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1. Summary

The results of analyzes of developments in real estate markets in 2014, including local markets of 16 voivodship cities and Gdynia, confirm that the housing situation in these cities has improved. Local real estate markets in the analyzed cities developed as a result of changing economic conditions, supported mainly by rising wages, falling unemployment and stronger GDP growth than the one observed in 2014. Demographic indicators i.e. birth rate, net migration and the number of new marriages slightly increased in some cities, boosting housing demand. On the other hand, demographic burden indicators and population decreased, which could have curbed demand. Both demand and supply in the primary market posted a considerable rise which was driven by both a positive change in fundamental factors as well as interest rate cuts.

The supply of new housing was on the rise and real estate developers were flexible in adjusting investment projects to clients’ preferences and their purchasing power. This allowed real estate developers to maintain high margins on housing construction and high rates of return on their projects. Offer and transaction prices in the primary and secondary markets were stable amidst a marginal rise in rent rates.

The Report presents the developments observed in Poland in 2015 in the residential and commercial real estate sectors. Detailed analysis leads to the following conclusions:

- In 2015 offer and transaction prices of square meter of housing in local primary and secondary markets were stable. As regards the primary and secondary markets of the six largest voivodship cities (6M) and Warszawa, the highest prices per square meter of housing were recorded in the case of small dwellings (with an area of 40 square meters and consisting of 1 room) and large dwellings (with an area of 80 square meters or more and consisting of 4 rooms or more). On the other hand, in the market of the remaining 10 cities (10M) the highest prices per square meter of housing were recorded in the case of small dwellings with a small number of rooms.

- The primary market of the analyzed cities saw a rise in demand and supply. High demand for housing was driven by growth in household wages, the persistence of historically low interest rates, continuation of the government-subsidized housing scheme MDM in the primary market, its extension to cover the secondary market and its announced discontinuation after 2018. As a result, growth was noted in a number of developer dwellings purchased for own housing needs and for investment purposes, financed both with bank loans and buyers’ own funds, whose share in the structure of the financing continued on the rise.
1. Summary

- In 2015 approx. 147.7 thousand dwellings were completed and made available for occupancy (3.3% y/y), the construction of 168.4 thousand new housing investments was commenced (13.7% y/y) and 188.8 thousand building permits were issued (20.5% y/y).
- The registered home selling time, both in the primary and in the secondary markets was stable and close to the level observed in 2014. The exception was Warszawa - this market observed a slight increase in selling time of large dwellings.
- A rise in average rents (both offer and transaction rents) per square meter of housing was observed. This may encourage wealthier households to purchase rental housing in the future.
- At the current level of rents, entities investing in rental housing have earned rates of return exceeding yields on bonds or bank deposits and close to the rate of return on investments in commercial real estate. It should be noted, however, that there is significant difference in liquidity and transaction costs between bank deposits and investment in rental housing.
- In 2015 disbursements of housing loans in PLN were stable, despite historically low interest rates. This was the result of the impact of regulatory factors, prudential behavior of creditors and borrowers and higher level of satisfaction of housing needs of prospective homebuyers. Household receivables resulting from housing loans in 2015 increased by PLN 23.9 billion as compared to 2014 and stood ad PLN 374.5 billion in December 2015.
- The estimated share of developers’ profit in the price of new housing continued at a high level. The factors enabling real estate developers to earn high rate of return on equity were the following: the structure of offered housing matching the preferences and financial possibilities of home buyers, low and stable prices of construction and assembly works and persistently high number of sold dwellings. The real estate development sector was negatively affected by high number of commenced, unsold housing construction projects and uncertainty about the future housing policy of the government as well as the Act on the restrictions in the acquisition and sale of land. As a result of improving condition of real estate developers, the share of lending in their financing structure decreased and the share of own equity and debt securities increased.
- In the commercial real estate market growing imbalances were observed for another consecutive year, especially as concerns office space. Growing supply of commercial real estate led to rent adjustments which will impact owners’ income and may make it difficult for them to repay the debt. Foreign investors investing abroad dominated the real estate market.
- In 2015 transaction rents in A class office buildings (quoted in EUR/square meter/ month) in all the analyzed markets showed stagnation or declines and increased slightly in the case of B class office buildings (quoted in EUR/square meter/ month) in Warszawa. Transaction rents in commercial centres quoted in EUR/square meter/month showed a slight downward trend.
2. Introduction

The residential real estate sector encompasses construction of new housing (real estate developers), trade in the existing housing stock, demand for housing (households) as well as the financial sector (lenders) and the regulatory sector (e.g. home buyers support schemes). Between the real estate market and other sectors of the economy there are correlations which impact the country’s macroeconomic and financial situation. Therefore, monitoring and analysis of developments in the real estate market are essential for NBP’s analyses of financial stability and macroeconomic imbalances. The aim of the Report is to present the results of these analyses, as well as to provide interested parties, including participants in the real estate market, with complete, reliable and objective information on the situation in the residential and commercial property market in Poland in 2015. The Report focuses on the developments observed in 2015. However, when the data have important implications for the current processes, information may go beyond this period.

Both the domestic experience (especially acquired in the 2005-2008 period dominated by low-interest foreign currency loans), as well as the abundant international experience shows that prolonged periods of persistently low interest rates may lead to the build-up of tensions in the real estate market by creating excessive housing demand. Excessive demand coupled with speculation can cause a rapid increase in home prices, boost the size of housing construction and lead to strong growth in lending. When imbalances in the residential estate market are not properly identified and offset by economic policy, and may lead to crises in the real estate markets. A collapse usually occurs when central banks hike their interest rates due to rising inflation. This translates into a further decline in housing demand and problems with the portfolio of low-interest mortgage loans financing expensive housing whose value is on the decline. If banks failed to require appropriate income buffers from borrowers, they could end up having difficulty in servicing the loan. Declining demand for housing, as a result of more expensive credit, makes it difficult for real estate developers to sell new homes. The next factor is rising unemployment, both in construction companies, as well as in the related industries. Declining demand and foreclosures result in further decline in home prices. In view of the above mentioned developments threatening the stability of the financial system and the economy, the key measure is ongoing monitoring of prices in the major housing markets, bank lending, banks’ prudential indicators and selected macroeconomic indicators measuring the level of tensions.

Due to the local nature of housing markets, similarly as in the previous editions of the Report, the Report provides an in-depth analysis of sixteen markets of voivodship cities broken down into: Warszawa, 6 cities (6M: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław) and 10 cities (10M: Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin, Zielona Góra). Such a break-down is justified by the comparable size and degree of development of the real estate markets.

The analysis of offer, transaction and hedonic prices per square meter of average housing in the primary and secondary market and the analysis of the commercial real estate market are based
on the data obtained by analysts from the Regional Branches of Narodowy Bank Polski under the survey of the housing market Real Estate Market Database (BaRN) and the commercial real estate market (Commercial Real Estate Database (BaNK)). As the survey covered a variety of agents operating in the market (agents, developers, housing co-operatives, municipal offices, consulting companies), this allowed the authors to obtain extensive information. The study also relied on the database of PONT Info Nieruchomości (PONT) containing data on offer home prices, the SARFIN database of the Polish Banks Association containing data on housing market financing and AMRON database containing data on housing appraisal and transaction prices of mortgage-financed housing as well as data on the primary residential market of company REAS.

The authors drew on the reports issued by the Polish Financial Supervision Authority (KNF) as well as aggregate credit data released the Credit Information Bureau (BIK). The statistical data published by the Central Statistical Office (GUS) and analyses including sectorial data have been used in the structural analysis. The authors also made use of the findings of the “Social Diagnosis” survey conducted by the Social Monitoring Council and the results of the surveys by the Public Opinion Research Centre (CBOS) and TSN Polska. The data concerning transactions in the commercial real estate market are drawn from the Comparables.pl database. The information about the commercial real estate market is also based on the data provided on a voluntary basis by commercial real estate brokers, as well as real estate management and consulting companies. The analysis was supported with knowledge of experts of particular agencies.

In the absence of data or in the case of insufficient quality of data, the authors relied on estimates verified on the basis of expert and specialist opinions.

The Report presents the developments observed in Poland in 2014 in the residential and commercial property sector. It highlights the main directions of changes in the real estate markets and identifies the factors behind these changes. The Report also draws attention to the financial capacities of home buyers and discusses the way in which housing demand is impacted by the government-subsidized housing scheme MDM which became also available to secondary market home buyers as of 2015 Q3. The authors described the phenomenon of increased developer...
housing construction and stabilization of offer and transaction prices in the primary and secondary markets in the analyzed cities. They presented the results of surveys of rents in the home rental market being an alternative to homeownership. The authors also analyzed selected stability indicators for the residential market which, if exceeded, may cause tensions in this market. They discussed the most important developments in the commercial real estate market, highlighting a significant increase in the supply of real estate which fails to be matched by demand, leading to growing vacancy ratios and a decline in rents. The analyses also focused on factors affecting transaction prices per one square meter of commercial space for rent. The last issues discussed in the Report are convergence and differentiation processes and structural changes in the 16 local real estate markets in Poland.

Technical terms have been marked in # and defined in the glossary of terms and abbreviations

The Annex to the Report (Monographic Articles) presents detailed information on the residential and commercial property markets in each of the 16 analyzed cities, capitals of Poland’s voivodships, including the Tri-City agglomeration of Gdańsk, Sopot and Gdynia.
3. Real estate market sector

The real estate sector provides services to other sectors of the economy and to the household sector. This sector is traditionally divided into residential real estate sector and commercial real estate sector, analyzing both trade in real estate as well as its rental.

The real estate sector is linked to the sector of services necessary for its operation (financial services, professional services, e.g. appraisal services, legal services, management of the real estate stock and its trade), the labour market (construction and ongoing functioning of the stock), the capital market (capital inflows) and the construction sector (transformation of financial capital into real estate equity).

![Figure 1 Structure of housing construction in Poland by type of construction (% of GDP)](image1)

![Figure 2 Investor relations in housing construction in Poland (%)](image2)

Source: GUS.

In Poland since the transition period the housing stock has been on a steady rise, which due to the commercialization of the sector has already gained a considerable economic importance. Capital (assets) involved in the commercial real estate, recorded a significant increase after 2000, when the economic situation became more stable. The estimated value of residential real estate assets at the end of 2015 reached approx. PLN 3.1 billion (Figure 3). The value of commercial real estate assets was approx. PLN 0.2 billion (Figure 5).

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4 The real estate sector is linked through markets.
3. Real estate market sector

The estimated value of residential and commercial real estate in Poland at the end of 2015 accounted for approx. 187% of GDP and approx. 55% of fixed assets in the economy, with the residential real estate accounting for 173% and the commercial real estate for 11% of GDP (see Figure 7 and 8). Despite the increase in the area of the housing stock (see Figure 4), its current value to GDP ratio decreased slightly in the analyzed period, which results from a 3.5% GDP growth combined with approx. 2% increase in the value of the housing stock. Real estate supply

Note: 6M# – Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław; 10M# – Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin, Zielona Góra; PP# – remaining part of Poland. The estimate is based on GUS data on the usable area of the housing stock in the analyzed cities. The housing stock was multiplied by transaction prices of housing (average prices in the primary and secondary market) in 16 cities (NBP database), and in other Polish cities by replacement prices. The figures show aggregate values.

Source: NBP estimates, based on GUS, PONT Info.

Note to Figure 5 and 6: The estimate is based on publicly available data on the commercial real estate stock. Offices are modern office buildings, retail premises are shopping malls, and warehouses are modern, large-format warehouses. The stock was multiplied by hedonic transaction price of commercial real estate #. Prices given in EUR are translated into PLN. The graph shows aggregate values.

Source: NBP estimates based on databases of NBP and other consulting companies, transaction prices from Comparables.pl.
adjusts to demand growth through construction of new buildings or demolition of the old ones. In the case of housing real estate, in the short term, housing supply adjusts to demand growth with approx. 8-quarter delay resulting from the lengthy construction process, introduced regulations, missing or inadequate infrastructure or problems with the availability of materials and transportation.

In Poland, the share of the whole construction classified as gross fixed capital formation fell slightly in 2015 and amounted to approx. 5.6% of GDP (Figure 1 and 2), while gross residential investment increased to approx. 1.3% of GDP. Real estate development accounted for approx. 50% of this value. The share of the real estate sector in employment in 2014 was 7.4%. As a result of longevity of the housing stock the recorded depletion of housing in Poland accounts for a mere 0.02% of the housing stock (the 2005-2004 average), whereas the real long-term rate of depreciation can be estimated at approx. 0.3-0.5% annually. Given the above data, we estimate that housing net investment represents less than 1% of GDP and real estate development ranges between 0.2 - 0.3% of GDP.

Given rapid GDP growth and rising housing demand, it usually takes several years to see the number of dwellings increase in the housing stock and is associated with increases in home prices. In subsequent periods, we see an excessive number of new, unsold homes. The commercial real estate stock is growing much faster than the housing stock, which is mainly the result of the shortage of modern commercial space recorded before 2000. The commercial real estate stock was in 2015 thirty times smaller than the housing stock. It should be emphasized that warehousing premises are a significant portion of the stock. Their share in the commercial real estate is rather small in terms of value (Figures 5 and 6).

**Figure 7** Ratio of the estimated current value of residential property assets (RPA, left-hand axis) to GDP and fixed assets (FA, right-hand axis) in Poland

**Figure 8** Ratio of the estimated current value of commercial property asset (CP, left-hand axis) to GDP and fixed assets (FA, right-hand axis) in Poland

Source: NBP estimates based on GUS, PONT Info

Note: see note to Figures 7 and 8.

Source: NBP estimates based on the databases of NBP and other consulting companies, transaction prices from Comparables.pl.
Although for statistical purposes, dwellings are often classified as consumer goods, due to their durability, it would be more appropriate to classify them as fixed assets generating housing services. Housing situation indicators are used to measure services provided by the housing stock. In the majority of cases, the value of housing services is calculated by multiplying the average area of housing by average rent rates in the local market.

After 2000 Poland has seen a gradual improvement in its housing situation, which was associated with the construction of new dwellings, renovation of the existing housing stock and demographic processes curbing demand for new housing. This was also driven by a large number of newly built dwellings, small scale of demolition of the existing housing stock and diminishing population in some cities as a result of people migrating abroad. However, the increase in the housing stock played much greater role than migrations (Figure 12). The number of dwellings per 1 000 inhabitants and the average usable housing area per person has increased, while the average number of persons occupying the dwelling has fallen (Figures 9-11).
In 2015 the value of housing services in Poland, estimated on the basis of market rents remained unchanged as compared to the 2014 level and amounted to approx. 11% of GDP, accounting for approx. 35% of household consumption (Figure 13). In Poland this figure is not included in GDP. Countries use various approaches in this respect⁵.

The consequence of Poland’s rapid development after 2000 was the increase in demand for commercial space, and then growth in the value of assets of the commercial real estate sector. Commercial stock saturation indicators, commonly used to measure the situation in the commercial real estate market, began to approach those observed in other EU countries. The value of services generated by the commercial real estate (income from rent) for their owners can be estimated at approx. 0.7% of GDP (Figure 14).

Real estate is subject to tax, with taxation basis being both trade in real estate (sale and purchase transactions), the related value of assets held as well as investors’ income from rent. Countries with a stable economic policy usually avoid excessive taxation of real property, as the yield on real estate is low, and financial risks inherent in investments in real estate, high.

In Poland, taxation according to taxation scale is the main form of taxing rental income. Due to the currently applicable tax regulations (i.e. declaration of aggregate income from various sources) it is not possible to indicate tax arising from rental income only. Income from rental, sub-rental, lease, sublease or other agreements of similar nature, provided these agreements are not concluded as part of non-agricultural business activities, may be subject to lump-sum tax on

⁵ For example, in the United States the value of housing services is included in GDP and in 2015 it stood as 12.2%.
registered revenue. The form of taxation is chosen by the taxpayer. According to the Ministry of Finance data, both the number of taxpayers who pay a lump-sum tax on registered revenue as well as the amount of this revenue are on the rise. At the end of 2015, the number of taxpayers declaring lump-sum tax amounted to 455 thousand persons posting a rise by approx. 42 thousand persons in year-on-year terms or 10%. The amount of lump-sum tax receivables amounted to PLN 701 million posting a rise of PLN 85 million, i.e. 13% (Figure 15 and 16).

Also the revenue of local government entities resulting from property tax shows an upward trend, rising from approx. PLN 12.1 recorded in 2006 to approx. PLN 20.2 billion, i.e. 3% more than in 2014.

The growing number of taxpayers is accompanied by increasing taxes on the property. Both the share of these taxes in GDP and the value of real estate assets (residential and commercial real estate) are insignificant (in 2015 approx. 1.2% of GDP and 0.7% of assets), due to the low net value produced by the real estate sector (an average of 5-6%). In Poland, these taxes represent approx. 12% of the value of services produced by the aggregate real estate stock (Figure 17).

**Figure 15** Lump-sum tax under rental, sub-rental, lease and sub-lease contracts (thousands of persons, left-hand axis) and proceeds from property tax (PLN thousand, right-hand axis)

**Figure 16** Number of taxpayers declaring income resulting from under rental, sub-rental, lease and sub-lease contracts (thousands of persons)

Source: MF.

**Figure 17** Relation of proceeds from property tax (%)  

Note to Figure 17: taxes on income of self-government entities from property tax and lumps-sum tax receivables; MMiN=value of housing and commercial real estate assets; UMiK=value of housing and commercial services;

Source: MF.

The market real estate sector does not function properly without a dedicated financial sector. At the same time, the financial sector is often a factor generating demand shocks. Excessive demand for residential properties can cause problems in the real estate sector, and as a result of the real
3. Real estate market sector

The activity of the banking sector involving services offered to the real estate sector in Poland began to gain in importance after 2000. At the end of 2015, assets of the banking sector in the form of loans for residential properties accounted for 41.6% of total loans and approx. 23.5% of banks’ assets. The commercial real estate sector, especially the sector of the largest commercial real estate, developed thanks to foreign capital. The share of loans extended to the commercial real estate amounted to approx. 5.7% of the banking sector’s portfolios and approx. 2.5% of banks’ assets. Although housing loans portfolios are still significantly smaller than the EU average (about 50%), they are a significant factor for the financial sector’s safety.

The risk for the banking sector related to the real estate market usually arises when excessive demand, often associated with the expected increase in prices and financed with bank loans, encounters rigid supply. The subsequent period brings a significant price increase, followed by their decline, when speculative expectations wane. Imbalances in the housing market may build up for years when the long-term growth in housing prices is higher than the growth rate of prices (CPI) and income (wages). Therefore, a detailed analysis of property prices is an important element in measuring this risk.

The main risk factor is generally low interest rates which, by lowering the opportunity costs (profits that could be earned by investing e.g. in Treasury bonds) and real costs of financing (low interest rates mean low cost of debt incurred) provide an incentive for speculation. Then, interest rate hikes become an additional risk factor, affecting not only the price of the property, but often leading to problems with loan repayment.

Figure 18 Housing loan in Poland, quarter-on-quarter changes in PLN billion (left-hand axis) and value in PLN billion (right-hand axis)

Figure 19 Relation of housing loan in Poland to GDP, consumption, banks’ assets (left-hand axis) and to banks’ equity (right-hand axis)

Source: NBP, GUS.

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6 Aggregate credit of the non-financial sector is made up of loans to households, enterprises and institutions providing services to households; at the end of 2015 aggregate credit exceeded slightly PLN 903.1 billion (http://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/nal_zobow.html).
Despite significant interest rate cuts by the Monetary Policy Council\(^7\) in the period 2014-2015, lending\(^8\) was stable and no signs of a credit boom were observed. This was the result of prudent behavior of borrowers and lenders amid economic uncertainties, including the risk of rising interest rates and mounting degree to which housing needs of the population are met. In 2015 new factors affecting the banking sector were observed, namely further tightening of the supervisory policy (i.e. reduced LTV at the time of granting the residential mortgage loan\(^9\)), uncertainty associated with the imposition of the banking tax\(^10\), legislative works on the act on Swiss franc loans and the act on limiting the sale of state-owned land property\(^11\).

The information on growing number of transactions in the primary residential market and a stable level of disbursements of new loans leads to the conclusion a significant part of funds allocated to home purchases came from deposits and other forms of individual savings. Thus, growing demand in the primary housing market in this period, did not generate excessive tensions that could threaten the banking sector.

**Figure 20** Relation of home prices to income (P/I\(^\#\), in years)

**Figure 21** Relation of cost of purchase of 1 square meter of housing to its annual lease rent

Source: NBP, GUS.

Source: NBP, GUS.

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\(^7\) The reference rate was decreased in October 2014 from 2.5% to 2.0% and in March 2015 to 1.5%.

\(^8\) Lending is measured by the annual change in household payables resulting residential mortgage loans at the end of December.

\(^9\) Another stage of implementation of S Recommendation.


\(^11\) The Act on suspending sale of the Agricultural Property Stock of the State Treasury and on amendment of certain acts (Journal of Laws of 14 April 2016, item 585).
3. Real estate market sector

Relation of home prices to household income in the local market or to costs of home ownership or home rental financing, respectively, are used to measure tensions in the housing market\(^\text{12}\). The ratio of the average home price to income (P/I), after an increase driven by the 2005-2008 credit boom, has been returning, since 2012, to the level observed before 2006, which confirms the stabilization of the situation in the housing market (Figure 20). The home rental market in Poland is still weak, as there are many legal barriers hindering the development of this market. Although the use of rent rates as the basis for calculating the scale of tensions is burdened with a greater error than the reliance on home prices\(^\text{13}\), the ratio of the cost of credit to rent (P/R) in 2015, close to the previous year’s level, confirms the absence of imbalances in the market (Figure 21).

In the commercial real estate markets we analyze the related offer and transaction prices and rents. Transaction prices in the Warszawa office market have declined, while remaining stable in other Polish cities. Transaction rents did not show any major changes, despite high vacancy rates, especially in Warszawa. Vacancy rates in Warszawa dropped at the end of 2015 from 13.3% to 12.3\(^\%\)\(^\text{14}\). It should be emphasized that some real estate developers postponed the completion and hand-over of office buildings to 2016 Q1, which caused the vacancy rates to increase further to 14\(^\%\)\(^\text{15}\). The commercial real estate market showed an increase in transaction prices, which was caused by the sale of good quality shopping centres. Rents of retail space in Warszawa continued on a downward trend, remained stable in other major markets, and rose slightly in the remaining part of Poland at the end of 2015. This may be due to the relatively high saturation with retail space seen in large cities, amid certain growth potential observed in smaller cities and towns.

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\(^\text{12}\) There are various methods of calculating those indicators, e.g. on the basis of absolute values, indices, etc.

\(^\text{13}\) The rental market operates largely in the shadow economy to the excessively stringent regulations concerning tenant’s protection.

\(^\text{14}\) See Polish Office Research Forum, 20.01.2016.

\(^\text{15}\) See Knight Frank Report „Office market in Warsaw, 2015 Raport” and Knight Frank Report „Office market in Warsaw, 2016 Q1”.
4. Developments in the residential real estate market in Poland in 2015

The residential real estate market may be divided into the primary market (new housing stock) and the secondary one (the existing stock). Housing is a long life good, and the majority of needs in a sustainable and stable housing sector are met in the secondary market. The primary residential market plays a vital role when the sector is in the development phase and demand for real property in the secondary market exceeds supply. According to estimates, more than 50% of all transactions in Poland were concluded in the primary housing market, which results from the qualitative and quantitative adjustment of the housing stock in Poland to better developed EU countries. Residential real property markets, despite the effects of some nation-wide factors, are always local and they should be analyzed as local markets.

Notwithstanding the fact that transactions in the Polish housing markets, as in other EU countries, do not exceed 3% of the stock value annually, considerable changes in home prices and rents, and consequently changes in the current value of housing assets, significantly affect both the sector itself and the entire economy. This is because for the majority of consumers owner-occupied dwellings, which are predominant in Poland16, in addition to the consumption function, are also a form of asset holdings, investment or savings deposit17. Housing needs are a kind of primary need. For the majority of households in Poland, housing is the main form of property, and a mortgage loan is usually the main burden for the household. This results in high social vulnerability of the sector, which becomes visible in the case of shocks, especially in the financial markets; and these are often caused by too short-sighted and profit-oriented policy of the financial sector. Such changes usually expose financial institution to considerable losses, which, in turn, become a burden for the entire society. In Poland, it was especially visible in the 1990s in the form of the so-called cooperative housing loans, and since 2006 in the form of Swiss franc loans.

Another important issue is the cyclical nature of the market–namely regular significant changes in its basic parameters, such as the volume of home sales and housing construction, number of housing investment or other investment projects, or the size of lending. Due to the local nature of the housing sector and its relation to other sectors of the economy, the cycles usually result from concurrence of factors at the demand and supply side. Synthetically, this may be described as a combination of volatile demand and rigid, in the long-term, supply which responds with considerable delays (see Box 1).

16 According to the data of the Central Statistical Office, in 2014 owner-occupied housing in Poland constituted 83.5% of the total housing stock.
17 This is confirmed by analytical results of the Household Budget Survey published in the paper Wealth and debt of households in Poland. Report from a pilot study 2014, NBP, 2015.
3. Real estate market sector

Box 1. Cycles in selected housing markets in Poland

The cyclical nature of the housing market means that the phase of the cycle is an important factor while evaluating the developments in the market, in addition to the relations between the particular entities. The primary indicator of the phase of the cycle in the real property market, as in other cases, is the number of homes sold. To monitor cycles, speculation, and credit booms, home price indices are used.

In the case of the developer housing market in Poland, the object of transactions are usually contracts for home construction rather than completed and ready for occupancy dwellings. The construction progress may vary as well (e.g. in the boom period, the so-called “holes in the ground” are sold). The Central Statistical Office does not keep statistics concerning the market of home construction contracts, whereas the statistics on the size of housing construction, i.e. completed, ready for occupancy dwellings, show only the effects of market demand observed a year or two years before. This is why the analysis of the cycle in the primary market should factor in a larger number of indicators which, when combined with expert knowledge on the particular market, allows to determine the phase of the cycle.

As in the analysis of business conditions, we may distinguish the following phases of the business cycle: through or downturn; stagnation following the crisis; recovery; and boom. The cycle is driven by many external factors so it should always be analyzed individually. Nevertheless, we may assume certain simplified common features of the phases of the business cycle. Through or downturn, is characterized by declining demand for and sale of residential properties. It is usually related to a collapse of the financial system, and may also be caused by such factors as excessive production, high stock of unsold dwellings, general economic situation, changes in housing policy, and many others. During this phase, prices usually fall, either very rapidly or over a longer period of time. The stagnation phase usually sees a gradual sale of excessive stock at low prices. During recovery, sales grow, which usually entails a rise in home prices. Finally, during boom, growing sale of dwellings exceeds sale and production levels (new constructions, construction in progress) observed in the previous period. The expansion stage in the real property market is often accompanied by credit boom, speculation, and rapidly growing prices.

Figure R.1.1 Housing cycle in the Warszawa market

Figure R.1.2 Housing cycle in the 6M market in total

Source: NBP, GUS, REAS, BIK.

Source: NBP, GUS, REAS, BIK.
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For the needs of this Report, based on the above description of the business cycle, we may distinguish the following periods in the situation in the Warszawa and the 6M market. The first cycle falling in the years 2004-2013 was more synchronized. The boom period, taking into account both sale, construction in progress and dwellings put on the market, was observed in 2007, so the years 2007-2009 may be referred to as through or downturn. The period 2009-2013 saw stagnation, and since the beginning of 2014 we observed recovery, which in 6M (especially in Kraków and Wrocław) turned into a boom in 2015. Yet, the Warszawa market failed to record the levels of indicators observed in the previous cycle. The previous boom was driven mainly by disbursements of loans, whose portfolio saw a rapid growth, whereas the present one is to a large extent financed from households’ savings.

The first business cycle in the Polish housing market began in 2004. It was moderate, in contrast to similar cycles in the EU countries or the U.S., which ended up with the real property crises. Yet, it was a rather considerable shock both to consumers and producers of dwellings. Between 2009 and 2013 the situation in the housing markets gradually stabilized following the 2006-2008 boom. The stabilization was accompanied by a temporary decline in economic activity and a halt in the granting of low-interest FX loans. The weaker situation in the housing market, which was a natural consequence of the cycle and was offset by both interest rate cuts and the launch of the government programme supporting the purchase of ownership housing, reversed in 2014. Interest rate cuts translated into lower interest on housing loans and on bank deposits, significantly boosting demand. At the same time, due to regulatory measures, banks tightened their lending policy. As a consequence, since 2014 Poland’s largest cities have seen a recovery in housing markets, demonstrated by growth both in home sales and in the number of dwellings offered under new investment projects. Real estate developers had to compete for the client. At the same time, developers had significant production capacity and the stock of construction sites, which impeded their inclination to raise prices. In 2015, supply continued to respond positively to high demand (significant growth in new housing investment projects exceeding levels

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18 The recovery phase is deemed to be the beginning of the cycle.
3. Real estate market sector

recorded in the boom period of the previous cycle). Also economic growth and rising wages had a positive impact on demand. The level of home sales, close to the one observed in the previous cycle, meant that the housing market entered the growth phase of a new cycle. With growing demand, supply was flexible, home buyers responded rationally and, as a consequence, home prices remained stable. Currently, investment in residential real estate is financed, to a significant extent, from savings, i.e. buyers’ own contribution, which impairs risk inclination of investors. Therefore, in 2015, and in particular in 2016, despite the boom in the developer markets in some cities (see Box 1), similarly to the previous year, only a slight upward trend in lending was observed (see Figure 18), unlike the credit boom in 2006-2008.

The basic developments in the housing market in 2015 may be explained with two different models: an econometric model based on the basic sector correlations (see Box 2) and an economic indicator-based model (see Figures 23-28).

Box 2. Econometric modelling of business cycle in the housing market

To analyze behaviours in the housing market, a model based on four equations was used to describe supply, demand, transaction prices and construction costs in the primary market\(^{19}\). The equations are logarithmic-linear, while the equations of prices and costs are equations describing increments, whereas supply and demand are shown in terms of absolute values. The model was based on the theoretical foundations of market operation, and takes into account the actual delays observed in the market (a developer responds to all factors with an annual delay). This version of the model features an extended supply part. It is emphasized that supply responds not only to price growth, but also to sales growth in the previous period. The model does not take account the developer housing stock in the market, which affects prices and developers’ behaviour. The stock of dwellings offered for sale helps to meet demand, yet, it should be noted that dwellings in that stock were put on the market in previous quarters, so their price may significantly differ from the current market prices. The estimated form of the model and interpretation of the estimated parameters is presented below.

\[
HD_t = 6.838 - 0.926 \times P_t + 7.869 \times D(P_t) - 14.896 \times Instrate_t + 1.220 \times Income_t + \epsilon_t
\]

\[
HS_t = 3.130 + 3.884 \times D(P_t-4) - 11.888 \times D(PC_t-4) - 5.336 \times Instrate_{t-4} + 0.658 \times HD_{t-4}
\]

\[
D(P_t) = 0.002 + 0.832 \times D(P_{t-1}) + -0.026 \times (HS_{t-1} - HD_{t-1}) + \epsilon_t
\]

\[
D(PC_t) = 0.000 + 0.982 \times D(PC_{t-1}) + 0.025 \times D(HS_{t-1}) + \epsilon_t
\]

\(^{19}\) The model has been explained in detail in the Report on the situation in the Polish residential and commercial real property market in 2014.
Housing demand \( HD_t \) is the function of housing prices \( P_t \), interest rate \( I\text{nt}_t \) and income of households \( \text{Income}_t \).

Housing supply \( HS_t \) is the function of increase in profit earned by the developer four quarters ago (increment of delayed price minus increment of delayed costs \( D(P_{t-4}) - D(PC_{t-4}) \)), the level of interest rates determining alternative costs of investment, and the developer’s assessment of demand size, described with the use of the observed delayed demand \( HD_{t-4} \).

The change in prices in a given year results from changes in the relation of demand and supply of dwellings in the market, as well \( (HS_{t-1} - HD_{t-1}) \) as the observed increment in price \( D(P_{t-1}) \), which may be interpreted as propensity to speculation.

The change in production costs is the result of the change in the production size \( D(HS_{t-1}) \) and the increase in costs as compared to the previous period \( D(PC_{t-1}) \).

The graphical demonstration of the results of the model is presented in Figure 1. The continuous line shows past developments. The broken line represents the forecast based on the input data from the NECMOD forecast published in the NBP Inflation Report, July 2016. The comparison of the forecasts from the model with the data observed in the period of one to eight quarters ahead allows to conclude that the model is fit to be used in market forecasting. The model also rendered well the increase in investment demand, which, in the absence of loans financing buy-to-let property (housing bought specifically for rent; loan repayment financed from rents), was financed with cash and consumer mortgage loans. In such settings, the increase in credit availability resulting from interest rate cuts explained, to a certain extent, growing investment demand, as loans were granted based on creditworthiness.

Comparison of the latest data with the results rendered by the model highlights lower price growth observed currently than would be suggested by the previous cycle. A more in-depth analysis of the results shows that there was a small structural change, namely increased elasticity in demand and supply. Consequently, the prices are nearly fixed, and adjusted in quantity terms. In the model, on the other hand, as previously, increase in demand and even a slight mismatch of demand and supply translate into higher prices. These, in turn, are even more increased by the speculation effect. As a result, the model forecasts slight price increases, which in reality have not taken place so far.

Figure R.2.1 Actual observations and forecasts of supply, demand, transaction prices, and construction costs of dwellings in the primary market in Warszawa (left-hand scale: Supply and demand (no of dwellings); right-hand scale: Price and construction cost (PLN/1 sq. m))

Source: NBP, GUS, REAS, Sekocenbud.
The model based on economic indices, constituting a combination of the particular elements of the housing market, is presented in the chart of relations observed in Warszawa and 6M (see Figures 24-29).
3. Real estate market sector

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Figure 24 Dwellings completed and dwellings under construction 6M

Figure 25 Long-term cost 6M

Figure 26 Demand for housing 6M

Figure 27 Housing market 6M

Figure 28 Housing supply 6M

Figure 29 Housing prices

Sources:
23 – GUS.
24 – GUS, PAB, Sekocenbud.
25 – REAS, GUS.
26 – REAS.
27 – NBP, GUS, Sekocenbud.
28 – NBP, REAS, GUS.
New dwellings are produced in the primary (developer) housing market (see Figure 26). The huge significance of that market in Poland as compared to the secondary market results from low saturation with housing stock. Theoretically speaking, households’ demand could concern the entire stock, but it is usually focused on the dwellings available for sale in the market (current demand). Similarly, the supply of housing encompasses the entire housing stock, yet, the current supply available in the market are dwellings offered for sale. Demand may not be fully satisfied with transactions in the secondary market (the existing stock) only. A part of demand is satisfied with transactions involving new dwellings in the primary market.

Due to the high demand for the available housing stock, prices are high, and developers generate high profits and return on investment. This encourages them to develop their activity. What is characteristic of this market is the high and volatile stock level (dwellings completed and ready for occupancy remaining unsold). This results from fluctuations in demand and a lengthy period of construction, making it impossible to quickly match supply with demand. As there is currently a large stock of unsold dwellings in the market of the largest cities, their prices do not increase despite growing demand. Another factor limiting price growth is the lack of incentives for speculation, additionally reinforced by negative experience from the previous cycle (purchase of significantly overpriced dwellings). Furthermore, what is noticeable, is competition between developers, and, in particular, domination of large, strong companies, able to quickly respond to increased demand with increased supply (see Figure 29).

The supply of contracts for developer housing construction is driven by the expected rates of return on investment projects and the expected size of demand. Developers try to predict situation in the market in a two-three years’ perspective, but they base their forecasts on the current and historical data (see Figure 28). Thus, today’s decisions determine the size of future supply of dwellings, and today’s supply is the effect of decisions taken two or three years ago (see Figure 24). For that reason, the leading indicator demonstrating the current size of construction are dwellings under construction and building permits issued several years ago (see Figures 24 and 25).

The estimated rates of return on developer projects have been for several years at a high level as compared to other sectors (approx. 18%). The rates of return are mainly determined by the difference between prices of dwellings and costs of their construction (see Figure 28). The stable level of this index in 2015, as well as large number of transactions, translated into high and stable profits of developer companies, encouraging them launch new construction projects. This is confirmed by increased number of dwellings under the previously commenced projects (subsequent stages of investment), new permits for home construction, and newly-launched projects.

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20 It is common in Poland is to sell dwellings under construction, thus sold dwellings are only contracts for housing construction in the future, usually in the period of the next 2-3 years.
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Costs of construction include the cost of construction sites, and construction and assembly works (labour, materials, equipment, overheads, construction profit), and largely depend on business conditions in the real property sector and in the entire economy. Growing developers’ demand for production factors slightly boosted their total costs (see Figure 28). However, price growth concerned mainly construction sites, which failed to be reflected in the real situation of developers, as they had already gathered significant stock of building land. In turn, costs of construction and assembly production were stable with slight declines noted in certain areas. Yet, the increase in construction outlays was insufficient, although they reached the level recorded in the previous cycle, when prices of production factors were rapidly growing. It should be noted that the last eight years were marked by a considerable increase in production capacity of the construction materials industry and construction companies, and the inflow of labour to the sector. Housing construction, however, accounts for a small share in construction and assembly production in Poland, thus the condition of the general construction sector is more important (see Figure 25).

Consumer demand for developer dwellings in the biggest cities is, to a large extent, determined by the availability of loan-financed housing. The key factors affecting consumer demand in the housing market are home prices and interest rates of loans. Prices, which have been stable for the last two years, and falling interest rates boosted consumer demand for housing, which was particularly strong in 2015 (see Figure 26). The full model of demand should additionally take into account migration and demographic factors, but these may be deemed stable in a short time.

Housing demand satisfied with the use of own savings is on the rise. Savers compare return on savings with potential return on home rental.

As the level of rents has been stable in the recent years, with a slight upward trend, falling interest rates, and thus also falling interest on savings, make housing investment more profitable (see Figure 28). That factor has gained in importance within the last two years, and, in the opinion of many analysts, is a major reason behind the surge in demand in the recent period.

There is also a pro-cyclical speculation demand. It is observed when prices of dwellings rise, and this upward trend seems to be constant. Households make current decisions and conclusions concerning the future usually based on the past experience. Speculation involves buying houses at a low cost and reselling them in the future at a higher price. Currently, the speculation factor has a negative effect, which is one of the factors determining price stability (see Figure 26).

In the last two years, we have noted a considerable growth in consumer demand, which dominated, and rise in investment demand, whose role was increasing with practically no speculation effects.
4.1 Home prices

Prices of real property are an important indicator while identifying tensions in the real property sector and creating other tension indicators. By investigating the price structure of newly-built dwellings, we may evaluate efficiency of and barriers to the development process. By juxtaposing the above indicators, and analyzing the real estate development process (including rates of return on projects), we may evaluate the strength of economic incentives affecting the production of dwellings.

Thanks to the analysis of price developments, we may identify growing tensions in this sector. Increasing home prices are usually a response to growing demand which may not be matched with supply within a short time. Growing prices drive speculation demand, as well as the mechanism of a self-fulfilling prophecy, and this leads to business cycles and crises in the market. In literature and economic policy, growing real property prices are explicitly deemed to be a threat and a signal to undertake appropriate economic policy measures, despite the fact that from the business point of view they may bring short-term profits.

In 2015, average prices per 1 square meter of housing, both offer and transaction prices in the primary and secondary markets in Poland, were stable (see Figures 30-33). The hedonic price, i.e. the price taking into account quality differences between the analyzed goods and the changing structure of the sample of dwellings analyzed in subsequent quarters, showed no volatility.

Figure 30 Average offer and transaction prices of housing in Poland (PLN/1 square meter) in the primary market

![Figure 30](image)

Source: NBP.
Warszawa; RP O – PM O; RP T – PM T;

Figure 31 Average offer, transaction and hedonic prices of housing in Poland (PLN/1 square meter) in the secondary market

![Figure 31](image)

Source: NBP.
RW O – SM O; RW T – SM T; RW hed – SM hed

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In all the analyzed cities, prices per 1 square meter of housing in the primary market exceeded prices in the secondary market, which could have been driven by their better quality and the fact that new dwellings were better tailored to buyers’ needs (see Figure 32).

Similarly to the previous years, the highest prices per 1 square meter of housing in Warszawa and 6M were recorded in the case of small properties (one-room dwellings with an area of up to 40 square meters) and large ones (4-rooms dwellings or larger with an area exceeding 80 square meters). In other cities the most expensive dwellings were those with a small number of rooms and a small area.

High price of small housing results from the fact that many potential buyers with meagre funds can afford to buy a small dwelling only. Yet, the supply of such housing is limited. On the other hand, the high overall price of large dwellings, despite low price per square meter, limits the number of interested buyers. However, wealthier buyers express considerable interest in large dwellings. In the case of very large dwellings, most markets offer alternative forms of residential property, including terraced houses or detached- and semi-detached houses.

Source: NBP.

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22 Total additional costs of transaction (notary’s fees, cost of registration in the Land and Mortgage Register, tax on civil law transactions, real property broker’s fees) are higher in the secondary market, but the time it takes to occupy the housing is shorter. Dwellings in the secondary market are generally better located, do not require investing any considerable resources, do not have garages, but they are readily available. When purchasing a new dwelling from a real property developer the buyer must reckon with the costs of PLN 500-1000 per square meter necessary to finish the housing, depending on the materials used. Additionally, it may take up to two years to occupy the dwelling.
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Figure 34 Average offer and transaction prices of housing in Warszawa in the primary market by area (PLN/1 square meter; < 40 sq. m right-hand axis)

Figure 35 Average offer and transaction prices of housing in Warszawa in the secondary market by area (PLN/1 square meter)

Source: NBP.

Figure 36 Average offer and transaction prices of housing in 6M in the primary market by area (PLN/1 square meter)

Figure 37 Average offer and transaction prices of housing in 6M in the secondary market by area (PLN/1 square meter)

Source: NBP.

Figure 38 Average offer and transaction prices of housing in 10M in the primary market by area (PLN/1 square meter)

Figure 39 Average offer and transaction prices of housing in 10M in the secondary market by area (PLN/1 square meter)

Source: NBP.
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Figure 40 Average offer and transaction prices of housing in Warszawa in the primary market by the number of rooms (PLN/1 square meter; 1 room right-hand axis)

Source: NBP.

Figure 41 Average offer and transaction prices of housing in Warszawa in the secondary market by the number of rooms (PLN/1 square meter)

Source: NBP.

Figure 42 Average offer and transaction prices of housing in 6M in the primary market by the number of rooms (PLN/1 square meter)

Source: NBP.

Figure 43 Average offer and transaction prices of housing in 6M in the secondary market by the number of rooms (PLN/1 square meter)

Source: NBP.
The analysis of prices per square meter of housing in real terms (CIP-deflated prices) in the primary market shows that these prices were higher than those recorded in the period of tensions observed in 2006-2008 (see Figure 46). On the other hand, indices of the weighted average transaction price for the secondary market, the real price to CPI, indicate that in Warszawa price are now lower as compared to the prices recorded in the boom period (see Figure 47).

Source: NBP.

Source: NBP.

**Figure 44** Average offer and transaction prices of housing in 10M in the primary market by the number of rooms (PLN/1 square meter)

**Figure 45** Average offer and transaction prices of housing in 10M in the secondary market by the number of rooms (PLN/1 square meter)

**Figure 46** Index of the average weighted transaction price of 1 square meter of housing in the primary market and the real price to CPI (2006 Q3=100)

**Figure 47** Index of the average weighted transaction price of 1 square meter of housing in the secondary market and the real price to CPI (2006 Q3=100)

Source: NBP, GUS.

Source: NBP, GUS.
The comparison of the amount and the structure of housing prices in the primary market shows a relatively high share of developers’ profit, which is related to limited competition, typical for this market, and price differences between sellers\textsuperscript{23}. The share of profits differs across markets\textsuperscript{24}.

\textbf{Figure 48} Gdańsk, estimated structure of transaction price per 1 square meter of usable area in the primary market (building type 1122-302)

\textbf{Figure 49} Kraków, estimated structure of transaction price per 1 square meter of usable area in the primary market (building type 1122-302)

\textbf{Figure 50} Łódź, estimated structure of transaction price per 1 square meter of usable area in the primary market (building type 1122-302)

\textbf{Figure 51} Poznań, estimated structure of transaction price per 1 square meter of usable area in the primary market (building type 1122-302)

\textsuperscript{23} See Report on the situation in the Polish residential and commercial real property market in 2014.

\textsuperscript{24} More detailed description in Chapter 3.1.1.2 Housing supply.
3. Real estate market sector

Figure 52 Warszawa, estimated structure of transaction price per 1 square meter of usable area in the primary market (building type 1122-302)

Figure 53 Wrocław, estimated structure of transaction price per 1 square meter of usable area in the primary market (building type 1122-302)

Note to Figures 48-53: net transaction price (excluding VAT);

Source: NBP.

In 2015, the average home rents (offer and transaction prices) increased Warszawa and 6M, primarily due to the growth in offer rent rates (see Figure 54). Rent rates in Poland show long-term stability. The rental market is becoming more transparent and is leaving the grey economy; this is demonstrated by the growing number of tax returns of persons offering their dwellings for rent\(^{25}\).

Figure 54 Average monthly offer and transaction home rental rates in Poland (PLN/1 square meter)

Source: NBP.

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\(^{25}\) In the *Information concerning tax on registered income for 2014* the Ministry of Finance provides that there were 39 thousand taxpayers in 2003, 108 thousand in 2006, 334 thousand in 2012, and 416 thousand in 2014.
4.2 Housing supply

Housing supply encompasses the entire existing stock and new dwellings adjusted for depletion and changes in the intended use of the property. The current supply in the housing market is encompasses dwellings offered for sale and for rent, involving both the existing stock (secondary market) and new housing (primary market), adjusted for the said depletion.

The supply of new dwellings dynamically responded to high demand in 2015 (see Figure 55). Approximately 147.7 thousand dwellings were completed and made ready for occupancy in Poland, i.e. approx. 4.3 thousand more than in 2014 (year-on-year growth of 3.0%). The recorded amount of new housing investment was by 20.3 thousand higher than in the previous year (dyn. y/y 13.7%). The number of building permits issued in 2015 was higher by approx. 32.1 than the number in the previous year (year-on-year growth of 20.5%).

High supply in the primary market simultaneously slightly limited transactions in the secondary market, offering older and poorer quality housing, even if in a better location.

The structure of supply of forms of housing construction satisfying housing needs in Poland has been almost stable since the end of the sector transformation at the end of the 1990s. In big cities, developer construction is predominant, whereas investment projects of housing cooperatives are of marginal, yet recently growing, importance. In medium-sized and small towns and in rural areas, single-family houses dominate, to some extent, self-built houses. Developer housing is offered both on the primary and on the secondary market26. It is estimated that approximately 40% of transactions are loan-financed, which, given the extensive scale of transactions, translates into growing mortgage loan portfolio. Single-family housing development is, to a large extent, based on own funds, and mortgage borrowing plays a supplementary role only.

Source: GUS.

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26 This refers both to dwellings purchased in the primary market for investment purposes to be resold later, and homes whose sale is enforced. Such dwellings are usually sold in a shell and core condition. Those dwellings are sold in the secondary market as the real estate developer is not the seller any more.
In 2015, the still persisting positive demand shock in the housing market had a significant and favourable impact on the situation of real property developers. The continuing considerable stock of unsold housing projects had a negative impact. Notwithstanding the above, low stock exchange listings of real property developers continued (see Figure 57).

In 2015 the estimated share of profit in the price per square meter of developer housing remained at a high level, particularly in Gdańsk, Kraków and Poznań (see Figure 58). This meant real property developers achieved high return on equity. The situation was enhanced by stable prices of construction and assembly works in the majority of the analyzed cities, with a minor downward trend observed in Warszawa (see Figures 59-60). As a consequence of the improving financial standing of companies, the share of loans began to decline (see Figure 68). The growth of housing production was financed with increasing, considerable share of equity and debt securities.
Box 3 Costs of developer housing production factors

The analysis of the developer sector is based on the analysis of production profitability. It is based on the analysis of the real estate development process, prices of sold properties, and costs of production factors, i.e. labour, capital and land. These are then disaggregated and their impact on the costs of production of particular properties is analyzed.

As part of the analysis of production factors prices, the following is examined: average cost-based estimates of labour rates (according to the types of works; see Figure R.3.1), average prices and changes of rental rates of materials and construction equipment (see Figure R.3.2), and prices of building land.

The analysis of real estate development process carried out by NBP since 2006 is based on the specially prepared cost estimates of Sekocenbud covering the period 2007-2016, and on the model of the complex “multi-family building”, including land development elements and utility connections. The said building are the basis to calculate the impact of changes in production factors on construction costs. The previously monitored building 1121#, due to the termination of its cost estimation, has been changed into a building of similar size: an average multi-dwelling, five-storey building (a half of building 1122-302) with an underground parking space. 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 a shell and core condition. The real price of 1 square meter of housing, based on construction costs, depends on the share of the building’s common area, different for various buildings. When calculating the price of 1 square meter of usable area of housing to be paid by a consumer, we have assumed that the building’s common area constitutes 20% of the housing area, and using this figure we made an upward adjustment of the price of 1 square meter of housing. The data were adapted to the developer’s model of the real estate development process, described in detail in Article 3 of the Report on the situation of the Polish residential and commercial real property market in 2011, NBP 2012.
The prices of building land have been monitored since 2014 by local analysts of NBP Regional Branches with the use of statistical methods, comparison of pairs and adjusted mean, and with the use of the mixed method. The estimates of prices per square meter of land are applied to the analysis of the structure of price per square meter of an average dwelling in the analyzed cities.

The comparison of construction costs with home prices obtained on the basis of own study carried out as part of public statistics research programme including the costs of building land allows to quantify the structure of home price and developer profit. The knowledge of typical investment projects used by developers allows for estimating the return rates on projects acquired by them, which is the basic indicator enabling the assessment of their activity.

Source: NBP, Sekocenbud.

Source: NBP, Sekocenbud.
The condition of real estate developer companies improved as the structure of offered housing to the demand structure was matched. Demand for small, 1- to 2-room dwellings still prevails. Due to their low overall price, they are affordable for clients and developers sell them quickly. They may serve both as housing for small households, as investment (housing for rent), and as the last home for the retiring generation. Dwellings ≤ 50 sq. m prevailed in the primary market, their offer was much more adjusted to the demand than that of dwellings >50 sq. m (see Figures 61-62). The secondary market still saw larger mismatch of the housing offer in terms of usable area and demand (see Figure 63-64). Developers also managed to differentiate home prices, offering similar dwellings to various clients at different prices.

Note to Figure R.4.5: the vertical line divides the expert estimate of land price from the more detailed analysis carried out by NBP Regional Branches; the estimate is weighted with the area of the completed developer housing in 6M.

Source: NBP, Sekocenbud.

In the period 2007-2009, decline in the growth rate of construction costs, prices of construction material, and equipment rental rates was observed. Since 2009 we have seen these factors stabilize. Land prices are much more volatile, which is typical for this production factor, whose price in the situation of growing demand is determined by marginal costs rather than the average ones.

The condition of real estate developer companies improved as the structure of offered housing to the demand structure was matched. Demand for small, 1- to 2-room dwellings still prevails. Due to their low overall price, they are affordable for clients and developers sell them quickly. They may serve both as housing for small households, as investment (housing for rent), and as the last home for the retiring generation. Dwellings ≤ 50 sq. m prevailed in the primary market, their offer was much more adjusted to the demand than that of dwellings >50 sq. m (see Figures 61-62). The secondary market still saw larger mismatch of the housing offer in terms of usable area and demand (see Figure 63-64). Developers also managed to differentiate home prices, offering similar dwellings to various clients at different prices.
3. Real estate market sector

Figure 61 Supply and demand mismatch*; dwellings with an area ≤ 50 square meters – primary market in selected cities of Poland

Figure 62 Supply and demand mismatch*; dwellings with an area > 50 square meters – primary market in selected cities of Poland

Note: Figure 61 shows the percentage short-term mismatch between supply (housing offered by real property developers) and estimated demand (transactions) with regard to the area of housing in the primary market, according to the data from the BaRN database. The mismatch of dwellings with a usable area of up to 50 square meters is measured as the four-quarter rolling ratio of the share of offered dwellings to the share of the number of transactions involving housing units with a usable area of up to 50 square meters (average for the last four quarters). A positive result (above the black line) indicates the surplus of dwellings of a particular size, a negative result – their deficit. The method used for creating Figures 62-64 is analogous to the method described above.

Source: NBP.

Figure 63 Supply and demand mismatch*; dwellings with an area ≤ 50 square meters – secondary market in selected cities of Poland

Figure 64 Supply and demand mismatch*; dwellings with an area > 50 square meters – secondary market in selected cities of Poland

Source: NBP.
3. Real estate market sector

Figure 65 Costs of the average DFD

Figure 66 Situation of DFD (in PLN million, left-hand axis; production years, right-hand axis)

Source: NBP based on GUS (F01).

Figure 67 Economic indicators of DFD (PLN million)

Figure 68 Liabilities of DFD (%)

Source: NBP based on GUS (F01).

Figure 69 Real property loans for enterprises (in PLN billion, left-hand axis) and impaired loan ratio (right-hand axis)

Note to Figure 69: Exclusive of BGK. The impaired loan ratios are calculated based on gross loans.

Source: NBP.
The government-subsidized housing scheme MDM# (Housing for the Young) had a positive impact on the financial situation of the real estate developer sector.

As a result of the cumulative effect of the analyzed factors, despite the significant stock of unsold dwellings, the average home selling time in the primary market slightly shortened (see Figure 70), whereas the secondary market has for many years seen a minor, although systematic, extension in home selling time (see Figure 71). Unusual selling time in the Warszawa market between 2012 Q2 and 2015 Q2, differing from the selling period observed in other markets, may be related to sellers’ non-acceptance of a lower price (extending selling time). Since 2015 Q3 the number of transactions involving dwellings, especially the small ones (which find buyers quickly), has grown, and longer selling time is the result of larger dwellings remaining unsold.

4.3 Housing demand

The main factors affecting housing demand are preferences and income of households, demographic factors, home prices, interest rates (affecting credit costs and alternative costs of savings), availability of loans as well as housing policy (subsidies and taxes). The continuing high level of housing demand (measured by the number of transactions) in 2015 was the consequence of the historically low interest rates being maintained and growing household income. The government’s housing policy, primarily the continuation of the MDM# scheme in the primary market and the extension of the programme to include the secondary market also had a positive impact.

Housing, similarly to other properties, is to a large extent loan-financed, so the cost of credit (the interest rate) and other terms and conditions of loan granting affect demand. In Poland, as in other developed countries, the housing sector is closely related to the financial sector, which, to a considerable extent, funds the purchase and construction of dwellings. Residential mortgage debt...
outstanding in Poland is below the European average, however it is constantly growing and becomes an important risk element for the banking sector stability.

Lending in Poland has been developing steadily, except for the credit boom period in 2006-2008 and the later counter-actions. Interest rates on mortgage loans, reaching their historic lows in 2015, exerted a positive impact on creditworthiness of households (see Figure 72). The growth of household real income, higher than the real interest rate paid on loans, reduced the share of loan repayments in the average household budget. These phenomena were favourable for borrowers and encouraged them to use bank financing while buying a house. As a consequence, at the end of 2015 an increase in loan availability (see Figure 73) and availability of loan-financed housing was observed (see Figure 74).

**Figure 72 Nominal interest rate on mortgage loans**

**Figure 73 Available weighted mortgage loan# (left-hand axis) + ZKPK (right-hand axis, no scale)**

Note to Figure 73: weighting the increase in housing loan to households with the currency structure (since the beginning of 2012 practically only PLN-denominated loans were extended); ZKPK – accumulated index of changes in banks’ lending policy criteria showing the trend in changes (decrease=tightening of policy).

**Figure 74 Availability of loan-financed housing#**

**Figure 75 Factors of housing demand (I 2006=100)**

Note to Figure 75: the total factor of demand is constituted in 60% by consumer demand (availability of loan-financed housing), in 30% by the profitability of housing rental and in 10% by investor’s speculation profit. The weights have been expert-estimated, the index shows the moving average from two subsequent quarters.

Source: NBP, GUS.
Impact on the demand side was also exerted by the government’s housing policy, which under the MDM programme, launched subsidies\textsuperscript{27} intended for first home buyers aged up to 35 purchasing their first dwelling in the primary market. Since 2015 Q3 the subsidies have also granted also to households buying dwellings in the secondary market. Under the programme, 21,883 housing loan contracts were signed in 2015 for the total value of PLN 3.9 billion, whereby approx. PLN 521 million worth support was extended. Approx. PLN 120 million (i.e. 23\% of the 2015 funds) went to the secondary market – out of approx. 5 thousand loans totaling approx. PLN 0.6 billion. According to information provided by BGK, 84.7\% was used out of PLN 615 million of the upper limit of funds intended for financial support in 2015.

At the beginning, the MDM programme was supposed to support the purchase of dwellings by young households who cannot afford to purchase housing on market conditions. At first, the government managed to accomplish that goal, but during the programme the prices of eligible dwellings were systematically raised. As there is no income criterion in the programme, which would limit the access to subsidies of wealthier families who can afford to buy housing on their own, this socially-oriented programme turned into a support programme for developer construction.

Although the MDM programme was not a continuation of the previous RNS programme\textsuperscript{#}, it used the same method of calculating prices of eligible dwellings. Formally, they were based on the so-called replacement value, i.e. production costs. In practice, that category was based on costs connected with the market value, without specifying which method is predominant. This meant a large extent of discretion while determining the index in particular cities, and consequently a different scale of subsidising real property developer companies. Apart from the MDM programme, BGK commenced to purchase dwellings under the Rental Housing Fund. Furthermore, since September 2015 the Rental Housing Construction Support Fund has been in place. All the government initiatives generated additional demand.

\textbf{Figure 76 Limits of max. prices per 1 square meter in the primary market under the government MDM programme in the biggest cities in Poland}

\textbf{Figure 77 Limits of max. prices per 1 square meter in the secondary market under the gov. programme}

Note to Figures 76 and 77: The red vertical lines section off the period without government programmes supporting the purchase of dwellings.

Source: NBP based on BGK.

Source: NBP based on BGK.

\textsuperscript{27} Redemption of part of the loan.
As a result of the impact of all the factors discussed above, housing markets of the largest cities in Poland saw a significant acceleration in developer housing purchases (see Figure 27). The purchase of housing was financed both with loans and with buyers' own funds (see Table 1). However, the scale of disbursements from bank deposits for this purpose cannot be captured statistically in the aggregated financial flows in the national economy and it can be only estimated based on the data derived from the housing and banking markets.

Table 1 Estimated gross housing loan disbursement to households in Poland and estimated purchases of developer housing financed both with cash and with loans in the seven largest markets (in PLN million)

<table>
<thead>
<tr>
<th>Date</th>
<th>Estimated housing loan disbursements in Poland</th>
<th>Estimated value of home purchase transactions in the primary market in 7 cities</th>
<th>Estimated disbursements of loans with own contribution for housing purchase in the primary market in 7 cities</th>
<th>Estimated housing purchases financed by cash in the primary market in 7 cities</th>
<th>Estimated share of housing purchases financed by cash in the primary market in 7 cities</th>
</tr>
</thead>
<tbody>
<tr>
<td>I 2012</td>
<td>5 385</td>
<td>2 703</td>
<td>922</td>
<td>1 781</td>
<td>0.66</td>
</tr>
<tr>
<td>II 2012</td>
<td>7 325</td>
<td>2 791</td>
<td>1 254</td>
<td>1 537</td>
<td>0.55</td>
</tr>
<tr>
<td>III 2012</td>
<td>7 661</td>
<td>2 512</td>
<td>1 312</td>
<td>2 000</td>
<td>0.48</td>
</tr>
<tr>
<td>IV 2012</td>
<td>7 441</td>
<td>2 882</td>
<td>1 274</td>
<td>1 608</td>
<td>0.56</td>
</tr>
<tr>
<td>I 2013</td>
<td>6 295</td>
<td>2 597</td>
<td>1 121</td>
<td>1 476</td>
<td>0.57</td>
</tr>
<tr>
<td>II 2013</td>
<td>7 867</td>
<td>2 897</td>
<td>1 428</td>
<td>1 469</td>
<td>0.51</td>
</tr>
<tr>
<td>III 2013</td>
<td>9 140</td>
<td>3 457</td>
<td>1 690</td>
<td>1 767</td>
<td>0.51</td>
</tr>
<tr>
<td>IV 2013</td>
<td>9 084</td>
<td>3 989</td>
<td>1 773</td>
<td>2 215</td>
<td>0.56</td>
</tr>
<tr>
<td>I 2014</td>
<td>7 571</td>
<td>3 998</td>
<td>1 478</td>
<td>2 520</td>
<td>0.63</td>
</tr>
<tr>
<td>II 2014</td>
<td>8 899</td>
<td>3 974</td>
<td>1 737</td>
<td>2 057</td>
<td>0.54</td>
</tr>
<tr>
<td>III 2014</td>
<td>8 894</td>
<td>3 811</td>
<td>1 736</td>
<td>2 075</td>
<td>0.54</td>
</tr>
<tr>
<td>IV 2014</td>
<td>8 122</td>
<td>4 059</td>
<td>1 585</td>
<td>2 474</td>
<td>0.61</td>
</tr>
<tr>
<td>I 2015</td>
<td>8 996</td>
<td>4 209</td>
<td>1 756</td>
<td>2 453</td>
<td>0.58</td>
</tr>
<tr>
<td>II 2015</td>
<td>10 640</td>
<td>4 680</td>
<td>2 077</td>
<td>2 603</td>
<td>0.56</td>
</tr>
<tr>
<td>III 2015</td>
<td>10 341</td>
<td>4 957</td>
<td>2 019</td>
<td>2 938</td>
<td>0.59</td>
</tr>
<tr>
<td>IV 2015</td>
<td>11 237</td>
<td>5 392</td>
<td>2 194</td>
<td>3 198</td>
<td>0.59</td>
</tr>
<tr>
<td>I 2016</td>
<td>9 742</td>
<td>5 497</td>
<td>1 902</td>
<td>3 595</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Note: The estimates are based on the following assumptions:
In the period 2012 Q1-2014 Q4, the estimates of newly granted loans in Poland in individual quarters were based on the increases in loans to households adjusted for loan amortization and flows between the foreign currency and PLN portfolio, available in NBP reporting. The entire banking system and credit unions were taken into account. Starting as of 2015 Q1, the estimated value of loan disbursements is based on the data collected from banks.

The estimated value of transactions in the primary market of 7 cities (Gdansk, Gdynia, Krakow, Lodz, Poznan, Warsaw, Wroclaw) was calculated by multiplying the average price of dwelling by its average size in square meters and the number of dwellings sold (based on the REAS data). Based on the ZBP data, it was assumed that the value of newly granted loans for home purchases in the primary markets of 7 cities in 2012 accounted for 50% of the value of housing loans in those cities, whereas at the end of 2013 this share amounted to approx. 57%. The estimated value of cash transactions constitutes the difference between the value of transactions in the market of 7 cities and loan disbursements, including own contribution. The price data for all periods have been updated.

Source: NBP, REAS, ZBP, GUS.

The analysis shows that the proportions of financing of growing housing construction have changed (housing loan vs. own funds). The level of housing loans (debt level) continued to increase, although lending in foreign currency practically ceased. Growth in lending was positive and stable (see Figure 78).
We estimate that lending in PLN continues to be profitable for banks (see Figure 79). Banks compensated declining interest rates on housing loans with higher margins on newly granted loans, which, however, constituted only a fraction of the whole loan portfolio.

Since 2012 practically no new loans denominated in foreign currencies have been extended. According to the provisions of S Recommendation, since June 2013 the group of potential borrowers has been limited to persons with fixed income in a given currency, and the required share of borrower’s own contribution has been constantly raised\textsuperscript{28}. As a consequence, the FX housing loan portfolio, in particular its share in the total housing loan portfolio, started to decrease systematically (see Figure 80). In 2015 Q1 the FX housing loan debt of households increased significantly due to the raised exchange rate\textsuperscript{29}.

In 2015 banks continued to tighten their prudential policy, which had the opposite effect than interest rate cuts. This is confirmed both by the aggregate index of changes in banks’ lending policy recorded by NBP, empirical observations, as well as the analysis of banking regulations already introduced and those scheduled to be adopted. Although the implementation of the EU directive on credit agreements for consumers relating to residential immovable property (the Mortgage Credit Directive (MCD) will strengthen the borrower’s position towards the bank, it will simultaneously boost credit costs and increase lending restrictions. It should be seen as a positive process introducing good standards and practices of lending. It means, however, that it

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\textsuperscript{28} Since 01 January 2015 the minimum own contribution required under S Recommendation was 10%; on 01January 2016 it was raised to15%.

\textsuperscript{29} On 15 January 2015 the Swiss National Bank decided to unpeg the Swiss franc from the euro from the existing cap of CHF 1.20 per euro. The decision resulted in the rapid growth of the CHF/EUR exchange rate as well as the PLN/CHF exchange rate which reached as much as PLN 5 on 16 January. Consequently, the value of CHF-denominated housing loans increased significantly and growth in loan servicing costs for borrowers was observed.
will not be possible to substitute the social function of providing housing with cheap and easily available loans, and this function will become principally the state's responsibility and burden.

The low interest rate means smaller repayments of the interest portion of the loan, which is especially important in the case of long-term loans with low principal instalments. In 2015 the quality of loan portfolio was stable (see Figure 81), and the share of non-performing loans marginally exceeded 3%.

**Figure 80 Currency structure of the housing loan portfolio in Poland**

![Currency structure of the housing loan portfolio in Poland](image1)

Source: NBP.

In Poland, the development of the housing market and the financial sector was accompanied by growing long-term household debt resulting from mortgage loans. In the end of 2015 it reached the level of approx. PLN 374.5 billion. It accounts for approx. 23.5% of financial sector assets and approx. 12.1% of the estimated value of the housing stock. The indebtedness of the housing stock in Poland continues to grow, however, it is still relatively low, in particular, in relation to household consumption (approx. 36.1% of the GDP). Currently, residential mortgage loans in Poland account for 250% of banks’ equity. The relation of estimated housing debt servicing costs (principal and interest) to consumption in the national economy as of the end of 2015 amounted to approx. 1.8%, thus we may say the changes in interest rates have a limited impact on the remaining consumption (see Figure 83)30.

In 2015, the long-term geographical distribution structure of new loan agreements persisted, i.e. the largest share of those loans was still observed in the remaining part of Poland (suburban zones, smaller towns and rural areas). Typical housing loans with a high LTV ratio (i.e. above 80%) are predominant in big cities, constituting approx. 50% of the portfolio of such loans31. Housing loans in the remaining part of the country are usually smaller loans supplementing own funds for the purchase of building materials or dwellings in the secondary market (see Figure 82).

30 However, the lack of detailed data on borrowers makes it impossible to conduct an in-depth analysis. As a result, we use approximate data, including the reference to consumption in the national economy.
31 According to the National report on housing loans and transaction prices of real property; AMRON-SARFIN 4/2015 (report no. 26 of the Polish Banks Association).
Housing demand may be also divided into consumption-, investment- and speculation-driven demand.

Pure consumption demand is demand for housing for rent (purchase of a service). The purchase of owner-occupied housing always includes an investment element, however, the consumption factor is the predominant one. A typical investment purchase is a purchase of housing for rent, where proceeds from rent constitute income. Speculation driven demand is a short-term investment purchase, where the buyer expects income from the growth in home prices after home resale. Another form is the so-called generation of capital from real property, where the dwelling is being indebted as its value grows.

Banks are usually reluctant to finance investment housing and speculation housing construction, so in those cases own financing, the so-called cash demand (usually financed with funds held at banks) is more important. Investment demand often turns into speculation demand and may lead to real property crises, as it has a destabilising impact on the financial system. Low interest rates, which translate into low alternative costs and thus encourage speculation favour such behaviour.
In Poland, no bank statistics are kept which would distinguish between loans granted for owner-occupied housing and those granted for buy-to-let housing. Banks are more reluctant to finance investment in which repayment is guaranteed by future proceeds from rent rather than the borrower’s income. Also legislation is not favourable for the development of the rental market, as it discriminates housing owners in favour of tenants. The rental market is developing, however, it has operated mainly in the grey economy. The Rental Housing Fund programme launched by BGK Bank, which offers housing for rent in good standard and at market prices, is a step forward in the development of the rental market. The main barrier to the development of that sector is the lack of changes in legal regulations, which adversely affects real property owners.

Deposit interest rate cuts, amid stable rent levels of residential housing increased profitability of purchase of rental housing as an alternative to bank savings and for investment purposes (see Figure 84). Lower loan interest rates boosted investment demand consisting in the purchase of rental housing financed mainly with savings, with loan being a supplementary element only.

On account of the deteriorating conditions in the commercial real estate market (excessive supply of buildings, rent rates moving downwards, increasing vacancy rates) and the resulting downward trend in the listings of securities issued by those funds, the profitability of housing rental slightly exceeded the rates of return earned in this market. The analysis, however, does not take into account the costs of maintenance of the housing stock, the risk related to renting a dwelling to a dishonest tenant and low liquidity of assets, as well as individual consumer’s limited possibility to participate in the particular commercial investment.

Procyclical speculation demand occurs when the prices of dwellings rise, and this trend seems to be constant. Speculation involves buying homes at low costs and reselling them in the future at a higher price. The effect of that factor may be measured with the profitability of sale of a dwelling purchased a year before less the costs of credit (interest rates and FX differences). The speculation mechanism works like a self-fulfilling prophecy. Growing home prices make home purchase profitable, thus there are new buyers bidding up the price. Low interest rates and appreciation of the national currency support speculative behavior, as they mean lower credit cost or alternative costs, as well as additional capital gains. Such speculative gains were recorded as late as 2005-2007, when the scale of speculation increased. The effect exerted by that factor may be measured with the profitability of sale of a dwelling purchased a year before less the costs of credit (interest rates and FX differences, see Figure 51 and 52). Currently, the speculative factor is inexistent, which also favours the stabilisation of housing prices (see Figure 71).

In the last two years, we noted growth in consumer demand, which was predominant, and in investment demand, which played a certain role with practically no speculative effects (see Figure 85-86).

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32 Gains from FX differences appeared also in 2015, however, there were no more foreign currency loans, and the number of foreign investors was limited to a large extent.
3. Real estate market sector

Figure 85 Costs and capital and interest gains from investment in housing financed with PLN-denominated loan

Source: NBP, GUS.

Figure 86 Costs and capital and interest gains from investment in housing financed with CHF-denominated loan

Source: NBP, GUS.

The commercial real estate market, in particular the markets for office and retail space, is seeing yet another year of imbalances. Foreign investors account for the majority of the investments. The total amount of loans intended for office construction extended by banks operating in Poland stood at less than PLN 7bn as at the end of 2016 Q1. This figure, slightly lower than in the corresponding period of 2015, is insignificant in comparison to housing loans. Thus, any potential problems faced by domestic banks on this account will be limited. Yet, mindful of the current situation in this market, NBP issued, as part of its Financial Stability Report, February 2016, a new recommendation for banks regarding granting commercial property loans.

Foreign investors are constantly seeking new investment opportunities, which results from both the sound condition of the Polish economy and very low rates of return in foreign markets. The supply of office space is on a steady rise, which, given the relatively stable demand for office space, boosts the vacancy rate. As building owners compete for clients, they are reducing effective rents. Investors’ income is falling, which directly affects their debt capacity, and, in the case of investment funds, dividend distribution. These developments are confirmed by sinking transaction rents and average transaction prices. Faced with the risk involved, banks must take a very conservative approach to valuation and assessment of investors’ debt capacity.

5.1 Transactions in the commercial real estate market, analysis of supply and demand

In the commercial real estate market, 2015 was yet another year of a historically high volume of investment transactions, after the record 2006 levels. According to the comparables.pl data, investment transactions worth of EUR 4bn were concluded, which represents a 27% rise on the 2014 figure (see Figure 87). Transactions in office and retail real estate each, accounted for approx. 40% of the total amount, while transactions in warehouse property made up 10% of the total figure. The share of investment in other real estate was similar. Like in the case of the housing market, large part of the transactions involved the change of the owner of the already operating and leased commercial premises. Capitalization rates in the office space market were running at 6-7%, whereas in the retail market they reached 6%.

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33 A detailed analysis of local commercial markets is included in the Analysis of 16 cities.
34 Recommendation 5 contained in the Financial Stability Report February 2016 reads as follows: “The situation in the major segments of the commercial property market (office and retail property) suggests that imbalances have been growing, which amid continually rising supply may result in increased credit risk. Banks should exercise utmost prudence in examining the quality of loan collateral, the reality of assumptions concerning cash flows generated by the property and the borrower’s loan repayment capacity.”
The stock of loans extended to enterprises in Poland and intended for office space construction diminished again, from PLN 7 billion in 2015 Q1, to PLN 6.5 billion at the end 2016 Q1 (see Figure 67). Loans intended for this type of real estate can be regarded as safe, and the share of loans considered impaired amounted to approx. 5%. In turn, corporate loans intended for housing developer construction and other types of real estate amounted to PLN 14.4 billion and 30.9 billion, respectively, at the end of 2016 Q1, with the share of impaired loans at 10.6% and 26%, respectively. The quality of both types of loans improved slightly. Housing developer loans account for a small share of lending banks’ assets and do not pose any significant credit risk. Loans for other type of commercial real estate increased by 15% in the period January 2015 - January 2016, as did the entire stock of corporate loans intended for real property construction. Taking into account the increasing affluence of the society, Polish investors’ debt at bank resulting from commercial property loans may be expected to rise further.

Figure 87 Value of investment transactions in the commercial real estate market (EUR billion)

As at the end of 2015, office space in Warszawa totaled 4.6 square meters, and in Poland - 7.5 million square metres. The vacancy rate in key office markets was observed to diminish somewhat (in year-on-year terms, it fell from 12.4% to 11.6%)\(^35\), amid a concurrent rise of office space supply by of 600 thousand square meters. This means that demand has risen somewhat. Office space under construction is expanding, with approximately 1.3 million square meters being currently built, of which approx. 700 thousand metres in Warszawa. Such a sharp rise in supply will probably exceed significantly increase in demand, if any.

The supply of office space totaled 10.9 million square metres at the end of 2015. In the period under review, new office space exceeding 600 thousand square metres was completed and made ready for occupancy, most of which was located in medium-sized shopping centres; one-fourth

\(^{35}\)See the Colliers International “Market Insights - 2016 Annual Report”.
of this figure accounted for the expansion of the existing retail premises.\textsuperscript{36} Saturation of retail space per capita was observed at the level of 240 sq. m. per 1000 persons, which is above the European average, but still below the average level for Western Europe.\textsuperscript{37} This may be a sign of a certain saturation of the market with retail space; consequently, real estate developers having access to cheap foreign financing are probably limiting risk by expanding the existing shopping centres or constructing smaller ones.

Transaction prices of office space, which are typically expressed in euros, remained stable all over Poland, except for Warszawa, where they were seen to fall (see Figure 88). Movements in the hedonic price of office space in Warszawa approximated movements in average prices, which results form the fact that the data samples for Warszawa were relatively large, and the quality of the buildings analyzed was relatively stable.

The retail property market, in turn, saw average prices decline, following their sharp rise in 2013 (see Figure 89). Yet, the analysis of hedonic price movements shows that those price changes were not significant and resulted rather from a change in the quality of the buildings in the sample. In 2013, transactions involved mainly very expensive shopping centres in Warszawa, whereas in 2015 transactions involving facilities located all over Poland, including in smaller towns, were predominant. It should be noted that the analysis of both the office market and the retail market concerns rather non-frequent transactions in large premises. Therefore it is necessary to carry out a hedonic analysis in order to address the problem of the changing sample of buildings being traded.

The analysis of transactions in the retail property market in cities being voivodship capitals and other cities and towns shows slight price declines dating back to 2013 Q2 (the time when data started to be analyzed). Warszawa was the only market to see prices of retail space rise, which proves stable demand for this type of real estate in Warszawa market.

\textbf{Figure 88 Growth of average and hedonic prices of office real estate (2004=100)}

\textbf{Figure 89 Growth of average and hedonic prices of retail real estate (2004=100)}

\footnotesize{Source: NBP}

\textsuperscript{36} Cf. Colliers International Report on "Review of the Real Estate Market - Summary of 2014".

\textsuperscript{37} See: Knight Frank "Poland, Commercial Market 2015/2016"
Figure 90 Transaction selling price of small retail and service premises in the secondary market (PLN/sq.m)

Source: PONT, NBP study

5.2. Transaction rents of commercial real estate

Transaction rents in the commercial real estate market enable to estimate building owners’ income, and, consequently, assess the situation in this segment of the property market. Rents for A class office buildings, which as a rule are expressed in euros, fell slightly on their 2014 levels. Similarly to the previous year, rents for B class buildings, quoted in euro, took only a slight rise. Rents charged for A class office space in Warszawa were close to EUR 24 per square metre per month, while in the remaining large cities they were in the region of EUR 13 per square metre per month. Rents charged for B class office buildings, expressed in PLN, fell somewhat in Warszawa and 10M, rising slightly in the remaining 6M. Rent declines in Warszawa are driven by heavy competition for office space tenants.

Transaction rents charged for retail space in shopping malls expressed in EUR/per square metre/per month demonstrated slight declines. This resulted from ample supply of modern retail space all over Poland, due to which owners of shopping centres had to fight for tenants.

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38 The analysis of rents based on the BaNK data base conducted by NBP, quotations are made semi-annually.

**Figure 91** Transaction rents for A class office space (average EUR price/sq. metre/month)

**Figure 92** Transaction rents for B class office space (average PLN price/sq. metre/month)

**Figure 93** Transaction rents charged for retail space in shopping centres (shopping malls) with a surface of approx. 100 sq. m. (EUR/sq. metre/month)

Note: Warszawa - A class office buildings, Warszawa – B class office buildings
Source: NBP

**Note:** The 6 cities include Tri-city Agglomeration of Gdańsk, Sopot and Gdynia, Katowice, Kraków, Łódź, Poznań, Wrocław.
Source: NBP

**Box 4. Hedonic analysis of rents charged for commercial and office space**

The box presents the results of the hedonic analysis of rents collected in the office market in Warszawa and in the commercial market in Tri-city Agglomeration of Gdańsk, Sopot and Gdynia. The analysis shows how price factors affect rents, and highlights the need to collect detailed information on rents and buildings where such rents are charged. Warszawa was selected for the analysis as it is the largest office market in Poland, offering almost 60% of the total existing space. In turn, Tri-city Agglomeration of Gdańsk, Sopot and Gdynia is a polycentric city, and major part of the shopping centers are located along streets connecting the city and along its ring road.

The analysis taking into account attributes determining the rent, measured in euro per square meter per month for space leased in shopping centers and offices, was based on data collected in the BaNK database as at 31 December 2015. The analyzed sample contains data collected directly from agents operating in the local commercial real estate market as part of the “Analysis of the residential and commercial property prices” conducted by the President of the NBP.
In line with the scope of the survey, NBP has been collecting data concerning rents and rent-determining factors. Logarithm of the rent charged for the space leased in euro per square meter per month was adopted as the explained variable as the majority of rents were expressed in euro. Logarithm values allow to capture elasticity of rents to rent-determining factors.

**Estimation of factors affecting rents of office space in Warszawa.**

While analyzing rents charged for office space exceeding 100 square meters, we used the following explanatory variables: surface of the leased space; total rentable area in the facility; class building, location.

Based on the analysis, in addition to the conventionally used categories of A, B and C class buildings, it was decided to establish a qualitative variable - b_butikowy (b_boutique) - to distinguish rather small and often profoundly modernized historical buildings in prime location. The authors also decided to differentiate premises from the point of view of their location, broken down into city centre, northern area, Aleje Jerozolimskie, Służewiec and other areas.

The empirical analysis does not show significant differences in rents between COB, close part of Wola district and close part of Mokotów district, therefore these areas were put together. The central area is used in the regression as the base from which rents charged in other areas deviate.

The results of the analysis, presented in detail in Table R1, confirm that the transaction rent per square meter of office space differs considerably between various classes of buildings. As regards rents charged in A class office buildings, higher rents are charged in the so-called b_butikowy (b_boutique) buildings, and lower rents are collected in B and C class office buildings. The important factor influencing the level of rent is the location of the office building. Rents charged in building located in the city centre are higher than those charged in other areas. The size of the building described with l_powdowynajmu (l_area for rent) variable, positively affects the amount of the rent, although the ratio is not high. Larger buildings, in accordance with the assumption of the economy of scale, have more attributes which affects the rent which may be charged by their owners.

**Table R.4.1 Results of the estimation of factors determining transaction rents per 1 square meter of office space**

<table>
<thead>
<tr>
<th>ln_rent per sq.m. EUR</th>
<th>coefficient</th>
<th>standard error</th>
<th>relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>l_area of premises</td>
<td>−0.00144042</td>
<td>0.00530565</td>
<td></td>
</tr>
<tr>
<td>l_area for rent</td>
<td>0.0277184</td>
<td>0.00762525</td>
<td>***</td>
</tr>
<tr>
<td>b_butikowy</td>
<td>0.112825</td>
<td>0.0284096</td>
<td>***</td>
</tr>
<tr>
<td>b_B class</td>
<td>−0.202570</td>
<td>0.0132192</td>
<td>***</td>
</tr>
<tr>
<td>b_C class</td>
<td>−0.272705</td>
<td>0.0488089</td>
<td>***</td>
</tr>
<tr>
<td>northern area</td>
<td>−0.103609</td>
<td>0.0223114</td>
<td>***</td>
</tr>
<tr>
<td>area of Aleje Jerozolimskie</td>
<td>−0.206838</td>
<td>0.0163533</td>
<td>***</td>
</tr>
<tr>
<td>Służewiec area</td>
<td>−0.205820</td>
<td>0.0190293</td>
<td>***</td>
</tr>
<tr>
<td>other areas</td>
<td>−0.239106</td>
<td>0.0179908</td>
<td>***</td>
</tr>
<tr>
<td>Constant</td>
<td>2.78271</td>
<td>0.0810662</td>
<td>***</td>
</tr>
</tbody>
</table>

Regression was performed using the least squares method; the total of 779 observations (records) were factored in and the determination coefficient for regression was 64%.
Estimation of the factors affecting rents for the lease of premises in shopping centers in Tri-City Agglomeration of Gdańsk, Sopot and Gdynia.

The analysis of rent-determining factors for premises ranging from 100 to 300 square meters located in shopping centers used the following explanatory variables: area of the premises, leading shopping centers specializing in fashion and accessories in Tri-City Agglomeration, age of the building, service charges, number of parking spaces belonging to the building, information on the renovation and modernization of the property.

The market of retail space in shopping centers in Tri-City Agglomeration offers a variety of commercial premises in various locations. The classical model of monocentric city, where the distance of the building from the center is reflected in the rent, does not apply in this case. As a result of the immediate adjacency of Gdańsk, Sopot and Gdynia to each other the Tri-City Agglomeration is one urban space with a linear arrangement of main roads; one along the centre of these three cities where commercial and retail premises are located or continue to be built, including both small and large retail premises. The second region is Tri-City’s ring road, with retail parks and large retail outlets.

Separate analysis of downtown retail and leisure parks and centres specializing mainly in fashion and accessories showed a considerable discrepancy between the level of rent in these buildings and in everyday shopping centers in residential districts, and hypermarkets with a small number of premises for rent, located on city outskirts. The regression shows that high rent usually goes hand in hand with high service charges. High service charges result from large common area, high standard and attractive appearance of the building as well as marketing and advertising costs of the shopping centre. These costs should be reflected in the attractiveness of the shopping center to the customer, and thus boost the income which the tenant can generate to make them willing to pay high rent. Another factor determining the rent level is the age of the building. Rents are higher in buildings younger than 10 years than in the older ones. The number of available parking spaces is also of considerable importance; in buildings with up to 500 parking spaces the rent is lower than in those with a greater number of parking spaces.

Table R.4.2 Results of the estimation of factors determining rents per 1 square meter of retail space in Tri-City Agglomeration of Gdańsk, Sopot and Gdynia

<table>
<thead>
<tr>
<th></th>
<th>coefficient</th>
<th>Standard error</th>
<th>relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>In area of the premises</td>
<td>-0.287799</td>
<td>0.0925196</td>
<td>***</td>
</tr>
<tr>
<td>Leading commercial centres specializing in fashion and accessories</td>
<td>0.447503</td>
<td>0.0591806</td>
<td>***</td>
</tr>
<tr>
<td>Age of the building up to 10 lat</td>
<td>0.322522</td>
<td>0.108341</td>
<td>***</td>
</tr>
<tr>
<td>In service charges</td>
<td>0.214899</td>
<td>0.0529005</td>
<td>***</td>
</tr>
<tr>
<td>Total number of parking spaces up to 500</td>
<td>-0.261176</td>
<td>0.0874518</td>
<td>***</td>
</tr>
<tr>
<td>Modernization</td>
<td>0.0164848</td>
<td>0.0624522</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>3.49891</td>
<td>0.482533</td>
<td>***</td>
</tr>
</tbody>
</table>

Regression was performed using the least squares method; the total of 351 observations (records) were factored in and the determination coefficient for regression was 48%.
6. Convergence and differentiation processes in local markets in Poland

The specific nature of housing makes it difficult to analyze the real estate market as a whole. Analysis of price changes in a particular market may pose many difficulties as a result of the changing structure of offered housing and concluded transactions. The changing structure is additionally affected by evolving preferences of home buyers and the changing business environment (i.e. wages, unemployment, government schemes aimed to support the housing sector), very often specific to a particular market. The analysis of the whole market should take into account various factors and be performed at various levels. Thus, its findings may be markedly different after the key element in the analysis has been factored in.

Major cities throughout the world tend to see faster growth than smaller ones and the same trend is also observed in Poland. This is also confirmed by the information collected in the BaRN database, in which the share of records from Warszawa exceeds 31%. Despite the fundamental differences between the analyzed cities, the overall housing situation in Poland is constantly improving. Every year new construction projects are completed and made available for occupancy, thus increasing the housing stock; on the other hand, depletion of the existing housing stock is of marginal importance. 2015 was another year in which developers completed and made available for occupancy a large number of construction projects. Demographic factors played a lesser role on account of the end of process of baby boomer generations of the turn of the 1970s and 1980s entering the labour market and due to the demographic burden ratio worsening for a several years.

The financial situation of households improved mainly due to higher wages and falling unemployment in most of the analyzed cities, which will probably generate more demand. In turn, declining population in most analyzed voivodship cities will negatively affect the demand side.

Due to minor changes in most of the factors affecting the housing market, no significant changes should be expected in the market. Stable prices and improving economic conditions coupled with more intense, negative pressure of demographic factors will support market stabilization.

**Housing situation in 16 voivodship cities**

In 2015 the housing stock of 16 voivodship cities increased by more than 55 thousand dwellings to reach the level of approx. 3.5 million dwellings at the end of 2015 (in the whole country it amounted to approx. 14.1 million). Like in the previous years, growth in the number of dwellings in the stock differed across cities. In 2015 growth generally ranged from 1% to 3% and depended on the situation in the regional markets, especially on local factors determining demand and
supply. 2015 saw a further improvement in the housing situation of Poland’s voivodship cities. This was driven by production of new dwellings, small scale of housing stock depletion and a downward trend in the officially registered population, persisting in some cities. More favourable saturation and population rates were recorded in the largest, in terms of inhabitants, cities.

Figure 94 Housing stock per 1000 inhabitants in 6M

Figure 95 Housing stock per 1000 inhabitants in 10M

Source: GUS.

Figure 96 Average usable area of housing in the housing stock per person (in sq. m) in 6M.

Figure 97 Average usable area of housing in the housing stock per person (in sq. m) in 10M.

Source: GUS.

39 In the case of Zielona Góra, a growth of nearly 15% (y/y) in the number of housing units was the result of the city’s merging with the municipality which took effect on 1 January 2015.
40 The officially recorded population is determined based on the CSO data on the population actually living in a given place as per 31 December.
6. Convergence and differentiation processes in local markets in Poland

Demographic factors in 16 voivodship cities

2015 the majority of fundamental demographic factors negatively affected the housing sector. This may be related to the end of the process of the second post-war baby boomer generation becoming independent and the persons from demographic decline period gradually entering the market.

In most regional markets (with the exception of Kielce, Olsztyn and Wrocław) in 2015 (as compared to 2014) the number of marriages increased (both in nominal terms and per 1000 inhabitants). Most voivodship cities also saw the birth rate decrease. Particularly unfavorable changes were noted in Poznań and Wrocław, where in 2015 the birth rate reached negative values, while a year earlier in was in the positive territory. The negative birth rate was especially pronounced in three cities: Łódź, Katowice and Szczecin. In 2015 these cities recorded the birth rate per 1 000 inhabitant of -6.3, -3.4 and -2.2, respectively.

In 2015 in most regional cities, the trend of population decline continued. Besides, like all over Poland, also voivodship cities continued to see population aging. Worsening demographic
burden ratio in the analyzed cities was confirmed by a further decline in the working age population and faster growth in post-productive and pre-productive age. According to official statistics, the population in voivodship cities in Poland at the end of 2015 totaled approx. 7.4 million people. By 2020, the population is bound to decrease to approx. 7.2 million people, with larger declines to be seen in smaller markets. Only two cities: Warszawa and Rzeszów may be expected to see a slight increase in the number of inhabitants. Starting from 2020 further declines in the size of the population are forecasted. In 2050, the number of inhabitants in 16 voivodship cities is forecasted to reach 6.4 million people, including approx. 3.9 million in the six largest cities, i.e. Warszawa, Kraków, Gdańsk, Wrocław, Poznań and Łódź.

Figure 102 Birth rate per 1000 inhabitants in 6M

Figure 103 Birth rate per 1000 inhabitants in 10M

Figure 104 Migration per 1000 inhabitants in 6M

Figure 105 Migration per 1000 inhabitants in 10M

Source: GUS.
In 2015, similarly as in 2014, economic factors had a favorable impact on local housing markets. Good performance of the Polish economy, and thus better situation in the labour market, amid relaxed monetary policy of NBP gave, for another consecutive year, a stimulus for housing demand. It was driven by both households meeting their own housing needs, as well as the buyers treating home purchase as an investment providing higher yield than, for example, bank deposits. Dwellings were both purchased with cash and were loan-financed.

As compared with 2014, in 2015 the unemployment rate fell in all voivodship cities. With the exception of Białystok, the unemployment structure saw persistently declining share of young people aged up to 34, being the largest group of prospective home buyers, the trend which started in 2010.

The analyzed period saw an increase in household wages in real terms (with the exception of Katowice) as a result of rising wages in nominal terms and deflation. Improvement was also noted in home availability ratios in the primary and secondary markets in most regional cities, indicating the number of square meters that can be purchased for an average wage. This was affected by growth in the average wage level exceeding growth in home transaction prices.
recorded in particular voivodship cities. Moreover, as compared to 2014, in 2015 improvement was seen in loan availability indicator and loan-financed housing availability indicator, which apart from wage levels and home prices was also to a large extent driven by lower interest on residential mortgage loans.

Despite greater estimated loan availability, only a slight increase in bank lending in the residential loans segment was noted. In 2015 the scale of demand for residential mortgage loans was significantly influenced by S Recommendation of the Polish Financial Supervision Authority (KNF). At the beginning of 2015 the demand for loans was lower as the requirement of buyer's own contribution was raised to 10%. In the second half of 2015, demand for credit increased after the announcement of further reduction of LTV# (as of 1 January 2016). In total, in 16 voivodship cities approx. 49.7 thousand housing loan agreements were concluded (i.e. approx. 0.5% more than in 2014). The value thereof stood at approx. PLN 13.5 million and was higher by approx. 2% as compared to 2014.

On 01 January 2014, the government launched a new scheme to support home purchases, namely MDM#. In the initial period of the scheme, the possibility to use the government subsidy was limited by home price specified in the scheme which was too low in the majority of cities as compared to the prices observed in the regional markets. In the second year of the scheme, due to the increase of the limits and a slight change of home prices in particular cities, the scale of mismatch decreased as compared to 2014. The largest mismatch was still observed in the largest cities (i.e. Warszawa, Kraków, Wrocław).

In 2015, as in the preceding year, the level of MDM scheme utilization in particular cities varied and was determined by the level of price limits per square meter of eligible housing specified under the scheme and the degree of availability of that housing. In 2015, the total of approx. 11.9 thousand applications for subsidy for the purchase of housing in the primary market were submitted in 16 voivodship cities, which accounted for the total loan amount of approx. PLN 2.6 million (as compared to approx. 8.5 thousand requests and the amount of approx. PLN 1.7 million in 2014). In the case of the secondary market, the importance of the MDM scheme in home purchase financing was much lower. This was driven by the fact that the scheme was expanded to include used dwellings at a later date (since 2015 Q3) as well as due to a lower price limit for those dwellings as compared to the dwellings in the primary market. Notwithstanding the above, in 2015, approx. 2.6 thousand applications for subsidy for home purchase in the secondary market were submitted in 16 voivodship cities, which accounted for the total loan amount of approx. PLN 0.4 million. The greatest interest in obtaining support in home purchase under the MDM scheme in the secondary market was observed in Łódź, Bydgoszcz, Katowice, Opole, Kielce and Olsztyn.

The effect of the MDM scheme on demand in 2016 will be probably lesser as the funds for 2016 disbursements were used in 100% in March 2016, and the first part of funds scheduled for

41 Source: NBP estimate based on the BIK data.
42 Source: NBP estimate based on the BGK data.
6. Convergence and differentiation processes in local markets in Poland

disbursement for 2017 was disbursed in July 2016. Households may still apply for subsidy to supplement their own contribution whose disbursement is scheduled for 2018.

Source: GUS.
6. Convergence and differentiation processes in local markets in Poland

**Figure 116** Housing affordability per average wage (in sq. m) in 6M – PM

Source: NBP, GUS.

**Figure 117** Housing affordability per average wage (in sq. m) in 10M – PM

Source: NBP, GUS

**Figure 118** Housing affordability per average wage (in sq. m) in 6M – SM

Source: NBP, GUS

**Figure 119** Housing affordability per average wage (in sq. m) in 10M – SM

Source: NBP, GUS

**Figure 120** Availability of PLN-denominated loans in 6M

Source: NBP, GUS.

**Figure 121** Availability of PLN-denominated loans in 10M

Source: NBP, GUS.
6. Convergence and differentiation processes in local markets in Poland

**Figure 122** Availability of loan-financed housing (PLN-denominated loans) in 6M – PM

**Figure 123** Availability of loan-financed housing (PLN-denominated loans) in 10M – PM

Source: NBP, GUS.

**Figure 124** Value of loans in newly concluded loan agreements (in PLN million) in 6M (according to the borrower's domicile)

**Figure 125** Value of loans in newly concluded loan agreements (in PLN million) in 6M (according to the borrower's domicile)

Source: BIK.

**Figure 126** Gap/surplus between RNS/MDM threshold prices and median transaction prices in 6M – PM

**Figure 127** Gap/surplus between RNS/MDM threshold prices and median transaction prices in 6M – PM

Source: NBP, BGK.
Housing construction in 16 voivodship cities
In 2015, the housing sector in voivodship cities developed with varied intensity. As in the previous years, the behaviour of economic agents representing the supply side was affected, among others, by local conditions prevailing in particular markets as well as fundamental demographic and economic factors. In 2015, as compared to 2014, the analyzed cities observed an increase in the number of the commenced housing investment projects as well as in the number of contracts for new housing construction. As in the previous years, the activity of investors in terms of housing production was the most pronounced in the group of the cities with the largest population. These were attractive and absorptive markets, ensuring high rates of return on investment. In 2015, as compared to 2014, developer housing construction became even more predominant in some of those cities. Increased activity of real estate developers was recorded also in some smaller regional cities, in particular in those which in the past 2-3 years saw a lower scale of developer investment. Furthermore, in those markets, contrary to what was observed in large cities, single-family housing, usually self-built, developed to a larger extent. Regardless of the size of the city, limited activity of housing cooperatives in the production of new dwellings continued. Among Poland’s voivodship cities, the largest share of cooperative housing in the commenced housing investment projects was recorded in Lublin, Rzeszów and Kielce. In those cities it stood at approx. 8-11%.

The effects of housing construction in 2015, as measured by the number of dwellings completed and available for occupancy, were lower in 10 voivodship cities and higher in 6 cities as compared to 2014. Real estate developers continued to carefully monitor the market and adjust their offer to demand in terms of the size and price of dwellings. The trend of building smaller dwellings continued, in particular in the group of the largest cities, which confirms the downward trend as regards the average usable area of completed and ready for occupancy housing, persisting in those cities.

In 2015, in the particular markets, we could observe increased interest of investors in land intended for housing construction, which was caused by the intent to recreate land banks by real estate developers.

Figure 128 Number of completed and ready for occupancy dwellings per 1000 inhabitants in 6M

Figure 129 Number of completed and ready for occupancy dwellings per 1000 inhabitants in 10M

Source: GUS.
Figure 130 Number of completed and ready for occupancy dwellings per 1000 marriages in 6M

Source: GUS.

Figure 131 Number of completed and ready for occupancy dwellings per 1000 marriages in 6M

Source: GUS.

Figure 132 Average usable area of completed and ready for occupancy dwelling in 6M

Source: GUS.

Figure 133 Average usable area of completed and ready for occupancy dwelling in 10M

Source: GUS.
6. Convergence and differentiation processes in local markets in Poland

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Figure 134 Outlook for housing construction in 6M

Source: GUS.

Figure 135 Outlook for housing construction in 10M

Source: GUS.

Figure 136 Indicator of trends in housing production in 6M (in thousands; dwellings commenced less competed and available for occupancy dwellings)

Source: GUS.

Figure 137 Indicator of trends in housing production in 10M (in thousands; commenced dwellings less competed and ready for occupancy dwellings)

Source: GUS.
Analysis of the BaRN database

Development of research on the real property market, including the collection of data from new sources and cooperation with new entities operating in the market, as in the previous years, translated again into a larger number of respondents and observations in the BaRN database. In 2015, nearly 178 thousand sale offers in the primary market were recorded (nearly 16% more than in the previous year) together with approx. 47.6 thousand housing sale transactions (by nearly 21% more than in 2014). In 2015, more than 97 thousand offers and nearly 43 thousand transactions in the secondary market were recorded, posting a growth by approx. 9% and 30% respectively. In terms of the number of records entered in the database (sale offers and transactions for both markets), Warszawa is predominant, with more than 31% of all records, followed by Kraków (10% of the database records) and Gdańsk (nearly 9%). In the case of the rental market, the BaRN database recorded approx. 17.7 thousand offers and transactions in 2015, which, compared to 2014, constitutes a decline by approx. 5%.

Approx. 460 developers on average (approx. 14% more than in 2014) and 555 agents (increase by approx. 5%) participated in the 2015 survey. According to the estimates of local experts, the average number of transactions in the secondary market in voivodship cities in 2015 grew by 8.8% as compared to the previous year.

Figure 138 Number of records in quarters in the BaRN database

Housing offers Rental offers Housing transactions Rental transactions

Source: NBP.
Primary housing market according to the BaRN database

In the 16 analyzed voivodship cities, the median transaction price at the end of 2015 in the primary market stabilized in the majority of the cities at a level similar to that recorded in the previous year. The highest increase was recorded in Kraków (by nearly 15%), Wrocław (by 5%) and Bydgoszcz (by 3%). The decline in the median transaction price as of the end of 2015 was observed in Szczecin (by 5%), Łódź (by 2%) and Zielona Góra (nearly 2%). In the remaining cities, the increase of the median price stood usually at 1-2%.

The stabilization of prices was observed also in the secondary market. The highest increases in the median transaction price in 2015 Q4, as compared to 2014 Q4, were noted in Katowice and Lublin (approx. 4.5% each), and Gdańsk (3.5%), and the sharpest declines in Kielce (by 4.5%), and Szczecin and Łódź (by approx. 4%).

The analysis of the annual average transaction prices in the analyzed markets allows to distinguish groups of cities with similar price changes. The sharpest growths in 2015, as compared to 2014, were recorded in Gdańsk (by 5%), Kraków (by 4%) and Bydgoszcz (by 3.7%), and declines in Kielce (by 3.5%), Zielona Góra (by 2.5%) and Łódź (by 1.7%).

In the largest local market in Poland, i.e. Warszawa, the median transaction price of developer housing as of the end of 2015, as compared to the end of 2014, grew by almost 3%, and in the secondary market fell at a nearly identical level.

The highest nominal prices, both in the primary and secondary market, were observed in the largest markets. The primary market in Warszawa at the end of 2015 saw the median transaction price at PLN 7,340/sq. m, in Kraków at PLN 6,321/sq. m, and in Poznań at PLN 5,939/sq. m.

The secondary market observed the highest median transaction price as of the end of 2015 in Warszawa (PLN 7,086/sq. m), Kraków (PLN 5,793/sq. m) and Wrocław (PLN 5,115/sq. m).

The average home selling time in the secondary market in 2015 for the entire country got slightly longer as compared to the previous year and was 163 days. For the six largest and most liquid markets the selling time also grew longer and was 157 days (as compared to 155 days in the previous year).

Figure 139 Median selling offer price (PLN/sq. m) in 6M – PM

![Median selling offer price (PLN/sq. m) in 6M – PM](image1)

Source: NBP.

Figure 140 Median selling transaction price (PLN/sq. m) in 6M – PM

![Median selling transaction price (PLN/sq. m) in 6M – PM](image2)

Source: NBP.
6. Convergence and differentiation processes in local markets in Poland

Figure 141 Median selling offer price (PLN/sq. m) in 10M – PM

Source: NBP.

Figure 142 Median selling transaction price (PLN/sq. m) in 10M – PM

Source: NBP.

Figure 143 Supply and demand mismatch; units with area <= 50 sq. m in 6M – PM

Source: NBP.

Figure 144 Supply and demand mismatch; units with area <= 50 sq. m in 10M – PM

Source: NBP.

Note to Figure 143: mismatch (expressed in percentage) between supply (housing offers by real estate developers) and estimated demand (housing transactions) as regards the area of housing, according to the data derived from the BaRN database; the mismatch is measured as the ratio of the offered housing units with a usable area of up to 50 square meters to the share of transactions involving housing units with an area of up to 50 square meters (the average for the last four quarters). A positive result (above the black line) indicates the surplus of housing units of a given size, a negative result – their deficit. The above applies also to Figures 144-146 and 151-154.
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Secondary housing market according to the BaRN database

Figure 147 Median selling offer price (PLN/sq. m) in 6M – SM

Source: NBP.

Figure 148 Median selling transaction price (PLN/sq. m) in 6M – SM

Source: NBP.

Figure 149 Median selling offer price (PLN/sq. m) in 10M – SM

Source: NBP.

Figure 150 Median selling transaction price (PLN/sq. m) in 10M – SM

Source: NBP.
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Figure 151 Supply and demand mismatch; units with area <= 50 sq. m in 6M – SM

Source: NBP.

Figure 152 Supply and demand mismatch; units with area <= 50 sq. m in 10M – SM

Source: NBP.

Figure 153 Supply and demand mismatch; units with area > 50 sq. m in 6M – SM

Source: NBP.

Figure 154 Supply and demand mismatch; units with area > 50 sq. m in 10M – SM

Source: NBP.

Figure 155 Average selling time in 6M – SM

Source: NBP.

Figure 156 Average selling time in 10M – SM

Source: NBP.
Home rental market according to the BaRN database

Average offer and transaction rents as of the end of 2015 increased as compared to the end of the previous year. Both offer and transaction rents grew by an average of approx. 5% for the entire country. The highest transaction rents, as in the previous years, were noted in Warszawa (PLN 45/sq. m), Kraków (PLN 34.4/sq. m), Gdańsk (PLN 33.7/sq. m), and Poznań and Wrocław (PLN 31.1/sq. m).

Figure 157 Average offer rents (PLN/sq. m) in 6M

![Figure 157](image)

Source: NBP.

Figure 158 Average transaction rents (PLN/sq. m) in 6M

![Figure 158](image)

Source: NBP.
**Glossary of terms and acronyms**

**Arbitrage** – A sale/purchase transaction of all tradable goods (e.g. merchandise, securities, housing), making it possible to gain profits without any risk. The essence of Arbitrage is the balancing of price differences of the same product in various markets or in the same market. In case such a difference is higher than transaction costs, the investor will gain profit by purchasing the product in a cheaper market and selling it in a more expensive market.

**BaRN** – Real Estate Market Database. The database containing offer and transaction prices of housing in the primary and secondary markets and data on rent rates in 16 voivodship cities. The data come from real estate brokers, housing cooperatives and real estate developers who volunteered for the study and partially also from the Registers of Prices and Values of Real Estate kept by particular counties. The data are gathered and verified by the Regional Branches of NBP.

**Building type 1121** – an average residential multi-family five-storey building with an underground parking space and retail premises on the ground floor, traditional construction (over-ground part made of ceramic bricks), monitored by NBP since 2004 based on the data of Sekocenbud. For the sake of convenience, it has been assumed that construction costs of one square meter of parking space and retail space are close to the costs of housing sold in a shell condition; The real price of 1 square meter of housing, based on construction costs, depends on the share of the 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 that the building’s common area constitutes 20% of the housing area and using this figure we made an upward adjustment of the price of 1 square meter of housing. The data were 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 residential and commercial real estate market in 2011”, NBP 2012.

**Shopping centre** – retail real estate that has been planned, constructed and managed as a single retail entity. It consists of common areas, with a minimum gross leasable area (GLA) of 5,000 sq. m, and a minimum of 10 shops.

**DI** – Disposable Income, households’ gross disposable income.

**Loan availability** – measure defining the amount of the average monthly wage in the enterprise sector in a given market, considering the bank’s lending requirements and loan parameters (interest rate, depreciation period, social minimum understood as the minimum income after the payment of loan instalments). Important information is provided by the pace of changes and regional differentiation rather than the value of the indicator alone.

**Housing affordability** – measure of potential ability to purchase housing at the offer price for the average monthly wage. It indicates the number of square metres of housing that can be purchased for an average wage in the enterprise sector in a particular city (GUS).

**DTI** - Debt to Income, indicator defining the level of loan service costs (repayment) to the average gross income available to households.
Financial leverage – ratio of liabilities and provisions for liabilities to equity.

PONT – database holding data on housing real estate offer prices, gathered by the company of PONT Info Nieruchomości.

Global creditworthiness – measure indicating overall creditworthiness (mortgage loans) of all households in Polish cities. It is calculated based on individual income available to households (household budgets according to GUS) as well as bank lending requirements and loan parameters.

Hedonic housing price index – reflects the ‘pure’ price, i.e. resulting from factors other than home quality differences. We also analyse the price of a standardized dwelling, common in a given market, based on an econometric model. The index adjusts the average price from the sample to the change in quality of housing in the sample in each period. This distinguishes it from the average price growth, or the median in the sample, which would strongly react to a change in the sample composition, e.g. by increasing the price given a higher number of small dwellings with a higher price per square metre. More information in the article by M. Widłak (2010) „Metody wyznaczania hedonicznych indeksów cen jako sposób kontroli zmian jakości dóbr” [“Methods of computing hedonic price indices as the way to control changes in goods quality”], Wiadomości Statystyczne no. 9.

IRR – Internal Rate of Return, internal rate of return – method of economic assessment of effectiveness of investment projects. An investment project is profitable when the internal rate of return is higher than the terminal capitalization rate being the lowest rate of return acceptable to the investor.

Affordability of loan-financed housing – measure specifying how many square metres of housing at an average offer price in a particular market (PONT Info) may be purchased for a mortgage loan obtained based on the average monthly wage in the enterprises sector in a particular market (GUS), in view of loan parameters (interest rate, depreciation period, social minimum understood as the minimum income after payment of loan instalments) and the bank’s lending parameters. Index growth rate and spreads between particular markets also provide important information.

LTV – (Loan to Value) – ratio of the value of the loan granted to the value of the loan collateral.

DFD – an average large real estate development company, selected on the basis of economic activity classification number PKD2007. A large real estate development company employs more than 50 people.

MDM – Housing for the Young – a new government-subsidized scheme intended to support housing construction through subsidies to mortgage loans granted to households meeting the following requirements: age below 35 years, no homeownership, housing usable area not exceeding 75 square meters for a housing unit and 100 square meters for a single-family house. The scheme entered into force at the beginning of 2014.
MDR - (Mortgage Debt Ratio) – percentage share of mortgage loans repayment in the borrower’s budget.

Cities 200-500 – all cities in Poland with 200 to 500 thousand inhabitants.

MLS – (Multiple Listing System) a system which enables the real estate brokers to exchange information concerning offers of homes for sale.

OOH – (Owner Occupied Housing) dwellings inhabited by the owner.

P/I – (Price to Income), ratio determining the relationship, expressed in years, of the price of an average dwelling in a particular market to the average available income.

P/R – (Price to Rent), ratio determining the relationship of the price of an average dwelling in a particular market to the cost of rental of a similar dwelling.

Sub-let – the process of a temporary lease by home owner of the whole or part of their property against a specific fee.

Pre-let – lease of commercial real estate during its construction period. Its level is determined by the bank financing the investment in order to secure the income from investment.

Credit rationing - restricted lending resulting from banks’ own assessment of growing risk. In specific situations this may diminish the value of newly granted loans, despite the absence of major changes in the current creditworthiness of the borrower, which may lead to self-fulfilling forecast.

Recommendation S - collection of good practices regarding mortgage-secured credit exposures. It was introduced in 2006 by the Polish Financial Supervision Authority, issued pursuant to Article 137 item 5 of the Banking Law Act (Journal of Laws No. 72/2002, item 665, as amended).

Recommendation T - collection of good practices in managing the risk of retail loan exposures. It was introduced in 2010 by the Polish Financial Supervision Authority, issued pursuant to Article 137 item 5 of the Banking Law Act (Journal of Laws No. 72/2002, item 665, as amended).

Re-commercialisation of commercial properties - re-lease of properties which were leased before.

Rodzina na Swoim (RnS) (Family on their own) – the governmental scheme intended to support housing construction through subsidies to interest rates on housing loans. The scheme was ended at the end of 2012.

Sekocenbud – publishing house issuing quarterly data on construction costs. The team relies on quarterly Bulletins of Prices of Buildings (BCO), Part I, large buildings.

Shell and core construction of new housing - it may be housing with concrete topping on the floor and plaster on the walls and front door, to be finally finished by the buyer. The actual standard of the shell and core construction may vary depending on the real estate developer. This standard should be described in the home purchase contract.
Standard of office real estate – office space is classified according to the offered standard. The classification depends on the age of the building, its location, possibility to customize the space, technical specification (e.g. raised floors or suspended ceilings), underground and over-ground parking lots and other factors important from the tenant’s point of view.

Capitalization rate – quotient of the net operating income that may be earned in the market and the market price of real estate (in accordance with the Generally Applicable Domestic Principles of Appraisal).

Housing situation - understood as an indicator of the degree to which housing needs of the society are satisfied. Most often it is measured as the relation expressed in natural numbers between the housing stock and the population. It is described by such indicators as the number of dwellings per 1 000 inhabitants, the size of the average dwelling, the technical condition of housing, access to public transport, measured by the average commute time.

TBS (Social Building Society) – a company operating under the Act of 26 October 1995 on certain forms of subsidizing housing construction (consolidated text of the Journal of Laws No. 98/2000, item 1070, as amended). IBS is engaged in the construction and administration of multi-family buildings under rental, provision of management and administration services and conduct of business related to housing construction and accompanying infrastructure. Initially, TBS offer was meant to be addressed to non-affluent families eligible for loan subsidy from the National Housing Fund (KFM). Tenants pay rent, which is usually higher than in municipal housing (as the loan is repaid from the rent) but lower than the market rent.

TDR - (Total Debt Ratio) – ratio determining the percentage share of mortgage loan repayment in the borrower’s budget.

Vacancy Rate – relation of non-rented space to the accumulated (total) supply of commercial space in a particular location, e.g. town or district.

Profitability ratios – ROA (return on assets) – relation of net income to assets at the end of the period, ROE (return on equity) – relation of net income to equity at the end of the period, profitability of net sales – net profit in relation to income on sales.

Professional rental – the process of leasing residential space especially constructed for housing purposes; the owner of the home rental stock may be both a legal entity (municipality, local government, real estate fund) as well as a natural person; in Poland this market is limited and decapitalised.
List of abbreviations

+3M  3-month changes
5M   5 cities: Gdańsk, Kraków, Łódź, Poznań, Wrocław
6M   6 cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław
7M   7 cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warszawa, Wrocław
10M  10 cities: Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin, Zielona Góra

AMRON  System for the Analysis and Monitoring of Real Estate Market Transactions
BaNK  Commercial Real Estate Market Database
BaRN  Real Estate Market Database
BIK   Credit Information Bureau
CPI   Consumer Price Index
DFD   Large real estate development company
DI    Disposable income
DTI   Debt to Income
FMnW  Rental Housing Fund
GD    Households
GUS   Central Statistical Office
IRR   Internal Rate of Return

EURIBOR  Euro Interbank Offer Rate
KNF   Polish Financial Supervision Authority
KRS   National Court Register
LIBOR  London Interbank Offered Rate
LTV   Loan-to-Value

MDM   Government-subsidized housing scheme Mieszkanie dla Młodych [Housing for the Young]
MDR   Mortgage to Debt Ratio
MLS   Multiple Listing System
IRFS  International Financial Reporting Standards
NBP   Narodowy Bank Polski
OOH   Owner Occupied Housing
PAB   Polish Construction Research and Forecasting
P/I   Price to Income
PP    Rest of Poland
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>RNS</td>
<td>Government-subsidized housing scheme Rodzina na Swoim [Family on their own]</td>
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<td>RP</td>
<td>Primary housing market</td>
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<td>RPO</td>
<td>Offer in the primary market</td>
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<td>RPT</td>
<td>Transaction in the primary market</td>
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<td>PAS</td>
<td>Polish Accounting Standards</td>
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<tr>
<td>RW</td>
<td>Secondary housing market</td>
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<td>RWO</td>
<td>Offer in the secondary market</td>
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<td>RWT</td>
<td>Transaction in the secondary market</td>
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<td>ROA</td>
<td>Return on Assets</td>
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<td>ROE</td>
<td>Return on Equity</td>
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<td>SARFIN</td>
<td>Analytical System for the Real Estate Financing Market</td>
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<td>TBS</td>
<td>Social Building Society</td>
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<td>TDR</td>
<td>Total Debt Ratio</td>
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<td>WIBOR</td>
<td>Warszawa Interbank Offered Rate</td>
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<td>WIG20</td>
<td>Index including top 20 companies listed on the Warszawa Stock Exchange with the highest value of publicly traded shares</td>
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<td>ZBP</td>
<td>Polish Bank Association</td>
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<td>ZKPK</td>
<td>Accumulated index of changes in banks’ credit policy criteria</td>
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