DYNAMICS OF REVENUE FROM REAL ESTATE MARKET IN POLISH VOIVODSHIP CAPITALS DURING ECONOMIC DOWNTURN

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Abstract

The paper discusses the local government revenue from the real estate market, focusing mainly on assessing the impact of the global economic crisis (triggered in 2008 by turbulence on the US property market) on the revenues of Polish voivodship capitals. The temporal scope of the analysis was a decade between 2005 and 2015. The analyses focused on the following three groups of revenue from a real estate market: recurrent property taxes; revenue from municipal assets and taxes in respect of ownership right transfer. The main research hypothesis was made that the major metropolitan areas suffer more from the fall in this type of revenue due to economic slowdown than other big cities. In order to determine the relationship between the economic situation and the cities' revenue from the real estate market the Pearson correlation coefficient was used. The analyses were conducted on the general and detailed levels: seeking the relationship between the GDP per capita on the voivodship level and the city revenue from the real estate market and three identified above groups of revenue sources. The data came from the Local Data Bank of the Polish Central Statistical Office.

Key words: gmina revenue, taxes, real estate market, economic downturn.

JEL Code: R3, H2, H7.

Introduction

In Poland the revenue from property taxes amounts to 5.3% of total tax transfers (the EU average is 6.4%), which translates into 1.7% of GDP (with the EU average at 2.5%) (Taxation Trends in the European Union, 2016, pp. 282, 283). The major beneficiary of this revenue are gminas (elementary units of local government) whose budgets are assigned with most public-law taxes and charges obtained from the real estate market. In 2014 the gmina revenues coming from the real estate market taxes reached PLN 24.205 billion, i.e. 28.61% of their total revenue (Local Data Bank of the Polish Central Statistical Office). The global economic crisis, triggered by the 2007 property bubble burst in the US, is generally considered to be the most severe recession in the world economy since the Great Depression that started in the late 1920s and lasted to the end of 1930s. The first crisis phase was associated with the burst of the speculative bubble on the American property market (and some European markets) followed by a dramatic property price decline (Polska wobec światowego kryzysu, 2009, pp. 4, 9). The global financial crisis had a hard impact on EU economies, including Poland. However, the effect on the Polish GDP turned out to be considerably less severe than in other EU countries. Poland was the only EU member state where GDP did not fall in 2009. On the contrary, it rose by 1.6% YOY. Unfortunately, despite its relatively good economic performance in comparison to the rest of the EU, Poland did not eventually avoid the deterioration of public finances. Strong decrease of GDP along with plunging asset prices in the financial and real estate markets resulted in considerable decline of tax revenue (Finanse publiczne w Polsce w okresie kryzysu, 2012, pp. 6, 13). According to Eurostat, in 2009 the Polish public finance deficit grew twofold YOY from PLN 46.9 billion (3.7% of GDP) in 2008 to PLN 99.6 billion (7.4% of GDP). In the local government sector the deficit was much deeper, rising almost seven times from PLN 2.3 billion (0.1% of GDP) in 2008 to PLN 14.3 billion (1.1% of GDP) in 2009. In the same period of time Polish real estate market saw a 24.8% decline in the number of closed transactions: from 277 013 in 2008 to 208 190 in 2009. The trend was accompanied by volumes decreased by 32%: from PLN 46 933 493 in 2008 to PLN 31 901 619 in 2009 (Obrót nieruchomościami w 2009 r., 2010, pp. 18, 19). The slowdown on the real estate market was not without effect on the revenues of local governments throughout the European Union. Yet, the dynamics of income varied depending on individual revenue sources (Davey, K. (edited), 2011, pp. 57-62).

The above correlation has been the rationale behind this study which is aimed at assessing the effect of the global economic crisis (that broke out in August 2008) on the revenues from real estate market in voivodship capitals in Poland. The main research hypothesis was made that the major metropolitan areas suffer more from the fall in this type of revenue due to economic slowdown than other big cities. The study covered 16 voivodship capitals (Warszawa, Wrocław, Poznań, Kraków, Gdańsk, Olsztyn, Rzeszów, Łódź, Szczecin, Bydgoszcz, Lublin, Katowice, Białystok, Kielce, Zielona Góra, Opole). The temporal scope of the analysis was a decade between 2005 and 2015. The data came from the Local Data

Bank of the Polish Central Statistical Office. The data analysis was conducted by means of statistical and econometric methods.

1 Gmina Revenue from Real Estate Market

The Polish gmina revenue system, similarly to its EU counterparts, is mixed, which means that it is based on gminas‘ own revenue (coming mainly from local charges and taxes and their own assets) as well as on funds transferred from the state budget in a form of general subsidies, targeted subsidies and a share in personal and corporate income taxes (Gliniecka, 2001, p. 7). A considerable part of the gminas‘ own revenue is represented by income from real estate market that falls into four categories (Cymerman, 2011, pp. 77-80), (Głuszczak, Marona, 2015, pp. 34-35):

a) recurrent property taxes – property taxes related to ownership rights but unrelated with any economic event or adminstrative-law procedure (property, agricultural or forestry taxes);
b) revenue from municipal assets – civil-law charges collected on account of a property sale or lease (income from property sale, letting, leasing or perpetual usufruct);
c) taxes in respect of ownership right transfer payable when transfering property rights in a form of market and non-market transactions (civil-law action tax, inheritance and gift tax);
d) income taxes levied on income from property sale, letting, leasing, etc. (personal income tax and corporate income tax);
e) charges levied on an increased property value due to a local government activity – changes in the local land use plan (planning fees), land division, reparcelling, upgrading (impact fees).

The main function of property taxes is the fiscal function. Property taxes also have an economic and social function (Małkowska, Głuszak, 2016, p. 271), (Oates, Fischel, 2016, p. 417-422), (Plummer, 2014, p. 900). The real estate market is closely correlated with the economy, being its essential element. On the one hand, the processes taking place in the economy may drive up or slow down the growth of the property market (Wheaton, 1999, p. 209). On the other hand, it influences macroeconomic variables by participating in the generation of the gross domestic product, creating jobs or providing tax revenue (Haila, A., 2000, pp. 2241-2249).

Local government revenue is conditioned by economic, demographic, political and technological factors (Bartle, Kriz, Morozov, 2011, p. 269). Taking into account the correlation of the revenue volume with the economic trends, there are three types of revenue (Czyż, 2012, pp. 23-36):

1) directly dependent on the economic situation,
2) indirectly dependent on the economic situation, and
3) temporarily independent from the economic situation (Tab. 1).

Tab. 1: Classification of gmina revenues from real estate market – a criterion of sensitivity to economic trends

Revenue directly dependent on economic situation	Revenue indirectly dependent on economic situation	Revenue independent from economic situation
- participation in personal income tax, - participation in corporate income tax	- revenue from municipal assets, - civil-law action tax, - inheritance and gift tax, - stamp duty, - planning fee, - impact fee,	- proerty tax, - agricultural tax, - forestry tax,

Source: own study based on (Czyż, 2012, pp. 23-36).

It is important to note that such a classification is only true in a short-term perspective. When considering the gminas' own revenues in a long term, over crises lasting several years, it is justified to say that their every budget line is reliant on the regional and national economic situation. Any long-lasting slowdown has a negative effect on people's incomes and material resources. That in turn affects the gmina budgets, including decreased revenues from the property tax as a consequence of business failures and the resulting fall in demand for real estate, which leads to lower rental prices.

2 Revenue from Real Estate Market in Voivodship Capitals during Economic Downturn

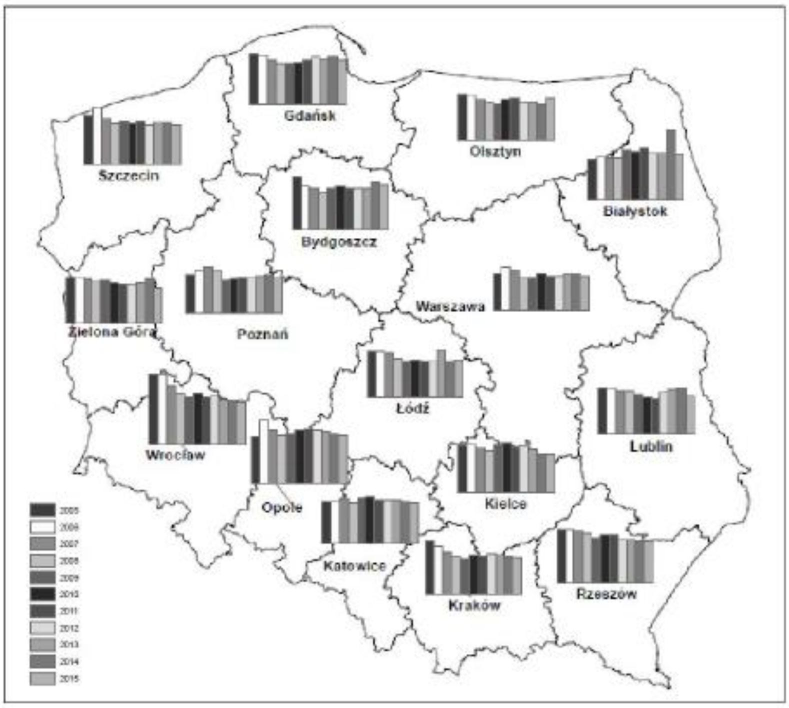
The analyses covered the revenue from a real estate market in 16 voivodship capitals Warsaw, Wrocław, Poznań, Krakow, Gdańsk, Olsztyn, Rzeszów, Łódź, Szczecin, Bydgoszcz, Lublin, Katowice, Białystok, Kielce, Zielona Góra, Opole between 2005 and 2015. The main research hypothesis was made that the major metropolitan areas suffered more from the decrease in this type of revenue due to economic slowdown than other big cities. The data came from the Local Data Bank of the Polish Central Statistical Office. The analyses focused on the following three groups of revenue from a real estate market:

1) recurrent property taxes – a property tax, an agricultural tax and a forestry tax;
2) revenue from municipal assets – income from property sale, letting, leasing and from perpetual usufruct);
3) taxes in respect of ownership right transfer – a civil-law action tax, an inheritance and gift tax).

The revenue from income tax related to the real estate market was excluded from the analysis due to the absence of relevant data – the part of income taxes levied on gains from the sale, rental and lease of properties is not separated from the total envelope of income taxes in the Tax Office records. Additionally, the analysis did not include gains from charges in respect of increased property value due to their marginal importance as they do not exceed 1% of the cities‘ own revenue.

In the time of observation the share of the revenue from the real estate market in the cities‘total own revenue ranged from 24.98% to 52.01%. The largest proportion was observed in Wrocław and Opole (the annual average of 38.71% and 38.42% respectively). Wrocław was the only city where real estate market-related revenue was higher than 50% of its own revenue (in 2005 and 2006). The smallest percentage of revenue from the real estate market was seen in Poznań and Warsaw (the annual average of 27.54% and 28.18% of their own income respectively) – see Fig. 1. Throughout the analysed decade all the cities except opole and Baiłystok saw a downward trend in the proportion of the revenue from the real estate market in their total own revenue: in 2005 it accounted for the average of 35.58% while in 2015 the figure fell to 30.14%. The most dramatic drop was seen in 2008 with the decline YOY by 2.92 percentage points from 34% to 31.08%.

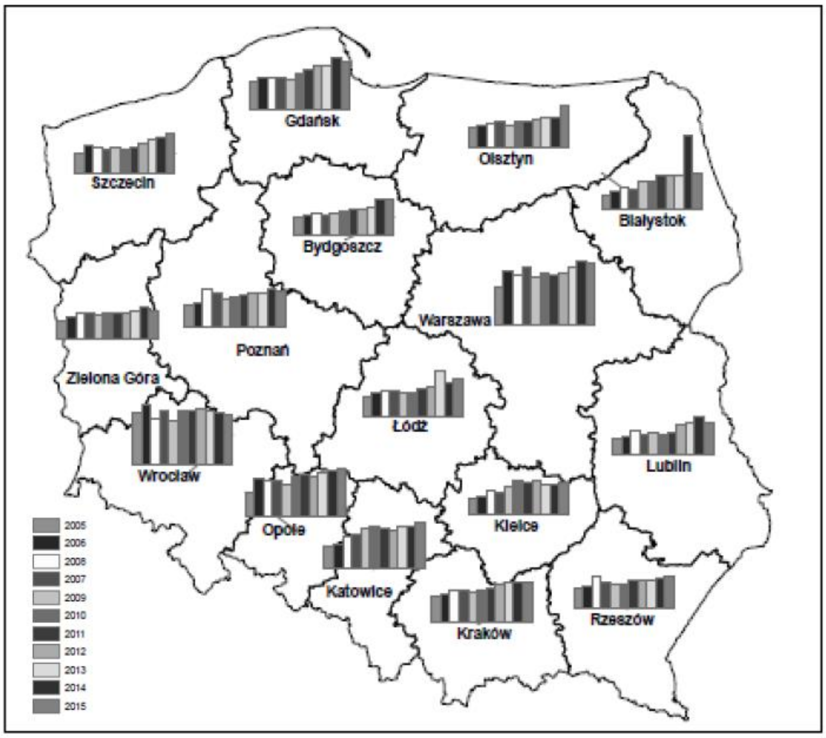
Fig. 1: Percentage of revenue from real estate market in voivodship capitals‘ own revenues in 2005-2015



Source: own study based on GUS Local Data Bank of Central Statistical Office.

When analysing the value of the revenue from the real estate market per capita, we can see a considerable growth in all the cities. In 2005 the city budgets gained the average of PLN 614.71 per capita while in 2015 the figure rose by 71% to PLN 1049.24 (see Fig. 2). The most dynamic increase in the real estate market-related revenue per capita (year on year) was recorded in Białystok (the annual average of 15.33%) followed by Łódź, Opole and Szczecin (the annual average of approximately 8%). The lowest dynamics of less than 0.4% was noted in Wrocław. In Krakow, Zielona Góra and Warsaw the revenues from the real estate market per capita grew by the average of 5% annually.

Fig. 2: Per Capita Revenue from Real Estate Market in Voivodship Capitals over 2005-2015



Source: own study based on GUS Local Data Bank of Central Statistical Office.

In order to determine the relationship between the economic situation and the cities' revenue from the real estate market the Pearson correlation coefficient was used:

$$\rho_{x,y} = \frac{cov(x,y)}{\sigma_x * \sigma_y}, \quad (1)$$

where:

cov (x,y) – the covariance of variables x and y,

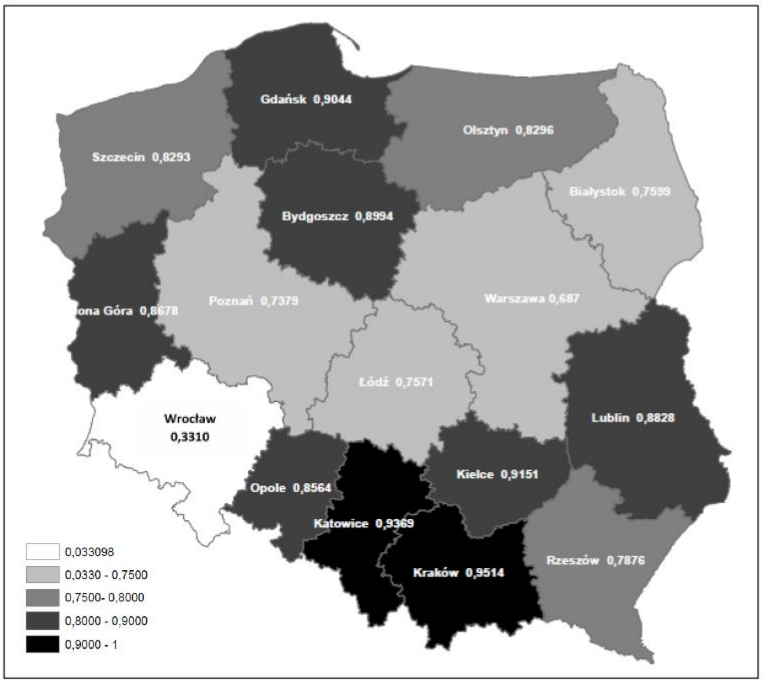
σ_x i σ_y- the standard deviation of variables x and y.

The analyses were conducted on the following levels:

- general – seeking the relationship between the GDP per capita on the voivodship level and the city revenue from the real estate market;
- detailed – seeking the relationship between the GDP per capita on the voivodship level and three identified above groups of revenue sources.

In 15 cities the Pearson correlation coefficient computed for the GDP and for the revenue from the real estate market were higher than 0.687, which confirms a marked correlation betwee these categories (in 10 cities the coefficient exceeded 0.8) (Fig. 3).

Fig. 3: Pearson correlation coefficient between GDP per capita in voivodships and per capita revenue from real estate market in voivodship capitals over 2005-2015



Source: own study based on GUS Local Data Bank of Central Statistical Office.

In comparison to the remaining cities, Wrocław was an exception with its Pearson correlation coefficient at 0.0331, which means that the dependency of the city's revenue from the real estate market on the concurrent economic situation was irrelevant.

Interesting phenomena can be observed when we analyse the correlation coefficient values obtained for the GDP and for the three identified groups of revenue sources related to the real estate market. While the revenues from Group 1 (property, agricultural and forestry taxes) were strongly dependent on the GDP, with the Pearson correlation coefficient within the range of <0,9364 ; 0,9853>, the situation in the remaining revenue groups was different (Table 2). Nine cities saw a marked posotive relationship between the revenues from Group II (revenue from municipal assets) and the economic situation over the period of 2005-2015, with the Pearson correlation coefficient ranging between <0.5873 ; 0.919>. In Wrocław the correlation coefficient was negative at -0.6043, which confirms a relevant but negative dependency, i.e. in a declining economic situation the revenue from local municipal assets was going up. The remaining cities did not experience a significant relationship in that case.

Tab. 2: Pearson coefficient of correlation between GDP per capita in a given voivodship and revenue from real estate market

No	City	Population on 31 June 2017.	Pearson correlation coefficient between GDP and:				
			Revenue from real estate market (Groups I.-III.)	Group I. Property taxes	Group II. Revenue from municipal assets	Group III. Taxes in respect of ownership right transfer	
							incl. inheritance and gift tax
1	Krakow	762 508	0.9514	0.9407	0.9190	-0.3072	-0.6462
2	Katowice	300 797	0.9369	0.9507	0.8164	0.0090	-0.6962
3	Kielce	198 475	0.9151	0.9658	0.7522	0.0145	-0.6692
4	Gdańsk	461 798	0.9044	0.9734	0.6099	-0.0629	-0.5533
5	Bydgoszcz	356 961	0.8994	0.9720	0.6575	-0.0029	-0.8621
6	Lublin	341 368	0.8828	0.9488	0.7734	-0.0211	-0.6164
7	Zielona Góra	138 763	0.8678	0.9798	0.2586	0.2292	-0.8890
8	Opole	119 465	0.8564	0.9581	0.4848	0.3178	-0.2681
9	Olsztyn	174 083	0.8296	0.9364	0.4719	-0.4506	-0.7276
10	Szczecin	407 043	0.8293	0.9639	0.5873	-0.3317	-0.9095
11	Rzeszów	185 706	0.7876	0.9670	0.3524	-0.2833	-0.7111
12	Białystok	295 624	0.7599	0.9909	0.6663	0.1153	-0.7744
13	Łódź	703 186	0.7571	0.9795	0.4579	-0.0018	-0.7347
14	Poznań	544 612	0.7379	0.9852	0.1994	-0.3010	-0.7511
15	Warsaw	1 739 586	0.6870	0.9853	0.5951	-0.5433	-0.7507
16	Wrocław	634 404	0.0331	0.9582	-0.6043	-0.4315	-0.7953

Source: own study based on GUS Local Data Bank of Central Statistical Office

Interesting values of the Pearson correlation coefficient were noted in the case of the GDP and Group III (taxes in respect of ownership right transfer – a civil-law action tax, an inheritance and gift tax). In 11 cities the coefficient was negative. However, only in Warsaw its value at 0.5433 highlights the relevant correlation, which means that the economic downturn was accompanied by a considerable rise in the revenue from taxes related to the ownership right transfer. When analysing the correlation between the GDP and the inheritance and gift tax, we can see that, excluding Opole, all the cities saw a significant negative relationship between the volume of revenue from that source and the economic situation – the Pearson correlation coefficient adopted values from the interval of < - 0.5533 ; - 0.9095>.

With the exception of Wrocław, all cities saw a total increase of the revenue from this tax from PLN 160,696 million in 2006 to PLN 185,594 million 2007, which translated into a rise by 15.49%. There were several reasons for that situation. First, a tax relief ‚trap‘ in the legal regulations concerning the inheritance and gift tax that was introduced on January 1, 2007. According to that provision, the next of kin who inherited a property were relieved of the tax. The unclear provisions resulted in the obligation to pay the tax because many people reported the inheritance acquisition, counting on the relief that was in fact undue. Other reasons of increased revenues from the inheritance and gift tax includes the growth in the number of deaths in that time - in 2007 15 cities saw the death rate rise by 2.5% (1028) in comparison to 2006. Another factor that brough an effect of increased revenue from the inheritance and gift tax was the upward trend in property prices, on which the tax is based.

Conclusion

The analysis results confirmed that in the decade of 2005-2015 there was a correlation between the voivodship capitals‘ revenues from the real estate market and the economic situation. In 2008 and 2009 the observed cities saw a decline in the revenues from their real estate markets. In 2008 the revenue fell to PLN 6 748 million, which meant the decrease by 4.82% in comparison to 2007. The study findings did not verify the hypothesis that the largest cities suffered more from the economic downturn through decreased revenue from the real estate market. Several big cities (e.g. Warsaw, Łódź, Wrocław) saw a lower correlation coefficient than the smaller ones, such as Kielce, Opole or Zielona Góra.

Reference

Bartle, J.R., Kriz, K.A, Morozov, B. (2011). *Local government revenue structure: trends and challenges*. Journal of Budgeting, Accounting & Financial Management. Vol. 23 (2).

Cymerman J. (2011), *Aktywna gospodarka nieruchomościami w gminie. Prawo. Instrumenty. Dochody gmin.* Wydawnictwo Uczelniane Politechniki Koszalińskiej. Koszalin.

Czyż, M. (2012). *Wpływ kryzysu gospodarczego na dochody własne gmin.* Zeszyty Naukowe Wyższej Szkoły Bankowej w Poznaniu Nr 41/2012. Wyższa Szkoła Bankowa w Poznaniu, pp. 23-36.

Davey, K. (edited) (2011). *LOCAL GOVERNMENT IN CRITICAL TIMES. Policies for Crisis, Recovery and a Sustainable Future*. Council of Europe Centre of Expertise for Local Government Reform. Strasbourg.

Finanse publiczne w Polsce w okresie kryzysu. (2012), Ministerstwo Finansów, Warszawa.

Gliniecka, J. (2001). *Zasady polskiego prawa dochodów samorządu terytorialnego.* Wydawnictwo Branta. Bydgoszcz.

Głuszak, M., Marona, B. 2015. *Podatek katastralny. Ekonomiczne uwarunkowania reformy opodatkowania nieruchomości.* Wydawnictwo Poltex. Warszawa.

Haila, A. (2010). *Real estate in global cities: Singapore and Hong Kong as property states.* URBAN STUDIES Volume 37, pp. 2241-2256.

Małkowska, A., Głuszak, M. (2016). *Pro-investment Local Policies in the Area of Real Estate Economics - Similarities and Differences in the Strategies Used by Communes*. Oeconomia Copernicana, 7(2), pp. 269-283.

Oates, W.E., Fischel, W.A. (2016). *ARE LOCAL PROPERTY TAXES REGRESSIVE, PROGRESSIVE, OR WHAT?* National Tax Journal, June 2016, 69 (2), pp. 415-434.

Obrót nieruchomościami w 2009 r. (2010). Główny Urząd Statystyczny. Warszawa.

Plummer Elizabeth, (2014). *The Effects of Property Tax Protests on the Assessment Uniformity of Residential Properties*. REAL ESTATE ECONOMICS. Volume: 42, pp. 900-937.

Polska wobec światowego kryzysu. (2009). Narodowy Bank Polski, Warszawa.

Taxation Trends in the European Union (2016). Publications Office of the European Union. Luxembourg.

Wheaton, W.C. (1999). *Real estate "cycles": Some fundamentals.* REAL ESTATE ECONOMICS. Volume: 27, p. 209-230.

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