

The European Union and the Housing Market in Poland¹

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Key words: market for flats, overpricing effect, demand and supply, preferences of buyers, changeability of market trends

SUMMARY

In recent years, Poland has seen the highest average growth in the prices of flats among the EU states. Since Poland's accession into the European Union, the prices have grown three times. The high growth figure has been determined among other things by an excess of demand over supply, which has been driven even further by a demand on the part of external investors, including foreign ones. The highest growth has been noted in large cities.

The analyses presented below refer to recent years, i.e. those coming after 2001, and major cities, notably Kraków. Krakow's real property market is characterised by a high dynamics and has been undergoing significant changes in recent years.

In the years 2001÷2002 real property markets in major cities were stable. The prices were growing slowly and steadily. Since 2003 there was an intensive growth in demand among polish investors. This was mainly linked to their fears of a radical price increase following our accession into the EU in 2004. Subsequently, after Poland joined the EU, there was a high growth in the interest in polish real property among foreign investors, which brought about another wave of growth in the prices of flats. Yet, the growth was actually started to be noticeable only a few months after the accession date, i.e. 1 May 2004.

On our accession to the EU Poland's reliability on the international market improved. This was thanks to the introduction of certain legal regulations and operating standards, also on the real property market, e.g. as regards the business standards of real property agents. Another contributing factor was the stability of the Polish currency and the predictability of economic development. Foreign investors started perceiving our country as less risky in terms of investments and still highly attractive in terms of prices compared to the other EU states. Another asset of large cities is their considerable human capital, i.e. graduates of the numerous universities, as well as the tourist potential of the city, which leads *inter alia* to enhanced investments into hotel facilities.

Following the high growths of prices between late 2004 and mid-2007, the market slowed down last year. Prices of flats are clearly stratified - the most noticeable fall in prices is observed for flats in so-called "concrete slab" buildings, while the prices of better-standard apartments only slightly fluctuate. Still, the general situation on the market still makes real property investments an attractive option. This is because real property is a safe investment.

¹ The task is worked based on statutory searches in Geomatic's Department AGH, Krakow, Poland

Unia Europejska a rynek mieszkaniowy w Polsce

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Słowa kluczowe: rynek mieszkaniowy, efekt przeszacowania cen, popyt i podaż, preferencje nabywców, zmienność tendencji rynkowych

STRESZCZENIE

Średni wzrost cen mieszkań w Polsce w ostatnich latach był największy wśród krajów Unii Europejskiej. Od dnia wstąpienia Polski do Unii odnotowano przeciętnie trzykrotny wzrost cen. Na tak znaczną podwyżkę wpływała m. in. przewaga popytu nad podażą, którą dodatkowo zwiększył popyt wśród inwestorów zewnętrznych, również zagranicznych. Najszybciej rosły ceny w dużych miastach.

Przedstawione poniżej analizy dotyczą ostatnich lat od roku 2001, w dużych polskich miastach, ze szczególnym uwzględnieniem Krakowa. Krakowski rynek nieruchomości cechuje się znaczną dynamiką oraz doświadcza w ostatnich latach znaczących przemian.

W latach 2001÷2002 rynki nieruchomości dużych miast cechowała stabilność. Ceny wzrastały powoli i równomiernie. Od 2003 roku obserwowano intensywny wzrost popytu wśród polskich inwestorów. Wiązało się to głównie z obawą przed radykalnym wzrostem cen po wstąpieniu w struktury europejskie w 2004 r. Natomiast samo członkostwo w strukturach europejskich spowodowało znaczny wzrost zainteresowania wśród inwestorów zagranicznych, co pociągnęło za sobą kolejną falę podwyżek cen mieszkań. Jednakże podwyżki te nastąpiły dopiero po kilku miesiącach od daty 1 maja 2004.

Z chwilą wejścia Polski do EU zwiększyła się nasza wiarygodność na rynku międzynarodowym. Miało to związek z wprowadzeniem regulacji prawnych i określonych standardów działania, związanych także z rynkiem nieruchomości, np. w kwestii standardów pracy pośredników w obrocie nieruchomościami. Swój udział miały również stabilność polskiej waluty i przewidywalność rozwoju gospodarczego. Inwestorzy zagraniczni zaczęli postrzegać nasz kraj jako mniej ryzykowny inwestycyjnie i jednocześnie wciąż bardzo atrakcyjny cenowo na tle innych krajów EU. Dodatkowym atutem dużych miast, szczególnie Krakowa, jest ogromny kapitał ludzki w postaci absolwentów licznych krakowskich uczelni a także turystyczny charakter miasta, pociągający za sobą m.in. wzrost inwestycji hotelowych.

Po gwałtownych wzrostach cen od końca 2004 do połowy 2007 roku – w ostatnim roku rynek nieco wyhamował. Ceny prawie w ogóle się nie zmieniają lub nawet spadają. Następuje wyraźne rozwarstwianie cen mieszkań – zauważalnie spadają ceny mieszkań z tzw. wielkiej płyty, delikatnie wahają się ceny mieszkań w lepszym standardzie. Takie zjawisko obserwujemy od jesieni 2007 roku. Jednakże ogólna sytuacja na rynku zachęca do inwestycji w nieruchomości, bowiem w przeciwieństwie do rynku akcji jest to inwestycja bardzo bezpieczna, a do niedawna była również bardzo zyskowna.

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1. INTRODUCTION

In recent years, Poland has seen the highest average growth in the prices of flats among the EU states. Since Poland's accession into the European Union, the prices have grown three times. The high growth figure has been determined among other things by an excess of demand over supply, which has been driven even further by a demand on the part of external investors, including foreign ones. The highest growth has been noted in large cities, e.g. Warsaw and Kraków.

The analyses presented below refer to recent years, i.e. those coming after 2001, and major cities, notably Kraków. Krakow's real property market is characterised by a high dynamics and has been undergoing significant changes in recent years.

In the years 2001÷2002 real property markets in major cities were stable. The prices were growing slowly and steadily. Since 2003 there was an intensive growth in demand among polish investors. This was mainly linked to their fears of a radical price increase following our accession into the EU in 2004. Subsequently, after Poland joined the EU, there was a high growth in the interest in polish real property among foreign investors, which brought about another wave of growth in the prices of flats. Yet, the growth was actually started to be noticeable only a few months after the accession date, i.e. 1 May 2004.

On our accession to the EU Poland's reliability on the international market improved. This was thanks to the introduction of certain legal regulations and operating standards, also on the real property market, e.g. as regards the business standards of real property agents. Another contributing factor was the stability of the polish currency and the predictability of economic development. Foreign investors started perceiving our country as less risky in terms of investments and still highly attractive in terms of prices compared to the other EU states. Another asset of large cities, notably Kraków, is their considerable human capital, i.e. graduates of the numerous Kraków universities, as well as the tourist potential of the city, which leads *inter alia* to enhanced investments into hotel facilities.

Following the high growths of prices between late 2004 and mid-2007, the market slowed down last year. Prices stand still or even fall. Prices of flats are clearly stratified - the most noticeable fall in prices is observed for flats in so-called "concrete slab" buildings, while the prices of better-standard apartments only slightly fluctuate. We have observed this since autumn 2007. Still, the general situation on the market still makes real property investments an attractive option. This is because, unlike the market for securities, real property is a safe investment, and it had been very profitable until recently.

2. MARKET FOR FLATS IN KRAKÓW

Until 2007 there was a deficit of new apartments, and developers used to sell most of their offer even before they set to the actual construction works. At present the real property market is stagnant. Since mid-2007, prices have remained on the same level, even falling in certain areas of the city. Unfortunately, this cannot be attributed to a market saturation in the traditional sense, i.e. satisfaction of potential buyers' needs. Prices in major Polish cities have reached such a high level that a flat has become unavailable for an average Pole. Within merely two years, starting from November 2004, prices in popular city quarters soared by an average of 100%. Compared to the pre-accession situation, the growth was threefold.

2.1. Second-hand and new flats

In general, the price depends to a large extent on the year of construction and the construction technology used. Based on an analysis of the prices of "old" flats (built between 1960-1989) and "new" ones (built after 1990) it may be established whether the prices of the two groups of flats have actually shown different trends. We can observe that the price evolution dynamics is different for "new" and "old" flats. Flats built before 1990, i.e. mainly those referred to as "concrete slab" have reacted to the fluctuations on the local real property market in a more noticeable way. In Kraków it can be seen that the prices of such flats have fluctuated considerably and have shown a lack of stability, while "new" flats have shown a strong growing tendency. In the early 2007, when people generally expected that prices of flats would be growing and the sellers' optimism was relatively strong, the prices of "old" flats were going up faster than those of "new" flats. As early as mid-2007 the trend started to change. Bad news about the condition of the market impacted to the highest degree the segment of the cheapest flats, i.e. "concrete slab" flats built before 1989. As a result, we may conclude that the prices offered for such apartments during the upward market were rising too dynamically and thus it was more difficult to find a buyer for them later on. This was mainly caused by the overpricing effect, which was most conspicuous with respect to "old" flats.

In order to better understand why this happened, we will present brief characteristics of an average flat built before 1989. Concrete slab was the predominant construction technology at the time when this category of flats were built. Since early 1990s flats built in that technology have been ranked among the cheapest categories of flats. Although the 1970s housing estates are located in very attractive areas, flats in concrete slab buildings usually mean lower comfort, draughty windows, defective installations, multiple architectural errors. In general, apart from the drawbacks linked to the construction technology we should also mention the following: high maintenance costs, low level of safety in the surrounding area and outdated forms of management (housing cooperatives). Thus "new" flats outstrip "old" flats in all respects, except the price. Low height, new construction technologies, low maintenance costs, high security level (monitoring), professional management - these aspects cost more. Once the prices of flats in concrete slab buildings reached ridiculous levels, the demand for flats started to decline, hitting mainly the concrete slab segment. Meanwhile, the prices of "new" flats remained stable or in some cases even grew. Therefore we may assume that the correction we are witnessing now has been caused to a large extent by "old" flats.

2.1.1 Primary market

When we consider all the 16 voivodeship cities in Poland, we will see that the number of flats commissioned for use in Kraków annually is relatively high. Figures are only higher in Warsaw. Illustrative data for 2006 is provided in Table 1. This does not mean, however, that the needs for flats in Kraków or Warsaw are met.

Table 1. Number of flats commissioned for use in polish voivodeship cities in 2006

Voivodship city	No. of flats	Voivodship city	No. of flats
Warszawa	13688	Łódź	1186
Białystok	1219	Olsztyn	1299
Gdańsk	3099	Opole	391
Gorzów Wlk	479	Poznań	2828
Katowice	440	Rzeszów	1011
Kielce	442	Szczecin	904
Kraków	6612	Toruń	717
Lublin	1403	Wrocław	4379

Beginning with 2003 the growth in demand on the primary market for flats in Kraków was influenced by the following factors:

- Poland’s perspective of EU membership,
- EU membership,
- reduction in the interest rates of mortgage loans,
- willingness to dodge the 7% VAT on newly built flats which was to be put in place.

An interesting regularity was observed, i.e. that in the recent years the largest demand on the market for new flats has been for flats having an area between 40 and 60 m² (as much as 40%) and 60-80 m² (25%). Small flats, up to 40 m², which dominated the market until recently - represent merely 14 % of the market transactions, i.e. nearly as much as the percentage share of the largest flats, i.e. having an area of more than 80m².

Since mid-2008, due to the general economic crisis, banks introduced more stringent conditions for mortgage loans. As a result, it is more difficult to obtain a loan to buy a flat. Until recently, buyers could obtain a loan exceeding 100% of the value of the flat. At present, banks require applicants to have a high proportion of their own funds when requesting a bank loan. Currently, the primary market is suffering from a stagnation. Even promotions offered by developers, i.e. free equipment, attractive foreign holidays, do not help.

2.1.2 Secondary market

Similar tendencies may be observed on the market for second-hand flats in Kraków. Between 2003 and 2007 there was a steady growth of prices, regardless of the location and size of the flat. The average prices in 2006 in nearly all the quarters of Kraków were nearly twice as high as in 2003. The main factors behind the 2007 excess of demand over supply include:

- Poland’s accession into the EU,
- entry of baby boomers of the mid-1980s into the age of potential buyers,

- presence of universities in the city, i.e. a high number of settlers, some of whom buy flats for the time of study or work in Kraków,
- growing easiness of obtaining a loan until 2008,
- small difference between the cost of renting a flat and the cost of mortgage loans,
- a large number of foreigners settling in Kraków,
- Poland’s economic growth,
- the average price of second-hand flats is approx. 10% lower than on the primary market in all parts of the city.

Among the above factors, a key role on the primary market is played by universities and foreigners’ eagerness to invest in Poland. More and more parents sending their children to study in Kraków buy a flat instead of renting it, as rent costs are very high. Meanwhile foreigners coming from the so-called “old” European Union still find prices of polish flats much more attractive than in their own countries.

2.2. Changeability of market trends over recent years

At the beginning of 2003 it could be presumed that it would be yet another year of slow trade in real estate, which had been certainly the case in previous years, i.e. 2001 and 2002. In practice, since mid-2003 the number of persons willing to buy a flat started to grow dynamically. One of the factors driving the growth was the rising exchange rate of euro, as a result of which many owners started to convert the value of their real property into euro, and thus the prices of flats were growing in parallel to the exchange rates. In the second half of 2003 there was no doubt that a boom was near. All those who had invested their money into real property, securities or euro in the previous year had a good reason to be happy. As regards investments into real property, flats were the most profitable. Their value was estimated to grow by 10% - 15%, and in some cases even by 20%. Concrete slab flats and apartments in worse locations enjoyed the lowest popularity. Flats in new buildings were appreciated the most. Developers and their products enjoyed a high trust among buyers. Buyers had to wait for some newly-built flats even 1.5 years, which had not be observed for a long time. An additional obstacle in such communities as Kraków was and still is the lack of local plans, which obviously translates into a lower number of new building permits. This in turn reduces the number of new houses and flats on the market and brings up the demand on the primary and secondary market. As from mid-2003 also the conditions for obtaining a mortgage loan started to become more easily available for clients. The monthly credit payments became comparable to the cost of flat rental. Ever since the majority of purchase transactions has been supported by mortgage loans.

In conclusion, the last quarter of 2003 and early 2004 saw a revival on the market for real property. Before Poland jointed the EU, the best-selling flats were single-room and double-room flats. As early as April 2004 more and more persons started to become interesting in buying larger flats, i.e. three- or four-room ones. At the time, on the one hand, clients were apprehensive of an increase in the prices of flats due to Poland’s accession into the EU, and on the other hand, they feared the alarming changes in the tax system announced by the government. According to the announcements, the VAT rate on building materials and land for development was to reach 22%. Moreover, most tax reliefs were to be discontinued. The rush to buy a flat before 1 May 2004 gave rise to an enormous increase in the demand for flats

in the months preceding the date, which made the prices skyrocket. Although in 2003 the prices of flats in Kraków increased significantly, they were still among the lowest compared to other European cities.

After the revival in all the segments of Krakow's real estate market between the second half of 2003 and the end of April 2004 and the resultant high upward price trend, as from the beginning of May 2004 the number of transactions decreased. The months directly following the accession were a time of perceivable fall in the sales of real property, both flats, land and houses. In most cases the prices remained on the new, higher level, until they started to rise dynamically in late 2004. This means that it was only after several months that Poland's accession into the EU gave a stimulus to further growth in real property prices and trade on the market.

Another effect of our joining the EU was a perceivable growth of interest among foreign investors in real property, in particular in business premises, although the interest in investments into property meant for housing purposes was also high. Foreigners, especially UK citizens, buy flats most eagerly in the city centre. According to foreign clients, the most important criteria for selecting a flat include location, prestige of the city quarter and its surroundings as well as good accessibility. What is less important for them is the price of the flat, as the amount which they must pay in Kraków is much lower than the average price of a similar flat in Western Europe, especially in the most popular cities. Due to a low supply of such attractively located flats their price has been growing.

As regards legal regulations, in particular those relevant for real property agents, the most important changes after 1 May 2004 concerned the new Real Property Management Act, under which the agency agreement was re-defined and was made a "named agreement". Also the profession of an agent was redefined, which clearly improved their business operations. Another important change were the attempts to adjust the legal regulations to the situation in which most Polish communities still do not have binding local plans. The changes were aimed at facilitating the process of obtaining land development conditions decisions and building permits.

Before 2005, another stimulus for potential buyers was the tax relief, and then - the possibility of obtaining a VAT recovery for construction materials. Much easier access to sources of financing, low interest rates on bank deposits, made flats become a popular long-term investment. Its sale after a few years meant certain profit, while its rental in the meantime would be a source of extra income. Rental is a frequent incentive to buy a flat. Attractive location, accessibility by public transport, closeness to the university make a flat to gain in value. During the market revival of the time, offers in attractive locations were sold within a few days, and sometimes even a few hours, practically regardless of the price.

There was also a substantial interest among investment funds, both private ones and those specialising in investing capital on the real property market. Investment funds were mostly interested in old, prestigious houses located in the very city centre or such buildings as old factories, manufacturing plants and other real property which could be given a new functionality, mainly residential one. Always, the fundamental condition of such investments is good location.

During the high growth of prices on the housing market clients were convinced that within a year, two or three the prices will grow even higher, therefore a large proportion of investors having private financial means or access to credit chose to invest money in that way. New flats were sold right away, practically before the construction itself started.

Students are another group of buyers. In Kraków, which is a large academic centre, the most popular flats are small self-contained ones, inhabitable by several persons. Students are satisfied by as little as 16-20 m². Good transport and proximity to the city centre make flats characterised by these qualities to be in a particularly high demand.

Despite the huge demand, caused by the numerous of factors, we can hardly speak of a boom on the housing market in the literal sense, as it was blocked by the small supply. This is caused by the continuing lack of local plans, which reduces the number of building permits issued and the number of investments delivered. Meanwhile, it is estimated that within a few years Kraków will have the second largest population in Poland, only after Warsaw.

As from the beginning of 2006 there was further growth in the demand for flats, both on the market for newly built flats and second-hand flats, especially in large Polish cities, where within three quarters of 2006 the prices of flats grew on average by 26%. In June 2006, another factor occurred contributing to the continuation of the high demand (despite the high prices). The Committee for Banking Supervision decided to limit as of 1 July 2006 the availability of low-interest housing loans granted in foreign currencies, in particular in Swiss francs. In July the tension increased as the government announced further restrictions on the market in 2007. The limitations were to include discontinuation of the tax relief for interest on housing loans and introduction of a 19% tax on profits derived from the sale of real property.

Similarly to the previous period, the most popular flats among buyers in 2006 were new flats (built within the previous 10 years), with 1, 2, 3 rooms and of an area between 28 to 75 m², having a separate land and mortgage register, well-planned, in mid-rise buildings, located in city centres or in the outskirts, but with good transport connections with the centre. Older flats were only slightly cheaper (on conditions that they were kept in a high standard), as were those in concrete slab housing estates. The selling time clearly shortened, on average from six months in 2005 to several days in 2006. Flats of a lower standard and in less attractive locations, especially big 4- and 5-room ones waited for a buyer for several months, unless offered for an attractive price.

Four-room high-standard flats became more popular. These were bought on the second-hand market most often for the buyers' own needs with the aim of improving their standard of living. Apart from Warsaw, also Kraków, Wrocław and Trójmiasto saw increased demand for top-standard apartments, both on the primary and secondary market.

We present below the most characteristic trends that have occurred on the housing market at the beginning of 2006 in major Polish cities:

- high demand and moderate supply,
- growth in the sale price by an average of 26% between January and September 2006,
- high popularity of 2- and 3-room flats, with a slight decrease in the demand for single-room flats, in particular those located outside city centres,
- 2.5-fold growth in the interest in top-standard apartments,

- over 90% of buyers had recourse to housing loans; the share of the loan represented on average nearly 80% of the flat's price,
- the number of buyers who financed the purchase of a flat by means of a credit in 100% grew by 82%,
- the most active buyers were persons aged 26-45; young persons aged 24-32 bought mainly small flats,
- the price was determined not only by the location, but also by the standard of the flat and its nearest surroundings.

Last year the real estate market in Poland slowed down. Prices stand still or even fall. The prices of flats are clearly stratified - there has been a clear fall in the prices of concrete slab flats, while the prices of better-standard apartments fluctuate slightly. We have observed this since autumn 2007.

While in the period of the boom on the housing market of 2006 and of the first half of 2007 it was the prices of concrete slab flats that were growing at the fastest rate, at present such flats are losing in value the fastest. This is natural as it is hard to imagine that products of a different quality have the same price, which had been still often the case in 2006. At present, finding a flat in Kraków for PLN 5-5.5 thousand/m² is relatively easy, which was impossible last year. Additionally, according to various estimates, Poland still suffers from a deficit of a million or two million flats, which means that our concrete slab housing estates will not face the same fate as in Western Europe, where they are depopulated and are gradually torn down. Unlike the old EU states, Poland does actually lack flats.

3. DETAILED ANALYSIS OF PRICE LEVELS

In order to illustrate the changes in the prices of flats since 2001 using randomly gathered data about transactions concluded in the period concerned, we estimated the average unit prices in individual years and the average prices for the entire period before and after Poland's accession into the European Union. These values were then set against the average price of all the transactions in the period concerned. The study material used included a set of information about approximately 450 transactions from a representative residential quarter of the city of Kraków. Detailed results of the calculations of the basic statistical characteristics (means, standard deviations and dispersions) in the set of the prices of flats is presented in Table 2.

Table 2. Basic statistics of prices of flats in Kraków in selected time intervals

Period	Average unit price [PLN/m ²]	Standard deviation [PLN/m ²]	Price dispersal
2001 ÷ 2007	3647.84	1825.12	0.50
before EU	2699.40	728.78	0.27
after EU	4784.95	2079.58	0.43
2001	2676.77	471.06	0.18
2002	2607.38	750.62	0.29
2003	2654.04	611.66	0.23
2004	3479.30	873.39	0.25
2005	3850.60	1136.21	0.30
2006	4993.21	1806.34	0.36
2007	7572.33	2009.94	0.27
2008	7450.79	1442.78	0.19

Apart from the year-to-year growth in the average unit prices and the jump of prices following our accession to the European Union, we can see that the values of the standard deviations of real property prices indicate that there has been a clear year-to-year growth in the price differences. The standard deviation for prices obtained after Poland's accession to the EU of 2079.58 PLN/m² is nearly 3 times higher than the standard deviation of prices in the years preceding Poland's membership in the UE of 728.78 PLN/m². This means that currently the prices of flats are not only much higher but also much more varied. This is also shown by the values of dispersion before and after the accession: 0.27 and 0.43. These values express the ratio of standard deviation to the mean value in the period concerned. Thus we may conclude, that Poland's membership in the EU as if "liberated" the prices of flats.

The average unit prices of flats in the individual years are presented in the diagram below (Figure 1), where one can notice even more clearly the high increase of prices in the period 2001÷2008. The trends in the change of prices in the period concerned and before and after Poland's accession to the European Union is presented in figures 2-4. The figures illustrate the stability of the average prices in the years 2001÷2002 and the fast upward movement in the year 2003 and at the beginning of 2004 (Figure 3). The last figure also shows the slump in the last months of 2007 of the upward movement which had continued for over two years.

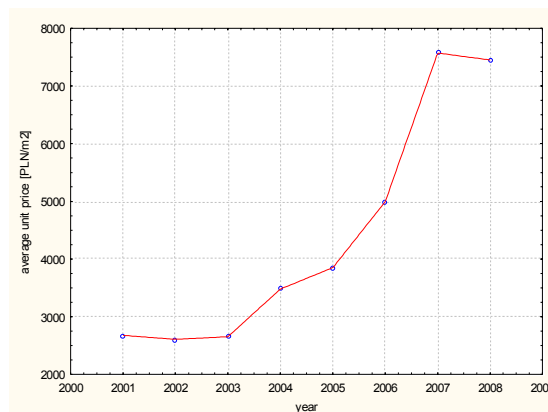


Figure 1. Mean unit prices of flats in Kraków in individual years

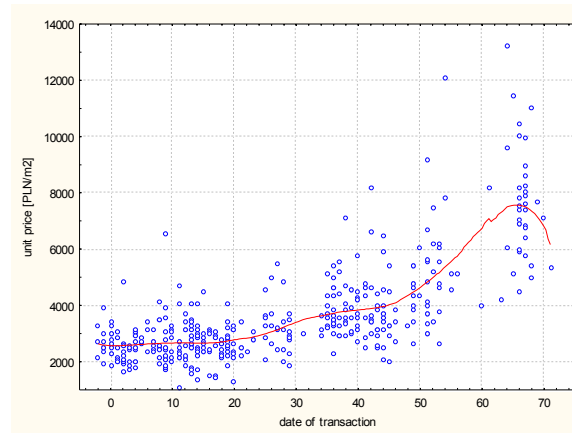


Figure 2. Dispersion of the prices of flats since 2001

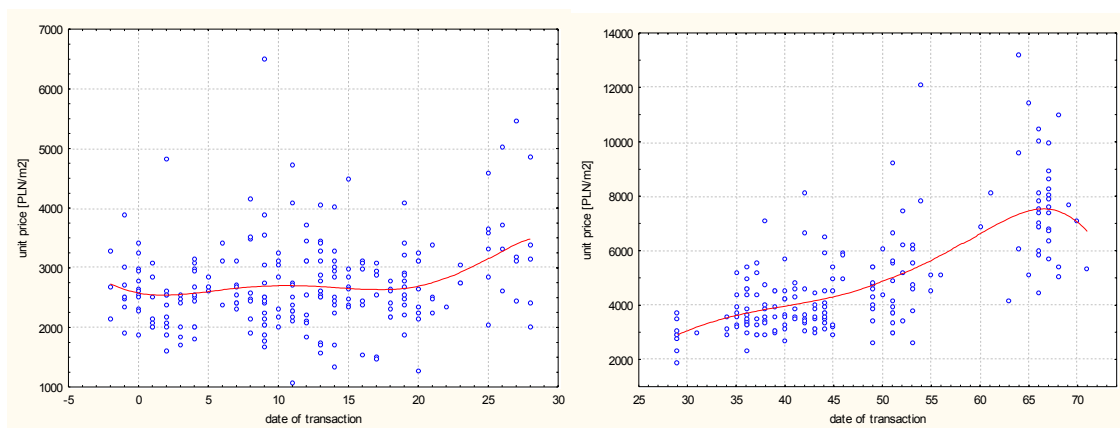


Figure 3. Dispersion of the prices of flats between January 2001 and April 2004

Figure 4. Dispersion of the prices of flats since May 2004

4. ANALYSIS OF CHANGES IN THE PREFERENCES OF REAL PROPERTY BUYERS

4.1. Determinants of the prices of flats

The real property data base on the basis of which the above calculations were made contains not only information about the dates of transactions and prices obtained for individual flats, but also scaled information on the attributes of the real property sold. The following determinants of the prices of flats have been taken into account:

area of the city, construction technology, condition of the building, number of rooms, floor surface area, fashion for specific locations, storey in the building, accessibility by public transport, nearest surroundings, availability of a basement or a storage facility, balcony, lift, kitchen in a separate room, recessed kitchen or dinette.

4.2. Determination of the percentage shares of the individual characteristics in the determination of prices

Apart from the high increase in the prices of flats in Poland over the last 7 years, one can observe changes in the preferences of property buyers suggesting that they tend to pay more and more attention to the comfort of living. Buying a flat is no longer just a means of securing one's basic needs, but is also a means of raising the standard of living. This is shown among other things by the substantial increase in the floor surface of the flats purchased.

Table 3 contains the values of lower and upper quartiles of the floor surface of flats sold before and after Poland's accession to the EU and in the individual years since 2001. As a rule, quartiles are used to set a symmetrical range with the middle in the mean value, where half of all the values of the random variable concerned are located. The data presented in the table indicates that in the recent years the floor surface of most flats sold has been systematically growing.

Table 3. Quartiles of the floor surface of flats sold

Time	Lower quartile	Upper quartile
2001 ÷ 2007	36.96	65.68
before EU	35.91	60.90
after EU	38.05	74.06
2001	33.24	61.31
2002	36.41	54.23
2003	35.30	60.90
2004	41.02	68.49
2005	35.62	76.23
2006	46.04	83.10
2007	38.00	63.78

In order to analyse the changes in the buyers' preferences as regards the other characteristics of flats, for the individual attributes we determined their percentage shares in the determination of the transaction prices before and after Poland's accession into the EU. In order to compare the results, the values of the percentage shares were calculated by means of different types of correlations: Pearson's, Spearman's and Kendall's correlations. Spearman's and Kendall's correlations are defined on the basis of ranks attributed to random variables of a qualitative nature. Because most of the real property characteristics are qualitative, these two types of correlations are more suitable for them. However, if a given random variable is scaled well, i.e. it is given the right quantitative nature, the values of the different correlation coefficients should not differ substantially.

Table 4 contains the values of the percentage shares of the attributes of flats in their price, calculated on the basis of the three different correlation coefficients. The shares were calculated according to the following formula:

$$k_i = \frac{r_i^2}{\sum_{i=1}^m r_i^2} \cdot 100\% \quad (1)$$

gdzie:

- r_i – correlation coefficient between attribute i and price,
- m – number of attributes considered
- k_P – percentage share calculated on the basis of Pearson's coefficient,
- k_S – percentage share calculated on the basis of Spearman's coefficient,
- k_K – percentage share calculated on the basis of Kendall's coefficient.

On the basis of the values included in Table 4, we may conclude first of all that the individual attributes of flats determining their prices have been scaled correctly, as the percentage share calculated on the basis of the different types of correlations are similar. The above results also indicate certain changes in the preferences of persons buying flats before and after the accession. Such attributes as type of technology and fashion have slightly lost in importance and have given way to the presence of a balcony or a lift in the building. It should be mentioned that the insignificant importance of the city area is linked to the fact that the market data gathered concern one city quarter only. The city area still remains to be one of the most important determinants of real property prices.

Table 4. Percentage shares of the attributes in price determination

Attribute	before EU			after EU		
	k_P	k_S	k_K	k_P	k_S	k_K
city area	2	4	4	2	5	5
type of construction technology	22	21	20	22	19	18
condition of the building	15	12	12	15	12	13
number of rooms	1	2	2	1	2	3
Area	1	1	1	1	5	4
Fashion	27	29	30	26	21	21
Floor	1	2	2	1	2	2
Transport	7	5	6	7	5	5
Surroundings	14	13	12	14	12	11
basement/storage facilities	5	6	6	4	2	2
Balcony	4	3	3	5	10	11
Lift	1	1	1	1	3	3
Kitchen	0	1	1	1	2	2

5. SUMMARY

Following the dynamic growth in the prices of flats which took place in the largest polish cities in 2006 and in the first quarter 2007, the spring and summer months of 2007 saw a clear slowdown in the growths. In particular the prices on the second-hand market, but also in the primary market, started to fall. The correction of the growths in the prices of flats by dozens of percent was natural and its occurrence may not be treated as a market crisis, but rather as a natural phase in the real property market development cycle. The year 2008 proved to be a period of stabilisation of the prices of flats in the largest polish cities, including Kraków.

We must remember about the specificity of the housing market - apart from the laws of demand and supply and short-term conditions, the situation is determined by structural factors: approx. 1.5-million deficit of flats in Poland, relatively low share of new flats in the structure of housing (merely every fifth polish flat was built after 1990) or demographic

trends (baby boomers are entering into adulthood). All this will undoubtedly lead to another revival of the market, taking the form of e.g. a growth in the supply of new flats.

It is a fact that despite reassuring voices of experts, the crisis in the world's market has led to a perceivable slowdown of the credit rush observable until recently. Banks have toughened their crediting policy. However, there is no real danger of a crisis on the market for mortgage loans. In view of the dynamic growth in salaries, the overall credit reliability of Poles on the market is increasing. The good economic forecasts for the Polish economy permit to predict with a high level of likelihood a further growth in the number of mortgage loans, although the growth will not be so dynamic as in recent years.

The large unsatisfied potential on the housing market proves that the demand for flats has subsided only for a short while. The high prices for land and construction & assembly work will not allow developers to reduce their prices considerably. The only exception will be developers having large resources of land bought at lower prices beforehand. Their reserves may leave some room for lower prices of flats in the future, but such companies are few and far between in Poland. Although we have not seen any general reduction in the prices of flats, now customers have a stronger negotiating position than several months ago (also in financial terms). The period when flats were sold nearly instantaneously, right after they appeared on the market, is gone. Developers receive much less response to advertisements and must strive hard to sell each of their flats. However, one should expect that the fall in prices will take the form of a mere correction and in the longer term prices will keep growing, perhaps except for concrete slab flats and flats located in a less attractive area or being in a worse condition.

The market has slowed down. There have been no major fluctuations in 2008. Kraków has become a much more mature market than last year or two years ago. There are no signs of a crisis. Polish salaries are constantly growing. The number of wealthy persons is increasing, so potential buyers will be found anyway. However, if somebody wants to sell a flat quickly they should definitely bring the price down.

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