Evolution of the local residential real estate markets in selected Polish cities against the various phases of the global financial crisis

Abstract: This study analyzed the impact of the global financial crisis on the Polish real estate market. Presented are the prices on the housing markets in several Polish cities against the backdrop of the situation on the stock exchange, the labor market and the price of money. It was examined how the price and number of transactions were changing in the initial phase of the crisis, during its apogee, and during the current process of coming out of the crisis. The research period is 2006-2010. It covers the period of the greatest prosperity in the real estate market and of the financial crisis. The study describes three local real estate markets (of western, central and eastern Poland). These markets, which do not belong to the leading markets in the country, are so interesting because they can be a potential investment niche.

Key-Words: property market, real estate development, local impact of global crisis

Introduction

The global financial crisis was and perhaps still is the most important economic phenomenon of recent decades. Much attention has been paid to the crisis by virtue of its scale and scope from a global perspective, analyzing the economies of entire countries and regions around the world. However, what affected the global economy as such, has also affected its components. One of the source areas related to the last crisis was the real estate market. This is the part of the economy that was the inflammatory spark which spread onto the whole world. Countries gave out details of negative GDP growth. It was said that Poland was one of the few countries that avoided recession resulting from the global economic turmoil. The economic data presented by the Polish government showed Poland as a "green island" of positive GDP growth against the background of the "red sea" of recession in other European Union countries. This study aims to determine whether the Polish property market also resisted a downward trend. Did the Polish residential property market see a significant correction in prices? The study shows the evolution of prices in housing markets in several Polish cities against the backdrop of the situation on the stock exchange, the labor market and the price of money. It was examined how the price and number of transactions were changing in the initial phase of the crisis, during its apogee, and during the current process of coming out of
the crisis. Usually this type of research relates to the largest cities, not giving an image of the smaller markets that may operate under slightly different rules. Analysis of markets other than the main ones is so important because, with the saturation of markets in major cities, investors may seek to invest their capital on those more local real estate markets.

The study takes into account three Polish cities: Szczecin, Łódź and Białystok. These are cities located respectively in western, central and eastern Poland. They are thus in a sense, representative of the whole country. However, they do not belong to the major urban centers in the country. Szczecin is one of the oldest and largest cities in Poland (3rd place in terms of occupied area, about 300 sq. km, and seventh in terms of population). The city is the center of the agglomeration of Szczecin, a network of surrounding municipalities. According to data as of 30 June 2010, the city had 405,944 inhabitants (Polish Central Statistical Office, 2010). Szczecin is the largest urban area in north-west Poland. The second longest river in Poland – Odra – flows through the city. Within the limits of the city lies one of the largest Polish lakes - Lake Dąbie.

Figure 1. Location of Szczecin on the map of Poland.

Łódź is a city located in central Poland, and it is the capital of the Łódź region. It is the third city in the country in terms of population (742,387 persons) and fourth in terms of area (293.25 sq. km).

Figure 2. Location of Łódź on the map of Poland.

1 A characteristic feature of this city is that it is divided by the river Odra, which separates the city into two parts that are different in nature, economic potential and investment values. The geographical area of the present study is the eastern part of the city.
Białystok is a city in north-eastern Poland. It is the capital of the Podlaskie region and the seat of the Białystok district. According to data as of 30 June 2010, the city had 294,989 inhabitants. Among the regional cities of Poland, Białystok is the second city in terms of population density, 11th in terms of population and 13th in terms of area. Białystok is the administrative, economic, scientific and cultural center of the region. The city with adjacent municipalities forms the agglomeration of Białystok.

Figure 3: Location of Białystok on the map of Poland.
Source: wikipedia.org.

**Assumptions of the study**

Evolution of the housing market is described in the current paper by three variables. The first is the average transaction price per square meter of usable floor space of dwellings sold during the study period. The second variable is the number of recorded market transactions. The third variable is realized demand for dwellings expressed as the sum of the prices obtained in all transactions, the object of which was a dwelling. Geographically, the area of research is three Polish cities: Szczecin (strictly speaking, its right bank districts), Białystok and Łódź. The first city represents the western part of Poland, the second - the eastern part, and the third city - the central part. The period of study covers the years 2006-2010 (in Białystok, 2006-2009). All data for the right-bank part of Szczecin are obtained from notarial deeds of transactions concluded within the jurisdiction of the Third Tax Office in Szczecin. However, information about transactions made in Łódź and Białystok are obtained from databases of property appraisers operating on these markets. Data refer only to free market transactions, i.e. they do not include inheritances, donations, housing newly completed and housing sold by the municipality and work places. It covers just over 2000 residential units sold in Szczecin's right-bank, close to 7000 transactions in the case of Łódź, and more than 1500 in the case of Białystok. It is worth noting that the survey is comprehensive. Presented transactions do not constitute a random sample, nor are a specially chosen set of transactions. Owing to this, the study is more realistic in nature. The data comes from notarial deeds, and so it is fully reliable. Quarterly observations were made by aggregating all transactions recorded in the quarter, while in the
analysis of average prices, the data used for research were the arithmetic mean of all observed values in a given quarter.

**Research results**

One of the characteristic features of the Polish residential property market is a very large shortage of housing. The imbalance between supply and demand pushes up prices of dwellings. Very strong growth in prices was recorded in 2006-2007, when economic growth, falling unemployment and a drop in interest rates and expanded lending resulted in a large increase in the purchasing power of society. However, a slowdown in this strong growth was observed in the first three quarters of 2008. That was the beginning of the repercussions caused by the global economic crisis, whose impact on the prices of housing would be stronger in the coming quarters. In the second half of 2009, the decrease in transaction prices largely slowed down. After the explosion of the financial crisis, real estate prices fell. That decrease did not last long, however. It lasted around 2-3 quarters. In the second half of 2009, prices stabilized and even grew slightly. The year 2010 is the continuation of price stability in the housing market. Evolution of the average prices of 1 sq. m on the local markets analyzed is shown in Figure 4. The strongest decline in prices was recorded in Szczecin. This is also the city in which "crisis" real estate prices lingered on the longest.

![Figure 4. Evolution of average transaction price in the real estate market in the right-bank part of Szczecin, in Łódź, and in Białystok in 2006-2010.](image)

**Source:** Own calculations based on data from the 3rd Tax Office in Szczecin and databases of property appraisers.

The variable which determines the degree of activity of the real estate market is the number of transactions executed on it. The evolution of this variable in each quarter of the period is shown in
Figure 5. In each of the cities the situation was different. In Szczecin, during the boom years 2006-2007, an increasing trend in the number of transactions was recorded. Starting from the beginning of 2008, the number of transactions decreased. First, because of too high prices, and later (after the outbreak of the financial crisis) due to the reduction in lending by banks. In Łódź, the real estate market was not characterized throughout the whole period by any clear trend. However, this market was distinguished by a significant share of random fluctuations. The housing market in Białystok was characterized by a decline, except for the first three quarters of 2008. It could be said that the biggest increase in transaction occurred one year later than in Szczecin and about half a year later than in Łódź. In all three markets analyzed, a decrease in the number of transactions was reported, but it did not occur at the same time and with the same intensity.

Figure 5. Evolution of the number of transactions in the housing market in the right-bank part of Szczecin, Łódź, and the Białystok in 2006-2010.

Source: ibid.

The total demand for housing in the period preceding the outbreak of the financial crisis was characterized by a rising trend. The upward trend, which also occurred in earlier years, gained greater momentum after Poland's accession to the European Union. Despite the national and global disruption, demand for housing was growing steadily. That is related to a major shortage in housing resources that Poland inherited from the previous political system, when the centrally controlled economy was unable to keep up with population growth. It is estimated that Poland lacks 1-2 million homes. Such a large supply gap determines strong demand for emerging premises. Correction in the positive dynamics of demand was caused by the financial crisis, brought about by the rupture of a speculative bubble in the property market in the United States, associated with low
interest rates, excessive money supply and lending in the so-called sub-prime sector. During this period, the market correction has made several dozen of demand.

The study also took into account how the real estate market in the cities analyzed evolved, against the backdrop of selected economic variables. Selection of variables that can potentially determine the evolution of demand and prices on the real estate market is a subjective choice. The dynamics of the main stock market index represents a synthetic state of the economy of the country. The unemployment rate is, in general terms, a measure of the creditworthiness of buyers of residential properties and is largely a factor determining the financial capacity of the population, and thus the possibility of purchasing the property. Higher unemployment means fewer potential buyers of flats. Interest on loans is the price of money, for which properties are purchased. Increasing and decreasing trends in this economic variable should determine the behavior of actors on the real estate market, and thus affect the demand and prices.

As can be seen in Figure 7, stock market index was characterized by positive dynamics in 2006-2007. The year 2008 is a sharp fall in prices on the Stock Exchange. A fall that, of course, blended in with the trends in global financial markets at that time. Beginning in 2009, the market systematically makes up for the losses. It is, however, very far from the levels before the crisis.
In contrast to the development of stock market index were changes in the dynamics of interest rates in Poland. WIBOR-3M rate began to rise since mid-2007 and reached its maximum level in the fourth quarter of 2008. In the following years, interest rates fell to pre-crisis levels. Low interest rates was to prevent deepening of the recession. Evolution of the average interest rate WIBOR-3M in 2006-2010 is shown in Figure 8.

The response of the real economy to the global financial crisis occurred with some delay. Unemployment fell in Poland, including the three cities surveyed, by the end of 2008. An increase in unemployment occurred throughout 2009. In 2010, the last year of the study, there was again a fall in unemployment, which can be interpreted a positive sign that the worst of the crisis was overcome. At least until the projected second phase of the crisis associated with excessive indebtedness of countries.
Another step taken in the study was examining the relationships between these determinants of the real estate market and prices, demand and the number of transactions in dwellings in the specified cities. Research shows that the demand on the housing market is primarily affected by the price of money, i.e. interest rates. However, there is also a link between the real estate market and the evolution of the situation on the capital market, and more specifically on the stock exchange.
Figures 10-12 present correlation diagrams showing the relationship between the average quarterly levels of stock market index WIG-20 and the average quarterly transaction prices of 1 sq. m of usable floor space of housing in the right-bank part of Szczecin, Łódź and Białystok. In all the surveyed cities, scatterplots have a similar shape. The general trend is a positive one - higher levels of WIG-20 are related to higher prices. One exception to this rule was a period of major declines in the stock market caused by the outbreak of the global financial crisis, when the stock market noted a large drop, while the decline in property prices, although it occurred, was not as strong as in the case of the financial market (the period of greatest decline on the financial markets is marked with ellipses).

![Diagram of average price of one square meter of housing in Szczecin and the average quarterly levels of stock market index WIG-20 in 2006-2010.](source)

Figure 10. Diagram of average price of one square meter of housing in Szczecin and the average quarterly levels of stock market index WIG-20 in 2006-2010.

Source: Own work.

Explanation of the fact that declines in house prices were much smaller than the declines in the stock market can be explained by the fact that the existing huge unsatisfied housing needs in Poland and the related, continually high demand for residential properties caused a situation in which owners of dwellings were not willing to significantly lower prices for the property they offered, hoping that the crisis is temporary and they will soon find buyers willing to purchase their properties at prices similar to those before the outbreak of the crisis. As time soon showed, that was not a wrong assumption. Once the banks abandoned the ultra-restrictive lending policies, the real estate market once again accepted prices similar to those from the period before the bursting of the bubble.
Evolution of the relationship between unemployment and prices on the residential real estate market is shown in Figures 13-15. A study of the relationships between the level of unemployment in the cities analyzed and the average price of one square meter shows that in the years 2006-2010 (2009), this relationship was negative. When unemployment fell, residential property prices were rising.
This, of course, also means that during the crisis and rising unemployment, real estate prices were falling. This result seems to confirm the assumption made earlier that the situation on the labor market has a substantial connection with the situation on the real estate market. This conclusion is significant, because in Polish reality, the reality of unmet housing needs, the reality of a market where rental of housing is not the primary way to meet those needs, it is very hard to see the principles ruling other, more mature markets.

Figure 13. Diagram of average price of one square meter of housing in Szczecin and quarterly unemployment rates in each quarter of the years 2006-2010.

Source: Own work.

The negative relationship between unemployment and the real estate market has been recognized in Szczecin and Łódź as well as in Białystok. That shows that this regularity has signs of recurrence, it is not an incidental phenomenon, occurring only locally.
What seems very interesting is an analysis of the relationship between demand on the residential real estate market and the main (long term) determinant of the market - the price of money, i.e. interest rates. As it turned out, the relationship between these variables in 2006-2010 was positive. It was a situation unseen in markets other than the property market. That situation was caused by
two separate factors. In 2006-2007, especially in 2006, real estate prices rose rapidly. A year later, the price increase continued despite the already rising interest rates. Once again, unsatisfied housing needs manifested themselves. Banks at that time had adopted very liberal credit policies. They granted loans with very low margins (even below 1%) and very gently assessed the creditworthiness of potential borrowers. This resulted in the fact that successive clients received loans that allowed them to achieve one of the most important goals in their life. They bought apartments despite rising prices, fearing that they would soon be even more expensive. This whole process happened as if in isolation from rising interest rates.

Figure 16. Diagram of demand for residential premises in Szczecin and the average interest rates WIBOR-3M in different quarters of the years 2006-2010.

Source: Own work.

2007 was a year of very bad signals from the U.S. economy, where the excessive "sub-prime" lending and excessive investment in financial instruments based on growth in property prices heralded the reversal of the upward trend in real estate. In 2008, the disturbing signals became a reality, which led to the bankruptcy of many financial institutions, especially those which had pursued their policy of risk management in an irresponsible way. Those bankruptcies caused a domino effect, financial problems affected not only the investment banks. There was a decline in trust between financial institutions. Those institutions which emerged from the first phase of the crisis unscathed, began to act very defensively. They largely restricted lending. Problems in financial markets also affected the real economy, leading to a decline in employment and investment. In Poland, the effect of the crisis was an almost total freeze in lending by banks. The Monetary Policy Council, attempting to rescue the economy from the recession, began lowering
interest rates, which was to stimulate the markets. Despite the decline in interests rates, however, property prices were falling. Again, the explanation for this unusual phenomenon lies with the banks. Banks strongly reduced mortgage lending for some time, adopted a very restrictive approach to the assessment of creditworthiness. Against that backdrop, in the "absence of buyers" of apartments offered on the market, there was a decrease in realized demand.

Figure 17. Diagram of demand for residential premises in Łódź and the average interest rates WIBOR-3M in different quarters of the years 2006-2010.

Source: Own work.
Figure 18. Diagram of demand for residential premises in Białystok and the average interest rates WIBOR-3M in different quarters of the years 2006-2009.

Source: Own work.

Conclusions
Polish real estate market is a stimulating field of research. Generally accepted and often quite widely occurring relationships seem not to be affecting this market. The decrease in property prices caused by the global financial crisis was neither too strong nor long lasting on the markets analyzed. A very important conclusion from the study is that the residential real estate market is governed by two forces. The first one is the firmly rooted need for Polish people to have their own homes. Renting is seen as something temporary, and worse than owning an apartment. This is undoubtedly linked to the lack of social mobility, especially among people who remember the previous political regime. This traditional reluctance to change is the stronger, the weaker the relationships of the local market with the major population centers, including the capital city - Warsaw. The knowledge of this "traditional desire" of having a property can help investment decisions of foreign developers seeking investment niches for themselves. The second force shaping the housing market are banks offering mortgage loans. Whether the market will develop or shrink, depends on them. The direct impact of the crisis in Poland was therefore not too strong. The so-called supply gap, estimated to reach 1-2 million units, is too large to allow there to occur reactions, relationships and regularities similar to those on the more mature and more global markets. It remains an open question whether such a situation - disconnected from the global market, is something positive or negative. On the one hand, it has mitigated the effects of the crisis, on the other hand, it can hinder the pace of development in the period of prosperity.

References:

