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Public Debt Management and The Country's Financial Stability

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Abstract:
The government debt portfolio is usually the largest financial portfolio in the country. It often contains complex and risky financial structures and can generate significant risk to the state budget and the country's financial stability. Therefore, governments are required to have sound risk management and sound public debt structures to limit exposure to market risk, debt financing or rolling risk, liquidity risk, credit, settlement and operational risk. In recent years, the debt market crises have highlighted the importance of sound public debt management practices and related risks, and the need for an effective and well-developed domestic capital market. This may reduce the vulnerability of the economy to adverse economic and financial shocks. However, it is also important for the government to maintain a macroeconomic policy that ensures sound fiscal and monetary management. The aim of the research is to present the theoretical and practical aspects of extremely important issues such as public debt management and to indicate the most important implications for the financial stability of the country on the example of the Polish economy. The study uses a research method based on literature studies in the field of macroeconomics, economic policy and finance, as well as statistical analysis of the studied phenomenon. Results of research indicate that effective public debt management can reduce the economy's vulnerability to financial threats, contribute to the financial stability of the country, maintain debt stability and protect the government's reputation among investors.
Keywords: public debt, sovereign debt management, budget deficit.

1. Introduction

The occurrence of public debt means that the ability to effectively manage this debt is becoming increasingly important. The process of public debt management is increasingly indicated as an essential element of national fiscal policy [7].

Theories on optimal public debt management have set different goals for public debt management. They concern macroeconomic stabilization, development of national financial markets, support for monetary policy and minimization of debt servicing costs and public debt risk. The macroeconomic objectives for public debt management clearly distinguish them from debt management in the private sector, where cost considerations prevail. In addition, assets and

liabilities in private enterprises are usually directly related (e.g. issue of bonds or equity to finance expansion or acquisition of an enterprise), while in the public sector such direct connections are usually absent. The starting point for any discussion on the objectives of public debt management are the considerations of J. Tobin, who treated public debt management primarily as a tool for macroeconomic stabilization. He argued that minimizing interest costs is of secondary importance and that risk minimization does not play any role. In the context of the economic recovery, new debt issuance should focus on long maturities, raising long-term interest rates, thus helping to cool the economy [13].

In turn, Alessandro Missale indicates stabilization of the budget deficit as the main goal of sovereign debt management. He argues that fluctuations in the budget deficit to GDP ratio can be minimized by choosing the right debt instruments. The optimal debt structure depends on the direction and strength of the correlation between inflation, real GDP growth and interest rates. Assuming that the central bank attaches great importance to price stability, its model shows that a combination of long-term conventional debt and inflation-indexed debt would be optimal for stabilizing the budget deficit. The cost of using debt instruments to reduce the likelihood of the budget balance exceeding the budget deficit limit in relation to GDP should be compared with the cost of the deficit exceeding this limit [8].

2. The Essence and Goals of Public Debt Management

In the opinion of the World Bank and the International Monetary Fund, the public debt management process should include issues of obtaining the required amount of funds, achieving the assumed risk and cost of incurring debt, and achieving other objectives, which include the development of the securities market. The main goal of public debt management is to meet the state’s borrowing needs in the long run at the lowest possible cost and at the assumed risk level.

Public debt management is a complex process, which results from the interdependence between public debt and other macroeconomic indicators. The long maturity of many debt instruments and the long-term nature of debt mean that public debt is also a long-term category.

The public debt management process can be defined as open market operations carried out by the government to change the structure and share of government debt instruments. Public debt management focuses only on changes in the structure of unpaid public debt. Public debt management mainly concerns changes in the structure of its maturity.

Public debt management can be defined in a broader sense and narrower sense. In a broader sense, public debt management is one of the elements of the fiscal policy pursued by the government. In this perspective, this process determines how much government expenditure is financed by incurring debt. In turn, in a narrower sense, public debt management is a process that determines the method of financing the state's borrowing needs (choice of markets, financial instruments and dates of their issue) and the process of appropriate shaping the structure of public debt (short-term, long-term debt).

The main goal of public debt management is to minimize debt servicing costs in the long-term horizon, with an acceptable risk level for the financial instruments used [15]. These are risks such as refinancing risk, exchange rate risk, interest rate risk, liquidity risk, credit risk, operational risk and the risk of distribution of debt servicing costs over time [1].

Debt refinancing risk relates to the ability to redeem maturing debt and the conditions under which it is refinanced (including in particular the servicing costs generated by the newly issued debt). The higher the maturity payments and the closer the debt maturity, the greater the refinancing risk. The amount of refinancing risk depends on the level of public debt and its maturity structure. In order to reduce the refinancing risk, it is strived to extend the debt maturity period and to evenly distribute the issued treasury financial instruments over time [9].

On the other hand, exchange rate risk is related to the currency structure of public debt. The greater the share of debt in foreign currency, the greater the exchange rate risk. In order to limit the

exchange rate risk, it is aimed to reduce the share of debt denominated in foreign currencies and to shape the desired currency structure of debt by using derivatives.

Interest rate risk is defined as the risk of a negative impact of market interest rates on the current and future value of public debt and its servicing costs. The larger the share of debt with a fixed interest rate, the greater the interest rate risk. Therefore, in order to limit the interest rate risk, variable rate and inflationary (indexed) bonds and interest rate derivatives are used.

The risk of the state budget liquidity concerns the possibility for the state to regulate current liabilities for the purchase of public debt and its timely service. In this situation, the state strives to maintain a safe level of liquidity of the state budget with effective management of liquid assets. In order to limit the liquidity risk, free funds in the national currency and in foreign currencies at the disposal of public finance sector units and derivative transactions are used to shape the appropriate structure of liquid assets.

Credit risk relates to a situation in which a party to a transaction fails to fulfill its obligation, in whole or in part. In order to limit credit risk, appropriate transaction partners are selected, characterized by high creditworthiness (rating), and maximum market exposure limits are set depending on the partner's creditworthiness and the type of transaction being carried out.

Operational risk is associated with a situation in which costs related to debt management or the level of other types of risk will increase as a result of infrastructure inadequate to the scope of tasks as well as organization and control of debt management. In order to limit operational risk, integrated public debt management is introduced in one organizational unit, whose structure, infrastructure and procedures are adapted to efficient operation in both state administration and the financial market.

Finally, the risk of the distribution of debt servicing costs over time relates to a situation in which, for various reasons, there is an uneven distribution of public debt servicing costs over individual years. In order to evenly distribute debt servicing costs in individual years, derivatives are used and bond coupons are set at a level slightly below their forecasted profitability in the sales period.

In recent years, International Monetary Fund and World Bank guidelines on public debt management have been developed to help policy makers consider reforms to improve the quality of public debt management and reduce their country's vulnerability to international financial shocks. The guidelines apply to both national public and external debt and cover a wide range of financial claims against the government. The guidelines identify areas of increasing convergence in prudent public debt management practices. Belong to them:

a) recognition of the benefits of the clear objectives of debt management;
b) risk-weighting of costs;
c) separation and coordination of goals and obligations in the field of public debt and monetary policy management;
d) determining the debt expansion limit;
e) the need for careful management of refinancing and market risk as well as interest costs related to debt;
f) the need to develop a solid institutional structure and operational risk mitigation rules, including a clear delegation of responsibilities and associated responsibilities between government institutions involved in the sovereign debt management process.

3. Public Debt and the Macroeconomic Situation of the Country

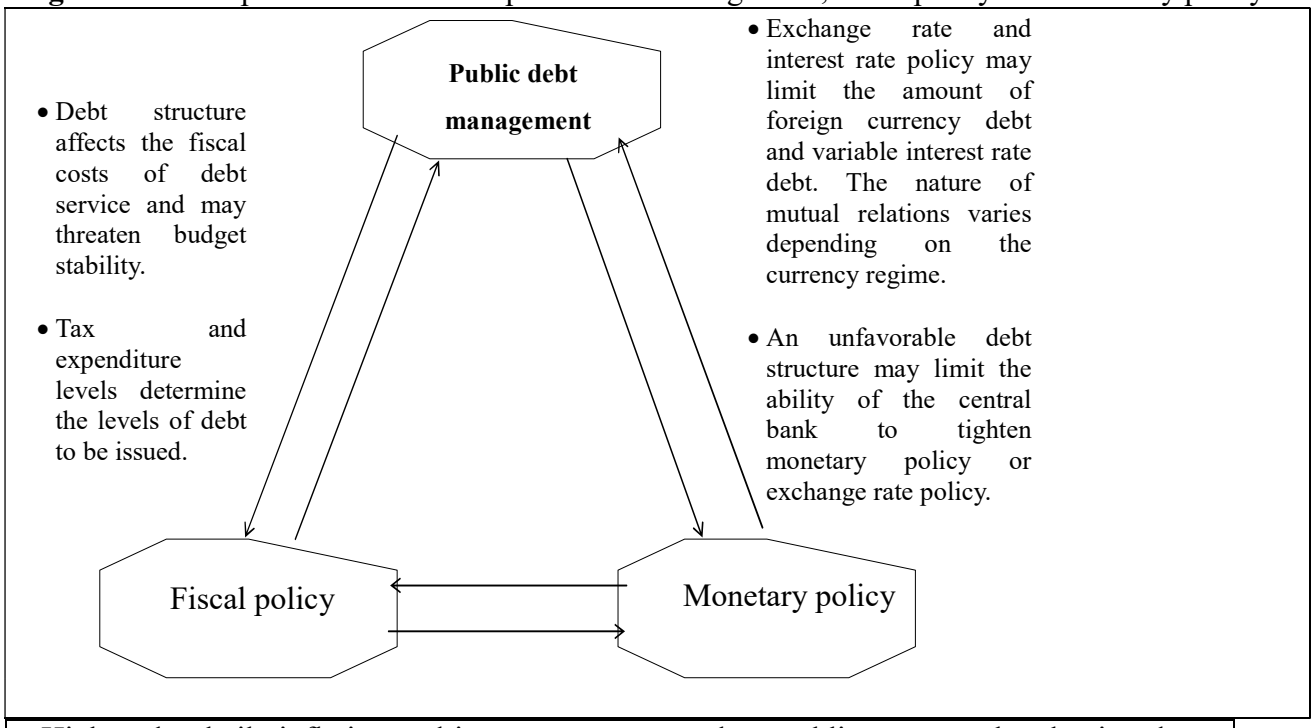
Inappropriate public debt management can force the fiscal authority to change the current policy direction, because an unfavorable debt structure can suddenly increase debt servicing costs and force the government to cut planned expenditure to meet its obligations. On the other hand, improperly conducted fiscal policy can affect the efficiency of debt management, because tax policy and spending policy determine the levels of primary surplus/deficit and the amount of debt to be issued. When this level is excessive, investors will demand a higher risk premium and may prevent

debt managers from issuing a given debt instrument at a reasonable cost and achieving the target debt structure.

Monetary policy can also limit the actions of public debt managers, since exchange rate policy and interest rate policy can limit the value of foreign currency debt and variable interest rate debt. For example, debt managers may be forced to limit the share of long-term debt with a fixed interest rate in the national currency or they may be forced to incur debt at very high costs, as investors may expect higher inflation or devaluation of the national currency in the future due to loose monetary policy. In such circumstances, investors may prefer debt indexed to inflation rates or short-term interest rates, debt with short maturity or debt denominated in foreign currencies. In turn, domestic debt with a large share of short-term debt, variable-rate debt or foreign currency debt may limit the central bank's willingness to raise interest rates or the depreciation/devaluation of the national currency, as this may lead to a debt crisis.

Finally, monetary policy and fiscal policy are interdependent, as high and volatile inflation and thus real interest rates can reduce public revenues by slowing down private sector economic activity, and sterilization by the central bank and quasi-fiscal deficits can directly increase debt levels. Inappropriate budgetary management and high levels of debt can put monetary policy goals at risk, as they can increase inflation and inflation expectations, and can increase real interest rates and / or depreciate the currency, leading to reduced financial stability [14].

Figure 1. Interdependencies between public debt management, fiscal policy and monetary policy.



• High and volatile inflation and interest rates can reduce public revenues by slowing down private sector economic activity. Sterilization and a quasi-fiscal deficit can directly increase the level of debt.
• Inadequate budget management and high levels of debt can increase inflation expectations and cause interest rate increases and / or currency depreciation.

Source: [14].

The country's financial stability can be broadly understood as the stability of financial markets, reflected in the low level of volatility of a number of economic and financial indicators, including prices, money supply, credit for the private sector, exchange rate, share prices, bond spreads, interest rates and currency swaps. However, the traditional concept of financial stability focuses on one dimension or price and one characteristic, i.e. low volatility [11].

Aerdt Houben, Jan Kakes and Garry J. Schinasi point to three major functions of finance in the modern economy that could help develop a broader definition of financial stability. These include promoting effective allocation of real economic resources, facilitating the transformation of maturities to meet the needs of lenders and borrowers, and appropriate pricing and financial risk management [4].

Garry J. Schinasi made three observations that can be used to determine financial stability. First, financial stability is a broad concept covering various aspects of financing (infrastructure, institutions and markets). Secondly. financial stability means that resources and risk are effectively allocated and valued and the payment system works efficiently. Thirdly, financial stability concerns not only the absence of financial crises, but also the inherent ability of the financial system to avoid, reduce and cope with imbalances that could threaten economic systems or processes [10].

In general, the presence of a well-functioning public debt market helps to build and develop efficient financial markets. The development of the financial market is an essential element to ensure stable economic growth. A healthy financial market allows for more effective orientation of the country's savings on investments. More efficient financial markets also allow long-term loans to individuals and businesses. Such loans help increase investment in a more stable way, enabling the financial system to promote efficient capital allocation and transformation of maturities. Given their size and lower risk compared to other domestic issuers, public debt issues are an appropriate instrument to facilitate this process. Instruments should be designed to contribute to the development of efficient and liquid financial markets that facilitate financing the development of enterprises in a given economy [2].

Actions taken and policies implemented by sovereign debt managers can promote financial market development and financial stability. Their role has gained a high position in the context of managing the effects of the recent crisis, during which the level of debt in many countries increased significantly in a relatively short time. The increase in the level of debt has increased pressure on financial markets to meet the higher financing needs of governments, which could threaten an increase in the profitability of debt instruments and the generation of sub-optimal debt structure. The public debt management strategy is therefore a necessary complement to properly run macroeconomic policy, an appropriate political environment and a sensible choice of political regime to achieve financial stability [16].

4. Global Practices in Public Debt Management

When analyzing the changes in global public debt in the years 1980–2018, it should be stated that the average level of public debt in the analyzed period increased from 40% of GDP in 1980 to over 80% of GDP in 2018 with a clear tendency for further growth. In most of the years surveyed, the average share of public debt in relation to GDP in the group of high-income countries was much higher than in the countries with medium and low income.

Table 1. Public debt in relation to GDP in selected countries of the world (in%) (from the highest to the lowest).

Japan	234.18%
Greece	181.78%
Sudan	176.02%
Venezuela	172.08%
Lebanon	160.57%
Italy	127.51%
Eritrea	127.34%

Barbados	127.31%
Cape Verde	126.66%
Portugal	117.54%
Mozambique	116.60%
USA	109.45%
Singapore	108.79%
Gambia	105.17%
Republic of Congo	105.01%
Bahrain	102.01%
Belgium	99.08%
....	
Poland	49.80%
... ..	
Brunei	2.46%

Source: [5].

The global financial crisis of 2007-2009 meant a further deterioration of the fiscal situation in many countries of the world as well as deepening budget deficits and an increase in public debt in these economies. Compared to the 1980s and 1990s, the budgetary position has generally improved only in low-income countries. The shorter the debt maturity, the higher the amount of debt to be refinanced in a given period and the higher the risk of refinancing the debt. The average share of short-term debt in total public debt globally dropped from 24% in 1995 to around 11% in 2018. Private creditors granting loans to the state did so over the period considered for an average period of close to five years, while official creditors signed loan agreements for the State with maturities exceeding 20 years on average.

As it is known, the debt expressed in a foreign currency is additionally exposed to the risk of exchange rate changes, which means that the depreciation/devaluation of the national currency increases the value of debt denominated in foreign currency expressed in the national currency. Public debt expressed in foreign currencies has slightly increased in the last 20 years. It currently accounts for around 36% of the total global public debt. At the same time, it should be noted that the percentage of debt denominated in foreign currency was the highest in low-income countries and the lowest in high-income countries. Public debt denominated in foreign currencies was incurred mainly in US dollars, the share of which increased during the period considered and amounted to about 60% in 2018. In second place in terms of share was the debt in the euro (13%), and third in the Special Drawing Rights (SDR) issued by the International Monetary Fund (6%). High-income countries have mainly borrowed from domestic creditors. Their share in total public debt was about 75% in 2019. In turn, middle-income countries divided their financial needs almost equally between domestic and foreign investors, while the debt of low-income countries was mostly financed by foreign creditors.

5. Public Debt Management in Poland

Analyzing the changes in the volume and structure of public debt in Poland in the period 2008-2018, one can notice a systematic decline in the share of public debt in GDP from nearly 52% in 2010 to just over 46% in 2018. The largest share in the total state debt was domestic debt, the share

of which oscillated around 70% in the entire analyzed period, and the average maturity of public debt in 2008-2018 was close to 5 years.

Table 2. National public debt in Poland in 2008-2018.

Specification	2008	2010	2012	2014	2016	2018
Public debt in relation to GDP in%	46,5	51,7	51,6	48,1	51,9	46,5
Share of domestic debt in%	73,7	72,2	68,4	64,5	65,6	70,7
Share of foreign debt in%	26,3	27,8	31,6	35,5	34,4	29,3
Average debt maturity in years	5,3	5,4	5,5	5,2	5,3	5,0
Share of debt with a fixed interest rate in%	95	89	88	81	82	85
Share of debt with a floating interest rate in%	5	11	12	19	18	15

Source: [3].

The largest share in the public debt in the period 2008-2018 had debt denominated in the national currency, which in the entire analyzed period was close to 70%. In turn, the debt denominated in the euro currency accounted for about ¼ of the total public debt, while the debt denominated in USD had a share close to 5%.

Table 3. Currency structure of the public debt in 2008-2018 (in%).

Specification	2008	2010	2012	2014	2016	2018
PLN	74	72	68	64	65	71
EUR	19	20	22	25	25	22
USD	2	4	5	7	6	5
Rest currencies	5	4	5	4	4	2

Source: [3].

The essence and objectives of public debt management in Poland have been specified in the Public Finance Act in relation to tasks carried out by the Minister of Finance, which include:

a) activities related to obtaining repayable funds financing the borrowing needs of the state budget,
b) servicing state liabilities under issued financial instruments and loans and borrowings raised;
c) management of free financial resources of the Treasury, management of financial liabilities and public financial assets.

At the same time, the management of available funds includes operations on financial markets that change the structure of public debt. These transactions are carried out in order to increase the financial security of the state's borrowing needs, reduce the risk or costs of servicing sovereign debt and to perform other tasks related to sovereign debt management.

The Minister of Finance prepares a four-year strategy for public debt management and impact on public debt. The sovereign debt management strategy for the period 2019-2022 adopts a flexible approach to shaping the financing structure in terms of market selection, currency and financial instruments to minimize costs and avoid monetary policy distortions. In addition, it is assumed that the domestic market will still be the main source of raising funds by the state, and the share of debt denominated in foreign currencies will drop below 30%. In addition, the government's priority will be the implementation of large and liquid issues of financial instruments with a fixed interest rate, the average maturity of public debt will be about 4.5 years.

According to the public debt management strategy in Poland in the period 2019-2022, the national debt to GDP ratio will fall to 46.6% of GDP in 2019, and then to 40.7% in 2022. Expenses for servicing the public debt will slightly decrease from around 1.31% of GDP in 2019 to a level

around 1.3% of GDP in 2022. According to forecasts, the share of debt denominated in foreign currency will fall from 26.8% in 2019 to 23.7% in 2022.

Table 4. Forecast of public debt in Poland in 2009-2022.

Specification	2019	2020	2021	2022
Public debt in relation to GDP in%	46,6	45,2	42,9	40,7
Share of domestic debt in%	73,2	74,7	75,7	76,3
Share of foreign debt in%	26,8	25,3	24,3	23,7
Treasury debt servicing in relation to GDP in%	1,31	1,28-1,32	1,27-1,30	1,27-1,30

Source: [12].

It is possible to indicate specific threats to the implementation of the public debt management strategy in Poland in the period 2019-2022. The most important threats include unfavorable changes in the macroeconomic situation in Poland in connection with lower GDP growth dynamics, rising inflation and, consequently, higher interest rates and growing exchange rate volatility. Also threats to the implementation of the above strategy may result from external factors associated with adverse changes in the global macroeconomic situation. This is in particular the forecasted economic slowdown in the world, the protection trade policy of the United States and China, changes in the nature of the monetary policy of the European Central Bank and the Federal Reserve System, as well as threats related to the current geopolitical situation in the world.

6. Conclusion

Inadequate debt structure and inadequate debt management can significantly inhibit the state's ability to ensure financial stability, negatively affecting investors' perception of country risk. The links between financial stability and risk may be feedback. Namely, poor debt management can worsen financial stability, which in turn can increase the risk of the edge, while on the other hand, increased country risk can further reduce the state's ability to maintain the country's financial stability. Some of these effects have become apparent during the recent global financial crisis. At that time, relatively weak positions in the public debt portfolio in some countries negatively affected both economic performance and financial stability of the countries [6].

A proper debt management strategy can play a crucial role in ensuring the country's financial stability by creating an appropriate structure of public debt commitments that maintains a low level of refinancing risk throughout the entire business cycle, ensuring the state's ability to issue the necessary amount of debt at an acceptable cost. Debt managers have a wide range of responsibilities, including the development and implementation of strategies defining in particular the loan instruments that will be offered on the financial market and their maturities. Effective public debt management can reduce the vulnerability to financial threats, contribute to the macroeconomic stability of the country, maintain debt stability and protect the government's reputation among investors. Public debt managers around the world need to strike a balance between borrowing to finance government needs while keeping costs and risks low.

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