagged.TIT			2.24** (0.90)	
Lagged.TP			-1.66 (1.39)	
Constant	13.76 (7.57)	6.82 (5.15)	20.13** (7.74)	
Observations	98	120	114	112
R-squared	0.60	0.63	0.56	0.63
Number of id	8	10	10	10

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

6.3 Limitations and future research

There are a few limitations that should be considered in this study. As it was previously mentioned, there is missing information regarding taxes especially when it comes to Western Balkan countries, therefore I include a short period of years to see the impact of taxation on economic growth. Further research is needed in order to shed more light on the impact of taxes in the Balkan countries, if more data becomes available.

Optimal taxation, an interesting concept that has often been cited as a guide to action has been left outside the scope of this study, however, I do acknowledge its importance on answering questions like how to reduce the burden of different types of taxes by increasing the overall social welfare in a country. This topic could be included in future empirical analyses that study the relationship between optimal taxation and economic growth.

Besides that, economic growth in this study does not include the non-market production where households grow, for instance, fruits and vegetables for their own consumption. Even though they contribute to the economy, their value is not recognized considering that I use the growth rates of GDP as a measure for economic growth. The dependent variable it does not also take into account the informal market, which can be quite large in some Balkan countries and thus can have a significant negative effect for the society but that continues to be ignored in many other studies. Unfortunately, we do not have an official estimation when it comes to the total size of the informal market in many Balkan countries, therefore this variable remains outside the scope of this project. While this might be true, it is important to consider economic growth in terms of changes in social and environmental factors such as income inequality or pollution.

The measure of this model does not take into consideration the environmental costs that come with the increased number of industries in a country or how the level of inequality changes with an increased growth rate of GDP. However, I do agree that economic growth should be environmentally sustainable and more inclusive. Different policy interventions should be implemented by taking into account the most vulnerable groups of the society, the share of the informal sector and environmental costs that can come as a consequence of different policy interventions.

Another important limitation is that the dependent variable fails to provide any information about the trade-offs that exist between the growth in the present and in the future. In particular, the growth can be increased as a result of government expenditure to satisfy short term demands in the country but not the long term objectives. This can create implications that arise as a consequence of very limited resources that can slow down economic growth in the future.

Having in mind all these limitations, the growth rate of GDP continues to be the most used variable in measuring economic growth in many countries, simply because it gives a single and precise number to define the progress of different economies. Further research can also be focused more on the relationship of taxes with investment and business decisions, wages, price inflation, unemployment, and so on. For instance, Zirgulis & Šarapovas (2017) found that unemployment grows when we have an increase in corporate tax rates. Moreover, Djankov, Ganser, McLiesh, Ramalho & Shleifer, (2010) found that corporate income tax rate has a negative impact on FDI, aggregate investment and entrepreneurship. These studies would be particularly important in order to see to which extent taxes affect other parts of the economy, and thus support policymakers to make better decision-making when it comes to different tax reforms.

7. CONCLUSION

As we have seen from theoretical and empirical studies, taxation and economic growth can have a complex relationship because of the fact that it depends on numerous factors, macroeconomic policies, and different country characteristics. On one hand, taxes increase the government revenue that can be used to finance many government projects, while on the other hand, they can have distortionary effects on the overall economy.

The aim of this project was to better understand the relationship between different types of taxes and economic growth in the Balkan countries for the period 2000-2016. The empirical analysis is performed by using panel data techniques, where I choose the fixed effect model to determine the link between the dependent and independent variables. Moreover, I have performed different robustness checks to my model by adding new variables to the data, using lagged values of tax variables, testing for endogeneity by performing an IV/GMM estimation of the fixed-effects with possible endogenous tax variables, and creating a smaller sample with countries who are not part of the euro area in the Balkans. Since some of the explanatory variables changed their significance level when adding control variables or using a different method, one should be cautious when interpreting the results.

In general, my empirical results suggest that individual income taxes do not have a significant effect on growth. The results remain the same when using different specifications. The reason could be that individual income taxes play a minor role in the budget of the governments of Balkan countries. Most of these economies continue to have a high share of informal markets, relatively low rates of taxes and high level of exemptions. On the other hand, it is interesting to note that, when adding new control variables or addressing a potential endogeneity issue in the model, corporate income taxes show a significant and positive relationship with economic growth. The positive effect contradicts with many theoretical studies who claimed that corporate taxes discourage the growth rates of GDP. As discussed before, the efficiency of collecting corporate income tax has been usually considered to be low in many countries in the Balkan region, therefore there is a reason to believe that the results might change if countries would reduce the tax fraud and increase tax compliance in the region.

Taxes on goods and services have been proven to be beneficial to growth, at least under the main regression and when adding new control variables to the model. The effect of this variable is smaller when we compare it to other significant effects of tax variables, however, the results are in agreement with the IMF (2011, 2015) reports where they state that indirect taxes such as VAT are usually considered to be more growth-friendly for the economy of a country. One of the reasons could be that VAT is considered to be more neutral when it's compared to other types of taxes, because of the fact that it doesn't create distortions by promoting the local production and it doesn't create additional costs when it comes to the production of goods and services (Brun & Diakite, 2016).

In the case of property taxes, the results demonstrate a strong negative impact on real GDP growth, even when it is measured with an instrumental variable technique or when adding new control variables. Since this source of revenue is not favorable to growth, Balkan countries should try to focus more on managing these taxes more efficiently, either by including higher rates that would reflect the real size and the actual use (e.g. commercial or residential) of different properties, or by trying to improving the compliance which could lead to a higher share of revenues in GDP and could reduce the negative effect of these type of taxes on economic growth.

On the other hand, taxes on international trade are positively correlated with economic growth. The results indicate the fact that most of the governments in the Balkans are still dependent on revenues that are coming from trade taxes. As mentioned before, one possible justification for this link between trade-related taxes and growth could be that higher tax rates can generate more revenues that can be used in sectors that cause positive externalities for the economy, and thus support growth (Yanikkaya, 2003).

Besides that, the results are in contradiction with the suggestions of the IMF or the World Bank who have been continuously encouraging countries to reduce or remove trade-related taxes and promote trade liberalization. Based on this relationship between taxes on international trade and growth rate of GDP, Balkan countries should reconsider the potential challenges that can come with trade liberalization and potential reforms that they could develop in order to create alternative sources of tax revenue that can similarly benefit economic growth in the future.

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APPENDICES

Appendix 1. Correlation matrix when adding foreign direct investments and savings as control variables

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) GGDP	1.00											
(2) PIT	-0.22	1.00										
(3) CIT	0.13	-0.02	1.00									
(4) TP	-0.26	0.46	-0.01	1.00								
(5) TGS	-0.08	-0.03	-0.30	-0.03	1.00							
(6) TIT	0.25	-0.01	-0.42	-0.20	-0.20	1.00						
(7) RIR	-0.32	-0.35	0.18	-0.00	-0.32	-0.14	1.00					
(8) GOVEXP	-0.27	0.42	-0.32	0.17	0.36	0.14	-0.26	1.00				
(9) UNEMP	-0.03	-0.28	-0.56	0.03	0.11	0.49	0.11	0.31	1.00			
(10) CoC	-0.20	0.57	0.23	0.03	0.03	-0.47	-0.03	0.25	-0.46	1.00		
(11) FDI	0.20	-0.10	-0.04	-0.04	0.27	0.21	-0.22	0.03	0.06	-0.22	1.00	
(12) S	0.18	-0.08	0.20	-0.36	-0.50	-0.08	0.21	-0.54	-0.30	0.26	-0.43	1.00

Appendix 2. Regression results when adding instruments as explanatory variables (Model A), estimation of the endogenous variable TGS (Model B), and PIT (Model C)

VARIABLES	Model A	Model B	Model C
PIT	-0.15 (0.83)		
CIT	1.04* (0.54)	-0.31* (0.16)	-0.00 (0.07)
TGS	0.52 (0.28)		
TP	-2.87** (1.19)	0.34 (0.54)	0.36** (0.15)
TIT	2.82*** (0.36)	-0.58** (0.22)	-0.22* (0.11)
RIR	-0.56*** (0.07)	-0.04 (0.03)	-0.00 (0.02)
GOVEXP	-0.87*** (0.14)	-0.14 (0.11)	-0.00 (0.03)
UNEMP	0.37** (0.13)	0.01 (0.05)	0.00 (0.02)
CoC	5.22** (2.22)	-0.38 (0.68)	0.27 (0.26)
MYS	-0.84 (0.61)	0.00 (0.17)	0.04 (0.05)
Lagged.PIT	0.60 (0.91)	0.02 (0.20)	0.50*** (0.14)
S	0.04 (0.05)	-0.06** (0.02)	-0.00 (0.01)
Lagged.TGS	-0.08 (0.27)	0.44*** (0.12)	0.00 (0.06)
GGDP		0.05 (0.03)	-0.00 (0.01)
Constant	14.68 (8.74)	12.35* (5.53)	1.21 (1.60)
Observations	112	112	112
R-squared	0.64	0.63	0.59
Number of id	10	10	10

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1