

THE INFLUENCE OF REAL ESTATE ON ITS SURROUNDINGS BASED ON THE EXAMPLE OF THE MANUFAKTURA COMPLEX IN LODZ

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Abstract

Real estate compared to other goods is distinguished by a high specificity. One of the signs of these specifics is the interdependence or correlation between property and its surroundings. On the one hand, the factor of closest neighborhood can largely shape the value of the property, while on the other hand, the function, use and development of real estate can strongly affect nearby property and the image of their entire neighborhood. The dynamics of the interdependence between the property and its environment reveal themselves most clearly in moments of transformation of real estate and its use.

This study has a research character. The focus of this article is one of the aspects of interdependence - the impact of the property, its use and development on its closest surroundings. The aim of this article is to show the manifestations of different types of external effects generated by the property.

Case study research was conducted on the housing market in Lodz for the purpose of the article. The study included the analysis of 3,444 transactions made during the period from July 2005 to December 2009 in the area of 27 precincts representing the proximal and distal environment of the Manufaktura complex. The study analyzed the impact of the transformation from a post-industrial area into a multifunctional one, with the dominant function of trade, on the prices and marketability of apartments located in the vicinity of the complex.

The performed analyses have not clearly confirmed the impact of the carried out transformations on the price of housing in areas surrounding the Manufaktura complex. However, the analyses did reveal that the proximity of the multifunction complex may be one of the factors influencing the activity of the housing market in the area.

Key words: *interdependence, surroundings, external effects, property use.*

JEL Classification: R30, D03, D70.

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1. Introduction

The specificity of the real estate market is manifested in the mutual relationship between property and its surroundings. The character of the nearest neighborhood may be one of the factors influencing the value of the property and, at the same time, the use and development of an individual property can strongly affect nearby real estate and determine the image of the entire neighborhood. The dynamics of the correlation between a property and its environment reveals itself most clearly when the property and its use undergo transformation.

Some theories concerning urban renewal aspire to exploit the positive effects of this interdependence. According to these theories, converting one or more properties can initiate the process of transformation, changing the image and leading to the recovery of selected areas of the city.

2. Literature Review

Relations between the property and its surroundings have been the subject of scientific research for a long time. Initially, researchers were interested in the external effects associated with the occurrence of undesirable objects and property uses, such as landfills (HITE et al. 2001), airports (ESPEY, LOPEZ 2000), industrial and post-industrial areas (PARKER 2007; KAUFMAN, CLOUTIER 2006; DE VOR, DE GROOT 2011). Property interdependence may also manifest itself by the emergence of positive external effects. Such effects are often observed in the vicinity of parks and other green spaces (CROMPTON 2001; VOICU, BEEN 2008), open areas (BOLITZER, NETUSIL 2000; KAUFMAN, CLOUTIER 2006; SANDERA, POLASKY 2009), historical buildings and sites (ASABERE, HUFFMAN 2001; ZAHIROVIC-HERBERT, CHATTERJEE 2012) and shopping centers (SIRPAL 1994, LOWE 2005; EMERY 2006). Positive external effects can be also generated as a result of transformations within the real estate, such as restoration or rehabilitation (KIEL, ZABEL 2001; WINTER, ELLIOTT 2008; DE SOUSA, WU, WESTPHAL 2009). Some research also confirmed mixed effects - both positive and negative, of office buildings located in the vicinity (THIBODEAU 1990), as well as the cumulative effects of opposite factors - degradation and new investments (SIMONS, QUERCIA, MARIC 1998).

The publications mentioned above focus mostly on the analysis of factors affecting the price and value of property, where the vicinity of the property generating external effects is considered as one of the characteristics of the neighborhood. However, there seems to be a lack of publications that investigate the nature and character of the interdependence between real estate and systematize knowledge on the subject.

3. Characteristics of interdependence on the property market

3.1. Sources of interdependence

Sources of correlations on the real estate market can be found in:

- 1) brand influence,
- 2) spatial concentration of functions,
- 3) influence of property use,
- 4) real estate use designated by zoning and its modifications.

Interdependence has been well recognized and commonly used in the context of commercial and office real estate. External effects in the case of commercial property are observed both between such objects, as well as within shopping malls. They emerge from the behavior of customers who are attracted to a shopping centre or mall by the power of a large tenant's brand (anchor) and, once there, may also visit other shops nearby. The image of an anchor tenant thus contributes to the success of smaller shops.

Interdependence in the context of the spatial concentration of functions refers to the theory of homogeneous retail agglomeration as the concentration of commercial objects with a similar assortment of merchandise. Shopkeepers setting up businesses in such homogeneous shopping areas benefit from the reduction of risks and costs of exploration by the fact that they offer their customers better access to information and the ability to compare products and prices in one place.

The managers of modern shopping centers make use of the theory of interdependence; it explains the basis for the selection of tenants, including those offering the same merchandise, for the lower and higher segment of the market. The subject of optimization decisions based on the idea of interdependence and related to the planning and managing of shopping centers, are both: the tenant mix and the selection of their location within the mall (EPPLI, BENJAMIN 1994). Managers of office properties can be driven by similar reasons when looking for anchor tenants who create a desired image of their property and attract smaller tenants.

External effects resulting from the impact of different uses of property can be divided into negative and positive. Negative external effects arise in the case of undesirable uses and development. They may be the result of real negative impacts on human health and on the environment from pollution or noise, but may also be associated with the negative image of the neighborhood. The vicinity of landfills, airports or industrial and post-industrial areas is considered a disamenity to neighboring real estate.

Positive external effects can be identified in the vicinity of parks and green spaces, open spaces and water bodies, as well as historic buildings and sites. The vicinity of open spaces, parks and green spaces results in a higher quality of the environment, better conditions for physical activity, leisure and recreation, as well as the better health of residents, all of which are associated with a higher quality of life and create a positive image of the area. Location within historic areas and the presence of nearby historic buildings also forms a positive image of neighboring properties. This can also be reflected in the increased interest of tourists, which can be particularly beneficial to the owners and tenants of commercial properties.

Literature also extensively analyzes the impact of neighborhood aesthetics, especially concerning the elements of closest surroundings which determine the quality of the view. As far as the impact of the view on the value of property is concerned, the exposure to parks, green areas, open spaces, rivers and lakes are analyzed most commonly (LUTTIK 2000; JIM, CHEN 2010).

Some property uses can generate both positive and negative external effects – these types of effects have been noticed mostly for commercial properties (THIBODEAU 1990). Multi-storey office buildings are places where many people find employment and living near them may be desirable; on the other hand, the view of such buildings and increased traffic in their vicinity may be seen as disadvantage. Similarly, the proximity of shopping centers is associated with convenience, lower transport costs, shorter travel time, the availability of entertainment and numerous job opportunities (SIRPAL 1994). However, the severity of traffic and other issues associated with it, such as noise, poor air quality, etc., in their most immediate neighborhood can be treated as an inconvenience.

The nature and the strength of interactions between real estate depend largely on the uses of the property generating the external effects and the property exposed to them. Industrial property can affect neighboring industrial areas in a positive way – creating effects resulting from the concentration of functions in space; its impact on residential areas, on the other hand, is most often expected to be negative.

3.2. Symptoms of interdependence

The impact of the one property on surrounding property can manifest itself in several ways. The result of a positive (or negative) image and the actual impact of the nearest neighborhood may increase (or decrease) the attractiveness of a given location, which can be expressed by:

- 1) the scale of turnover,
- 2) the activity of the market,
- 3) the level of tenant rates (occupancy rates),
- 4) rental rates,
- 5) property prices.

The strength of a brand and the attractiveness of an anchor tenant attract many customers who also often visit nearby shops and service points. The concentration of shops and the ability to meet various needs in one place can also be a magnet for customers. In this way, the concentration of shops, often around a specific entity, contributes to the increase in the turnover of shops and service points in the area.

Properties, their use, land development, maintenance, and sometimes the owners' or tenants' identities and scopes of business affect the image of the neighborhood. A positive image of an area may result in a higher attractiveness of a given location to potential buyers and tenants. This will cause an increase of demand on the local real estate market and a higher market activity, which may result in higher occupancy rates, as well as an increase in rents and property prices in the area. A negative image of the area is associated with the opposite consequences, such as a lack of tenants' and buyers' interest in the particular location, a low activity of the real estate market, and decreasing occupancy rates, as well as rents and property prices.

The vast majority of studies concerning the effects of individual objects and areas on the neighborhood focus on price analysis. A positive effect manifests itself in a higher level of real estate prices in the neighborhood, with the opposite true of a negative effect. This relationship results from the preferences of property buyers who perceive the neighborhood and surroundings of a property as a set of desirable or undesirable characteristics. These features are evaluated by buyers in the context of the willingness to pay for their availability (desirable) or unavailability (undesirable). Sometimes environmental factors affect the price of a property more strongly than the structural characteristics of

real estate. The buyers are willing to pay more for a property possessing certain attributes, such as a park or river nearby, as well as for a property located at a greater distance from undesirable objects, e.g. landfills, airports and industrial areas.

3.3. Consequences of interdependence

The ability to gain benefits from the concentration of functions and vicinity of a strong subject which is attractive to customers may determine the direction in which an area develops. Such a mechanism has been documented especially in regards to commercial properties. An interesting example of the phenomenon of interdependence are IKEA shopping centers (KUCHARSKA-STASIAK 2006), around which a concentration of multifunctional objects formed, at first spontaneously, and now under a carefully carried out strategy; these include not only trade and service objects, but also dining and leisure facilities.

Referring to the above mentioned symptoms of interdependence we can also point out the corresponding consequences. The scale of the turnover can influence the profits of tenants and income of the property owner. The consequence of changes in market activity is an increase or decrease of real estate liquidity in a certain area. The result of higher occupancy rates and rents is the increasing income of the respective owners of the properties.

The level of prices on the real estate market and income from a given property is the basis for determining the value of the property. Changes in value may also be one of the consequences of the described interactions between real estate. The positive impact of parks and green spaces, open areas, the vicinity of historic objects and transformations of real estate, such as restoration and rehabilitation (KIEL, ZABEL 2001; WINTER, ELLIOTT 2008; DE SOUSA, WU, WESTPHAL 2009) on the surrounding areas is interpreted in the context of rising property values, although in most cases, the research concern the dynamics of the real estate prices. The negative impact of undesired objects such as landfills, airports or industrial and post-industrial areas in the neighborhood is connected with a decline in property values.

3.4. Range of impacts

The impact of desirable and undesirable objects and property uses on the environment changes along with the distance away from the source of external effects. Usually, this effect is strongest in the direct proximity of the property generating external effects, and decreases with an increase in distance. This pattern has been confirmed in the case of undesirable land uses, such as landfills or industrial and post-industrial sites (DE VOR, DE GROOT 2011). A strong impact of these kinds of objects on housing prices was revealed at a distance of up to 1,100 m.

A relationship characterized by a decreasing intensity with increasing distance from the element inducing the external effects is called marginal. Both positive and negative effects of the real estate on the environment can take the form of marginal external effects (PARKER 2007).

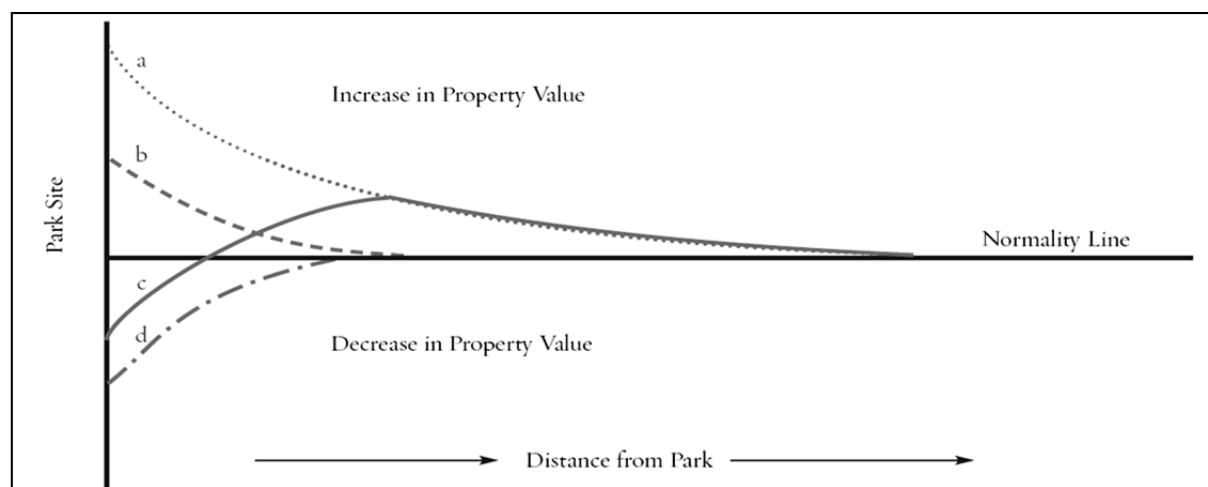


Fig. 1. Alternate scenarios of impacts that parks and open spaces may exercise on property values.
Source: BRUN 2007, p. 8.

In the case of positive external effects, this relationship is often similar - the highest increase in

prices and value is characteristic of property in the direct vicinity of parks and green spaces, and open areas; an increase in the distance away from them, *ceteris paribus*, results in a decrease in the value and price of real estate.

The influence of open spaces, including parks, may be differentiated both in terms of the strength and direction of the relationship. There have also been cases where a lack of impact was reported, as well as the occurrence of a negative relationship between housing prices and the proximity to certain type of spaces, including parks. John Crompton (BRUN 2007) presents four possible scenarios reflecting the range of impacts that parks and open spaces may exercise on property values (Figure 1). As mentioned above, both positive and negative impacts on property values are possible:

- a) A large, high-quality, natural resource based park that is well maintained and to which residents are passionately attached – its positive impact on property value may extend out to 600 m.
- b) A smaller high-quality, natural resource based park, that is well maintained and regarded positively by the community can have a measurable positive impact on property values at a distance of up to 150 m.
- c) A large, intensively used park with athletic facilities, noise, congestion at entrances, and extensive traffic. These factors lead to negative values on properties in close proximity to the park, but those living away from the immediate nuisance but within easy access, typically two or three blocks away, experience benefits.
- d) A dirty, run down park with decrepit facilities and broken equipment in which undesirable groups congregate, which is regarded as dangerous, can lower the values of nearby properties.

The range of effects described might be different, depending, among others, on the size of the park, but a significant part of the premium (up to 75%) occurs at a distance of 150-180 meters (CROMPTON 2005; JIM, CHEN 2007).

In the case of office buildings, both positive and negative external effects were reported. The direct vicinity of tall office buildings caused declines in property values, but at a distance of 1,000 to 2,500 m, an increase in property values was noted; upon exceeding a distance of 2,500 m, no significant influence on the value of properties was observed (THIBODEAU 1990).

4. Case Study - Rehabilitation of industrial areas on the example of the Manufaktura complex in Lodz

The transformation of urban space taking place in Lodz over the last 20 years has been very closely associated with the liquidation of certain industries, reducing the number of industrial sites, and the process of their relocation from the downtown area to the suburbs. This process, as in other cities around the world, resulted in the emergence of post-industrial wastelands.

The area that had been occupied by Izrael Poznanski's factory complex, deserted since the 1990s, serves as a good example of such an extensive post-industrial wasteland. The 27 hectare brownfield originally belonged to one of the largest factory owners in the city. The rehabilitation and modernization of the area previously occupied by the factory resulted in the establishment of a multifunctional center called Manufaktura. Currently, the area is occupied by commercial, office and leisure facilities – a fitness studio, bowling alley, climbing wall, ice skating rink (in the winter) and sand court for playing beach volleyball (in the summer), hotel with a swimming pool and conference center, cinema, theater, and museums (art museum, museum of the former factory, interactive science museum). The transformation process of this area was completed in May 2006.

The aim of this study is to verify the hypothesis concerning the impact of these transformations on the prices and activity on the housing market near the Manufaktura complex. The housing market is the most often analyzed in the case of such research, as the most active and highly responsive to changes in its surroundings.

The vicinity of industrial brownfields can negatively affect neighboring real estate. The redevelopment of brownfields, including rehabilitation and renovation of historical buildings, is likely to result in positive changes, the effects of which will appear, among others, on the real estate market. Shopping centers can generate two types of external effects. Firstly, their proximity can be seen as a positive attribute of residential property because of the shopping possibilities they offer, lower transport costs, shorter travel time, and the availability of entertainment as well as the creation of job opportunities. On the other hand, areas directly adjacent to shopping centers experience the negative

effects associated with increased traffic and noise. As a result, real estate in the direct proximity of such objects is seen as less attractive from the perspective of residential property buyers.

External effects associated with the distance to the shopping mall may therefore be of a similar nature to the impact of a large, intensively used and crowded park. One can expect lower values of properties located in their immediate neighborhood, and higher values of those located at some distance from shopping center, beyond the reach of the obvious disadvantages, i.e. at some distance from inconveniences, but not too far, ensuring easy access to the multifunctional center. Apart from the impact on the value of the surrounding property, transforming brownfields into multi-purpose areas may also affect the market activity and the level of real estate prices. As a consequence of the described transformation, it may be possible to observe a change in the image of the entire area, and the set of features characterizing the real estate may be subjected to modification. The close proximity to brownfields (usually negatively correlated with the price of residential properties) is replaced by the vicinity of a multifunctional center (with the possibility of both positive and negative effects, as described above).

To examine these assumptions, data concerning 3,444 transactions on the housing market in Lodz was analyzed. The analyzed transactions took place during the period between July 2005 and December 2009 in 27 precincts, representing closer and farther surroundings of the Manufaktura complex. The period of analysis thus includes the year before the completion of the Manufaktura transformation as well as 3.5 years after its grand opening.

The immediate surroundings of the complex (radius of approximately 1,500 m) are represented by 11 precincts - Zone I (B-28, B-29, B-45, B-46, B-47, B-48, B-49, P-7, P-8, P-9 i S-1), and further (radius of up to approximately 3,000 m) by 16 precincts - Zone II (B-5, B-23, B-24, B-26, B-27, B-30, B-31, B-44, B-50, B-54, P-6, P-17, P-19, P-20, S-2, S-6). Within these zones, the prices and the number of transactions were monitored. Data regarding these transactions was obtained from the Lodz Centre of Geodesy.

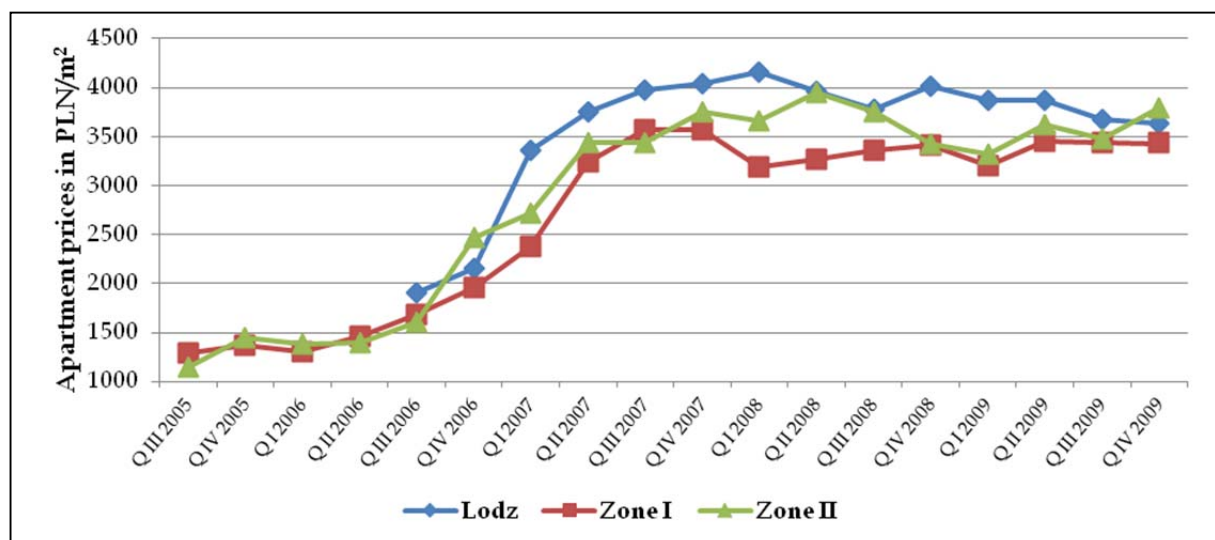


Fig. 2. Average prices in Lodz and in the vicinity of the Manufaktura complex (in PLN per m²). Source: own elaboration.

Average prices in the city of Lodz were obtained from the database of the Polish National Bank. These publications cover the time period from the third quarter of 2006. Average prices in Lodz (Figure 2) during this time reached the lowest level in the third quarter of 2006 (1,905 PLN per m²), and the highest in the first quarter of 2008 (4,160 PLN per m²). These prices showed an upward trend until the first quarter of 2008. The most noticeable increases were observed in the fourth quarter of 2006 and the first quarter of 2007 (up to 3,360 PLN per m²). In the second and third quarters of 2008, average prices on this market declined to a level of 3,780 PLN per m², though largely made up for the loss in the fourth quarter of the same year. The year 2009 was marked by the systematic declines of prices on this market to a level of 3,636 PLN per m². One of the factors that can be contributed to the significant rise in housing prices quoted at the end of 2006 and throughout 2007 is the opening of Manufaktura. However, this theory can neither be clearly confirmed nor denied without a more in-depth study of the subject.

The dynamics of the average housing prices in both the nearest (Zone I) and further (Zone II) neighborhoods of the Manufaktura complex were similar to those of average prices for the entire city. However, there were some deviations. In both zones a decline in housing prices was recorded in the first quarter of 2008, preceding the decline in prices for the city as a whole. Then housing prices in Zone I showed a moderate upward trend until the end of 2009, with a short-term decline in the first quarter of 2009. After growth observed in the second quarter of 2008, prices in Zone II decreased for the next three quarters; this trend was reversed in 2009, when prices returned to the level in the third quarter of 2008. The lowest average prices in both zones were recorded at the beginning of the analysis, i.e. 1,296.00 PLN per m² in Zone I and 1,148.65 00 PLN per m² in Zone II. The highest level of average apartment prices in Zone I was reached in the third quarter of 2007 (3,572.15 PLN per m²), while in Zone II – almost over a year later, i.e. in the second quarter of 2008 (3,950.90 PLN per m²).

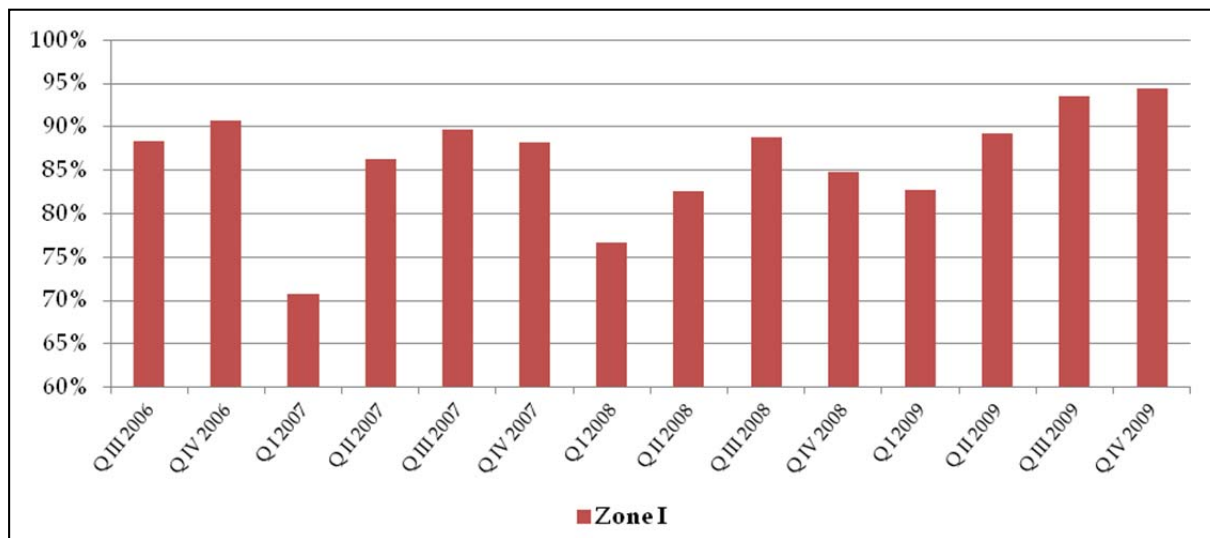


Fig. 3. The percentage of average prices of apartments in Zone I in relation to the average prices of apartments in Lodz. *Source:* own elaboration.

Changes in the level of the average prices of apartments in Zone I in relation to the average for the city show significant variability. Following 2-3 periods of growth, there were 1-2 periods of decline. The lowest levels were recorded in the first quarter of each year, with the highest in the third or fourth quarters.



Fig. 4. The percentage of average prices of apartments in Zone II in relation to the average prices of apartments in Lodz. *Source:* own elaboration.

Throughout the entire analyzed period, average prices in Zone I were below the average for the entire city (Figure 3). The highest level in relation to the average was recorded at the end of the period

under consideration (94.4 %), with the lowest noted in the first quarter of 2007 (70.7 %).

Average prices in Zone II for most of the analyzed period were below the average for the entire city (Figure 4). Only during two periods did these prices exceed the city average - the fourth quarters of 2006 and 2009. In two other periods, i.e. in the second and third quarter of 2008, the prices were close to the level of the average for the city. Apart from these four periods, the average level of prices in Zone II did not exceed 95 % of the average for Lodz. The highest level in relation to the average was recorded at the end of 2006 (114.2 %), whereas the lowest was in the first quarter of 2007 (80.7 %). Changes in the level of average apartment prices in Zone II in relation to the average for the city showed considerable variation; until the third quarter of 2008, increases and decreases occurred alternately in the percentage shares of the average prices for the city, and were then followed by increases in this indicator, up to the end of the analysis.

The results of the analysis did not confirm a relationship between the direct vicinity of the Manufaktura complex and the level of apartment prices in Lodz. Some manifestation of this can be noticed in the further neighborhoods of Manufaktura included in Zone II. The highest level of the indicator was recorded in the fourth quarter of 2006, a few months after the grand opening of the complex. It cannot be excluded that the opening of the Manufaktura center was one of the reasons for achieving this result.

The number of transactions of residential properties in Lodz and in selected groups of precincts showed an upward trend with fluctuations similar to seasonal ones (Figure 5). In 2005-2008, the number of transactions increased at the turn of the year, reached the highest value in the first quarter of each year, and dropped in the subsequent quarters. The lowest value in all of the years covered by the analysis was observed in the third quarter of 2006 (251), fourth quarter of 2007 (468), second quarter of 2008 (645) and the first quarter of 2009 (640). The highest number of transactions during this period (889) was recorded in the first quarter of 2008.

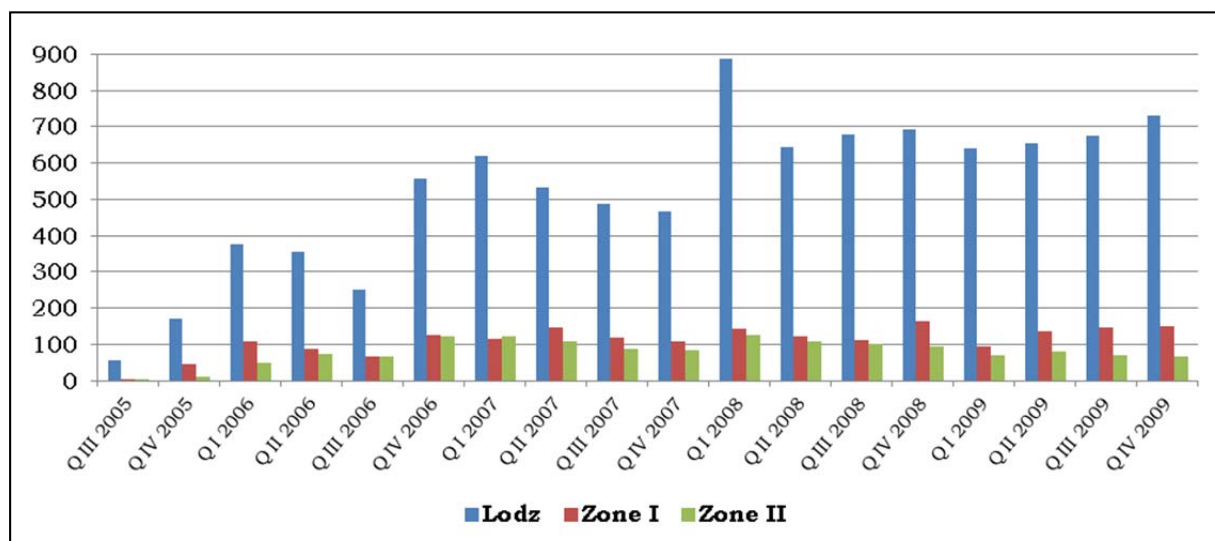


Fig. 5. The number of transactions of apartments in Lodz. Source: own studies.

Significant variation can be observed in the number of transactions in the selected areas representing the neighborhood of the Manufaktura complex. The number of transactions recorded in the immediate surroundings of the complex was, on average, 57% higher than in the further surroundings. The number of transactions in Zone II exceeded the number of transactions in Zone I in only two periods - in the third quarter of 2006 and the first quarter of 2007. In Zone I, transaction numbers reached the highest level in the fourth quarter of 2008 - 164 transactions. In the years 2006, 2008 and 2009, the highest values of transactions in Zone I were reached in the fourth quarters, while in 2007 - in the second quarter. The number of transactions in Zone II initially increased rather regularly until the breakthrough of 2006 and 2007 (up to 122 transactions), then declined throughout 2007 (down to 83 transactions). In the first quarter of 2008, there was a significant increase in activity in the studied segment of the market, reaching 126 transactions, but in subsequent periods, market activity once again decreased to a level of 72 transactions in the first quarter of 2009. In the last year of the analysis the number of transactions in Zone II stabilized at about 75 transactions quarterly.

When looking into the potential impact of the neighborhood of the Manufaktura complex on residential market activity, it may prove useful to analyze the number of transactions in the area under study in relation to the number of transactions recorded for the whole city (Figure 6, Figure 7). In the nearest neighborhood of the transformed area (Figure 6), a dynamic increase in the percentage of transactions was recorded in the fourth quarter of 2005 (the area contained 27% of all apartment transactions reported on the market in this period to the Lodz Centre of Geodesy), then between the first quarter of 2006 and the first quarter of 2007, a systematic decrease in the percentage of the transaction was reported. A similar trend was repeated in the next year - an increase in the percentage of transactions in Zone I in the second quarter of 2007 (up to 28%) followed by a systematic decline over the next 3 quarters - to the level of 16% in the first quarter of 2008. Market activity in Zone I was characterized by significant variability. In the years 2007 - 2009, the lowest housing market activity for this zone took place in the first quarter of each year.

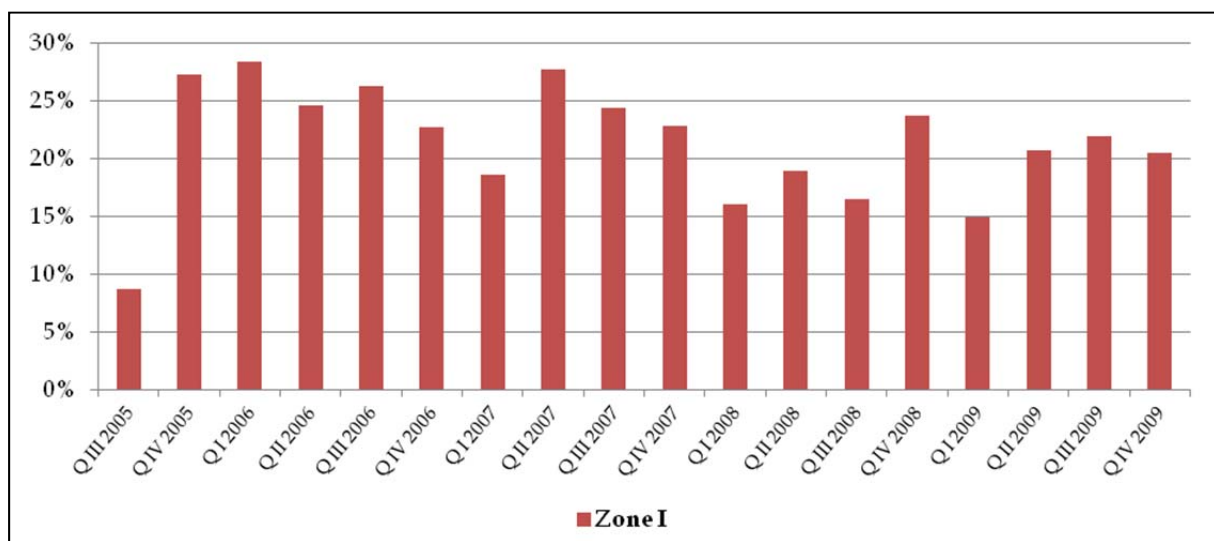


Fig. 6. The percentage of the number of transactions in Zone I in relation to the total number of transactions in Lodz. *Source:* own elaboration.

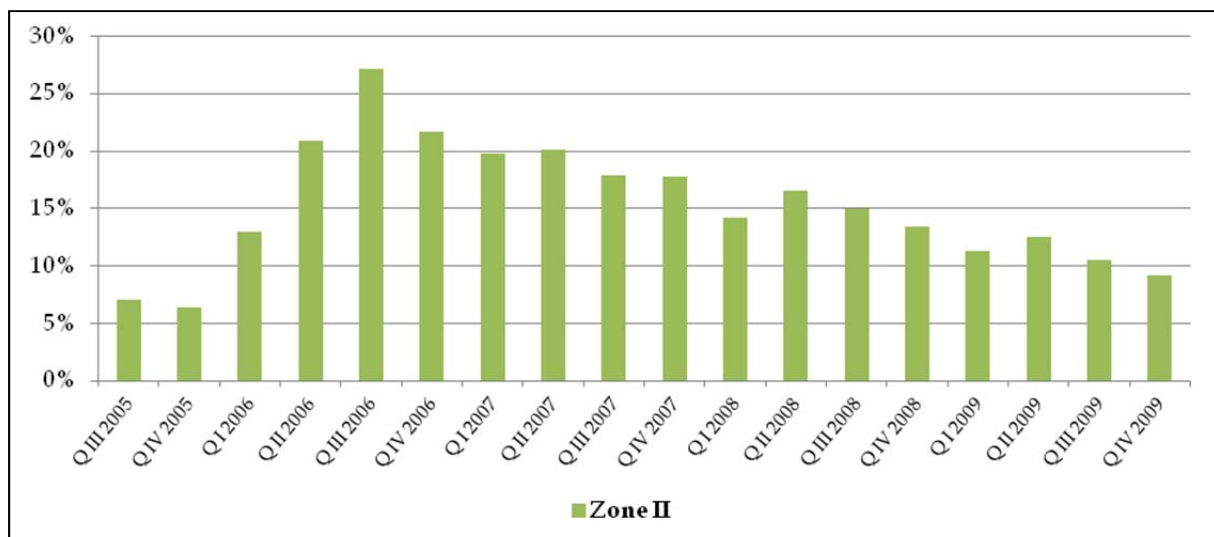


Fig. 7. The percentage of the number of transactions in Zone II in relation to the total number of transactions in Lodz. *Source:* own elaboration.

The share of transactions involving apartments lying in the further vicinity of the transformed area (Figure 7) increased systematically, up to 27% of the total transactions in Lodz in the third quarter of 2006, and then decreased just as systematically to 9% at the end of 2009. The highest level of the indicator for Zone II occurred in the period following the grand opening of the Manufaktura complex.

The examined relationship between the activity on the housing market and the neighborhood of Manufaktura is even clearer after cumulating data (Figure 8). In 2006-2007, the proportion of apartment transactions located in the immediate and more distant surroundings of the Manufaktura complex was apparently higher than in the next two years. In 2006 and 2007, more than 20% of the total open market apartment transactions in Lodz were recorded in Zone I, with over 15% taking place in Zone II. In the following years, especially in Zone II, the proportion of transactions increased steadily.

Based on the analysis it can be assumed that the opening of the Manufaktura complex in 2006, was one of the factors affecting the distribution of apartment transactions in Lodz and could have contributed to the periodic growth of market activity observed in the vicinity of the complex. The influence under analysis in the presented study is more evident in the further surroundings of the Manufaktura complex, which is consistent with the previously described dichotomy of effects observed in the direct and more distant neighborhood of commercial real estate.

The method used in this study and therefore also the obtained results were influenced by the nature of data obtained from the Centre of Geodesy. This data did not allow more complex analyses to be carried out or hedonic methods to be applied. The acquired database did not contain information about the floor on which the apartments were located, building technology, the property manager or noise from traffic. Conducting in-depth research without taking into account such information is not possible.

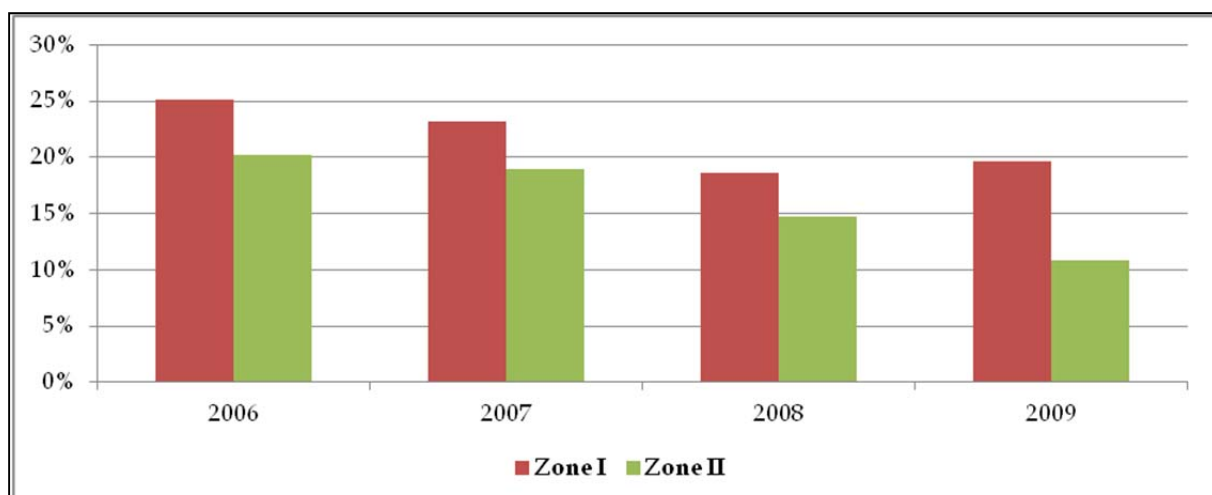


Fig. 8. The percentage of the number of transactions in the surroundings of the Manufaktura complex in relation to the number of transactions in Lodz. *Source:* own elaboration.

5. Summary

The focus of this article was to show the influence of real estate on its immediate surroundings. Various effects can be expected in the immediate and more distant neighborhood of commercial areas as a result of the influence they exert. Certain disadvantages can be observed in the nearest proximity of this type of property. They are associated with heavy traffic that generates noise and exhaust emissions, hence the possibility of lower prices and lower market activity in the immediate environment of commercial facilities. In the further neighborhoods not affected by the mentioned disadvantages, we can expect higher real estate prices and higher market activity as a result of the benefits associated with the presence of such real estate, i.e. reduced time and cost of travel for shopping, a large product range, creating job opportunities, and an attractive offer of cultural and recreational activities.

The analysis conducted in the present study did not confirm the impact of transformations carried out on the former post-industrial area on the prices of housing in the vicinity of the Manufaktura complex. However, some signs of the dependencies mentioned above were noted with regard to the further neighborhoods of Manufaktura included in Zone II. It cannot be excluded that the opening of Manufaktura was one of the reasons for the significant increase in average housing prices in the fourth quarter of 2006 in the further surroundings of the complex.

The vicinity of this multifunction area may also have been one of the factors influencing activity on the housing market in Lodz. In 2006-2007, significant activity was observed in this segment of the

market in comparison to the city area and the results achieved in the following years. The performed analyses confirm the predictions about the diversity of external effects depending on the distance from the shopping center.

The results of this study can be used as starting point for further analyses of the described phenomenon using more complex methods. Conducting such analyses, using one of the most appropriate tools - the HPM method, will require access to more complex databases containing the characteristics of the property and the use of GIS software in Lodz.

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