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CHOSEN ELEMENTS OF QUANTITATIVE AND QUALITATIVE ANALYSIS OF DIVISION PROCESSES IN A COMMUNE LOCATED NEARBY A ONE HUNDRED THOUSAND CITY

The paper presents the research based on quantitative and qualitative analyses of property divisions and their results. The main aim is to set indicators for the assessment forecasting directions of development and dynamism mainly of single-family housing in a commune. In this case influence of a nearby one hundred thousand city on a tested object was essential. The research was conducted from 2007 to 2012 and applied to Swieszyno commune situated in the north-east of Poland.

Keywords: commune; real estate; single-family housing.

Лешек Давід, Кшиштоф Деска

ВИБРАНІ ЕЛЕМЕНТИ КІЛЬКІСНОГО ТА ЯКІСНОГО АНАЛІЗУ ПОДІЛЮВИХ ПРОЦЕСІВ НА ТЕРИТОРІЇ ГМІНИ, РОЗТАШОВАНОЇ ПОБЛИЗУ СТОТИСЯЧНОГО МІСТА

В статті представлено результати досліджень, одержаних на основі кількісного і якісного аналізу поділових процесів та їх наслідків. За джерело даних для аналізу було взято реєстри і технічну документацію, пов'язані з поділами. Метою дослідження є визначення показників прогнозування напрямів і динаміки, в основному, односімейного житла на території гміни. У цьому випадку важливим є вплив прилеглого сотиссячного міста на досліджуваній об'єкт. Дослідження охоплює період 2007–2012 рр. і стосується гміни Свешино, розташованої в північно-західній Польщі.

Ключові слова: гміна; нерухомість; будівництво односімейного житла.

Табл. 1. Рис. 15. Літ. 20.

Лешек Давид, Кшыштоф Деска

ИЗБРАННЫЕ ЭЛЕМЕНТЫ КОЛИЧЕСТВЕННОГО И КАЧЕСТВЕННОГО АНАЛИЗА ПРОЦЕССОВ ДЕЛЕНИЯ УЧАСТКОВ В РАЙОНАХ, РАСПОЛОЖЕННЫХ ВБЛИЗИ ГОРОДА СО СТОТЫСЯЧНЫМ НАСЕЛЕНИЕМ

В статье представлено исследование, основанное на количественном и качественном анализе процессов деления участков, а также результаты этих исследований. Источником данных для проведения анализа служили реестры и техническая документация, относящаяся к межеванию и делению участков. Целью исследования было определение параметров развития строительства (в основном односемейных коттеджей), прогнозирование направлений развития и его динамики. Главным аспектом анализа стало исследование влияния соседствующего сотысячного города на изучаемый объект. Исследования охватывают период 2007–2012 гг. и относятся к району Свешино, расположенного на северо-западе Польши.

Ключевые слова: район; недвижимость; строительство семейных коттеджей.

Introduction

In the authors' opinion, the concept of real estate division has not been defined unambiguously and precisely enough in any Polish legal act. Divisions of real estate

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are regulated mainly by articles 92–100 of Land Management Act and by the Cabinet decree concerning the procedures of property division. Outline Planning Law elaborates on regulation of forming spatial politics by administrative bodies and activities having in view the disposal of land for specific purposes and determines the rules of their management and development (Jaroszynski and others, 2009). Real estate divisions are also regulated by the Civil Code (abolition of common ownership of property with two buildings) and an act of Surveying and Cartographic Law (determines the subjects entitled to perform surveying activities and specifies their technical standards).

Divisions are one of the most important signs of active real estate management. They have in view, among others, improvement of ground management conditions and delivering new lands to the market. Real estate division consists of both technical and legal surveying activities (Wolanin, 2011). Surveying activities consist in subdivision of at least two parcels from one property. Survey partitioning consists in the subdivision of new parcels from existing land parcels without transferring ownership to other subjects. New internal borders and new parcel numeration are set (Bojar, 2008). The aim of survey partitioning is to create within one property new parcels, which may become separate properties over time (Bieniek, Rudnicki, 2011; Strzelczyk, 2011). Legal activities (in some simplification) consist in creating a new land register for newly subdivided parcels (Durzynska, 2011). In division procedure an important role is played by a commune, which may also have great impact on the development of building lands understood as increasing their supply.

The research purpose

Real estate divisions are often the first stage of an investment process connected with ownership change. Data on these divisions may be the first measure in forecasting house-building development in a specific area. These tools may be used in early forecasts determining places where new investments connected with building industry will appear. They can thereby indicate future directions of house-building development on specific area and also future migration directions. The main aim of this article is to answer the question if it is possible, basing on quantitative and qualitative data on division processes, to forecast house-building development and its directions within a basic territorial division unit in Poland – that is a commune and (in some extent) the migration from a big city to the country. This article is an attempt to determine the indicators characterising real estate divisions in a chosen commune, basing on which one can forecast directions of a single-family housing development, taking into consideration the needs of a neighbouring big city. In particular, the article aims to answer the following research questions:

- if it is possible, basing on quantitative and qualitative data for a certain period of time on a specified area (collected from official registers and technical documents), to forecast house-building development in a commune, connected mainly with the migration from a big city to the country,
- what factors, from those determined in the research, indicate processes appearing there the most precisely and the earliest.

Literature review

The above issues have not been raised yet and in the authors' opinion are an innovative approach to real estate division.

The research subject

Swieszyno commune is located in the north-eastern part of Zachodniopomorski province, Koszalin district. It directly neighbours Koszalin and communes Manowo, Biesiekierz, Bobolice and communes of Bialogard district. The location of Swieszyno commune is presented on Figure 1. It is a rural-touristic commune. 133 km² area is inhabited by about 6200 persons (CSO, 2013). The commune area includes partly Bialograd plain and Drawski lake district on the South. Farm lands make 55% of Swieszyno commune's area, forest lands – 34%. The commune is cut through by the provincial road no. 167 leading from Koszalin to Tychowo (Internet 1, 2013). Swieszyno houses basic institutions and offices.



Source: Interaktywna mapa Polski, 2013.

Figure 1. The map of Koszalin district

Swieszyno commune consists of 30 villages including 10 village administrator's offices that are at the same time cadastral units: Dunowo, Giezkowo, Konikowo, Kurozwecz, Mierzym, Niedalino, Nielklonnice, Strzekecino, Swieszyno, Zegrze Pomorskie (Figure 2).



Source: Urząd Gminy Swieszyno, 2013.

Figure 2. The map of Swieszyno commune

Neighbouring villages located in the commune have been for a dozen years a base for housing development which as the main purpose has the fulfillment of the needs of Koszalin city. Intensification of this process has been noted in Poland since 2000 (GPC, 2011). Nowadays, the township of Koszalin has a negative internal migration balance, while Koszalin district has a positive one and, according to the available forecasts (CSO, 2011), this tendency will remain.

Research methodology

The research was carried out basing on the data concerning divisions made in the rural commune of Swieszyno. Quantitative and qualitative data on divisions was collected from PODGiK (District Office of Surveying and Cartographic Documentation) in Koszalin. Most of the data from 2007–2011 was gathered within the dissertation (Barzycki, 2012). The sources of the collected data from this time period were mainly appraisal reports on divisions made at this time and also registers of the reported surveying works on divisions. The neighbouring subject determining the examined aspect of Swieszyno commune development is a one-hundred-thousand city of Koszalin (once a province city, now having the status of a township).

In the research, techniques of quantitative and qualitative analyses of documents and descriptive analyses were used. Quantitative and qualitative analyses consist in gathering and processing data from different formal materials. In this case, it concerned registers and appraisal reports on divisions gathered in PODGiK in Koszalin. From the tools of quantitative analysis research the authors used mainly the graphical presentation of the results, the table description and distribution measures (arithmetical average and percentage share).

An attempt was made to determine and interpret the indicators characterizing real estate divisions in a chosen commune and their dynamics. Based on these indicators, it may be possible to forecast directions of a single-family housing development taking into consideration the housing needs of a big neighbouring city.

The basic indicators were gathered during the analysis of the collected data:

- a) a number of divisions,
- b) a number of divided parcels and the average number of subdivided parcels within the confines of one surveying work,
- c) a number of subdivided parcels and the average number of subdivided parcels within the confines of one surveying work,
- d) percentage share of subdivided parcels of a different area size in all subdivided parcels,
- e) a number of subdivided parcels of the area of 1500 square metres and their (%) share in the total number of subdivided parcels,
- f) a number of cancelled surveying works and cancelled divisions.

For the given years and for chosen villages the indicators may be compared and analyzed in detail. The following questions were posed: is it possible to determine and describe the processes that take place on a specific area basing only on the mentioned indicators and which of them the most precisely and the earliest indicate the appearing trends, processes and possibly their changes.

Results

The paper presents only the selected indicators (which in the authors' perspective are the most reliable) and analyses made on their basis. The key potential indicators which were worked out, analysed and interpreted are: the number of divisions, the number of subdivided parcels and their changes on a selected area within a tested period.

Figure 3 shows that a number of divisions depends on the localization in a commune. The elementary analysis of a number of divisions enables to distinguish the 3 biggest villages in Swieszyno commune, as about 85% of all the divisions took place

just there. In villages such as Swieszyno, Nieklonice and Konikowo which have easy access to Koszalin, thanks to both small distance and good public transport, a number of subdivisions is much bigger than in those located several km from Koszalin.

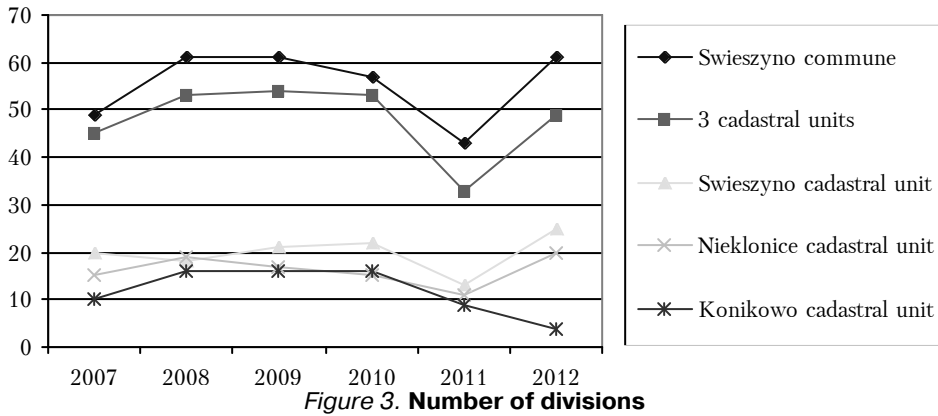


Figure 3. Number of divisions

In Swieszyno commune in 2008–2010 a number of division works maintained at a steady level. In 2011 a distinct decline (by 25%) was observed, but in 2012 the level returned to the previous state. This tendency concerned the whole commune and also the 3 distinguished cadastral units, although in their case this decline was bigger (38%). Only in Konikowo cadastral unit a number of division works did not increased in 2012, but decreased (by 56%). A number of performed subdivisions at a certain time and place (adding up) can be the next indicator which shows the same data. The change of a curve gradient in the following years (Figure 4) shows an increase or a decrease of this phenomenon.

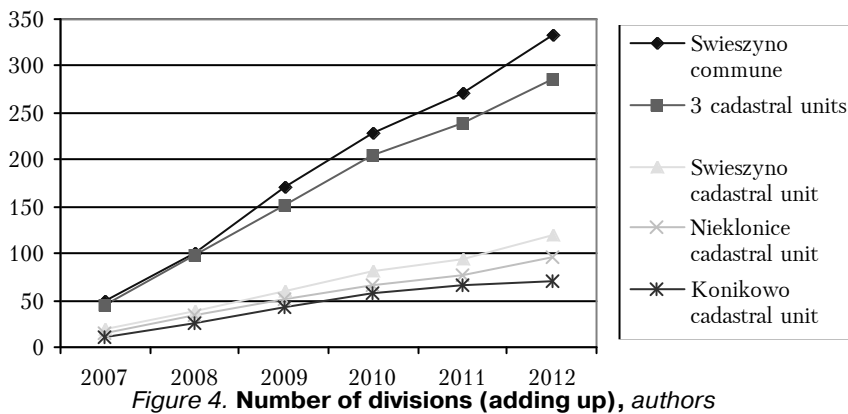


Figure 4. Number of divisions (adding up), authors

A number of divided plots is a more precise indicator. A number of divided plots in Swieszyno commune increased every year (Figure 5) except for 2011, when a slight decrease occurred. In the following year there was a fast increase. The following regularity can be seen until 2011: a significant majority (2007 – 90%, 2008 – 87%, 2009 – 88%, 2010 – 94%, 2011 – 87%) of the divided parcels was located in one of the 3 distinguished cadastral units.

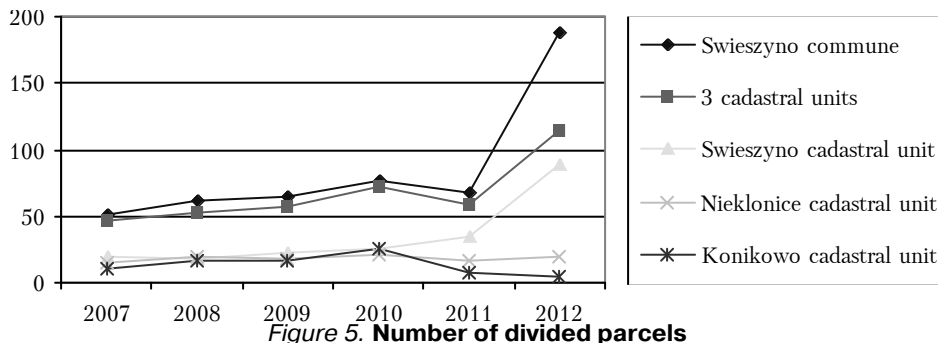


Figure 5. Number of divided parcels

This regularity did not show in 2012, when divided parcels located in these areas made up only 61% of all the divided parcels in a commune. In 2011 only in one of the 3 cadastral units – Swieszyno – a big increase of the divided parcels number was observed (by 254% comparing to the previous year, it is an amount close to a increase of a the whole commune – 276%). When it comes to Nieklonice cadastral unit, a number of divided parcels was almost the same every year.

The average number of divided and the number of subdivided parcels are another indicators that were analysed.

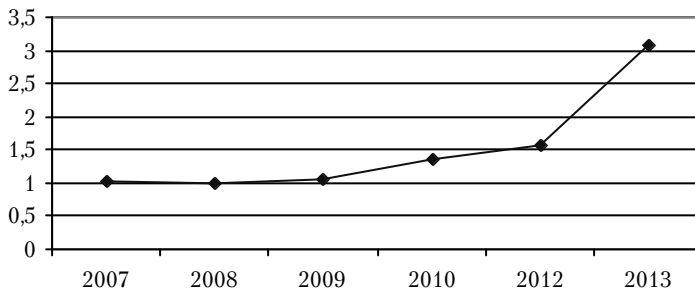


Figure 6. The average number of divided parcels, authors

In the analysed period, the average number of the divided parcels within the confines of one surveying work significantly increased, but not linearly. In 2007–2009 the average number of the divided parcels amounted to 1–1,1, in 2010 and 2011 – 1,4 and 1,6 accordingly, whereas in 2012 it almost doubled in comparison to the previous year (3,1). A dynamic increase in the number of divided parcels within the confines of one surveying work, observed since 2009, may be a sign of an increase of potential investors' interest in buying parcels and starting investments.

A number of subdivided parcels is another simple but more precise indicator which was worked out and analysed on the basis of the collected data. Changes of this number in 2007–2012 are presented in Figure 7.

In 2007–2010 a number of the subdivided parcels increased, only in 2011 a slight decrease was noted, but it concerned mainly Konikowo cadastral unit and other cadastral units of Swieszyno commune. In 2011 also differences in the number of subdivided parcels between these 3 units started to appear. They crystallised in 2012, when a number of subdivided parcels significantly increased, but in these 3 units – decreased.

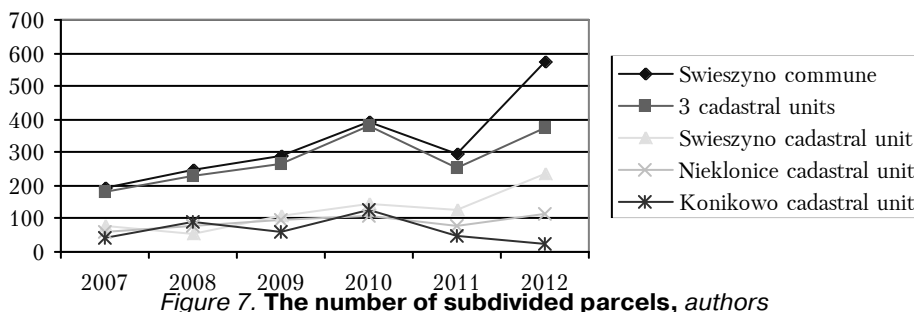


Figure 7. The number of subdivided parcels, authors

In spite of a general growth tendency, a number of subdivided parcels decreased in Konikowo, but significantly increased in Swieszyno (a village located in the same direction, but a few km further from Koszalin). It may be caused by a deficit of attractive lands in Konikowo. In Nieklonice however attractive land for divisions was still available – a number of divisions did not decrease.

The average yearly number of subdivided parcels in Swieszyno commune within the confines of one reported surveying work significantly increased in the analysed time period. In 2007 it amounted to 3,9 parcels, 2008 – 4,1, 2009 – 4,7, 2010 – 6,9, 2011 – 6,9, 2012 – 9,4 and in 2007–2012 on average 6 parcels within the confines of one reported surveying work. It must be emphasized that although the value was constant, in the whole analysed period it practically doubled.

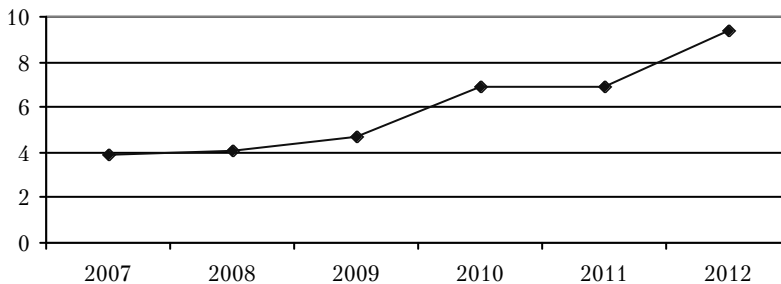


Figure 8. The average number of subdivided parcels, authors

The research indicates that the following factors may be good for forecasting single-family housing in this area and have a decisive impact on the housing industry development: a number of subdivided plots in size of 1500 m² or smaller and a percentage share of subdivided plots of such a maximum size in all the subdivided parcels. The area structure of subdivided parcels in Swieszyno Commune in the analysed period is presented in Table 1.

Table 1. The structure of divisions based on the sizes of subdivided parcels, authors

Year	Percentage share of a number of subdivided parcels in the size of:		
	1500 m ² or smaller, %	1500-3000 m ² , %	above 3000 m ² , %
2007	60	7	33
2008	48	7	45
2009	64	4	32
2010	67	6	27
2011	66	12	22
2012	65	7	28

Among the parcels subdivided in 2007–2012 (with the exception of 2008) relatively small parcels in size of 1500 m² or smaller significantly dominated. Their percentage share in the scale of the whole commune amounts to at least 60% every year (except 2008 – 48%). A number of parcels of 3000 m² or smaller makes up 68–78% (except 2008 – 55%).

Figure 9 presents the changing number of parcels in size of 1500 m² or smaller subdivided in 2007–2012. The tendency is similar to the one concerning the number of all the parcels (Figure 8). Most of 1500 m² parcels are subdivided in Swieszyno, Nieklonice and Konikowo.

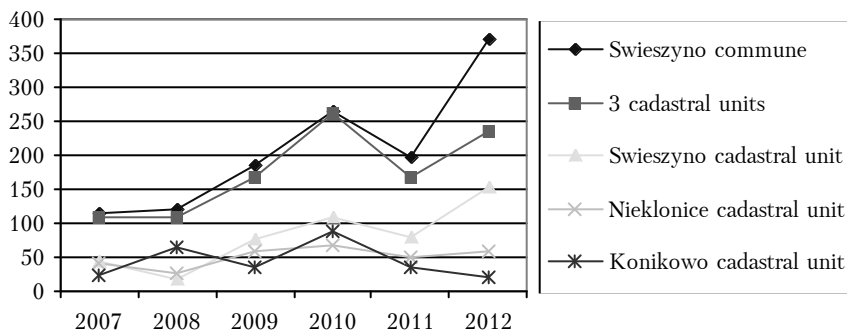


Figure 9. The number of subdivided parcels in the size of 1500 m² or smaller, authors

The percentage share of the parcels in size to 1500 m² subdivided in 2007–2012 in the commune in 3 distinguished cadastral units in each of them separately is presented in Figure 10. Their percentage share in the whole commune, in particular years, practically corresponds to the share specified for these 3 units individually. In 2008 this share significantly decreased (only in Konikowo cadastral unit parcels in the analysed size made up all 70% of all the subdivided parcels). In 2010–2012 in Konikowo unit this share increased and amounted to 88%, whereas in Nieklonice unit it decreased to 52%. This analysis enables to state that these 3 chosen cadastral units are representative also when it comes to the structure and the share of divisions to small parcels (up to 1500 m²) in the whole area of Swieszyno commune.

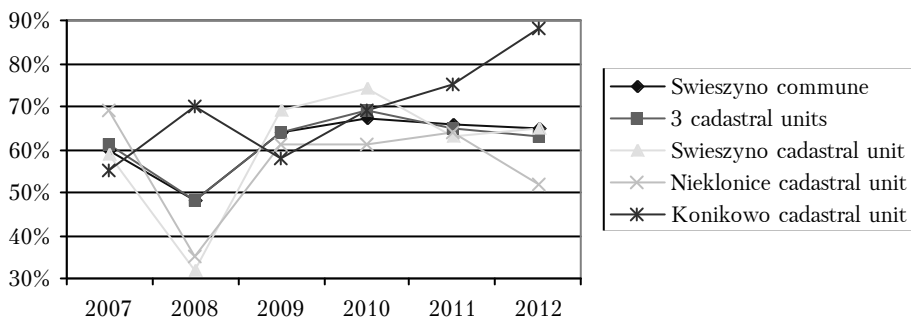


Figure 10. Percentage share of the parcels in the size up to 1500 m² in all the subdivided parcels, authors

The total number of the subdivided parcels in the size up to 1500 m² (adding up) in this period, is presented in Figure 11.

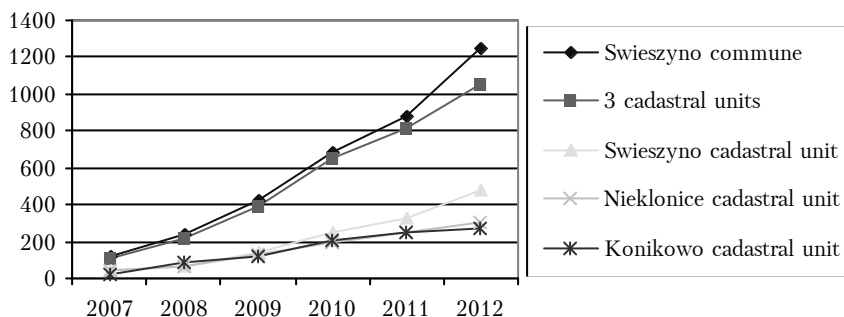


Figure 11. The total number of the subdivided parcels in the size up to 1500 m² (adding up), authors

Starting with 2011, there is a decrease of these 3 units' share in the total number of new subdivided parcels in the analysed size (Figure 12). In 2007–2010 this share amounted to 91–100%. In 2011 it amounted to 85%, in 2012 – only to 63%.

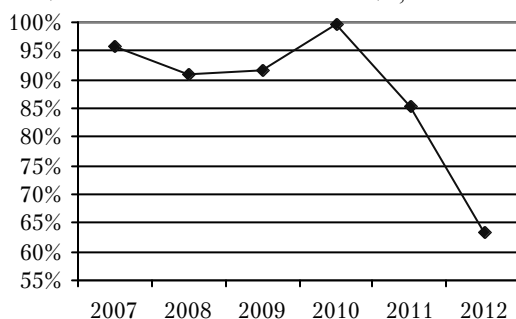


Figure 12. Percentage share of the parcels in the size up to 1500 m² subdivided in 3 chosen cadastral units in all the subdivided parcels in the commune, authors

During these 6 years the percentage share of parcels in the analysed size subdivided in 3 chosen units decreased (Figure 13). In 2007 it amounted to 96%, in 2008 and 2009 – 93%, 2010 – 95% and in 2012 only to 84%.

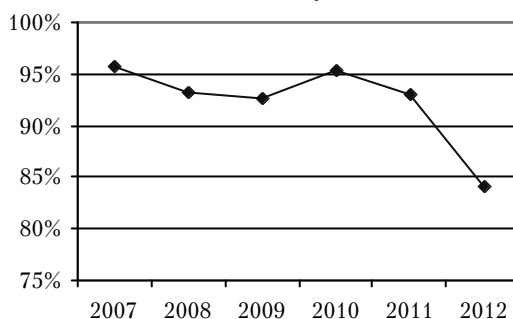


Figure 13. The percentage share of parcels in the size up to 1500 m² subdivided in 3 chosen cadastral units in all the subdivided parcels in the commune (adding up), authors

It is undeniably a sign of directions diversification of Koszalin inhabitants' housing migration. They chose not only the 3 chosen cadastral units, but also land with less attractive communication with Koszalin.

A helpful, but indirect factor, indicating mainly a decrease of investment activities, their number and a demand for different kinds of work, may be a number of surveying works reported in PODGiK by surveying units and then cancelled. The main reason of cancelling surveying works by an executor is a resignation of investor, owner, made both before starting technical activities by a surveyor and in their duration. Information concerning 2007 was not found, but during 2008–2012 a big increase of cancelled surveying works in Swieszyno commune was noted in 2010 (it was almost 4 times bigger than the year before). In the two following years this number decreased and to 2012 decreased by half (Figure 14).

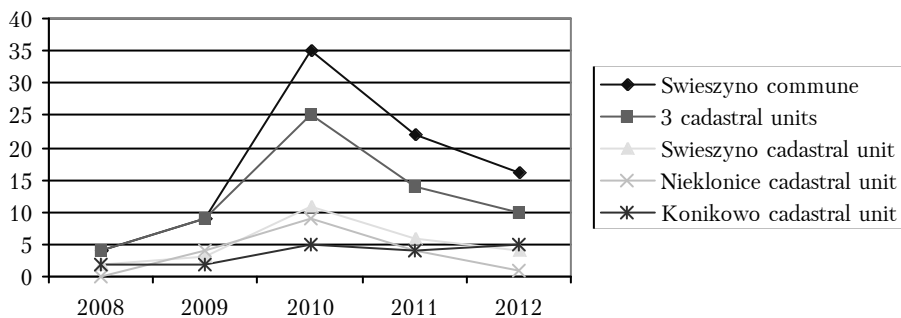


Figure 14. The number of the cancelled surveying works, authors

In the case of works belonging to a particular kind of works connected with land register that is real estate divisions, similar regularity may be noticed (Figure 15). A number of divisions reported and then cancelled in Swieszyno commune increased from 4 in 2009 to 6 in 2010. In the following years it decreased – in 2011 to 5, and in 2012 to 2.

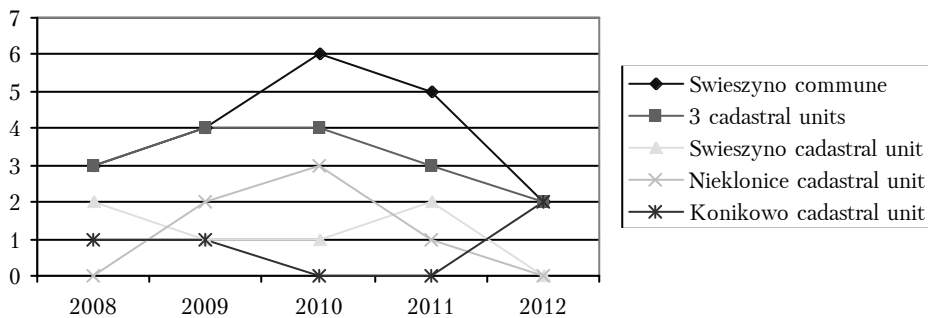


Figure 15. The number of cancelled divisions, authors

The world crisis, which impacted practically every sector of the economy, showed in Poland quite late, in 2009 and 2010. This period is characterized by a significant increase of surveying works (including divisions) started but soon cancelled. Investors and owners of divided parcels reacted the fastest to the situation at the market: stagnation, drop of prices, too big supply. It is confirmed also by the analysis basing on the previous indicators: a number of divisions, a number of divided and subdivided parcels. In this case however, on account of time needed to proceed with a division process (about 6 months and for parcels in size up to 1500 m² – even 1 year and more), this effect in the form of a decrease was not noted until 2010–2011. It is prob-

ably connected with more and more restrictive conditions that must be fulfilled to get a mortgage credit, introduced in Poland in 2008. It had an important impact on a demand for building parcels and, as a result, on the decrease of demand for surveying works connected with divisions.

Quantitative data concerning divisions in Swieszyno commune in comparison to other communes in Koszalin district in 2010–2011 was presented in (Barzycki, 2012). During this time period 751 divisions were performed in the whole Koszalin district. Swieszyno commune was the fifth with 100 divisions with the percentage share amounting to 13%. 81% of all the divisions was performed in the communes neighbouring Koszalin, which indicates that the biggest housing need is within 7–8 km radius from Koszalin and in seaside villages. The analysis of divisions in Swieszyno commune enables to state that in 2010 a culmination of divisions appeared and in 2011 – a drop. The same tendency is noticeable in the whole Koszalin district (412 divisions in 2010, 339 in 2011). A number of newly created parcels in the communes of Koszalin district in 2010 amounted to 1849 and in 2011 – 1507. 21% (691 parcels) was subdivided in Swieszyno commune (Barzycki, 2012). In this period of time, it gives Swieszyno commune the second place in the district.

Conclusions and suggestions

The analysis of the collected data and presented in this work indicators enable to state that general tendencies concerning an increase or a decrease in a number of division, a number of divided and subdivided parcels maintain a steady level for the period of at least 3 years. In a way it is the consequence of duration of a division process (even 1 year) and time that passes between a division and a purchase. In this case, the concept of the system inertia may be used. A decrease and an increase in a number of subdivided parcels informs faster about the current situation in a particular unit of the market (in this case, parcels for single-family housing) than a decrease or an increase of real estate prices that can be a result of any disturbance at the real estate market or of the factors connected with imperfection of this market. It also shows the current tendencies and potential investors' or purchasers' behaviour.

In the authors' opinion, it is a number of subdivided parcels in the size up to 1500 m² and its derivatives that is the most precise and useful indicator in this issue. It directly indicates tendencies in single-family housing.

The indicators analysed and presented in this article can be treated as basic for such a transitional area (a municipal-rural zone). What may be important is to connect quantitative and qualitative data (indicators determined basing on them) with changing in time local and legal conditions, a local zoning plan or data and conditions in other communes neighbouring the agglomeration.

Chosen villages of communes neighbouring a one hundred thousand city of Koszalin became a terrain of single-family housing and recreation building mainly for Koszalin inhabitants (Internet 2, 2013). These chosen villages are as following: Konikowo (2 km from Koszalin), Nieklonice (4 km from Koszalin) and Swieszyno (8 km South from Koszalin). In the abovementioned villages a majority of parcels in the size up to 1500 m² was created. It was caused by the fact that subdivided parcels were destined for single-family housing and as a result they fulfilled the authors' assumptions in the best manner. Parcels in bigger sizes are less attractive for standard investors wanting to build a house because of a high price of a parcel. As a result, a

sale of such a parcel is more difficult for owners. Creating such big parcels (over 1500 m²) can be caused by the unawareness of the market and potential investors' needs. The percentage share of parcels in the size up to 1500 m² amounted to over 60% of all the divisions. Attractiveness of Swieszyno, Nieklonice and Konikowo terrains, where the most of parcels in the size up to 1500 m² was subdivided, is probably caused by their neighbourhood and easy access to Koszalin and many parcels destined to investments in these 3 villages of Swieszyno commune. A favourable politics of Swieszyno commune in this period was also important.

In the authors' opinion, a development strategy for Swieszyno commune for years 2000–2015 (The Main Office of Swieszyno, 2006) did not predict such a big housing development in the commune. The results of the research and the determined indicators may be used as a means of fast reaction and may enable a proper modification of elements and assumptions of such strategies and zoning plans, particularly those concerning single-family housing.

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