EVALUATION OF THE INFLUENCE OF THE POLITICAL FACTOR ON ECONOMIC GROWTH IN UKRAINE

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Abstract. *The article deals with the complex of economic-mathematical models applied for the investigation of the influence of some kinds of budget expenses on economic growth considering changes in the Ukrainian economic system over the last years. The main idea of the investigation is to analyze the effectiveness of budget expenditures under the political changes that took place in Ukraine in 2005–2009.*

Key words: *budget expenditures, political influence, economic growth, econometric models*

Introduction

Budget expenditures are among the instruments that can be used by the government to influence the processes of capital accumulation, changes in market conjuncture, tempoes of economic growth, demand and supply in the internal market. In developed states, increasing the capital due to budget investments is an important factor of public production, a source of modernization and expansion of the main assets, a way of stimulating its accumulation.

Taking into account the limitation of the state finance, there is a necessity to choose the priority ways of budget investments, increase their efficiency and direct them to the so-called "developing points". Considering foreign experience, one may state that only budget investments must be directed to the places that create an innovatory development of economics and make the basis for stimulating private investments in such sectors of economics. Unfortunately, up to now there has been no exact determination of priority directions for budget investments in different periods.

Literature review

The current financial crisis is under consideration among world scientists, and special attention is paid to the problem of budget deficits, but it is closely connected with the reduction that can negatively influence the further economic growth. The point is that

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the reduction of expenditures must be done very carefully because of different economic efficiency.

IMF researchers (Spilimbergo et al., 2008) state that fiscal policy should become the main tool for market regulation as monetary policy is admitted to be ineffective.

Debrun and Kapoor (2010) underline that the fiscal policy may influence macroeconomic stability through three main channels, which may be presented as changing:

a) the volume of government and state reserves,
b) the ratio between budget expenditures and tax incomes,
c) the structure of tax incomes and expenditure transfers.

We will consider some of these channels to define the most effective budget expenditures for economic activity in Ukraine. Zatonatska and Stavytskyy (2006a, 2006b, 2007a, 2007b) have conducted some initial analysis concerning the influence of state, local and private investments on GDP. The aim of the work was investigation of the influence of each separate type of economic activity expenditures on GDP, considering changes in the economic system because of some political factors.

The object of the present work was to compile certain econometric models applicable to investigating the correlation befween the impact of separate budget expenditures and changes in the economic system, caused by political factors, on economic growth in Ukraine during the last years.

Data

The problem of the effect of budget expenses on economic growth required to choose the budget expenditures on economic activity and the Ukrainian GDP growth as input data. The authors used observations from 2002 till 2009 with a quarterly structure. Avoiding the problem of inflation, constructing the model requires normalization of all parameters. That's why all nominal data were recalculated to indices. All values were normalized for the first quarter of 2002. It helped introducing the following definitions:

IN_EXP_TOTAL – the index of all expenditures on economic activity;

IN_EXP_AGGRIC – the index of expenditures on agriculture, forestry, hunting, fishing in the GDP;

IN_EXP_COMMUN – the index of expenditures on communication, telecommunication, informatics in the GDP;

IN_EXP_IND – the index of expenditures on industry and construction in the GDP;

IN_EXP_OTHER – the index of expenditures on other branches in the GDP;

IN_EXP_PEK – the index of expenditures on fuel and the energetic complex in the GDP;

IN_EXP_RESEARCH – the index of expenditures on research and improvements in branches of economics in the GDP;

IN_EXP_TRADE – the index of expenditures on general economics, trade and labour activity in the GDP;

IN_EXP_TRANSP – the index of expenditures on transport in the GDP;

IN_GDP – the index of the nominal GDP growth;

STATE – the dummy variable (Greene, 2004) which shows some change of the economic system under the influence of the political factor in Ukraine. Its value equals to 0 for all periods before 2005 and to 1 since the first quarter of 2005.

In case of the dynamics of changing the GDP index and the index of general expenditures, one may state that the financing of expenditures has a definite seasonal structure with some increasing trend, which considerably surpasses the GDP growth. It shows an increasing part of expenditures in the GDP structure. Besides, it should be emphasized that the financing of expenditures is realized by a remnant principle. It cannot guarantee an effective utilization of budget money. The majority of expenditures are realized in the last quarter of every year, forcing the enterprises to accept for financing short-term programs and projects.

The dynamics of indices of the expenditures on economic activity (Fig. 2) shows an irregular volume in the financing of different branches. The 10–12-fold raise of expenditures versus 2002 was observed in such spheres as transport, agriculture, while the upturn in the energetic complex was 5 fold. The financing of fundamental research
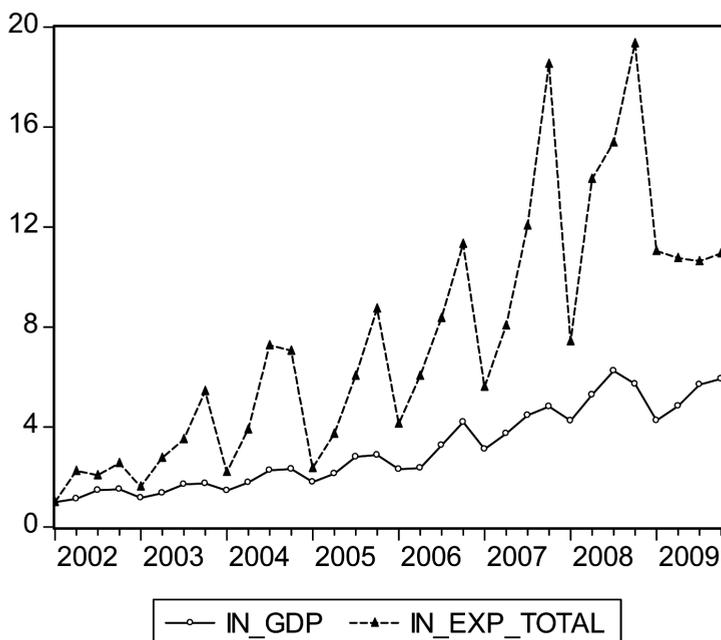

FIG.1 **Dynamics of general expenditures on economic activity and the GDP index**

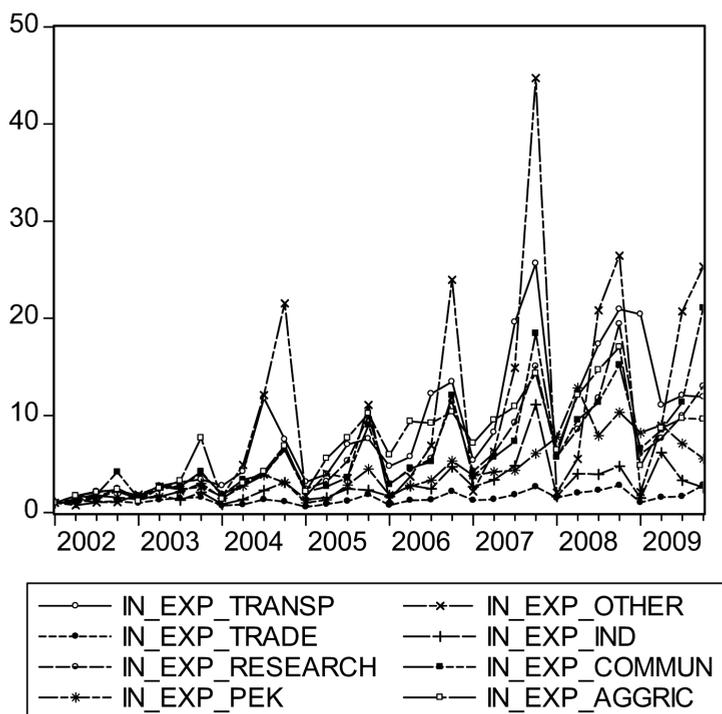*Source:* authors' calculations, www.ukrstat.gov.ua, www.minfin.gov.ua

FIG. 2. **Dynamics of economic activity indices in 2002–2009**

Source: authors' calculation based on www.minfin.gov.ua

considerably increased (more than 5 times). Taking into consideration the increased index of expenditures for the study period (11.32), only some kinds of expenditures were left on the same level, i.e. the level of 2002. Among them, we can name expenditures on transport, agriculture, some branches of national economy, industry and construction, fundamental research. The relative part of other expenditures decreased as compared with 2002.

Special attention must be directed to seasonal fluctuations at the end of every year and to a rather considerable increase of all indices after 2004. It should be explained by changing the economic policy after the Orange Revolution and appointment of the new Prime-minister in 2005. These considerations lead us to a special type of the model of analysis.

Models and results

The general model considers the influence of budget expenditures on economic growth with incorporation of political changes. So, the main model can be presented as follows:

$$IN\_GDP_t = \beta_0 + \beta_1 x_t + \beta_2 \cdot STATE_{t} + \varepsilon_t,$$

where

IN_GDP_t – the index of GDP in time t,

x_t – the index of appropriate budget expenditures in time t,

$STATE$ – a dummy variable, it equals to 0 for all periods before 2005 and to 1 since the first quarter of 2005,

$$\varepsilon_t \sim N(0, \sigma^2).$$

The main model was estimated for all types of expenditures. The whole set of equations were tested for adequacy, stability, the significance of coefficients, the absence of heteroscedasticity and autocorrelation of residual, etc.

Two samples were observed. The first one considered the data from 2002q1 till 2006q4 and the second one from 2002q1 till 2009q4. Such periods were used for analysing the influence of the crisis factor on the Ukrainian economy.

Let us consider the influence of different expenditures on economic activity upon increasing the GDP index, taking into account economic changes caused by political factors.

The results obtained are presented in Table 1 presenting the coefficients of the models in two sample periods.

TABLE 1. **The coefficients of models for different budget expenditures**

Model	Type of budget expenditure	2002q1–2006q4			2002q1–2009q4		
		β_1	β_2	R^2	β_1	β_2	R^2
1	IN_EXP_TOTAL	0.2191	0.5146	0.95	0.2418	0.9204	0.86
2	IN_EXP_TRANSP	0.1563	0.5913	0.92	0.1448	1.3113	0.77
3	IN_EXP_TRADE	1.0047	1.0528	0.75	1.5815	1.6661	0.81
4	IN_EXP_RESEARCH	0.2072	0.5410	0.88	0.2410	1.1390	0.82
5	IN_EXP_PEK	0.4490	0.7913	0.92	0.3561	1.3109	0.84
6	IN_EXP_OTHER	0.0719	0.9598	0.86	0.0721	1.9021	0.73
7	IN_EXP_IND	0.5834	0.7058	0.87	0.2910	1.9068	0.64
8	IN_EXP_COMMUN	0.2062	1.3159	0.83	0.1975	0.6801	0.88
9	IN_EXP_AGGRIC	0.1772	0.3536	0.79	0.2465	0.9110	0.75

The first model shows that general expenditures on economic activity influence the economic welfare of the state. A 1% rise of the index of general expenditures leads to increasing the GDP index up to 0.219% with the tendency of increasing up to 0.242%. Taking into consideration that total budget expenditures on economic activity equal to nearly about 5% of the GDP, such a value shows that expenditures on economic activity fulfil the function of intensifying the economic growth and accelerating its tempo. The positive aspect of the growth is the new economic system introduced in 2005. This impact has a tendency of increasing from 0.52 by data of the first sample to 0.92 by all observations.

Expenditures on transport have a positive influence on the economic growth as well. A one percent increase of such expenditures leads to an about 0.15% increase of the GDP index. Therefore, discipline and responsibility for such expenditures can significantly improve the situation in this sphere. The change of the economic system stimulated the growth of the GDP index from 0.591 to 1.31. It can be explained by the increased effectiveness of using infrastructure in Ukraine.

The rising index of expenditures on general economic, trade and labour activity by 1% offers a possibility to increase the GDP index by 1–1.5%. The change of the economic system reveals a great potential in this sphere. The influence of the political factor is evaluated at 1–1.6% in the GDP index. It can be explained by the low level of trade in Ukraine comparing to other countries, the high liquidity of goods due to the growing welfare, and by the large part of shade trade in the Ukrainian economy.

Expenditures on research and innovations in the branches of economy are also worth attention. The influence of these expenditures can be assessed at 0.2–0.24% in the GDP index. The effectiveness of researches grew over the last years, and their contribution to economic growth increased from 0.54 to 1.14. It has been proven (Zatonatska, Stavytskyy, 2007b) that longer systematic researches present more prominent benefits for economy. According to the suggested model, fundamental research cannot produce immediate results, and the real outcome can be expected only in a year after financing a certain project.

Expenditures on fuel and on the energetic complex are among those most important for the Ukrainian economy. A 1% rise of expenditures leads to increasing the GDP index by about 0.36%–0.45%. This means that investing into the energetic sector significantly stimulates the development of the Ukrainian economy. The high level of profitability is related with the considerable technological backwardness in energetic and transition capacities, large ineffective consumption of energy through its transportation and utilization. Summing up, the application of new technologies can significantly speed up the economic growth in Ukraine; it means that stimulating the energetic sector leads to accelerating the energetic reconstruction of the economy and raising welfare in Ukraine. Among other factors, we should emphasize the economic system of the state, which was altered due to political factors. The model evaluates the political factor including the changed price of gas and oil at 0.79 in the GDP-index in the first sample. The influence of the political factor increased to 1.31 upon estimating all observations.

Expenditures on the other branches of economics influenced the economic growth as well. Increasing their index by 1% leads to a 0.07% rise of the GDP index. Taking into consideration the small amount of resources allocated to this sphere, one can notice a low efficiency of such expenditures. A large part of such expenditures was used for shade schemes. During the recent political changes, the political influence on the GDP index increased from 0.96 to 1.9, proving that the majority of such expenditures weren't used directly.

The 1% rise of the index in expenditures on industry and construction provides the possibility to increase the GDP index by 0.29–0.58%. Taking into account the fundamentality of such expenditures, one can affirm a positive shock for the economy during the period of financing, which may be accounted for a great variety of goods and services related to construction objects. The change of the economic system allowed increasing the GDP index from 0.7058 to 1.9068.

Expenditures on communication, telecommunication and informatics influence significantly the economic growth. The numeric value of such effect is close to 0.2% for each 1% of increasing budget expenditures. It means that investments in communication are especially profitable and can be refunded fast, and the rising level of welfare during the investing period proves it. The change of the economic system in 2005 produced a positive but decreasing impulse. The value obtained by the first sample (1.32) almost twice exceeded the one estimated by all observations (0.68).

The last model illustrates the effect of expenditures on agriculture, forestry, fishing on the economic growth. Of course, the level of such expenditures has a definite seasonal component due to the seasonal character of agricultural production. It should be mentioned that the increase in such expenditures leads to a 0.18–0.25% rise of the GDP index, and the political factor accounts for 0.35 to 0.91 of increasing the GDP index.

Conclusions

Thus, increasing expenditures on economic activity can stimulate the economic growth in Ukraine. However, the most important factor for the economic growth in the last two years was changing the political model of management; as a result, some modifications occurred in the economic system. According to the proposed models, the positive influence of this factor in 2006 can be assessed as 0.35 to 1.05 in the GDP index for different types of expenditures. In three years this value increased almost for all types of expenditures. Taking into account the adequacy of all models and the significance of all coefficients and of fulfilling all necessary econometric conditions, it may be concluded that the change of the economic system in 2005 has promoted the accelerated growth of the Ukrainian economy.

The influence of expenditures on economic activity is heterogeneous. All types of expenditures can be divided by their effectiveness according to the influence on the economic growth. The most effective type of expenditure is budget expenditures on trade activity. Among less profitable are expenditures on fuel and the energetic complex, industry and building, agriculture, science.

The further research should include investigations concerning the length of influence of different types of budget expenditures on economic growth, the role of external factors, especially during the economic crisis.

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