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The effect of the financial crisis on Czech municipal financial management: can a future crisis be prevented?

Abstract

The economic crisis affected many areas, and there have already been a number of analyses and studies on this subject. The public sector is no exception, although most of the interest has been directed towards the issues of the central government. In contemporary nations, the municipal sector plays an important role, even though in terms of expenditures, it is in the shadow of the central government. This paper identifies how the financial management of municipalities developed in the periods before, during, and after the crisis.

Keywords: economic crisis, municipalities, financial management, public sector, prevention.

JEL Classification: H70, H81, H83.

Introduction

The economic crisis affected public finances around the world, but the level of expression and forms of impact and influence varied among countries and across their public administrations. The effects of the economic crisis on various areas of national economies has been addressed by many authors and institutions. Research was conducted focusing on individual analyses of the economic crisis, and on specific areas such as the private sector, individual industries, national economies, and the public sector. It is important to note that rather brisk research has been conducted on the effects of the crisis and on the relationships among various subsectors of the public sector. One of the most important subsectors was the area of local governments, particularly municipalities. A lot of specific and focused research deals with the effect of the crisis on public administration and on municipalities from different perspectives (Paulais, 2009; Council of European Municipalities and Regions, 2009; IMF, 2009; United Cities and Local Governments, 2009; Lungova, 2010; Steytlér and Powell, 2010; Peters, Pierre and Randma-Liiv, 2011; Lopez-Hernandez, Zafra-Gomez and Ortiz-Rodriguez, 2012). Such analyses of the impact of the economic crisis on municipal budgets were also performed in the Czech Republic (Dvořáková and Špaček, 2010; Sedmíhradská, 2011). The analyses are usually general or cover very broad areas. Public administration is a relatively large area containing several sub-areas and covering a range of different subjects.

This paper focuses exclusively on the public administration area of municipalities, a subject with significant issues. The paper uses a quota sample of municipalities to show how the municipalities acted before, during, and after the crisis in terms of financial management and how they coped with the economic crisis such that the total indebtedness level

of all municipalities remained stable during and after the crisis, avoiding any dramatic increase. The paper addresses the following questions: Did nothing really change during this period? What consequences did the economic crisis have for municipal financial management?

1. Methodology and methods of the research

The methodology of this research is based on previous research on a similar topic, but using different methods. It involves positive quantitative research based on primary empirical research, and secondary research concerning other analyses of municipalities within the examined time period in the context of the economic crisis. The quantitative research is used to analyze selected relevant primary financial data and indicators. An important prerequisite was the selection of a suitable approach to the analysis of the samples. The approach of identifying significant aspects and patterns of the sample clusters was used in order to identify the defined financial aspects and symptoms.

The quantitative research is based on the financial documents of relevant municipalities (balance sheets, income statements, etc.) that are available in the ARIS and UFIS databases (specific central databases of the Czech Ministry of Finance). An important limitation of this approach is the ability to collect data from these accounting documents of municipalities, which are provided publicly, individually and separately for each municipality, making it difficult to obtain aggregate data for a larger sample of municipalities. In the Czech Republic, this is significant due to the exceptionally high fragmentation of cities and municipalities. The period examined is from 2007 to 2010: the year before the crisis (2007), in order to monitor the situation before the crisis; the years when the consequences of the global economic crisis began to penetrate Czech public finances (2008 and 2009); and the year after (2010). To create our sample of

100 municipalities, we used a quota sampling method, which formed a non-random, nonprobability sample in terms of the relative proportions

of the examined research objects in different relevant categories (Bryman, 2012). The structure of the analyzed sample was constructed as follows.

Table 1. Distribution of municipalities by size (number of inhabitants)

Size intervals of municipalities	0-199	200-499	500-999	1000-1999	2000-4999	5000-9999	10000-19999	over 20000	Total
Relative distribution	23.5%	32.3%	21.9%	11.6%	6.4%	2.3%	1.1%	1.0%	100.0%
Absolute number of municipalities in sample	24	32	22	12	6	2	1	1	100

Source: Own processing.

Another prerequisite for quota sampling was determining whether a municipality carries out a particular state administration duty or performed no state administration duties, because the municipalities performing state administration duties receive financial support for this in the form of non-specific subsidies from the state. In our desired sample, 20% of the municipalities perform state administration duties, and the rest (80%) do not. The size distribution of municipalities to be included in the sample was modified slightly to meet the required ratio of municipalities performing state administration duties.

2. Definition of used terms

Certain fundamental concepts are mentioned in this paper which must be defined, such as economic crisis, municipalities, and financial management.

2.1. Economic crisis. It is important to focus on the specific connection between the economic crisis and the municipalities as a subset of the public sector. It is therefore necessary to define the areas that were affected by the economic crisis within this connection. Various studies analyzed different aspects of the impact of the crisis on municipalities, with different ways of looking at this problem and addressing it, some of which attempted to describe how the economic crisis affected local budgets in general (Paulais, 2009):

- ◆ revenue either generated by local governments or derived from state transfers may be subject to sharp declines;
- ◆ expenditures increase because of the slowdown in economic activity and there are corresponding increases in unemployment and social welfare needs;
- ◆ financing capacities shrink due to the difficulty in obtaining loans and there is an increase in the cost of money.

One employed approach is that of the case study, which for example was used to demonstrate the influence of the crisis on the Republic of Macedonia by following the negative effects on the budgeting

process in the municipality of Strumica (Jankulovski, Acevski and Gramatikova, 2010):

- ◆ decreased incomes and expenditures in the municipal budget;
- ◆ decreased block subsidies from the central government: (a) decreased capital transfers from the central budget; (b) decreased fees for maintaining of building land; (c) decreased municipal administration salaries; (d) decreased capital expenditures;
- ◆ slowed economic growth of the municipality;
- ◆ slowed opportunities for business activities;
- ◆ decreased quality of services.

As municipalities are very complex organizations, the dimensions of this issue in municipal financial management are viewed in different ways and from different perspectives. Thanks to the diversity of its revenues, expenditures, and assets, the financial management of municipalities is affected by a large number of external factors (the economic crisis, the birth rate, tax payment discipline, etc.) and internal factors (management of municipal property, investment management, the ability to forecast revenue sharing, etc.).

2.2. Municipalities in the Czech Republic. The municipal sector is a specific subset of the public sector. It is the lowest administrative division in the Czech Republic. In comparison with other countries, the Czech municipal sector can be characterized as highly fragmented, both because of the large absolute number of municipalities given the size of the country and because of the low number of inhabitants per municipality.

Table 2. Structure of government levels

Level	Character	Type	Amount
1st	State	State	1
2nd	Local	Regions	14
3rd	Local	Municipalities	6246

Source: Own processing.

The exact form and function of the Czech municipalities is based on Act No. 128/2000 Coll. on

Municipalities. Municipalities can be seen as basic territorial self-governing communities with both their own property and own responsibilities, which are exercised by the municipality and its bodies on its own behalf, and delegated responsibilities, which are performed on behalf of the state with the state being legally responsible for the performance of the delegated power (Sedmíradská and Klazar, 2011). The municipalities are divided according to their different levels of delegated power:

- ◆ basic delegated powers: 6246;
- ◆ municipalities with authorized municipal offices: 388;
- ◆ municipalities with offices of extended scope: 205.

The type of delegated power determines considerably the revenues and expenditures, so it is helpful to perceive this division of municipalities when performing a financial analysis (Hemmings, 2006). The differences between the municipalities and the central government that may influence the specific form of the effects of the crisis on the municipalities in terms of the specific subjects of this research are that local governments (Sedmíradská, 2011):

- ◆ rarely engage in stabilization policies;
- ◆ have different revenue and expenditure structures;
- ◆ have quite limited fiscal autonomy;
- ◆ are influenced by central government measures.

These differences affect the ability of municipalities to face external phenomena, in this case, an economic crisis.

2.3. Financial management of municipalities. Municipalities were granted autonomy and are now able to manage their own property and their own operations. This implies that they become regular economic subjects with its own management, revenues, expenses and assets and therefore appropriate analysis should take into consideration all these aspects.

Municipalities in the Czech Republic have tax revenues as a main source of income. The reallocation of income generated from national revenue from shared taxes, such as VAT or income tax, plays an important role; a less important role is held by non-tax revenues, capital revenue, and received transfers or subsidies. The total expenditures of municipalities are divided into current and capital. Budgets are planned to be balanced, but in reality most eventually end up with a budget surplus or deficit, with deficits consequently involving municipal assets in the form of income previously accumulated and saved in current accounts, if the municipality has such savings. If there is a deficit, municipalities with such savings may not necessarily use credit financing.

Financial management in the context of this paper is characterized by basic financial indicators and the relationships between them as the following (including the types of financial documents where the indicators can be found).

Table 3. List of used and analyzed indicators

Municipality profile	Balance sheet	Budget
Identification number	Fixed assets	Tax revenues
Number of inhabitants	Current assets	Non-tax revenues
Performs state administration or not	Total assets	Capital revenues
	Total current accounts	Accepted transfers
	Own sources	Total revenues
	External sources	Current expenditures
	Total liabilities	Capital expenditures
		Total expenditures
		Annual budget balance

Source: Own processing.

For analyzing the financial management of municipalities, basic financial analysis ratios were used, such as the following balance sheet indicators:

- ◆ Fixed assets / Total assets;
- ◆ Current assets / Total assets;
- ◆ Own sources / Total liabilities;
- ◆ External sources / Total liabilities;
- ◆ Total current accounts / Total liabilities.

3. Financial condition of the municipal sector before and after the crisis

After the establishment of the Czech Republic, the level of indebtedness of its municipalities rapidly increased. In recent years, and despite the economic crisis, this trend has ended for a while. Why is this so, when other public budgets suffer from deficits and their debt levels are increasing?

Table 4. Summary data for municipalities in the Czech Republic in the years 2005-2011

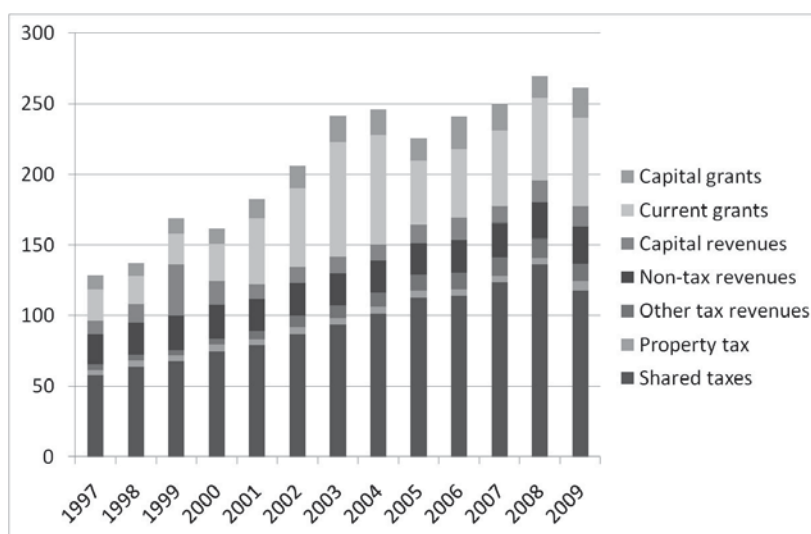
In bill. of CZK	2005	2006	2007	2008	2009	2010	2011
Revenues	228.56	245.61	253.98	272.89	264.86	288.11	274.11
Tax revenues	128.91	130.67	141.35	154.42	136.56	142.89	141.90
Non-tax revenues	22.95	23.50	24.68	26.30	27.21	27.89	29.53
Capital revenues	13.47	16.01	12.25	15.66	14.00	12.84	8.84
Accepted transfers	63.23	75.42	75.70	76.51	87.09	104.50	93.84
Expenditures	221.71	247.36	245.66	256.90	283.21	291.51	275.00
Current expenditures	149.65	162.65	170.13	180.42	189.83	199.93	194.73
Capital expenditures	72.05	84.71	75.53	76.49	93.39	91.57	80.27
The balance of revenue and expenditure	6.85	-1.75	8.32	15.99	-18.36	-3.39	-0.90
Total debt of municipalities and DSO	79.00	80.90	79.20	80.10	80.60	83.30	82.40
The states on the accounts of municipalities and municipal contributory organizations	61.80	65.60	72.60	87.60	69.60	72.50	71.20
Municipalities with a higher level of risky management*	n.a.	n.a.	n.a.	26	44	62	84
Number of indebted municipalities	3270	3283	3242	3229	3250	3112	3089
Total number of municipalities	6243	6244	6244	6244	6244	6245	6246
Indebted municipalities (percent of total)	52.4%	52.6%	51.9%	51.7%	52.0%	49.8%	49.5%

Notes: Municipalities with an indicator for the overall liquidity on 31st December of the year in the interval $< 0, 1 >$ and also the share of liabilities to total assets of more than 25%.

Source: Own processing; Ministry of Finance, Czech Republic.

In the Czech Republic in 1994, 31.7% of the total 6,221 municipalities reported debt. In 2007, 51.9% of the total 6244 municipalities reported debt. After that, the trend towards increasing debt stopped, despite the economic crisis and its effects on public finances. In 2008, 51.7% of all municipalities reported debt; in

2009, it was 52.0%; in 2010, it actually dropped to 49.8% although the absolute indebtedness for the entire municipal sector increased by almost 3 billion, thereby increasing the average indebtedness of municipalities. In 2011, the proportion of indebted municipalities again decreased, to 49.5%.



Source: Sedmíhradská and Klazar (2011).

Fig. 1. Development of municipal revenues (1997-2009)

One of significant recent declines in municipal revenues was recorded in 2009 (see Figure 1) in the field of revenues from shared taxes. In 2009, total municipal revenues declined by 3% and tax revenues by 11.5% (Sedmíhradská and Klazar, 2011). This slump was promptly corrected by increasing the current grants from the state that year, but particularly in times of crisis, such a decline increases the financial dependence of municipalities on the state. The real practical problem is that such a

situation may occur again, and this type of solution might not be possible for the state because of its own financial pressures, even though the municipalities might expect it.

3. Discussion and results

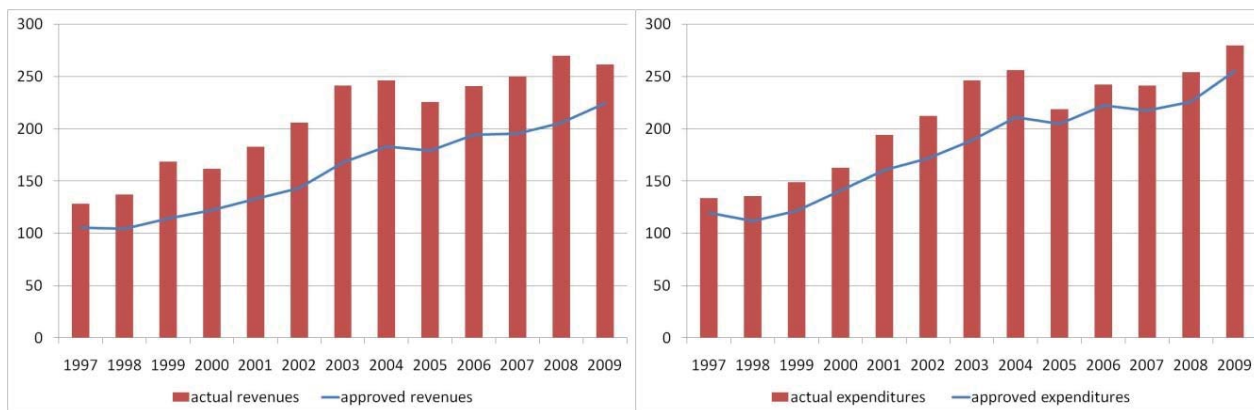
This part of the paper references both relevant secondary research results and the results of primary research based on the chosen methodology. Some points that are relevant and necessary for the

analysis are based on secondary knowledge of the municipal sector environment as a whole before, during, and after the crisis. The interesting points that should be pointed out here are:

- ◆ stable conditions: (a) the aggregate debt level during and after the crisis remained stable; (b) the percent of indebted municipalities during and after the crisis remained stable;
- ◆ unstable conditions: (a) the number of municipalities with a higher level of risky management increased in the years following the crisis.

There are varying views on the same issue; for example, that municipal revenues and expenditures between 1997 and 2009 were underestimated (as reflected in the difference between approved and actual budgets) on average by 32.2% and 16.6%

(Sedmíhradská and Klazar, 2011). From this perspective, it is evident that revenues were more underestimated than expenditures, which were more accurately determined. Assuming that mostly balanced budgets were approved, this could be a reason that the overall municipal debt situation appeared stable. The study by Sedmíhradská and Klazar proved that most underestimations within the studied time period were related to intergovernmental grants and capital revenues and the most accurate estimations were of tax revenues and current expenditures. Budget revenue underestimation is considered by some to be a fiscally responsible and thus positive phenomenon (Sedmíhradská and Kramoliš, 2012). Other studies, such as the research concerning the evaluation of tax forecasts (Špalek and Moravanský, 2005) have dealt with similar issues and from different perspectives.



Source: Sedmíhradská and Klazar (2011).

Fig. 2. Approved and actual municipal revenues and expenditures (1997-2009, in bill. of CZK)

While accurate estimations of municipal revenues and expenditures can lead to stable financial management over the long term, it is important to consider what actually happened during and after the crisis with selected municipalities when the aggregate financial situation of municipal sector remained stable by analyzing it from a financial perspective.

In 2009, all of the municipalities in the sample experienced a drop in tax revenues (which corresponds to the aggregated trend for all municipalities, which was characterized by almost a 12% decline), with the most affected municipalities having 1000-4999 inhabitants and the least affected municipalities having 0-999 inhabitants. In 2010, there was a returned increase in this type of revenue.

Table 5. Annual changes of individual revenues by size intervals – tax revenues

	Size intervals	2008	2009	2010
Tax revenues	0-199	59%	-6%	7%
	200-499	22%	-6%	5%
	500-999	21%	-7%	5%

	Size intervals	2008	2009	2010
Tax revenues	1000-1999	17%	-15%	10%
	2000-4900	11%	-14%	8%
	5000+	6%	-12%	5%

Source: Own processing.

Non-tax revenues increased for the municipal sector by almost 3%, but the analyzed sample shows some disproportions between municipalities of different size intervals (see Table 6).

Table 6. Annual changes of individual revenues by size intervals – non-tax revenues

	Size intervals	2008	2009	2010
Non-tax revenues	0-199	25%	10%	-20%
	200-499	47%	-22%	43%
	500-999	19%	-14%	-5%
	1000-1999	26%	-15%	4%
	2000-4900	0%	-4%	10%
	5000+	5%	33%	2%

Source: Own processing

The decline in capital revenues affect mainly small municipalities (0-1999), while large municipalities

(2000+) showed a significant increase in capital revenues in 2009, but 2010 showed a significant decline.

Table 7. Annual changes of individual revenues by size intervals – capital revenues

	Size intervals	2008	2009	2010
Capital revenues	0-199	388%	-34%	-15%
	200-499	63%	-50%	47%
	500-999	-21%	-3%	2%
	1000-1999	11%	-16%	-43%
	2000-4900	10%	78%	-55%
	5000+	18%	65%	-51%

Source: Own processing.

The most interesting area of revenues are the received transfers (grants) that should replace the loss of revenues from shared taxes within the municipal sector as a whole. These increased by almost 14% overall. In the research sample of municipalities, there are really striking differences between the individual intervals of analyzed municipalities; the differences are disproportionate due to losses in other revenues.

Table 8. Annual changes of individual revenues by size intervals – accepted transfers

	Size intervals	2008	2009	2010
Accepted transfers (grants)	0-199	-40%	6%	2%
	200-499	-41%	38%	66%
	500-999	-30%	67%	-10%
	1000-1999	13%	16%	-8%
	2000-4900	5%	16%	-6%
	5000+	6%	0%	-8%

Source: Own processing.

The decline in total revenues for the municipal sector in 2009 showed a decrease of 3%, but due to the individual disproportions in various types of revenues and across different periods, the table shows that only some municipalities recorded a decrease in total revenues.

Table 9. Annual changes of individual revenues by size intervals

	Size intervals	2008	2009	2010
Total revenues	0-199	21%	-4%	0%
	200-499	5%	-4%	31%
	500-999	3%	7%	-1%
	1000-1999	16%	-1%	-2%
	2000-4900	6%	11%	-6%
	5000+	6%	0%	-6%

Source: Own processing.

The analyzed sample shows a different expenditure trend: most municipalities increased spending in 2009, possibly as a result of optimistic expectations

due to the economic growth of 2008, the last year before the recession which was directly reflected in a decline of tax revenues. A delayed restrictive response to the negative economic situation was reflected in municipal expenditures in 2010.

Table 10. Annual changes of expenditures by type and by size intervals

	Size intervals	2008	2009	2010
Current expenditures	0-199	15%	31%	-8%
	200-499	-2%	4%	8%
	500-999	7%	21%	-3%
	1000-1999	16%	-3%	-6%
	2000-4900	8%	7%	-17%
	5000+	6%	3%	-9%
Capital expenditures	0-199	-40%	11%	-47%
	200-499	12%	66%	-7%
	500-999	-34%	-5%	54%
	1000-1999	14%	26%	-14%
	2000-4900	13%	40%	117%
	5000+	17%	16%	-29%

Source: Own processing.

Municipal property is also an important issue. The following table shows that within the observed period, municipal property increased at all size intervals, with a slight slowing in 2009.

Table 11. Annual changes of total assets by size intervals

	Size intervals	2008	2009	2010
Total assets	0-199	6%	3%	3%
	200-499	7%	7%	5%
	500-999	6%	4%	4%
	1000-1999	7%	3%	9%
	2000-4900	0%	5%	7%
	5000+	5%	4%	3%

Source: Own processing.

The issue of municipal property must be complemented by the dimension of funding, which has both an internal and external nature. The following table shows the development of the ratio of external sources to total liabilities within the observed period; there are significant differences in the sample. The increase in external funding during the crisis can be seen in the large municipalities (2000+) and in some smaller municipalities (200-499). An increase of external funding for all municipalities was recorded in 2010, but there are visible significant differences in the use and degree of this type of financing. This corresponds with the fact that the municipal sector as a whole increased its nominal debt by almost 3% in 2010, while in 2009 the total debt remained almost unchanged (up only by 0.6%) from 2008.

Table 12. External sources use by municipalities (annual)

External sources / Total liabilities	Size intervals	2007	2008	2009	2010
	0-199	1,5%	1,7%	1,5%	2,6%
	200-499	2,0%	2,6%	4,1%	4,1%
	500-999	1,4%	2,0%	2,5%	5,0%
	1000-1999	2,6%	2,5%	2,1%	4,5%
	2000-4900	8,4%	7,9%	8,3%	14,1%
	5000+	6,3%	5,7%	8,4%	8,5%

Source: Own processing.

In 2009, municipalities drew upon their accumulated funds from previous years, as shown from the examined sample in the following table.

Table 13. Development of current accounts/total assets ratio by municipalities (annual)

Current accounts / Total assets	Size intervals	2007	2008	2009	2010
	0-199	5,8%	10,0%	9,0%	13,2%
	200-499	9,6%	11,0%	10,6%	10,5%
	500-999	11,7%	12,4%	12,2%	9,5%
	1000-1999	4,9%	5,7%	5,1%	5,1%
	2000-4900	2,2%	1,4%	1,6%	2,4%
	5000+	3,2%	4,2%	3,4%	2,9%

Source: Own processing.

Small municipalities drew the most upon these resources, relative to their total assets, and they also had the most of these resources compared to the total property. Small municipalities included those that remained with the lowest ratio of external sources to total liabilities compared to other municipalities in the sample. The largest increases in the ratio of external sources to total liabilities was experienced by large municipalities (2000+), which had also the lowest ratio of current accounts/total assets.

500-999	-0,3%
1000-1999	-0,6%
2000-4900	0,2%
5000+	-0,9%

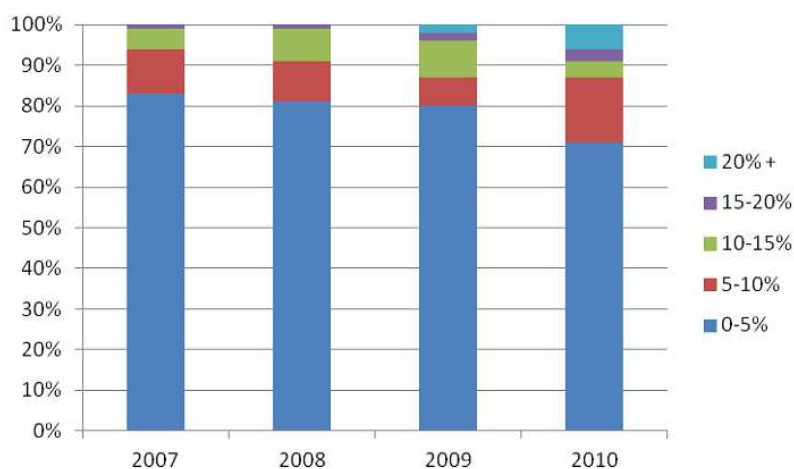
Source: Own processing

The structure of municipalities by external funding ratio has changed in form of shifting certain municipalities from lower debt levels to higher within the observed time period (2007-2010) as seen in Figure 3.

It is appropriate to extend this perspective to examine the size intervals and to analyze in which groups of municipalities this trend was recognized, as shown in Table 15.

Table 14. Differences in current accounts/total assets ratio by municipalities (2008/2009)

Size intervals	2008/2009
0-199	-1,0%
200-499	-0,4%



Source: Own processing

Fig. 3. Structure of municipalities in the examined sample by external type of funding use divided into intervals (indicator: external sources/total liabilities; 2007-2010)

Table 15. Structure of sample by size intervals and by external type of funding use (2007-2010)

Size intervals	External sources / Total liabilities	2007	2008	2009	2010
0-199	0-5%	88%	88%	96%	92%
	5-10%	13%	13%	0%	4%
	10-15%	0%	0%	4%	0%
	20%+	0%	0%	0%	4%
200-499	0-5%	86%	86%	86%	86%
	5-10%	7%	3%	0%	3%
	10-15%	7%	7%	7%	0%
	15-20%	0%	3%	0%	3%
500-999	20%+	0%	0%	7%	7%
	0-5%	100%	90%	86%	71%
	5-10%	0%	0%	5%	14%
	10-15%	0%	10%	5%	5%
1000-1999	15-20%	0%	0%	0%	0%
	20%+	0%	0%	0%	0%
	0-5%	91%	82%	91%	64%
	5-10%	9%	18%	9%	27%
2000-4999	10-15%	0%	0%	0%	9%
	15-20%	0%	0%	0%	0%
	20%+	0%	0%	0%	0%
	0-5%	43%	57%	43%	14%
5000+	5-10%	14%	0%	14%	43%
	10-15%	43%	43%	29%	0%
	15-20%	0%	0%	14%	14%
	20%+	0%	0%	0%	29%
5000+	0-5%	38%	38%	13%	13%
	5-10%	50%	50%	50%	63%
	10-15%	0%	13%	38%	25%
	15-20%	13%	0%	0%	0%

Source: Own processing.

The results show that the structure of the use of external resources has changed within the observed period for all size types of municipalities, but there is no apparent significant common trend. It can be seen that very small municipalities (0-499) generally stayed at the lower ratio of this indicator. More significant changes are visible in larger municipalities (500-999 and 2000-4999), which recognized significant decreases in the group of municipalities with a ratio of 0-5%; the group of municipalities with 2000-4999 inhabitants appears the riskiest. An important prerequisite in this case was the initial structure before the crisis, which could make the conditions for managing the crisis more difficult for these municipalities. A gradual shift to higher ratio groups can be seen even in the largest municipalities (5000+) which, however, managed to avoid movement to higher levels of this ratio (15%+).

Conclusions

This paper intended to use a data sample to show how the financial management of municipalities was affected by the economic crisis. The secondary objective was to find similar symptoms, features, and

patterns within this data sample if possible. The municipalities were able to adjust to new conditions to a limited extent, even though their fiscal autonomy is much more limited than that of central governments. During the crisis, the municipalities began to draw on previously accumulated resources, which helped them avoid fatal adverse conditions. But the municipalities did not engage all of their liquid resources for this purpose. The decline in shared tax revenues was compensated by the use of liquid funds and by an increase in accepted transfers from the central government, but this solution impacts municipal finances and can lead to a growing dependence on the central government. The paper analyzed individual parts of municipal financial management using a selected sample of municipalities during the reporting period (2007-2010) when the crisis occurred and affected the public finance system. The paper identified some evidence and trends that various selected municipal groups exhibited. Some partial general assumptions were confirmed. The limits of this research are of course the sample size and methodology. Further research is possible in this area at least on two levels:

both in the expansion of the sample to increase the explanatory power of analysis and in the use of econometric methods to identify the specific impact of the crisis on specific aspects of municipal financial managements during the reporting period.

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