Issues Of Optimic Basis Of Public Financing In Following Financial And Monetary Policy

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Abstract. This study investigated the public debt and its main sources, carried out a structural and dynamic analysis of external and internal debt of the Republic of Uzbekistan and analyzed the impact of debt limits on the economic and social life of the country. The main result of the research is the creation of the scientific basis for establishing the optimal boundary of public debt, which ensures economic growth in Uzbekistan.

Index terms - public debt, external and internal debt, debt limits, economic growth, optimal boundary

1.INTRODUCTION

In the course of reforms initiated in the country in recent years, a number of state initiatives have been undertaken to ensure comprehensive economic growth in various sectors of the economy. Most of these activities were covered by the state budget. This, in turn, led to an increase in public debt.

Considering the above, determine the optimal level of government debt restriction and step-by-step restriction in order to prevent the slowdown in the economy through excessive levels of public debt and at the same time reduce the effectiveness of government's economic development initiatives. One of the most important tasks today.

The purpose of the study was to develop recommendations for establishing a high threshold for public debt in the Republic of Uzbekistan over the country's GDP. At the same time, the principle of the high level of public debt is set at the level that does not limit the economic development of the country.

The scientific relevance of this research is that the topic is relatively new to the Uzbek economy and lack of research materials in this area. The practical significance of the work stems from the need for a comprehensive analysis of public debt in defining future directions of the current economic policy.

2.LITERATURE REVIEW

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Given the debate over the impact of public debt on economic growth, it is understandable that a large amount of research has been done on this topic. Marcet A., Sargent T. J., & Seppala J. (2002) highlight the importance of the optimal tax burden level in the management of unpaid public debt in their research. They conclude that there are two types of debt limits when creating their own models of defining the state debt limit: "natural" ("natural") and "special" ("ad hoc"). If the natural debt limit is the level of net debt that can be paid at a moderate tax burden, the special debt limit means that there is a limit below the natural limit. The authors conclude that the imposition of a natural limit is better for the national economy [1].

A. Pienkowski's (2017) scientific work on the structure of public debt and debt structure proves that there is no acceptable limit for public debt, but rather that these indicators differ slightly for developed, developing and underdeveloped countries. Among its main recommendations, it is advisable for low-income countries to borrow from the national currency, while the developed countries recommend the issue of government-linked government securities to maximize debt [2].

M. Dabrowski's (2016) study on fiscal stability suggests that the level of "safe" debt for countries has declined significantly since the global financial and economic crisis. One of the peculiarities of this work is the study of the maximum debt level for developing countries, including the CIS countries (Kazakhstan, Russia, Belarus). M. Dabrowski states that rising public expenditures (including public debt) in the post-crisis countries will have an impact on the economy as a whole in the near future [3].

The most frequently cited work on the level of debt is the work of C. Reinhart and K. Rogoff (2010). Their 2010 study, "Economic Growth in

Debt," analyzes nearly 200 years of data from 44 countries. Their main conclusions are that while the public debt to GDP ratio is less than 90%, the GDP growth rate does not decrease. Increase in public debt after each interest rate will reduce GDP growth by more than one percent. For developing countries, these figures are a bit different: when the public external debt reaches 60% of GDP, the annual growth rate falls to 2%, and subsequent debt growth reduces the rate of growth by 2 times. One of the conclusions of this work is that rising debt in developing countries can also lead to increased inflation in the country [4].

Pedro Leão (2015) in his article analyzing whether high debt levels are really a problem, suggests the development of fiscal policy mechanisms that reduce the impact of high levels of public debt on tax burdens, the state's default, and its inflationary effects [5].

Theoretical issues of Applying of artificial intelligence in the textile industry were researched by Ergashxodjaeva, S. J. and et.al. [14], Yuldashev N.,Tursunov B. [15] and others.

Methodological principles for the development and improvement of assessment methods were investigated by Ibragimov, I. U., & Tursunov, B. O. [16] and others.

Features of organization of production at light industry enterprises and improving logistics were studied by several scientific works of Tursunov B. [17;18;19;20;21]

Generally speaking, the issue of public debt and its maximum limits has been covered by many foreign research papers. It is possible to apply their scientific and practical conclusions to the policy of public debt of Uzbekistan.

3.RESEARCH METHODOLOGY

Before finding the optimal level of debt, it is necessary to determine the formula of public debt [6] :

$$D_t = (1 + r)D_{t-1} + PB_t$$
(1)

D_t – t the ratio of public debt for the period to GDP, r – annual interest rate of debt, PB_t – t State budget balance for the year. This equation can be explained as follows: current year public debt amounts to the amount of debt of the previous year and interest payments for the current year are included in the annual state budget balance. Another important indicator of this equation is economic growth [2]:

$$D_t = \left(1 + (r - g)\right)D_{t-1} + PB_t$$
(2)

g added to the above equation is the annual growth rate of the economy. D is the ratio of debt to GDP, and g is negatively correlated with debt.

We use the multivariate second-order regression equation to find the optimal public debt for Uzbekistan.

This method is based on the idea that public debt can have some positive and then negative impact on economic growth. The second equation is

$$grgdp = a_0 + a_1 \cdot td + a_2 \cdot td^2 + w + \varepsilon$$
(3)

$grgdp$ – nominal GDP growth rate, td – the ratio of public debt to GDP, w – other factors, a_i - parameters, ε – error rate.

In this model, to maximize the level of economic growth, we derive a function and set it to zero.

Other factors affecting economic growth are as follows:

Tabe-1 Required parameters for the model

The variable name	Definition	Description	Influence	Source
Growth in GDP	$grgdp$	Nominal GDP growth rate	The main indicator	State Statistics Committee
public debt	td	The ratio of public debt to GDP	-	World Bank
external debt	ed	The ratio of public debt to GDP	-	World Bank
investment	inv	Investing in fixed assets versus GDP	+	Asian Development Bank
trade openness	tr_open	Total exports and imports of the state	+	Asian Development Bank
inflation	Inf	Change in the annual consumer price index	-	State Statistics Committee

The main reasons for the need to develop these models are the fact that investment in the country, foreign trade turnover, ie export and import potential, and the level of prices in the country affect the level of public debt. In addition to determining the impact of public debt on economic growth, we also examine the impact of external debt on GDP.

4.ANALYSIS AND RESULTS

The main reasons for the formation of public debt are the deficit of the state budget and the availability of free funds of individuals and legal entities.

In the list of countries with foreign debt, the United States ranks first in the list of countries with the largest debt. However, to see the actual level of debt, it is necessary to look at the ratio of public debt to GDP. Japan (253%), Greece (181%) and Lebanon (152%) are on the top of the list.

Table 2 World Bank External Debt rating as of 2019

№	Country	External debt (billions of dollars)	№	Country	External debt to GDP
1	United States	17910	1	Japan	253%
2	Great Britain	8126	2	Greece	181.1%
3	France	5360	3	Lebanon	152%
4	Germany	5326	4	Italy	123.4%
5	Netherlands	4063	5	Cape Verde	123.40%
6	Luxembourg	3781	6	Portugal	121.50%
7	Japan	3240	7	Congo	117.70%
8	Ireland	2470	8	Singapore	112.20%
9	Italy	2444	9	Mozambique	110.50%
10	Spain	2094	10	Butane	108.64%
...	...	...	...	...	...
100	Uzbekistan	16.9		Uzbekistan	24%

Source: Based on data from the World Bank

In developed countries, the level of external debt is high, but not as high as GDP, so high debt levels are not a big problem for these countries.
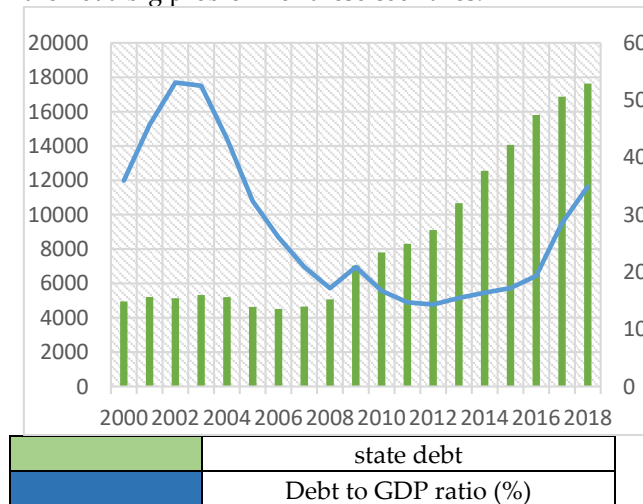

state debt
Debt to GDP ratio (%)

Figure 1. Dynamics of State Debt of the Republic of Uzbekistan ($ billion)

Source: Based on data from the World Bank

In recent years, the Republic of Uzbekistan has a tendency to borrow from external and internal sources, most of which is spent on the development of the economy and improving the material and technical base. That is, the availability

of sufficient funds to cover this debt is guaranteed in the future.

Uzbekistan's public debt in the first quarter of 2016 was $ 13 billion, while in the second quarter of 2019, the total public debt exceeded $ 20 billion (Figure 1).

There are a number of problems in modeling the level of public debt in Uzbekistan, related to economic growth:

1. Insufficient information.

Although Uzbekistan's economic performance has been around since 1991, the data from the 1990s crisis has been dramatically different. Because of this, model-specific data only begin to appear after 2000 years.

2. Inadequate statistical information.

Considering the relationship between the share of public debt in GDP and GDP growth rates (Figure 2), economic growth was also high when Uzbekistan's debt was low. In recent years, the period of adjustment of statistical data coincided with an increase in public debt.

The results of the model proposed by the author.The accuracy of statistical data for some

years affects the quality of the model, due to its inadequacy.
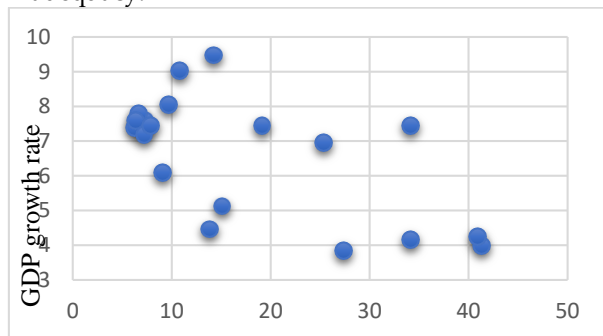
The ratio of public debt to GDP

Figure 2. Relation of public debt to GDP growth rate

Source: Author's development based on data from the World Bank

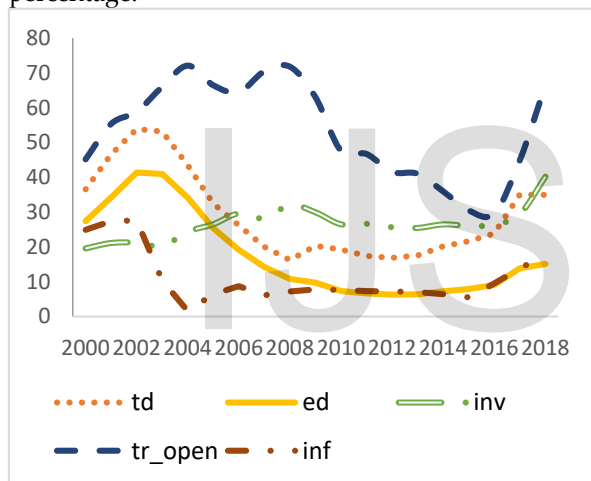The model was taken into account from 2000 to 2018. All indicators are calculated as a percentage.

Figure 3. Dynamics of required parameters for the model

Source: State Committee on Statistics, authored by the World Bank and the Asian Development Bank

As a result of these indicators we calculate the optimal level of public debt:

Table -3 Results from model calculation

a0	td	td^2	ed	inv	tr_open	inf	R^2
3.145209	2.81693	-0.37005	0.207982	0.230687	0.071177	-0.20361	0.960638

Since the model we are interested in is the level of public debt, we only model the public debt. Another reason for omitting the other factors is that when the first level of debt is obtained to find

the maximum point of the regression equation, the model can be used as follows:

$$grgdp = 3.1452 + 2.81td - 0.37td^2$$

$$(4)$$

To calculate the maximum point in the equation, the debt level with the highest GDP growth rate, we calculate the first-order derivative and subtract the result to 0.

$$\frac{d}{d(td)}grgdp = 2.81 - 0.74td = 0$$

$$(5)$$

result: $td = 45\%$. Thus, the model shows that Uzbekistan's GDP can be reached at a point where growth rates are maximized - its share in GDP does not exceed 45%.

Our model defines the optimal debt assessment in Uzbekistan.

From the foregoing, other factors affecting economic growth in Uzbekistan can eliminate the risks associated with rising public debt.

5.CONCLUSION/RECOMMENDATIONS

While public debt is one of the major factors for economic growth at the same time, its excessive debt can adversely affect future economic growth. In such a wilderness, each state must set an optimal level of restraint on its internal and external debt, which is at the point where it minimizes the negative impact on the country's economic growth.

Various international institutions, including the International Monetary Fund, the World Bank, and the European Union, have given their recommendations on setting the national debt limit. In particular, one of the main conditions for joining the European Union is that the public debt to GDP ratio should not exceed 60% [7].

The purpose of this work was to find a convenient point of restraint in the level of public debt. To achieve this, two different econometric models have been created and their results analyzed.

The recent growth of the public debt of Uzbekistan requires the implementation of targeted measures to limit the level of debt.

According to the results of this analysis, Uzbekistan's current share of public debt in relation to GDP should not exceed 45%. An increase in the debt level by 1 percentage points will lead to a 3.95 percentage point decrease in economic growth.

In the near future, with the aim of ensuring sustainable growth rates of the economy of the Republic of Uzbekistan, the following proposals have been developed to optimize the public debt and its structure:

1. Considering the issue of issuance of government bonds and their sale to residents of the country in covering the budget deficit. Research on this topic shows that the presence of public debt in the national currency allows the state to withstand external shocks;

2. Given that the country is in transition, it is advisable to set the share of public debt to GDP below the IMF's recommendation (55%). The author recommends that this figure be set at 45%;

3. The high level of public debt should be fixed in the Budget Code of the Republic of Uzbekistan and taking measures to ensure that the level of debt does not exceed this indicator.

These recommendations, proposed by the author, will help regulate Uzbekistan's public debt and achieve macroeconomic stability and improve living standards.

References:

[1]Marcet, A., Sargent, T. J., & Seppala, J. (2002). Optimal taxation without state-contingent debt. SSRN Electronic Journal.

[2]Pienkowski, A. (2017). Debt limits and the structure of public debt. Journal of Globalization and Development, 8(2).

[3]Dabrowski, M. (2016). Fiscal Sustainability: Conceptual, Institutional, and Policy Issues. CASE Research Paper, (4-128).

[4]Reinhart, C. M., & Rogoff, K. S. (2010). Growth in a Time of Debt. American economic review, 100(2), 573-78.

[5]Leão, P. (2015). Is a very high public debt a problem?. Levy Economics Institute of Bard College Working Paper, (843).

[6]https://www.bradford-delong.com/2010/12/economics-1-uc-berkeley-fall-2010-september-27-government-deficits-and-debts-lecture.html

[7]Chohan, U. W. (2016). Independent Fiscal Institutions at the Supranational Level: The European Fiscal Board. Available at SSRN 2883550.

[8] www.mf.uz - The Ministry of Finance of the Republic of Uzbekistan.

[9] www.stat.uz - Site of Goskomstat of the Republic of Uzbekistan

[10] www.cbu.uz - The Central Bank of the Republic of Uzbekistan.

[11] www.wordbank.org - World Bank website.

[12] www.imf.org - International Monetary Fund website.

[13] www.adb.org - Asian Development Bank website.

[14] Ergashxodjaeva, S. J., Kyvyakin, K. S., Tursunov, B. O., & Ahmadovich, H. Z. (2018). Evaluation of textile and clothing industry clustering capabilities in Uzbekistan: based on model of M. Porter. Int J Econ Manag Sci, 7(439), 2.

[15] Yuldashev N.,Tursunov, B. (2018). Applying of artificial intelligence in the textile industry as factor of innovative development of the branch. Бюллетень науки и практики, (4), 396-403.

[16] Турсунов, Б. О. (2017). Стратегия развития легкой промышленности Республики Узбекистан. Вестник Института экономики РАН, (5).

[17] Ortikmirzaevich, T. (2018). Distinctive features of organization of production at light industry enterprises. Zbornik radova Departmana za geografiju, turizam i hotelijerstvo, (47-1), 88-93.

[18] Ortikmirzaevich, T. B. (2017). Improving logistics as main factor in textile capacity usage. Zbornik radova Departmana za geografiju, turizam i hotelijerstvo, (46-2), 44-52.

[19] Ortikmirzaevich, T. B. [2017]. Principles and functions of management of production capacity. Journal of Process Management. New Technologies , 5(4), 61-68. doi:10.5937/jouproman5-15248

[20] Tursunov, B. (2017). Role of Managing Industrial Stocks in Increasing of Textile Enterprises Capacity. Journal of Applied Management and Investments, 6(4), 260-266.

[21] Tursunov, B.O (2018) "Modern methods of production capacity usage management in textile enterprises," Economics and Innovative Technologies: Vol. 2018 : No. 3 , Article 32.