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DEBT DYNAMICS UNDER UNCERTAINTY: EVIDENCE FROM THE REPUBLIC OF MOLDOVA[2]

Public debt management plays a pivotal role in ensuring fiscal stability and fostering economic growth, particularly amidst unprecedented challenges like the COVID-19 pandemic and energy crises. The main aim of this study is to provide accurate projections for public debt, offering valuable insights to guide sustainable debt management practices. Utilizing historical data from the Republic of Moldova spanning the period 2003-2023, the study employs the Monte Carlo simulation method to construct a fan chart. This chart presents a probability distribution of the general government debt-to-GDP ratio for the Republic of Moldova during 2023-2027. By generating multiple alternative scenarios for real GDP growth, real interest rates, and primary balances, policymakers can gain a comprehensive understanding of future debt trajectories and the potential impacts of various policy decisions. These projections are essential tools to facilitate informed decision-making and promote effective debt management strategies in the face of economic uncertainties and challenges.
Keywords: public debt; Monte Carlo method; Republic of Moldova
JEL: E17; H63; H68

1. Introduction

Public debt enables governments to finance essential infrastructure projects, fostering economic growth, job opportunities, and enhanced public services. Public debt instruments, such as government bonds, are often considered safe investment options. They provide individuals, institutions, and foreign governments with a low-risk avenue to invest their funds, diversifying their portfolios and reducing overall investment risk. However, public debt comes with certain drawbacks. Servicing and repaying the debt can divert funds from essential public services and infrastructure. High levels of debt may lead to dependency on external creditors, impacting a country's economic sovereignty. Excessive debt can make a country vulnerable to economic shocks and financial crises, leading to difficulties in refinancing and loss of investor confidence. Moreover, borrowing extensively from financial markets can raise interest rates, affecting private sector growth and economic development.

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Improper debt management can burden future generations with debt repayment obligations, limiting their economic opportunities. Hence, prudent debt management practices are essential to balance the benefits and costs of public debt.

Determining the level of sustainable public debt has been a pressing concern for countries, particularly in the context of the COVID-19 pandemic and subsequent energy crisis. Governments faced the challenge of managing increasing budget deficits, leading to fluctuations in public debt dynamics like never before. In 2020, the world witnessed the largest surge in debt levels since World War II, with global public debt reaching nearly 100% of GDP. However, in the following years, debt levels decreased at an unusually rapid pace, with both advanced and emerging economies experiencing a decline in public debt despite positive primary deficits. Conversely, low-income developing countries witnessed a slight increase in public debt due to currency depreciation, primary deficits, and nominal interest rates.

The landscape of global public debt exhibits diverse patterns, with Japan holding the highest government debt level of 261% of GDP in 2022, followed by Greece. The Republic of Moldova ranked 153rd out of 189 countries in terms of general government debt as a percentage of GDP, with a debt level of 34%, comparable to Nigeria and Sweden (IMF data, 2023). This illustrates that there is no inherent correlation between a country's debt level and its level of development. Consequently, there is no universal optimal level of public debt. Rather, the optimal level is achieved when the benefits of borrowing outweigh the associated costs.

Given the macroeconomic situation in the Republic of Moldova, where inflation reached 28.6% in 2022 and the budget deficit stood at 3.3% of GDP, there is a pressing need to closely monitor the level of public debt. Therefore, the main aim of this study is to provide essential projections for public debt, offering valuable insights for implementing sustainable debt management practices. To achieve this, the paper utilizes the Monte Carlo simulation method to construct a fan chart. This chart offers a probability distribution of the general government debt-to-GDP ratio of the Republic of Moldova for the period 2023-2027. The process involves generating various alternative scenarios for real GDP growth, real interest rates, and primary balances. These scenarios are then used to calculate the debt-to-GDP ratio using a deduction formula.

Accurate projection of public debt levels is of utmost importance for effective debt management. Such projections enable governments to make well-informed decisions and take necessary actions to ensure fiscal stability and debt sustainability. By understanding their future debt obligations, governments can engage in strategic fiscal planning and budgeting, ensuring sufficient resources are allocated for debt servicing and repayment. This, in turn, prevents fiscal imbalances and allows for better allocation of funds to critical public services and investments. Moreover, reliable debt projections enhance investor confidence and credibility. Investors as small medium enterprises and creditors rely on these projections to evaluate a country's creditworthiness and risk profile. By providing transparent and accurate debt projections, governments can inspire trust, attract investment, and access financing on favourable terms. Thus, accurate debt projection is an essential tool for governments, enabling them to plan effectively, maintain fiscal stability, and attract investment. It provides critical information for policymaking and fosters a climate of confidence and credibility on the global financial stage.

2. Literature Review

Public debt dynamics are a subject of extensive research within the fields of economics and finance. Several factors can influence the accumulation and sustainability of public debt, including but not limited to: (i) economic growth, (ii) inflation shocks, (iii) fiscal policy, (iv) political factors, and (v) external shocks.

Following a decline in economic activity, which led to lower economic growth rates, researchers and policymakers delved into the potential impact of higher public debt-to-GDP ratios on economic growth. A significant contribution to this field was made by Reinhart and Rogoff (2010), who provided extensive historical data series to analyze public debt-to-GDP ratios and economic growth. Their finding that public debt-to-GDP ratios above 90% are linked to significantly lower economic growth triggered a substantial debate. On the contrary, some studies suggest that there is no statistically significant correlation between the debt-to-GDP ratio and GDP growth (Corsetti et al., 2012; Boussard, Castro, Salto, 2013; Blot et al., 2015). However, the authors Panizza and Presbitero (2014), and Ash, Basu and Dube (2020) argue that the evidence for a causal effect from higher public debt-to-GDP ratios to economic growth is weak. Moreover, there is a lack of evidence for universal thresholds in the public-debt-to-GDP ratio beyond which growth falters across countries (Pescatori, Sandri, Simon, 2014; Eberhardt, Presbitero, 2015; Egert, 2015a; Yang, Su, 2018; Eberhardt, 2019; Bentour, 2021). However, a high level of debt negatively impacts economic growth (Cecchetti, Mohanty, Zampolli, 2011). According to the EU's fiscal rules, the annual fiscal deficit must be limited to 3% of GDP, and the overall government debt should not exceed 60% of GDP.

An increase in the price level directly diminishes the purchasing power of government debt, leading to a decrease in the real value of debt and the debt-to-GDP ratio. This relationship is observed due to the fact that higher prices result in an increase in nominal GDP, assuming other factors remain constant. Research conducted by Akitoby, Komatsuzaki and Binder (2014) demonstrates that in advanced economies an inflation shock is associated with a decrease of approximately 0.5 to 1 percentage point in the debt-to-GDP ratio. The impact of inflation shocks is more prominent and enduring when the maturity of the debt is longer. However, even with moderately higher inflation and some degree of financial repression, the reduction in the public debt burden remains marginal in most advanced economies. It is important to note that higher inflation is not expected to significantly decrease the real value of debt by more than a few percentage points of GDP, as found by Hilscher, Raviv and Reis (2014). Regarding the inflation target, Krause and Moyen (2016) emphasize that only permanent adjustments in the target have a significant impact on real public debt. Moderate changes in the target are unlikely to yield substantial effects. Furthermore, the benefits of not communicating a change in the inflation target are relatively small.

Government spending and taxation policies have a direct impact on public debt. Expansionary fiscal policies, including increased government spending and tax cuts, can lead to higher deficits and subsequent increases in debt. On the other hand, fiscal consolidation efforts, such as austerity measures and tax reforms, can help reduce public debt over time (IMF, 2022a). According to Von Hagen and Wolff (2006) fiscal rules, such as the excessive deficit procedure and the stability and growth pact, are intended to constrain government behaviour. By setting limits on budget deficits and public debt levels, these rules attempt to

prevent excessive borrowing and the accumulation of unsustainable levels of government debt.

Political stability and the quality of governance have a notable impact on the dynamics of public debt. Political instability, corruption, and weak institutional frameworks can impede fiscal discipline and contribute to elevated levels of debt. Transparent and accountable governance structures, on the other hand, are associated with improved practices in debt management. The relationship between political instability and higher public debt has been frequently observed, as governments may turn to increased borrowing to ensure stability or fund populist programs. For instance, Alesina and Perotti (1996) found evidence of higher public debt in developing countries experiencing political instability. The role of political fragmentation in understanding public debt dynamics is significant. Moreover, corruption amplifies this relationship, especially in societies where corruption is perceived to be prevalent. In such contexts, a high level of political fragmentation contributes to a substantial increase in public debt. Conversely, when corruption levels are high, low political fragmentation fails to effectively reduce public debt. Additionally, the impact of political fragmentation on debt dynamics appears to be somewhat asymmetric. The effects of fragmentation are more pronounced and meaningful during periods of decreasing debt. However, this observation primarily holds true in normal times when public debt remains relatively low, below 50% of GDP. In countries with already elevated levels of public debt, political fragmentation alone cannot account for further increases. Similarly, low political fragmentation proves ineffective in reducing public debt beyond that threshold (Crivelli et al., 2016).

During economic or financial crises, natural disasters, or external shocks, governments often experience a significant impact on their public debt dynamics. These unforeseen events can necessitate increased borrowing to fund recovery efforts, stabilize the economy, or mitigate the adverse effects of the crisis. As a result, public debt tends to accumulate at a higher rate during crisis periods compared to non-crisis periods (Koh et al., 2020). One specific type of crisis that has been extensively studied is the banking crisis. It is widely recognized that banking crises are frequently accompanied by substantial increases in government debt. Such crises, especially those affecting the banking sector, often lead to significant expansions in public debt levels. This is primarily due to the fiscal costs associated with crisis management, including bank bailouts and economic stimulus measures, which require governments to borrow more funds to address the crisis repercussions (Kumar, Woo, 2010). Moreover, research suggests that a rise in overall debt, whether it is government debt or private debt, significantly elevates the risk of a crisis occurring in the following year. Additionally, when both government and private debt increase simultaneously, the likelihood of a currency crisis becomes even higher compared to situations where there are increases in only government or only private debt (Ayhan Kose et al., 2021). These findings emphasize the link between crises and the accumulation of government debt, highlighting the need for effective crisis management and debt sustainability strategies to mitigate the adverse consequences on economies and financial systems.

It is important to note that the influence of these factors can vary across countries and over time. Researchers continue to explore the complexities of public debt dynamics and the interplay between these factors. By understanding these influences, policymakers can make

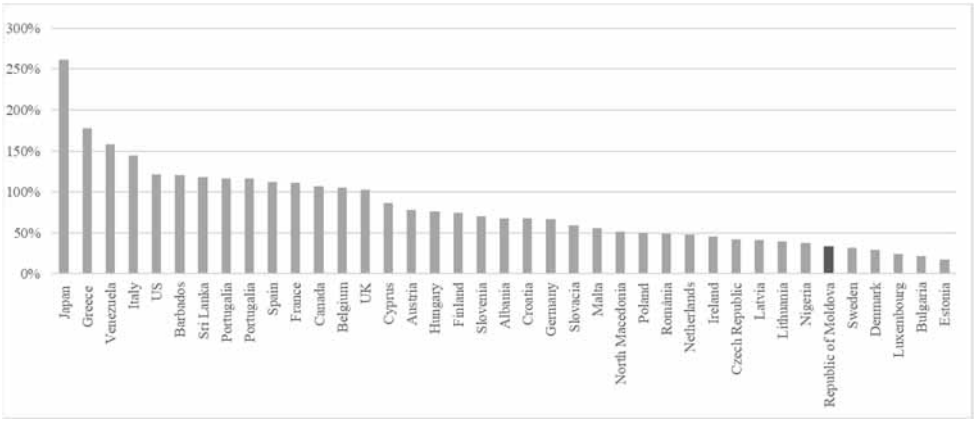
informed decisions to promote sustainable debt management practices and ensure long-term fiscal stability.

High levels of public debt can impose a burden on future generations because governments may be compelled to raise taxes or borrow more to repay their debts. This can lead to increased financial pressure on future citizens as they may have to shoulder the consequences of previous borrowing decisions (Qehaja, Gara, Qorraj, 2022). Additionally, significant government debt can foster an anticipation of higher future taxes, which, in turn, may discourage individuals from saving and investing. This expectation of increased taxation can dampen the incentive for people to save their money and invest it in productive endeavours, potentially hindering economic growth and prosperity (Qehaja-Keka, Qehaja, Hoti, 2023).

3. Public Debt in the Republic of Moldova

The distinction between developing and developed countries regarding public debt levels is not straightforward. At the global level, Moldova's general government debt is relatively low compared to many other countries (Figure 1). While some developed countries may have significantly higher or lower levels of public debt relative to their GDP.

Figure 1. General government debt to GDP, 2022



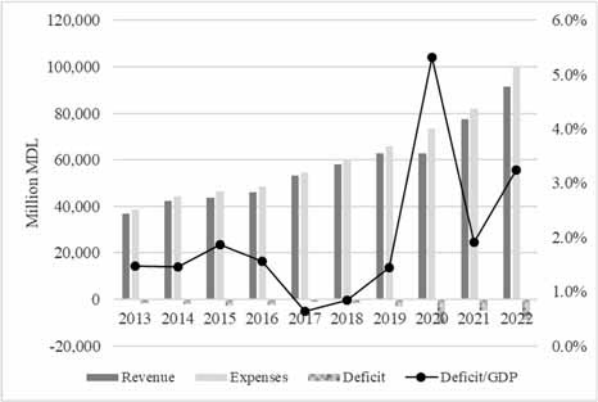
Source: Authors' elaboration based on IMF data (2023).

Moreover, comparing public debt levels between countries should take into account not only the absolute debt figures but also the economic context and the capacity to service the debt. Factors such as economic growth prospects, revenue generation capabilities, fiscal discipline, and debt management practices all play a crucial role in determining the sustainability of a country's debt.

Prior to the outbreak of the COVID-19 pandemic, the macroeconomic outlook was optimistic, projecting an economic growth rate of approximately 3.8% for the year 2020. However, the situation drastically changed after the pandemic hit, leading to a significant

decline of 8.3% in economic growth. This decline was primarily attributed to the shock in demand and production within the economy. The COVID-19 crisis has brought about extreme uncertainty in the field of macroeconomics, as it has exerted immense pressure on public finances. Budget revenues fell below the projected levels, while there was a surge in spending to implement additional measures in various areas like health, social protection, and the overall economy. Consequently, the national public budget deficit reached its highest negative levels in 2020, making it the most substantial deficit experienced in the past decade, largely influenced by the impacts of the COVID-19 pandemic (Figure 2).

Figure 2. Execution of the National Public Budget



Source: Authors' elaboration based on government open data portal (2023).

In 2021, there was a notable economic rebound driven by the resumption of external financing, but it was accompanied by an energy crisis towards the year's end. This energy crisis presented fresh challenges for governance and the business environment, resulting in a cascading effect on energy resource prices in the regional market and food prices in the domestic market. By the end of 2021, the inflation rate exceeded expectations, surpassing the target range set by the National Bank of Moldova (5% +/- 1.5%), reaching 13.9%. In the early months of 2022, the surge in food and energy prices led to a higher cost of goods and services in the domestic market. The ongoing conflict in Ukraine added further pressure to the situation.

The sources of financing for the national public budget deficit of the Republic of Moldova are represented in Table 1.

According to Table 1, except for the year 2019, debts account for the largest portion of financing sources for the budget deficit. External debt takes precedence over internal debt in funding the budget deficit. In 2022, the main creditors of the Government of the Republic of Moldova are the World Bank, the European Bank for Reconstruction and Development, the European Investment Bank, the International Monetary Fund, and the European Union. Domestic financing sources for the budget deficit comprise government securities issued in the domestic market.

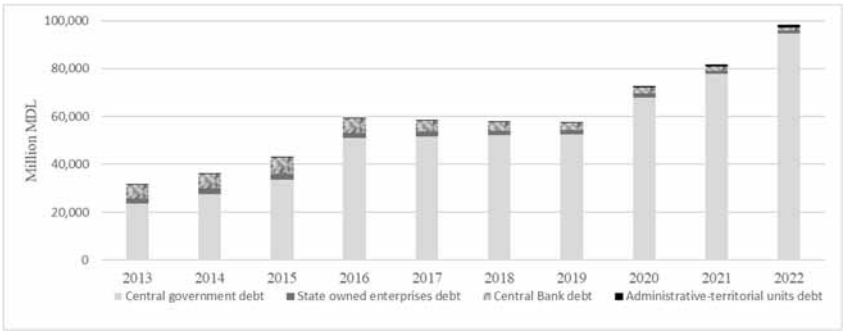
Table 1. Sources of financing for the national public budget (million MDL)

Indicator	2018	2019	2020	2021	2022
Budget deficit	-1 613,0	-3 026,4	-10 619,8	-4 640,5	-8 868,6
Sources	1 613,0	3 026,4	10 619,8	4 640,5	8 868,6
Financial assets	319,3	521,9	-471,9	-2 386,8	-9 580,7
Debts	943,7	567,4	13 227,4	12 443,0	12 920,3
Change in cash balance	350,0	1 937,1	-2 135,7	-5 415,7	5 529,0

Source: Authors' own elaboration based on government open data portal (2023).

In recent times, there has been an increase in the stock of public sector debt (Figure 3).

Figure 3. The evolution of Public Sector Debt



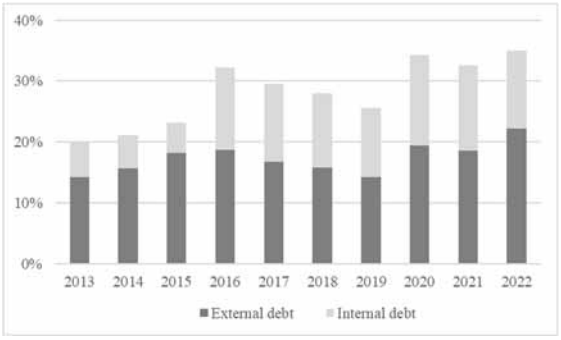
Source: Authors' own elaboration based on Government Open Data Portal (2023).

According to Figure 3 in 2022, the stock of public sector debt reached a record level of 98.5 billion, representing a 3.1-fold increase compared to the situation at the end of 2013. Until 2020, a general debt-to-GDP ratio of over 30% was recorded in 2016, when in October 2016, government securities amounting to MDL 13.3 billion (US$672 million) were issued to fulfil guarantees provided for emergency loans given by the National Bank of Moldova to insolvent banks. The bonds have maturities ranging from 1 to 25 years and carry a fixed annual interest rate of 1.4% for maturities up to 10 years, and 5.3% for longer maturities (IMF, 2016).

Central government debt accounts for the largest share of the total public sector debt, constituting 96% in 2022. Within the state debt, the majority share is held by external state debt, representing 64% (Figure 4).

Starting from 2016, there has been an increase in the share of domestic debt, driven by the issuance of government securities to fulfil state guarantees. The same trend of growth or decline in both domestic and external debt is highlighted. The maximum level of general debt-to-GDP ratio was reached in 2022, with 35.3 billion MDL for internal debt and 60.8 billion MDL for external debt (Ministry of Finance, 2023). It is worth noting that the classification of domestic and external debt is not based on residency criteria.

Figure 4. The evolution of General Government debt to GDP



Source: Authors' own elaboration based on Government Open Data Portal (2023).

The energy crisis in 2022 has affected the level of public debt in the Republic of Moldova in a similar way to the COVID-19 pandemic in 2020. The government allocated significant funds to address the crisis, including importing natural gas and supporting the energy sector. These additional expenditures have led to a significant increase in the budget deficit and, consequently, an increase in the public debt. Additionally, the energy crisis has had a negative impact on the overall economy and, therefore, on the government's tax revenues. Reduced production and disruptions in energy supply have affected businesses and, consequently, tax revenues. This has resulted in a decline in tax revenues and, therefore, an increase in the public debt. Inflation expectations have become a challenge for the National Bank of Moldova. To mitigate the impact of the price shock on the economy, it implemented restrictive monetary policy measures by raising in 2022 the base rate nine times, from 8.5% to 21.5% (Gutium, Speian, 2022).

In order to assess the sustainability of the central government debt, the government annually approves the Medium-Term Debt Management Strategy. In its development is used an analytical tool, created jointly by the World Bank and IMF in 2009 (World Bank and IMF, 2019). This tool enables the evaluation of both the costs and risks associated with financing budget deficits and 69 countries utilize this. In this context, the Ministry of Finance monthly in statistical bulletins publishes the results of the risk indicators established in the Debt Management Strategy.

According to the Debt Sustainability Analysis, Moldova's external debt is assessed to have a low risk of distress, while the overall public debt is considered to have a moderate risk of distress, which remains unchanged from the May 2022 Debt Sustainability Analysis. The current debt-carrying capacity is evaluated as strong, indicating that Moldova's public debt is sustainable. However, it is essential to address the increasing financing needs arising from the economic and humanitarian impact of the war in Ukraine, as well as the projected medium-term developmental spending requirements. Despite the overall sustainability, the trajectory of public debt is still exposed to risks, especially shocks to real GDP growth. To mitigate these risks, it is crucial to diversify growth drivers and maintain a commitment to prudent fiscal policy (IMF, 2022).

4. Methodology

The stock of public debt at a given time is determined by several factors, including the debt level from the previous period, gross disbursements, and debt repayment or amortization. This relationship can be expressed as:

$$D_t = D_{t-1} + GD_t - M_t \quad (1)$$

Where, D_t is the stock of debt at time t, D_{t-1} is the stock of debt at time t-1, GD_t represents gross disbursements at time t, M_t denotes debt repayment at time t.

To analyze the sources of financing, we examine the following equation:

$$S_t = R_t + GD_t + NDAssts_t \quad (2)$$

Where, S_t represents the total funds available to finance the government's activities, R_t denotes revenues received by the government, including taxes, fees, and other forms of income and $NDAssts_t$ represents net disposal of assets.

Similarly, the uses of financing can be expressed through the following equation:

$$E_t = G_t + IP_t + M_t \quad (3)$$

Where, E_t represents the uses of financing, G_t denotes primary expenditure, which is the total of government spending, excluding the interest payment on government debt and IP_t represents interest payments.

To ensure balance, the equation (2) should be equal to (3), resulting in the equality:

$$GD_t - M_t = G_t + IP_t - R_t - NDAssts_t \quad (4)$$

Assuming net disposal of assets is zero, we can substitute equation (4) back into equation (1) to obtain:

$$D_t = D_{t-1} + IP_t - PB_t \quad (5)$$

Where, PB_t represents the primary balance, which is the difference between revenues and primary expenditure. The primary balance is a crucial indicator of a government's fiscal position, as it shows the government's ability to meet its essential expenditure needs without considering interest payments on its existing debt.

Introducing the concept of an implicit interest rate as:

$$i_t = \frac{IP_t}{D_{t-1}} \quad (6)$$

Where, i_t represents the implicit interest rate, equation (5) can be rewritten as:

$$D_t = D_{t-1} + i_t * D_{t-1} - PB_t \quad (7)$$

To facilitate analysis, if we divide both sides of equation (7) by GDP_t and multiply and divide by the GDP_{t-1} only $\frac{i_t * D_{t-1}}{GDP_t}$ ratio, we can obtain:

$$\frac{D_t}{GDP_t} = (1 + i_t) * \frac{GDP_{t-1}}{GDP_t} * \frac{D_{t-1}}{GDP_{t-1}} - \frac{PB_t}{GDP_t} \quad (8)$$

Considering 1 plus n_t as the nominal rate of growth of GDP:

$$1 + n_t = \frac{GDP_t}{GDP_{t-1}} \quad (9)$$

Where, n_t represents the nominal GDP growth rate, equation (8) can be reformulated as:

$$d_t = \frac{1+i_t}{1+n_t} * d_{t-1} - pb_t \quad (10)$$

Where d_t is debt-to-GDP and pb_t is primary balance to GDP.

If we assume that the nominal interest rate and the nominal growth rate consist of a real interest rate component, real growth, and inflation, we can express:

$$1 + i_t = (1 + r_t) * (1 + \pi_t) \quad (11)$$

$$1 + n_t = (1 + g_t) * (1 + \pi_t) \quad (12)$$

Where, r_t represents the real interest rate, g_t denotes the real growth of GDP, π_t represents inflation.

By utilizing equations (11) and (12), the debt dynamics formula can be reformulated as:

$$d_t = \frac{1+r_t}{1+g_t} * d_{t-1} - pb_t \quad (13)$$

Equation (13) provides a method to calculate the stock of debt at a specific time, incorporating the debt level from the previous period, the interest rate on the debt, the growth rate of the economy, and the primary balance during the current period.

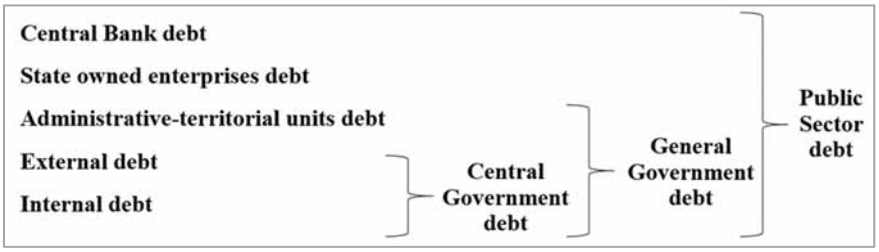
Given the uncertainties involved in analyzing debt dynamics, Monte Carlo simulation as a useful method to address this matter. There are two main steps for producing a fan chart:

- Firstly, we require a substantial number of debt trajectories, ranging from hundreds to even thousands. These paths are constructed by introducing perturbations to the key variables influencing the debt dynamics in our baseline scenario. These variables encompass interest and GDP growth rates, and the primary balance. The shocks are sampled from a normal distribution with a specific standard deviation. Standard deviation is calculated based on the historical data.
- Secondly, once we have generated these alternative debt paths, we examine, at each point in the projection period, the intervals in which the debt falls within a specific percentage of cases. Starting with the interval that encompasses 90% of the cases, we then identify the intervals in which the debt falls within 80%, 70%, and so on, of the cases. It is essential that these intervals are centered, meaning that each interval excludes an equal number of paths above and below it.

Moldova's public sector debt encompasses the central government debt, which includes obligations owed by the national government, as well as the debt incurred by local government authorities. Additionally, it includes the debt of state and municipal enterprises, which refers to companies that are either fully or majority-owned by the government. Furthermore, the debt of the Central Bank of Moldova is also considered as part of the public sector debt. The reporting requirements extend to all debt-generating instruments of the

public sector, which are contracted for a period of one year or more. This includes all conditional obligations arising from contracts for the provision of state guarantees, guarantees of local government units, guarantees of state/municipal enterprises, and guarantees of wholly or majority publicly-owned companies (Figure 5).

Figure 5. Coverage of Public Sector Debt in the Republic of Moldova



Source: Speian (2022).

Internal debt – the total amount of obligations and unpaid interest incurred on behalf of the Republic of Moldova by the Government through the Ministry of Finance from residents. In regards to government securities acquired by non-residents on the domestic market, they are also included in the domestic debt.

External debt – the total amount of obligations and unpaid interest incurred on behalf of the Republic of Moldova by the Government through the Ministry of Finance from non-residents. Government securities issued on international financial markets and acquired by residents are included in the external debt.

Administrative-territorial units debt – commitments in the form of loans, as well as unpaid interest, incurred and utilized by local authorities.

Debt of state-owned enterprises and companies – commitments in the form of loans, as well as unpaid interest, incurred and utilized by state-owned enterprises/municipalities and companies.

Central Bank debt – includes loans from the IMF utilized by the Central Bank of Moldova.

5. Empirical Results

Using IMF data (2023) for the Republic of Moldova spanning the period from 2003 to 2027, the author constructed a fan chart using the Monte Carlo simulation method. The process involved following steps:

- The calculation of the standard deviation for real GDP growth, real interest rate, and primary balance utilizing historical data ranging from 2003 to 2022 (Table 2).
- The construction of 500 alternative scenarios for real GDP growth, real interest rate, and primary balance. Excel formulas were utilized to generate uniformly distributed random numbers.

Table 2. Standard deviation of variables

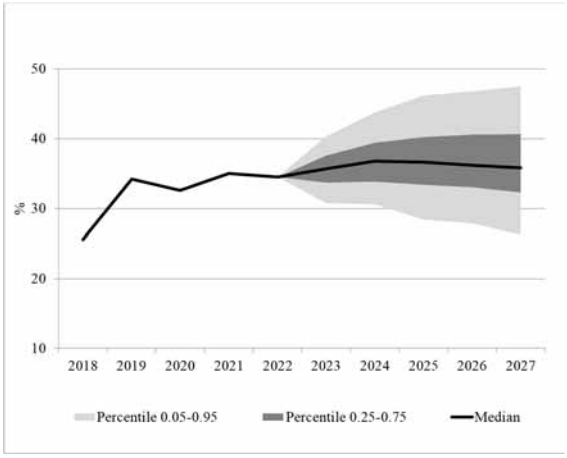
Variable	Standard deviation
Real GDP growth	5,5
Real interest rate	5,0
Primary balance	2,0

Source: Authors' own calculation.

- The calculation of the debt-to-GDP ratio using formula (13).
- Computation of percentiles to ascertain the range of values within which the calculations were conducted.

Based on these aforementioned steps, the author constructed a fan chart depicting the general government debt-to-GDP ratio (Figure 6).

Figure 6. General Government Debt to GDP



Source: Authors' own elaboration.

Figure 6 presents the probability distribution of the general government debt-to-GDP ratio for the period 2023-2027. Based on the chart, it indicates that there is around 5% probability that the ratio in 2027 will be above 40 percentages and below 30 percentages. On the other hand, the chart suggests that there is approximately a 95% probability that the general government debt-to-GDP ratio in 2027 will reach the level of 36 percentages. Thus, there is a probability that the forecast of the general debt as a percentage of GDP will align with the anchoring level, 37 percentage of GDP, specified in the IMF staff country report on Moldova (2023). According to the report, the program's target for public debt is 45% of GDP.

Given the projected growth rate of the national economy, which is estimated at 2% in 2023 and 5% in 2027 (IMF data, 2023), along with the expected decline in the inflation rate to 5% in 2027 and the assumption of an overall balance similar to that of 2022, there is a higher

likelihood that the debt-to-GDP ratio will not significantly differ from the results observed in 2022.

Conclusions

Public debt plays a crucial role in the economy, enabling governments to secure funds for public spending and stimulate economic growth. In recent times, there has been a global increase in public debt-to-GDP. As a result, it is of utmost importance to ensure that the debt remains sustainable to prevent adverse consequences for the economy and the well-being of future generations.

There is no "magic" debt threshold that guarantees economic growth. The debt-to-GDP ratio varies from one country to another, and there is no direct correlation between a country's level of development and its debt-to-GDP ratio. Indeed, each country typically establishes its own debt ceiling, often outlined in the annual state budget law, which it aims to adhere to.

At any specific point in time, the total outstanding debt is relatively certain. However, the uncertainty lies in the factors that influence the future evolution of debt dynamics, such as interest rates, economic growth, and the primary balance, among others.

In 2027 the forecasted results indicate that the general government debt of the Republic of Moldova is expected to remain at a similar level to that of 2022

This projection reflects the government debt remain sustainable. Although, it is essential for policymakers to closely monitor the factors influencing public debt dynamics, such as economic growth, interest rates, and fiscal balances, and take necessary measures to ensure debt remains within sustainable limits.

The methodology presented for calculating a debt stock provides a valuable tool for policymakers and investors to assess the level of public debt in a country. In each distinct macroeconomic scenario, the debt profile varies from what we anticipate under the baseline scenario, representing a likely trajectory deviation. These alternative scenarios are used to assess how the debt trajectory changes if certain variables, like interest rates, economic growth or primary balance deviate from the baseline expectations. These shocks help to gauge the sensitivity of the debt dynamics to different economic conditions.

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