

ЕКОНОМІКА ТА УПРАВЛІННЯ НАЦІОНАЛЬНИМ ГОСПОДАРСТВОМ

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**FISCAL POLICY
FOR ECONOMIC DEVELOPMENT****БЮДЖЕТНО-ПОДАТКОВА ПОЛІТИКА
ЕКОНОМІЧНОГО РОЗВИТКУ**

Urgency of the research. Commonly, tax and budget instruments' nature and degree of influence on the economic development depend on the share of GDP redistribution through the public finance system. But it isn't the one and only influencing factor. The national fiscal architectonics model and the quality of state institutions are essential as well.

Target setting. Under modern conditions of the global economy delayed growth rate, the further development of the statements on the possibility evaluation of discretionary fiscal policy measures implementation, their scope and composition to accelerate economic growth is advisable.

Analysis of resent researches and publication. The questions of determining the fiscal policy role for the economic development regulation are explored in numerous works written by P. Arestis, G. Dell'Araccia, A. Afonso, R. J. Barro, O. Blanchard, E. M. Engen, P. Mauro, V. Tanzi, I. Chugunov, D. Furceri etc.

Uninvestigated parts of general matters defining. At the present development stage of financial relations, it is important to deepen the scientific research in the area of estimating the budget and tax instruments' value and degree of influence on the country's economic development dynamics.

The research objective. The main aim of this article is to develop theoretical and methodological principles of fiscal policy formation in the context of providing the necessary prerequisites for a long-term economic growth.

The statement of basic materials. Using the convergence of neoclassical and neo-Keynesian approaches as well as correlation and regression analysis methods, the influence of such factors as the level and the structure of taxation, the budget expenditures, the budget deficit, and the public debt on economic development was examined in this article.

Conclusions. In modern conditions, fiscal policy has a significant regulatory impact on the economic processes by an integrated combination of fiscal architectonics instruments (taking into account the variation of composite structure models, time lags, and economic cycles).

Keywords: fiscal policy; fiscal architectonics; budget deficit; government debt; economic development.

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Актуальність теми дослідження. Зазвичай, характер та ступінь впливу податкових і бюджетних інструментів на економічний розвиток залежить від обсягу перерозподілу валового внутрішнього продукту через систему публічних фінансів. Проте це не єдиний фактор. Також важливими чинниками є модель бюджетно-податкової архітекτονіки відповідної країни та якість інститутів.

Постановка проблеми. За сучасних умов уповільнення темпів росту світової економіки доцільним є подальший розвиток положень щодо оцінки можливостей використання заходів дискреційної фіскальної політики, їх масштабів та композиції для активізації темпів економічного зростання.

Аналіз останніх досліджень і публікацій. Питанням визначення ролі бюджетно-податкової політики у регулюванні економічного розвитку присвячено численні праці Ф. Арестіса, Дж. Дель'Аріссія, А. Афонсо, Р. Барро, О. Бланшара, Е. Енгена, П. Мауро, В. Танзі, І. Чугунова, Д. Фурсері та інших.

Виділення недосліджених частин загальної проблеми. На сучасному етапі розвитку фінансових відносин важливим є продовження наукового пошуку щодо оцінки значення та ступеню впливу бюджетних та податкових інструментів на динаміку економічного розвитку країни.

Постановка завдання. Основним завданням написання цієї статті є розвиток теоретико-методологічних засад формування бюджетно-податкової політики в контексті забезпечення необхідних передумов для довгострокового економічного зростання.

Викладення основного матеріалу. У статті досліджено вплив рівня та структури оподаткування, бюджетних видатків, дефіциту бюджету та державного боргу на економічний розвиток із використанням конвергенції неокласичного та неокейнсіанського підходів, методів кореляційно-регресійного аналізу.

Висновки. За сучасних умов бюджетно-податкова політика здійснює значимий регулятивний вплив на економічні процеси шляхом комплексного поєднання інструментів фіскальної архітекτονіки, враховуючи варіацію моделей композиційної структури, лаги дії у часі, циклічність економіки.

Ключові слова: бюджетно-податкова політика; фіскальна архітектоніка; дефіцит бюджету; державний борг; економічний розвиток.

Urgency of the research. One of the crucial tasks of financial science is to ensure economic development through the realization of fiscal policy. So, the role of this policy should be defined properly.

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The fiscal policy improvement is interconnected with expansion of the public institutions' tasks and functions. Commonly, tax and budget instruments' nature and degree of influence on the economic development depend on the share of GDP redistribution through the public finance system. But it isn't the one and only influencing factor. The national fiscal architectonics model and the quality of state institutions are essential as well.

Target setting. Neoclassical and neo-Keynesian economics have proposed the opposite approaches explaining the fiscal policy instruments' impact on employment, domestic demand, and the GDP growth rates. The convergence of these approaches determines the developed countries' state financial policies' formation doctrine. Fiscal policy is a powerful influence instrument and has a long-lasting effect. Usually, it is used to enhance investment and consumer demand. Under modern conditions of the global economy delayed growth rate, the further development of the statements on the possibility evaluation of discretionary fiscal policy measures implementation, their scope and composition to accelerate economic growth is advisable.

Analysis of resent researches and publications. Philip Arestis (2012) defined fiscal policy is an effective tool for macroeconomic stabilization [2]. Olivier Blanchard, Giovanni Dell'Ariccia, and Paolo Mauro (2010) stated that from the time of the Great Depression until the early 1960s fiscal policy has remained the central macroeconomic policy tool for economic development [4]. Igor Chugunov and Valentina Makogon emphasized that fiscal policy was an effective tool for economic growth [8]. Robert J. Barro (1996) concluded that effectively used budget expenditures in form of infrastructure investment, research and development subsidies as well as education spending had a positive impact on the economic dynamics [3]. Vito Tanzi and Howell H. Zee (1997) noted that fiscal policy could play a fundamental role in affecting the long-run growth performance of countries [7].

However, using a sample of 107 countries during the period from 1970 to 1985, Eric M. Engen and Jonathan Skinner examined the interrelation between the GDP dynamics and a *balanced-budget increase* in government spending and revenue. They found strong and negative effects of both government spending and revenue on output growth [5]. António Afonso and Davide Furceri conducted an empirical study of the fiscal instruments' impact on the economic processes. They concluded that 1 percentage point rise in the share of total revenue in GDP would decrease output by 0.12 and 0.13 percentage points respectively for the OECD and for the EU countries [1].

Uninvestigated parts of general matters defining. At the present development stage of financial relations, despite the thorough researches (conducted by foreign and domestic scholars), it is important to deepen the scientific research in the area of estimating the budget and tax instruments' value and degree of influence on the country's economic development dynamics.

The research objective. The aim of this article is to develop theoretical and methodological principles of fiscal policy formation in the context of providing the necessary prerequisites for a long-term economic growth.

The statement of basic materials. Neoclassical economics classifies the fiscal policy instruments on the basis of their impact on economic growth. So, according to this classification, there are four groups of these instruments: 1) *distortionary taxes* – the taxes that reduce the economic agents' intentions to invest in human or physical capital; 2) *non-distortionary taxes* – the taxes that do not have a destructive or restrictive effect on the economic agents' decisions (regarding the savings formation and further investment); 3) *productive expenditures*; 4) *unproductive expenditures*. The group of *distortionary taxes* includes the taxes on income, profit and capital. Meanwhile, the group of *non-distortionary taxes* combines the taxes on consumption and rent payments. *Productive expenditures* are defined as the spending on education, scientific research and development, transport and information infrastructure, and public health care. At the same time, *unproductive expenditures* combine spending on public administration, defense, public order and judicial power, economic activity etc. The highest level of positive impact on economic growth is provided in the case of financing *productive expenditures* at the expense of the taxes belonging to the *non-distortionary* group.

The state tax policy's main impact tools on the aggregate demand are *the tax structure* and *the level of taxation* (characterized by *the tax burden indicators*). The level of taxation is commonly considered to be the result of a public compromise. The tax burden is set according to the chosen model

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of the country’s social and economic development. This model determines the ratio of GDP redistribution through the public finances and the state institutions’ role in the provision of public services. In the chosen sample of the OECD countries, the share of tax revenues (including social security contributions) in GDP varied from 16.23 % in Mexico to 53.71 % in Sweden. Using the linear regression method to analyze the OECD countries’ public finances during the period from 1981 to 2016 [9], it was founded that a rise in tax revenues percentage in GDP by 1 percentage point causes 0.08 percentage points decrease in the GDP growth rate. So, there is no evidence that the level of taxation has any significant influence on economic growth. Mexico, the USA and Norway (in the chosen sample of the OECD countries) have a notably different level of GDP redistribution through the tax system. Meanwhile, their economic growth rates (2.50 %, 2.69 %, and 2.44 %, respectively) were approximately the same. The above mentioned confirms that the tax burden regulation is not the ultimate instrument, but only one of the tools to influence economic activity.

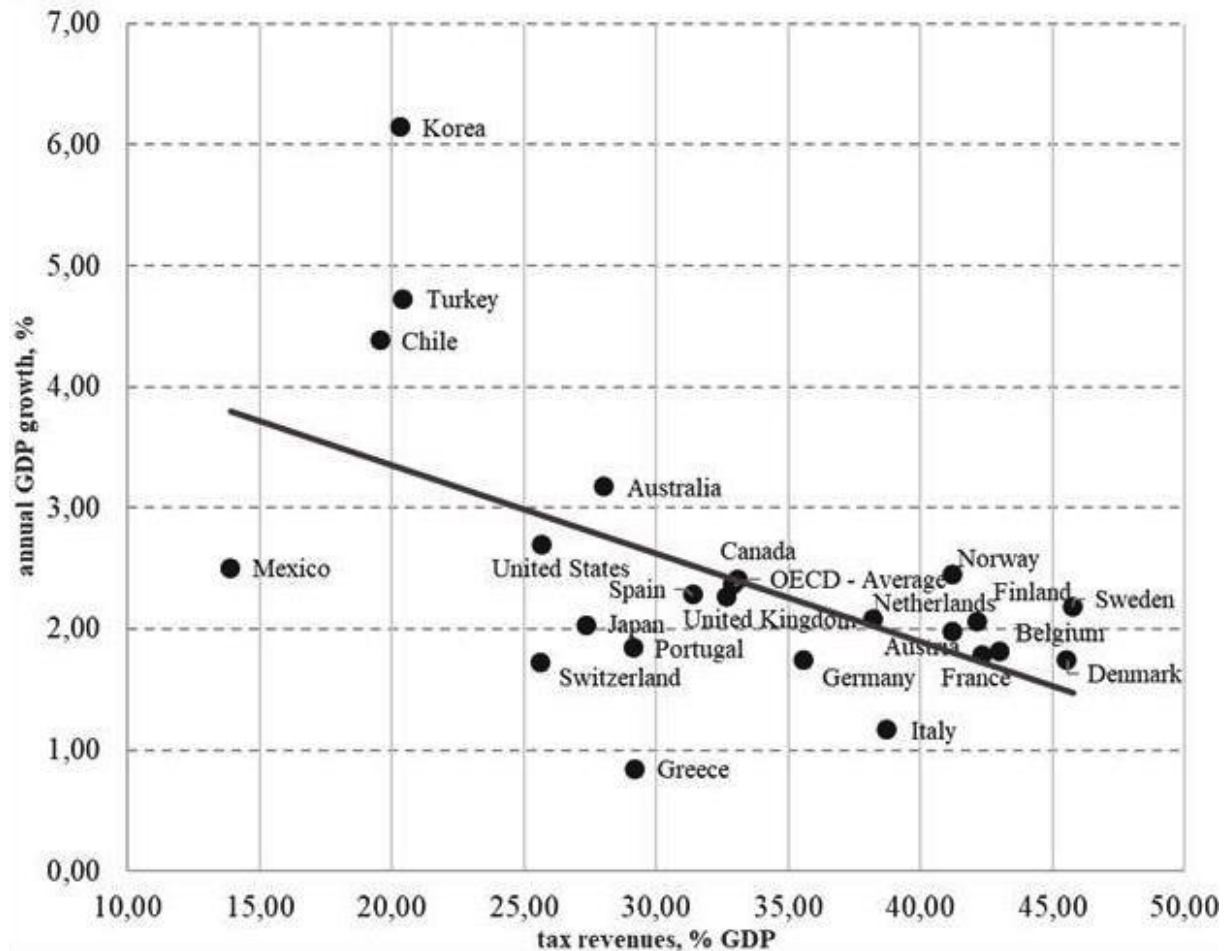


Fig. 1. The interrelation between the level of taxation and the real GDP growth rates in the OECD countries during the period 1981–2016
 Source: [9]

The variation scenarios for combining both the tax bases and the tax rates determine the tax structure. In the context of the tax bases, there are *the taxes on income and profits, the taxes on labor, the taxes on consumption, and the taxes on capital*. The regulation of the tax burden on labor and capital has an impact on the market conditions of these factors of production. It is one of the main reasons for the labor and financial capital migration from one country or region of the world to another. In the con-

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text of the tax rates impact on economic activity, there are two main classification groups: a) depending on method of application – ad valorem, specific, and combined rate; b) depending on the tax scale type – regressive, proportional, and progressive rate. Due to the plural variations for combining the tax bases and rates, the state has significant opportunities to affect the investment and consumer demand. In general, the tax structure influences the real GDP growth rate. This influence can be estimated using the following equation (1):

$$agr_i = \beta_0 + \beta_1 tl_i + \beta_2 tc_i + \beta_3 tcon_i + \varepsilon_i \quad (1),$$

where:

agr_i – the real GDP growth rate (the index i indicates the period);

β_0 – the individual effect to be estimated for each case;

tl_i – the taxes on labor to GDP ratio;

tc_i – the taxes on capital to GDP ratio;

$tcon_i$ – the taxes on consumption to GDP ratio;

ε_i – the country-specific random effect (an independent shock).

Using equation 1 to analyze financial systems of the OECD countries during the period from 1981 to 2016, it was founded that the taxes on capital had the most destructive impact on the rates of economic growth. It was determined that increase in the taxes on capital to GDP ratio by 1 percent had caused reduction in the growth rate of real GDP by 0.46 percentage points. At the same time, expansion in the taxes on labor to GDP ratio by 1 percentage point had caused reduction in the growth rate of real GDP by 0.19 percentage points. Meanwhile, the taxes on consumption had practically neutral impact on the rates of economic growth. Increase in these taxes to GDP ratio by 1 percentage point slowed down the real GDP growth rate by 0.03 percentage points [9].

Tax policy has some direct and indirect levers of influence on the inter-budgetary relations development. Primarily, this is caused by the fact that all the taxes are divided into two groups: state and local. Secondly, the local authorities are institutionally defined and empowered to regulate the local taxes and fees bases as well as the rates. And thirdly, the state taxes (in whole or in part) are integrated in the revenues of local budgets. The degree of fiscal decentralization affects the interest of local self-government bodies to mobilize tax revenues to the relevant budgets. However, taking into account the fact that the imbalances in interregional economic development could emerge or significantly expanse, the mentioned fiscal decentralization requires a scientific substantiation.

A tax cut through the reduction in the rate of taxes or provision of targeted temporary tax benefits is an important aspect of the of state tax policy instruments' impact on aggregate demand. The changes in the taxation system (needed to achieve a significant decrease in the tax burden) require a balanced and consistent set of measures aiming to reduce the budget expenditures. In that aspect of economic stimulation, it is appropriate to use the short-run tax policy tools. These measures are usually related to the taxes that have a direct impact on investment activity and the volume of economic agents' consumption. The taxes on labor and the taxes on capital (namely the corporate tax) should be included into this group.

Arthur Betz Laffer, one the founders of supply-side economics, is an active supporter of a moderate tax burden. Using the tax curve, he substantiated that, in the context of further lowering the tax rates (already belonging to the "forbidden zone"), the fiscal value of the relevant taxes would rise. In addition, the excessive level of the tax burden leads to an increase in the size of the shadow economy. This fact reduces the overall functional effectiveness of the national economy and undermines the economic agents' confidence in the state as a public institution. Theoretically, the possible reduction in the tax revenues during the transition period should be followed by the decrease in the budget expenditures (chosen by the criteria of the lowest funding expediency and effectiveness level). However, the practical implementation of a tax cut measures (offered by the supporters of supply-side economics during the presidency of Ronald Reagan) led to a significant increase in the budget deficit. At the same time, the GDP growth rate rose to 7.26 % in 1984 (reaching the highest level since the Second

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World War). The average real GDP growth rate for the period from 1981 to 1988 was amounted to 3.50 % [9]. The reduction of unemployment, the notable expansion in incomes and social standards should be named as the consequences of that situation.

Increase in the budget allocations for the investment projects, employment intensification programs implementation, and innovative infrastructure development (by additional tax revenues) is the possible option to stimulate the economy. In view of the mentioned above fact, there are two possible solutions. It is advisable to provide an increase in the tax rates or an expansion in the tax bases. The second solution is more effective and logical for emerging market economies. The effectiveness of these measures could be achieved through the expedient and efficient provision of the budget funds use. Moreover, this requires a developed system of public institutions and a solid budget strategy.

The fiscal policy's impact on aggregate demand in terms of expenditures should be investigated regarding the spending to GDP ratio as well as variable compositional structure of public expenditures. Neo-Keynesian scholars state on the positive impact of the public spending expansion on economic growth. This approach is based on the next logical construction. Increased budget expenditures lead to the rise in demand for industrial goods (e. g., metallurgical, engineering, and construction products). Subsequently, the manufacturers of these goods satisfy the market demand. As a result, this situation is reflected on the growth in demand for labor in certain sectors of the economy. The above, in turn, leads to an increase in wages. And that has a direct impact on the level of private consumption.

It is clear that the structure of expenditures can be viewed through the prism of the functional and economic budget classifications. However, numerous scholars emphasize that it is appropriate to assess productive and unproductive budget expenditures regulation impact on economic growth. The share of budget expenditures in GDP vastly depends on the model of social and economic development (chosen by society) as well as the political preferences. After elections, those preferences are transformed into specific decisions on the financial resources redistribution between the public sphere sectors, administrative territorial units, and strata of the population. In certain cases, the state financial responsibilities for education, public health care, and housing programs for socially deprived classes are enshrined in the Constitution without any real assessment of their implementation possibility. That fact has a destructive impact on the country's social and economic development.

The fiscal policy's impact on aggregate demand and economic growth in terms of expenditures (regarding the spending to GDP ratio and their compositional structure) can be represented using the following equation (2):

$$agr_i = a_0 + a_1pex_i + a_2n_pex_i + \varepsilon'_i \quad (2),$$

where:

a_0 – the individual effect to be estimated for each case;

pex_i – the productive expenditures to GDP ratio;

n_pex_i – the unproductive expenditures to GDP ratio;

ε'_i – the country-specific random effect (an independent shock).

If the economic recession is identified, there is a strong necessity and expediency to provide the deficit financing by expansion in the public spending. The state programs directed to achieve enhance in employment, activation in infrastructure investments as well as the widest social support of the population have been the standard stimulation policy's measures since the Great Depression. Meanwhile, it should be said that the fiscal policy instruments' usage approaches have been transformed significantly. That was caused by the fiscal stimulation's negative effects on the long-term economic growth. The crowding out effect, the public debt to GDP ratio growth, the relevant expenditures efficiency, the lag of fiscal instruments, and the need to enhance the future tax burden should be named amid the affirming facts. Taking into account the *Ricardo–de Viti–Barro equivalence* theorem and the potential economic agents' expectations concerning the budget and tax regulations, in the long-run, fiscal policy has a neutral impact on aggregate demand. It should be noted that fiscal policy in emerging market economies is mostly procyclical, and in advanced economies it is acyclical or countercyclical. So, the

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deficit financing possibilities are divergent and depend on the level of the country's economic development. Under current conditions, the rising in the budget expenditures through the deficit regulation (opposed to the widely used in the 20th century stimulation approach) is often seen as a tool to ensure the macroeconomic stabilization in the short-term.

The main sources to finance the budget deficit are the borrowings (attracted by the government) and some specific revenues (received from the state-owned property privatization). The money creation (as a source of budget financing) is not considered because of the institutional constraints of its application under the current conditions of the budgetary relations development. Thus, the only fact of the budget deficit existence is already leading to an increase in the nominal value of public debt. This interrelation could be presented using the next equation (3):

$$d_i = d_{i-1} + def_i - \pi_i \quad (3),$$

where:

d_i – nominal value of public debt;

def_i – nominal value of budget deficit;

π_i – non-debt sources of budget financing.

The nominal value of public debt is less important (in context of its impact) than the government debt to GDP ratio. So, it's necessary to use the equation (4):

$$\frac{d_i}{g_i} = \left(\frac{1}{1+ngr_i} \right) * \frac{d_{i-1}}{g_{i-1}} + \frac{def_i}{g_i} - \frac{\pi_i}{g_i} \quad (4),$$

where:

g_i – nominal GDP;

ngr_i – the nominal GDP growth rate.

Commonly, the public debt to GDP ratio is determined by the respective indicator over the past year and the budget deficit to GDP ratio. But there are some other factors of influence. The nominal GDP growth rate should be named among them primarily. If the real economic growth is absent, the prices rising could serve as a tool for the public debt to GDP ratio decrease. But that situation contradicts the global goal of financial stability achievement.

The highest average level of public deficit during the period from 1981 to 2016 was observed in Greece. It was equal to 7.49 % of GDP. The prolonged period of budget imbalance has led to an increase in the public debt to GDP ratio from 26.7 % in 1981 to 181.6 % in 2016. It should be mentioned that in the chosen sample of the OECD countries Greece had the lowest average annual GDP growth rate (equal to 0.84 %). A similar situation is observed in Japan. The public debt to GDP ratio (due to the high level of budget deficit and low inflation) rose from 66.9 % in 1981–1990 to 237.7 % in 2011–2016 (Tab. 1). Economic growth slowed down from 4.64 % to 0.99 % respectively. Using the regression method to analyze the economic situation in the OECD countries during the period from 1981 to 2016, it was determined that 1 percentage point expansion in the share of budget deficit in GDP would decrease the real GDP growth rate by 0.17 percentage points.

A budget deficit financing by the means of debt instruments has an impact on the internal state loan bonds index of yield and may lead to a reduction in private expenditures. Private expenditures (e. g., private investment and personal consumption spending for durable goods) are elastically sensitive to the market interest rate changes. The public debt accumulation during the recession period and post-crisis recovery of the economy actualizes the issue of the debt to GDP ratio reduction. It is urgent to find an appropriate solution for the fiscal consolidation questions. These issues form the basis for the long-term financial stability achievement. The implementation of the mentioned measures requires to set some institutional restrictions for the budget expenditures and deficit as well as the public debt. If financial system is based on the medium-term budget planning and profound budget strategy, the rational public spending limitation becomes possible.

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Table 1

General government debt and overall balance in OECD countries, % of GDP

	1981–1990		1991–2000		2001–2010		2011–2016	
	debt	deficit	debt	deficit	debt	deficit	debt	deficit
Japan	66,9	1,4	99,9	3,8	186,0	6,3	237,7	6,5
Greece	46,5	9,2	94,0	7,4	110,9	7,8	174,1	7,3
Italy	79,7	11,2	113,8	6,4	107,5	3,6	128,8	3,0
Portugal	50,0	6,0	53,8	4,8	66,1	5,1	125,5	4,7
United States	54,7	4,4	66,8	2,4	67,2	5,0	104,9	5,7
Belgium	113,4	10,3	124,0	4,1	94,8	1,5	104,4	3,2
France	30,0	2,6	52,0	3,9	66,9	3,9	92,4	4,1
Spain	28,2	4,3	56,9	3,8	47,7	2,1	91,7	7,8
Canada	64,8	6,2	93,5	3,6	75,9	0,4	87,6	2,1
United Kingdom	47,2	3,6	45,2	3,2	48,1	4,4	86,6	5,8
Austria	50,0	3,2	63,6	3,3	65,5	2,1	81,7	1,9
Germany	40,0	2,1	53,1	2,9	67,7	2,7	75,3	-0,1
Netherlands	66,5	5,0	70,7	2,4	53,2	1,7	65,6	2,5
Finland	15,0	-4,0	48,1	2,3	41,5	-2,3	57,7	2,2
Mexico	59,5	7,4	42,6	2,6	42,1	2,4	49,2	3,7
Denmark	57,3	1,9	66,7	1,5	40,9	-1,6	42,4	1,3
Sweden	51,4	7,1	63,4	4,0	46,6	-0,8	41,2	0,5
Korea	17,1	-1,3	11,0	-2,4	27,1	-1,6	35,3	-1,1
Norway	30,5	-4,9	33,0	-3,9	51,2	-13,2	34,1	4,6
Australia	21,2	3,5	26,3	2,5	13,7	0,6	32,6	3,2
Turkey	36,1	3,1	36,8	9,5	54,3	6,6	31,3	1,4
Chile	56,0	-0,8	23,3	-1,3	9,2	-2,1	14,9	0,8

Source: created by authors on the basis of IMF and OECD data

Conclusions. In modern conditions, fiscal policy has a significant regulatory impact on the economic processes by an integrated combination of the fiscal architectonics instruments (taking into account the variation of composite structure models, time lags, and economic cycles). According to the conducted study, the state tax policy's main impact tools on the aggregate demand were the tax structure and the level of taxation. The level of taxation is commonly considered to be the result of a public compromise. It is set according to the chosen model of the country's social and economic development. The level of taxation does not have any significant destructive impact on the rates of economic growth. Meanwhile, the interrelation between the level of taxation and economic growth was revealed. In the OECD countries during the period from 1981 to 2016, an expansion in the taxes on capital to GDP ratio as well as the taxes on labor to GDP ratio led to a decline in the real GDP growth rates. Meanwhile, the rise in the taxes on consumption to GDP ratio had practically neutral impact on the rates of economic growth. The budget spending impact on economic growth should be considered separately for productive and unproductive expenditures.

The deficit regulation should be used as a tool to ensure the macroeconomic stabilization in the short-term (opposed to the widely practiced in the 20th century stimulation approach). Using the regression method, it was determined that 1 percentage point increase in the share of budget deficit in GDP would slow down the real GDP growth rate by 0.17 percentage points. In that case, the public debt (requiring additional budget expenditures for debt-servicing) is accumulated. And that, in turn, is followed by the crowding out effect (in the field of private investment) and the tax policy compensatory measures' implementation.

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