Should Albania
issue municipal bonds?
Analyzing the impact of municipal bonds market in some of the Central Eastern European Economies

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Abstract

The aim of this study is to evaluate whether Albania should issue municipal bonds or not considering the current economic, socio-politic and legal environment. In order to answer the main question, the study employs three main analyses: descriptive, case study and empirical. In addition to providing a detailed description of the current situation in Albania regarding its readiness for issuing municipal bonds, the study reviews the experience of four former communist countries which have had experience in municipal bonds markets: Hungary, Romania, Poland and Serbia.

Employing Time Series Cross Sectional methodology on annual data covering the period 1996-2015 for these four countries, the study finds those municipal bond markets do not have a significant effect on the economic output of the country.

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Introduction

The aim of this study is to explore the possibilities for the development of a municipal bond market in Albania. Based on empirical and descriptive analysis, the study provides suggestions whether Albania should issue municipal bonds now or should wait a bit longer for several conditions to be met.

Currently, Albania does have a relatively high public debt, around 72.2% of Gross Domestic Product, which is mostly financed in the domestic market. The primary market is not very highly developed and it consists in eight instruments: 3-, 6-, and 12-month T-bills, 2-, 3- and 5-, 7 and 10-year government bonds. The auctions of the last three government bonds are conducted at not a very high and irregular frequency. The secondary market is nearly non-existent, and the stock market exchange is no longer functional. It is important to point out that Albania has high political fragmentation of local government officials; not-very well specified legislation regarding fiscal decentralization and a high level of corruption of public administration officials (according to various surveys).

Like any other emerging economy, Albania highly needs financial resources in order to finance its local projects, mostly related to infrastructure and it is currently struggling in finding these resources. So far, the main resources in financing capital projects in municipalities have been from the central government budget or donors (mainly international). Therefore, it is very important that municipalities in Albania mobilize their local resources in financing their investment projects. However, legislation regarding such issue is not very clear in Albania. Statistics obtained from Albania's Ministry of Finance show that even though local government units in Albania, in the context of decentralization process, are delegated services of pre-tertiary education , primary health care facilities and their maintenance, investment in infrastructure, etc., the portion of state budget allocated to all local government units is quite small, around 5-7%.[1]

A real challenge for local governments units of any country, not only in Albania, is to find and mobilize local revenues which would ensure local economic development in the long-run. According to World Bank's definition, local development is "a set of activities that aim to build the capacity of local communities to improve their economic future and quality of life for all"

[1] Statistics obtained from Albania's Ministry of Finance

(Goga and Murphy, 2006). Similarly, other definitions on local economic development are not constrained solely to the economic issues but to the quality of life, sustainability, and socio-economic development, as well. It is widely accepted that local economic developments starts with "hard infrastructure", though the developed economies have started to invest more in aspects of overall quality of life given that they have met the basic infrastructure conditions. Borrowing through issuance bonds by local governments is widely recognized as an effective way for financing local capital projects.

Many emerging economies have continuously undertaken efforts to enhance the development of municipal bond markets in their countries, using the successful experience of U.S municipal market as a model. Policy makers in these emerging countries are aware that they cannot replicate the features of the U.S market in their economies, especially in the short-run, and therefore they have come up with a diverse set of techniques to achieve the same results as in the U.S case, such as: shaping laws and regulations which would channel investment opportunities into municipal bonds markets; sometimes even providing support for specific municipal bonds sales on a selective basis.

In order to evaluate whether there are possibilities for development of a municipal bonds market in Albania, three approaches are applied: *descriptive*, *case-study analysis* and *empirical estimation*.

In the descriptive approach, I provide a detailed description of the Albanian current situation regarding the development of primary market and its main instruments, the performance of public debt (domestic and external), and the legislation in place regarding the decentralization of fiscal expenses and revenues to local government units.

In the case study analysis, the experience of four countries (Hungary, Poland, Romania and Serbia) is provided with regard to their issuance of municipal bonds while focusing on their challenges and successes in using such instruments. The main criteria in choosing these countries is that they have all been under communist regimes, and upon their collapse in the late '80s and early '90s, they undertook several reforms regarding decentralization of public administration and decision-making powers. Similarly to Albania, the four countries considered in the case study analysis are characterized by a capital city with much power in decision-making compared to other cities of the country.

In the empirical approach, the study aims to investigate the effect of fiscal decentralization on economic growth for the four countries (Hungary, Romania, Poland and Serbia) along with the effect of the issuance of the municipal bond market, while taking into consideration other control variables for economic growth.

The empirical results show that the municipal bonds variable does not have a statistically significant effect on the economic output, in both cases, when interacting with the fiscal decentralization variable and when entering the specification as a free term. However, given the insufficient number of observations (annual data for four countries over a relatively short time period) included in the analysis; results need to be taken with caution.

The rest of the paper is organized as follows. The next chapter provides a review of empirical literature on how to measure the effect of fiscal decentralization on economic growth or on other economic indicators. The third chapter describes the experience of four countries considered as case studies in our analysis when issuing municipal bonds focusing on reasons, challenges and the extent of using them. The fourth chapter reviews the data and outlines the methodology that will be applied in order to estimate the effect of fiscal decentralization and the effect of issuing municipal bonds on economic growth. The final chapter concludes whether it is an appropriate time for Albania (based on three approaches) to issue municipal bonds, and also points out further areas of research.

Chapter 1

Literature Review

Empirical literature on the impact of municipal bonds issuance on the economy is quite limited. The majority bulk of literature on municipal bonds is of descriptive nature, with the main focus on the evolutionary chronology of the municipal bonds market in various countries, on their advantages and disadvantages compared to other local financing instruments; and on the successes or failures of such instruments in financing local capital projects.

To the best of my knowledge and based on extensive literature review, there is no previous study aiming to empirically estimate the impact of municipal bonds either on the local economy or on the whole economy. However, such issue is tackled in a more indirect way in many other studies, whose focus has been to estimate the impact of local decentralization, rather than the issuance of municipal bonds, on economic growth (Phillips and Woller, 1997; Davooodi and Zoe, 1998; Xie et al., 1999; Lin and Liu, 2000; Thieben, 2001; Thiesen, 2003; Ebel and Yilmaz, 2004; Malik S. et al, (2006); Yamoah, 2007; Hammond and Tosun, 2009; Faridi, 2011). However, municipal bonds represent one form of fiscal decentralization as they allows local governments, under constraints of low local revenues, to implement local government policies and financial local projects, which are important to public well-being, through local borrowing.

The definition employed for fiscal decentralization varies among studies. Most of the studies on the relationship between decentralization and various macroeconomic measures represent the level of fiscal decentralization as the subnational revenues or government spending to total revenues or government spending, respectively, or to Gross Domestic Product. The advantage of using such indicators – available from the Government Finance Statistics, IMF – is that it allows the comparison of fiscal decentralization across countries while eliminating the need of knowing details regarding fiscal system designs for each country. Some other studies (Stansel, 2005) represent the degree of fiscal decentralization as the number of local governments in a locality. Another alternative method to measure fiscal decentralization is using a dummy for whether or not country governments administer welfare at the local level (Yamoah, 2007). In their study aiming to investigate the impact of decentralization effect on government

size with cross-country panel data, Jin and Zou (2002) use a dummy variable to represent decentralization, which takes value of one if the country shows decentralization features, such as: is a federation, has elected officials, has constraints on subnational government borrowing, and has an independent central bank.

Regarding the impact of decentralization on economic growth, different studies provide very different results depending on the sample period chosen, on specific characteristics of countries under study, and on the type of decentralization and fiscal system designs. Some of the earliest studies on such topic are Phillips and Woller (1997) and Davoodi and Zou (1998). The former found inverse relationship between decentralization and economic growth for seventeen developed nations over the period 1947- 1991, and no concluding evidence for developing economies. In contrast, the latter, using panel data for forty six countries during the period 1970-1989, found negative relationship between fiscal decentralization and economic growth in developing economies, but no relationship for developed ones.

There exists a considerable bulk of literature for the case of United States on such topic, with conflicting results. Xie et al. (1999) concluded that there is an inverse relationship between fiscal decentralization and economic growth for the USA for the period 1948- 1994. Hammond and Tosun (2009) investigate the effect of fiscal decentralization on U.S county population, employment, and real income growth. The main findings of the study suggest that decentralization is important for the local economic growth; however, it depends on the government unit and on the economic indicator used. According to Hammond and Tosun (2009), decentralization, measured as the number of single-purpose governments per square mile, has a positive impact on metropolitan population and employment growth, but no impact on nonmetropolitan counties. When decentralization is measured by the fragmentation of general-purpose governments, results find a negative effect on nonmetropolitan employment and population growth. Another study regarding U.S counties is that of Yamoah (2007), which aims to construct a measure of decentralization and to estimate its impact on the economic growth of U.S counties using country level data from forty-six states in the United States. Yamoah (2007) represents economic growth either by population or employment growth, and constructs an interaction term between decentralization and rural status with the aim of testing whether the effect of decentralization varies by rural status of counties.

With regard to OECD countries, Thiesen (2003) concludes that fiscal decentralization promotes economic growth over the period 1973- 1998. Fiscal decentralization in this study is represented by the share of local government spending and revenues to total, while economic growth is represented by the average income growth per working age person. An interesting finding of the paper is that the relationship between fiscal decentralization and economic growth is hump-shaped. Using bivariate estimation techniques, Ebel and Yilmaz (2004) concluded on a positive relationship between economic growth and decentralization of expenditure and revenue for six countries of Central and Eastern European countries. Even for an underdeveloped economy with not a remarkable growth rate, fiscal decentralization is found to improve the public sector efficiency and to enhance economic growth (Faridi, 2011).

In the case of Albania, there is no empirical study investigating the relationship of municipal bonds or any other kind of decentralization with other indicators of the Albanian economy. The first and only attempt is that of Cepiku and Mussari (2008), which aims to assess the impact of draft law on Corporate and Municipal Bonds on the Albanian securities, while pointing out the problems of the new legislations with regard to local economy and providing recommendations on how the legal framework can be further improved and more efficiently implemented. Cepiku and Mussari (2008), also, conduct a case-study analysis in selected municipalities (Fier and Kruja) at some banks with the aim of understanding the impact of the draft law on the Albanian market and on local governments. The case-study analysis consisted of document analysis, participant observation and semi-structured interviews, which all aimed to provide a more comprehensive understanding of the potential use and attractiveness of municipal bonds as alternative means of raising debt capital and financing local projects. This project concludes that enabling local government units to issue bonds would positively contribute to the economic and social development of the country; would enhance the quality of services provided to the citizens; would attract new businesses and investments; and would increase the local tax base.

Chapter 2

Case Studies

In the beginning of the study I wanted to include more countries in my case study analysis and briefly outline their experience with the issuance of the municipal bonds market. Due to lack of data or due to lack of municipal bonds markets in countries which I showed high interest in (such as Macedonia or Montenegro), I ended up only with four countries: Hungary, Poland, Romania, and Serbia, which share a couple of similarities with Albania. First, all these countries have been under communist regimes and upon their collapse in the late '80s and early '90s; they all started to undertake reforms for decentralizing public administration and decision-making powers. Second, the four case studies represent countries with powerful capital city (Budapest, Warsaw, Bucharest and Belgrade) characterized by high and centralized power-decision making and with much less power delegated to other cities of the country, as in the case of Albania.

2.1 Hungary

In Hungary, as in many other Central and Eastern European (CEE) countries, the end of centralized planning gave communities the right to form local self-governments and to make decisions about the community on their own. Among the post-Communist CEE countries, Hungary was one of the first to take steps toward decentralizing public administration and decision-making powers. The decentralization process decreased significantly revenues of local government while the level and scope of services did not decrease at the same time. Therefore, local government in Hungary started to use extensively loan resources. The size of indebtness increased considerably in 2002, while at the end of 2009 the size of financial obligations derived from local borrowing amounted more than 4% of GDP. The extremely high volume of local government debt started in 2006, mostly due to the issuance of local government bonds.

Kovàcs (2011) aims to investigate factors which caused the high level of indebtedness in Hungary while separating the effect of internal and external variables. The former variables consist in factors, such as: local financial management, the professional knowledge and the attitude of local government's executives towards bond-financing. The latter variables consist in factors, such as: legislation, the central subsidy policy, and the macro-economic situation of Hungary. Main findings of the study show that the level of knowledge of municipal executives

about local borrowing and bond financing resulted to be extremely low. This implies that the internal factors could not have been the accelerator process of the borrowing process. In another study of the same year, Kovàcs (2011) finds that external factors (mainly legislation) played a more dominant role on the bond boom in Hungary.

2.2 Poland

The municipal bonds market in Poland has developed quite rapidly over the 1996- 2012 period. A key event in this process was the implementation of the Act on Bond in 1995, according to which communes were officially recognized as the issuers of municipal bonds (Galinski, 2013). Since then, the number of these securities has increased continuously. Another key development in the municipal bond market in Poland has been the considerable increase in 2009 onwards, due to several reasons (Galinski, 2013). First, the realization of investment projects in the context of EU financial perspective introduced in Poland required substantial funds which were obtained by increasing participation in the municipal bond market value. The host of the European championship in 2012 required large infrastructure projects, as well. Also, many municipal bonds were issued to re-pay previously debt incurred as a result of higher interest rates in the wake of the global financial crisis. Though the municipal bonds market value in Poland has increased in its volume and value, it still remains low in terms of GDP and compared to the European Union markets. However, according to Galinski (2013), there are a lot of opportunities for further development of the Polish municipal bond market. In a survey of commercial banks, Galinski (2013) states that the percentage of banks who consider municipal bonds highly attractive until 2015 has gone up to 64% from 22% in 2011. Also, the creation of a new platform for conducting transactions in the bond market (the Catalyst market), organized by the Warsaw Stock Exchange, has affected the evolution of the municipal bonds market by increasing its trading liquidity. Liquidity is considered to be one of the main risks which prevent the development of the municipal bond market, as investors would not be able to convert their securities into cash.

2.3 Romania

Similar to other Central and Eastern European countries, changes in local public administration registered in Romania in 1999 onwards were associated with changes in local financial independence. Local governments had the freedom to choose their own tools in financing their local objectives. One of this tools consisted in the municipal bond, which was first issued in 2001 by the municipality of Predeal, with the aim of financing a ski resort upgrade (Mosteanu and Carmen, 2009). Other municipalities issued municipal bonds, such as: Bacau, Alba Iulia, Lugoj, Timisoara, Oradea, Deva, Predeal, Sebes, in order to finance investments in municipal roads, water net extensions, cleaning stations, modernization of tourist areas or of districts. All the municipal bonds issued so far are listed on the Bucharest Stock Exchange.

2.4 Serbia

The Serbian experience in issuing municipal bonds has shown to be quite successful. The decentralization process in Serbia started in 2002 with the draft of the Local Self Government Act, which aimed to extend the competences of 39 municipalities in Serbia. However, the complete decentralization of the municipalities could not be achieved without further changes in national legislation with regard to fiscal decentralization. Therefore, in 2006, Serbia adopted the Local Self-Government Financing Act, which enabled municipalities to contribute to their local development by using their own instruments. Municipal bonds turned out to be a much more effective tool in enhancing capital investments compared to other tools: municipal revenues (pay-as-you-go system) or bank loans.

Even though neighboring countries were quite familiar in using municipal bonds as an instrument to finance bank loans, it took almost a decade for Serbia to prepare the legal and regulatory framework for the issuance of municipal bonds. In 2009, some changes were added to the Public Debt Act, which in addition to the financial institutions allowed other agents (domestic and foreign, individual, private and corporate) to participate in the municipal bond market. Another legislation aiming to boost the municipal bond market is the draft of the New Capital Market Act, which specified the complete procedure for issuing municipal bonds and for trading in the secondary market. This act helped in making the financial instrument more tradable and more attractive for investors which in turn would contribute to the successful

development of the municipal bonds (Vučetic and Jovanović, 2013). The first municipality to issue municipal bond in Serbia is the City of Novi Sad in 2011 to finance local infrastructure, which saved more than three millions Euros compared to the loan that the City of Novi Sad could have obtained from a bank. Later, other municipalities followed Novi Sad. The relative modest experience in Serbia showed that a municipality is better off when simultaneously attempts to issue a bond and obtain a loan, as with an increased investor competition, it can profit a lower borrowing cost. Also, for the municipal bond market to well function, It is important that the activity of local governments and the management of local finances are transparent to the public. Receiving international credit serves as a positive signal to the investors, as it indicates a less risky and more transparent environment. Another factor limiting the development of the municipal bonds in Serbia is the price and the level of the current debt.

To sum up all four cases, the experiences of each country in issuing municipal bonds are different from each other and are in line with the efforts of each country towards decentralizing central government power. However, in overall terms municipal bonds have helped in financing some major local infrastructure investment, in mobilizing local resources, and in increasing the financial dependence from the central government. Also, based on the experience of four countries, drafting the right legislation on municipal bonds has been the key driver in the development of municipal bond market.

Chapter 3

The Case of Albania

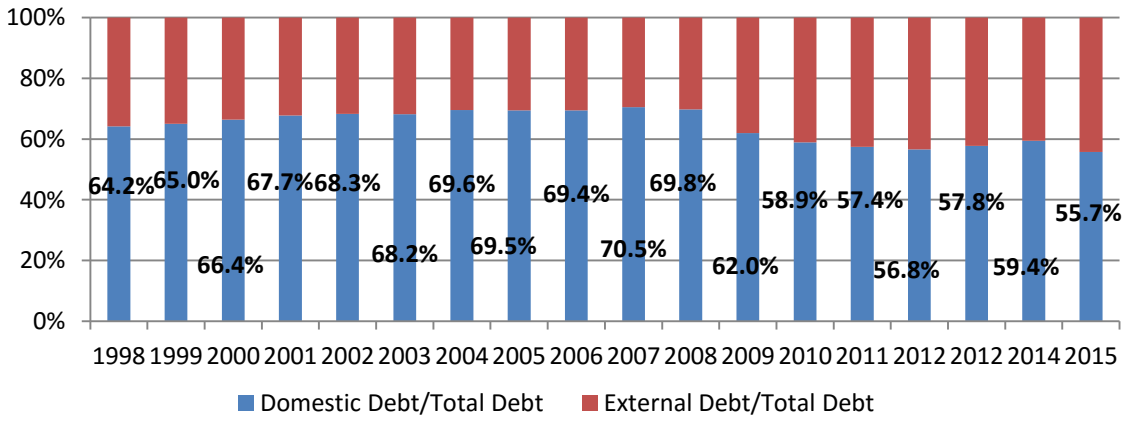
In the case of Albania, there is no municipal bonds market. This is the first study which addresses the potential impact of developing a municipal bonds market in Albania, both theoretically and empirically. The following provides an overview of the government borrowing at local and central level in Albania, outlines the decentralization process, especially that of the fiscal process, and describes the current legislation framework at place on fiscal decentralization and local borrowing. Also, some factors are pointed out which might inhibit the development of a municipal bonds market, such as: the absence of a stock market exchange, high level of public debt, a not very developed primary market; high political fragmentation of local government officials; not-very well specified legislation regarding fiscal decentralization, high level of corruption of public administration officials, etc.

International experience shows that the level of public debt in terms of GDP varies considerably from one country to another, but however it is not a sign of the performance of the respective economy. The limit to public debt should be subject to the ability of the economy to generate economic growth and to whether its use is productive or not. The level of debt becomes threating for an economy, when it increases to such an extent that limits the performance of public functions, such as maintaining administration, the function of protection, law enforcement, education, health. As a results of all these, the government becomes incapable of repaying installments and interests periodically.

An important indicator supporting the capacity and ability of a government to meet its obligations is the ratio of income to GDP, which currently in Albania fluctuates around 26.8% in 2015. This is considerably lower than the average of EU countries and that of the countries in the region. Such low level is due to two main reasons: the rate of taxation and fiscal administration in Albania. Even though the rates of taxation in Albania are on par with those of the region or even higher, the level of revenue collection is considered among the lowest in the region (excluding Kosovo), around 28% of GDP. Such low level of revenue collection is mostly due to the high informality characterizing the Albanian economy, low tax base, and due to inefficiency of revenue collection process. It is of high importance to increase the level of revenue to GDP, as it would reduce the need for debt.

Another issue concerning public debt management relates to how debt is financed. According to standard macroeconomic textbooks, the drawback of central government issuing debt is that is mobilizes national savings and to some degree reduces the possibility for credit available to the private agents, and this way inhibiting economic growth. Whether public deficit should be financed domestically or from external sources is highly debatable. In current circumstances of global economy, the predominant view is that deficit should be financed in international market in order to free up credit resources for the domestic economy. Such policy seems is followed by the Albanian government in 2016, during which most of the budget deficit is financed from external market. As shown in the graph, most of the public debt is Albania is financed domestically, and there has been an increasing tendency from the central government to resort to external resources.

Figure 1. Composition of Public Debt



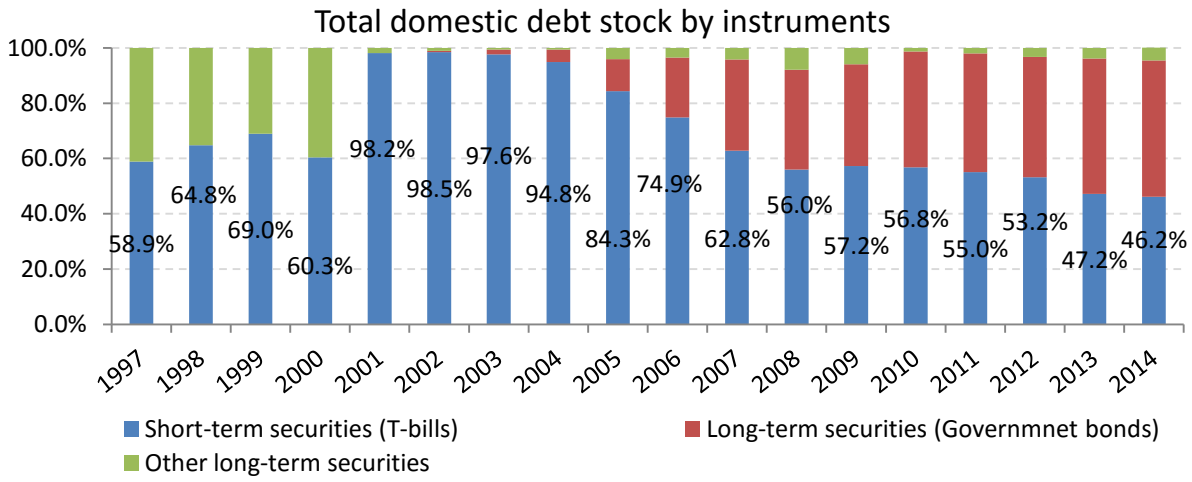
Source: Ministry of Finance of Albania

Albania does not have a very developed primary market, while the secondary market is almost negligible. There is not a wide spectrum of maturities forming the yield curve in Albania. There are only eight maturities (3-month T-bill; 6-month T-bill; 12-month T-bill; 2-year government bond; 3-year government bond; 5-year government bond, 7-year government bond and the 10-year government bond). Time series on yields of government bonds (2-, 3-, 5-, 7-, and 10-year) are quite short. They date back in 2002Q4, 2005Q2, 2006Q4, 2007, and 2013, respectively. Also, the frequency of auctions limits the number of observations on these yields. So, 2-year government bonds auctions are held every month; those of 3-year and 5-year

government bonds are held every three months; while those of the 7- and 10-year government bonds are held even less frequently.

As shown in graph 1, domestic debt in Albania has been mostly financed by short-term securities (3-, 6- and 12-month T-bills) until 2007. Afterwards, government bonds (2-, 3-, 5-, 7- and 10-year) started to play a significant role in financing domestic debt at almost the same level with short-term securities. The following graph shows that Albania is not characterized by a high level of diversity in loanable funds market.

Figure 2. Domestic Debt Financing



Source: Albania's Ministry of Finance and author's calculations

Currently, there is no stock exchange in Albania. There used to be a central Stock Exchange, which was established in 1999 in the capital city, Tirana. The market functioned as a department of the central bank until it began operating as an independent entity in 2002. The aim of Tirana Stock Exchange was to serve as an agent for government titles in the secondary market, but it failed to do so, and so it was closed. This would present a drawback for the development of a municipal bond market as these bonds would be considered less tradable.

3.1 A brief overview on decentralization in Albania

According to the law No. 115/2014, "On the Administrative-Territorial Division of the Local Government Units in the Republic of Albania"[2], the local government units are organized in 61 municipalities and 12 regions.

The government decentralization reform in Albania considerably progressed in 2002, with the draft of the law Nr. 8652, 31.07.2000, "On the organization and functioning of local government", which guarantees the rights and competencies of local government in alignment with the Constitution and the European Charter for local governance.

The period 2001- 2002 is considered to be successful in terms of fiscal decentralization. During this period, for the first time the concept of unconditional transfers to local government was introduced in the law "On State Budget" of 2001 and it was further developed with the fiscal reform package in 2002, which increased the autonomy of local government units in collecting revenues from taxes and local tariffs and in determine their level. Revenues generated from the local government units are further reinforced through local tax on small business, the transfer of tax revenues from vehicle registration, tax on real estate, etc. Since January 2005, local government units are responsible for water supply and sewerage services, as well as for costs associated with these services.

In the State Budget Law for 2003 and 2004, services of pre-tertiary education and primary health care were delegated to local government units. During this period, important policies and reforms were undertaken in the field of pre-primary health care, social services, and economic assistance. One of the greatest change was the involvement of local government units in the implementation of investment in infrastructure, pre-tertiary education, primary health care facilities, the authority to hire management staff and guards for these facilities; full authority to administer funds of economic assistance and of community work programs.

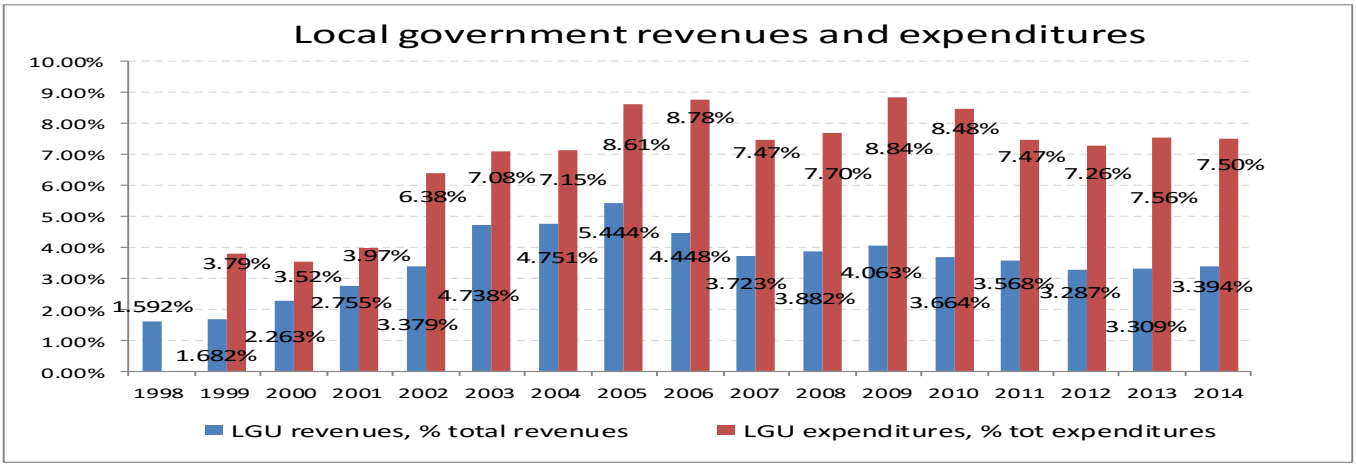
Though the decentralization process in Albania has continuously improved, it has encountered several challenges. These challenges consisted mainly in the absence of a National Framework for Policy Development, in the absence of a clear legal framework and regulatory environment, and in the extreme fragmentation of local government authorities. The lack of consensus between

[2] http://www.reformaterritoriale.al/

local elected officials and their politically-biased behavior have contributed to weakening the position of local government compared to that of the central government and has led to delays in implementing some important reforms. Also, participation of the local government representatives in the consultation process with the central government has been irregular and not systematic. With regard to common functions and competencies, there is still uncertainty derived from shortcomings and vagueness in the existing legal framework regulating the structure, roles and powers of central and local authorities at regional and local levels.

Fiscal autonomy of local government still remains a challenge. Local authorities do not have adequate financial resources which are in line with their own and common competencies. Local government units are highly dependent on the financial assistance from the local government. There is lack of capacity to collect revenues from several sources, especially from property tax or from local tariffs. In terms of fiscal decentralization process, Albania ranks much lower than countries of South-Eastern Europe. According to statistics from Ministry of Finance and the Ministry for Local Government Issues, Albania ranks last in terms of local government revenue (2.2% of GDP); local government revenue per capita (670 Euro); property tax revenue (0.18% of GDP) leaving behind only Croatia (0.13% of GDP); in terms of local government investment (0.9% of GDP). As shown in Graph 2, revenues of local government account for 3.5% of total revenues, while expenditures make up around 7% of total expenditures for the period 1998-2014.

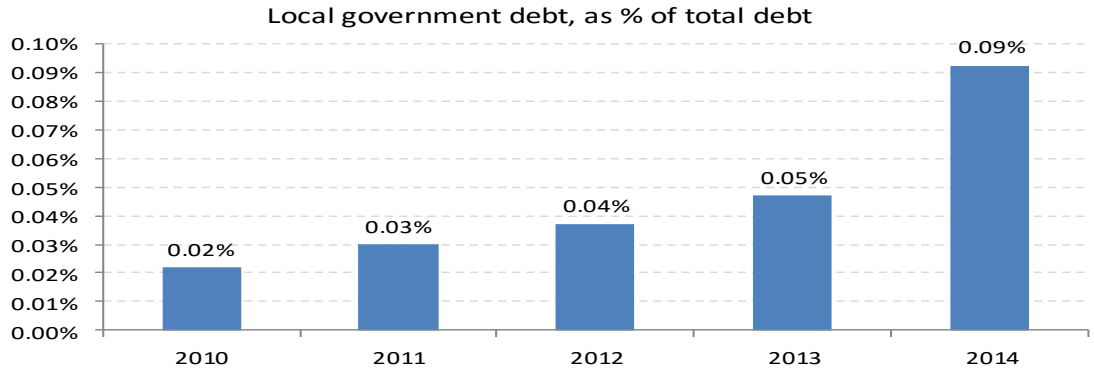
Figure 3. Trends in revenues and expenditures of local government units



Source: Albania's Ministry of Finance and author's calculations

The process of borrowing from local government units started in 2009 with the adoption of law Nr. 9896, dated 4.2.2008, and "Borrowing local government". Data show that loans received from LGUs are quite scare and account from 0.02% of the stock of national debt in 2010 and 0.4% in 2013. There are constraints from the Ministry of Finance with regard to local borrowing due to high level of public debt in the country. Borrowing through other forms, such as public-private partnership (PPP) or instruments such as credit funds municipality may be some solutions for capital investments at the local level.

Figure 4. Local Government Borrowing



Source: Ministry of Finance of Albania and author's calculations

A very important feature when considering launching a municipal bond market is also the integrity and professionalism of people administering such market. A recent survey from IDRA[3] on corruption, people's perception and their experiences shows that the level of corruption among municipalities' majors is quite high, 63 points (on a scale from 1 to 100, the latter representing the highest level of corruption), though has decreased (improved) from the previous survey conducted in 2010.

[3] IDRA is a leading Albanian research and development consulting agency with operations in Balkan region and beyond.

Chapter 4

Data and Methodology

The empirical methodology followed in this paper is based on Faridi (2011) and on Hammond and Tosun (2009). The former applies a Neo- classical growth theory, according to which growth is a function of labor and capital, while extending the model by incorporating decentralization variables and some other control variable related to growth (such as, inflation and openness). The study investigates the impact of fiscal decentralization and autonomy using annual data for the Pakistan Economy and for its four provinces for the period 1972- 2009. The technique employed is Ordinary Least Squares.

The second study aims to estimate the impact of local decentralization on economic growth for 48 U.S Counties (Hammond and Tosun, 2009). Similarly to the first study, Hammond and Tosun (2009) attempt to estimate the impact of fiscal decentralization on economic growth by regressing population, employment, and real income growth on various measures of fiscal decentralization. Also, the study checks for other control variables, like: human capital, employment, population size, previous growth and the initial level of the dependent variable.

Our study follows almost the same approach as laid out in Hammond and Tosun (2009) and Faridi (2011) by pooling four countries together: Hungary, Romania, Poland and Serbia. The methodology which will be employed in this study is based on the Neo- classical growth theory, according to which economic growth is expressed as a function of capital and labour. For the purpose of this study, the neoclassical model is extended in order to capture the influence of other control variables, such as trade openness, inflation and fiscal decentralization, and the presence of municipal bonds market.

In the following first specification, growth is regressed on labour, capital, inflation, trade openness, and fiscal decentralization (either revenue or expenses), municipal bond variable, and on the interaction of the last two, while in the second specification the municipal bond variable o is not interacted with anything.

(1)

Y=f (Labour, Capital, Inflation, Trade Openness, Fiscal Decentralization, Municipal_Bond, *Fiscal Decentralization*Municipal_Bonds*)

(2)

Y=f (Labour, Capital, Inflation, Trade Openness, Fiscal Decentralization, Municipal_Bonds)

Data on employment, capital, inflation, openness and real output are obtained or constructed using statistics from the World Economic Outlook (WEO) Database (updated in April, 2016)[4]. The criterion in choosing the sample to cover the 1996- 2014 period is due to availability of the data for the four countries under study. Data on output are available from the WEO database. Inflation is presented by average consumer prices index, while capital is proxied by the level of total investment (private and public).

The openness variable is constructed using statistics from Direction of Trade Statistics, IMF, as the as the ratio of the sum of exports and imports (of goods and services) to nominal output of the respective country[5]. The labour or human capital stock is represented by the primary completion rate for both sexes, obtained from World Development Indicators database[6].

The fiscal decentralization variable, as most of literature suggests (Faridi, 2011, and Hammond and Tossun, 2009), is constructed either as the share of local expenses to total or as the share of local revenues to total. Data on central and local government revenues or expenses are obtained from Government Financial Statistics[7]. However, there are other studies, which have used a dummy to capture the fact whether or not a county government administer welfare at the local level (Yamoah, 2007). We have used both approaches: the fiscal decentralization variables (local to total revenues and local to total expenditures) and a dummy variable to capture the (non)existence of the municipal bond market.

The fact whether a country has issued municipal bonds or not is captured by a dummy variable, which takes value one for zero for those periods when no municipal bonds were issued, and value 1 for those periods when these bonds were issued, after having after having identified the exact year when municipal bonds were first issued in each of them. In the case of Serbia, the dummy takes value from 2006 onwards, given that during this year Serbia adopted the Local Self-Government Financing Act, which enabled municipalities to contribute to their local development by using their own instruments, including municipal bonds. In the case of Romania,

[4] https://www.imf.org/external/pubs/ft/weo/2016/01/weodata/weoselgr.aspx
[5] http://data.imf.org/?sk=9D6028D4-F14A-464C-A2F2-59B2CD424B85&sId=1390030341854
[6] http://databank.worldbank.org/data/reports.aspx?source=2&country=HUN&series=&period=#
[7] http://data.imf.org/?sk=a0867067-d23c-4ebc-ad23-d3b015045405&sid=1435697914186&ss=1409151240976

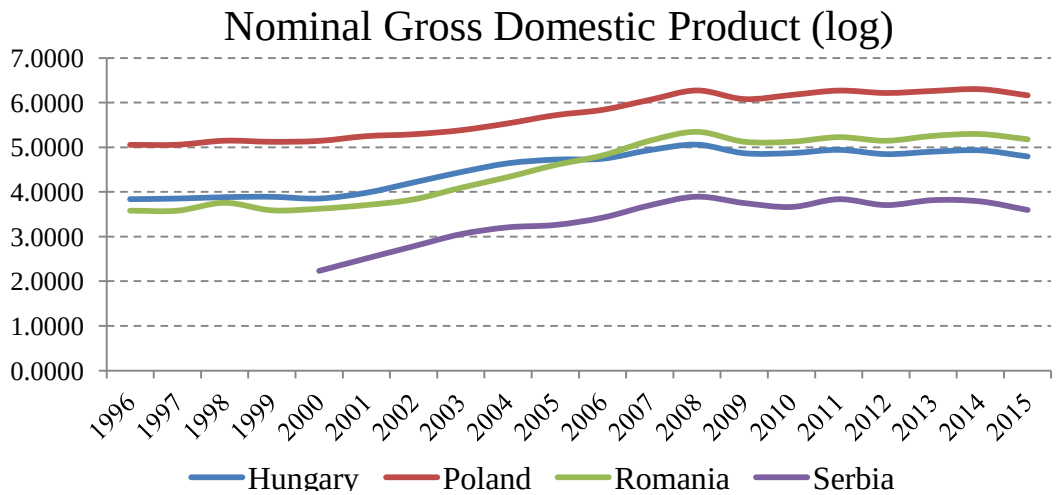
the dummy variable takes value one from 2001 onwards. In Poland, the municipal bond market has existed well before the time horizon that this study considers in its empirical analysis, which complicates the use of dummy. For this reason, the dummy takes value 1 in 2009 onwards, during which the municipal bond market in Poland registered a considerable increase. The same applies to Hungary, which is considered among one of the first country in post-Communist CEE countries in decentralizing public administration and decision-making powers. Similarly to the case of Poland, the dummy takes value 1 in the post-2002 period, during which the size of local indebtness through municipal bonds in Hungary marked a considerable increase. The magnitude, statistical significance and the size of the municipal bond dummy (interacted or not with the fiscal decentralization variable) coefficient will determine the effect of issuing municipal bonds in the economy.

The panel database used in this study is unbalanced, which means that there are some missing data for different countries for some of the variables. Serbia is the country in our analysis, which suffers the most from missing data. There are no data available for Serbia for fiscal decentralization variables over the period 1996- 2006; for GDP over the period 1996-1999; for the primary completion rate over the period 1996- 1999; and for the trade openness over the period 1996- 2000. There are some other minor missing data for other countries included in the study.

In tables 1, 2, 3, 4 and 4, you will find descriptive statistics for all variables considered in the study (but the dummy variable) for the pooled sample and for each country separately (Hungary, Poland, Romania and Serbia).

The following graph shows the behaviour of log nominal GDP for the four countries included in the study.

Figure 5. Log Nominal GDP of each country



A visual inspection of graph 5 shows that NGDP of each country represent a unit root process and shows an increasing trend. However, when applying the panel unit root test on the log of GDP against individual *intercept&trend*, it turns out that log NGDP is non-stationary, and therefore should enter the specification as first difference.

Panel unit root tests were also conducted on other explanatory variables, which all resulted to be I (I) – non stationary- , but the primary completion rate (representing the labour or the human capital stock). So, all the variables which result to be I(1) enter the specification in first difference, while the primary completion rate enters the specification in level. Variables which represent percentages such as fiscal decentralization variable, primary completion rate, or trade openness are not expressed in logarithmic forms, and therefore the obtained coefficients should be interpreted carefully, as semi-elasticities.

Since there are missing observations in the database and the number of countries under analysis is considerably smaller than the number of time periods (years in this case), we are dealing with time series cross section time analysis rather (TSCS) than with panel data analysis. Though TSCS data have similar characteristics with panel data, they might encounter statistical problems related to heteroscedasticity, autocorrelation and spatial correlation.

In the following table you will find four specifications aiming to estimate the impact fiscal decentralization and that of municipal bond market on the performance of economic growth.

In the first specification, the fiscal decentralization variable is expressed as the share of local to total government revenues and the municipal bond variable enters as a free term like all other explanatory variables as well as interacted with the fiscal decentralization variable. In the second specification, the municipal bonds variable and the fiscal decentralization enter the specification both, as free terms.

All explanatory control variables (investment, primary completion rate, consumer price index, and trade openness) have the expected positive sign, though all of them result to statistically insignificant. The fiscal decentralization (local to total revenue) variable has a negative impact on output growth (though not significant). The municipal bonds variable, by itself, also turns out to have a negative impact on the output growth. The interaction term turns out to be positive, implying that the existence of municipal bonds market increase the positive impact of fiscal decentralization variable by 1.04% (*semi-elasticity*).

In the second specification, where the interaction term is missing, the impact of the fiscal revenue decentralization is positive, while the impact of the municipal bond is negative, though both are not statistically significant.

Table 1. Impact of fiscal decentralization and municipal bonds market on economic growth

	Dependent Variable: d(log(GDP))			
Variable	Specification 1	Specification 2	Specification 3	Specification 4
	Coefficient	Coefficient	Coefficient	Coefficient
C	-0.9916	-0.9970	-1.6740	-1.1708
d(log(I(-1))	0.1859	0.1666	0.1367	0.1580
d(log(CPI(-1))	0.1272	0.0472	0.0711	0.0979
PRIMARY_COMPL(-1)	0.0110	0.0107	0.0180	0.0129
d(TRADE_OPENESS)	0.0013	0.0007	0.0008	0.0005
d(FD_REV)	**-0.0002**	**0.0042**	-	
MUN_BOND	**-0.0179**	**-0.0431**	**-0.0057**	**-0.0239**
d(FD_REV) * MUN_BOND	**0.0104**	-	-	
d(FD_EXP)	-	-	**0.0014**	**0.0076**
d(FD_EXP) * MUN_BOND	-	-	**0.0207**	
Periods included	**14**	**14**	**14**	**14**
Cross-sections included	**4**	**4**	**4**	**4**
Total panel (unbalanced) observations	**40**	**40**	**40**	**40**
Fixed Effects	**Yes**	**Yes**	**Yes**	**Yes**
R-squared	**0.156**	**0.148**	**0.219**	**0.153**
Akaike info criterion	**-1.010**	**-1.050**	**-0.937**	**-1.057**
Schwarz criterion	**-0.672**	**-0.754**	**-0.472**	**-0.761**
Log likelihood	**28.196**	**27.994**	**29.731**	**28.130**

Note: *** denotes significance at 1% level of confidence; ** denotes confidence at 5% level of confidence; and denotes confidence at 10% level of confidence.
GDP- nominal output; I proxies capital stock; CPI- Consumer Price Index; FD_Rev represents fiscal decentralization as a share of local to total revenues; FD_EXP represents fiscal decentralization as a share of local to total expenditures; mun_bond represents the municipal bonds market; primary_comp denotes completion rate at primary school for both sexes as a proxy for labour or human capital stock

Compared to the first two specifications, in the third and fourth specification, the fiscal decentralization variable is represented by the share of local to total government expenditures, with the only difference that in the fourth specification there is no interaction between the fiscal decentralization and the municipal bond variable.

Like in the first two specifications, all explanatory control variables (investment, primary completion rate, consumer price index, and trade openness) have the expected positive sign, though their impact is statistically insignificant. The fiscal decentralization variable (share of

local to total expenses) has a positive impact on the economic growth (though not significant); an increase by one percentage point in the share of local to total expenses increases economic growth by 0.1%. The municipal bonds variable, by itself, has a negative impact on the economic growth. The interaction term between fiscal expenses decentralization and municipal bond turns out to be positive, implying that the existence of municipal bonds market increase the positive impact of fiscal decentralization variable by 2.07% (*semi-elasticity*).

While in the fourth specification, where the interaction term is missing, the impact of the municipal bond variable continues to be negative while the impact of the fiscal decentralization variable is still positive.

In order to estimate the goodness of fit for the above regressions, I apply unit root tests on the residuals of each specification (1, 2, 3 and 4). Results, as shown in Table 2, show that residuals of all specifications are stationary (but in the first specification: individual& intercept), which means they have a zero mean and constant variance over time.

Table 2. Results of Unit Root Tests on Residuals

	Levin-Lin_Chu test: *in Levels*					
	Individual & intercept		Individual intercept &trend		None	
	Statistic	*Prob.***	*Statistic*	*Prob.***	*Statistic*	*Prob.***
residual (spec. 1)	-0.3429	0.3658	-11.2789	0.0000	-2.6466	0.0041
residual (spec. 2)	1.1950	0.8840	-13.8629	0.0000	-2.6488	0.0040
residual (spec.3)	0.8222	0.7945	-15.8036	0.0000	-2.1151	0.0172
residual(spec. 4)	1.1239	0.8695	-16.1466	0.0000	-2.3802	0.0087
Null: Unit root (assumes common unit root process)						

However, it is important to stress out that variables turn out to be statistically non-significant, which might require other empirical approaches to tackle the question of any possible impact of municipal bond (and fiscal decentralization) on the economic growth. The statistical non-significance might be also due to the insufficient number of observations. Due to such strong indication for statistical insignificance, we might conclude that the impact of municipal bond on the economic output is negligible. Considering that the empirical analysis took into consideration only four countries over a relatively short time period (annual data), results need to be taken with much caution.

Chapter 5

Concluding Remarks and Further Areas of Research

This study aimed to estimate whether Albania should issue municipal bonds in terms of the impact that they would have in the economy but also in terms whether the current conditions in Albania would justify and support the launch of such market.

The study followed three approaches.

The case study analysis briefly overviewed the experience of four former communist countries (Hungary, Poland, Serbia and Romania) in issuing municipal bonds. The choice of these countries is due to the decentralization reforms they undertook in the late '80s and early '90s in terms of public administration and decision-making powers. The experience was quite different from one country to another, but in overall terms municipal bonds helped in finance some major local infrastructure investments, in mobilize local domestic resources, and in increase the financial dependence from the central government.

The descriptive approach pointed out the main areas that Albania lacks before issuing municipal bonds, though has made major improvements over years. A more explicit regulation regarding local borrowing is needed, and whether there are cases that Albanian municipalities have really borrowed locally through bonds market, it is important that such activity becomes transparent to the public. It would be wiser for Albanian authorities to focus their efforts in developing the secondary market and the stock exchange, since that would increase the liquidity of municipal bonds and thus make them more attractive instruments.

The empirical approach clearly showed that municipal bonds did not have any significant impact on the economic output of Albania. Therefore in the future, other empirical approaches might be tested which include more countries and a wider time horizon. It would be logical to try to estimate the impact of municipal bond on any local indicator rather than on economic output for the whole country. That would be quite a challenging task given the lack of data at local level for several countries, and the statistical reporting standards vary from one country to another.

An interesting approach would be to choose only one country, which consists in several local government units issuing municipal bonds and to compare these local government units to other ones on various criteria. But again, having access to data at local level would be difficult.

In the case of Albania, it is very important that authorities intensify their efforts in explicitly formulating legislation regarding local decentralization, specifically in terms of mobilizing revenues and local government. At the moment, such issues are vaguely mentioned in the 2015-2010 Decentralization Strategy of the Ministry for Local Affairs.

Since the secondary market or the stock exchange is not functional in Albania, it would be wise to make them operate in the future, as it would make every other bond (primary t-bills or bond, municipal bond) more liquid and tradable and therefore more attractive for investors.

Finally, it is very crucial to financially educate the public and municipalities' officials about the characteristics, risks and benefits of municipal bonds auctions by organising different workshops, distributing booklets, or organising pilot auctions for municipal bonds.

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Appendix

Table 3. Descriptive Statistics for the pooled sample

	GDP	Inflation	Fiscal Decentralization (Expenses)	Fiscal Decentralization (Revenues)	Capital	Trade_Openess	Labor (primary completion rate)
Mean	162.0109	96.80567	25.38176	29.67613	37.15620	80.01945	96.53413
Median	129.9335	97.67300	25.04537	29.56950	29.11083	78.10692	96.42500
Maximum	528.4820	169.1370	40.82400	48.20000	118.6130	123.4900	104.3800
Minimum	35.87200	3.726000	10.75280	14.44600	7.209374	39.30493	87.78000
Std. Dev.	133.5861	38.60077	7.359765	8.490073	28.61877	21.03325	2.929213
Skewness	1.453387	-0.285071	-0.017143	0.301374	1.298877	0.045153	-0.137510
Kurtosis	4.314476	2.729683	2.400596	2.421889	3.973702	2.281174	4.387052
Jarque-Bera	19.50627	0.763091	0.690883	1.336907	14.75147	1.005992	3.832471
Probability	0.000058	0.682805	0.707908	0.512501	0.000626	0.604716	0.147160
Sum	7452.500	4453.061	1167.561	1365.102	1709.185	3680.895	4440.570
Sum Sq. Dev.	803036.0	67050.88	2437.477	3243.660	36856.52	19907.88	386.1129
Observations	46	46	46	46	46	46	46

Table 4. Descriptive Statistics for Hungary

	GDP	Inflation	Fiscal Decentralization (Expenses)	Fiscal Decentralization (Revenues)	Capital	Trade_Openess	Labor (primary completion rate)
Mean	99.60265	79.40235	26.19580	28.96620	23.42184	92.82825	88.68585
Median	113.6325	78.42800	28.77000	30.47150	26.46874	90.79090	96.18500
Maximum	157.0950	111.7850	30.90000	35.84700	38.91086	126.9524	108.2000
Minimum	46.48500	35.46400	9.856000	8.401000	11.56826	51.31447	7.800000
Std. Dev.	39.39863	24.68102	5.806429	6.122522	8.088048	22.10592	27.81462
Skewness	-0.286302	-0.168578	-1.629980	-2.036582	-0.083531	0.082016	-2.567628
Kurtosis	1.476807	1.825429	4.585370	7.420590	1.898654	2.057725	7.815119
Jarque-Bera	2.206660	1.244410	10.95061	30.11023	1.034061	0.762324	41.29685
Probability	0.331764	0.536760	0.004189	0.000000	0.596289	0.683067	0.000000
Sum	1992.053	1588.047	523.9160	579.3240	468.4368	1856.565	1773.717
Sum Sq. Dev.	29492.78	11573.90	640.5778	712.2202	1242.914	9284.759	14699.40
Observations	20	20	20	20	20	20	20

Table 5. Descriptive Statistics for Poland

	GDP	Inflation	Fiscal Decentralization (Expenses)	Fiscal Decentralization (Revenues)	Capital	Trade_Openess	Labor (primary completion rate)
Mean	320.0835	131.5537	32.73350	39.08056	69.22739	59.61227	98.71000
Median	279.0695	133.9575	34.58700	40.67000	55.69950	63.23025	97.56500
Maximum	530.0230	169.1370	40.82400	48.20000	128.8640	78.72327	108.7000
Minimum	156.6840	77.84600	20.11600	24.21000	32.30700	39.30493	93.67000
Std. Dev.	149.5783	25.87837	6.285877	7.351504	33.31339	13.64390	3.444361
Skewness	0.280801	-0.441828	-0.815222	-0.850688	0.433075	-0.117419	1.539623
Kurtosis	1.387597	2.478662	2.728209	2.751370	1.600913	1.442944	5.225926
Jarque-Bera	2.186430	0.789482	2.049165	2.217371	2.030746	1.859678	10.82738
Probability	0.335137	0.673855	0.358946	0.329992	0.362267	0.394617	0.004455
Sum	5761.503	2367.966	589.2030	703.4500	1246.093	1073.021	1776.780
Sum Sq. Dev.	380352.3	11384.73	671.7082	918.7583	18866.30	3164.652	201.6816
Observations	18	18	18	18	18	18	18

Table 6. Descriptive Statistics for Romania

	GDP	Inflation	Fiscal Decentralization (Expenses)	Fiscal Decentralization (Revenues)	Capital	Trade_Openess	Labor (primary completion rate)
Mean	105.6203	64.16778	19.33915	23.29278	28.25872	94.18538	86.75333
Median	87.95800	71.00750	22.22401	22.73250	21.15400	96.42550	83.23500
Maximum	209.6640	113.7030	25.21671	31.13600	70.10500	110.7328	100.4200
Minimum	35.87200	3.726000	10.10566	12.85000	5.742000	61.80918	74.35000
Std. Dev.	66.59545	36.10644	5.542358	6.509659	20.94799	12.90694	9.306429
Skewness	0.239452	-0.303099	-0.740103	-0.291556	0.437297	-0.791255	0.338559
Kurtosis	1.346428	1.785781	1.849550	1.689209	1.767231	3.260539	1.589219
Jarque-Bera	2.222737	1.381352	2.635909	1.543645	1.713476	1.929163	1.836593
Probability	0.329108	0.501237	0.267682	0.462170	0.424545	0.381143	0.399198
Sum	1901.166	1155.020	348.1047	419.2700	508.6570	1695.337	1561.560
Sum Sq. Dev.	75394.22	22162.47	522.2015	720.3862	7459.912	2832.017	1472.363
Observations	18	18	18	18	18	18	18

Table 7. Descriptive Statistics for Serbia

	GDP	Inflation	Fiscal Decentralization (Expenses)	Fiscal Decentralization (Revenues)	Capital	Trade_Openess	Labor (primary completion rate)
Mean	43.08867	134.3035	16.17333	20.13667	10.01574	61.52278	91.00667
Median	41.67250	132.7870	15.95000	19.88500	8.952052	66.12828	91.44500
Maximum	49.16500	163.1140	17.49000	22.52000	14.91715	77.49058	91.71000
Minimum	39.03500	106.0020	15.32000	18.32000	7.209374	27.85895	89.50000
Std. Dev.	3.934171	21.01681	0.867587	1.623880	2.851581	17.45560	0.857010
Skewness	0.599023	0.074063	0.459745	0.363967	0.874494	-1.359362	-1.030475
Kurtosis	1.845927	1.822483	1.722445	1.775481	2.406542	3.511534	2.496656
Jarque-Bera	0.691800	0.352122	0.619403	0.507334	0.852788	1.913282	1.125217
Probability	0.707583	0.838567	0.733666	0.775950	0.652859	0.384181	0.569721
Sum	258.5320	805.8210	97.04000	120.8200	60.09446	369.1367	546.0400
Sum Sq. Dev.	77.38850	2208.532	3.763533	13.18493	40.65757	1523.490	3.672333
Observations	6	6	6	6	6	6	6