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Information on home prices and the situation in the residential and commercial real estate market¹ in Poland² in 2012 Q4.

Summary

The analysis of the situation in the Polish real estate market in 2012 Q4 leads to the following conclusions:

- For another consecutive quarter there was a slight fall in housing prices in the largest markets (both as regards offer and transaction prices in the primary and secondary market). Growing housing demand and increased home sales in the primary market were driven by the last-time chance to benefit from subsidised interest on mortgage loans under the government-subsidized housing scheme *Family on their own* (Rodzina na Swoim - RnS) coming to an end.
- The number of housing units completed in Q4 hit its record high since 2010. On the other hand, there was a decline in the number of newly commenced investment projects and issued building permits. The number of housing units put on sale in the six cities decreased for the second time since 2009. Nevertheless, the unsold new housing stock continues to exceed twice the level considered as balanced.
- Although the model analysis indicates a drop in aggregate profit margins on newly commenced real estate development projects, housing construction continues to be profitable.
- The situation of the majority of real estate development companies seems stable due to diversification of their activities (engagement in residential and commercial real estate) and a relatively low level of debt burden. Yet, the sector's current situation and the general economic downturn are likely to generate problems: falling profitability, losses and bankruptcies of the weakest market players.
- Quarter-on-quarter growth in housing loan receivables from households hit its lowest level for the past seven years, whereas the value of newly signed mortgage contracts hit its record low over the past three years. Since the beginning of 2012, banks have not granted any mortgages in foreign currencies. Quarter-on-quarter declines in the amount of loan receivables from households in FX adjusted terms are getting more and more pronounced, which may be a sign that loans denominated in foreign currencies are being either repaid or, to a lesser extent, converted into zloty.
- Real estate loans for enterprises have been on the rise, whereas the loan quality has been deteriorating. A slight drop has been observed in lending to real estate developers for housing construction projects.
- The commercial real estate market recorded a strong growth in the value of investment transactions amidst stable capitalization rates on investments in prime locations.

¹ Due to the data update frequency, information on the commercial real estate market shall be published on a 6-month basis.

² The information was prepared by the Economic Institute for the needs of the authorities of NBP and it presents the authors' opinions. This document should not be read as an advisory material, nor should it be the basis for any investment decisions.

The study provides a synthetic description of key developments affecting the housing market in Poland's largest cities in 2012 Q4 and contains an appendix with charts and figures presenting: 1) home prices (Figures 1-12), 2) housing availability, loan availability, availability of loan-financed housing, loan limits and loan disbursements under the government-subsidized housing scheme *Family on their own* (Rodzina na Swoim - RnS) (Figures 13-21) 3) loan disbursements and real interest rates (Figures 22-31), 4) operating profitability of housing and real estate development projects, costs of construction and assembly output and economic situation of real estate developers in Poland (Figures 32-57), 5) residential construction and housing market in Poland (Figures 58-67) and 6) commercial real estate (Figures 68-82).

This study was based on the data from the Real Estate Market Database BaRN³, the database of offer prices of housing provided by PONT Info Nieruchomości, databases SARFIN and AMRON of the Polish Banks' Association (ZBP), collective data of the Credit Information Bureau (Biuro Informacji Kredytowej), data presented by Sekocenbud, Real Estate Advisory Service (hereinafter REAS) and information supplied by the Central Statistical Office (GUS) – F01 and F02.

Information on the commercial real estate market⁴ was prepared thanks to voluntary provision of data by commercial real estate agents and commercial real estate managing companies as well as companies providing related consulting services. The analysis also relied on the knowledge of particular consulting companies and banks as well as data and information supplied by the following consulting companies: CBRE, Colliers International, Cushman & Wakefield, DTZ, Jones Lang LaSalle and associations Retail Research Forum of the Polish Council of Shopping Centres and Warsaw Research Forum. The study also makes use of the database Comparables.pl.

In 2012 Q4 the residential real estate markets saw a one-time phenomenon driven by a regulatory measure, i.e. the termination of the government-subsidized housing scheme *Family on their own* (Rodzina na Swoim - RnS). This phenomenon together with the entry into force of the Act on the Protection of Home Buyers' Rights in April 2012 significantly affected the situation in the residential sector.

The markets of the analysed cities recorded a further decline in home prices driven by both the difficult market situation and conservative price limits in the RnS housing scheme (see Figure 1-Figure 4). The fall in prices was particularly significant in the primary market of the largest cities with the biggest oversupply of unsold developer housing units.

Particular declines were observed in prices in real terms (see Figure 7-Figure 8). In the case of Warsaw and Poland's seven largest cities in the primary and secondary market, the real

³ The BaRN database of the National Bank of Poland is created thanks to voluntary provision of data by the real estate agents and real estate developers with the participation of regional branches of the NBP; the study analyses both home sale offers and transactions as well as home rentals within city limits of sixteen voivodship cities, where the majority of real estate deals are closed. In 2012 Q4, district branches of the NBP collected in 16 capitals of voivodships a total of 49769 records on home sales (including 42085 offers and 7684 transactions), and a total of 4509 records on home rentals (including 3817 offers and 702 transactions).

⁴ The study focuses on modern commercial real estate as they are the object of transactions concluded by large real estate agencies. The scale of such transactions has a strong, direct impact on the domestic economy. Introduction to the commercial real estate market, definitions and a more in-depth analysis of major economic variables are presented in the "Report on the situation in the residential and commercial real estate in Poland in 2010" available at the NBP's website.

price level was equal to the 2006 Q3 level⁵, at the time when the NBP started its housing price study. The above described price developments are also corroborated by the hedonic index of transaction prices for the secondary market (see Figure 9 and Figure 10). In the primary market in the remaining 10 voivodship cities the observed level of nominal prices is stable, albeit considerably lower than in other cities. This is the effect of the relatively lower income of their inhabitants, triggering a weaker demand. Another factor behind the price stability in the primary market of 10 cities is the better quality of new housing units and their small number. As a result of the above developments, in the ten cities prices in the primary market exceed those in the secondary market (see Figure 5). On the other hand, transaction prices in the primary and secondary markets in the seven large cities were similar. The situation is somewhat different in Warsaw with the highest price level and the largest number of unsold new constructed housing units. The secondary market also offers a large number of new housing units of good quality in good locations, often ready to be occupied. As a result, in the Warsaw market new housing construction contracts, which are more risky for the buyer, are cheaper than secondary market housing. The relation of offer prices to transaction prices in the secondary markets of the largest cities shows that sellers' price expectations continue to run high as compared with home buyers' expectations (see Figure 6). In the case of the 10 cities, sellers' and buyers' expectations are similar.

Average prices of contracts for the construction of new housing put onto the market for the first time (see Figure 11) in the largest cities, show what prices are desired by real estate developers. On the other hand, average offer prices (see Figure 12) show the average level of all contracts currently offered in the market in the analysed period. The comparison of both values shows the real estate developer's subjective assessment of their project and market situation. After a period when the developers' sentiments eased slightly, in 2012 there were attempts to survey the market about price increases. Yet, as a result of the surplus of unsold housing units, their year-on-year price level was almost stable, whereas in a several-year perspective, those prices followed a downward trend.

The situation in the residential market is the relation of factors on the demand and supply side. It should be remembered that majority of home purchases in the primary market are financed with a bank loan⁶. Factors boosting demand in the analysed period included persistently falling home prices in relation to income and, in consequence, increased housing availability, understood as the number of square meters of housing that may be purchased in a particular market with an average wage in the enterprise sector (see Figure 13). While in the first three quarters of 2012 credit availability declined (see Figure 15), Q4 saw its certain improvement, driven by a slight fall in interest rates on PLN loans. Yet, housing availability is still below the 2004 level. Housing demand is also considerably impacted by banks' lending policy. In 2012 Q4, as in the whole period since 2009 Q3, banks continued to limit lending, guided by concerns about the uncertain situation in the housing sector and the economic crisis. Another factor which limited housing demand in the analysed period and in the whole of 2012 was the fact that banks ceased to grant lower interest loans in foreign currencies. The availability of loan-financed housing (see Figure 16), being an approximation of the purchasing power in the housing market, increased slightly in the whole of 2012. This was mainly driven by falling home prices. The growth in the purchasing power affected housing demand.

The factor which strongly affected housing demand was the government-subsidized housing scheme RnS⁷. The termination of the scheme planned for the end of 2012, boosted its

⁵ Yet, it should be remembered that a rapid growth in home prices was observed in the years 2005-2006 and was driven by Poland's accession to the EU.

⁶ According to market analysts, over 60% of transactions in the primary market are financed with mortgage loans.

⁷ In the years 2007-2008, the impact of the government-subsidized housing scheme RSN was limited due to dominant position of foreign currency denominated loans, especially in view of conservative regulations concerning

share in loan disbursements in 2012 Q4. This was an important factor which supported home purchases and increased their number as compared with the previous periods (see Figure 19- Figure 21).

In the analysed period, housing demand was strongly impacted by demand of households buying housing to meet their own needs. Home purchases for commercial purposes (rental) were limited by their high risk and low profitability. The comparison between home purchase costs (interest payable) and the amount of net rent (see Figure 17) shows that home rentals were not profitable for tenants in the Warsaw market only; in the Cracow and the Wrocław markets in 2012 Q4 rental was on the verge of profitability. For a wealthier investor buying housing for rental purposes would yet make sense, provided it was considered as an alternative to bank deposits or purchase of five-year Treasury bonds. Proceeds from such an investment would not allow the investor to finance it with mortgage loan only. The investment would not offer a competitive profitability as compared with rates of return on commercial real estate (office and retail real estate). The discussed indicators confirm the regularities observed in the markets of more developed countries, where housing investment is generally hardly profitable and requires additional support. As a result of the development of the market and stabilisation of its basic parameters (prices, rents, rates of return) these correlations are beginning to be found in the Polish residential market. In Poland the economic sense of this type of investment is additionally diminished by the high risk connected with the protection of tenants' rights⁸. In order to capitalize on investment demand in the Polish residential market this risk should be mitigated by the government assuming social protection of tenants (e.g. by providing social welfare housing or housing allowances).

2012 Q4 saw a downward trend in the growth of debt resulting from mortgage loans to households (see Figure 22 – Figure 23). This is in line with the general trend observed since 2008. Also the geographical breakdown of those loans has not seen any major changes (see Figure 24 – Figure 25). The six cities with Warsaw leading the market, accounted for the largest number of mortgage loans. The same was true for the newly signed loan contracts (see Figure 27).

Mortgage loan portfolios began to decline both in absolute and relative terms (see Figure 26). This resulted from foreign currency lending coming to a halt at the beginning of 2012, which led to poorer loan availability. From banks' point of view, an important reason to curb lending was a weaker economic situation and more risky situation of the housing sector (bankruptcies of real estate development companies as well as falling value of housing used as collateral to back loans). From the point of view of home purchasers, housing demand has been curbed since the first half of 2012 on the back of concerns about job and income losses and expectations of further decline in home prices. Hastened decisions about home purchase, driven by the termination of the government-subsidized housing scheme RnS, had the opposite effect.

Banks' behaviour was largely impacted not only by the expected economic slowdown but also by steady deterioration of housing portfolio quality (see Figure 30) driven by an ageing loan portfolio. The analysis of this portfolio shows that the loans granted in the boom period and immediately afterwards, i.e. in the years 2007-2009 had the lowest quality. Besides, the lowest quality loans are in the Cracow market (the largest price bubble) and the Łódź market (the highest unemployment rate).

In 2012 the construction sector, including residential construction and real estate development was adversely affected by the external environment and the sectors' internal

maximum prices of financed housing. After those requirements had been eased in 2008, the scheme gained rapidly in importance. Another important factor was banks' withdrawal from loans denominated in foreign currencies. Although conservative regulations laying down maximum prices of financed housing were re-implemented in 2010, the housing scheme was an important factor driving home purchases.

⁸ Act of 21 June 2001 (Journal of Laws no. 71, item 733) on the protection of tenants' rights, municipality's housing stock and amendment of the Civil Code.

problems. In the case of the housing sector, the problems included steadily weakening demand and an excessive number of home construction contracts put on sale. The growing number of bankruptcies is a sign of the gloomy situation of both sectors (see Figure 33). As a result of this bad situation, in the second half of 2012 stock exchange indices of construction and real estate development companies hit their record lows (see Figure 32). Yet, the situation of real estate development companies offering homes for sale was not, in fact, that bad (their bankruptcies accounted for approx. 15% of all bankruptcies in the construction sector). The majority of large real estate developers are part of holdings which, apart from housing construction, are also engaged in the construction and lease of commercial real estate. This, in turn, allows them to diversify risk. In 2012 Q4, as in the whole of 2012, those companies implemented cost restructuring. As a result, the share of real estate development costs in one square meter of housing increased and aggregate profits and general expenses declined (see Figure 34). This discussed measure, which combines profits and general expenses, seems more reliable than measures based exclusively on costs, as in this case the likelihood of overestimating direct costs and financing in this way expenses which should be financed with profits is smaller. Despite faster price declines and related profit margins, observed in 2012 Q3 and Q4, rates of return on housing construction recorded in 2012 Q3 and Q4 in the largest cities were at the level of 15% on an annual basis (see Figure 35), the level which seems satisfactory for the sector during the crisis. This was also driven by falling costs of production factors. Real estate development companies better tailor their offer to meet housing demand (see Figure 66 and Figure 67). The analysis of balance sheets of real estate development companies shows that although they have adjusted to the current market and legal situation⁹, they continue to have at their disposal considerable equity, including cash ensuring business liquidity. In 2012 Q3¹⁰ the completed housing stock grew, whereas the number of housing projects under construction declined (see Figure 50). The long-term price decline was supported by the growing competition in the market as measured by the largest companies' share in the value of production (see Figure 44). A detailed analysis shows that there are considerable differences among housing developers in terms of economic condition (see Figure 45- Figure 52). The steady rise in the number of companies with negative financial result reflects, in fact, only historical developments (e.g. business mistakes made involving setting of too low home selling prices, failing to account for faster growing costs). However, a negative financial result does not necessarily indicate a company's insolvency as housing yet to be constructed may be very profitable. What is much more alarming is a growing share of companies with negative equity, which may be the result of mistakes already made, combined with mistakes which are currently committed, and which means that the company is insolvent. As a result, the number of companies facing financial problems is growing and the quality of the portfolio of housing construction loans for developers is deteriorating (see Figure 53- Figure 55). The quality of housing construction loans for developers is the worst among all loans for developers.

In 2012 Q4, new investments were curtailed, after having been increased by real estate developers prior to the entry into force of the Real Estate Development Act. As a result of a leap increase in demand, driven by the termination of the government-subsidized housing scheme RnS, real estate developers managed to sell more contracts. Yet, the total number of contracts offered in

⁹ The situation in the housing market was largely impacted by the regulatory environment, especially changes in it i.e. entry into force of the Act on the protection of the real estate developer's client (the Real Estate Development Act) and termination of the government-subsidized housing scheme RnS. Real estate developers embarked on new investment projects and sold new housing construction contracts to ensure they have orders not falling under the new Act for the coming years. They also expected home purchases would accelerate as a result of the termination of government-subsidized housing scheme RnS in December 2012. They managed to achieve both objectives, without excessive price drop and tensions in corporate balance sheets. Although net results and rates of return actually earned on real estate development projects fell, it should be remembered that the profit and loss account presents historical data and reflects past developments.

¹⁰ The analysed data are the 2012 Q3 data – more recent data of the GUS are not available.

the market diminished only slightly (see Figure 63). While analysing the leading indicators, we should reckon with gradual reduction in the size of housing investment and the number of new contracts¹¹. Also a certain fall in demand may be expected after its drastic acceleration in 2012 Q4. On the other hand, housing getting cheaper will become more attractive, especially for investors buying housing with cash¹². This means that a decline in housing demand does not have to be a dramatic one. In consequence, the market will get balanced.

The value of real estate loans to companies continues to be low as compared to housing loans, yet, follows a steady upward trend and at the end of 2012 stood at PLN 46 billion (see Figure 56 and 57). Lending to real estate developers for housing property remained stable since the end of 2011, yet its quality continued to deteriorate. The index of loans considered by banks as doubtful increased for another consecutive time and reached approx. 29% at the end of 2012. Despite the high level, this is not a threat to the banking system stability, as the share of those loans in the assets of banks which grant the most real estate loans, was below 4%. In 2012 Q4, there was a strong rise in company loans for office real estate (44% y/y) and their quality improved. This may be indicative of a growing investor's interest in the office market, likely to be the result of an uncertain situation in other sectors of the economy. Company loans for other real estate remain at a stable level with no significant change in quality.

The commercial real estate market in 2012 Q4 saw a strong rise in investment transaction (by EUR 1.6 billion), with the annual volume of transactions standing at EUR 2.8 billion (see Cushman & Wakefield data). This figure is similar to the volume of transactions recorded before the global crisis. Similarly to the previous years, investments in retail real estate accounted for approx. 45% of the total of transactions, and investments in office space for approx. 35%. The warehouse space market also recorded a relatively high level of transactions (17% of the total volume of transactions). According to the data published by Comparables.pl, this resulted from the fact large funds engaged in real estate investments have taken over parts of assets of two large warehouse space developers. Poland continues to be perceived as the largest Central and Eastern European market, and consulting companies expect a further growth in the volume of investment transactions¹³. Capitalization rates on investment in office and retail real estate remained at the 2011 level (see DTZ data). Amidst generally stable rent levels in the majority of markets this may be indicative of a persistently stable level of real estate prices (see Figure 68 – Figure 69).

In 2012, the office real estate market in Poland saw a rise in the office space by 500 thousand square meters, which to some extent lead to increased vacancy rates (see Figure 70 – Figure 71). Yet, asking rents remained stable (see Figure 73).

It should be remembered that the vacancy rate in Łódź, which used to be the largest among the surveyed cities, has been on a steady decline since the beginning of 2012 and in the second half of 2012 was close to the average for all the analysed cities. Growth in office space in Warsaw in 2012 reached 270 thousand square meters (see Figure 74- Figure 75). According to Jones Lang LaSalle, 320 thousand square meters of office space will be completed in 2013 in Warsaw, the highest figure since 2000¹⁴. Such a strong growth in office space will probably lead to further growth in the vacancy rate¹⁵ up to approx. 10% in 2013 (from 6.7% in 2011 and 8.8% in 2012). This may exert a downward pressure on rents, especially in older office buildings.

¹¹ The construction production index - IRG (SGH, 2013 Q1) shows that after the 2007-2008 downturn, the two subsequent years saw a gradual improvement in economic situation. The recovery period ended in the second half of 2011. Since that time, construction has been again on a downward trend. 2012 Q4 ended with the trend reversal, yet, the subsequent quarters will show whether this is a long-lived development.

¹² This concerns mainly investors for whom home purchase is a tangible investment, demonstrating aversion to financial assets.

¹³ Colliers International, "Poland Research & Forecast Report 2013".

¹⁴ DTZ, "Warszawski Rynek Biurowy. 2012 Q4".

¹⁵ CBRE, "MarketView - Warsaw Office 2012 Q4".

In 2012 almost 500 thousand of square meters of retail space was completed (see PRCH data). Shopping malls were constructed mainly in cities with population below 100 thousand inhabitants, where customers are less wealthy, rather than in large agglomerations (see Figure 76- Figure 77). Yet, in 2013 the share of shopping malls completed in large agglomerations in the total retail space completed is expected to increase¹⁶. Asking rents in prime locations in most agglomerations remain at a stable level (see Figure 78) and are largely diversified (see Figure 80). Rental payments in Warsaw's prime locations have been on the rise since the beginning of 2011. This may be indicative of a considerable demand for retail space amidst limited possibilities of new shopping centre constructions in Warsaw.

Rents in prime shopping streets in all cities decreased slightly in the second half of 2012, and in most cities show a slight downward trend which continues since the turn of 2009 and 2010 (Figure 81).

The warehouse space market in 2012 saw an increase in completed warehouse space by 430 thousand square meters¹⁷, which is 10% more than in 2011. At the same time, the vacancy rate went down from 11.4% from 2011 to 9.4% at the end of 2012 which points to an increased demand for warehouse space. In most markets, rents for warehouse space in the second half of 2012 remained stable.

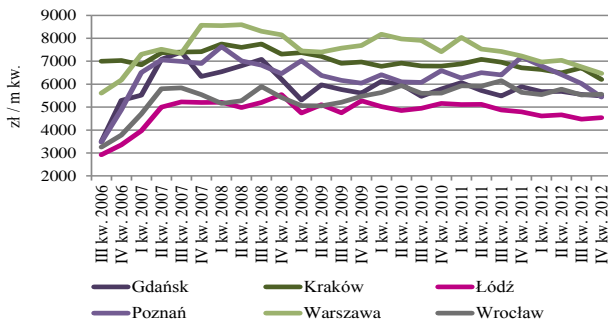
¹⁶ CBRE, "MarketView - Warsaw Retail Q4 2012".

¹⁷ Colliers International, "Poland Research & Forecast Report 2013".

Appendix

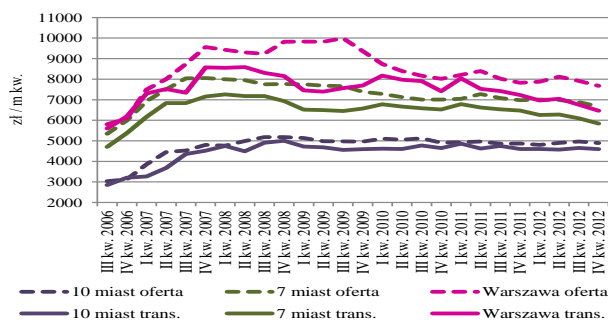
1. Transaction, hedonic¹⁸ and offer prices, primary market and secondary market

Figure 1 Transaction prices per square meter of housing – Primary market - primary market



Source: NBP.

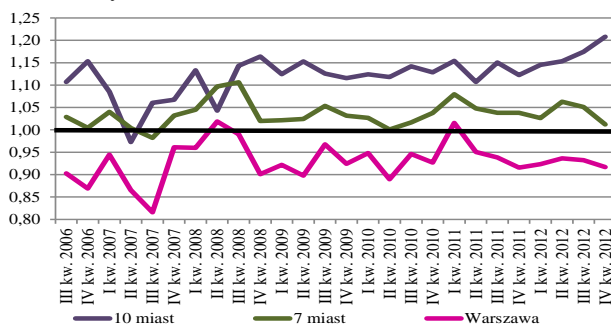
Figure 3 Weighted average price per square meter of housing, offers and transactions - primary market



Note to Figures 3-9: The price weighted with the share of housing in the market stock, the average price for Warsaw; Prices collected from developers and intermediaries and included in the BaRN database; description of the database in the 2011 annual report. 7 cities: Warsaw, Cracow, Poznań, Wrocław, Łódź, Gdańsk, Gdynia; 10 cities: Białystok, Bydgoszcz, Kielce, Katowice, Lublin, Olsztyn, Opole, Rzeszów, Szczecin, Zielona Góra;

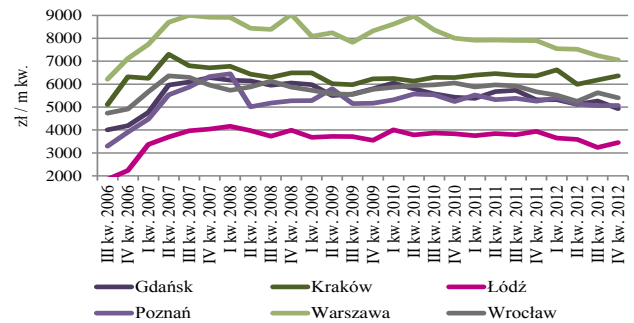
Source: NBP.

Figure 5 Ratio of the average weighted transaction price per square meter of residential housing, - primary market to secondary market



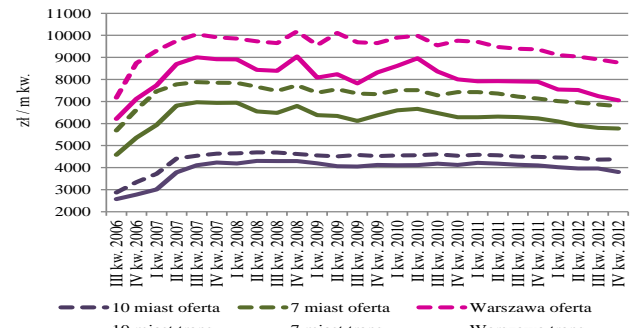
Source: NBP.

Figure 2 Transaction prices per square meter of housing – primary market- secondary market



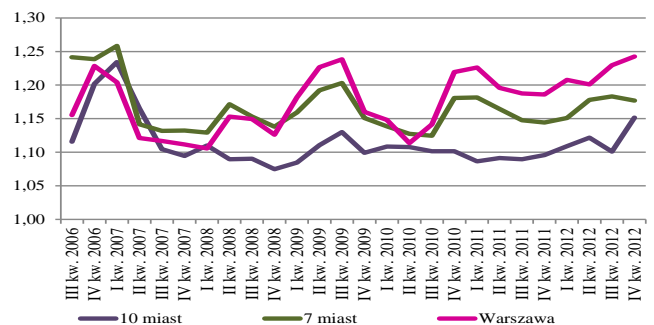
Source: NBP.

Figure 4 Weighted average price per square meter of housing, offers and transactions - secondary market



Source: NBP.

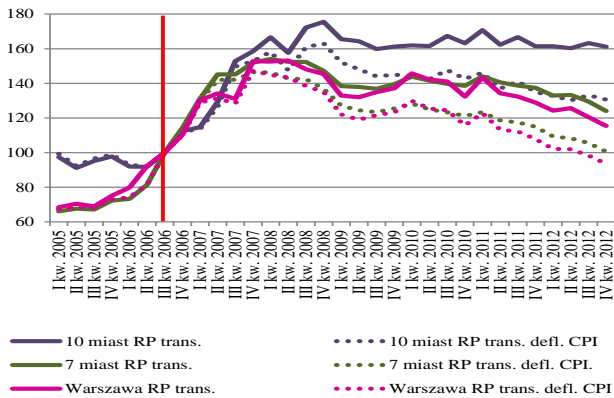
Figure 6 Ratio of average weighted price per square meter of residential housing, offer price to transaction price secondary market



Source: NBP.

¹⁸ The hedonic price of housing reflects the "pure" price, that is the price that results from other factors than the quality of housing. The analysis always pertains to the price of a standardized apartment constructed on the basis of the econometric model. It adjusts the average price stemming from the sample taking into account change in the quality of housing from a given sample in each quarter. It is different from the average or the median price growth, which would react strongly to any change in the sample's composition, for instance a larger number of small apartments with a higher price per square meter. For more information, see M. Widłak's (2012) article entitled "Metody wyznaczania hedonicznych indeksów cen jako sposób kontroli zmian jakości dóbr" in Wiadomości Statystyczne no. 9.

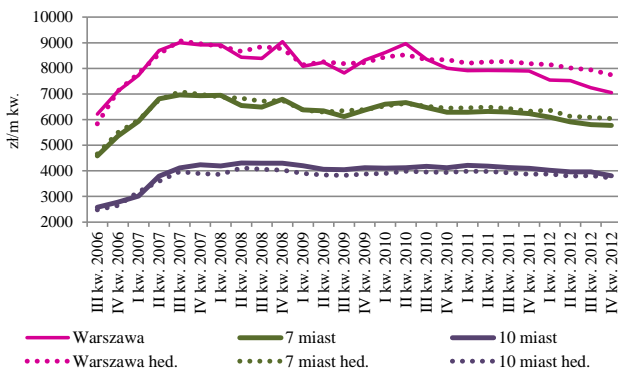
Figure 7 Weighted average price per square meter of housing and CPI-deflated price (2006 Q3 =100) – primary market, transactions



Note: The home price data base of the NBP (BaRN) has existed since 2006 Q3; red line separates BaRN data from PONT Info price estimates.

Source: NBP.

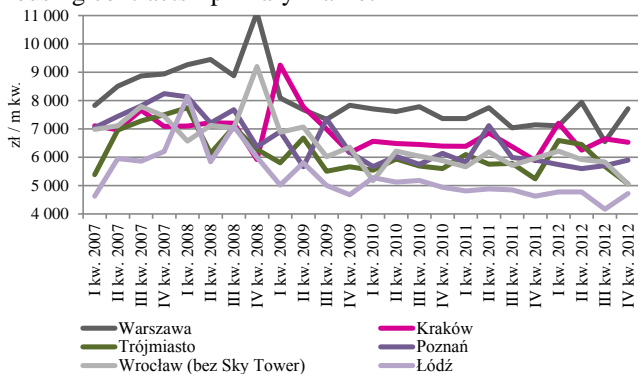
Figure 9 Average weighted price per square meter of housing and the hedonic price * - secondary market, transactions *



Note: Price of 1 square meter of housing in the reference period adjusted for the price growth index accounting for changes in housing quality in subsequent quarters.

Source: NBP.

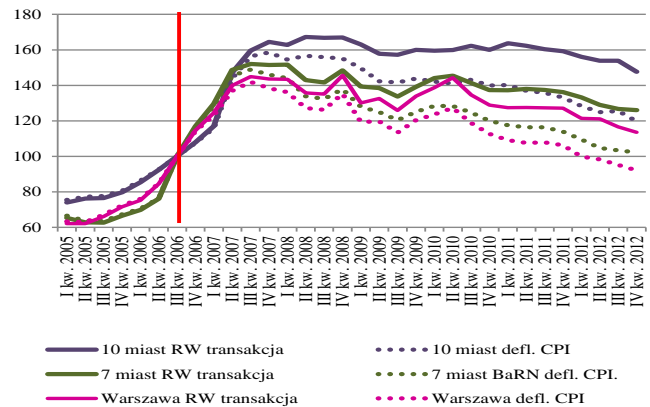
Figure 11 Average offer prices per square meter, new housing contracts - primary market



Note: prices refer only to new contracts put on the market for the first time.

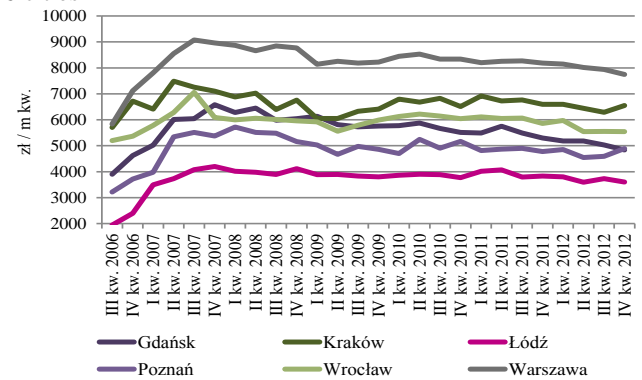
Source: REAS.

Figure 8 Weighted average price per square meter of housing and CPI-deflated price (2006 Q3 =100) – secondary market, transactions



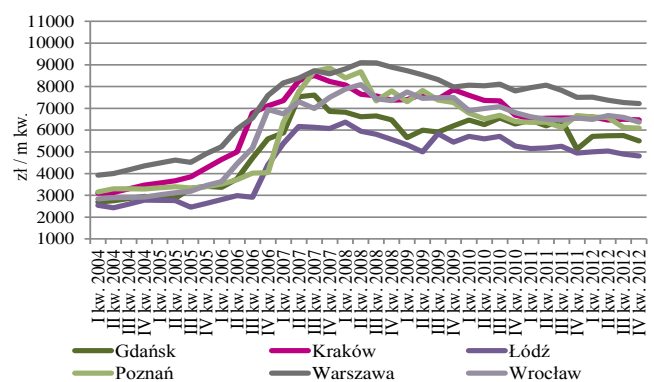
Source: NBP.

Figure 10 Housing transaction price per square meter in the secondary market, adjusted by the hedonic index *, in 6 cities



Source: NBP.

Figure 12 Average offer prices per square meter of housing - primary market

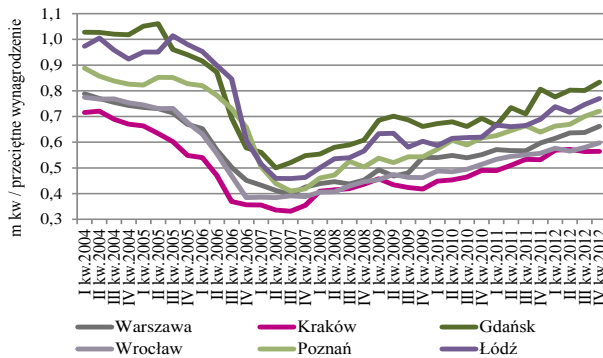


Note: prices are collected from all available sources.

Source: PONT Info Nieruchomości.

2. Housing availability, loan availability, availability of loan-financed housing

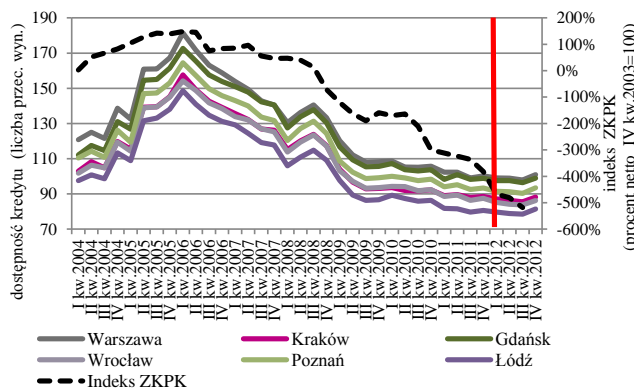
Figure 13 Housing availability in terms of a square meter of housing for an average wage in the enterprise sector



Housing availability – a measure of the potential ability to purchase housing space; it expresses the number of square meters of housing at an average offer price in a particular market (PONT Info), that can be purchased for an average wage in the enterprise sector in a particular city (GUS);

Source: NBP, GUS, PONT Info Nieruchomości.

Figure 15 Available weighted* mortgage loans / (expressed as multiplication of an average monthly wage in a particular market) and accumulated index of banks' housing loan policy (ZKPK)



Available housing loan – a measure, specifying multiplication of the monthly wage in the enterprise sector in a particular market, taking into account bank's lending requirements and loan parameters (interest rate, amortization period, minimum wage as the minimum income after payment of loan instalments);

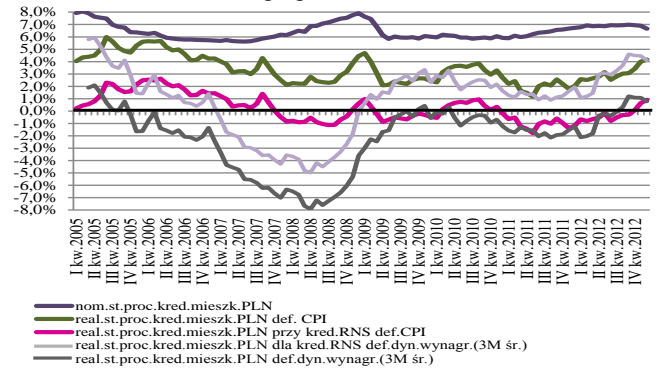
ZKPK Index – accumulated index of changes in banks' lending policy criteria; positive value mean easing, and negative values tightening of lending policy as compared to the initial period i.e. 2003 Q4; computing methods are described in the *Financial stability report, December 2012*, NBP

Availability of loan-financed housing – a measure, specifying how many square meters of housing may be purchased at an average offer price in a particular market (PONT Info), with a mortgage loan obtained basing on an average monthly wage in the enterprises sector in a particular market (GUS), in view of bank's lending requirements and loan parameters (interest rate, depreciation period, social minimum understood as the minimum income after payment of loan instalments). The pace of changes of the index and differences between particular markets provide important information.

Note: weighting with the currency structure of the quarterly loan increase; red line separates weighted values from values expressed in PLN only recorded since 2012.

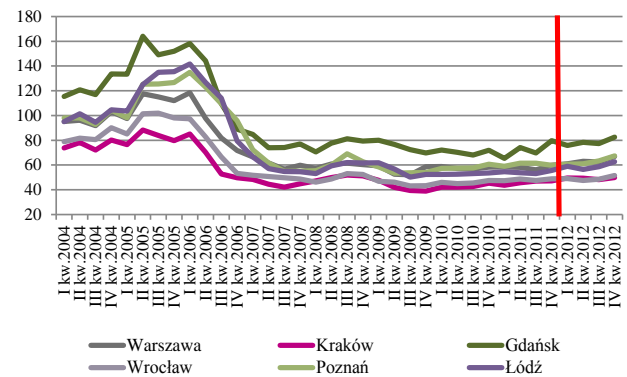
Source: NBP, GUS, PONT Info Nieruchomości.

Figure 14 Costs of PLN housing loans for consumer as deflated with CPI or wage growth



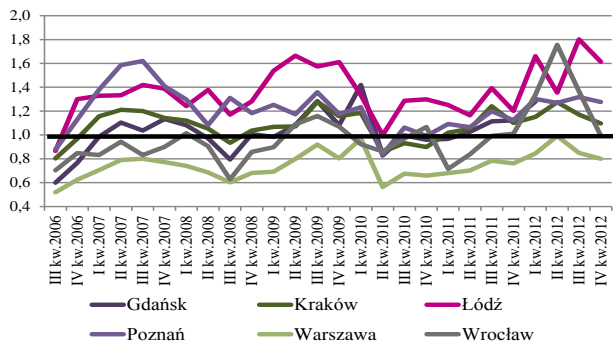
Source: NBP, GUS, PONT Info Nieruchomości.

Figure 16 Availability of loan-financed housing per square meter of housing (in the case of PLN loan) *



Source: NBP, GUS, PONT Info Nieruchomości.

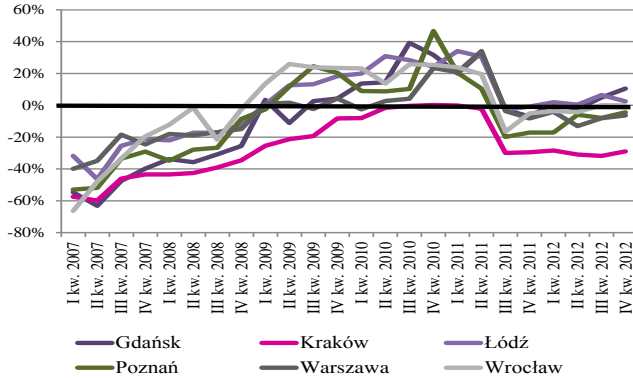
Figure 17 Ratio of loan interest expenses for purchase of 1 square meter of housing to the rental price of 1 square meter of housing (exclusive of service charges) with the weighted credit in 6 cities



Note: in figures 17 and 18 values above 1 denote higher profitability of home rental.

Source: NBP, GUS, PONT Info Nieruchomości.

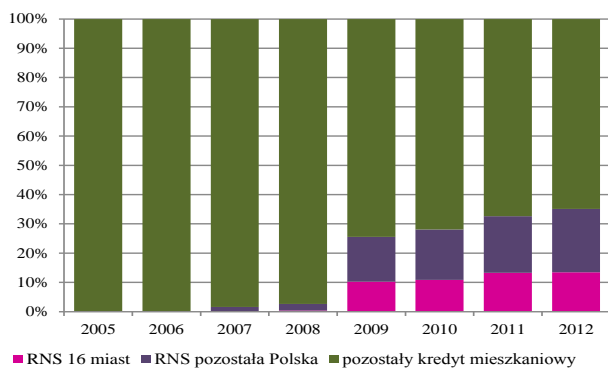
Figure 19 The gap between the limit under the RnS scheme in relation to the median transaction price in 6 cities - primary market



Note: The gap is calculated as the difference between the maximum (limit) of the RnS scheme and the median transaction price in the primary market in relation to the median transaction price. A positive difference means that the scheme finances housing with prices higher than the median, whereas a negative difference means the opposite situation.

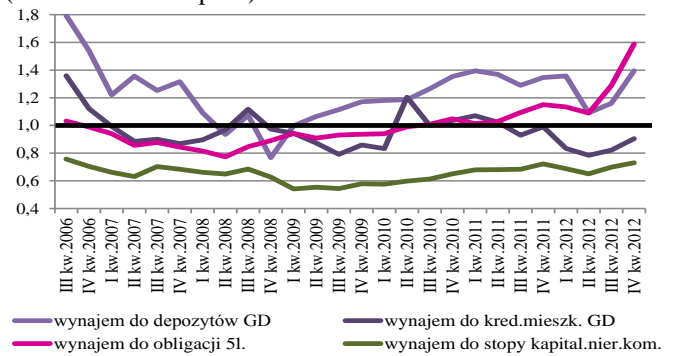
Source: NBP, BGK.

Figure 21 Geographical structure of new mortgage loan in Poland and subsidies under the RnS scheme



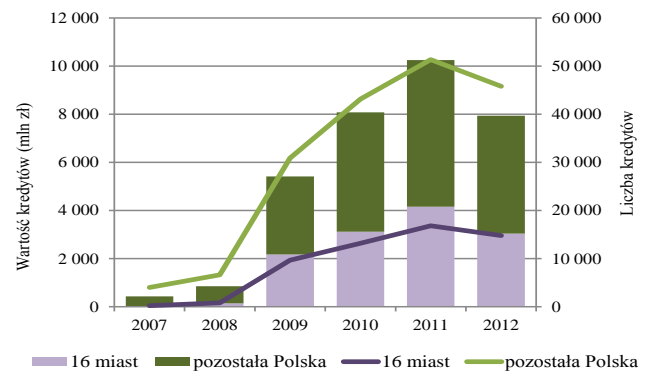
Source: NBP based on BIK and BGK data.

Figure 18 Profitability of home rental (average housing in 6 cities) in relation to bank loans and deposits, 5-year Treasury bonds and rate of capitalization of commercial real estates (office and retail space)



Source: NBP, GUS, PONT Info Nieruchomości.

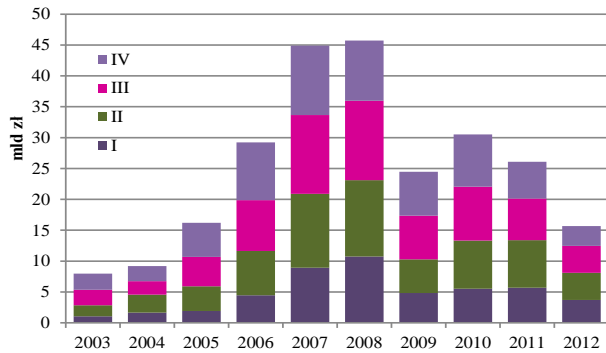
Figure 20 The number and value of loan disbursements under the RnS scheme in a given period



Source: BGK.

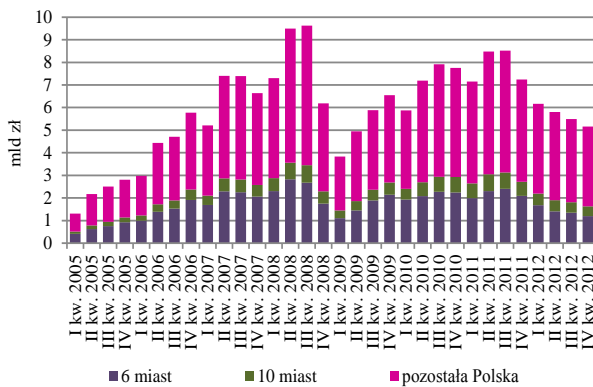
3. Disbursement of housing loans, interest rates

Figure 22 Quarter-on-quarter increases in housing loan receivables from households in FX adjusted terms (in PLN billion)



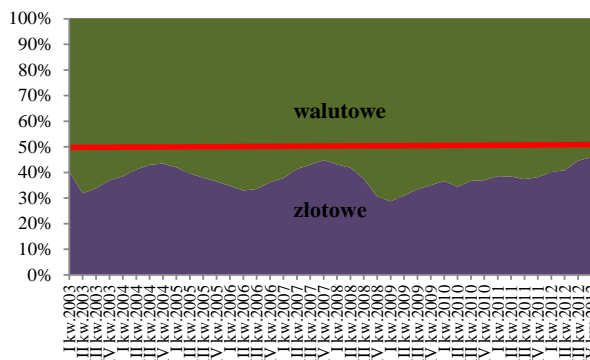
Note: The increase in receivables means the actual change in the amount of household debt, as it takes into account the actual disbursement of housing loans and their repayment.
Source: NBP.

Figure 24 Geographical breakdown of new housing loans in Poland



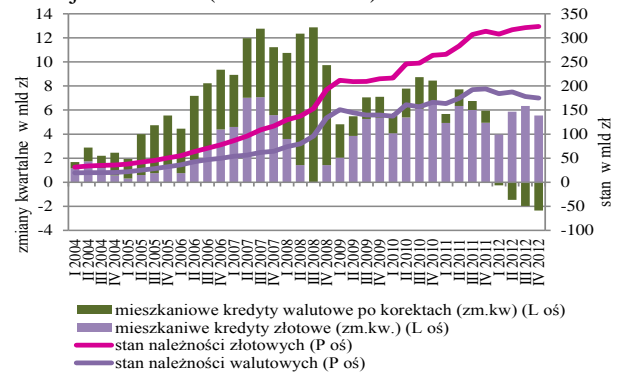
Note: BIK data do not cover the total of housing loan disbursements;
Source: NBP based on BIK data.

Figure 26 Structure of housing loan receivables from households (in %)



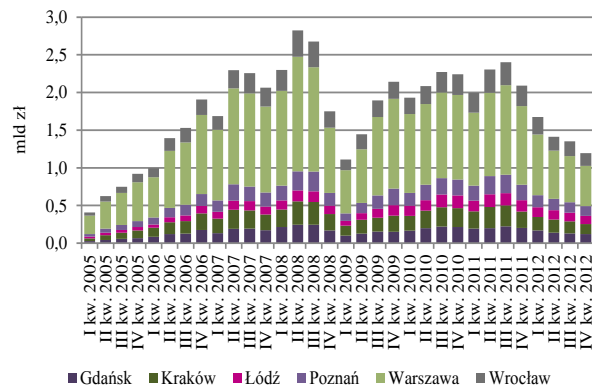
Source: NBP.

Figure 23 Currency structure of quarter-on-quarter increases in housing loan receivables from households in FX adjusted terms (in PLN billion)



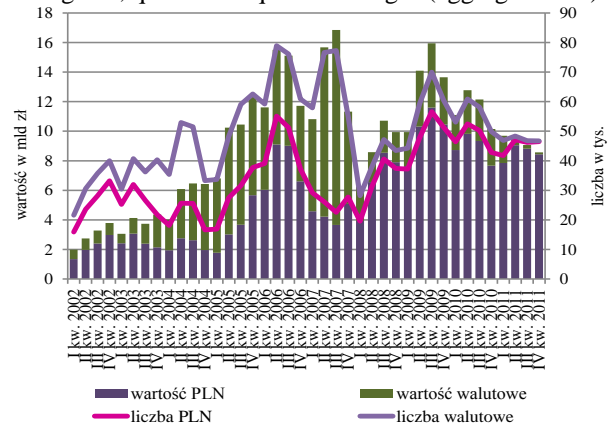
Source: NBP.

Figure 25 New housing loans in Poland's 6 cities



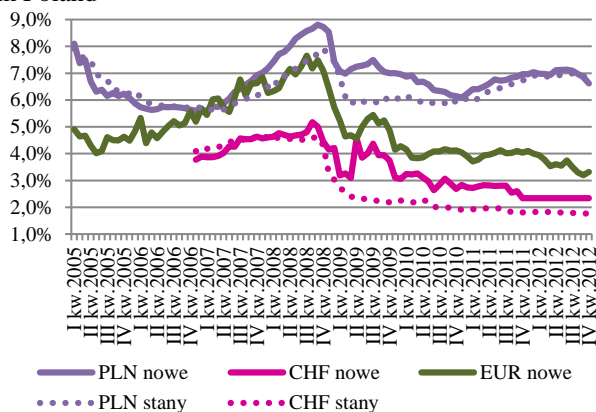
Source: NBP based on BIK data.

Figure 27 New housing loan contracts in terms of values and figures, quarter-on-quarter changes (aggregate data)



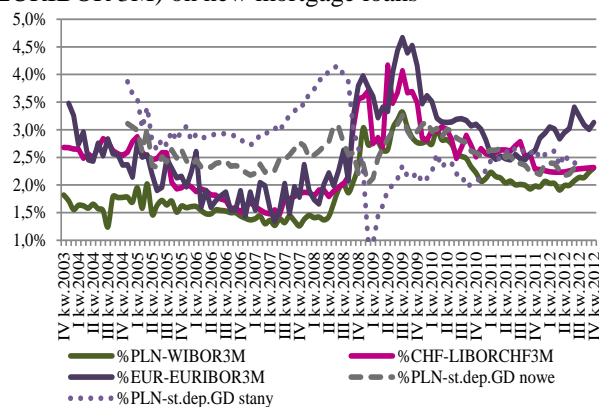
Note: data provides information on the concluded loan agreements and not the actual loan disbursements.
Source: ZBP.

Figure 28 Interest rates on mortgage loans to households in Poland



Source: NBP.

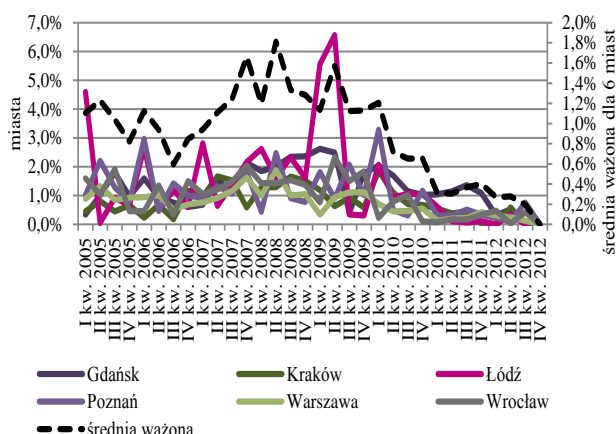
Figure 29 Bank margins (to WIBOR, LIBOR, EURIBOR 3M) on new mortgage loans



Note: Bank margin is the difference between mortgage loan rate (NBP) and the LIBOR3MCHF rate, the LIBOR3MEUR rate or the WIBOR3M rate;

Source: NBP.

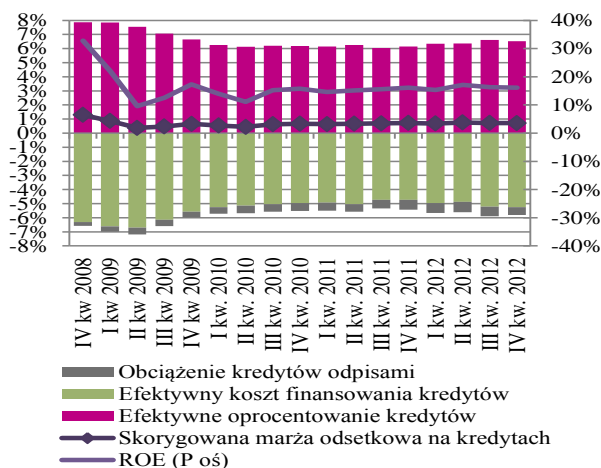
Figure 30 Quality of the mortgage loan portfolio in Poland's 6 cities in 2012 Q4



Note: Quality is defined as a percentage share of nonperforming mortgage loans (i.e. in arrears for 91-180 days) in the total of mortgage loans in a particular period for a particular city and the average level for the six cities; average weighted with the city's share in loan increase;

Source: NBP based on BIK data.

Figure 31 Estimated banks' return on FX loans in Poland

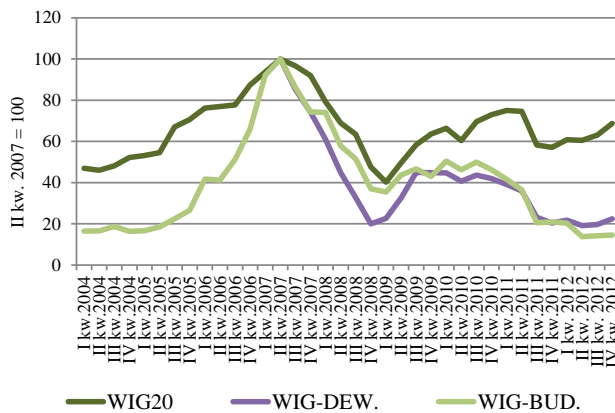


Note: Income and costs related to mortgage loan portfolio. Estimated ROE (Return on Equity) is calculated as the adjusted interest margin on mortgage loans with respect to the minimum required equity. The minimum equity requirement is assessed on the basis of the LTV estimate derived from the AMRON data and capital requirement for mortgage loans as set by the Polish Financial Supervisory Authority (KNF). The adjusted interest margin is the result of all income being added and all costs being deducted. The effective cost of financing was computed based on the WIBOR and LIBOR rates by adding estimative costs of this operation.

Source: NBP, AMRON..

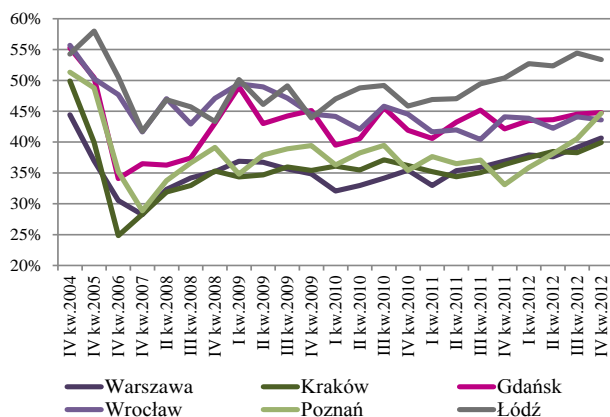
4. Operating rate of return on housing and real estate development projects, costs of construction and assembly production and economic situation of real estate developers in Poland

Figure 32 Growth in stock exchange indices: WIG20 and for real estate developers and construction companies



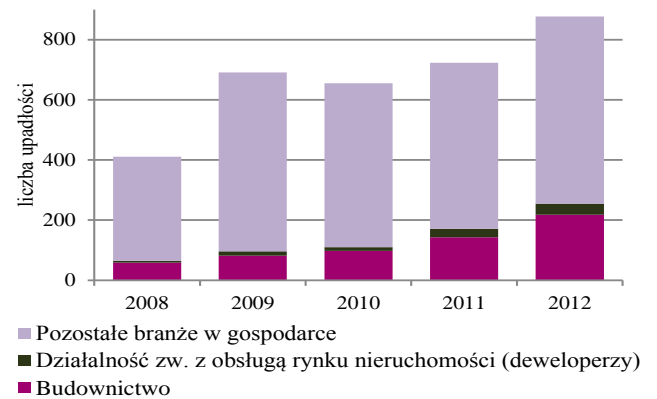
Note: harmonized data 2007 Q2 = 100.
Developers' WIG has been recorded since 2007 Q2
Source: Warsaw Stock Exchange..

Figure 34 Share of direct construction costs per square meter of the residential building's usable area (type 1121¹⁹) in the transaction price – primary market



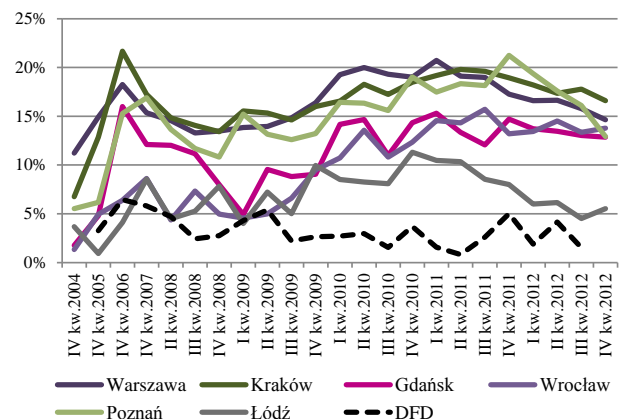
Source: NBP based on Sekocenbud.

Figure 33 Number of bankruptcies in the sectors in three quarters



Note: breakdown according to the first entry into the National Court Register (KRS);
Source: Coface Poland.

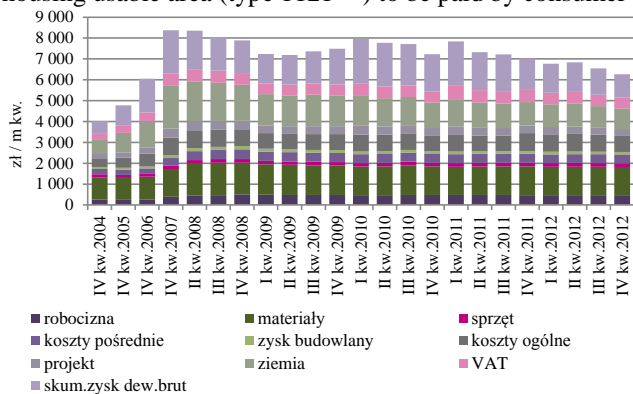
Figure 35 Rate of return on equity in investment projects in 6 cities and the actual rate of return of real estate developers(DFD)



Note: The rate of return on equity in new investment projects assuming the currently applicable interest rates, banks' requirements and production costs; calculated on the basis of the diagram included in Annex 3 of the "Report on the situation of the Polish market of residential and commercial real estate in 2011".
Source: NBP based on Sekocenbud, GUS.

¹⁹ Building (type 1121) monitored by the NBP since the second half of 2004 as an average residential multi-family five-storey building with an underground parking space and retail premises on the ground-floor; traditional construction (overground part made from ceramic bricks); for the sake of convenience, it has been assumed that construction costs of 1 square meter of parking space and retail space are close to the costs of housing sold in shell condition; real price of 1 square meter of housing, based on construction costs, depends on the share of outer space [building's common area], different for various buildings; when calculating the price of 1 square meter of usable housing area to be paid by consumer, we have assumed 20% share of outer space [building's common area] with respect to housing area and by this figure we have adjusted upward the price of 1 square meter of housing. Data adapted to the new developer's model of the construction process described further in Article 3 of the "Report on the situation of the Polish market of residential and commercial real estate in 2011".

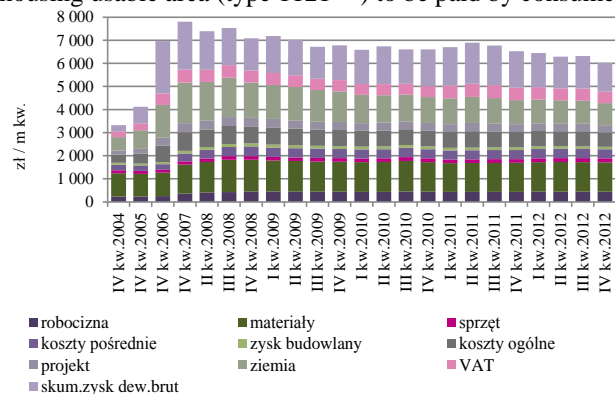
Figure 36 Warsaw - structure of price per square meter of housing usable area (type 1121^{19/}) to be paid by consumer



Note: data in Figures 33-38 presented in quarter-on-quarter terms since 2008 Q2; previously, data published in year-on-year terms;

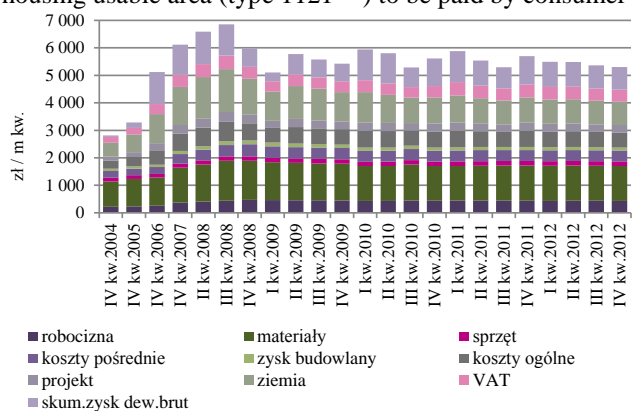
Source: NBP based on Sekocenbud, REAS.

Figure 37 Cracow- structure of price per square meter of housing usable area (type 1121^{19/}) to be paid by consumer



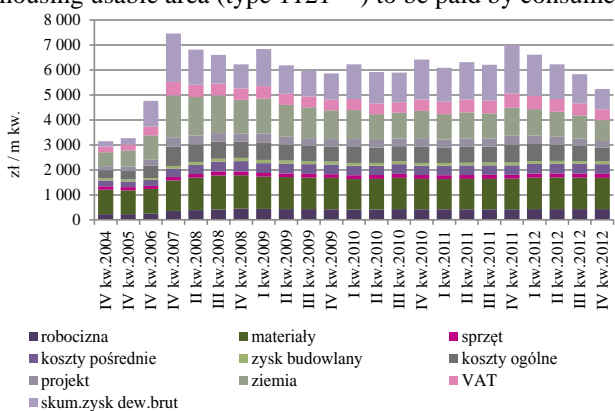
Source: NBP based on Sekocenbud, REAS.

Figure 38 Gdańsk - structure of price per square meter of housing usable area (type 1121^{19/}) to be paid by consumer



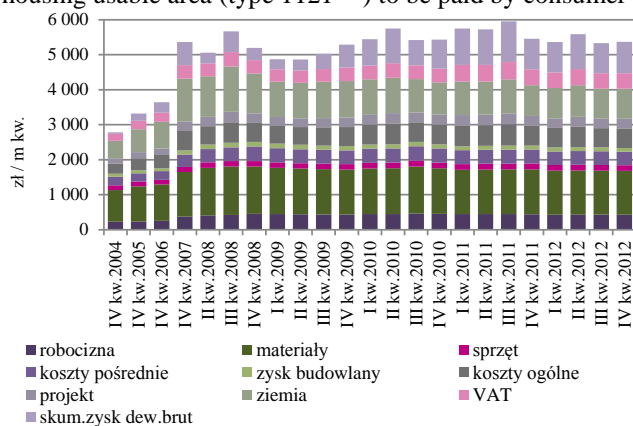
Source: NBP based on Sekocenbud, REAS.

Figure 39 Poznań - structure of price per square meter of housing usable area (type 1121^{19/}) to be paid by consumer



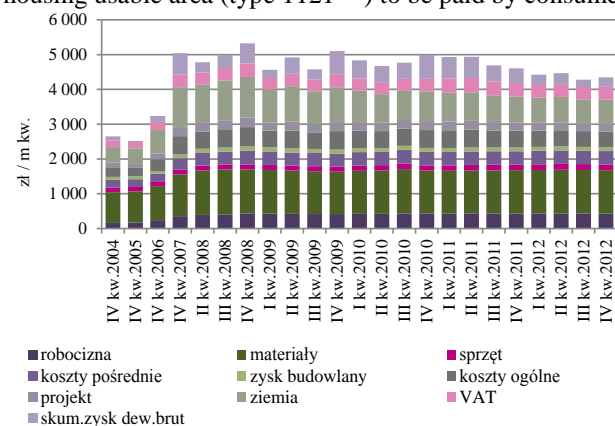
Source: NBP based on Sekocenbud, REAS.

Figure 40 Wrocław - structure of price per square meter of housing usable area (type 1121^{19/}) to be paid by consumer



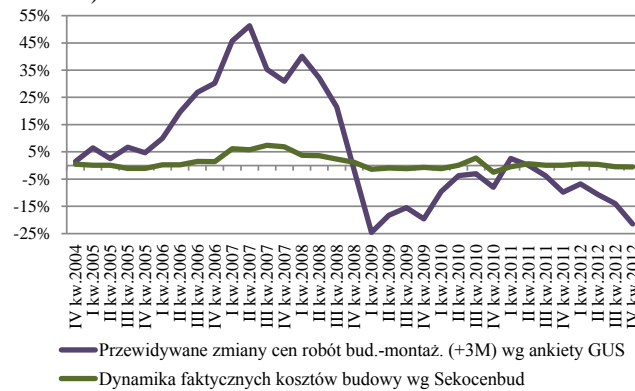
Source: NBP based on Sekocenbud, REAS.

Figure 41 Łódź - structure of price per square meter of housing usable area (type 1121^{19/}) to be paid by consumer



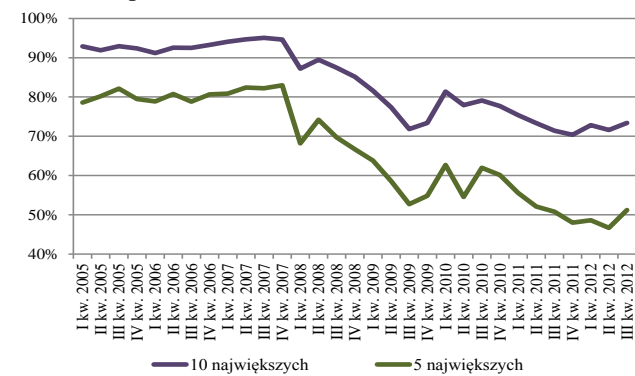
Source: NBP based on Sekocenbud, REAS.

Figure 42 Anticipated changes in the price of construction and assembly production (+M3) and growth in the costs of construction of the residential building's usable area (type 1121^{19/})



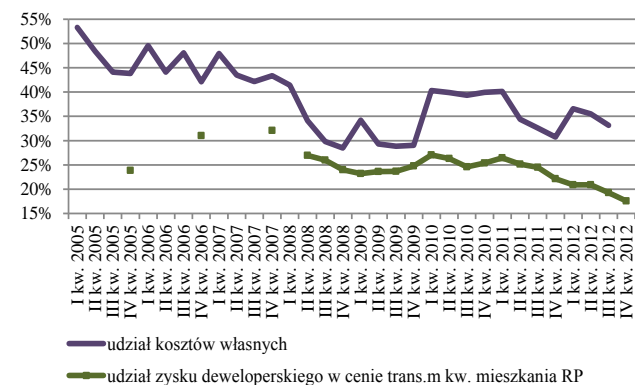
Source: NBP based on GUS data (business conditions survey), Sekocenbud.

Figure 44 Share of sale of 5 and 10 largest real estate development companies in total sale (calculations based on financial reports)



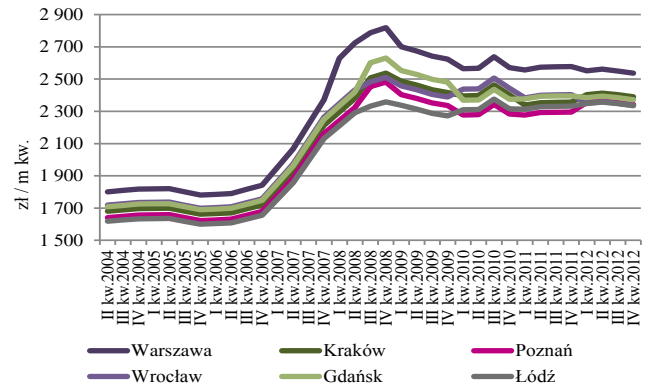
Source: NBP.

Figure 46 Share of own costs in the costs incurred by a large real estate development company (LD) and the share of real estate developer's return in the price per square meter of housing in the primary market.



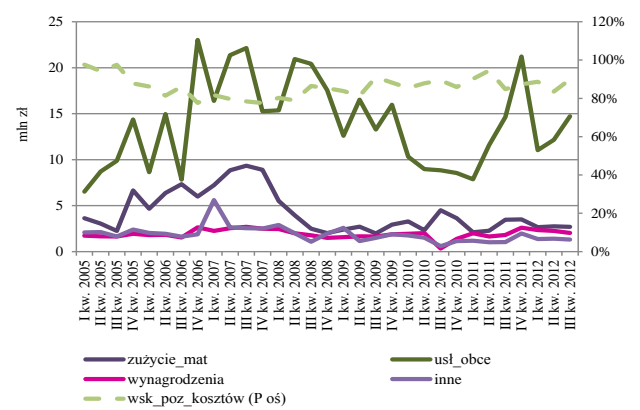
Note: share of the real estate developer's return until 2007, in relation to the fourth quarters only;
Source: NBP based on GUS (F01) and Sekocenbud.

Figure 43 Cost of construction of one square meter of the residential building's usable area (type 1121^{19/})



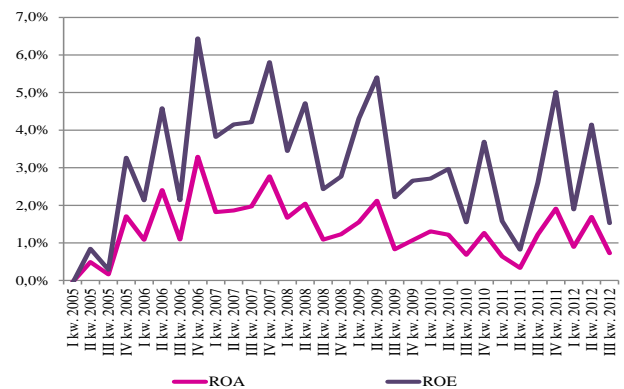
Source: NBP based on Sekocenbud.

Figure 45 Costs incurred by a standard large real estate development company (LD)



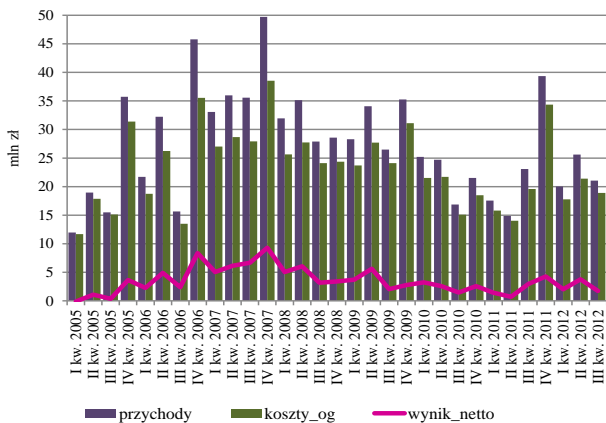
Note: according to the GUS, a large company employs on average more than 50 persons; relates to Figures 44-55;
Source: NBP based on GUS (F01).

Figure 47 ROE and ROA of large real estate developers



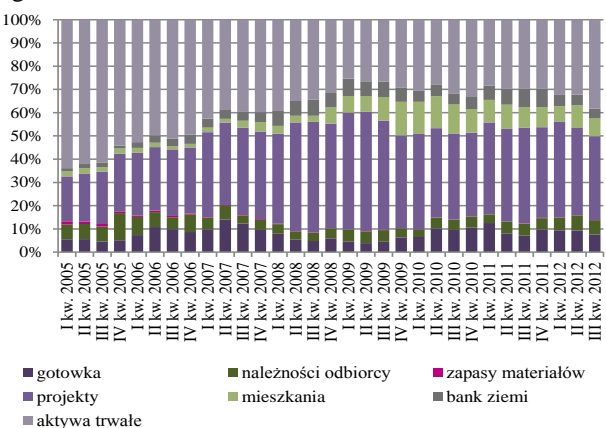
Note: net result in a given quarter as compared to assets (equity) at the end of a given quarter;
Source: NBP based on GUS (F01).

Figure 48 Economic indicators of LD



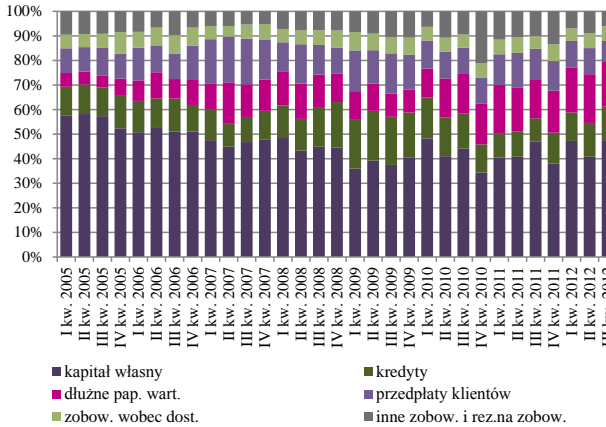
Source: NBP based on GUS (F01).

Figure 50 Structure of LD assets



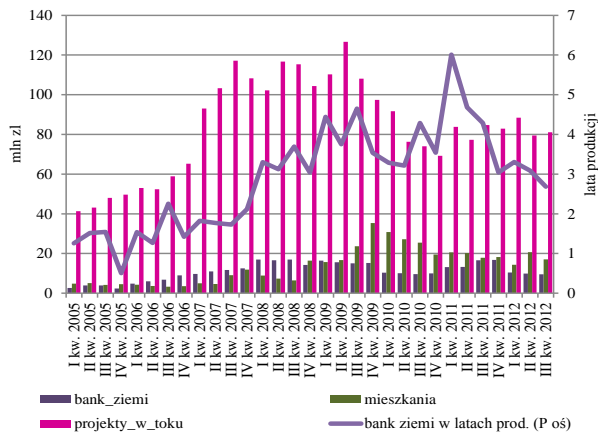
Source: NBP based on GUS (F01).

Figure 52 Structure of LD financing



Source: NBP based on GUS (F01).

Figure 49 Situation of LD



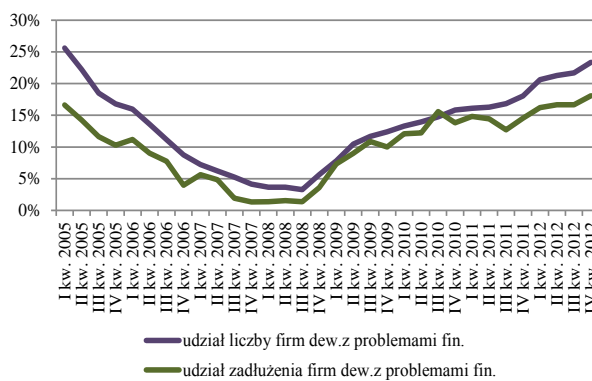
Source: NBP based on GUS (F01).

Figure 51 Structure of LD costs



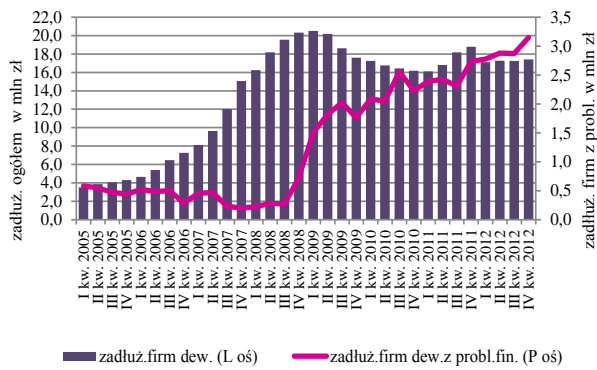
Source: NBP based on GUS (F01).

Figure 53 Real estate development companies facing financial problems */



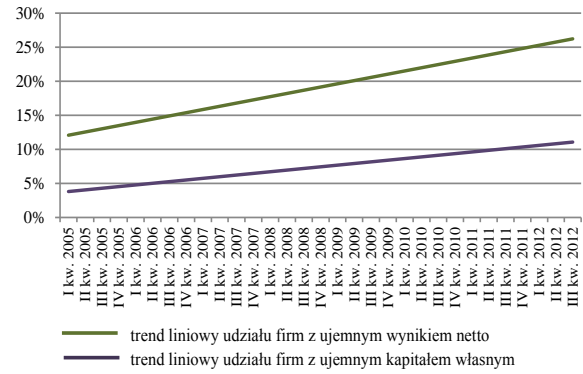
Note: */ companies whose liabilities have been classified by banks as non-performing (this refers to large-scale liabilities, exceeding the value of PLN 500 thousand); Source: NBP.

Figure 54 Value and growth of loans to real estate developers (commercial banks) and debt of real estate developers facing financial problems



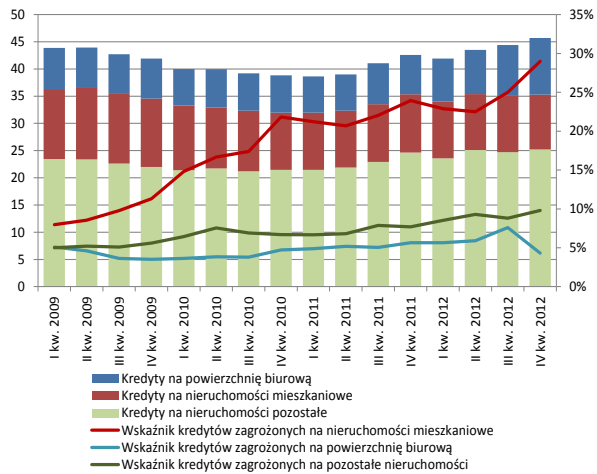
Source: B300; only large loans exceeding PLN 500 thousand.

Figure 55 Share of real estate development companies with negative financial result and negative equity



Source: B300; only large loans exceeding PLN 500 thousand.

Figure 56 Company loans for real estate purchase (in PLN billion, L axis) and doubtful loans (% , P axis)

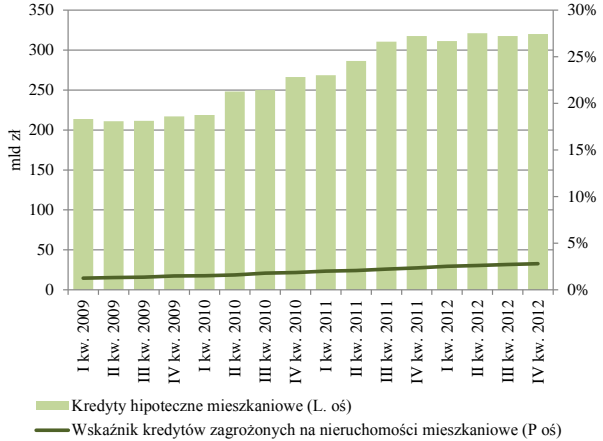


Note to Figure 56 and 57: Receivables (loans) with determined loss of value – receivables from B portfolio, in the case of which there are objective premises of a loss of value and fall in the expected value of future cash flows (at banks using the International Financial Accounting System (IFAS) or which have been classified as doubtful in accordance with the Decree of the Minister of Finance on the rules of creating provisions for risk resulting from banks' activity (at banks using Polish Accounting Standards).

Note: without BGK.

Source: NBP.

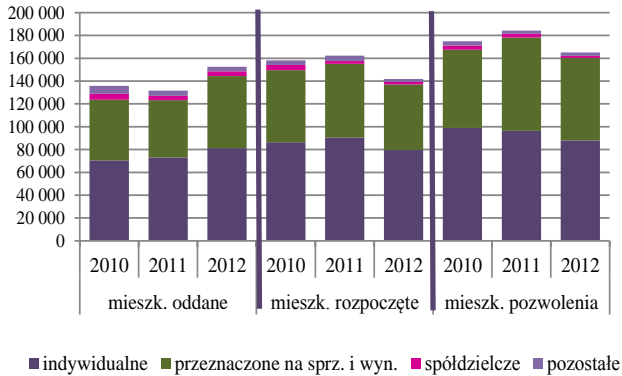
Figure 57 Household loans for real estate purchase (in PLN billion, L axis) and doubtful loans (% , P axis)



Source: NBP.

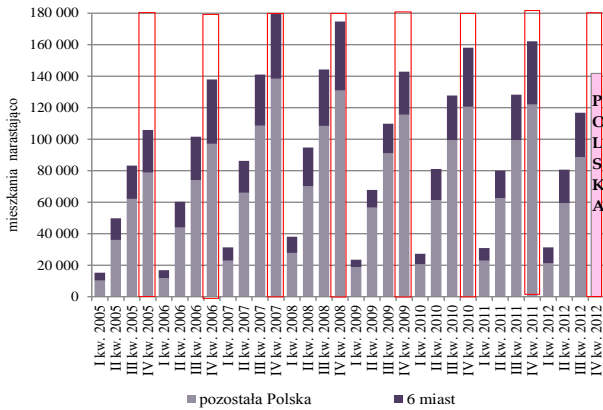
5. Residential construction and housing market in Poland in selected cities

Figure 58 Poland – structure of investors in residential construction in the third quarters of 2011 and 2012.



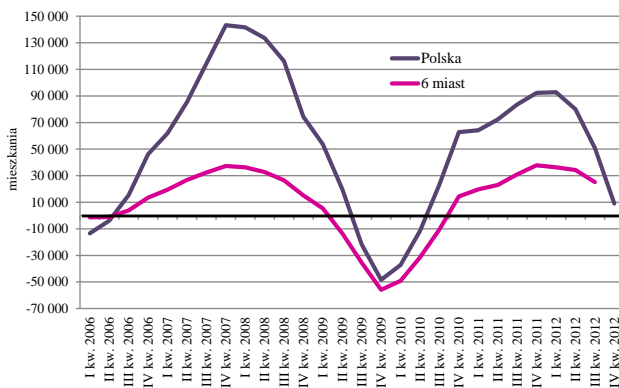
Source: GUS.

Figure 60 Poland – housing units under construction, per quarter



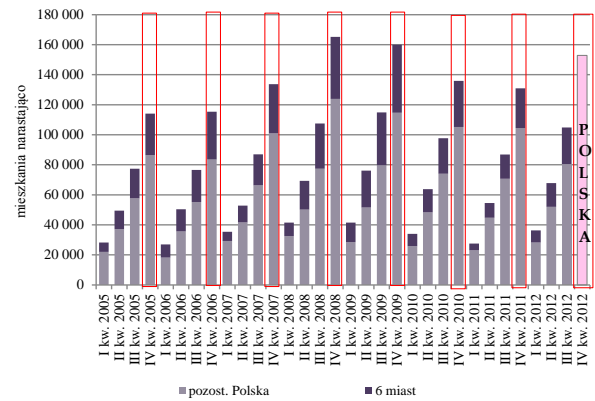
Source: GUS.

Figure 62 Housing market indicator in Poland and in Poland's six largest cities*/ (housing under construction minus completed housing)



The index is a 12-month rolling figure;
*/Warsaw, Cracow, Gdańsk, Łódź, Poznań, Wrocław;
Source: NBP based on PABB and GUS.

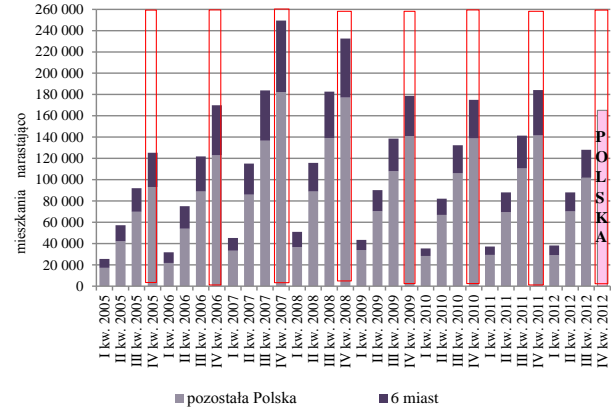
Figure 59 Poland - completed housing, per quarter



Note to Figures 59-61: marked Q4;

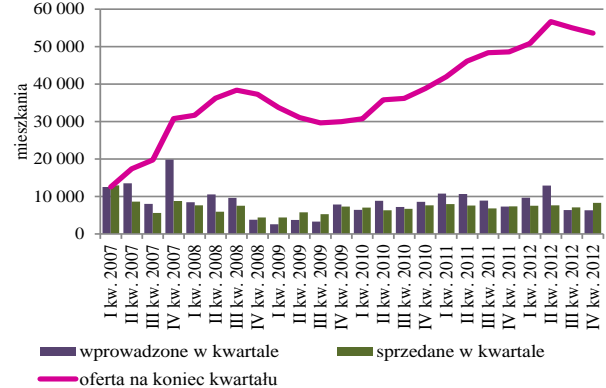
Source: GUS.

Figure 61 Poland – permits issued for housing Construction, , per quarter



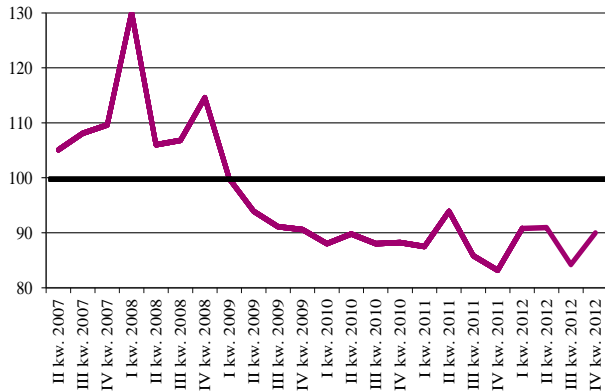
Source: GUS.

Figure 63 Number of housing units put on the market, both sold and offered for sale in Poland's 6 largest markets*/



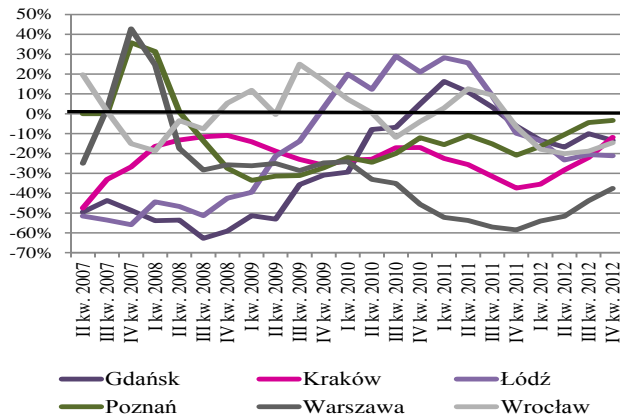
*/ Warsaw, Cracow, Gdańsk-Sopot-Gdynia agglomeration, Wrocław, Poznań, Łódź;
Source: REAS.

Figure 64 Growth in the average price per square meter of housing put on sale in the primary market in Poland's 6 largest cities*/ (2007 Q1=100)



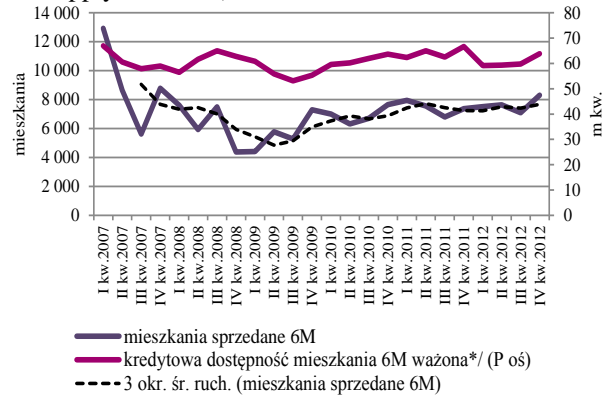
*/ Warsaw, Cracow, Gdańsk-Sopot-Gdynia agglomeration, Wrocław, Poznań, Łódź;
Source: REAS.

Figure 66 Structure of supply and demand*/ for housing with an area ≤ 50 square meters in the primary market in selected cities in Poland



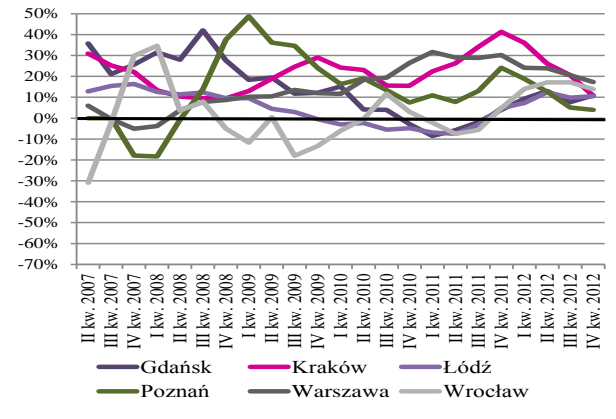
Note: Figure 66 presents a mismatch (in %) between supply (developers' housing offer) and the estimated demand (housing transactions) in terms of the housing unit's size, according to the data from the BaRN database; the mismatch is calculated as the ratio of the share of housing units with a usable area of up to 50 square meters offered for sale to the number of transactions involving housing units with a total area of up to 50 square meters (the average figure for the last four quarters). The positive result (above the line) indicates a surplus of housing of this particular size, whereas the negative result indicates a shortage thereof. Figure 67 is parallel.
Source: NBP.

Figure 65 Availability of loan-financed housing versus housing units sold in Poland's 6 largest cities*/(demand and supply estimates)



*/ Warsaw, Cracow, Gdańsk, Poznań, Wrocław, Łódź;
Source: NBP based on REAS.

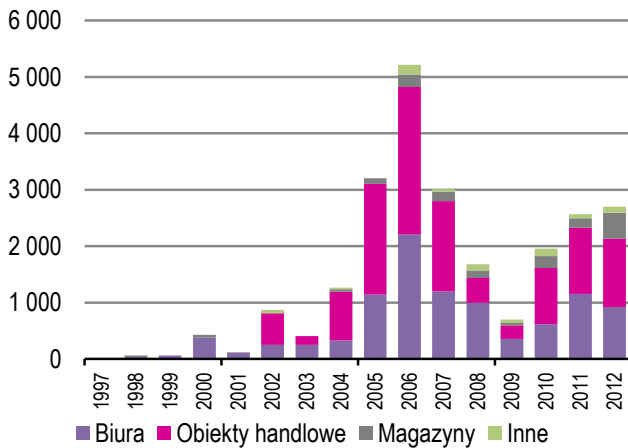
Figure 67 Structure of supply and demand*/ for housing with an area >50 square meters in the primary market in selected cities in Poland



Source: NBP.

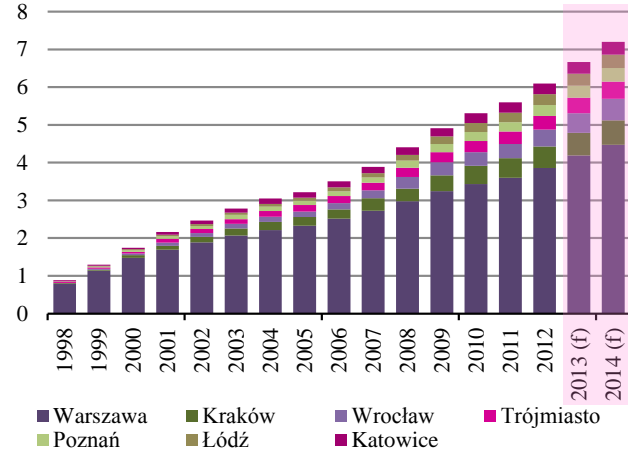
6. Commercial real estate

Figure 68 Value of investment transactions (EUR million)



Source: Cushman & Wakefield.

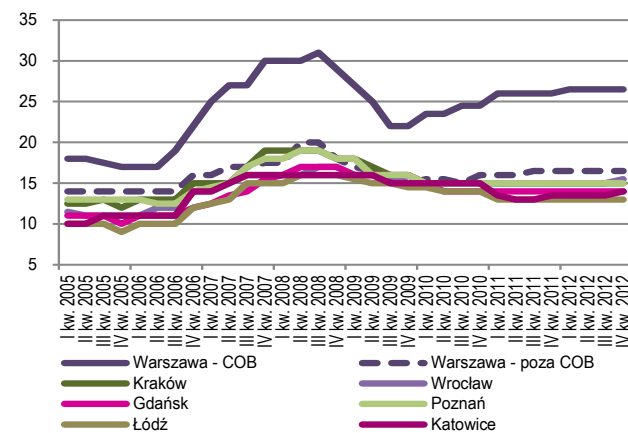
Figure 70 Aggregate supply of modern office space (square meters)



Note: the 2013 and 2014 data are estimates.

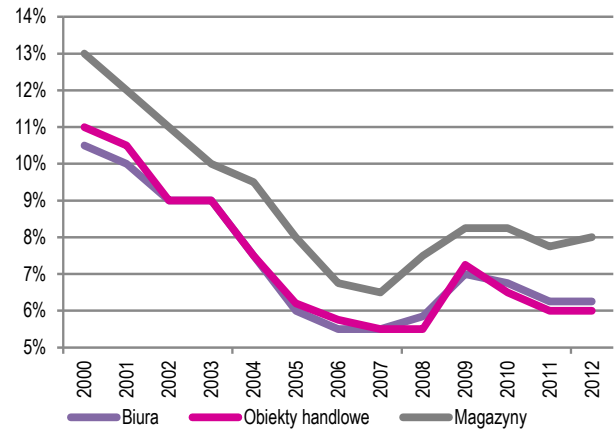
Source: DTZ.

Figure 72 Rents (EUR/square meters/month) for office space in prime locations



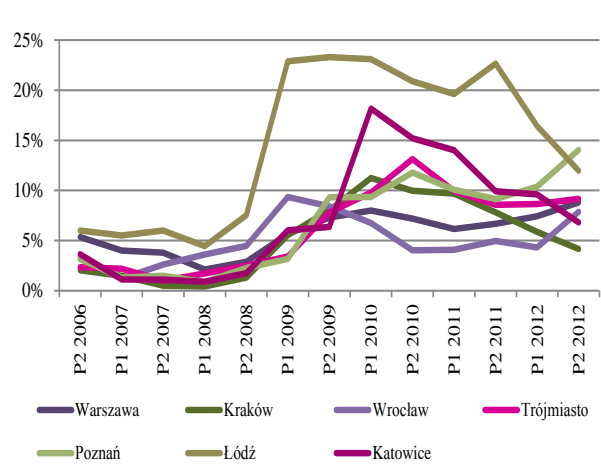
Source: Cushman & Wakefield.

Figure 69 Capitalization rate on investment in real estate in prime locations



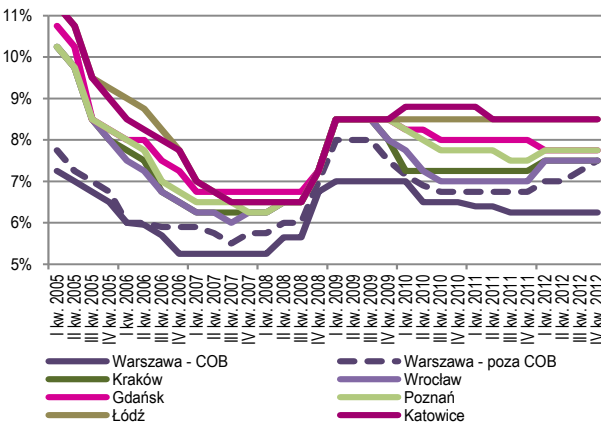
Source: DTZ.

Figure 71 Office space vacancy rate in half-year periods



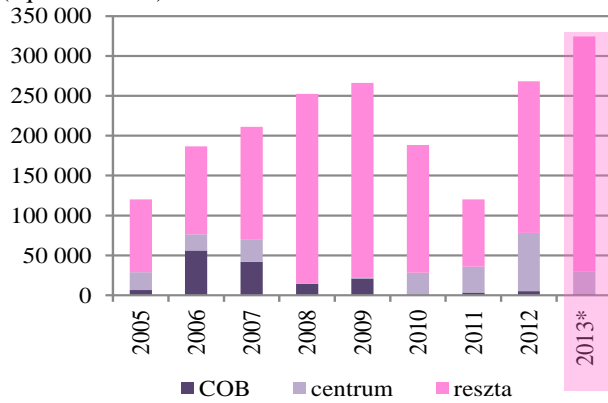
Source: DTZ.

Figure 73 Capitalization rate on investment in office space in prime locations



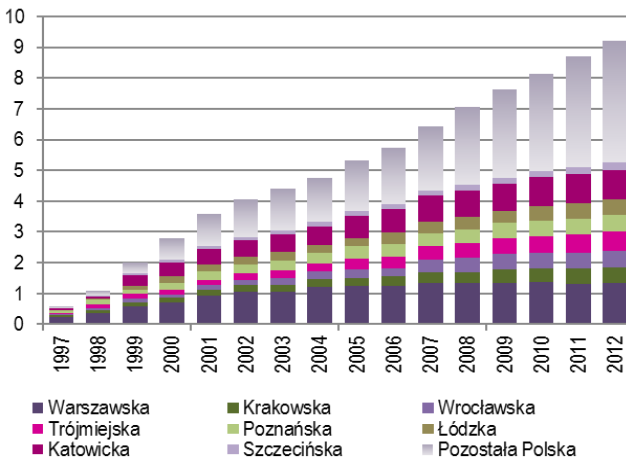
Source: Cushman & Wakefield.

Figure 74 Annual supply of new office space in Warsaw (square metres)



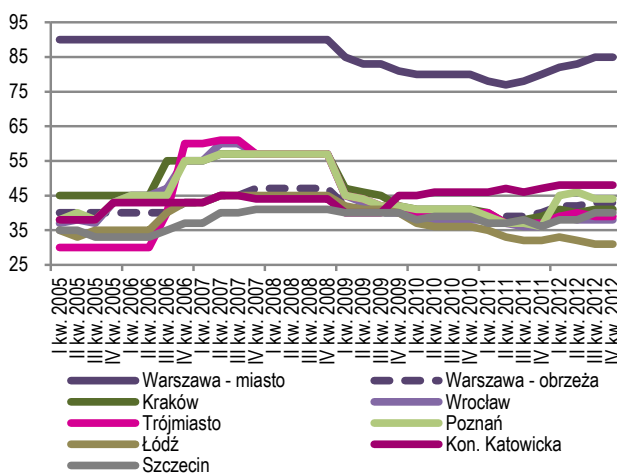
Note: estimates for 2013 come from Jones Lang LaSalle.
Source: Jones Lang LaSalle, WRF.

Figure 76 Aggregate supply of modern retail space (millions of square metres) in large agglomerations and other parts of Poland



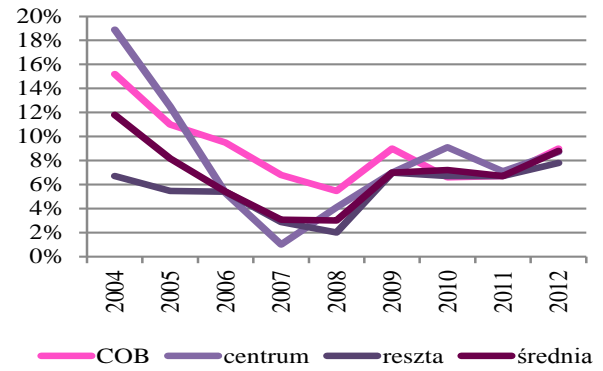
Source: Polish Council of Shopping Centres.

Figure 78 Rents (EUR/square meter/month) in shopping centres in prime locations



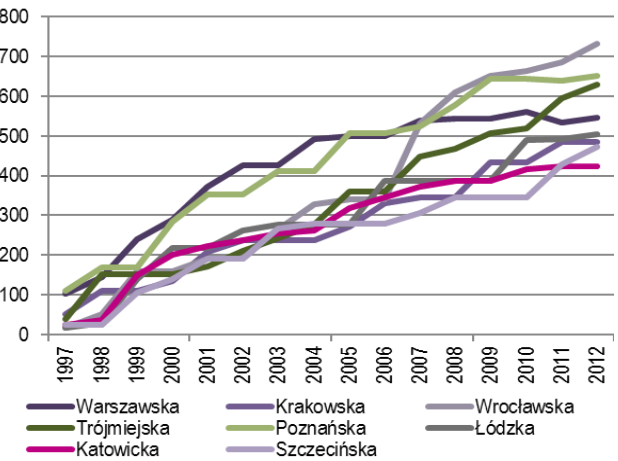
Source: Cushman & Wakefield.

Figure 75 Vacant office space in particular parts of Warsaw



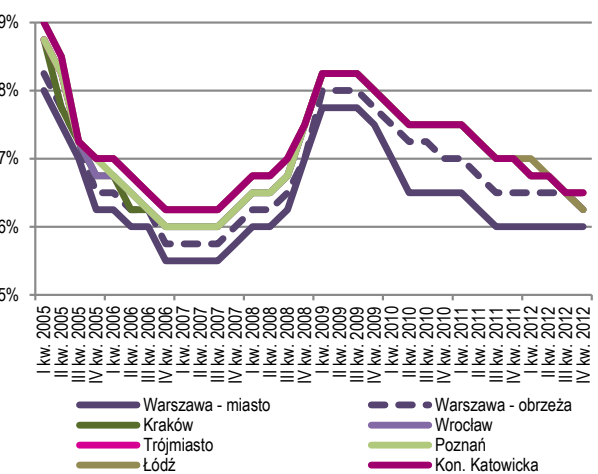
Source: Jones Lang LaSalle, WRF.

Figure 77 Aggregate supply of modern retail space in large agglomerations (square metres per 1000 inhabitants)



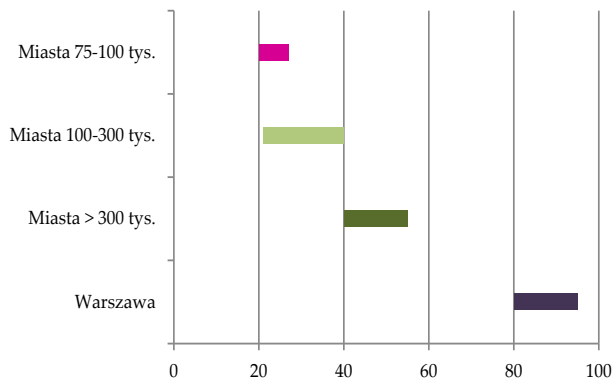
Source: Polish Council of Shopping Centres.

Figure 79 Capitalization rate on investment in shopping centres in prime locations



Note: capitalization rates for all market except for Warsaw were almost identical by the end of 2008.
Source: Cushman & Wakefield.

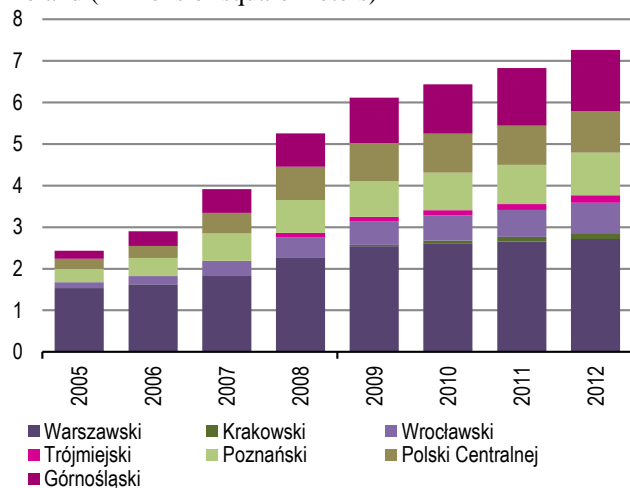
Figure 80 Ranges of rents for best retail space in leading shopping centres (EUR/square meters/month) in 2012 Q4



Note: rents for retail space up to 100 square metres in the fashion and accessories sector located in a leading shopping centre.

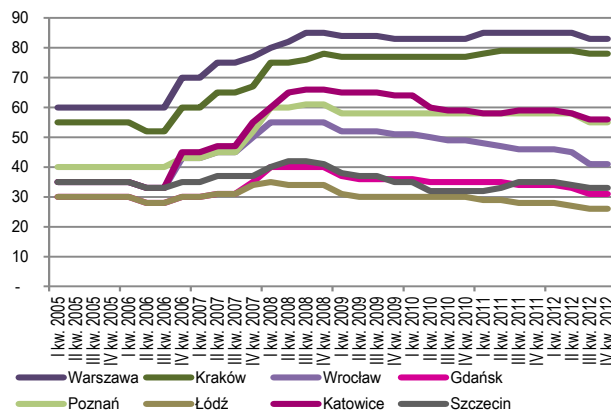
Source: Jones Lang LaSalle.

Figure 82 Warehouse space stock in particular regions of Poland (millions of square meters)



Source: Cushman & Wakefield.

Figure 81 Highest rents (EUR/square meter/month) in prime shopping street



Source: Cushman & Wakefield.