MEASURING THE IMPACT OF FISCAL POLICY ON THE ECONOMIC GROWTH OF ARMENIA

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Abstract: The key objective of macroeconomic regulation is to achieve sustainable economic growth and development in the long term. At the same time, within developing economies, the task of ensuring sustainable economic growth in the long term faces the failure of institutions, and as a result, the ineffectiveness of the main mechanisms of macroeconomic regulation, especially those that have a long-term and ambiguous impact on the economy. The purpose of the study was to assess the impact of fiscal policy on economic growth, as well as to find fundamental common ground for increasing the impact of basic instruments on economic activity by improving transmission mechanisms.

The methodological basis of the study was a review of theoretical and practical models of the fiscal regulation impact on economic growth, known in the scientific literature, as well as approbation of the most optimal ones considered using the example of the Armenian economy. The result of the study was the conclusion that in the current format, the fiscal policy of Armenia does not have the proper positive impact on the rate of economic growth, and therefore requires a fundamental revision and the need to develop an appropriate strategy aimed at ensuring sustainable economic growth in the long term.

 Key words: economic growth, fiscal policy, monetary policy, developing economy, Armenia.

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Introduction: Problem Statement

The scientific literature considers in detail the approaches to macro-economic regulation that exist today in theory and practice. At the same time, the most common among them is the approach to ensuring macroeconomic stability (Harris, J., 2005). However, often, preventing inflation or recession is seen as the only goal of macroeconomic policy. Moreover, in most cases, short-term goals to stabilize inflation have a long-term effect (Spiegel, S., 2006).

Today, in many works one can find the key thesis that the causal relationship between indicators of the effectiveness of macroeconomic policy and the goal of economic policy itself is not always effective. Shari Spiegel noted that much of the recent debate about economic policy has focused on intermediate variables such as price stability or balance of payments, but those are not important themselves, but their degree of importance is determined by their role as indicators of economic performance, efficiency in terms of really important functions such as growth and development (Spiegel, S., 2006). This approach, in turn, leads to incorrect measurement as an indicator of the effectiveness of macroeconomic policy, rather than its goal. However, modern authors have already noted that inflation is a variable that characterizes macroeconomic policy, but there is a likely problem between the bond of the inflation and real variables, which may be weaker than theory expects (Spiegel, S., 2006).

In particular, one of the methods of fighting inflation is the letting of a strengthening of the national currency, and this in turn assumes various scenarios for the development of events that may have worse consequences than the original source. For example, the strengthening of the currency will lead to a deterioration in the position of exports and damage to the position of domestic producers competing with importers, thereby disrupting the position of producers will have an effect both on the balance of payments and will lead to an increase in the unemployment rate (Spiegel, S., 2006). Small open economies face the challenge of choosing an exchange rate strategy; although pegging the exchange rate to a stable, low-inflation currency may be desirable to curb inflation, the foreign exchange market may be susceptible to speculative attacks (Worrell, De L., Codrington, H., Craigwell, R. & Greenidge, K., 2003). Thus, in the short term there is no clear answer regarding the cost of the issue when choosing an approach to monetary regulation.

Many authors note that the banking system, from the point of view of macroeconomic policy in developing countries, comes to the fore, which in turn puts monetary regulation at the forefront (Spiegel, S., 2006). Greenwald and Stiglitz, in their work, point out that credit, and not the money supply, matters

for the level of economic activity (Stiglitz, J. and Greenwald, B. 2003), which generally contradicts both the Keynesian approach and the monetarist one.

With regard to fiscal policy, it is known that developing countries are most often directly dependent on external sources of financing, which leads to pro-cyclicality of fiscal policy. However, fiscal policy in developing countries mainly performs one function - fiscal, in other words, it serves as a tool for providing funds to the budget to cover expenditures. This in turn leads to the fact that fiscal policy, as part of macroeconomic policy, is either absent or has less influence than monetary policy, although it has greater opportunities regarding the transmission mechanism of influence on macroeconomic indicators, as indicators of the effectiveness of macroeconomic policy. In the absence of medium- and long-term fiscal policy, monetary policy plays a dominant role in shaping the monetary, financial and economic landscape (Awdeh, A., 2019).

The impact of fiscal policy on the growth rate of potential GNP is transmitted through the ratio of tax revenues, non-capital expenditures and budget deficits to GNP (Khan, M. S. & Villanueva, D., 1991). Thus, by constantly measuring this ratio and trying to ensure a more countercyclical nature of the implementation of fiscal policy, the government can have a strong influence on the macroeconomic situation in the country, and, ensuring balance on both sides, by coordinating monetary and fiscal policies, it is possible to increase economic productivity and ensure stability. The policy of increasing domestic savings, which makes it possible not to depend on external flows, thereby leads to a reduction in the pro-cyclical nature of macroeconomic policy (Spiegel, S., 2006).

Thus, in developing countries, the role of monetary policy largely dominates as the main instrument for implementing macroeconomic policy, while fiscal policy has not taken on its role as such, and is aimed more at ensuring the fiscal function. If a developing country has a developed banking system, then this greatly facilitates the implementation of macroeconomic policy and becomes a direct channel of influence on the real sector of the economy. Since in the conditions of developing economies there is no task of achieving an equilibrium point, this forces us to highlight mechanisms for coordinating fiscal and monetary policies, giving priority to the task of ensuring macroeconomic stability, in the broad sense of the word, (the desire to increase economic productivity), thus creating direct relationship between economic growth and macroeconomic policy. On the other hand, exposure to external shocks caused by changes in global or regional market conditions forces a more thoughtful and conservative approach to the formulation of macroeconomic policies and ways to choose one approach or another.

Among the most well-known theories that justify the impact of fiscal policy on the economy are endogenous growth models (Barro, R., 1990), which argue that such effects can be temporary, as well as permanent. Contemporary authors (Arnold, J. M. at all, 2011), (Gemmell, N., Kneller, B., & Sanz, I., 2011), (Acosta-Ormaechea, S. & J. Yoo., 2012), such as the ones mention below, also pay lots of attention to the long-term impact of fiscal policy on economic growth rates. However, each of the authors considered the impact of changes in tax rates and the corresponding change in economic activity during this period. At the same time, certain works (Acosta-Ormaechea, S. and J. Yoo, 2012) have revealed that, say, reducing income tax rates while simultaneously increasing the value added tax rate can lead to stimulating economic growth. Nevertheless, some works (Acosta-Ormaechea, S. and J. Yoo, 2012) reveal the neutrality of certain types of taxes to any changes in the economic growth of the country. Gemmell, Kneller and Sanz (Gemmell, N., Kneller, B., & Sanz, I., 2011) in their work proved the persistent impact of various types of taxes on economic growth, but only in the short term.

The key conclusion of most researches devoted to the influence of fiscal policy on the rate of economic growth comes to the thesis that in the long-term certain changes in the structure and rates of taxes affect the rate of economic growth (positively or negatively), therefore, the optimal use of this instrument can lead to sustainable and long-term economic growth.

As for the impact of the state budget expenditures on the rate of economic growth, the conclusions found in the scientific literature (Slemrod, J., 1995) are also ambiguous. There are also authors (Ram, R., 1986), who prove the positive impact of expanding government spending on economic growth. However, the general conclusion found in the scientific literature is the importance of state budget expenditures aimed at infrastructure, education, science, healthcare, and everything that can positively influence the development of human capital.

1. Analysis of the relationship between macroeconomic indicators and economic growth in Armenia

Since the key objective of the study was to try to determine the relationship between fiscal policy and economic growth in Armenia, at the first stage was identified the relationship between economic growth and other macroeconomic indicators. The basis for this assessment was the LR and LZ regression models proposed in the work "Macroeconomic policies and growth" (Andersen, P. and Gruen, D., 1995). The model is a regression relationship to identify the influence of the level of certain parameters on economic growth.

Adapted to the indicators characterizing the economy of Armenia, the final model received the following form:

$$\textbf{GDP}_{\textbf{per capita}} = \textbf{B}_1 + \textbf{B}_i\,\textbf{GDP}_i + \textbf{B}_z\textbf{GPO}_z + \textbf{B}_y\textbf{SEC}_y + \textbf{B}_x\textbf{INV}_x + \textbf{B}_b\textbf{GOV}_b + \textbf{B}_h\textbf{X}_h$$
$$+ \textbf{B}_a\textbf{LLY}_a + \textbf{B}_k\textbf{I}_k + \textbf{B}_g\textbf{M}_g + \textbf{B}_j\textbf{r}_{j\,,\,\textbf{where}}$$

GDPi – GDP per capita growth (GDPi-GDPi-1),

GPOz – Population growth

SECy – Number of people receiving primary education, INVx – average share of investment in GDP

GOVb – Share of government expenditures as % of GDP, Xh – Exports as a % of GDP

LLYa – Ratio of liquid liabilities to GDP, Ik – inflation rate

Mg – change in money supply M2, rj – interest rates

The calculation of the regression equation for the Armenian economy took the following form:

$$\textbf{GDP}_{\textbf{per capita}} = \textbf{-3.48} + \textbf{1.01GDP} + \textbf{0.02GPO} -$$
$$\textbf{0.0003SEC} + \textbf{0.05GCF} + \textbf{0.05GOV} + \textbf{0.039X} + \textbf{0.001LLY} - \textbf{0.04INF} - \textbf{0.005M2}_{\textbf{ch}} -$$
$$\textbf{0.02r}$$

The results of the regression analysis presented in Figure 1. The key conclusions of the analysis include the following theses:

• GDP growth rates are not related to population growth, which indicates an increase in labor productivity in the economy.

• There is an inverse bond between GDP per capita and the liquid liabilities ratio (the greater the coverage of an economy's liabilities, the lower the GDP per capita). From the point of view of investment in the economy, such a relationship indicates the loss of potential investments in favor of covering external obligations.

• In other cases, no obvious dependencies found.

Summarizing the considered components, let's note, that the proposed model, which combined various indicators of the two main macroeconomic policy tools, turned out to be significant, and using it, it was possible to assess the impact of various indicators on economic growth. Thus, these results and conclusions will serve as the foundation for further analysis.
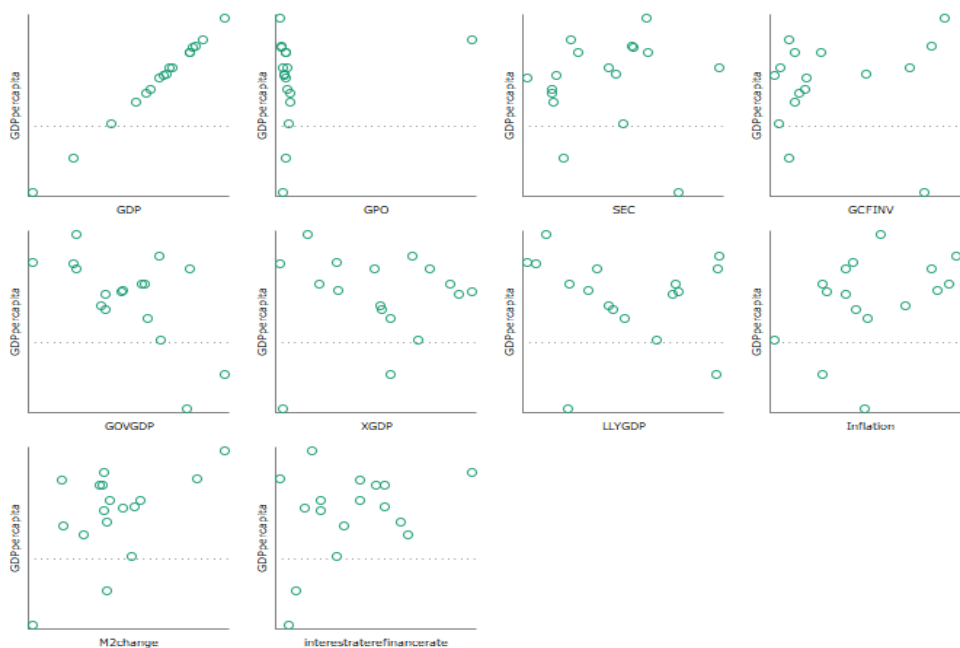
Figure 1. **Two-factor relationship between a variable (out of eight independent ones) and economic growth.**
Source: compiled by the authors.
Note: X-Y ratio, respectively, GDP per capita growth, on the Y axis, other factors on the X axis.

2. Analysis of Fiscal Policy of Armenia

Fiscal policy is considered as one of the most effective mechanisms for ensuring an enabling environment for economic development. At the same time, often developing economies focus their attention only on the fiscal function of the state budget, ignoring the need to build a long-term fiscal policy strategy aimed at ensuring sustainable growth and, as a result, a high level of well-being

At the same time, with an emphasis on increasing the tax burden on the economy in order to cover budget expenditures, in the long term, developing economies are faced with a slowdown in growth rates and a reduction in household incomes.

In this case, Armenia cannot be considered as an exception. Classic errors in macroeconomic regulation have been observed throughout almost the entire period of Armenia's independence. For the most part, the emphasis is on the policy of maintaining macroeconomic stability as a goal, rather than a

mechanism for achieving a high level of well-being of the population in the country (Voskanyan M. A., 2022).

The first thing that requires the greatest emphasis is the lack of consistency in the implementation of the country's tax policy (Voskanyan M. H. & Galstyan A . H., 2023). As we can see in Figure 2, almost the entire period under review, Armenia pursues a pro-cyclical tax policy based on the principles of populism. Thus, in particular, the tax burden on the economy increases permanently, regardless of the cyclical nature of the economy and the presence of a crisis or, conversely, rapid growth in the economy.

In addition, comparing the level of tax burden on the economy to different groups of countries, it can be noted that Armenia is far ahead of this indicator. Thus, on average, the tax burden on the economy ranges from 17% to 25%, while the same figure in middle-income countries is almost half as much. Moreover, the trend of the tax burden in relation to GDP indicates the constantly restraining nature of tax policy, while in other groups of countries this indicator is stable and practically does not change over the period under review.
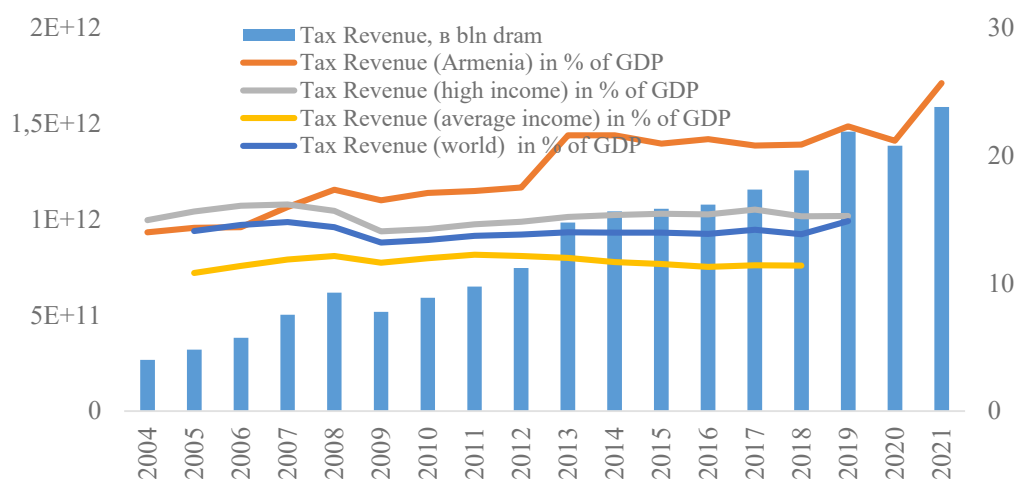
*Figure 2. **Tax revenues as % of GDP, %, annually***
Source: World Bank database -- https://databank.worldbank.org/source/world-development-
indicators

In this sense, Armenia is actually pursuing a policy of manual control, constantly increasing the tax burden on the economy in order to "patch holes" in the country's state budget.
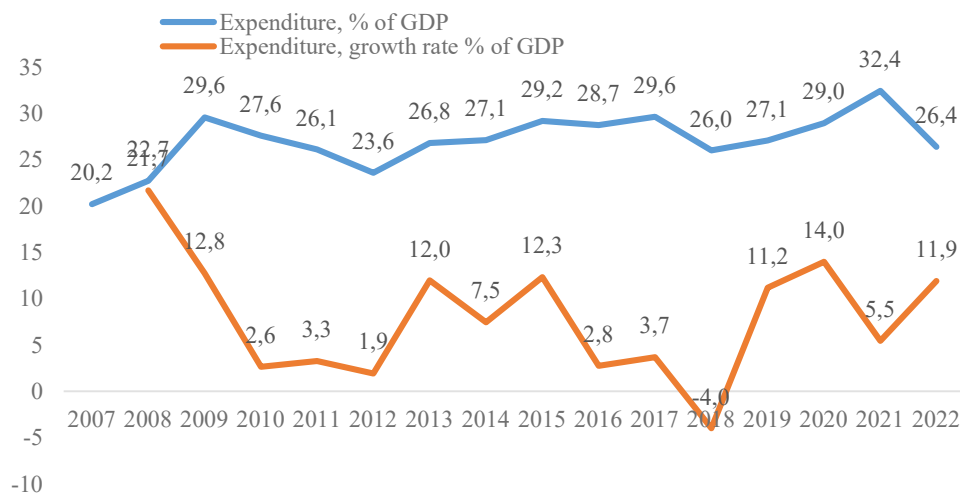
The structure of tax revenues in Armenia indicates a strong emphasis on indirect taxes, which is generally characteristic of almost all developing economies (see Figure 3).
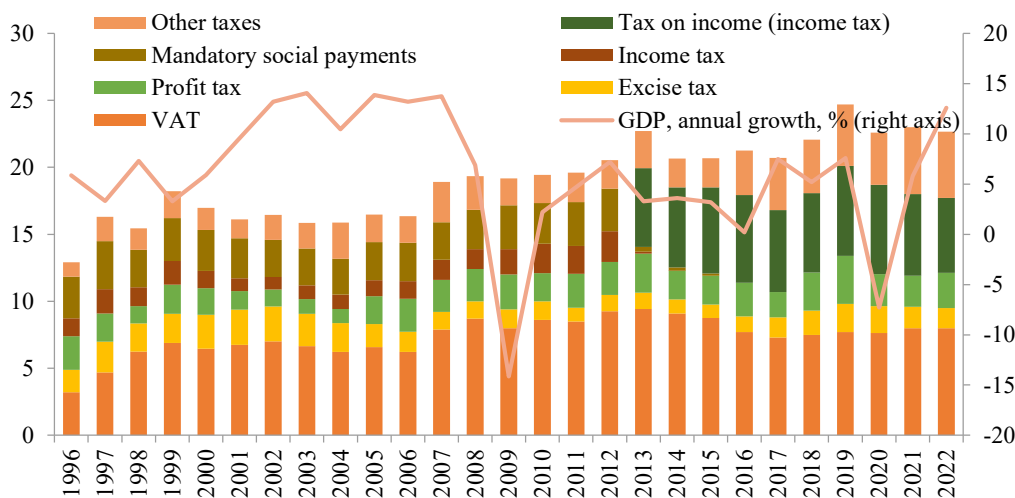
Figure 3. **Structure of Tax Revenues in % of GDP, %, annually**
Source: Data Base of National Statistical Service of the Republic of Armenia –
http://www.armstat.am

At the same time, the dynamics of expenditures of the state budget of Armenia also indicate a restraining nature, as well as elements of "manual control", the absence of a long-term strategy and any clear goal setting in the implementation of budget policy (see Figure 4). The share of government spending in relation to GDP since 2009 has remained on average at 25-26%, and during periods of crisis it tends to increase slightly.

Figure 4. **Expenditures of the RA state budget, % of GDP and growth rates**
Source: Data Dase of National Statistical Service of the Republic of Armenia –
http://www.armstat.am

At the same time, the structure of government expenditures in Armenia indicates short-term decisions in terms of budgetary policy. Most of the spending is directed either to social needs in one way or another, or to sectors that are traditionally the responsibility of the state (defense, public services, etc.). On the other hand, expenses that have long-term positive effects are negligible: infrastructure, human capital (education, healthcare, etc.). In this aspect, fundamental reforms are required to adjust the structure of government spending towards those that are most significant in terms of stimulating supply in the long term.
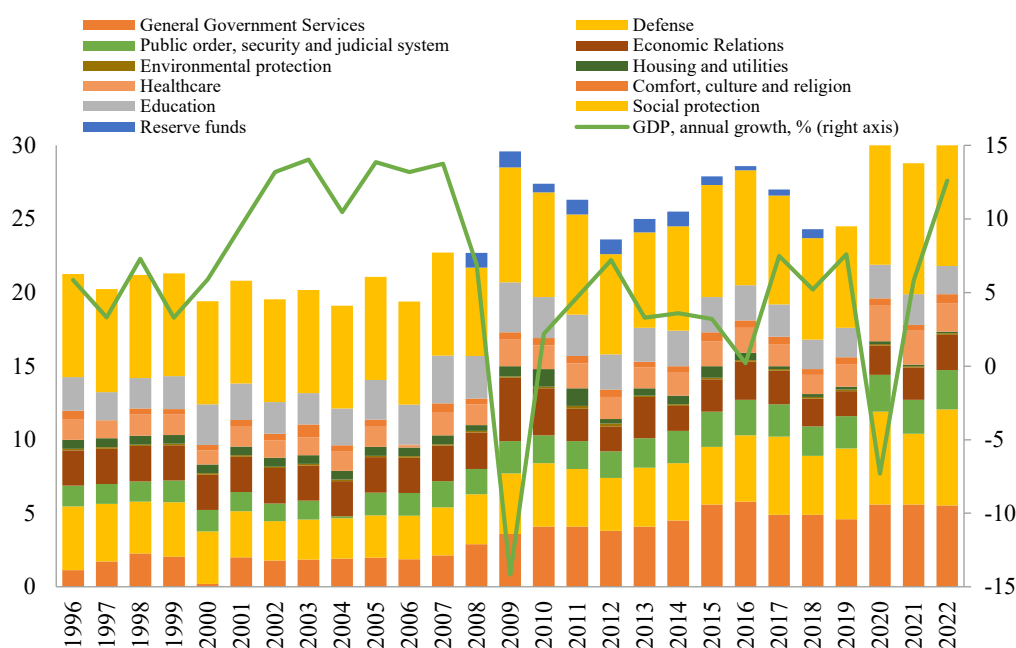
Figure 5. **Structure of Government expenditure in % of GDP, annually**
Source: Data Base of National Statistical Service of the Republic of Armenia –
http://www.armstat.am

Summarizing a brief analysis of fiscal policy, the conclusion suggests itself about the need to evaluate its impact on economic growth, in order to build a more promising one in terms of ensuring sustainable growth in the long term.

3. Assessing the impact of fiscal policy on economic growth in Armenia.

At the first stage of the study, an analysis of the impact of fiscal policy on the rate of economic growth in Armenia was carried out. To assess the

relationship, the least squares method (OLS) was chosen, which quantifies what effect each parameter has on a variable, and, in general, whether it has any effect at all. Fiscal policy variables were selected on the basis of the GDP formula itself and the results of the study by Mohsin S. Khan and Delano Villanueva (Khan, M. S. and Villanueva, D., 1991), using the available justifications and our own interpretation, the following linear model was formed:

$$\text{ECONGROWTH} = B_1 + B_i\text{VALUEADDTAX}_i + B_j\text{PROFITTAX}_j + B_y\text{INCOMETAX}_y + B_g\text{CURRENTEXP}_g + B_c\text{CAPITALEXP}_c + B_h\text{def}_h, \text{ where}$$

ECONGROWTH - economic growth per capita
VALUEADDTAX - value added tax share of GDP
PROFITTAX - share of income tax in GDP
INCOMETAX - income tax share of GDP
CURRENTEXP - current expenditure as a share of GDP
CAPITALEXP - capital expenditure as a share of GDP
def-budget deficit of a given year from GDP

Before turning to the model itself, it seems important to consider descriptive statistics (see Table 1). It should be noted that all variables are presented relative to GDP, in other words, any change in GDP leads to a change in these factors.

Table 1.
Descriptive statistics of the second model, the relationship between GDP per capita growth and fiscal policy parameters.

Variable	Mean	Median	S.D.	Min	Max
Econgrowth	6.72	7.46	6.03	-5.51	15.1
valueaddtax	8.02	7.80	0.623	7.30	9.10
profittax	2.52	2.45	0.471	2.00	3.60
incometax	6.17	6.10	0.392	5.50	6.70
currentexp	24.2	23.7	2.21	21.6	27.9
capitalexp	3.67	3.60	0.564	3.00	4.60
def	-3.36	-3.40	1.80	-5.50	-1.00

Source: compiled by the authors

The average indicator of the coefficient of influence of economic growth is 6.72, but the standard deviation is significantly high, this phenomenon in itself indicates that there is a relatively long fluctuation interval, all other variables have a small standard deviation, i.e. during the considered interval, namely 2013-2022, their share changes little and remains stable. Based on the above, it can be noted that the emerging imbalance between indicators of economic

growth and other variables indicates the presence of other factors that influence economic growth.

However, the study did not assume that only the noted factors have an impact; on the contrary, the purpose of the work is to assess the influence of these factors, on the assumption that there are other factors that have a significant impact on economic growth.

Thus, as part of the study, a linear regression model was built, which made it possible to estimate the influence of 6 variables on the dependent variable, and marked the effects that have change in one unit of any factor has on the economic growth indicator.

The calculation of the regression equation using the example of the fiscal policy of Armenia took the following form:

ECONGROWTH= 81.7318+ 0.979716VALUEADDTAX+ 6.83649PROFITTAX −13.3508INCOMETAX + 0.322908CURRENTEXP −8.40233CAPITALEXP −1.55544def

In Graph 6, can be observed the relationship between economic growth and the explained variables. The factor that is striking is the absence of a clear relationship, which suggests that a linear relationship is not observed, which means that changes in free variables do not have a systemic impact on economic growth. Thus, the main indicators of fiscal policy are not aimed at influencing the economic growth indicator.

In the case of the relationship between economic growth and the VAT share, there is a strong scatter, and tracking any line is not possible; a similar situation is in the case of the relationship between economic growth and profit tax, economic growth and deficit. In the case of the latter, however, an interesting trend is observed: a weakly expressed vertical connection.

The conclusion can be the thesis that economic growth increases at the same level of deficit, that is, the budget deficit does not increase in proportion to economic growth.

In the case of the ratio of VAT to GDP, the effect is the following: an increase in a unit of the VALUEADDTAX indicator brings to economic growth by approximately 0.97. In general, there is nothing paradoxical here, the very nature of VAT is such that with an increase in the volume per a unit of production within the economy, as the multiplier increases also the meaning of VAT. Everything becomes much more complicated when we delve into the very essence of VAT in developing economies. The problem is that in underdeveloped transition economies, VAT becomes a consumption tax, and the observed direct relationship is often the result of this trend.
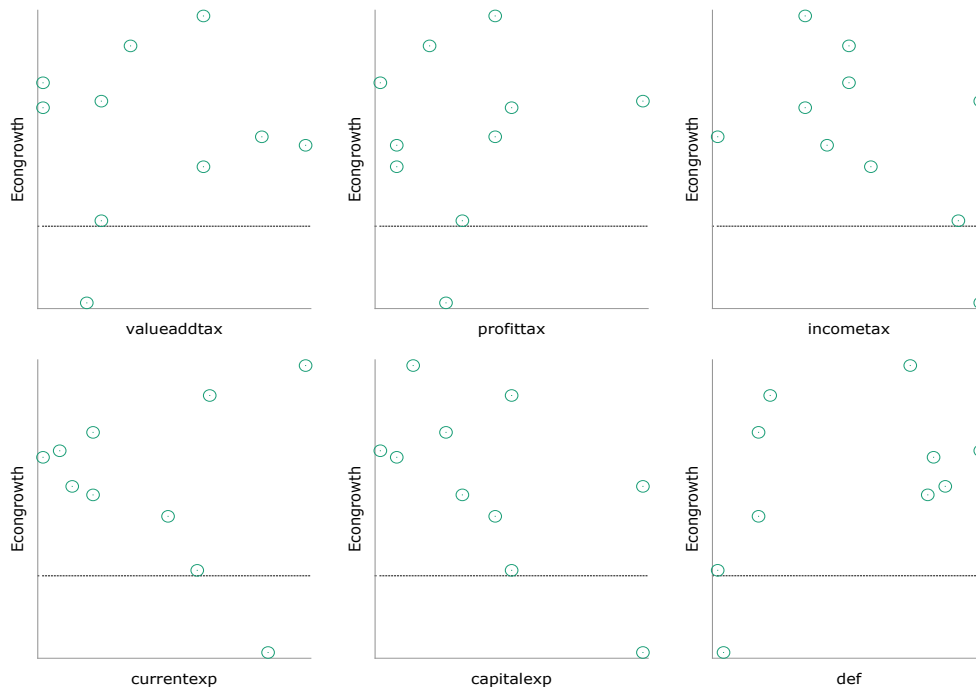
Figure 6. ***Two-factor relationship between the variable describing fiscal policy and economic growth (GDP per capita, %).***
Source: compiled by the authors
Note: X-Y ratio, respectively, GDP per capita growth, on the Y axis, other factors on the X axis.

The next factor is PROFITTAX, in this case the resulting coefficient indicates that an increase by one unit of the PROFITTAX indicator, economic growth increases by 6.83. Thus, increased profitability leads to economic growth

An increase in the indicator by one, INCOMETAX leads to a decrease in ECONGROWTH by 13.3 points, since we are looking at GDP per capita, it turns out that the more citizens pay from their income, the lower economic growth is obtained. A similar negative relationship was obtained in the case of the CAPITALEXP indicator with a coefficient of -8.4, and the same negative relationship in the case of deficit. In the case of current expenses, the situation is as follows: the coefficient is equal to 0.32, i.e. an increase in CURRENTEXP by one leads to economic growth of 0.32.

Thus, summing up the results obtained, it can be noted that fiscal policy indicators do not have a major impact on economic growth; moreover, in many cases it is impossible to give an unambiguous answer as to what effect this or that factor has. Thus, fiscal policy is not a strong channel for influencing economic growth in Armenia.

Conclusion

To sum up, it should be noted that both in theory and in practice, it is quite difficult to determine the channels of influence of fiscal policy on the rate of economic growth, both through tax and expenditure policies in the country. Such an impact is very specific and largely depends on the individual characteristics of the economy itself, in particular its structure, the degree of its development, the institutional environment, the presence of possible market fiascoes, and many other factors. In particular, macroeconomic policy itself, its goals, the choice of approach, and so on are of great importance.

An analysis of the macroeconomic policy of Armenia in terms of fiscal regulation indicates a definitely restraining nature of its orientation. It seems obvious that such a restrictive policy over a long period led to a slowdown in economic growth and contributed to the deepening of the socio-economic consequences of the crises that have occurred over the past 15 years both in the global economy and in the economy of Armenia.

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