

Model Proposition for the Fiscal Policies Analysis Applied in Economic Field

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***Abstract.** This paper presents a study about fiscal policy applied in economic development. Correlations between macroeconomics and fiscal indicators signify the first steep in our analysis. Next step is a new model proposal for the fiscal and budgetary choices. This model is applied on the date of the Romanian case.*

Key words: economic theory; fiscal policy; macroeconomics indicators; fiscal choice; fiscal indicators.

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The modern economic theory and its role in enunciating the macroeconomics fiscal models

In the last period, the fiscal-budgetary politics represent important marks of building the financial equilibrium in the purpose of the economic development. The economic development imposes new concepts which led to the modification of the existent perception over the fiscal theories. Thus, we can analyze, at this moment, new established models of the economic theory appeared after a post-Keynes period of the contradictory approach over the importance of the fiscal policy. Their empirical verification, although unconvincing sometimes, had a contribution in establishing an important thing for developing the economic science, meaning the existence of a connection between the fiscal, budgetary and monetary policies, which lead to the macroeconomic stabilization.

In order to underline the importance of the monetary policies, it has been developed lately – by a series of representative economists of the economic school from Chicago, with Milton Friedman (1953) – “The quantitative theory of money”, as a leader. They analyzed the correlation between the mass of money in circulation and the gross domestic product, concluding that between these two economic sizes there is a close connection,

and the mass of money in circulation represents a liable variable.

Therefore, M. Friedman proposes the annual increase of the mass of money with a certain percent which corresponds to the annual appreciation installment of the gross domestic product. In consequence, the monetary authorities should point their attention on the money in circulation, firstly, using the money issue as one of the main levers of influencing the other economic variables, too. In this way, we get to the second main element of the monetary market, meaning the money offer, which is generally made, through the money issue and the credit.

Because the money issue increases the mass of money in circulation, therefore influencing the entire economic activity, the money offer must be oriented towards the banks specialized mainly after the evolution of the material processes, respectively after the quantity of goods and services which are to be sold – bought, in a certain period, as well as after the policy of prices. On a wider plan, the banks of issue must create an optimum relation between the mass of money in circulation and the amounts of money claimed after doing all the

economic operations which are made with money. This means that in order to have a healthy circulation of money it's necessary to make a concordance between the volume and the structure of the liquidities, the volume and structure of the offer of goods and services, meant both for the productive and non-productive consumption. Therefore, the increase of the mass of money in circulation must be in concordance with the increase of the volume of production and services, as M. Friedman claims, with the annual increase of the gross domestic product.

In a series of works published in the 60's, Robert Mundell developed the analyses over the monetary policies within the open economies.

In this way, R. Mundell developed the so-called IS-LM model for the closed economies, by introducing the export trade and the movements of capital.

The model reflects the movements of capital at different rates of interest and also the reaction of the net export to the real rate of exchange. R. Mundell proved that the effect of stabilization of the policies is in relation with the international movement of the financial capitals, and the effects of the analyzed policies depend on the regime of the rates of exchange. Thus, in the case of the floating rate of change, the monetary policy becomes strong and the fiscal policy becomes weak in the opposition with the situation in which the rate of exchange is precise. In order to illustrate the model and its results, it is necessary to use a particular case.

In conclusion, we may say that Robert Mundell established a base of the theory that still governs the considerations concerning the monetary and fiscal policies from the open economies.

We live in a sophisticated world, in continuous change, a world in which the decisive factor of progress is not represented anymore by the abundance of primary material resources, but by the access at information and the capacity of promptly using it.

Today, the economic theory was constrained by realities to abandon the models – seducing, easy to understand and rather comfortable – born together with Keynes's theory, to accept the priority of the theories which take into account the information. After all, the theory of rational anticipations – as a development of the monetary school from Chicago – is built around the evidence represented by the fact that the actors of the economic scene base their resources allocation decision on the information concerning the evolutions in economy, as they are influenced by the better or less good policies of the authorities.

The economic policy's decisions are immediately critically evaluated, and the tricks cannot have the

foreseen effect. Therefore, a monetary relaxation in the hope of stimulating the economic increase and the decrease of unemployment – Philips's famous curve – is immediately sanctioned by the market, by the decrease of circulation and the increase of inflation pressures. The positive effect, if it still manifests, lasts very little and it is unconvincing, but the loss of credibility remains, affecting the results of economy for a long period of time.

Edward Prescott and Finn Kydland (1977) are the exponents of the approach based on rational anticipations. Their main common contribution – to which others were added, individually accomplished – was the work "Rules, rather than discretion: the inconsistency of the optimum plans". Written three decades ago, the work shows how the people who take decisions in the economic policy prepare the disequilibrium on long terms through deviations from the healthy objectives, of course, when they deviate from them for solving some problems on short time, like the election ones. In time, their attention was focused especially on the substantiation of the role of the modern central bank – the one of defending without any compromise the stability of prices. Therefore, it seems that the economic theory substantiate today the major orientations of economic policy, in general, and the importance of assuring the stability of prices – as essential attribute of the central bank – in special.

With their research, Edward Prescott and Finn Kydland plead for two attributes of the economic policies: stability and credibility.

The rebirth of interest in the favor of the revolutionary fiscal policy may be connected with the development of the concept concerning its influence on the prices' level, which appeared at the beginning of the 90's.

Before the appearance of this concept, the role of controlling the prices' level was given to the central bank, which induced a series of steps in the choices from the private sector or caused unexpected evolutions of GDP or determined high rates of interest on long term.

In comparison with this literature, the new theory studies the connection between the monetary policy and the fiscal policy. Its main message can be seen in the case of two different mechanisms and meaning the first mechanism which gives the possibility of an ex ante satisfaction of the Government through the presence of budgetary constraints and second mechanism when the achieving of the budgetary equilibrium involves their modification.

In the first case the authorities modify for the future the level of taxes being constrained by the rates of

interest and the volume of the national income. In the second case it is followed the identification of the prices' level to which is realized the macroeconomic equilibrium.

This model presents the interest towards the fiscal policy for stabilization, for the effect of growth, for the public debt and for the existent connection between the fiscal and monetary policy. Thus, the coordination of these two types of policies represents the key of success for stabilization within the contemporary open economies.

The application of the fiscal theories at international level becomes a problem pretty serious, existing different approach of the state fiscal philosophy which presents a high degree of volatility.

Romania's fiscal policy after 1989

Romania's fiscal policy after 1989 and until nowadays has been examined many times, having a sinuous and inconstant character being less favorable to the business environment – although many of the adopted modifications were supposed to be meant to the business stimulation. It has also suffered the impact of an economy marked by structural strain.

In 2000 there was registered the first step headed in a good direction, when the fiscal policy was consolidated and became more transparent.

In 2004 the Fiscal Code, which reunited the entire fiscal legislation in one unitary document of economic policy, came into force, thus improving the transparency, the predictability and the legislative stability in this field. In the following period the fiscal policy measures were concentrated on the reduction of the tax level and on the continuation of the alignment to the forecasts of the communitary acquis.

Concerning the observance of the criteria imposed through the Maastricht Treaty, the critical point of the Romanian economy is constituted by the observance of the inflation rate criteria; because these are not achieved implies the lack of sustainability of the economic macro-stability process.

Although the nominal convergence process may be achieved in a shorter period than the one of the real convergence, it is considered that a high degree of the last one represents the essence of an advantageous integration being necessary the harmonization of the two types of convergence.

Romania must mobilize in order to adopt the measures imposed by the post-adhesion period which it has to cross in order to integrate in the European Union.

The costs which are said to belong to the integration are, actually, the costs for the Romania's modernization, which should have been made, even without the Community's help, in the case in which Romania did not adhere.

Probably the only costs that can be associated strictly to the integration are the ones in connection with the creation of some specific institutions: of administration of the communitary funds, in agriculture, for example, but the benefits that this management system of the European financial influxes brings, are exponentially bigger reported to the costs.

Starting from the idea that the economic integration means "the elimination of the economic barriers between two or more economies", we can mention that one of the biggest advantages is the participation of Romania at the communitary market, with large possibilities of economic growth, taking into account that almost 70% of the Romania's commercial relations are with European Union.

Under these circumstances, new possibilities for foreign investments appear, and, implicitly, for the implementation of new technologies and innovations, and if one of the main benefits of integration would be the increase of foreign investments, then the main winners of the adhesion are the sectors of financial-banking, tourist and services.

To all that, we may add the access to the funds allocated to the less developed regions of the European Union. The absorption capacity of the respective funds depends, mainly, on the co-financing possibilities of the ones who receive them, as well as of the value of the projects which they make and their transposition in real life.

The problem of the integration costs being debated, the only thing remains to search the sources of covering them, which are being represented by the fiscal incomes, whose accumulation depends on the performance level of the fiscal system.

Proposal concerning the simplified model of fiscal-budgetary model

In order to establish the influences that exist over the economic environment, in general, and over the development level, in particular, we start from the necessity of studying the existent correlation between the adopted fiscal policies within the economic policies and the resulted macro economic indicators. Thus, next to the monetary policies, the fiscal policies represent marks of the lasting development.

The determination of a model starts from the premise of identifying some indicators which quantify the best the existent connections between the macro-economic

policy and its component – the fiscal policy, taking into account the requirement of function of the state and the fulfillment of its national and international obligations. Starting from the last conceptual approaches concerning the role of the monetary and fiscal policies, we will present a model which takes into account both concepts.

The model's hypotheses

- there is a national plan of development on medium and long term;
- there is a functional market economy;
- the inflation is controlled through monetary policies;
- the fiscal incomes are entirely collected.

This model has as purpose to realize a connection between the macroeconomic situation and the instruments used by the fiscal-budgetary policy for improving the results.

In this way, we will use the scenario technique, starting from the variation of the budgetary incomes, following the connection between them and the characteristic rates concerning the fiscal-budgetary activity. We will also follow the explanation of the fiscal and budgetary policies results and that's why this model has a contribution to the identification of the manner in which the Government's decisions lead to the increase of the budgetary incomes.

We will follow the identification of the connections inside the chosen model.

Therefore:

- if the incomes of the consolidated general budget diminish, the rate of fiscality increases, the budget rate increases, the rate of budgetary capitalization decreases;
- if the incomes of the consolidated general budget increases, the rate of fiscality decreases, the rate of budget decreases, the rate of budgetary capitalization increases.

The formulation of the model will follow three steps in order to allow the application, the interpretation and provision of the results.

These steps may be synthesized as follows:

I. the determination of the model's equations: it follows to establish the indicators taken into account, to determine the relations between them and to verify the calculation relations for the applicability of the model;

II. forming the matrix of verifying the results: it follows to introduce the results of the model in the general macroeconomic frame and to establish the relevance of the results;

III. simulation of the scenario with the biggest probability of achievement, it follows to assure an extrapolation of the tendencies determined through the model into a future predictable, reality, in order to allow the identification of the decisions' influences adopted on long term.

I. The definition of the model's equations

$$\Delta GGR = A \times \Delta TB + B \times \Delta BR + C \times \frac{1}{\Delta CBR} + \text{another influences}$$

With:

$$A + B + C = 1$$

$$BR = \frac{GGR}{CGR};$$

$$TB = \frac{CGR}{\text{nominal GDP}};$$

$$CBR = \frac{CGCE}{CGE};$$

where:

ΔGGR = variation of general government revenue;

ΔBR = variation of budgetary rate;

ΔTB = variation of tax burden;

ΔCBR = variation of capitalization budgetary rate;

GGR = general government revenue

CGR = central government revenue;

CGCE = central government capital expenditure;

CGE = central government expenditure;

A, B, C = coefficients.

II. Formation of the verification matrix of the results

After verifying the calculation relations, we will check the results of the model by achieving a matrix which contains the base indicators that characterize the economic evolution in ensemble, instrument indicators of fiscal nature which characterize the definition of the model and the resulted indicators which are influenced by the evolution of the instrument indicators.

Together with the fiscal instrument indicators we also define the monetary instrument indicators which are observed in order to establish the concordance of the fiscal-monetary policies.

III. Selection of the scenario with the biggest possibility of achievement

The wanted situation will characterize a value with the biggest possibility of achievement. In order to identify the deviations, both the dispersion and the square

average deviation will be calculated. Thus, the application of the model starts from the definition of some possible scenarios concerning the base considered indicators:

Scenario 1:

GGR modification with the average plus or minus the deviation – probability allocated: over 62.3%.

Scenario 2:

GGR modification with another value, higher than the average plus or minus the deviation with the probability of 18.85%.

Scenario 3:

GGR modification with the value lower than the average plus or minus the deviation with the probability of 18.85%.

In the interpretation, there will be used the normal repartition of the numbers or Gauss Laplace's repartition, which catches very well the evolutions of the economy characterized by periodicities, starting from the idea that the value with the highest probability of appearance is the average value of the observed years. This average value, in order to have a deviation plus or minus the square average deviation, we give it a 62.3% probability, characteristic to the normal repartition law.

Application of the model in the Romanian economy

I. *The econometric definition of the model* and the calculation of the parameters starting from the relations between the fiscal indicators presented above.

The evolution of the model parameters

No. crt.	Denomination of the indicator	Variation 2003	Variation 2004	Variation 2005	Average value	Indicator weight
1	ΔGGR	0.134	0.2649	0.06	0.152	
2	ΔBR	0.125	0.3	-0.05	0.125	0.3
3	ΔTB	0.01	-0.21	0.256	0.0186	0.3
4	$\Delta(1/CBR)$	0.02	0.24	-0.21	0.35	0.3

$$0.152 = 0.164 + \varepsilon$$

$\varepsilon = -0.012$ result which signifies the existence of the developed underground economy and macroeconomic dysfunctions in Romania during 2002-2006

II. *The construction of the tendencies' matrix for the analysis of the model's results*

In order to continue the analysis of this model, we propose the achievement of a tendencies' matrix of the budgetary policy instruments to help us in interpreting their evolution in the analyzed period.

The construction equation of the model starts from the relation:

$$\Delta GCR = A \times \Delta TB + B \times \Delta BR + C \times \frac{1}{\Delta CBR} + \varepsilon$$

where:

ΔGGR = variation of general government revenue;

ΔBR = variation of budgetary rate;

ΔTB = variation of tax burden;

ΔCBR = variation of capitalization budgetary rate;

ε = control variable which stabilize the nature of intensity about budgetary revenue and construction rate's model.

1. if ε equals 0 then there is no connection established between the variables of the model. We are in the case of an economy with atypical reactions to the fiscal policies and hard quantifiable;

2. if ε is negative, then there is a connection with a reduced intensity and the economic reaction at the incomes' level is not on the measure of the instruments used for their modification. In this case, we identify the existence of some economic dysfunctions like underground economy and fiscal fraud;

3. if ε is positive, then we are in the situation of an intense development of the relation between the budgetary incomes and the used instruments, relation which characterizes a developing economy.

Application of the model for a 3 years period giving the same level of importance to the coefficients, respectively $A = B = C$.

The tendencies may increase or decrease and we will mark them with "+" or "-".

Base indicators	Fiscal instrument indicators
1. Fiscal revenue (+)	1. Tax burden (+)
2. Deficit current account (+)	2. Budgetary rate (+)
3. Monetary mass (-)	3. Capitalization budgetary rate (+)
	Monetary instrument indicators
	4. Minimum compulsory reserves rate (-)
	5. Inflation rate (-)
	6. Refinancing interest rate (-)
Output indicators	
1. Economic growth(+)	
2. Medium wage income (+)	
3. Foreign direct investment (+)	
4. Net export (-)	

The economic indicators' matrix follows their logical group starting from the economic-social realities. As a result, we can see a proportionally reversed correlation between the fiscal and monetary instrument indicators.

We can see that during 2002-2006, most indicators had a suitable evolution. We can appreciate that during 2005-2006 important indicators had an inadequate evolution, namely: the net export, the tax burden, the budgetary rate. The Romanian National Bank, using rates of the minimum compulsory increased reserves and the policy of aiming the inflation, realizes its main objective concerning the stability of prices. There is a tendency of diminishing the rate of compulsory minimum reserve and increasing the credit. Therefore, the Romanian economy aims to become a consumption economy in the logic of its European development.

In this way, the budgetary incomes will increase on the account of the indirect taxes because of the increase of consumption. The increase of the consumption is based on the maximum wage of Romanians who left to work abroad producing capital which they consumed in the country. The unemployment diminished also at the microeconomic level because of this mobility of the labor force.

Taking into account the possible impact of those incomes over the economy – source, residents' transfers, who work abroad, represent an associated phenomenon (and intensely presented in the media) with the legal or not migration of the labor force towards more developed markets, which offer higher wages than the origin

country. In order to study the impact, it is necessary to determine the level of these fluxes.

At this moment the problem is represented by the lack of a clear methodology which can offer absolutely credible results, although there are some preoccupations for the harmonization of such methodology both at the states level and at the level of some international organizations, like the European Union, IMF, World Bank or the International Organization of Labor.

At international level, the number of the official transfers from work in GDP, according to the IMF and World Bank estimations, is high for a series of emergent economies, like Moldova (25%), Jordan (18%), and Albania (15%). Other countries which present relatively high rates are: Bangladesh, Bosnia, Egypt, Morocco, Pakistan or Tunisia (according to IMF, World Bank).

For Romania, this aspect has become so important, as it has in view the increasing migration of the labor force towards the European Union's market. Until 2004, the main component of the payment balance in which we can find the official transfers of the workers, respectively the transfers' balance, it offered a detailed situation only between the current transfers of the administration and private transfers. Since 2004, it has been made a division of the private transfers in the workers' transfers and other private transfers, the first value being estimated on the ground of an adjusting coefficient of the information received through official channels (almost 60% of fluxes).

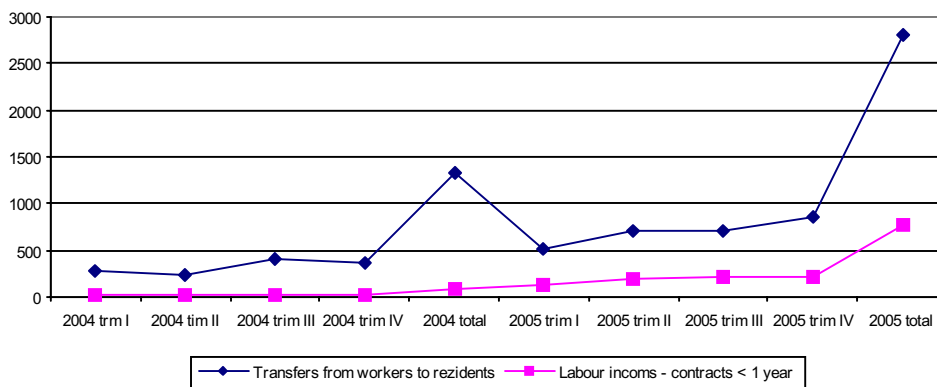


Figure 1. The balance of transfers of labor force

According to a boring made by the International Organization for Migration (IOM) in 2005, during 2001-2005 the number of families with a constant migration rate was about 10%. Besides, for the same period, the migration had a temporary character, with a medium 20 years length (IOM 2006). As a boring of the Foundation for Open Society shows, at the urban level 53% of the homes who receive transfers from work use them for covering the daily needs,

while only 4% use them to begin a new business (FOS, 2006). A detailed presentation of the theoretical aspects concerning the possible macro impact of the transfers was made by Kireyev (2006). For example, the migration of the labor force may generate an absolute contraction of GDP (the exports included) in the countries which use this factor more intensively and an expansion of GDP (exports included) where the capital is used more intensively.

After the adhesion to the European Union, Romania needs more investments in production and services destined to the export in order to counter balance the massive imports. From the impressive total of nine billions of Euro, representing the total value of the foreign investments, 15% were generated by the retail segment. Instead of more shops, Romania would need more technology, massive investments in production and services destined mainly to export. Modern factories and recent support centers would be only some of the elements which can lead to the diminishing of the current account deficit through the counter balance of the massive imports and through the increase of productivity doubled by the increase of wages.

The wages have also registered significant increase during the last two years, but these increases could not keep up with the increase of the power of buying. The direct foreign investments and the money sent in the country by the Romanians who work abroad have brought more than 12 billions dollars in the last year's Romanian economy, increasing the power of the Romanian currency, Leu, in rapport with the European currency, Euro, and cheapening the imports. The home credits have also increased during the last 24 months.

Thus, by applying the analysis of the indicators' matrix, there are established both the correctness of the results of the model and the perspective of the evolutions of the Romanian economy in close connection with the macroeconomic decisions that must be adopted.

III. Identification of scenario with the highest probability of being achieved

In order to continue the analysis of the model's results we start simulating the probable scenario and identifying some fiscal policy elections. Using the calculated indicators, we establish that the most probable scenario

of appearance is the one of variation of the average value with square deviation.

The variation of general government revenue

Table 2

Starting from the calculated values, we appreciate

Valor's of ΔGGR (from table 1)	Average	Variation of the average value	Square deviation
0.0134	0.015297	0.000108	0.01039
0.02649			
0.006			

that variation GGR for the 2006-2007 period will be between 0.0058 as pessimistic variant and 0.025687 as optimistic variant with a 62.3% probability. We can see that the scenario that we propose aims only the determination of the GGR variation allowing calculation, if wanted, of its absolute value. There are some premises that the GGR variation would spectacularly increase as a result of the previous explained factors concerning the increase of consumption. But this cannot be higher than 0.025687. At the Romania's level, taking into account that 2007 represented the year of adhesion which modifies the bases of comparison, this increase will be totally insufficient. The somber forecast needs a change of the fiscal-budgetary philosophy in order to try recovering the lagging behind the countries which are members of the European Union. We have to give up the idea that multiplying the number of taxes we will succeed in assuring the increase of GGR and we must encourage a reduction of the fiscal pressure in the social contribution field in order to assure a healthy increase of the economy and of the fiscal incomes at the same time. Beyond the partial results of the model which confirm the real situation, it is a good instrument for the identification on the ground of scenarios of some future efficient measures of fiscal policy.

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