New Public Investment in Poland under Conditions of Risk Related to Budget Deficit and Public Debt

Krzysztof Jarosiński

Abstract—**The financing of investment in the public sector is a complex phenomenon and involves many difficulties of the public entities, such as gathering an adequate amount of their own budget means for new investment programs. An important role in the public sector is played by the assessment of different risk categories that may arise. Economic practice in the public sector proves that an important role is played by the possibility of difficulties in financing investments resulting from the emergence of the risk of budget deficit and the risk of public debt. This risk often has a negative impact on investment decisions, and may adversely affect the future operations of individual investment projects. The paper is an alternative look at the problems of financing of public investments. It can be a starting point for discussion and implementation of new practical solutions: looking for optimal taxation, implementation of innovations in public units. The paper can be a starting point for discussion and implementation of new practical solutions.**

Index Terms—**Budgetary economy, public finance, decision making, investment risk.**

I. Introduction

One of the most important directions of activity of public authorities, apart from financing current tasks, is to stimulate the processes of sustainable local and regional development as well as the stimulation of development processes on the level of the state. Creation of conditions should involve the construction of efficient organizational structures of a local nature based on internal conditions of public sector entities (communes, counties, provinces). Within the framework of such organizational structures, budget revenues should be collected and strategic tasks should be implemented, including various diversified public investments.

The result of such activities should therefore be the implementation of a specific investment policy, aimed at creating a material development base both on a local and regional scale, as well as on a national scale. The investment policy of public sector entities should focus on identifying and implementing mainly infrastructural tasks, which in practice should include investments aimed at maintaining and reconstructing existing fixed assets, and should be directed towards new investments, in accordance with the needs of local communities and economy as a whole, according to the results of strategic planning documents.

The new investments are understood here very broadly, mainly as satisfying the diverse needs of future periods. Such necessity arises from the already existing legal and organizational conditions of public sector entities and the degree of their financial independence, as well as results from the rules of the market economy, where the importance of diversified financial instruments used in the implementation of tasks and intended economic goals is observed.

The implementation of investments in the public sector is a complex phenomenon. Such an assessment results not only from the fact of expenditures of public funds, but also from the organizational, technical and economic complexity and numerous and also from diverse social conditions. There is a rather complex situation in the scope of decision-making processes existing in public sector. Public sector entities are subject to different legal and administrative conditions as well as numerous conditions resulting from the specificity of investment projects.

The specificity of investment in the area of broadly defined public services is often that it is passive, consisting in many indirect effects and the lack of direct measurable cash effects. Such a situation often makes it difficult or even impossible to keep an economic account and analyze and evaluate the effectiveness of investment projects, both at the stage of their preparation, as well as the implementation and subsequent operation of the facilities. The situation of public sector entities is therefore slightly different from the situation in which private sector entities working, especially in the scope of use of sources of investment financing.

The material scope of investments undertaken by public sector entities is broad and includes diversified public tasks, adequate to the level of local government units, to the government administration, as well as other non-government entities that perform specific service functions in the public sector. As a rule, these units are responsible for all cases corresponding to the legal scope of their operation, which is found in the formal assignment in the statutory regulations. For example, in the area of territorial self-government units, the competences of commune authorities include tasks including water supply, sewage disposal, electric power supply, heating, provision of local public transport services, maintenance of cleanliness and sewage treatment. These include also a lot of activities in the social sphere. In this scope of the tasks a special role belongs to local and regional government units. In the new concept of management in public sector attention should be paid to the importance of regional government tasks at the level of the regions.

Systemic changes taking place in Poland prove that the scope of activity of public sector entities still plays an important role in the process of socio-economic development. Under the conditions of a market economy, the scope of the

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public sector is still broad. It became necessary to take on new development challenges, which require ensuring efficient sources of investment financing [1]. On the one hand, there is an extensive level of social expectations and well-established habits in the sphere of collective consumption; on the other hand, there are clear deficiencies in the sphere of economic infrastructure equipment, which is an obstacle for further development. The scope of public tasks and the related expenses results in a situation that they do not always find financing within the budgetary means of public entities. Consequently, negative phenomena have emerged in Poland connected with the new method of financing of new investment projects in public sector using the financial sources in the form of credits and loans. Therefore, in the short-term perspective we have to deal with quite widespread excessive budget deficits, which in the long run lead to the expansion of the phenomenon of public debt [2]. The problem seems to be difficult to solve, because the reduction of public debt is associated with the necessity of launching savings programs leading to the reduction of the budget deficit, which in practice means forcing a reduction in the public investment rate as well as the level of social benefits and as a result lowering the standard of living.

II. Budget Deficit, Public Debt and Socio-Ekonomic Development

The implementation of investment programs in the public sector is a complex phenomenon, in particular in organizational, technical and economic terms, as well as due to many important social conditions. Such an assessment results not only from the fact of spending funds constituting public resources. There is a rather complex situation regarding the course of decision-making processes due to numerous legal and administrative conditions. The situation is additionally compounded by the specificities of investment projects in the public sector, which often involve tasks that do not give an opportunity to make profits. The implementation of investments in the public sector is associated with the growing risk of such investments. This risk can be understood here as the probability of underachievement of the intended results and loss of incurred financial outlays. This problem is particularly complex due to expending public funds collected in the form of taxes and various public tributes within the state budget, budgets of local government units at the regional and local level as well as budgets of other public entities entitled to conduct their own investment policy. As a result, investments in the public sector face different risk categories, than investments in the business sector which are focused on achieving a financial surplus. Here you can indicate the main risk categories common to all investments.

Recognition of risk related to the implementation of an investment project or other public administration activity, and thus the recognition of the uncertainty in the implementation of such activity, is associated with the identification of potential effects. So far, numerous attempts have been made to develop a risk classification for projects implemented within the public sector. The complexity of this issue and the penetration of risk factors, which are sometimes common and occur both in the implementation of projects in the private sector and in the public sector. It is important to present the risk categories classified into the main groups giving a comprehensive approach to the issue [3]. The main categories are: administration, project acceptance procedures, commercial or non-commercial projects, communication, environmental, investment policy, resources, strategic goals, subcontractors, technical solutions, financing, knowledge and information, legal and organisational framework.

From the point of view of the objective of the study, it is important to pay attention to risk factors of a financial nature. In particular, it is about the importance of risk analysis of future investments in the conditions of a deepening budget deficit and excessive public debt at the state level and also at the self-governments at the regional and local level.

Risk identification in the public sector may be carried out depending on the reference subject, in relation to which different risk categories may occur [4], [5]. We can therefore talk about the risk occurring at the level of a given public sector entity or entities associated with this unit. Most often they can be subsidiaries that provide public services to the inhabitant of a given local government community. We can also indicate risk groups appearing in the administrative structures of such units. Such cross-sections may include differentiated risk categories, such as the low level of staff qualifications, lack of awareness of risk, indifference to risk and lack of anticipatory activities in this area or the risk related to the possibility of violating financial discipline. We can also identify the risk occurring at the level of several public units, especially cooperating local self-government units, which focus on the implementation of joint investment projects. It is also possible to identify the risk at the level of state tasks implementation, with some categories of risk occur everywhere and have a general character, such as the liquidity risk in the implementation of current tasks and risk in the course of investment financing [6]. Based on the research, it should be stated that the most frequently identified risk categories are operational risk, legal risk and financial liquidity risk in the implementation of investment projects, which often occur at the time when the cost estimate of the project is mismatched to the actual investment costs.

Two categories of risk deserve special attention, which may be revealed during the preparation of investment feasibility studies and in the phase of their implementation and of the operation. They are the risk of an excessive budget deficit and the risk of public debt growth at the government level as well as at the local and regional level of local government units.

III. Budgetary Economy of Public Units in Empirical Studies

Surveys which have been undertaken in the past it clearly show that there is a permanent shortage of budgetary resources that could be allocated to local government units to finance development tasks. The list of disclosed investment needs and budgetary resources of the public sector units, which could be allocated for investment purposes, lead to unambiguous assessment of the current situation, characterized by the occurrence of serious difficulties in implementing statutory tasks of own investment sources and dilemmas, how to finance the infrastructure to provide the public services. The implementation of investments in the scope of technical and social infrastructure, encounters significant difficulties, not only of a financial nature. The actual scale of the problem encompasses a broader subject scope and makes that the multifaceted complex research of investment projects is quite very important. Table I presents the results of an empirical research of public debt of public finance sector at the state level, at the level of the government sector and at the local government sector.

TABLE I: DEBT OF THE PUBLIC FINANCE SECTOR IN POLAND IN SELECTED YEARS OF THE PERIOD 2010-2017 (W BLN PLN)

Specification	2010	2014	2015	2016	2017
Debt of the public finance sector	778.7	898.8	877.3	965.2	961.8
including government sector debt	705.9	781.8	805.1	895.6	892.6.
Including the State Treasury debt	701.9	779.9	803.4	893.9	890.7
Debt of the local government sector	59.9	77.1	72.1	69.6	69.5

Sources: Own study based on data from Eurostat, Central Statistical Office in Poland, Ministry of Finance 2018, http://www.finanse.mf.gov.pl/web/wp/, connection of 11.03.2018.

TABLE II: GENERAL GOVERNMENT GROSS DEBT RATIOS IN SELECTED COUNTRIES IN 2010-2017 (IN %)

Specyfication	2010	2014	2015	2016	2017
Belgium	99.7	107.0	106.1	105.9	103.1
Bulgaria	15.3	27.0	26.0	29.0	25.4
Czech Republic	37.4	42.2	40.0	36.8	34.6
Denmark	42.6	44.3	39.9	37.9	36.4
Germany	80.9	74.7	71.0	68.2	64.1
Ireland	86.1	104.5	76.9	72.8	68.0
Greece	146.2	178.9	176.8	180.8	178.6
Spain	60.1	100.4	99.4	99.0	98.3
France	85.3	94.9	95.6	96.6	97.0
Italy	115.4	131.8	131.5	132.0	131.8
Cyprus	56.3	107.5	107.5	106.6	97.5
Latvia	46.8	40.9	36.8	40.5	40.1
Lithuania	36.2	40.5	42.6	40.1	39.7
Luxembourg	19.8	22.7	22.0	20.8	23.0
Hungary	80.2	76.6	76.7	76.0	73.6
Malta	67.5	63.8	58.7	56.2	50.8
Netherlands	59.3	68.0	64.6	61.8	56.7
Austria	82.7	84.0	84.6	83.6	78.4
Poland	53.1	50.3	51.1	54.2	50.6
Portugal	96.2	130.6	128.8	129.9	125.7
Romania	29.7	39.1	37.7	37.4	35.0
Slovenia	38.4	80.3	82.6	78.6	73.6
Slovakia	41.2	53.5	52.3	51.8	50.9
Finland	47.1	60.2	63.5	63.0	61.4
Sweden	38.6	45.5	44.2	42.1	40.6
United Kingdom	75.6	87.4	88.2	88.2	87.7

Sources: Own study base on data from Eurostat, Central Statistical Office in Poland, Ministry of Finance 2018, http://www.finanse.mf.gov.pl/web/wp/, connection of 11.03.2018.

According to the collected empirical data, the debt of the public sector in 2010-2017 increased significantly (by over 23.5%). It means that in Poland we had to deal with larger public expenditure in relation to the public finance sector budget possibilities. The government sector had the largest share in this indebtedness. Throughout the period under discussion, the share of this sector's debt in 2010-2017 remained at an almost similar level in 2010, 90.7%, in 2015 91.8%, and in 2017, 92.8%. However, there has been a gradual increase in this share. A slightly more favorable situation occurred in relation to self-government units, where in the discussed period the debt increased by 16.0%. In this group of public entities, the situation was differentiated internally. This means that in some local governments the budget situation was balanced, while in others, especially the economically weaker, the debt was high. Table II presents empirical data on the general government gross debt ratios.

The occurrence of a budget deficit and excessive public debt is a phenomenon that is quite common in the European Union. This problem concerns both economically developed member countries as well as member states with a weaker economic position. The empirical material collected during the research [7], [8] clearly shows that high developed countries are in a relatively worse situation. The public debt calculated in relation to GDP was much higher than in the group of less developed countries. Among the European Union countries three groups can be identified that have similar development scenarios and the level of public debt associated with it. The first group is developed countries, where the public debt ratios were at a relatively high level: Italy Belgium, France, United Kingdom, Austria. The second group are the medium-developed countries, where also a relatively high level of public debt was recorded: Greece, Cyprus, Portugal, Spain. The third group is the member states of the European Union which are in the relatively rapid growth phase and could be included in the group of "emerging markets". In this group, the level of public debt expressed in relation to GDP has been relatively low level, among others we can show Bulgaria, the Czech Republic, Estonia, Latvia, Poland, Romania, and Slovenia. Only three countries in the entire European Union are characterized by a high level of development and at the same time showed low rates of public debt. These countries are: Sweden, Denmark and Luxemburg.

It should be emphasized that the presented differences in the level of public debt indicators do not give grounds for unambiguous assessments regarding the development potential. The relatively high levels of public debt in countries with a high level of development are less burdensome than even a relatively lower level of the indicator in emerging countries. Such an assessment consists of many further conditions and connections of the external nature, which often have a very individual socio-economic dimension. In this sense, the risk of budget deficit and excessive public debt may be affected by the implementation of investment projects with varying strength. There is no doubt, however, that this risk will to some extent impose adequate methods of managing such a risk of adjusting the scenarios of public entities to their own situation, whether at the state level or at the level of regional and local self-government units.

A budget deficit and an excessive large public debt resulting a remarkably negative phenomenon. In the long term emerge new hazards representative to the public finances, which in the strategic viewpoint could pose a threat to the investment projects in progress as well as to the projects planned. That both an excessive budget deficit as well as public debt negatively affect the general socio-economic situation. It is due to the increase in the costs of debt servicing, of the limitation of the budgetary revenue and the extension of the scope of the tasks related to an increase in the direct costs of their implementation. The budget economy of public sector units is managed under quite difficult financial conditions. It is advisable to pay attention to the changes in the level of a surplus as well as a budget deficit of local self-government units at the local level.

The mechanism of public debt formation in public sector entities is well recognized. The main and basic reason for public debt at the state level and at the level of local government units at various levels is the surplus of budget expenditure over own budget revenues. This, therefore, leads to imbalances and disruptions in the current approach of the balance between the two streams: budget revenues and budget expenditure. The short-term imbalance situation does not immediately have negative consequences for a given unit's public finances.

This, however, could happen when a state or local government units undertake complex and costly investment projects. In such a situation, it is often necessary to use external reverse sources of investment financing, usually in the form of investment loans. Such a solution will lead to a new financial situation in the future, when it will be necessary to include in the future current budgetary expenses COF (Cash Outflow) related to servicing the previously generated debt. Charging budgets for future capital instalments with interest will subsequently result in a reduction of investment potential in subsequent budget periods. Therefore, if it is necessary to finance further capital-intensive investments in the future, it will be necessary to continue using external funds. This, in turn, may lead to the accumulation of liabilities resulting from previously implemented investments and as a result may start the process of creating excessive public debt. The risk of budget deficit and excessive public debt may become a threat to effective implementation of subsequent investment projects of the public sector entity. This situation is presented in Fig. 1.

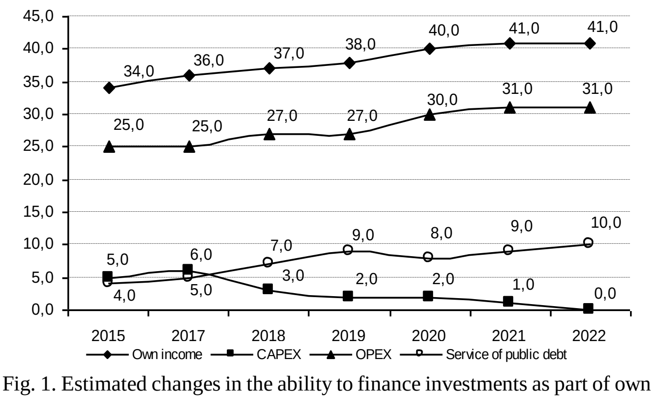

Fig. 1. Estimated changes in the ability to finance investments as part of own funds due to the increase in the cost of servicing public debt in an exemplary local government unit (in mil PLN).

Under the conditions of a balanced budget of the public finance sector entities, a significant increase in investment expenses, which may be caused by the need to launch a major investment program, is extremely difficult. Hypothetically, this situation could occur, but only in the case of a very clear, rapid increase in budget revenues. However, this is unlikely due to clearly defined statutory sources of budget revenues, and which are the result of the general economic situation of the state and the tax base of the area of the operation of local public authorities [9]. For these reasons, a significant increase in budget revenues is hardly possible. An increase in investment expenditures within the existing budget would be possible through changing the structure of expenditures and limiting current expenditures. However, this is most often not possible, especially due to the need for financing rigid current expenditures. A so called "third way" leading to an increase in taxes and fees is most often not possible as well. In this respect, there are numerous limitations, and what is most important here, raising taxes could be socially unacceptable. We know, however, that optimal taxation should be pursued while abandoning the excessive fiscalism of a state that is not socially accepted [10], [11].

One of the methods of the financing of development under the conditions of budget deficit and public debt is, as mentioned, the use of loan funds. These, however, can significantly limit the financing of investments in the future. As a result, the situation may become difficult due to the increased risk of investments in the future in conditions of budget deficits and the need to service excessive debt.

An integral part of risk monitoring in the public sector is research on the impact of these risk categories on the course of socio-economic processes. As a result, the risk recognition may give rise to a systemic approach to threats related to budget deficit and excessive public debt and may be included in various concepts of public management. At this time, one should point to the concept of new public management and its potential application in relation to risk in the public sector [12], [13]. This phenomenon occurs quite extensively in many countries in the world, including Poland. In Poland, the systemic approach to public sector risk management has become mandatory and has been included in the form of statutory provisions contained in the public finance law. Solutions included in the act testify to the importance of the problem on the basis of theoretical research and the results of empirical research.

The risk management resulting from over-indebtedness should be implemented in multiple directions. Firstly, a good understanding of the budgetary position of the public finance sector entities is necessary regarding their current situation and financial possibilities of budgets in the future [14]. This approach may lead to increased budgetary discipline when it comes to making and implementing new investment projects. As a result, research on the financial condition of individual entities can give a good basis for assessing the possibilities of financing investments within the available own budget. Such an approach may be the first step towards ensuring budgetary balance in a long-term perspective.

Secondly, it is necessary to properly prepare feasibility studies for planned investment projects to be financed from budgetary funds, from public funds or in connection with funds from various external sources. A credible feasibility study may lead to the maintenance of the principle of rational management and effective use of own budgetary resources of public sector entities, and may lead to rational use of external sources of investment financing and limiting the size of loans and credits to the necessary volumes. It should be remembered that the investment part of budget expenditures may lead to excessive budget deficit and public debt in the future.

Thirdly, it is necessary to recognize the specifics of the planned investments. In general, public investments carried out at different levels of the public sector are clearly divided into two categories, which have their own separate economic specificity. On the one hand, we are dealing with investment projects, where after their completion enterprises will carry out paid services. In this group one should expect during the future to obtain a financial surplus during the operation of projects and positive financial flows, including also to the budget of units of the public finance sector (water supply, sewage disposal, waste management, etc.). On the other hand, we are dealing with investment projects that after their putting into operation will not directly generate financial revenues, their public services will be provided free of charge to recipients (health care, urban roads, education, high education etc.) In this case, such projects will generate additional current expenses of budgets of public finance sector entities, which in turn may lead to limiting the possibilities of financing tasks in the future and may lead to deepening of budget imbalance.

IV. Conclusion

An excessive budget deficit and a large public debt resulting from it marked constitutes a remarkably negative phenomenon. In the long run, new hazards pertaining to the fragility of public finances may emerge, which from the strategic viewpoint could pose a threat to the investment projects in progress as well as to the projects planned. It should be remembered that both an excessive budget deficit and public debt negatively affect the general socio-economic situation. It is due to the increase in the costs of debt servicing, the limitation of the units' budgetary revenue and the extension of the scope of the tasks, often related to an increase in the direct costs of their implementation.

The research found that in Poland, in particular, in the aftermath of the world economic crisis the correction of management conditions in public sector took place. An excessive budget deficit and a resultant mounting public debt must be controlled. In the long run, new hazards to the stability of public finances emerged. It should be noted that an excessive budget deficit and public debt, and also the indebtedness of the self-government sub sector of public finances, caused the negative effects with reference to the socio-economic situation.

New situation of increasing debt risk in public sector and the financial situation of the public sector units leads to the diverse changes. The increase in the costs of debt servicing, the slowdown in the growth rate of the budgetary revenue, and also the increase in the scope of the tasks and the increase in the costs of their implementation leads also to looking for new methods and conceptions of management in public sector.

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Standards of operational management improved, and also the effectiveness of risk management was enhanced in the aftermath of Poland's accession the European Union. As a result of the organisational and legal changes and as a result of high subsidies received from UE budget a relatively high investment ratio in public sector enterprises and organisational units was maintained. which improved the level of technical infrastructure and caused that the quality and services provided are enhanced, and this process continues and further effects are anticipated in the future. Such a situation took place in conditions of increased risk of financing new investments, resulting from excessive budget deficit and public debt.

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