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Olsztyn Economic Journal 6/2, 303-317

2011

Artykuł został opracowany do udostępnienia w internecie przez Muzeum Historii Polski w ramach prac podejmowanych na rzecz zapewnienia otwartego, powszechnego i trwałego dostępu do polskiego dorobku naukowego i kulturalnego. Artykuł jest umieszczony w kolekcji cyfrowej bazhum.muzhp.pl, gromadzącej zawartość polskich czasopism humanistycznych i społecznych.

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THE ROLE OF REAL PROPERTY TAX IN MUNICIPAL BUDGET MANAGEMENT

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Key words: revenue, expenditure, real property tax, budget, municipality.

A b s t r a c t

This study has been performed to analyze and evaluate some of the issues related to the budget of the municipality of Mława. The purpose has been to investigate the role of real property tax revenue in managing the municipal budget, and its effect on the municipal finances. The analysis comprised five years, from 2005 to 2009. The information necessary for analyzing the role of revenue from immovable property tax in the municipal budget consisted of secondary data (official statistics, available online in the electronic form, legal acts, reports prepared by the municipality, data from the Main Office of Statistics). Pearson's linear correlation coefficient has been used to demonstrate dependences between the revenue from real property tax and budget expenditure on investment projects.

ROLA PODATKU OD NIERUCHOMOŚCI W ZARZĄDZANIU BUDŻETEM GMINY

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Słowa kluczowe: dochody, wydatki, podatek od nieruchomości, budżet, gmina.

A b s t r a k t

Przedmiotem opracowania jest analiza i ocena zagadnień związanych z budżetem gminy Mława. Celem opracowania jest zbadanie roli dochodów z tytułu podatku od nieruchomości w zarządzaniu budżetem gminy oraz ich wpływu na gospodarkę finansową gminy. Analizą objęto 5 lat: 2005–2009. Materiały źródłowe, niezbędne do zbadania znaczenia dochodów z podatku od nieruchomości w zarządzaniu budżetem gminy, stanowiły dane wtórne (oficjalne statystyki udostępniane za pośrednictwem sieci web, w wersji elektronicznej, akty prawne, sprawdzania przygotowywane przez gminę oraz dane z GUS). Do przedstawienia zależności między dochodami z podatku od nieruchomości a wydatkami z budżetu na inwestycje zastosowano współczynnik korelacji liniowej Pearsona.

Introduction

In Poland, a municipality (*gmina*) is the basic local government unit. It is a complex social and economic system. The law (Act on Municipal Government, Journal of Law 2009, No 157, item 1241) which specifies how municipalities are financed underlines the fact that each municipality runs its financial economy based on its own budget. The budget of a municipality functions separately from the state budget. When creating a budget, the overriding aim is to pay attention to the municipality's tasks and competences. The budget of a municipality is an important tool in managing this local government unit. It is considered to be the basic and the main instrument for running the finances of a municipality. With the budget, the municipal authorities can take action to shape the municipality's revenue and expenditure. The authorities can also rationally distribute the budgetary means, work out a local policy and reinforce the role of a municipality as an entity that can actively shape its budget. Ongoing changes in the world of economy force local government units, like municipalities, to improve the use of available financial means. For this purpose, however, municipalities must manage their budgets in the best possible way (KORZENIOWSKA, KRAWCZYK 2005, pp. 29–30).

This paper presents some issues related to a municipal budget, revenues and expenditures, with particular attention paid to the role of income from real property tax and the effect of taxes on the fiscal policy of a municipality. It is commonly believed that rational management of real property, and especially tax policy, can be a source of finance for investment in infrastructure.

Aim and methodology of research

The authors have undertaken an attempt to specify the role of revenue from real property tax in managing the budget of a municipality and, consequently, in running local finances. Another objective has been to indicate how the tax policy can be improved. The study has been carried out on a case study of the urban municipality of Mława. The municipality of Mława lies in the northern part of the Province of Masovia. The study comprised the years 2005-2009. The data needed for our analysis of the role of property tax in municipal budget management were derived from indirect sources, such as official statistics available online in the electronic form, legal acts, reports prepared by the municipality and the data collected and made available by the Main Office of Statistics.

The comparative analysis method was employed, mainly vertical (dynamic) comparisons, owing to which it was possible to demonstrate how the revenue

from immovable property tax varied between 2005 and 2009; the analysis also enabled the authors to indicate and evaluate the dynamics of such changes in the consecutive years.

In addition, the research determined the dependence between real property tax revenue and investment expenditure in the municipality of Mława. To this aim, Pearson's linear correlation coefficient was applied, which showed the dependence between these two variables. The dependence was calculated from the following formula:

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}.$$

When Pearson's linear correlation coefficient is in the range $\{-1,1\}$, where $r_{xy} = 1$ means exact positive linear dependence between the properties, $r_{xy} = -1$ means exact negative linear relation between the properties, and $r_{xy} = 0$ means lack of linear relation between the properties. The sign of Pearson's correlation coefficient indicates the correlation direction, whereas the absolute value of this coefficient determines the strength of the association between the variables. The higher the absolute coefficient between these two variables, the stronger the linear relationship between them (BUDA, JARYNOWSKI 2010, pp. 5–8). The results of our analysis are set in the tables and diagrams included in this article.

Characterization of the analyzed area

Mława is an urban municipality, located in the northern part of the Province of Masovia. The municipality covers the town of Mława, which is nearly 600 years old. In 1975–1998, the town was in the Province of Ciechanów. After the administrative reform, on 1 January 1998, it was incorporated into the Province of Masovia. The municipality lies in the geographical region called the Mława Uplands, near the Mławka River. With respect to the physico-geographical division of Poland, Mława belongs to the macro-region called the Central Polish Lowlands, or more specifically, to their north-eastern part, known as North Masovia Lowland (*Plan rozwoju...* 2004).

On 1 January 2004, two villages, Piekiełko and Krajewo, were incorporated into the administrative boundaries of Mława, so the town's area rose by 1051 ha. The incorporated land was mainly woodland. In 2009, the municipality of Mława covered around 35 000 km² (3486 ha), with a large percentage of undeveloped land, as shown in Table 1.

Table 1

Area and structure of land use in the Municipality of Mława in 2009

Structure of land use	Area [ha]	Structure of land use [%]
Farmland	1 881	53.96
– arable land	1 474	–
– orchards	18	–
– permanent meadows	186	–
– permanent pastures	80	–
– developed farmland	118	–
– drainage ditches	5	–
Forest land, land with trees and shrubs	838	24.04
Developed and urbanized land	726	20.83
– residential area	427	–
– industrial areas	4	–
– other developed areas	3	–
– urbanized undeveloped areas	10	–
– recreational areas	19	–
– roads	188	–
– railroads	73	–
– others	2	–
Land under waters	5	0.14
– surface flowing waters	5	–
Ecological utility areas	0	0.00
Wasteland	32	0.92
Other land	4	0.11
Total registered area	3 486	100

Source: the authors, based on the data from the *Municipal Office in Mława* (2009), pp. 5–7.

About 54% (1881 ha) of the territory of the municipality consist of farmland, a prevalent type of land in this municipality, which belongs to typically agricultural areas, as reflected by the structure of land use. The farmland was dominated by arable lands. The remaining farmland (meadows and pastures) made up a small percentage of the total area of the municipality. Forests as well as areas covered by trees and shrubs, which covered 24.04% of the municipality's total area, as well as developed farmland made up another important component in the land use structure. Undeveloped and urbanized lands, which covered 20.83% of the total area, were mostly the land zoned for residential development.

The population structure of the municipality of Mława is presented in Table 2. Although two villages were incorporated into the town in 2004, the

total number of population was slightly decreasing during the study. In 2009, the population was 29 489 and a slight increasing tendency was observable compared to the previous year.

Population in the municipality of Mława in 2005–2009

Table 2

Specification	Years				
	2005	2006	2007	2008	2009
Number of population	29 761	29 648	29 465	29 480	29 489
Population density (persons/km ²)	838	852	847	847	849

Source: the authors, based on the data of the *Main Office of Statistics*.

The average population density in 2009 was 849 persons per square kilometer. The District Employment Office in Mława had 1995 registered unemployed persons in 2009, including 987 women and 1008 men (as of 31 December 2009).

There were 2925 business entities registered in the Polish REGON system, operating in the municipality of Mława (Fig. 1).

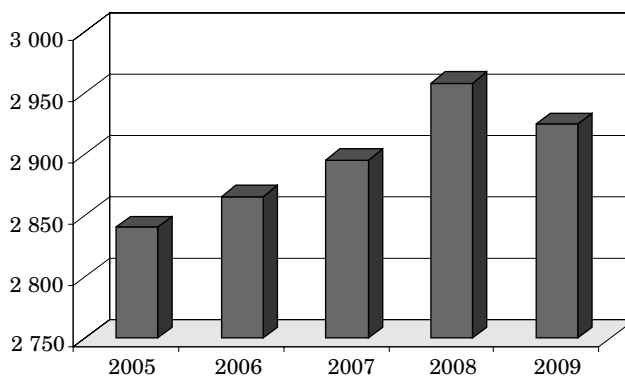


Fig. 1. Business entities operating in Mława

Source: the authors, based on the data of the *Main Office of Statistics*.

The number of business enterprises steadily grew until 2008. During the five analyzed years, it increased by 4.15%. In 2009, it fell slightly, with 34 business entities fewer than in the previous year. Most businesses registered in 2009 operated in section G, i.e. wholesale and retail trade, car and

motorcycle repairs, sale of personal and household goods. There were 1089 entities in this section, which corresponds to 37.23% of all registered businesses (*Strategia ... 2015*, pp. 14–15).

The budget of the municipality of Mława in 2005–2009

The budget of the municipality of Mława is approved by the Council of the Municipality. Both budget revenues and expenditures over the five analyzed years changed significantly (Tab. 3).

Table 3
The budget of the municipality of Mława in 2005–2009 (in PLN)

Specification	Years				
	2005	2006	2007	2008	2009
Total revenue	53 597 095	56 803 151	66 038 962	69 478 476	73 420 126
Total expenditure	59 851 445	61 692 602	68 583 456	77 414 723	77 135 029
Balance	-6 254 350	-4 889 451	-2 544 494	-7 936 247	-3 714 903

Source; the authors, based on the data from the *Municipal Office in Mława*, pp. 10–12.

In 2005, the revenue did not exceed 53.6 million PLN, while the expenditure was about 59.9 million PLN. In the subsequent years, both the income and the expenses increased. In 2009, the revenue reached about 73.5 million PLN, and the expenditure slightly less than 77.1 million PLN. During the five years, we could observe an increase on both sides – the revenue and the expenditure. The revenue rose by 36.99% whereas the expenses grew by 28.88%. This was, to some extent, explained by the fact that in 2009 the expenditure decreased slightly versus the previous year, while the revenue continued to increase.

The highest per cent increase in the revenue versus the preceding year was noticed in 2007 (by 16.26%). In the other years, the revenue increased by about 5% compared to the previous year. The highest increase was recorded in 2008. The expenses rose by 12.88% versus the previous year. In 2009, the expenses fell by 0.36%.

The deficit in the municipality of Mława showed some considerable, periodical variations (table 3). In absolute value, the highest deficit appeared in 2008, when it reached 7.9 million PLN, which equalled to 11.42% of the municipality's total revenue. The smallest deficit was noted in 2007, when it was approximately 2.5 million PLN, that is 3.85% of the total revenue. The deficit compared to the total revenue was the highest in 2005 (11.67%) and the

smallest in 2007 (3.85%). However, it is worrying to notice such high periodical variations in the budgetary deficit. On the other hand, the deficit kept increasing because the municipality had to perform additional tasks, both own and commissioned ones.

Revenue from real property tax

The revenue that the municipal budget obtained originated from different sources. The acquisition of budgetary revenue depends mainly on tax revenue. Tax revenue comprises the revenue from levied and collected local taxes, because the municipality is responsible for imposing their tax rates and can therefore freely use the income thus derived. This is the revenue that is collected exclusively for the budget of the municipality and not shared with any other budget.

Local taxes constituted one of the most numerous groups of income sources that affected the revenues acquired by the municipality and enabled the municipality to execute its own tasks (Tab. 4).

The revenue from collected taxes grew steadily. From just slightly above 11.2 million PLN in 2005, it went up to 15.0 million PLN in 2009. The revenue from local taxes equalled on average 20.21% of the total income. In the five analyzed years, real property tax dominated over all other forms of local taxes, as it generated on average 75.03% of the revenue. Another significant source of revenue was the tax on civil law transactions, which made up over 12.9% of the total revenue from taxes.

The income from real property tax is an important source of budget profits in the municipality of Mława (Fig. 2).

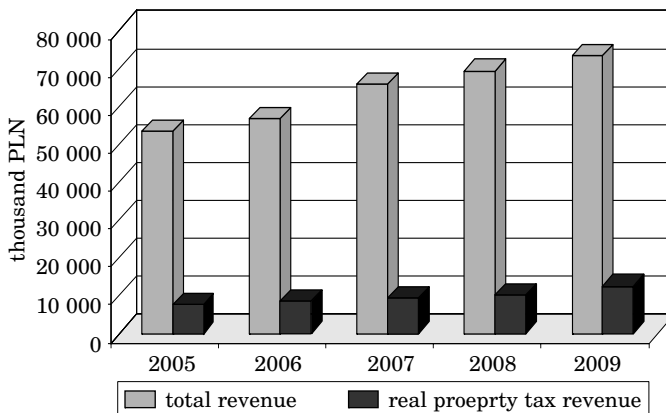


Fig. 2 Revenue from real property tax versus the total revenue of the municipality
Source: the authors, based on the data from the *Municipal Office in Mława*, pp. 15–20.

Table 4

Revenue from local taxes in 2005–2009 in PLN

Specification	Years											
	2005		2006		2007		2008		2009			
	PLN	%	PLN	%	PLN	%	PLN	%	PLN	%	PLN	%
Real Property Tax	7 839 953	69.70	8 576 987	74.33	9 421 571	68.74	10 195 666	79.23	12 489 979	83.16		
Farmland Tax	94 171	0.84	76 733	0.66	85 239	0.62	100 500	0.78	96 330	0.64		
Forest Tax	15 431	0.14	11 734	0.10	11 973	0.09	13 100	0.10	14 532	0.10		
Vehicle Tax	894 445	7.95	937 162	8.12	1 061 140	7.74	1 130 000	8.78	1 033 354	6.88		
Dog Tax	30 771	0.27	37 047	0.32	31 023	0.23	20 000	0.16	16 083	0.11		
Inheritance And Gift Tax	136 174	1.21	234 988	2.04	996 443	7.27	200 000	1.55	211 858	1.41		
Self-Employment Tax (Tax Deduction Card)	79 186	0.70	64 820	0.56	45 379	0.33	40 000	0.31	33 386	0.22		
Tax On Civil Law Transactions	2 157 256	19.18	1 599 744	13.86	2 084 244	14.99	1 169 962	9.09	1 123 790	7.48		
Sum of local taxes	11 247 387	100	11 539 215	100	13 707 012	100	12 869 228	100	15 019 312	100		

Source: the authors, based on the data of the *Municipal Office in Mtawa*, pp. 15–20.

Figure 2 shows a simultaneous increase in the revenue, both total and derived from real property tax. It needs to be added, however, that in actual values the total revenue rose more quickly than the revenue generated by real property tax, although the per cent growth was varied. Should we take into consideration the per cent increase versus the previous year, than the total revenue rose more dynamically only in 2007. In the other years, the per cent increase in the revenue from real property tax was much higher. Thus, it can be concluded that the income from this tax was an important element of the municipal budget of Mława.

The revenue from real property tax was compared not only with the total budget revenue but also to the municipality's own income. The municipality's own income showed a high dynamics of growth in the town's budget (on average 12.64%) – Fig. 3.

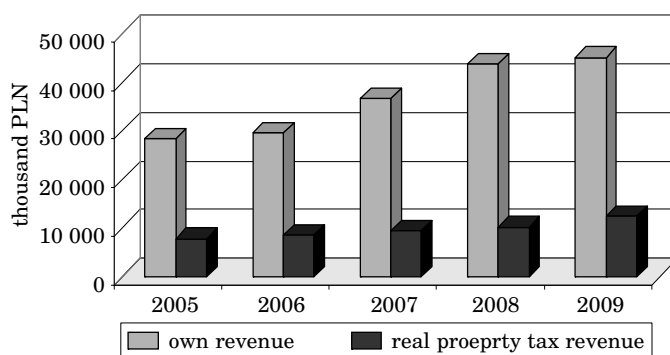


Fig. 3. Revenue from real property tax versus the municipality's own revenue
Source: the authors, based on the data from the *Municipal Office in Mława*, pp. 15–16.

The revenue from real property tax kept increasing at a similar rate (on average, 12.49%) but, two years, i.e. 2006 and 2009, were an exception because then the municipality's own income rose more slowly and the tax-generated revenue increased faster. The municipality's own revenue in 2005 and in 2006 was similar. In the other years, the revenue of this type tended to increase. In turn, the revenue from real property tax rose steadily compared to each previous year. In 2009, a large increase in the municipality's revenue from real property tax was observed. Real property tax seems to be the most efficient source of own income for the municipality of Mława. In 2009, the share of real property tax revenue in total revenue in that municipality was about 17.01%, while in the other analyzed years it remained on a similar level of about 15% (Tab. 5).

Table 5

Share of real property tax revenue to own revenue and total revenue (%)

Specification	Years				
	2005	2006	2007	2008	2009
Share of real property tax revenue in total income	14.63	15.10	14.27	14.67	17.01
Share of real property tax revenue in own income	27.57	28.98	25.73	23.23	27.66

Source: the authors, based on the data from the *Municipal Office in Mława*, p. 19.

With respect to the years 2005–2009, in general the average increase in the contribution of real property tax revenue to the total revenue was 15.14%. The increase in the share of real property tax revenue in total revenue did not, however, show a definite direction of change. Regarding the share of real property tax revenue in the total own revenue, it was the lowest in 2008, when it equalled 23.23%, and the highest in 2006, reaching 28.98% of the total own income. The annual average revenue from real property tax during the analyzed period of time equalled 26.63% of the municipality's own revenue.

Revenue from real property tax divided between taxpayers

The revenue from real property tax paid to the budget of the municipality of Mława originated from two groups of taxpayers. The first one consisted of physical persons and the other one was composed of legal persons. In all the analyzed years, the legal persons paid more in real property taxation than physical persons (Fig. 4). Both physical and legal persons paid increasingly more real property tax in each subsequent year. The increments, however, were not equal.

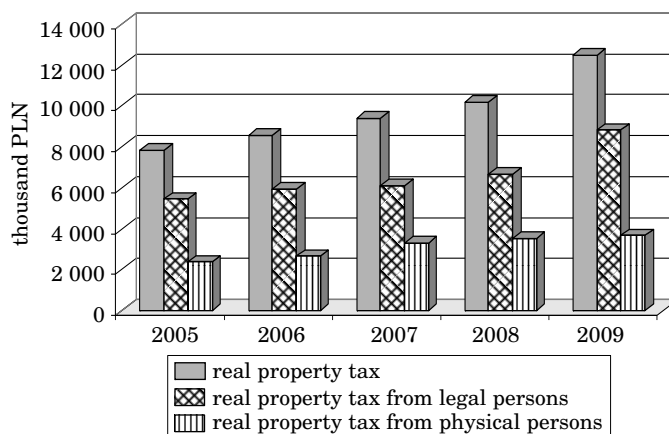


Fig. 4. Revenue from real property tax according to taxpayers

Source: the authors, based on the data from the *Municipal Office in Mława*.

The highest increase in the revenue paid by physical persons occurred in 2007, when they paid 24.91% more in real property tax than in 2006. In 2006 and 2007, the revenue obtained from real property tax paid by legal persons was similar. The highest increment in the revenue from real property tax paid by legal persons occurred in 2009, when it reached 32.14% versus the previous year.

In order to analyze the structure of revenue from real property tax according to taxpayers, percentages of the revenue obtained from each group of taxpayers in the total revenue from this tax collected by the municipality were calculated. The total revenue from this tax in each analyzed year was treated as 100%.



Fig. 5. Payers of the real property tax and their contribution to the total real property tax revenue
Source: the authors, based on the data from the *Municipality Office in Mtawa*, pp. 15–20.

In 2005, 69.57% of the real property tax revenue was paid by legal persons. The remaining 30.43% originated from physical persons. In the subsequent two years, the percentage of the revenue from legal persons in the total revenue obtained from that tax decreased slightly to the advantage of the revenue acquired from physical persons. In 2008, the percentage of the real property tax revenue from legal persons rose again. Despite the value-related increase in the revenue from real property tax, the percentages of the revenue acquired from either of the two groups of taxpayers remained on a similar level in 2007–2008. This means that both groups paid higher amounts in the actual value due to real property tax. The authorities of the municipality should concentrate on both of these groups, but more attention should be paid to legal persons, as they generate higher budget revenue. However, the revenue obtained from physical persons as real property taxpayers should not be neglected.

Revenue from real property versus the municipality's investments

The value of the real property tax revenue versus the investment projects carried out by the municipality of Mława is presented in table 6. The municipality was engaged in many investment projects, which required high financial outlays. The investment projects can be divided into the current and long-term ones. Some of the tasks the municipality carried out together with the District of Mława.

Table 6

The investment outlays versus the total expenditure

Specification	Years				
	2005	2006	2007	2008	2009
Investment expenses [PLN]	18 880 265	16 503 799	17 763 343	19 309 787	13 671 104
Total expenses [PLN]	59 851 445	61 692 602	68 583 456	77 414 723	77 135 029
Share of investment expenses in total expenses [%]	31.55	26.75	25.90	24.94	17.72

Source: the authors, based on the data from the *Municipality Office in Mława*.

The highest share of investment expenditure in the total expenditure appeared in 2005, when it reached 31.55%. In 2006–2008, the percentage of investment outlays to the total expenditure of the municipality decreased steadily. The decrease, however, was attributable to a higher rate of increase in the total expenditure rather than a decrease in the value of all investment projects. On average, during the five analyzed years, the investment outlays made up 25.37% of all the expenses of the municipality in Mława. The growing value of the investments proves that the local authorities are highly interested in completing investment projects. The year 2009 was an exception in that the investment outlays were on a low level. In that year, they made up just 17.72% of the total expenditure of the municipality. The investment outlays comprised mainly the funds allocated to construction and development of the municipal infrastructure, purchase of tangible assets and capital investments. The projects completed by the municipality contribute to enhanced attractiveness of the municipality to prospective investors and residents.

A considerable share of the means allocated to financing investment projects originated from the municipality's own revenue and especially from the real property tax revenue. It is, therefore, important to possess efficient sources of budgetary revenue. Among the factors which condition the volume

of investment outlays is the level of acquired real property tax revenues. In all the analyzed years, the investment outlays exceeded the revenues from real property tax.

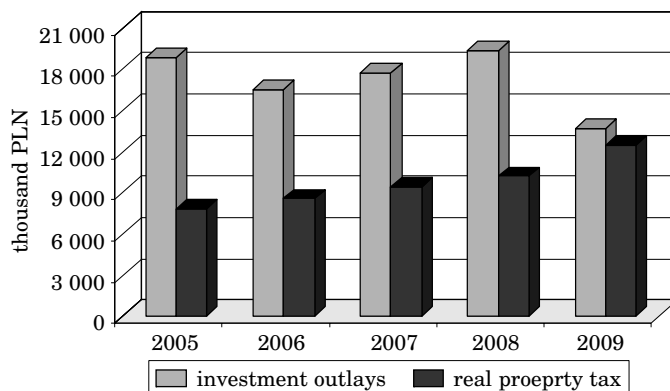


Fig. 6. Investment expenses versus the real property tax revenue

Source: the authors, based on the data from the *Municipality Office in Mława*, p. 33.

In 2005–2006, the real property tax covered about 50% of the investment outlays. In 2009, the situation changed. The revenue from real property tax increased and the investment expenditure decreased. Both values came close to a similar level. The strength of the association between these two variables expressed the dependences between own revenues, especially real property tax revenue and the size of investment expenditure incurred by the municipality of Mława. Pearson's linear correlation coefficient was applied, which enabled the authors to determine the dependence between these two variables, indicating the direction and strength of this interaction.

The linear correlation coefficient for the revenue from real property tax and investment outlays indicates a strong dependence between these two values. The coefficient calculated for the municipality of Mława was +0.70 (Tab. 7).

Table 7

Dependence between investment outlays and real property tax revenues

Specification	Years				
	2005	2006	2007	2008	2009
Real property tax [PLN]	7 839 953	8 576 987	9 421 571	10 195 666	12 489 979
Investment outlays [PLN]	18 800 265	16 503 799	17 763 343	19 309 787	13 671 104
Pearson's linear correlation coefficient	+ 0.70				

Source: the authors, based on the data from the *Municipality Office in Mława*, pp. 25, 35.

The above value of the coefficient supports quite a strong dependence between the revenue obtained from real property tax and the municipal investment outlays. The sign + in front of the coefficient defines the direction of the dependence between the two variables. The positive value of this coefficient informs us that as the investment outlays increase so does the revenue from real property tax, which is predominantly composed of betterment levy sums, imposed because of the constructed municipal infrastructure. The municipality is obliged to carry out such investment projects which will improve the development of local areas, and therefore encourage business enterprises to start operating on its territory.

Summary

In the budget of the analyzed municipality, both the revenue and expenditure were observed to increase. It is worrying, however, to notice that the value of the budget deficit fluctuated periodically. Among the budget revenue, the strongest position is occupied by the revenue from legal persons, physical persons and other entities without legal personality. The revenue obtained from real property tax enables the municipality to perform its own basic tasks. The budget preparation depends mainly on the collection of real property tax revenue.

The revenue from real property tax is an important source of revenue for the municipal budget in Mława. The annual average share of this revenue in the total revenue of the municipality was 15.14%. In 2005–2009, the revenue from real property tax constituted on average 26.63% of own income.

There is correlation between the revenue from real property tax and investment expenditure (0.70). This is a positive relationship. An increase in the investment outlays is accompanied by an increase in the revenue from real property tax. The real property tax revenue is composed mainly of betterment levy, imposed because of the constructed municipal infrastructure.

Being able to make decisions about the acquired revenue, the municipality can manage its budget and shape relations between the budget income and expenditure.

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