

The Impact of Automatic Stabilizers on the Economic Growth of Albania during the Period 1999-2021

MATILDA VELIU

Faculty of Economy, Department of Economics, University of Tirana,
ALBANIA

Abstract- Fiscal policy remains a crucial and powerful strategy to improve the welfare of citizens. During the last three decades, Albania has faced enormous social-economic challenges, raising the necessity for an adequate fiscal policy under the current economic situation. The correlation between fiscal policy and economic growth is a highly debated topic in literature reviews, as some of the fiscal tools do not influence in the same direction on economic growth. The purpose of the article is to see the influence of Automatic Stabilizers (AS) on the Economic Growth of Albania during the period 1999-2022. Most of the topics have been focused on the influence of active fiscal policy on economic growth despite this an unclear gap exists about the influence of the automatic fiscal policy, especially in Albania reality. The secondary data of the Ministry of Finance and INSTAT institutions about the variables and the factors that influence them like the tax system, tax revenues, and public expenditures are analyzed for this purpose. The conclusions reveal the necessity to improve especially the formula of the tax system according to the challenges of the economy. For almost three decades, the data of Automatic Stabilizers (AS) have been included in the multiple linear regression equation using the Ordinary Least Square (OLS) technique. The empirical result shows a narrow positive impact range of Automatic Stabilizers on Economic Growth. The change in the tax system and events such as the earthquake on November 9th, 2019, and the Covid-19 pandemic seem to have had a huge impact on this relationship. As Automatic Stabilizers have to do with vulnerable groups (social assistance is part of AS), some actions should be undertaken focusing on the improvement of the tax system, according to optimal management of expenditures. Applying the best practices to increase the revenues of vulnerable groups is necessary to cope better with the increasing actual rate of inflation.

Key Words: Tax system, Automatic stabilizers, Fiscal balance, Economic growth.

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1 Introduction

Fiscal policies are one of the main strategies used to improve the economic situation of a country. The consequences of the appropriate fiscal strategy will depend strongly on objective factors like the country's current economic environment, subjective factors like income inequality consequences, [1], cultural factors such as human capital accumulation, [2], secondary and tertiary educational attainment, etc. In their article, [1], the authors emphasized that income tax is more progressive and may abate income inequality in developing countries rather than in developed countries. Factors like government size, health expenditures, and education expenditures are negatively associated with income inequality. According to, [2], the secondary and tertiary educational attainments of the labor force have a significant positive effect on economic growth,

whereas primary education has an insignificant negative effect. The main markets in the economy, those of production factors (especially the labor market), markets of goods and services, and financial markets seem to influence the performance of overall fiscal policy and otherwise. Their objective and subjective triggers remain also very determinants. The relationship between fiscal policy and economic growth is complex, where the amplitude's change of one variable has not the same impact on the other variables, leading to discussion topics.

The active fiscal policy has been for a long time a crucial point in economic growth, while only in recent days the automatic fiscal policy has an increasing interest. This article aims to see this correlation, focusing on variable AS and taking into consideration its triggers like the tax system,

expenditures, etc. Although many papers show different scenarios (divergence and convergence) of fiscal policy on the increasing rate of the economy, no specific evidence exists for Albania, taking specifically into account automatic stabilizers (AS). Besides that, the variable is related to other fiscal variables, making the problem more complicated. The proper tax system selected to achieve the objectives remains one of the most important economic decisions.

Albania has changed the tax system three times over those 16 years and therefore Automatic Stabilizer (AS), which includes tax revenues and a payment scheme (unemployment assistance), has changed automatically. The “manipulation” of AS is almost done without any bureaucratic costs because it is an automatic fiscal tool. This creates an opportunity to improve the negative effects of a possible recession phase of the economy.

The theory suggests, [3], that an inappropriate tax rate will permanently decrease the economic growth of the country. The implementation process of fiscal strategy also is very important to the overall performance. Macroeconomic studies suggest, [4], that an increased tax level on revenues, automatically will reduce the level of consumption, and the effect of fiscal multiplier (if the other factors are *ceteris paribus*) will reduce economic growth much.

Although the revenues from taxes probably will be managed well, simulating investments in absolute terms, we cannot have a positive economic growth rate if we are not able to connect the investment with the rise of consumption, [4].

In Albania two different tax systems are applied on citizen revenues: flat tax and progressive tax, where the progressive tax system was modified in 2017, [5]. Focusing on the consequences of the tax system, the paper will try to reveal:

- i. Which of the two systems was able to generate more revenue, increasing the possibility for higher levels of consumption?
- ii. Which of the social rank of the population results to be more favorable by the application of that tax system?
- iii. Is there any possibility for automatic stabilizers (AS) to influence economic growth?

Automatic stabilizers (AS) are fiscal mechanisms that directly influence the government budget, increasing government expenditures or reducing taxes when the economy goes into a recession phase.

The Overall Fiscal Balance indicator will be examined to understand how much of the government expenditures per year are covered by the budget, therefore to know how the fiscal policy performs on economic growth. By using the database of the Ministry of Finance and other official institutions (INSTAT, World Bank) it will be able to create an idea about the related issues.

2 Literature Review

As was highlighted above, many researchers have found different conclusions on the inner relationship among the variables highly correlated with fiscal policy and economic growth. Their conclusions are based on the socio-economic dimensions that a country reveals, depending on cultural or political features. Therefore, the recommendations to improve the relationships among variables vary from one county to another. The discussion takes priority especially when the economy is in recession and the application of an appropriate fiscal policy is an emergency to improve the situation, but also it is going to be present even when the positive steady state of the economy takes place.

The negative marginal effects of a possible recession may not influence the economy if the proper economic actions are undertaken immediately. The determination of the optimal tax rate, or the interval tax rate, is essential and should be done through the exact evaluation of the macroeconomic indicators of the country, and those should not be biased.

The overall performance of the fiscal policy will mainly be dependent on the marginal effects of the taxes. Takes priority the category of goods and services on which the changing tax rate occurs, also the time when it is applied.

According to the literature, focusing on taxable goods reveals that Korea and Japan, [6], are more likely to face an efficiency-equity tradeoff by the revenue-neutral marginal tax reforms incorporating a reduced tax on food & beverages. Therefore, specifying well-taxable goods and services remains a good start on a well-designed fiscal policy.

In recent years, the separation of revenues because of tax effects is seen by researchers as a way to understand the situation better. The separation is done according to the references of the authors, [7], who suggest separating the public tax revenues into these main categories: a) Distortionary Revenues; b)

Non- Distortionary Revenues, and c) Other Revenues.

In Albanian reality was found that, [8], these revenues and other sub-categories have reduced economic growth, but distortionary taxation has a much larger and more significant effect on economic growth. The researchers stressed the fact that distortionary policies have the main impact on that result. According to, [9], who based on the database of the Albanian Ministry of Finance for the period 2007-2017 figured out that *MNDR* variable (Marginal Non-Distortionary Revenues) is the only independent variable that influences economic growth. The author stressed that value-added tax (VAT) and excise tax remain those that have the greatest impact on economic growth compared to other taxes.

The way tax revenues are managed and how the implementation process of fiscal policy performs, remains essential for the improvement of the economy. According to the authors, [10], the relationships between economic growth and tax income policies are apparent and a slight marginal change of 5% of those will affect economic growth by 0.2%-0.3%.

Focusing on the literature review, the impact of fiscal policy on economic growth shows a 3-dimensional view related to the socio-economic-political conditions of the specific country where the study is conducted. The researchers have used different methods and techniques for the analysis of the data. Some main findings of the literature are revealed in Table 1.

Table 1. The summary of the Literature Review: The impact of fiscal policies on economic growth.

<i>Researchers</i>	<i>Main Findings</i>
[11]	There is a significant difference in the level of impact of fiscal policy on economic growth across different fiscal regimes. The fiscal policy is more effective in the deregulated period compared to the regulated period.
[12]	The impact of the tax burden, public expenditures, and fiscal deficit on the economic growth of 23 European countries during 2012-2021 has been assessed and negatively correlated with economic growth indicators.
[13]	Tax revenue has a significant positive impact on the economic growth method: Generalized Methods of Moments (GMM).
[14]	The tax policies have a bidirectional kind of relationship
[15]	Only consumption tax has a significant negative effect, the other forms of taxation had a heterogeneous effect, method: Panel Data Analysis.
[16]	Significant Positive Effect, method: Ordinary Least Square.
[17]	The impact depends on the type of tax applied.
[18]	The significant negative effect, method: Times Series regression
[19]	Ambiguous effect/no effect, method: Pooled-Cross data, Times Series Regression.

Source: The author's summary, 2022

As Table 1 highlights, the three major impacts of fiscal policy on economic growth are:

- Fiscal policy is related positively to economic growth.
- Fiscal policy is related negatively to economic growth.
- An unclear relationship exists between those two variables.

The model of progressive tax applied in Albania since 2017 has been modified many times by the changing of tax rates, minimum wage, etc, therefore the automatic stabilizers AS of fiscal policy have been changed automatically, increasing interest in how those fiscal movements have influenced the economic growth. The number of firms that operate in Albania and their categorization upon some features like the size, number of employees, and the level of their annual profit are inputs for the preparation of a good fiscal strategy.

When the tax changes, some entities tend to avoid it, but according to the authors, [20], who focused the study on 183 tax-audited Albanian entities, found that those which have a high level of liquid ratio show a low level of tax risk. Among the all ratios used by them for the analysis of data, the debt ratio remains the most significant on tax audit risk. Therefore, to create the proper fiscal strategy it is necessary to focus also on the variables that are

concentrated especially on the micro-aspects of the economy.

3 The Evaluation of Some Fiscal Factors that Determine the Automatic Stabilizers (AS) in Albania

From 2005 until 2013 the country faced the flat tax system and the progressive tax system from the beginning of 2014 up to 2017. The revised progressive tax system was applied in 2018. Comparing the two systems, [21], the flat tax was simple without any bureaucratic cost because the revenues up to 10.000 All were not taxable, while for those among 10.001 All -30.000 All were applied a rate tax by 10% for the sum of revenues above 10.000 All. For revenues higher than 30.001 All were applied the 10% tax rate.

Therefore, the implemented formula was simple and with practical values. The progressive model was different and the tax rates changed according to the level of revenues. The revenues tend to be more specific than in the flat tax system. Table 2 shows the progressive formula up to 2017. This was the first progressive tax formula because it changed during the next few years.

Table 2. Tax rates of the first progressive tax model on personal revenues.

<i>Taxable monthly income</i>		<i>Personal employment income taxation</i>
0	To 14.000 All	1%
14.001	40.000	140 All+5% amount over 14.000
40.001	90.000	1.440 All+10% amount over 40.000
90.001	200.000	6.440 All+15% amount over 90.000
200.001	more	22.940 All+20% amount over 200.000

Source: Ministry of Finance, 2017

The information provided by Table 2 confirms that the flat tax system was simple, and less bureaucratic than the progressive tax, but from another perspective, the progressive tax contributes much better to the improvement of the economic conditions of those people who do not earn so much revenue. The disaggregate data of Table 3 are based on the revenues between the two tax systems showing the

effects of each system. The simulation process is done for different tax revenues and, for the same level of revenue is calculated the difference in a taxable sum according to each tax system. The results of Table 3 reinforce the conclusion above that for people who earn less the progressive tax system is much better.

Table 3. Various versions of taxable income on both tax systems.

	<i>Taxable Income</i>	<i>Progressive Tax(1)</i>	<i>Flat Tax(2)</i>	<i>Conclusions</i>
<i>Case 1</i>	30.000 All	940 All	2.000 All	<i>Progressive Tax has a positive effect</i>
Difference (2)-(1)		1.060 All		
<i>Case 2</i>	40.000 All	1.440 All	4.000 All	<i>Progressive Tax has a positive effect</i>
Difference (2)-(1)		2.560 All		
<i>Case 3</i>	55.000 All	2.940 All	5.500 All	<i>Progressive Tax has a positive effect</i>
Difference (2)-(1)		2.560 All		
<i>Case 4</i>	70.000 All	4.440 All	7.000 All	<i>Progressive Tax has a positive effect</i>
Difference (2)-(1)		2.560 All		
<i>Case 5</i>	105.000 All	8.690 All	10.500 All	<i>Progressive Tax has a positive effect</i>
Difference (2)-(1)		1.860 All		
<i>Case 6</i>	140.000 All	13.940 All	14.000 All	<i>Progressive Tax has a positive effect</i>
Difference (2)-(1)		940 All		
<i>Case 7</i>	160.000 All	22.940 All	16.000 All	<i>Flat Tax has a positive effect</i>
Difference (2)-(1)		-.940 All		

Source: INSTAT (2017), the author's calculation, 2017

According to the data of Table 3, the progressive tax takes priority over the flat tax among the salaries included on the segment [40.000-70.000] All and with a decrease rate of 51% for the salaries on the segment [40.000-55.000] and up to 33.7% for the salaries that are included on semi- segment [55.000-70.000]. For the segment [40.000-70.000] All, the absolute difference remains constant at a level of 2.560 All. The progressive tax model influences more positively than the flat tax in this segment, but the differences in relative terms from one range to another decrease with a small rate, [9]. Therefore, the Albanians do not recognize very much the difference between the two systems, determining low levels of consumption over time, [22].

The simulation analysis done in Table 3 shows that the marginal effect of a progressive tax remains relatively low for different revenues. Despite implementing different fiscal policies, the focus on the marginal effects of taxes seems to be crucial as the AS variable is mainly dependent on the level of the tax revenues. Until now, the marginal effect of taxes was not involved well in the strategy. The analysis of data converges with that. A statistical approach should be incorporated well, even when the strategy is at first draft.

The political and economic events that take place in Albania beyond 2017 raise the necessity to revise the progressive tax system to reaching economic targets. Consequently, the new tax rates, [5], according to the revenues were as below:

- 0-30.000 All, rate 0%;
- 30.001-150.000 All, the taxation rate is 13% of the sum over 30.000 All and
- Over 150.001 All, the taxation rate is 16.000 All +23% of the sum over 150.000 All.

The reformatted progressive tax system gives a new simple formula of taxation contributing to the reduction of bureaucratic costs.

It results in a hybrid system between the two tax systems mentioned above, as suggested by, [3, 27]. According to them, the taxation must be on a single level for all the income sources, which are subject to taxation only once, at the moment of earning. They supposed that the tax rate must be at 19% to perform better in the economy.

The indicators used to change the progressive tax system according to, [22], were:

- a) The minimum wage that it is not taxable and,
- b) Tax rates over the different revenues.

The final target objective according to, [5], was to reduce fiscal evasion and at least, to remain constant private consumption.

The fiscalization process plays a crucial role in the result. The process tends to show online every

transaction of the entities in Albania. Only in June 2022, it was completed totally. Despite this, the economic fluctuations remain evident, [23], showing a potential risk for an economic recession. The effects of the earthquake, the Covid-19, the energy crisis, and now the consequences of the Ukraine War are present in the economy, emphasizing the necessity of institutions to take steps in markets, especially in the Gasoil market.

The trend of real GDP growth and tax revenues will evaluate the economic situation during recent years. The disaggregate data of Figure 1 show that the GDP rate has received the highest value of 3.8% in 2017 and after that has been remaining constant over the two upcoming years. In the same year, the tax revenues variable takes the highest value.

The continuity of tax revenues during the pandemic time due to the increasing import of some items, especially alcohol and Gasoil products, remains an interesting fact. Although the average level of salaries remains among the lowest in European countries, (approximately 302 euros), the average price of Gasoil products is the highest, [24], reflecting a clear asymmetry of the market.

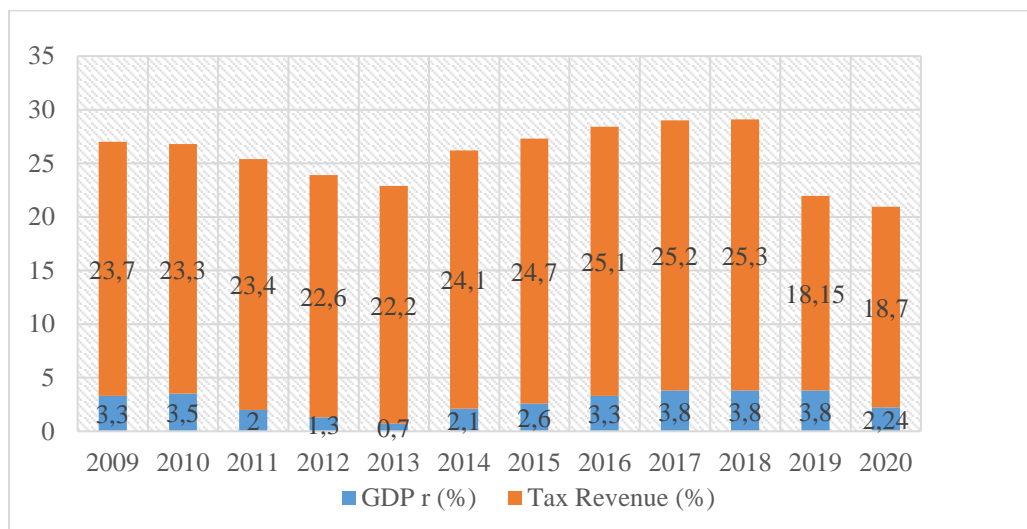


Fig. 1: Tax Revenues and real GDP growth in Albania during the period 2009-2020.

Source: Ministry of Finance (2021), the author's visual presentation.

The changing of tax systems occurs is in 2013 and the data of Figure 1 reveal that the fluctuation of the two variables (GDP r and Tax revenues) seems to be higher in the split year (2013) and almost consistent after it. This result shows that after all, the progressive tax system contributes better than the flat tax. Much more, it reveals that the forecasting

process of tax revenues is an essential process that has to be coordinated with the proper tax revenue management to mitigate the negative effects of a possible recession. The expenditures also play a huge role in this process. With the purpose to examine the fluctuations of the expenditure variable during the years, based on the data of Figure 2, is calculated the

average value rate of it estimated by 30.3%. Then, the estimated differences between the current expenditure of each year and average value are calculated. The highest value results in 2020 with a rate of 9.57%. Meanwhile, the deviation of the highest rate of tax revenue with its average value (exactly 23.03%), results at 9.85%. The tax revenue

reached the highest level in 2018, at exactly 25.3%. At that time, the pandemic effect was not yet present. If we take into consideration the deviations rate of both two variables from their average value respectively, it is clear that those are almost equal, a conclusion that agrees with the analysis above.

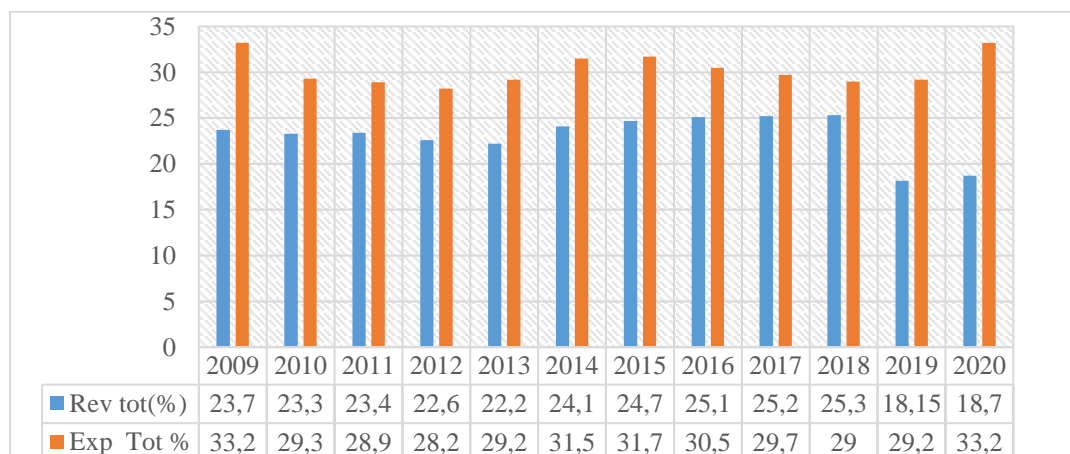


Fig. 2: The trend of expenditures and tax revenues in Albania during the period 2009-2020.
Source: Ministry of Finance (2021), IMF 2021, the author’s visual presentation.

Table 4. The ratio of Tax Revenues/Expenditures (TaxR/E) over the years in Albania.

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Ratio	71.3	79.5	80.9	80.1	76.0	76.5	77.9	82.29	84.8	87.2	62.1	56.3
TaxR/E												

Source: Ministry of Finance (2021), IMF (2021), the author’s presentation.

Furthermore, keeping as target the objective above is calculated the ratio of two variables: Tax Revenues/Expenditures- (TaxR/E) for the period 2009-2020.

Table 4 gives the respective values for each year.

As Table 4 reveals the ratio TaxR/E takes the highest level in 2018, exactly 87.2%, corresponding to the year when the tax revenue also takes the highest value. On this result, the process of revenue digitalization and the psychological effect of fiscalization have generated positive effects. The positive rate of tax revenue through the years approves that, [20], the micro-entities play a huge role. In recent years, the effects of imports are evident, [22], despite the influences of endogenous events (the Ukraine war, the pandemic effect, etc) on the economy.

The relevant fact is that for the period 2017-2019 the values of the variables remain stable and almost at the highest respective levels compared to all the post-communism period times.

A higher rate of tax revenues over time implies consequences.

As the macroeconomic literature suggests, increasing tax revenues implies a rise in the rate of inflation. Therefore, to keep it in control, the loan rates come as a prior target. Coordination of fiscal policy and monetary policy is necessary.

Besides this, focusing on fiscal policy, the forecast rate of both expenditures and revenues remains critical for a sustainable economy. The process of forecasting expenditures is done based on the forecast rate of the previous year. To see how the expenditures vary among the years, the difference of each respective year with the lowest rate of the variable through the period 2009-2020 estimated by

28.2%, are revealed in Figure 3. The variable has been generally declining over time, taking the lowest value of 28.2% in 2012.

Specifically, as shown in Figure 3, the variable takes the highest value in 2009 and 2020, respectively by 5 points.

Over 2012-2015 and after 2019, the variable shows an increasing positive rate. The average rate for each period is respectively 1.95% and 3%.

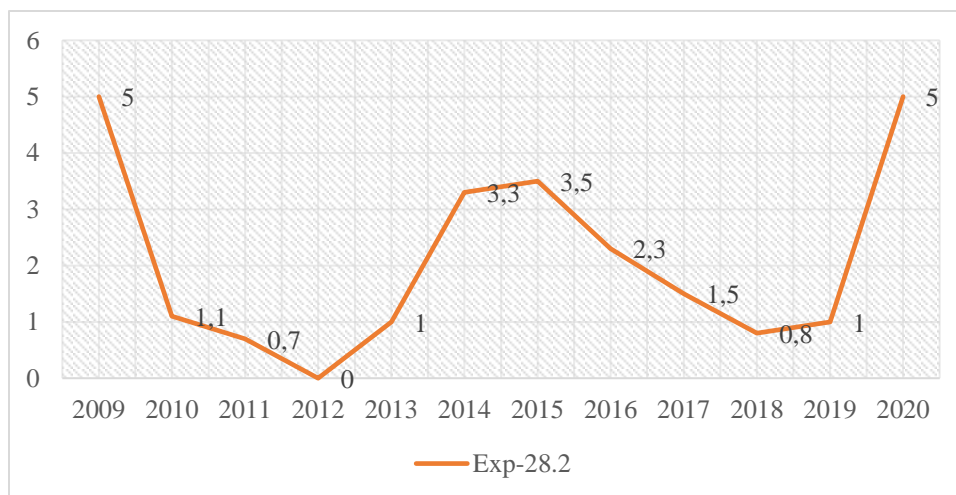


Fig. 3: The variable Exp-the lowest value (E-min value) during the period 2009-2020.
 Source: Ministry of Finance (2021), IMF (2021), the author's visual presentation.

Given the fluctuations in the variable, it seems that the result was expected because the rate of expenditures in 2019 and 2020 remains equal, whilst in 2012 expenditures variable take the lowest value. The absolute difference remains interesting in 2020 because corresponds to the year when the reduction of expenditures was a priority for the mitigation of the negative effects of the Covid-19 pandemic.

Whilst 2009 year corresponds with the year when the flat tax system gives a reduced rate of tax revenues up to 2013 when the tax system changed into the progressive tax system.

Considering 2013 as a target can be identified easily that, before 2013 tax revenues have a lower level than after 2013, meanwhile expenditures are presented with a not sustainable rate which tends to increase in the years when major events take place. The lowest level of expenditure variable is in 2012.

As the revenues are one of the main sources of budget expenditures, Figure 4 shows the variability of the two variables:

- a) Expenditures-28.2% (where 28.2% is the lowest value from the data panel) and,
- b) Revenue/Expenditure (TaxR/E) ratio.

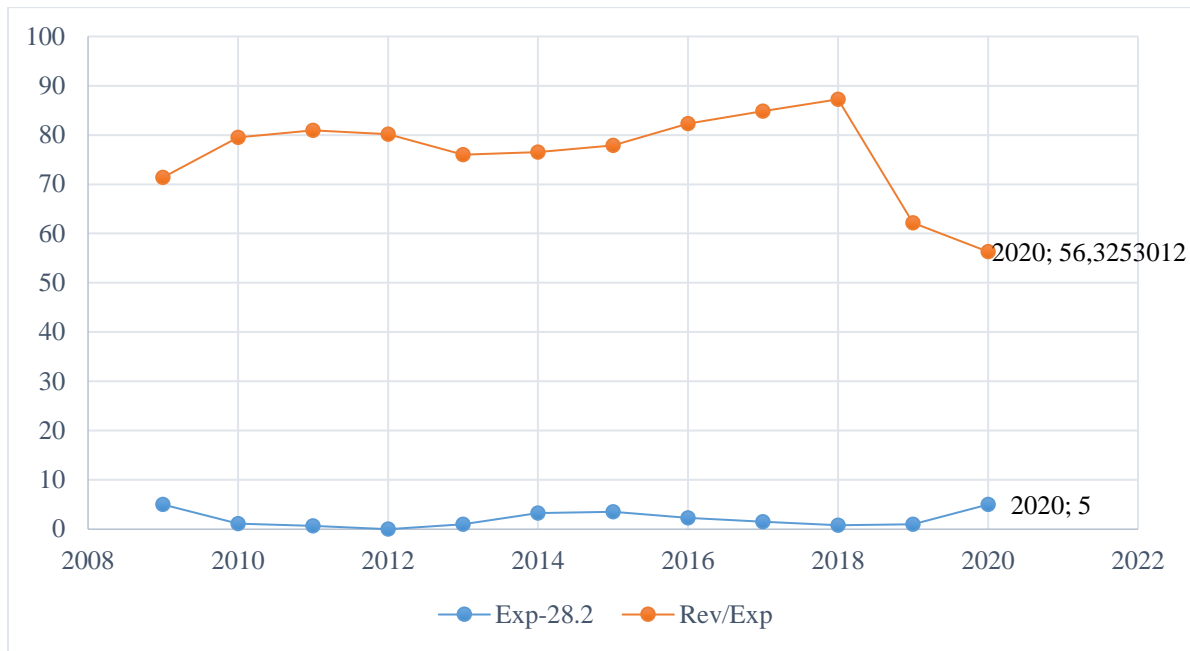


Fig. 4: The trend of the TaxR/E ratio and the variable E-28.2 over the years in Albania.
 Source: Ministry of Finance, IMF (2021), the author's visual presentation.

2018 results to be the year with the best performance, whilst 2020, as data of Figure 4 shows, has a minimal gap, emphasizing the above problems. The results underline the essential role of the appropriate forecasting rate of expenditure for the creation of a sustainable economy.

In 2018, using Arima and Autoregression Vectors model to examine tax revenue forecast errors the researchers, [25], have found that the Albanian Ministry of Finance valued the variable by 1.59% of the GDP, but in their point of view, according to the conclusion of the models was less than 0.3% of GDP. They stressed the fact of an overestimated value and the strong impact of globalization's effect on the variables. To mitigate the impact risk of an overestimating rate for both tax revenues and expenditures on economic growth, the process should constantly be estimated and with the proper method.

4 The Empirical Findings and Methodology

Initially, it is important to specify the concept of Automatic Stabilizers. It includes income taxes (personal tax and corporate income tax) and welfare spending. Therefore, focusing on automatic stabilizers (AS) is essential because it shows how the

taxable incomes have performed over the years and how those are incorporated into the economy by multiplying the money and the possibility to increase growth.

4.1 Methodology

The paper analyses how the fluctuation of variable AS has impacted the economic growth of Albania. All strategies tend to improve the overall economy by raising the living standard of citizens but the contrary direction remains to be evaluated. Increasing growth of the economy does not always detect an increasing standard of living, although vice versa is always true, [28].

To find the potential link in this direction, the AS variable will be estimated in the model, studying all the possible information gathered for this purpose. It is relatively hard to find all the primary necessary data to examine in detail the problem. Therefore, using the secondary data obtained by the main official institutions that operate in Albania remains the only procedure to create an idea about the aim of the paper. As we all know, the database imposes the usage of variables leading to or not in some strict procedures. With the provided database, the possible statistical tests and econometric model with p-value =0.05, are going to be created to see how the phenomenon exists in Albania.

4.1.1 The Model and Its Variables

As Table 1 reveals, many authors use different variables to show the impact of fiscal policy on economic growth. Prevalence in different papers takes the indirect taxes, [29], and marginal effects of taxes, [30]. The variables used for the selected problem are AS and economic growth, without underestimating the other variables that distinguish the fiscal policy. The secondary data gathered from an international source, [31], also by national sources like the Ministry of Finance, [5], and other official institutions, [26], [27], during the period 1999-2021

are used to create the model. The variables for the multiple linear regression equation are:

- a) Output Gap (OG)- the difference between potential GDP and real GDP.
- b) Fiscal Impulse (FI)- the difference in the government budget balance resulting from changes in expenditures and tax policies.
- c) Automatic Stabilizers (AS).
- d) Expenditures Interests (IE).
- e) Actual Overall fiscal Balance (AOFB)- the difference between current revenue and current expenditure.

The Pearson correlation test calculated among the variables reveals indications as in Table 5.

Table 5. Pearson Correlations among the variables.

	Variable OG	Variable AS	Variable FI
Variable AS	0.528		
	0.008		
Variable FI	-0.042	-0.186	
	0.845	0.383	
Variable AOFB	0.128	0.350	-0.371
	0.541	0.093	0.075

Source: The author's calculation, 2022

According to the Pearson coefficient between AS and OG variables, the positive value of 0.528 or 52.8% shows a positive relationship, whilst a negative connection exists between the variables AS and FI by 0.186 points.

Furthermore, a negative correlation exists between variables FI-AOFB and OG-FI. Taking into account the p-value it is clear that only the correlation value between OG and AS variable, for the individual hypothesis test of correlation, attempts the target value smaller than 0.05.

In regression analysis is used the Ordinary Least Method (OLS), in which the residual (ϵ) sum of the square is as small as possible. The dependent variable will be OG as an indicator that shows the growth of the economy, while explanatory variables are AS, FI, AOFB, and IE. The resulting equation is as follows:

$$OG = -1.11213 + 0.32 FI + 0.4 AOFB + 0.94 IE + 1.33824 AS + \epsilon$$

It shows that the autonomous value of the dependent value is negative (-1.11213), indicating the negative trend of OG over time, despite the influence of the explanatory variables.

Analysis of Variance revealed in Table 6 shows that the AS variable has an impact on economic growth as the p-value is lower than 0.05.

Moreover, the positive coefficient before the AS variable indicates a direct relationship between AS and OS. It means that a unit change on AS will result in the same direction on the change of OG variable by 1.33824.

For the dependent variable, OG is important to emphasize that it is evaluated keeping as its target the potential GDP of the country and its current value of real GDP.

The differences between those data are the values of the OG variable, respectively for each year. Therefore, economic growth is estimated in the long-run time. From this point of view, the influence of variable AS seems profitable.

Table 6. Analysis of Variance

<i>Term</i>	<i>DF</i>	<i>Seq SS.</i>	<i>Adj.SS</i>	<i>Adj.MS</i>	<i>F</i>	<i>P</i>
<i>Regression</i>	<i>4</i>	<i>26.9494</i>	<i>26.9494</i>	<i>6.7373</i>	<i>3.11609</i>	<i>0.039518</i>
<i>Fiscal Impulse (FI)</i>	<i>1</i>	<i>0.1214</i>	<i>3.8115</i>	<i>3.8115</i>	<i>1.76285</i>	<i>0.200001</i>
<i>Actual Overall Fiscal Balance (AOFB)</i>	<i>1</i>	<i>4.2853</i>	<i>6.0522</i>	<i>6.0522</i>	<i>2.79919</i>	<i>0.110697</i>
<i>Expenditures Interest (IE)</i>	<i>1</i>	<i>9.7041</i>	<i>7.1802</i>	<i>7.1802</i>	<i>3.32094</i>	<i>0.084182</i>
<i>Automatic Stabilizers (AS)</i>	<i>1</i>	<i>12.8385</i>	<i>12.8385</i>	<i>12.8385</i>	<i>5.93795</i>	<i>0.024826</i>
<i>Error</i>	<i>19</i>	<i>41.0802</i>	<i>41.0802</i>	<i>2.1621</i>		

Source: The author's calculation, 2022

The coefficient of the multiple regression model shows that about 39.61 percent of the variation in the OG variable can be explained by the influence of the four explanatory variables: FI, AOFB, IE, and AS.

Figure 5 shows the scatterplot of OG and AS variables with the residual plots and marginal plots

between them, emphasizing the convergence with the conclusions above.

The marginal plot shows that values are on the right side of the scatterplot, having almost positive signs of values, and being included in a narrow segment. The influence reveals positively inside a narrow range of economic growth.

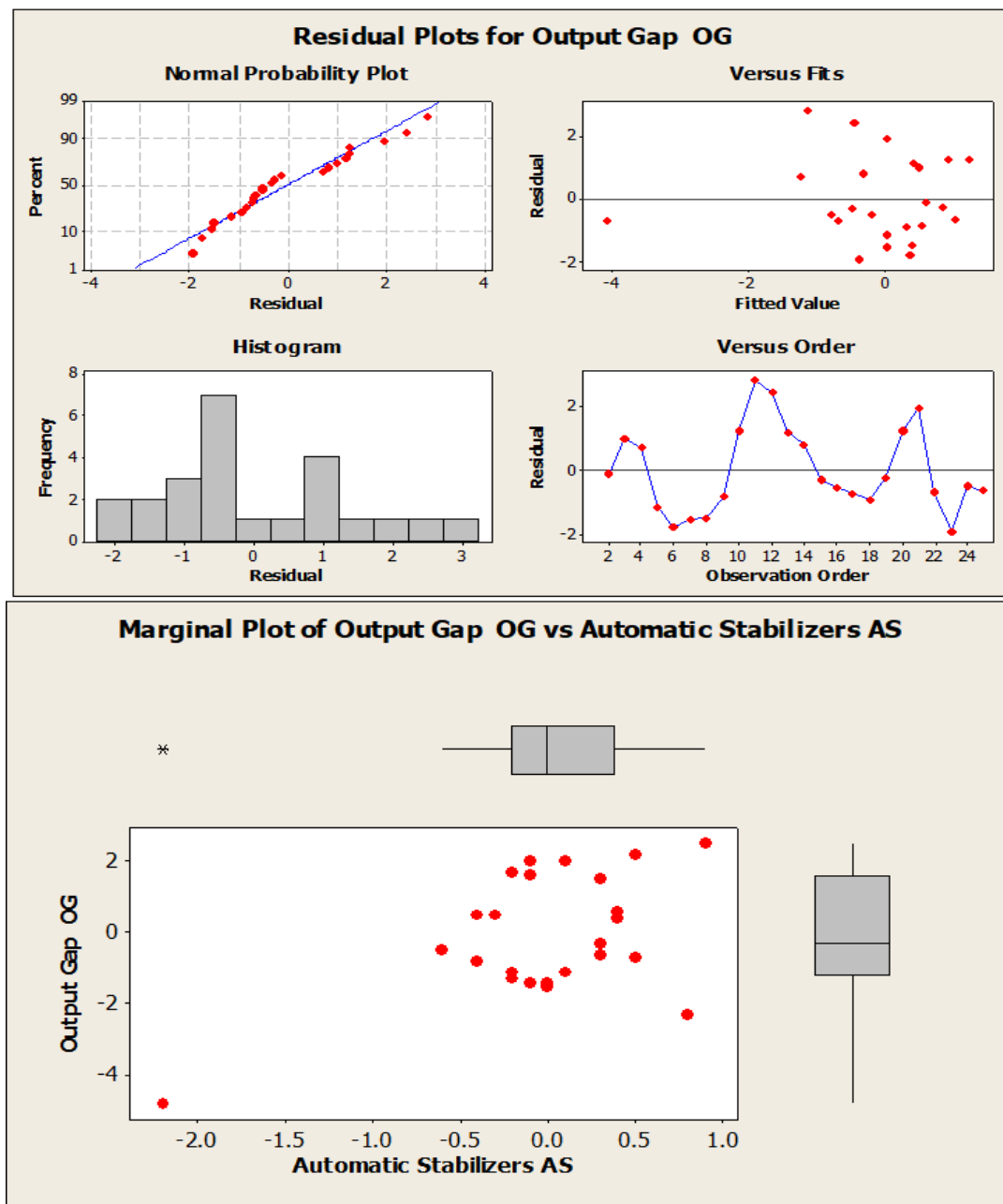


Fig. 5: Visual Summary of the data model.
 Source: The author's calculation, 2022

5 Conclusion and Discussion

As the tax system is an essential factor that determines the tax revenues and therefore automatic stabilizers (AS), focusing on it was primary for the aim of the paper. Albania has applied for about 12 years two different tax systems: the flat tax and the progressive tax. The progressive tax system has changed relatively many times, due to the influence of some major events like the Earthquake, the Covid-

19 pandemic, and the Ukraine War. The analysis of the two tax systems reveals some conclusions as follows:

- 1- The marginal effects of the two systems on the economy are relatively the same.
- 2- The progressive tax system helps people who earn less, while the flat tax helps those who earn relatively much more.

- 3- As a consequence of the simple formula used in the flat tax system, bureaucratic costs are lower than in the progressive tax system.
- 4- For the salary segment [40.000-70.000] All, the absolute difference between the two systems remains constant at the level of 2.560 All.
- 5- The Albanians do not recognize the relative differences between the systems, indicating over time lower levels of private consumption.
- 6- Although the progressive tax system has changed to improve the economic situation, that process leads to other asymmetric information, especially in the labor market.
- 7- An ambiguous impact on the employment rate can be derived by changing the minimum wage. The worst scenario will reduce the young employment rate in the country.
- 8- The expenditures tend to increase after 2013 when the tax system changed.
- 9- The tax rate of revenues tends to increase in the progressive system than in the flat tax system, remaining constant for almost 3 years up to 2018. Beyond this year, the ratio variable TaxR/E is reduced deeply reflecting the effects of major events that occurred in the economy.

The AS variable includes some tendency of both above variables (tax revenues and expenditures) and is used to determine the effect of fiscal policy in the economy. The variable is chosen because it is an automatic fiscal tool and its implementation is done without any bureaucratic cost. The results obtained by the multiple regression model, using the OLS method reveal a positive effect of the automatic stabilizers (AS) on the economic growth of the country. Some steps in the model include:

- 1- The variable of the economy (OG) is created taking into account the potential GDP, therefore the problem is seen in the long-run period.
- 2- The marginal effect of tax revenues of both the two tax systems remains in the model unchanged and the conclusion is that the AS variable has a narrow positive effect on the economic growth of the country.

- 3- The Pearson Correlation between AS and OG variables reveals a positive sign with a p-value less than 0.05.

Furthermore, the data shows a relatively constant rate of the forecast process for both the two crucial variables, tax revenues, and expenditures. Regarding the fluctuations of the economy and the overestimated forecast rates of the two main variables, it is necessary to review again the processes associated with good management of tax revenues. The analysis of variables involved in the problem shows the necessity to index the wages with the rate of inflation and the reconsideration of the gap between public and private wages,- for the professions with the same skills. The fiscal steps undertaken especially towards the labor market, such as the rise of a minimum wage, should be well appreciated because they can influence the rate of unemployment. The ratio between skilled and unskilled employees can easily be tangible, especially for young people.

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