

# Influence of Urban Renewal on the Assessment of Housing Market in the Context of Sustainable Socioeconomic City Development

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**Abstract.** The variability of the urban environment, where the symptoms are observed in terms of spatial, aesthetic, architectural, urban and socio-economic development, seems to be relevant to the functioning of the local real estate market. Housing issue is the vital component of sustainable socioeconomic city development. The perception of the property attractiveness is determined by price-setting attributes such as: building standard, area, utilities, zoning and also location and neighbourhood. The attractiveness of the residential property is manifested in its market value. As a part of the follow-urban transformation, it seems to be important to reconstruct the impact of the neighbourhood changes on the housing market. The authors attempt to explain the ensuing problem on the example of one of the streets in a Polish city – Kalisz, which over the years has gained a new face and market image and simulate changes in the market value of selected properties located on the street, in order to map the influence of changes on the value.

**Keywords:** Housing market · Property value · Revitalization · Neighbourhood · Kalisz

## 1 Introduction

Symptoms of changes in the urban environment can be seen in a number of aspects: spatial, aesthetic, architectural, urban and socio-economic. They seem to be relevant to the functioning of local property markets. Perception of property attractiveness by potential buyers depends on evaluation of its vital qualities, whose resultant is an objective economic measure – property market value. This value is affected by all relevant market attributes, which in turn affect a particular property.

Under this study observations focused on revitalization processes in Dobrzecka street in a Polish city, Kalisz, in 2006–2014. The analysis was accompanied by identification of trends and dynamics of changes in the local property market in Kalisz. The choice of the research object was deliberate – within a few years Dobrzecka street gained a new aesthetic face and market image.

The main purpose of the study was assumed to be an evaluation and interpretation of the impact of urban transformations upon the economic and social assessment of residential properties. Thus, a possibility was recognized of conscious programming of a sustainable city development taking into account the influence of revitalization processes upon attractiveness of the local property market.

The research procedure employed the principles of a quantity and quality analysis of the property market (including a statistical analysis of phenomenon structure and dynamics), a case study, a comparative analysis, a methodology of property assessment in a comparative approach, a simulation method and a questionnaire. Above all, a market survey was conducted to evaluate the level of value changes and related factors used by various social and trade groups during their assessment.

## **2 Impact of Changes in the Urban Environment upon the Property Value**

Properties are characterized by interdependence which means that by possessing a certain image they affect the surrounding including properties in the close and more distant neighbourhood [1]. The interdependency in the property market also means spatial and functional interrelations. This kind of interaction is explained by concentration of functions in space, influence exerted by development methods, neighbourhood effects, local site development plans and the power of brand [2, 3].

A diagnosis of the sources and essence of the interdependence first led researchers to consider environmental causes of changes in property values. They analyzed impact of air quality and its pollution upon market listings of flat and house prices [4]. Already then the term of externalities began to be used, which determine change in attractiveness of individual premises in the property market [5]. The externalities also include relations caused by neighbourhood of specific assets or limitations. Microlocation may mean a potential asset or a negative circumstance affecting the value depending on the nature and perception of the neighbourhood. Also complexes of properties desired due to popularity usually improve assessment of their surrounding [6]. The most vivid effects can be observed in commercial property markets where interdependence causes more intense investment activity in the neighbourhood (for instance, IKEA, “Old Brewery: in Poznan, “Manufacture” in Lodz) [1, 2]. It is not only connected with investments in the commercial property market, but also in residential and public properties [7, 8]. Studies of the neighbourhood nature and quality consider presence of organized urban greenery and recreational areas (municipal parks or areas accompanying residential estate space) [9, 10]. The widely understood public space and its influence on fluctuations of property value or more generally – on neighbourhood assessment – was analyzed referring to several cities in Poland [11, 12]. The said studies prove that among various types of urban public space centres and representative squares to a large extent determine market aspects of the surrounding development.

In the context of transformations in the property market a lot of attention is dedicated to space transformations, including revitalization processes. The notion of city revitalization combines both revitalization and gentrification. Variety of forms and conceptions of developing European urban space as part of revitalization projects or

gentrification phenomena [13] points to conscious attempts of determining interdependence effects in the property market. What is interesting from the point of view of evaluating phenomena accompanying city revitalization is in particular reconstruction of the way it affects the residential and commercial property market [13–20]. The property market plays an important role in attracting both investors and inhabitants. A huge capital consumed by revitalization processes is a barrier to its development. A rapid growth of prices in the property market, especially in the residential one, attracts entities with strong capital which follow a disinvestment strategy (meaning a relatively quick sale at a high price) [21].

The market value is a resultant of attractiveness of perception of important property qualities. Their diagnosis includes attributes related a particular property (such as a standard and technical condition, usable area, plot area, premises location within a building) and other non-related attributes (such as general location, detailed location, neighbourhood nature and quality, available technical infrastructure, designation in the local site development plan). These attributes, called price determining attributes, are defined each time for a market segment where the assessed property falls in. Weights of individual attributes may be assigned by examining customer preferences in a particular property market or by analyzing transactional prices [22, 23]. Relations between city revitalization or functional and quality surrounding transformations and the property market value in Poland are not exhaustively described; they are still open to preliminary analysis. The development level of domestic residential segment suggests a necessity to carefully examine the phenomenon of transmitting revitalization effects in the property market.

### **3 Changes in the Market Value of Living Premises in Kalisz – A Case Study**

#### **3.1 Analysis of the Residential Property Market in Kalisz in 2006–2014**

The analysis of the living property market included sale transactions of flats in Kalisz from the beginning of January 2006 to the end of December 2014. 2941 market transactions of flats were analyzed. Between 2006 and 2010 the number of transactions declined, however, in the period considered as crisis in the property market in Poland it grew. Every second flat sold had an area between 30 sq m and 50 sq m (an average size of a property sold in 2006–2014 in Kalisz was 49 sq m).

By examining unit transactional prices a trend formula was created for flats sold in Kalisz between 2006–2014. The linear trend function takes the following form:

$$y = 0.2681x + 2108.81 \quad (1)$$

The average price of one square metre increased month by month by PLN 0.27 and its theoretical value in the period immediately preceding the analysis, i.e. in December 2005, amounted to PLN 2108.81. The average increase of living properties in Kalisz property market in 2006–2014 was found to be 0.39 % monthly. Throughout the entire analysis the average unit price reached 2526 PLN/sq m.

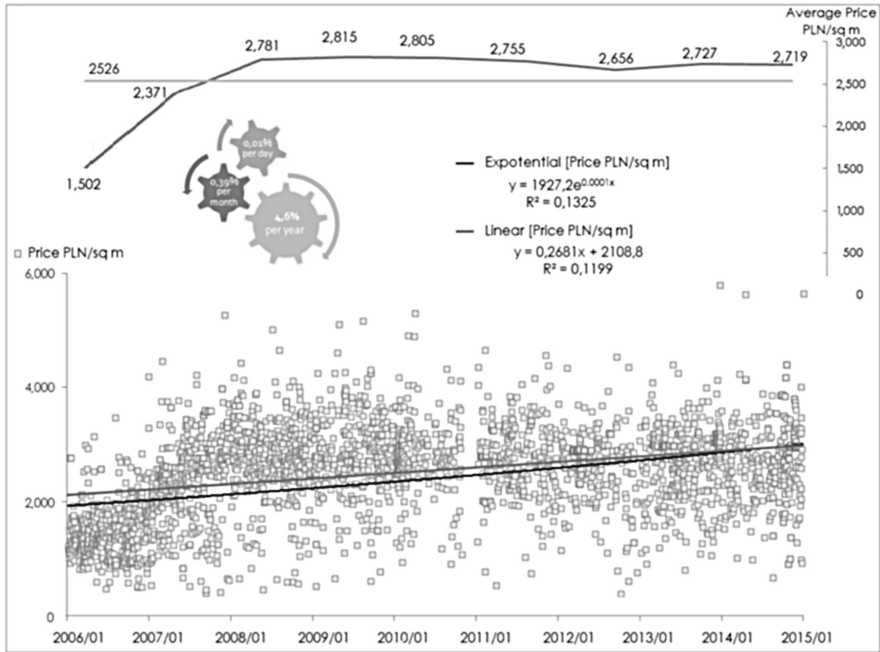


Fig. 1. Average price and price trend [PLN per sq m] of flats in Kalisz from 2006 to 2014.

### 3.2 Characteristics of the Analyzed Area

Dobrzecka street in Kalisz is about 2.6 km long; it starts near the city centre and reaches the administrative areas of Dobrzec village. The name “Dobrzec” goes back to the oldest tradition of this land and bears a large emotional and historical significance. The first mentions of Dobrzec settlement date 1280.

The street has a non-homogenous nature. Its beginning consists of multi-family residential buildings which are about one hundred years old, built close to each other. In the post-war years they were confiscated from private owners by the State and at that time they were mostly rent tenement blocks. They alternate with other buildings: public services (a blood donor station, social aid centre), manufacturing (former clothes plant). In its middle section the street is built up with warehouses, engineering and service buildings. The end of Dobrzecka street crosses the area of former Dobrzec village, partly transformed into detached house estates, and partly still settlement and farming areas. A particular attention was paid to transformations in the initial sections of the street. This terrain has changed its character in years. Rent tenement houses administrated then and partly now by a municipal company have been regained by previous owners; other ownership transformations have taken place. The first effective action was change of ownership of the property located at 6 Dobrzecka street build up with a shabby living house. Next the building was demolished and in 2006 replaced with a new one.

A parallel step in order to change the street character was replacement of the old living substance at the junction of Dobrzecka and Poznańska streets, where one of

Kalisz housing associations built the first block of flats in 2005 and the second one in 2008. The obsolete petrol station located at the beginning of the street was dismantled in 2007. In the same year the ownership transformation of the property located at 10 Dobrzecka street was finished, which permitted its general repair.

At the same time, some manufacturing areas, which formerly belonged to KALPO Textile Plant, were – upon announcing the company’s bankruptcy – bought out by a local investor (a quasi-developer) and transformed into living areas. Construction of a block of flats (flats and apartments) was begun in January 2008 and finished in December 2009. The result was 37 m tall building of 1 overground and 9 underground storeys and 100 flats. In order to build this building, the manufacturing facility was mostly demolished. The only thing left was a raw structure which was subsequently developed and a few storeys were added.

In 2009 the perpetual administrator (PCK) of the property located at 2 Dobrzecka street renovated the building, made the façade, replaced the woodwork and roof.

Recently, renovation of the building at 5 Dobrzecka street was completed. In 2014 the legal status of the property located at 8 Dobrzecka street was regulated. Currently, the third building joining the two living houses owned by a housing association is being built.

### 3.3 Market Value of the Flats in the Analyzed Area

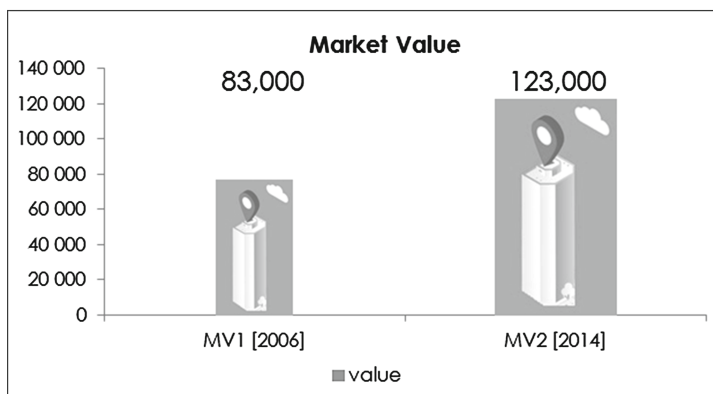
In to show changes in values of the flats as a result of positive changes in the surrounding, a flat situated in an old tenement house in Dobrzecka Street in Kalisz was valued. The said flat covering 50.0 sq m is situated on the first floor of a short building, consists of two rooms, a kitchen, a bathroom with toilet and a hall. Its market value was determined. Transactions connected with second-hand flats were analyzed, which were located close to the flat and were of a similar technical condition and standard. Based on our own analysis and surveys of preferences among potential buyers in property agencies, basic attributed were identified which determine the property’s value as well as their percentage weights. The average annual time trend was found to be 4,6 % in 2006–2014. Therefore, the transactional prices were corrected due to elapsing time. Next, transactions were selected which best correspond to the said flat. For the representative sample, parameters shown in Table 1 were identified.

**Table 1.** The parameters of a representative sample – flats in Kalisz in 2006 and 2014 [PLN per sq m].

Parameter	Transaction prices 2006	Adjusted prices 2006	Transaction prices 2014	Adjusted prices 2014
Minimum price	489	682	679	691
Average price	1502	2094	2719	2766
Median price	1429	2002	2788	2842
Maximum price	4197	5757	6130	6341
Standard deviation	504	697	704	715
Coefficient of variation	34 %	33 %	26 %	26 %

The most important asset in the calculation was comparison of the market value of the same flat in two situations – the former worse surrounding (picture of Dobrzecka street in 2006) and upon the image transformation of the surrounding (picture of Dobrzecka street in 2014). The property prices which were the reference point in both situations referred to the same moment – 31.12.2014. As a result, it was possible to maintain comparability of all other market conditions. The results of the property assessment were as follows (Fig. 2):

- 83,000 PLN before the surrounding changes (2006),
- 123,000 PLN after the surrounding changes (2014).



**Fig. 2.** The value of the flat according to its surrounding in 2006 and 2014 (Prices as on 31.12.2014).

### 3.4 Perception of Space Transformation in the Analyzed Area by Kalisz Inhabitants

One of the purposes of the study was to collect information about perception of changes in the urban surrounding by Kalisz inhabitants. The questionnaire asked about feelings and knowledge about changes in the city's image within the last ten years and about the trend, visibility and image transformation of Dobrzecka street (from Poznańska to Al. Wojska Polskiego streets). A question was also asked about most likely and desired trends in this area. The survey was designed to recognize and compare knowledge of Kalisz inhabitants about changes in values of the properties located there (Table 2).

The respondents are Kalisz inhabitants belonging to various groups:

- property market specialists (property agents and property surveyors),
- clerks employed in Kalisz City Office,
- students from the The President Stanisław Wojciechowski University School of Applied Sciences in Kalisz,
- inhabitants of Dobrzecka street,
- passer-byes.

**Table 2.** Number of surveyed inhabitants.

No	Trade group	No of respondents	Share in total
1	Specialists	25	6.6 %
2	Clerks	70	18.4 %
3	Students	43	11.3 %
4	Dobrzecka inhabitants	43	11.3 %
5	Passer-byes	199	52.4 %
	<b>Total</b>	<b>380</b>	<b>100.0 %</b>

### 3.5 Survey Results

The respondents were asked to define the image trend within the last decade for the analyzed section of Dobrzecka street. The changes are perceived as common, repeatable and lacking outstanding diversity. Furthermore, Dobrzecka street is evaluated subjectively – despite the changes – as ugly.

When asked about the degree of changes in the image of Dobrzecka street within the last 10 years, the respondents most often gave neutral answers as they thought the street's image changes to some extent (45 %). Few (17 %) considered the changes as visible.

The survey also checked knowledge of trends in flat prices in Kalisz. Kalisz citizens were asked about changes in flat prices in Kalisz within the last ten years including Dobrzecka street. The biggest number of the respondents think that the prices of flats in Kalisz and at Dobrzecka street have been stable, however, almost as large a group said the prices went up. Only 4 % marked a high increase of the prices in Kalisz – 3 % for Dobrzecka street. As many as 22 % of the respondents think that flat prices have gone down in Kalisz.

28 % who say that flat prices in Kalisz have decreased think they have been stable in Dobrzecka street while 19 % think they have gone up. Also every fifth who thinks the prices were generally stable in the city point to their rise in Dobrzecka street.

What is interesting, (compare: Fig. 1) wrong answers about the drop of flat prices in Kalisz within the last 10 years were most frequently given by property agents and clerks. The surveyors, students and passer-byes marked the price increase whereas the inhabitants of Dobrzecka street were convinced of their stabilization.

The respondents were asked to identify which presently existing element is the strongest sign of space changes in the analyzed section of Dobrzecka street. The block of flats dominated the spontaneous answers. Supported answers were similar. Even though 100 new flats were built in the analyzed vicinity, as many as 16 % think the social structure of the street inhabitants has not changed while 35 % think it has been poor (Fig. 3).

Next, they were asked about respondent anticipated and desired trends in that area. Spontaneous answers about the desired trends boiled down to two main options:

- renovation of tenement houses,
- development of transportation infrastructure.

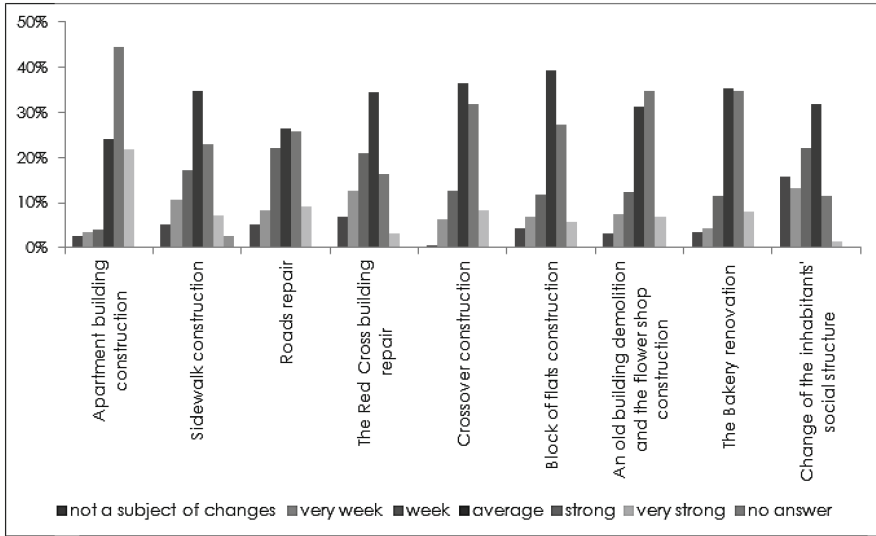


Fig. 3. Accents of changes within Dobrzecka street.

Next, the respondents were offered a few variants of answers regarding the change of Dobrzecka image. The respondents considered the majority of the suggested trends as quite or rather unlikely. The highest score was given to further growth of blocks of flats – renovation of tenement houses ( $p = 0.49$ ). On the other hand, construction of tall buildings is regarded as slight less likely ( $p = 0.38$ ). The respondents also pointed to transfer of the current trend to the farther section of the street or adjacent areas as quite probable ( $p = 0.46$ ). The likelihood of growth of commercial and other functions was estimated by the respondents as  $p = 0.38$  and  $p = 0.36$  respectively.

The last question asked to Kalisz citizens was about their satisfaction with transformations within Dobrzecka street within the last ten years. Most people did not clearly state their attitude to the changes (selected the neutral answer), however, the emotionally burdened answers were mostly positive (Fig. 4). The lowest satisfaction with the changes was shown by property agents and passer-bys; the students are slightly more satisfied. Among the street inhabitants negative scores prevail, which proves their dissatisfaction with the changes.

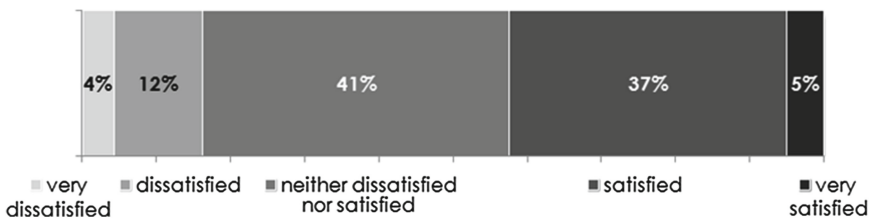


Fig. 4. The level of satisfaction with the changes within Dobrzecka street in the last ten years.



## 4 Conclusions

The study shows the trends and dynamics of the changes in the market value of the flat located in Kalisz, Dobrzecka street. This area was subject to urban transformations which in 2006–2014 improved the surrounding quality and image and consequently increased attractiveness of the local flat market.

The flat's market value was defined according to its surrounding in 2006 and 2014. Due to the simulations taking into account various states of attractiveness of the analyzed flat, it was assessed that should the surrounding's condition remain relatively low and typical of 2006, its market value would now amount to PLN 83,000. However, the actual improvement of the neighbourhood's image and quality made the value go up to PLN 123,000. Therefore, in the observed period the real appreciation of the said flat increased by 48 %.

This kind of rise, which is to a large extent though not entirely a consequence of the local revitalization, proves a connection between transformations in the space and flat valuation. It illustrates possibilities of stimulating price increase in a property market in areas subject to revitalization.

Consciousness among the respondents of the scale of changes in flat prices is low. They diagnosed the difference slightly higher on the scale for Dobrzecka street than for the whole city. When asked about desired trends of changes in that area, the respondents indicate a necessity to modify the social structure.

Significance of changes in urban space and their market consequences reaches more strongly and quickly to profiteers who seek to multiply their assets through successful investments. General social consciousness is limited and blurred. Typical space users behave inconsistently – they notice accents, evident signs of transformations, however, at the same time they say the transformations cannot be easily noticed. They also cannot see a link between changes in the surrounding with prices of flats. In this way, a surprising mechanism was caught of separation between social and market consciousness. This indicates a gap in consciousness or economic competence in the society which is unable to translate significance of physical changes in the space to their market consequences.

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