

ANALYSIS OF THE FINANCIAL MANAGEMENT OF MUNICIPAL ENTERPRISES IN BLAGOEVGRAD WITH Z-SCORE MODEL

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Abstract

It is generally accepted that municipal property is a basic prerequisite for financial autonomy and administrative independence of local authorities. In Bulgaria, municipalities received ownership rights from the Constitution (1991) and this regulation was further confirmed by the Law on Local Self-Government and Local Administration (1991). In 1996 municipal property was finally settled with the adoption of the Law on Municipal Property and the Law on State Property. In the late 1990s local governments received significant amounts of assets from the central government. The process was accompanied by abuses of administrative authority, corruption scandals, and financial mismanagement. Two decades later, Bulgarian municipalities have different types of assets, but the effectiveness of local financial management is still a topical issue. This paper aims to analyse and estimate the financial performance of nine enterprises owned by Blagoevgrad municipality with Z-Score model. The analyzed period covers the years from 2006 to 2020. The results indicate that municipal enterprises can achieve profitability while providing a wide range of services to the local community.

Keywords: municipal enterprises, Z-Score model, financial management, local governments, Bulgaria

JEL Codes: H70, G33

1. Introduction

It is generally accepted that municipal property is a basic prerequisite for financial autonomy and administrative independence of local governments. In Bulgaria, municipalities received ownership rights from the Constitution (1991) and this regulation was further confirmed by the Local Self-Government and Local Administration (1991). In 1996 municipal property was finally settled with the adoption of the Municipal Property Act and the State Property Act. Both the laws provide a differentiation between municipal property and state property, and indicate the procedure to be used to prove ownership in case of a dispute between municipality and state. The aforementioned legal base accelerated the process of building portfolios of municipal properties. In the late 1990s local governments received significant amounts of assets from the central government. The process was accompanied by abuses of administrative authority, corruption scandals, and financial mismanagement, revealed in a series of reports by the Center for Economic Development (2003), the Center for the Study of Democracy (2006, 2012, 2017), Slavova (2015) and Transparency International Bulgaria (2015). Two decades later, Bulgarian local governments have different types of assets, but the effectiveness of local financial management is still a topical issue. Due to increase of fiscal decentralization, subsidies from the central government gradually decrease, while raising own-source revenues by increasing local taxes and fees is a politically unpopular decision. In this

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respect, effective management of municipal properties seems a politically acceptable and easily accessible source of additional own-source revenues.

This paper is intended to analyze the efficiency of financial management of municipal enterprises in the municipality of Blagoevgrad. The financial performance of municipal enterprises is estimated with Z-Score model. The analyzed period covers the years from 2006 to 2020. The study consists of four main sections. Section two provides a brief literature review. Section three analyzes the financial results of nine enterprises owned by the municipality of Blagoevgrad. Section four provides the main conclusions and recommendations.

2. Literature review

It is generally accepted that enterprises form the backbone of any economy. Municipal enterprises are usually defined as businesses owned by the local governments and established with the purpose to provide a variety of public services and generate revenues for local communities. In theory, economic activities are seen as domain of private companies. This is the reason why municipal enterprises are expected to be involved only in three types of economic activities, as follows: (a) activities that are beneficial for the society, but not remunerative for the private sector, (b) activities that are highly remunerative, but private sector fails to execute them, and (c) activities of the natural monopolies. Therefore, the main objective of municipal enterprises should be to improve social welfare. In practice, municipal enterprises can also pursue economic efficiency by delivering goods and services on a remunerative basis, thus ensuring own-source revenues to the local budgets.

Some authors differentiate two main goals of public property management. The first goal is to provide public goods and services needed by the population and the second goal is to support local economic development and provide a stable source of budget revenue (Kaganova and Nayyar-Stone, 2000). However, such a clear division is quite difficult. Most of the local governments apply a mixed approach, so municipal enterprises aim to ensure basic services to the local communities, promote the development of local economy, and increase budget revenue. Several authors describe the process of so-called “corporatization of local governments” in England (Ferry, Andrews, Skelcher and Wegorowski, 2018), Italy and Germany (Grossi and Reichard, 2008). Municipal corporatization, meaning the creation of municipal companies, is often presented as a significant improvement in the management and efficiency of local service delivery. In fact, municipal corporations in the EU member states operate in a variety of sectors. Social housing, disposal of solid waste, water and sewage, power, gas, and public transport are the most common areas of local corporative activities. However, municipal companies can also be found in the sectors of healthcare, social services, economic promotion, city marketing, recreational and cultural services, such as museums, theatres, operas, etc. (Dexia Crediop, 2004).

Although municipal corporations are increasingly used by local governments in developed countries to provide local public services, the studies on their role and efficiency are rather scarce. Some authors believe that it is not possible to analyse the performance of municipal enterprises with the widely used financial indicators, such as liquidity ratios, turnover ratios, solvency ratios, and profitability ratios, because the reasons for establishing municipal companies are quite different from those of commercial firms (Agh, Vavrek, Dvorak and Papcunova, 2021).

The literature review reveals both positive and negative perceptions about municipally owned companies. The positive views emphasize on a variety of benefits provided by the municipal enterprises to the local economy. Geller (2019) outlined the potential positive impact of municipal enterprises stating that these public ventures allow local governments to provide affordable and qualitative goods and services while creating additional jobs and increasing

incomes of local residents. She emphasized that municipal enterprises can help improve the stability of local economy by decreasing its dependence on private sector corporations, which are prone to relocate their business in search of lower expenses and maximum profits. In addition, municipal enterprises have considerable potential to provide vital services to local communities that may be neglected by for-profit providers, thus allowing for the pursuit of social, economic and environmental outcomes beyond profit maximization (CLES, 2021).

There are authors who have found a relation between the fiscal performance of local governments and the number of municipal companies. Rubin (1988) explored why some cities in Illinois (USA) have municipal enterprises to deal with garbage collection, parking, and economic development and concluded that cities with fiscal difficulties avoid registering enterprises, while more reformed cities often use enterprises to provide public services. Voorn, Van Genugten and Van Thiel (2017) reviewed a number of studies on performance and efficiency of the municipally-owned corporations. They concluded that municipal corporations could be viable means of providing some public goods and services for local communities, moreover, they found that very often municipal enterprises are more effective than local bureaucracies in the delivery of some services, such as water distribution, garbage collection, and transport. This is confirmed by Benito, Bastida and García (2010), who examined the effectiveness of the municipal sector in one of the Spanish regions (Murcia) and found that in the scope of water supply and garbage collection, public management through companies controlled by local government is more efficient than private management. Cuadrado-Ballesteros, García-Sánchez and Prado-Lorenzo (2012) explored how different modes for provision of local public services affect the quality of life in Spain and found that the quality of life is higher in municipalities where city transport and health services are provided by public enterprises.

At the same time, some authors believe that public ownership is bureaucratic and inherently inefficient, so municipal companies operate with inferior efficiency. Sorensen (2007) combined the principles of political economy and corporate governance and argued that elected politicians can support ineffective solutions to improve the chances of re-election. In this respect, jointly owned companies are expected to perform better than those owned by a single local authority, as local politicians would have less influence. At the same time, he found that in the case of garbage collection in Norway, the cost of dispersed ownership very often exceeds the benefits of economy of scale, so the use of jointly owned companies is not always an appropriate response to the inherent efficiency problems typical of a fragmented structure of local government.

Da Cruz and Marques (2011) studied the viability of Portuguese municipal enterprises in providing urban infrastructure services. They concluded that in theory the concept of a municipal company is based on high principles and shows advantages over the other means of service provision, but in practice the expected benefits had not been achieved in Portugal, mainly due to the lack of technical competence and the political patronage of the municipal companies.

Some authors point out that municipal enterprises may indirectly increase the indebtedness of local governments. For example, Junkernheinrich and Micosatt (2007) discussed that 42.3% of local governments' debt in Germany at the end of 2005 was related to their companies and was hidden in the various financial statements of those companies. This point of view is shared by Ferry et al. (2018), who found that the process of municipal corporatization in England increased by 50% for the period 2010-2016, especially in the areas of planning and social services. At the same time they point out that when municipal companies have huge deficits, local authorities face the reputational and financial consequences of service failures.

Grossi and Reichard (2008) study municipal corporatization in Italy and Germany and outline several positive effects, such as closer ties to customers, increased efficiency, extended flexibility and managerial freedom. At the same time, they point out that when local governments transfer the responsibility for the production of public goods and services to municipal corporations, they face a progressive loss of participation and control on the local service provision. In addition, corporatization often leads to significant fragmentation of the local public sector, where different units generate strong centrifugal forces, making it difficult for the political core to control and manage the diverging and conflicting interests of its multiple units. They conclude that the evidence from Germany and Italy demonstrates a conflicting development. Municipal companies are becoming more market-oriented, so that profitability goals are becoming dominant, while reducing the focus on public interests. At the same time, a more commercially oriented utilities sector is politically questionable.

3. Analysis of the financial management of municipal enterprises in Blagoevgrad

3.1. Methodology and data

Altman's Z-Score model is intended to estimate the financial stability of companies. It was developed and proposed by Edward Altman in 1968 and is used to predict the chances of a company to go bankrupt in the next two years (Altman, 1968). Altman used the methodology of multiple discriminant analysis (MDA) to identify the coefficients that are most important for detecting the potential for bankruptcy and to specify the different weights attached to the selected ratios.

The original specification of the Z-Score model combines five financial ratios as follows:

$$Z = 1.2(X_1) + 1.4(X_2) + 3.3(X_3) + 0.6(X_4) + 1.0(X_5) \quad (1)$$

where:

X_1 is equal to the working capital of a company divided to its total assets (WC/TA). The working capital of each enterprise is calculated by subtracting current liabilities from current assets. So the WC / TA ratio aims to assess the company's net liquid assets in relation to its total capitalization.

X_2 is equal to the company's retained earnings divided by its total assets (RE/TA). This ratio estimates the cumulative profitability of the enterprise over time, as well as the leverage of the company. Companies with higher retained earnings, measured as a percentage of total assets, are expected to have paid for their investments through their profits instead of accumulating significant debt.

X_3 is equal to the company's earnings before interest and taxes (EBIT) divided by its total assets (EBIT/TA). This ratio is an estimate of the real productivity of the company's assets, its earning power independent of any external factors such as tax rates or interest rates.

X_4 is equal to the market value of equity divided by the book value of total liabilities (E/TL). The purpose of this ratio is to add a notion of market value to the assessment of the corporation. This ratio shows how easily the company may become insolvent if its liabilities exceed its equity.

X_5 is the popular asset turnover ratio, calculated by dividing company's annual sales to its total assets (S/TA). The asset turnover ratio is a standard financial ratio that shows the ability of a company's assets to generate sales.

Z is the overall score.

It is obvious that the original specification of the Z-Score model is based on two data sources that make it inappropriate to use for all types of companies: first, it requires the company to have equity that is publicly traded (as far as X_4 requires data for the stock prices) and second, it is mainly applicable for manufacturers (Altman, 2005). Although the most logical modification is to substitute the book value of equity for the market value when calculating X_4 , Altman (2013) revised the Z-Score model and proposed its adaptation (Z'-Score) applicable to companies that are not traded on the stock exchange (*Formula 2*).

$$Z' = 0.717(X_1) + 0.847 (X_2) + 3.107 (X_3) + 0.420(X_4) + 0.998(X_5) \quad (2)$$

The adapted Z'-Score model seems quite similar to the original, however, some of the coefficients have decreased (i.e. the coefficients for X_1 , X_2 and X_4), thus diminishing the importance of the respective variables for the overall score.

In more than three decades of experience in testing and using the scoring models for a variety of purposes, Altman (2005, 2013) further improved the original model to make it applicable to non-manufacturers (*Formula 3*) and emerging markets (*Formula 4*).

$$Z''(\text{Non-Manufacturers}) = 6.56 (X_1) + 3.26 (X_2) + 6.72 (X_3) + 1.05 (X_4) \quad (3)$$

$$Z'' (\text{EMS}) = 6.56 (X_1) + 3.26 (X_2) + 6.72 (X_3) + 1.05 (X_4) + 3.25 \quad (4)$$

In the Z''-Score model applicable to non-manufacturers the asset turnover ratio (X_5 equal to Sales/Total Assets), which was proved to be industry sensitive, was removed from the model and the coefficients for the other ratios were changed. The Z''-Score model was tested on different samples of both non-manufacturers and manufacturers, demonstrating high accuracy and reliability similar to the previous models (Z-score and Z'-Score).

A constant of 3.25 was added to the final Emerging Market Scoring (EMS) model in order to standardize the scores so that a default equivalent rating (D) is consistent with a score below zero (*Table 1*).

Table 1. Z''-scores and equivalent ratings

Z''-Score	Ratings	Zones
> 8.15	AAA	Safe zone
7.60 – 8.15	AA+	
7.30 – 7.60	AA	
7.00 – 7.30	AA-	
6.85 – 7.00	A+	
6.65 – 6.85	A	
6.40 – 6.65	A-	
6.25 – 6.40	BBB+	
5.85 – 6.25	BBB	
5.65 – 5.85	BBB-	Grey zone
5.25 – 5.65	BB+	
4.95 – 5.25	BB	
4.75 – 4.95	BB-	
4.50 – 4.75	B+	
4.15 – 4.50	B	
3.75 – 4.15	B-	Distress zone
3.20 – 3.75	CCC+	
2.50 – 3.20	CCC	
1.75 – 2.50	CCC-	
< 1.75	D	

Sources: Altman, E. (2005, 2013)

The interpretation of the scores follows a simple rule – the higher the score, the better is the firm’s financial performance. The safe zone ($Z'' > 5.85$) indicates that the company is financially healthy and has only a small chance of facing financial difficulties. It can be said that the company is financially stable. If the company falls in the grey zone ($5.85 > Z'' > 4.15$) there is a moderate chance that it will face financial difficulties in the near future. Distress zone ($Z'' < 4.15$) means that there is a high possibility for the company to face financial difficulties and even bankruptcy in the near future. It can be said that the company is in a vulnerable position.

The EMS model is tested and can be applied to both manufacturers and non-manufacturers. Moreover, it is relevant for public and private companies (Altman, 2005, 2013). This is the reason why the Z'' (EMS) model is applied for the purposes of this paper. The data on the financial performance of municipal enterprises in Blagoevgrad are extracted from their financial statements published at the *Registry Agency of the Republic of Bulgaria* (2021).

3.2. Results and discussion

Municipality of Blagoevgrad is located in the southwest Bulgaria and covers an area of 621 sq.km. It includes the city of Blagoevgrad and 25 neighbouring villages. The city of Blagoevgrad is the administrative center of the municipality. It is situated on the main road E-79 at almost equal distance from Sofia (capital) and the Greek border (100 km). The border with the Republic of North Macedonia is 20 km to the west. Blagoevgrad municipality is classified as a medium-to-large sized local government due to its total population of 77,441 inhabitants. This allows Blagoevgrad municipality to develop a comprehensive system of local services, considerable local administrative capacity, appropriate financial system, and different types of municipal properties, including several municipally-owned enterprises.

According to the data provided by the *Register of commercial companies with municipal participation in Blagoevgrad* (2021), the municipality is a sole owner of the capital of nine enterprises. They were established in accordance with the provisions of the Commercial Law (1991). The only available option for municipal enterprises in Bulgaria is to be registered as limited liability companies, because Bulgarian municipalities are legally prohibited from taking unlimited responsibility for any economic activities. The municipal companies are intended to cover a wide range of services. Four of the enterprises have been established with the purpose of managing and maintaining a variety of real assets that are either public or private municipal properties, four of the enterprises are medical centres and hospitals intended to provide general and specialized health services to the population, and the last one of the municipal enterprises is a sports club.

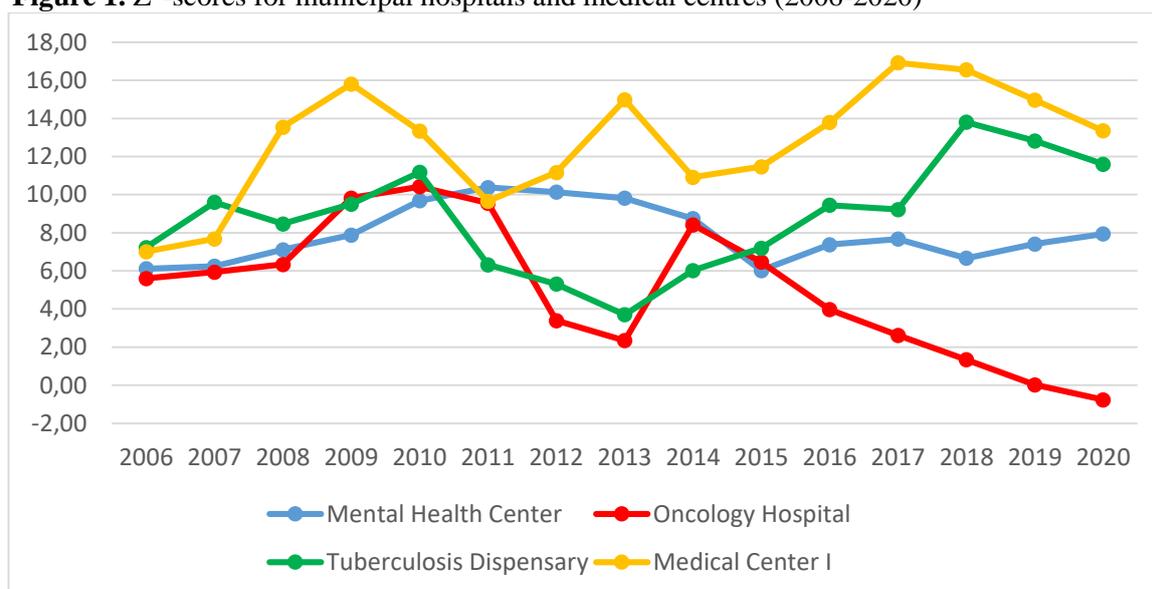
In accordance with the legislation in force, municipal hospitals and medical centers are registered as commercial enterprises with 100% municipal property. There are four municipal hospitals that provide health services to the community. The “Medical Center I” Ltd. is intended to provide specialized outpatient medical care. The “Specialized Hospital for Active Treatment of Pneumo-Phthisiatric Diseases” Ltd. (also known as Tuberculosis Dispensary) is created as a specialized medical institution that offers diagnosis, monitoring and treatment of patients with tuberculosis and chronic lung diseases. The “Specialized Hospital for Active Treatment in Oncology” Ltd. has traditions in diagnostics, early detection, complex treatment and dispensary monitoring of patients with oncological diseases. The “Mental Health Center” Ltd. offers emergency psychiatric care, diagnosis, treatment and monitoring of persons with mental disorders, psychotherapy and psycho-social rehabilitation.

The Z'' -scores calculated for municipal hospitals and medical centers for the period 2006-2020 show that three of the legal entities demonstrate financial health (*Figure 1*). The “Medical Center I” Ltd. has operated in the safety zone during the entire period, registering the

lowest Z"-score of 7.01 in the beginning of the analyzed period and the maximum Z"-score of 16.92 in 2017. The Z"-scores for "Mental Health Center" Ltd. vary in a narrow range (6.12 - 10.38) and demonstrate the sound financial management of the health center. The Tuberculosis Dispensary worked in the safety zone during the analyzed period, except for 2012 and 2013, when the hospital entered the grey zone ($Z'' = 5.31$) and distress zone ($Z'' = 3.70$), respectively. According to the detailed calculations, presented in Table 6 in the appendix, the negative values of EBIT/TA (X_3) in 2011-2013 were compensated by the high values of RE/TA (X_2), so the hospital was able to overcome the temporary financial difficulty and became profitable in 2014. The Oncology Hospital performed well in the period 2006-2011, but deteriorated in 2012 and has been operating in the distress zone since then due to the high level of accumulated losses. The negative values of WC/TA (X_1) speak about serious liquidity problems that may be due either to the underfunding of the so-called "clinical paths" for treatment of the oncology diseases by the state or to the inefficient financial management of the hospital.

However, with the exception of the oncology hospital, municipal hospitals and medical centres in Blagoevgrad enjoy good financial health, while providing general and specialized health services to the population. These results are in line with the findings of Cuadrado-Ballesteros et al. (2012), who maintain that health services can be provided efficiently by local public companies and such a mode of service delivery has a significant positive impact on the quality of life in the Spanish municipalities.

Figure 1. Z"-scores for municipal hospitals and medical centres (2006-2020)

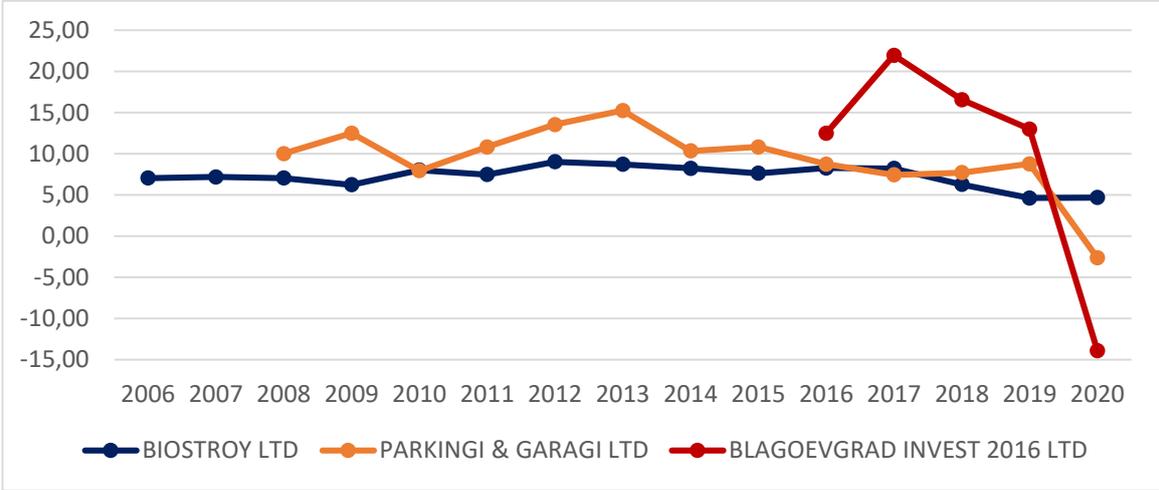


Source: Author's calculations

Besides healthcare providers, there is another bunch of municipal enterprises that manage municipal property and provide a variety of services to the local community (Figure 2). "Biostroy" Ltd. is the oldest municipal enterprise in Blagoevgrad and provides services in the scope of solid waste disposal, maintenance of urban infrastructure (e.g. squares, streets, parks, gardens), construction, and specialized transport. "Biostroy" Ltd. enjoys the advantages of a monopoly and the calculations show that during the period 2006-2020 it has operated in the safety zone and demonstrated good financial health (Z'' has varied in a narrow range between 5.84 and 9.03). These results confirm the views of Benito et al. (2010) and Voorn et al. (2017), who argue that municipal enterprises are efficient in the provision of services such as transport and refuse collection. At the same time, our results contradict the findings of Da

Cruz and Marques (2011), who conclude that municipal companies are not viable providers of services related to urban infrastructure.

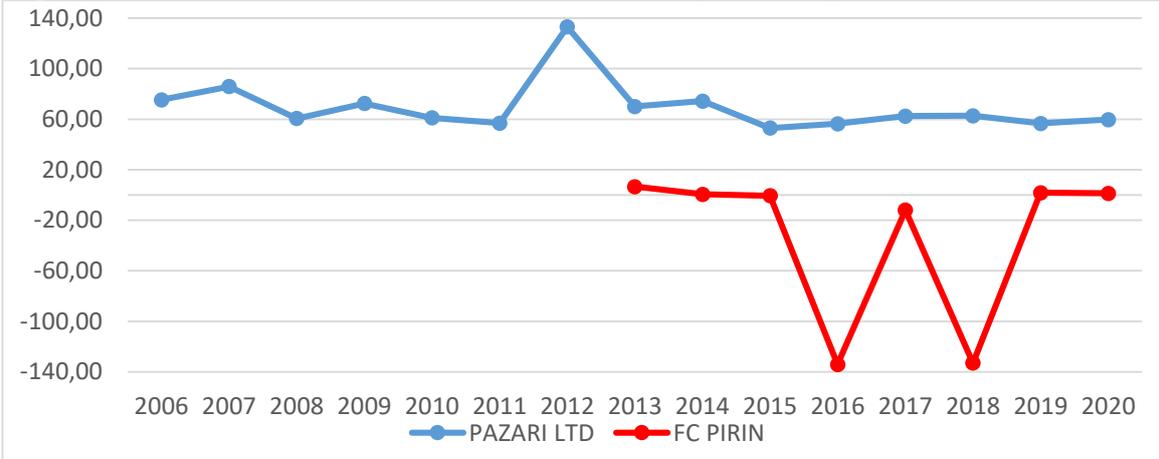
Figure 2. Z"-scores for “Biostroy” Ltd., “Parkingi & Garagi” Ltd., “Blagoevgrad Invest 2016” Ltd. (2006-2020)



Source: Author’s calculations

“Parkingi & Garagi” Ltd. was established in 2008 in order to build, maintain and manage a number of garages and parking lots owned by the municipality. “Blagoevgrad Invest 2016” Ltd. was established in 2016 with the purpose of carrying out independent construction supervision, investor’s and technical control in design and construction, expert assessments, and consulting services. Both companies demonstrated good financial health until 2020, when the enterprises entered sharply the distress zone mainly due to the restricted economic activity during the COVID pandemic. However, their RE/TA (X2) remained positive (see Table 3 and Table 9 in the appendix), so it seems that the enterprises have financial reserves to overcome the difficult period. These results are in line with the views of Rubin (1988), who argued that more reformed cities often use municipal enterprises to deal with garbage collection, parking, and economic development.

Figure 3. Z"-scores for “Pazari” Ltd. and FC “Pirin” Ltd. (2006-2020)



Source: Author’s calculations

The last two enterprises show interesting dynamics (Figure 3). Founded in 2000 “Pazari” Ltd. aims at managing and maintaining private municipal properties, such as fixed

assets, equipment and installations located on the territory of municipal markets. "Pazari" Ltd. has the rights to build, buy, sell and rent municipal assets by decisions of the Municipal Council. Z"-scores of this enterprise are extremely high, mainly due to the extremely high values of its equity-to-total-liabilities ratio ($E/TL - X_4$). The retained earnings-to-total assets ratio ($RE/TA - X_2$) is zero, meaning that the profits are entirely transferred to the local budget (see Table 2 in the appendix). However, the company stays stable due to the good liquidity and lack of long-term liabilities. The good financial results of "Pazari" Ltd. are similar to the findings of Geller (2019), who describes the efficiency of one of the oldest public farmer's markets in the United States, owned and operated by the City of Seattle.

The last municipal enterprise is Football Club "Pirin" (FC "Pirin"). According to the records, it was founded in 1922. For almost a hundred years of history FC "Pirin" has created and promoted many talented players. In 2011, the team was removed from professional football due to financial obligations. Blagoevgrad Municipality was committed to managing the team in 2013, with the goal of bringing the team back to professional football. The calculations show that the municipality failed to manage the football club in an efficient manner. Z"-scores of this enterprise are negative and extremely low, so the football club is rather a burden to the local budget.

In this regard, it is highly recommended for the municipality to attract private capital and expertise to improve the financial management of FC "Pirin" Ltd. A possible option is to expand the own capital of the football club by creating a mixed firm (a form of a joint-stock company, in which the state or municipality acts as a partner of private capital). The efficiency of mixed firms is confirmed by Pérez-López, Prior and Zafra-Gómez (2015), who have analyzed the different delivery methods for local public services in 1 058 Spanish municipalities during the period 2001-2010. They found out that the mixed firm is a delivery form that contributes to improving cost efficiency in municipalities both in times of prosperity and in times of crisis.

4. Conclusion

The results demonstrate that municipal enterprises in Blagoevgrad are viable legal entities able to efficiently provide some local public services, such as refuse collection, cleaning and maintenance of urban infrastructure, management and maintenance of parking lots and garages, management and maintenance of municipal markets, construction supervision, etc. Municipal hospitals and medical centres enjoy good financial health, while providing general and specialized health services to the population. The only exception is the oncology hospital, which demonstrates high level of accumulated losses and serious liquidity problems.

The municipality failed to manage the Football Club "Pirin" Ltd. in an efficient manner. It seems that the municipality was not able to find appropriate sponsors for the club, so it is rather a burden to the local budget. In this regard, it is highly recommended for the municipality to attract private capital and expertise to improve the financial management of the football club. A possible option is to expand the equity of FC "Pirin" Ltd. by creating a mixed firm registered as a joint-stock company in which the municipality to be a partner with the owners of private capital.

The study is limited to the nine companies in which the municipality of Blagoevgrad is the sole owner of the capital. Further research is needed to examine the effectiveness of companies that are partially owned by the municipality, as well as to analyze the financial management of municipal enterprises in the other local governments located in the region of Southwest Bulgaria.

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2013	0,6400	-0,0533	0,0222	7,1923
2014	0,5133	-0,0304	0,0532	3,8462
2015	0,5677	-0,0113	0,0489	4,0000
2016	0,5877	0,0000	0,0097	6,3000
2017	0,7090	0,0100	0,0769	8,0645
2018	0,7399	0,1216	0,0473	7,3636
2019	0,7362	0,1205	0,0814	5,6667
2020	0,7500	0,1203	0,0411	4,2982

0,0024	0,2451	-0,1456	0,5848
0,1067	0,1093	0,0773	1,1416
0,2127	0,1696	0,0709	1,4486
0,3174	0,2148	0,1504	2,2935
0,3267	0,3490	0,0198	2,4382
0,5906	0,2165	0,2872	3,8529
0,5218	0,4695	0,1032	3,7377
0,5745	0,4106	0,0532	2,7527

Table 7. "Specialized Hospital for Active Treatment in Oncology" Ltd.

	X1	X2	X3	X4
2006	0,2204	-0,1275	0,0679	0,8232
2007	0,2072	-0,0509	0,0801	0,9149
2008	0,1953	0,0270	0,0080	1,5876
2009	0,3734	0,0210	0,1906	2,6447
2010	0,3946	0,1592	0,1786	2,7242
2011	0,3605	0,3612	0,0100	2,5665
2012	0,1274	0,4303	-0,3679	0,3546
2013	0,0164	0,0438	-0,1697	-0,0172
2014	-0,0279	-0,0393	-0,0460	5,5100
2015	-0,0375	-0,0926	-0,1100	4,2929
2016	-0,0791	-0,2185	-0,1295	2,6892
2017	-0,0976	-0,3549	-0,0844	1,6552
2018	-0,1338	-0,4669	-0,1051	1,1360
2019	-0,1704	-0,5925	-0,1263	0,6383
2020	-0,1699	-0,7786	-0,1158	0,3983

Table 8. "Mental Health Center" Ltd.

X1	X2	X3	X4
0,2407	-0,5085	0,1729	1,6977
0,1698	-0,2013	0,0985	1,7870
0,2265	-0,1020	0,0510	2,2526
0,1879	-0,0277	0,0996	2,6903
0,2906	0,0576	0,0947	3,5304
0,2814	0,1559	0,0190	4,4286
0,2930	0,1876	-0,0232	4,2929
0,2860	0,1743	0,0137	3,8421
0,2636	0,2092	-0,0651	3,3571
0,1429	0,1789	-0,1829	2,3663
0,1855	0,0095	0,0164	2,6421
0,2084	0,0249	0,0118	2,7553
0,2738	0,0299	0,0044	1,4239
0,2690	0,0369	0,0516	1,8405
0,3300	0,0853	0,0013	2,1348

Table 9. "Blagoevgrad Invest 2016" Ltd.

	X1	X2	X3	X4
2016	0,5625	0,0000	0,6181	1,3415
2017	0,8619	0,0193	0,9102	6,5417
2018	0,7582	0,1345	0,6600	3,2969
2019	0,6042	0,1542	0,5000	1,8402
2020	-0,9574	1,0106	-2,0426	-0,4471