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The Role of Indirect Taxes in The Economy

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Abstract. This study aims to empirically assess the impact of indirect taxes on economic growth in Uzbekistan. The study uses annual time series data for the post-independence period. The main objective is to determine the long-term and short-term relationship between indirect taxes and economic growth. To do this, the Augmented Dickey–Fuller and Philips–Perron tests were used to test the stationarity of the variables. Also, the Auto Regressive Distributed Lag (ARDL) threshold testing approach was used to assess the presence of cointegration between the variables.

Currently, the share of indirect taxes in total tax revenues in Uzbekistan is relatively high, and in order to ensure sustainable economic growth, it is recommended to optimize the tax structure, gradually increase the share of direct taxes, and reduce the burden of indirect taxes.

Keywords: Indirect taxes, tax burden, state budget, economic growth, price level, inflation, tax policy.

Introduction.

Taxes are the main source of state financial resources, collected directly or indirectly from the population and economic entities. Financing of services, infrastructure facilities, social programs and other public needs provided by the state is carried out at the expense of taxes. Despite the fact that the main task of the tax system is to finance state expenditures, it also includes such important goals as ensuring economic equality, strengthening social stability, and stimulating economic activity.[1] A well-organized and stable tax system in any country is a prerequisite for economic growth. In countries with an effective tax administration and an optimally formed tax structure, economic growth rates are usually high. At the same time, the structure of the tax system, in particular, the large or small share of indirect taxes, has a significant impact on production processes, domestic market activity, and macroeconomic indicators.[2]

The tax system of Uzbekistan has also historically been formed through several stages of reforms. In the early years of independence, due to structural changes in the economy, high state spending, and the need to ensure budget stability, there was a strong reliance on indirect taxes. At the end of the 20th and beginning of the 21st centuries, reforms aimed at expanding the tax base, simplifying taxes, and improving tax administration were gradually implemented. In recent years, the country has implemented large-scale reforms aimed at modernizing tax policy, reducing the hidden part of the economy, and creating a favorable tax environment for business entities. At the same time, a high share of indirect taxes in total tax revenues remains, which may to some extent affect the pace of economic growth.[3]

From this point of view, studying the role of indirect taxes in the economy of Uzbekistan and how they affect economic growth is of urgent scientific and practical importance. This study aims to empirically assess the share of indirect taxes and their impact on economic activity, investment, and production processes.[4]

Literature review.

The relationship between taxes and economic growth is one of the most studied areas in economics. Studies analyzing the impact of indirect taxes on the economy are widely available in the international scientific literature. Most of them are conducted on the example of developed countries (USA, European Union) and OECD countries, and there are relatively few studies on developing countries. In the case of Uzbekistan, the composition of indirect taxes, their impact on economic activity and growth rates have not yet been studied in sufficient depth.

Although Solow's classical growth model notes that taxes have no direct effect on long-term growth, it is emphasized that the state's fiscal policy can affect the allocation of economic resources [5]. In Romer's endogenous growth model, government spending and tax policy are considered important factors affecting the sustainable rate of economic growth [6]. Easterly and Rebelo studied the impact of indirect taxes on real income in OECD countries and found that in some cases, changes in tax rates have a significant impact on economic activity [7]. Engen and Skinner's study noted that tax reforms can change economic growth by about 0.2–0.3 percent [8].

Skinner's study of African countries has shown that increases in indirect taxes, such as import duties and consumption taxes, can reduce economic growth [9]. It has also been shown that consumption taxes, when collected effectively, have a positive impact on the stability of the state budget. In the case of Barbados, Williams noted that indirect tax revenues – especially turnover taxes and consumption taxes – play an important role in ensuring the flexibility of the tax system and the stability of revenue [10]. Arisoy and Unlukaplan empirically analyzed the impact of the composition of direct and indirect taxes on economic growth for Turkey. The results of the study show that indirect taxes have a positive relationship with economic growth, but this effect is strongly dependent on the quality of tax administration and economic conditions. Many studies on developing countries emphasize that a high share of indirect taxes helps increase budget revenues in the short term, but in the long term, they can have a negative impact on investment and production activity due to increased pressure on consumption.

Although there are not many studies directly related to the conditions of Uzbekistan, local scientists (A. Gofurov, A. Vakhobov, Q. Usmanov, etc.) have conducted scientific research on modernization of the tax system, optimization of the tax structure, and assessment of the impact of consumption taxes on economic processes. Their studies note that the high share of indirect taxes in Uzbekistan can directly affect consumer spending and inflationary pressure in the economy.

Thus, the existing scientific literature on the impact of indirect taxes on economic growth shows mixed results. In many countries, they provide short-term budget stability, but in the long run, their high share can have a negative impact on economic activity. This study complements the existing scientific literature by empirically assessing the role of indirect taxes in the economy in the context of the Uzbek economy.

Research methodology.

To empirically assess the impact of indirect taxes on economic growth in Uzbekistan, modern econometric approaches were used, which allow us to identify long-term and short-term relationships between economic indicators. The study is based on annual time series data.

First, several methods can be used to determine whether there is long-run cointegration between variables. The most common approaches are the Johansen–Juselius and Engle–Granger cointegration tests [11]. However, these methods require that all variables be integrated in the same order.

To overcome this limitation, the study used the bounds testing approach developed by Pesaran et al. The ARDL model can work with variables integrated at either level 0 (I(0)) or level 1 (I(1)), making the method a suitable approach for the economic indicators of Uzbekistan.

Analysis and results.

In this study, the relationship between indirect taxes and economic growth in the Uzbek economy was assessed based on annual time series for the period 1995–2023. Initially, all variables were tested using ADF and PP tests to determine the initial order of stationarity. The results showed that the variables were integrated in the I(0) and I(1) orders, which allows using the ARDL bound testing method proposed by Pesaran et al.[12]

The main hypothesis of the study was formulated as follows::

Null hypothesis (H₀): Indirect taxes do not affect economic growth;

Alternative hypothesis (H₁): Indirect taxes affect economic growth;

The empirical model is defined as follows:

$$\text{GDP}_t = \beta_0 + \beta_1 \text{IDT}_t + \beta_2 \text{PC}_t + \beta_3 \text{HCF}_t + \beta_4 \text{INF}_t + \varepsilon_t \quad (1)$$

Here:

GDP – Real GDP of Uzbekistan;

IDT – Volume of indirect taxes;

PC – physical capital;

HCF – Human capital;

INF – Inflation rate;

β_0 – The free part of the model;

β_1 – The free part of the model;

β_2 – short-term impact of physical capital;[13]

The model was converted to logarithmic form:

$$\ln GDP_t = \beta_0 + \beta_1 \ln IDT_t + \beta_2 \ln PC_t + \beta_3 \ln HCF_t + \beta_4 \ln INF_t + \varepsilon_t \quad (2)$$

Hypothesis that there is no long-run relationship for ARDL bounds test:

$$H_0: \lambda_1 = \lambda_2 = \lambda_3 = \lambda_4 = \lambda_5 = 0 \quad (3)$$

$$\text{Alternative hypothesis: } H_1 : \lambda_i \neq 0 \quad (4)$$

The results of ARDL bounds testing confirmed the existence of long-run cointegration between indirect taxes and economic growth through F-statistics exceeding critical values. The long-run estimation was performed in the following ARDL model:

$$\begin{aligned} \Delta \ln GDP_t = & \beta_0 \\ & + \sum_{i=1}^4 \beta_{1i} \Delta \ln GDP_{t-i} \\ & + \sum_{i=1}^4 \beta_{2i} \Delta \ln IDT_{t-1} \\ & + \sum_{i=1}^4 \beta_{3i} \Delta \ln PC_{t-1} \\ & + \sum_{i=1}^4 \beta_{4i} \Delta \ln HCF_{t-1} + \sum_{i=1}^4 \beta_{5i} \Delta \ln INF_{i=1} + \gamma_1 \ln GDP_{t-i} \\ & + \gamma_2 \ln IDT_{t-1} + \gamma_3 \ln PC_{t-1} + \gamma_4 \ln HCF_{t-1} + \gamma_5 \ln INF_{i=1} + \mu_t \end{aligned}$$

Once the long-term relationship was identified, ECM (Error Correction Model) was used to assess the short-term effects.:

$$\begin{aligned} \Delta \ln GDP_t = & \beta_0 + \sum_{i=1}^4 \beta_{1i} \Delta \ln GDP_{t-i} + \sum_{i=1}^4 \beta_{2i} \Delta \ln IDT_{t-1} + \\ & \sum_{i=1}^4 \beta_{3i} \Delta \ln PC_{t-1} + \sum_{i=1}^4 \beta_{4i} \Delta \ln HCF_{t-1} + \sum_{i=1}^4 \beta_{5i} \Delta \ln INF_{i=1} + \gamma_1 \ln GDP_{t-i} + \\ & \gamma_2 \ln IDT_{t-1} + \gamma_3 \ln PC_{t-1} + \gamma_4 \ln HCF_{t-1} + \gamma_5 \ln INF_{i=1} + \mu_t \end{aligned}$$

In this study, the relationship between indirect taxes and economic growth was assessed using the ARDL method based on time series data for Uzbekistan for the period 2000–2023. First, the stationarity of all variables was checked using the ADF and PP unit root tests. The results showed that some indicators are integrated at the I(0) level, while others are integrated at the I(1) level, which allows using the ARDL methodology.

The results of the ARDL threshold test confirmed the presence of long-run cointegration between the variables. This indicates that a stable long-run economic relationship has been formed between indirect taxes, physical capital, human capital and inflation in the Uzbek economy.[14]

The results of the long-run coefficient estimation showed that indirect taxes have a negative impact on GDP growth. According to the model results, a 1 percent increase in indirect taxes reduces economic growth by an average of 1.5–1.7 percent. This is explained by the fact that in the conditions of Uzbekistan, indirect taxes such as VAT, excise tax and customs duties increase the cost of production and reduce consumption and investment activity. The physical capital variable had a positive and statistically significant impact on economic growth. An increase in physical capital by 1% leads to an increase in GDP by approximately 1.5–1.7%. This confirms that in Uzbekistan, the expansion of investments, infrastructure, and production capacities is one of the main drivers of economic growth. The human capital variable (education and health care

expenditure indicator) turned out to be positive in the long run, but statistically insignificant. This result indicates that the economic effect of spending on human capital in Uzbekistan is gradually taking shape, and its effect is more pronounced in the long run. Although the inflation coefficient is negative, it is not statistically significant. This indicates that there is no strong direct relationship between price stability and growth rates in the Uzbek economy.

The coefficient of the ECM (error correction mechanism) is negative and statistically significant, estimated at approximately -0.40 to -0.50. This means that the deviation of economic growth from the long-term equilibrium is eliminated by 40-50 percent within a year. Thus, the economy quickly returns to the long-term equilibrium after short-term fluctuations.

In general, the results of the study show that the structural structure of the tax system in Uzbekistan has a significant impact on economic growth. A high share of indirect taxes can limit economic activity, therefore, in stimulating economic growth, it is advisable to gradually redistribute the tax burden in favor of direct taxes, optimize tax benefits, and strengthen investment incentives.

The results of Table 1 allow us to determine the stationarity of the variables. The ADF and PP test results confirm that most of the macroeconomic indicators used in the study - LnGDP, LnIDT, LnHCF and LnINF - are integrated in the first order, that is, they achieve stationarity at the I(1) level. Only LnPC is immediately stationary in its I(0) state. These results fully satisfy the conditions necessary for the application of the ARDL method, that is, the model can be estimated stably when some of the variables are I(0) and some are I(1).

Table-1. Results of ADF and PP tests (with Intercept)

O'zgaruvchilar	ADF	ADF Diff	PP	PP Diff	Integration	Result
LnGDP	0.050	-5.188	-1.942	-6.636	I(1)	Stationary
LnIDT	-0.411	-4.020	-0.591	-6.142	I(1)	Stationary
LnPC	-4.222	-4.749	-3.831	-3.752	I(0)	Stationary
LnHCF	-0.922	-4.614	-0.799	-5.280	I(1)	Stationary
LnINF	-3.193	-4.823	-3.130	-6.329	I(0)	Stationary

Table 2 shows the results of the ARDL(3,4,4,3,2) model, highlighting the long-term impact of economic variables. According to the results, the investment level (LnIDT) has a significant and negative impact on economic growth ($p < 0.01$). Although this phenomenon is rarely found in the economic literature, it is explained by the fact that investments slow down economic growth in the short term under certain conditions. In particular, the fact that new investment projects are in the cost phase and have not yet entered the income-generating phase can temporarily reduce economic growth.

Table-2. ARDL model results (based on AIC criterion)

Regressors	Coefficient	Approximation error	T-statistics	P-value
LnIDT	-1.686	0.163	-10.331	0.000
LnPC	1.660	0.308	5.390	0.000
LnHCF	0.027	0.158	0.173	0.865
LnINF	-0.061	0.053	-1.161	0.268

C (constant)	4.438	1.294	3.428	0.005
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Per capita consumption (LnPC) has a strong and positive impact on economic growth ($p < 0.01$). This result indicates the high importance of domestic demand in the processes of economic growth. As the consumption opportunities of households expand, production also becomes more active and GDP indicators increase. The coefficients of health care costs (LnHCF) and inflation (LnINF) are not statistically significant. This means that the impact of these variables on economic growth in the long run is not clear and stable. In particular, inflation can support economic activity to a certain extent, but excessive inflation weakens the positive effect. In the case of health care costs, the expected effect may be slow to appear and may take a long time.

In general, the stationarity results confirmed by ADF/PP tests indicate the correctness of the application of the ARDL model, while the ARDL model showed that the most significant impact on economic growth is manifested in the dynamics of domestic consumption and investment. This situation emphasizes the importance of increasing investment efficiency, increasing household incomes, and supporting domestic demand in economic policy.[15]

Conclusion.

This article analyzes the role of indirect taxes in the economy and their impact on the state budget and economic processes. The results of the study show that indirect taxes, in particular value added tax and excise taxes, are an important tool for stabilizing state revenues. At the same time, their impact on prices and consumption plays a certain role in shaping economic growth rates.

The results of the analysis show that indirect taxes are of strategic importance in increasing economic efficiency and diversifying budget revenues. Therefore, when formulating tax policy, it is necessary to align them with economic conditions and the level of inflation. In addition, the effective use of indirect taxes serves to ensure the stability of the state budget and maintain socio-economic balance.

In general, indirect taxes play an important role not only as a source of state revenues, but also as a tool of economic policy. In order to increase their effectiveness in the future, it is recommended to expand the tax base and improve monitoring systems.

List of used literature:

- [1] P. C. B. Phillips and P. Perron, "Testing for a unit root in time series regressions," *Biometrika*, vol. 75, no. 2, pp. 335–346, 1988.
- [2] R. M. Solow, "A contribution to the theory of economic growth," *The Quarterly Journal of Economics*, vol. 70, no. 1, pp. 65–95, 1956.
- [3] P. M. Romer, "Increasing returns and long-run growth," *Journal of Political Economy*, vol. 94, no. 5, pp. 1002–1037, 1986.
- [4] W. Easterly and S. T. Rebelo, "Marginal income tax rates and economic growth in developing countries," *European Economic Review*, vol. 37, pp. 409–417, 1993.
- [5] E. M. Engen and J. Skinner, "Taxation and economic growth," *National Tax Journal*, vol. 49, pp. 617–642, 1996.
- [6] J. Skinner, "Taxation and output growth in Africa," *World Bank Working Paper No. 73*, The World Bank, 1988.
- [7] M. V. Williams, *Managing Public Finance in a Small Developing Economy: The Case of Barbados*, London: Greenwood Publishing Group, 2001.
- [8] I. Arisoy and I. Unlukaplan, "Tax composition and growth in Turkey: An empirical analysis," *International Research Journal of Finance and Economics*, no. 59, pp. 50–61, 2010.

- [9] S. Johansen and K. Juselius, "Testing structural hypotheses in a multivariate cointegration analysis at the purchasing power parity and the uncovered interest parity for the UK," *Journal of Econometrics*, vol. 53, pp. 211–244, 1992.
- [10] M. H. Pesaran, Y. Shin, and R. J. Smith, "Bounds testing approaches to the analysis of level relationships," *Journal of Applied Econometrics*, vol. 16, pp. 289–326, 2001.
- [11] Sh. Ruziyev and S. Togayev, "Solliqqa tortishning mohiyati va uni iqtisodiyotdagi ahamiyati," *Yashil iqtisodiyot va taraqqiyot*, vol. 2, no. 4, 2024.
- [12] G. R. Murodovich, "Tax revenues and economic growth dynamics in Uzbekistan," *American Journal of Multidisciplinary Bulletin*, vol. 3, no. 4, pp. 151–162, 2025.
- [13] Sh. Ruziyev and L. Toshnazarova, "Optimal solliqqa tortish bo'yicha tadqiqotlarning bibliometrik va ekonometrik tahlilining ahamiyati," *Innovations in Science and Technologies*, no. 2, pp. 240–249, 2025.
- [14] A. Barro, R. J., "Government spending in a simple model of endogenous growth," *Journal of Political Economy*, vol. 98, no. 5, 1990.
- [15] N. Gregory Mankiw, D. Romer, and D. N. Weil, "A contribution to the empirics of economic growth," *Quarterly Journal of Economics*, vol. 107, no. 2, pp. 407–437, 1992.