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Information on home prices and the situation in the housing and commercial real estate market in Poland in 2022 Q3

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The analysis of the situation in the real estate market in Poland in 2022 Q3¹ leads to the following conclusions:

- **The number of housing construction contracts sold in the largest primary markets in 2022 Q3 decreased considerably, amounting to approx. 6.6 thousand.** This represented a drop of approx. 55% y/y (2021 Q3 saw an increase of approx. 12%). The number of new residential mortgage loans declined (by approx. 71% y/y, whereas it had grown by approx. 36% in 2021 Q3). A total of 57.6 thousand dwellings were completed and made ready for occupancy in 2022 Q3 in Poland (an increase of approx. 5.5% q/q, but decrease of 1.8% y/y), which was the effect of the developers' activity in previous years. The 66.1 thousand dwellings covered by the building permits issued was less than in previous quarters (by about 29% q/q and approx. 21% y/y). The building of 45.1 thousand dwellings was started, representing a decrease of approx. 32% q/q and approx. 24% y/y. Construction costs, such as the costs of materials, labour, lease of equipment, and construction sites, were on the rise. The average nominal transaction prices per square metre of housing rose both in the primary and in the secondary markets, as did the rental rates in actual transactions. However, in real terms (relative to CPI), the prices started to fall.
- **The third quarter of 2022 saw a further increase in the nominal prices of dwellings in most of the cities under analysis and the y/y price growth rates remained high** (see Table 1). Nominal transaction prices (PMT) grew, especially in Poznań, Kraków and the 10 cities, which was partly due to a change in the structure of sold dwellings (a higher proportion of transactions in better locations rather than on the outskirts), rather than a price adjustment by the developers. In real terms, relative to CPI, price growth rates decreased, and the change was the greatest in quarter-on-quarter terms in Gdynia, and year-on-year in Łódź. **The secondary market also observed slight upticks in nominal transaction prices (SMT) in all the groups of cities.** Secondary market transaction prices grew particularly in Kraków, Wrocław and Gdynia. There was a continued demand for older dwellings, in better locations, but smaller ones. Real prices decreased, especially in Warsaw. **Hedonic# index-adjusted prices rose in all the groups of cities** (see Figure 10), which means that similar dwellings were sold at higher prices than in the previous quarter.

¹ The analysis carried out in this issue of the *Information* is based on data available as at the end of 2022 Q3. Data collected in the NBP database during the listings include offers valid as at 1 September 2022 and transactions concluded in the period from 1 June to 31 August 2022. Due to delays in the availability of certain data, some charts and tables include information until and including 2022 Q2. The data series with average prices per square metre of housing, commercial rents and transaction prices per square metre of retail space reflect the pool of data available at the cut-off-date. Historical data are subject to revision. In the housing prices survey (BaRN database) concerning 2022 Q3, approx. 125.8 thousand records were collected, of which approx. 21.6% concerned transactions and 78.4% concerned offers. Altogether, approx. 4.7 million records were collected in the BaRN database, of which 25.2% concerned transactions and 74.8% offers.

Table 1 Changes in transaction prices of housing per square metre in the analysed cities in 2022 Q3

| | change in nominal prices q/q | | change in nominal prices y/y | | change in real prices relative to CPI* q/q | | change in real prices relative to CPI* y/y | |
|------------------|------------------------------|-------------|------------------------------|--------------|--|--------------|--|---------------|
| | PMT | SMT | PMT | SMT | PMT | SMT | PMT | SMT |
| Gdańsk | 6.4% | 1.1% | 15.5% | 11.3% | 3.2% | -1.9% | -0.6% | -4.1% |
| Gdynia | -3.9% | 3.8% | 18.6% | 16.4% | -6.7% | 0.7% | 2.1% | 0.2% |
| Kraków | 4.4% | 5.2% | 20.0% | 13.8% | 2.3% | 2.1% | 2.3% | -2.0% |
| Łódź | 6.9% | 3.5% | 13.8% | 13.4% | 3.7% | 0.4% | -2.1% | -2.4% |
| Poznań | 3.2% | -2.2% | 22.2% | 4.9% | 0.1% | -5.2% | 5.2% | -9.7% |
| Wrocław | 1.8% | 5.1% | 18.3% | 18.9% | -1.3% | 1.9% | 1.8% | 2.3% |
| Warsaw | 3.0% | 0.6% | 15.8% | 2.4% | -0.1% | -2.4% | -0.3% | -11.8% |
| 6 cities | 3.8% | 2.7% | 18.5% | 12.9% | -0.3% | -0.2% | 1.7% | -2.5% |
| 10 cities | 4.4% | 0.0% | 20.4% | 13.4% | 2.1% | -2.3% | 3.7% | -1.2% |

Note to Table 1: The changes in the average transaction prices in the secondary market (SMT) are underestimated due to the limited number of transactions available in the RCIWN register of real property prices (a smaller number of more expensive dwellings). Revisions will be made in the following quarters, as required data become available. */ The change in real prices relative to CPI is calculated as a change in the actualised weighted average transaction price per square metre of a dwelling in the PM and the SM. The prices from 2006 Q3 were adopted as fixed prices (compare with Figures 7 and 8).

- **The average transaction rental rates per square metre of housing** (excluding service charges and utility fees) **increased in quarter-on-quarter terms in Warsaw as well as in the six and ten cities** (see Figures 14 and 15). Demand for dwellings to rent² has been growing since the second half of 2021, boosted by a large influx of refugees from war-stricken Ukraine. The number of rental dwellings remaining on offer has been steadily decreasing. Investors continued to invest in real estate, considering it as safe capital investment, rather than expecting attractive rates of return. Investment funds, including foreign funds, have shown increased interest in the purchase of rental dwellings in the recent years.³ The Housing for Rent Fund operated by Bank Gospodarstwa Krajowego (BGK) has traditionally played a major role in this market.
- **The increase in the level of rental rates in the case of long-term rental (average in the seven large cities) resulted in a slightly higher level of the rental profitability index, but only in the case of dwellings bought for cash** (see Table 15).⁴ Housing investment (excluding the transaction costs) continued to be competitive with interest rates on bank deposits. The profitability of purchased rental housing compared with the yields on 10-year Treasury bonds was negative due to rising interest rates on Treasury securities.
- **The estimated housing affordability index in the seven large cities** (based on the average monthly wages in the enterprise sector) **decreased slightly in quarter-on-quarter terms** as a result of faster growth in the prices of dwellings than wages (see Figure 16). The estimated maximum affordable residential mortgage

² Based on the results of the NBP survey "Secondary residential real estate market, including the rental market in Poland", May 2022.

³ The most active group of investors comprises specialized German and Nordic funds, private equity funds from the USA and the United Kingdom and other investment institutions from the Central and Eastern Europe region.

⁴ For more information on the rental market, see chapter "Analysis of profitability of investment in housing in selected cities in Poland in 2022 Q3".

loan⁵ also decreased, as did the estimated affordability of loan-financed housing⁶. What contributed to the decrease in the two affordability indicators are rising interest rates and home prices.

- **Quarterly sales of housing construction contracts in the six largest primary markets in Poland⁷** (see Figure 57) were about 30% lower than in the previous quarter and amounted to **approx. 6.6 thousand dwelling units** at the end of September 2022. At the same time, **approx. 7.2 thousand housing construction contracts were put up for sale⁸**, or approx. 66% fewer in quarter-on-quarter terms. **The supply of unsold housing construction contracts in the six largest markets decreased in comparison to the previous quarter** by approx. 1.4 thousand dwellings to **approx. 51.4 thousand at the end of the period**. The number of contracts for “turnkey” dwellings offered for sale increased compared to the previous quarter to approx. 3.9 thousand.
- **The selling time of a housing construction contract in the primary market in the six largest markets, calculated on the basis of sales from the previous quarter, increased to 4.9 quarters from 4.2 quarters in 2022 Q2** (see Figure 64).
- **In 2022 Q3, the value of new residential mortgage loans disbursed in Poland was significantly lower than in the same period of 2021**. According to NBP data⁹, the value of new agreements for PLN-denominated residential mortgage loans entered into by households^{10, 11} (excluding renegotiated

⁵ The maximum residential mortgage loan available in a particular market is a measure expressed in PLN thousand, taking into account the banks' lending requirements and the loan parameters (i.e. interest rate, amortisation period of 25 years, minimum wage understood as the minimum income after the repayment of loan instalments). The estimate does not take into consideration changes in banks' lending policies, including the lending terms and criteria.

⁶ Affordability of loan-financed housing is a measure specifying how many square metres of housing can be purchased with a residential mortgage loan, given the average monthly wage in the enterprise sector in a particular market (Statistics Poland), in view of a given bank's lending requirements and loan parameters (interest rate, amortisation period, minimum subsistence level understood as the minimum income after the payment of loan instalments) at an average transaction price of housing (40% in the PM and 60% in the SM) in a particular market (BaRN). The pace of changes of the index and differences between particular markets provide important information.

⁷ Based on JLL data (formerly REAS).

⁸ Most investment projects were placed on the market mainly in late June so that the sale could be closed according to the rules effective until 1 July, meaning without the developer having to satisfy the conditions of the amended Developer Act requiring developers to pay contributions to the Developer Guarantee Fund. The practice of putting investment projects up for sale “for later” reached the highest scale in the agglomerations of Warsaw, Tri-City and Wrocław.

⁹ The data concerning the interest rates and the value of new residential mortgage loans based on the NBP data available in the “4 OPN2PLN” tab on the NBP site : https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/oprocentowanie.html. According to NBP data, at the end of September 2022, the value of residential mortgage loans granted by the banks to households was PLN 511.0 bn, which was PLN 1.3 bn more than in the previous quarter and PLN 10.1 bn more than in September 2021 (an increase of 2.0% y/y, and a 7.0% increase in 2021 Q3). In 2022 Q3, the value of PLN loans decreased (by PLN -2.9 bn on 2022 Q2), whereas the value of foreign currency loans increased (PLN +4.2 bn).

¹⁰ According to the BIK data, in 2022 Q3, the banks and credit unions granted about approx. 20.8 thousand residential mortgage loans to retail customers, amounting to approx. PLN 6.8 bn (approx. 73.0 thousand loans and PLN 24.1 bn in 2021 Q3, respectively). Negative growth rates of sales of residential mortgage loans in 2022 Q3 concerned all the loan amount brackets. From 2021 Q4 to 2022 Q3, approx. 181.8 thousand residential mortgage loans were taken out (a decrease of approx. 31% y/y), totalling PLN 62.4 bn (a decrease of approx. 25% y/y).

¹¹ According to AMRON data, 21.2 thousand new residential mortgage loans were granted in 2022 Q3 (38.4 thousand in 2022 Q2 and 68.4 thousand in 2021 Q3), totalling PLN 7.0 bn (compared to PLN 13.5 bn in 2022 Q2 and PLN 23.2 bn in 2021 Q3), while the average value of residential mortgage loan granted was approx. PLN 329.9 thousand (PLN 350.6 thousand in 2022 Q2). Loans in the PLN 200-300 thousand range continued to predominate (25.8% compared to 24.8% in 2022 Q2), there was also an uptick in the share of loans amounting to less than PLN 100 and to PLN 100-200 thousand, whereas the shares of loans in the remaining amount brackets decreased. In total new loans, the shares of loans with an LtV of up to 30% and between 30-50% increased to 18.2% and 12.9% respectively, while the share of loans with an LtV in the range 50-80% decreased (to 53.3%), and those with an LtV above 80% to 15.7%. Compared to the previous quarter, there was a slight increase in the share of residential mortgage loans with a

agreements) amounted to PLN 9.2 bn, which was approx. PLN 6.4 bn (-41%) less than the previous quarter and approx. PLN 14.4 bn (-61%) less than in 2021 Q3. Demand for loans dwindled, both as a result of rising interest rates and a change in the rules of calculation of creditworthiness by the banks (adding 5 p.p. to the interest rate, according to Recommendation 5). The results of the NBP survey on the situation in the credit market in 2022 Q4¹² suggest that after one year of tightening of the lending policies, most banks did not change their lending criteria, taking into account in their decision-making a drop in demand and stronger competition from other banks. The reason most often cited by banks for the drop in demand for residential mortgage loans was the worsened financial standing of households and bleak forecasts concerning the situation in the housing market. The surveyed banks expected a slight tightening of the lending policy in 2022 Q4, while demand is to decrease a little less than in the previous quarters of 2022.

- **The estimated Return on Equity (ROE) on development projects for housing developers approximated 20%, i.e. it grew marginally compared to the previous quarter**, while still remaining relatively high. The level of ROE was influenced by an increase in transaction prices offsetting the higher costs incurred by the developers. According to the Coface report¹³, the estimated number of insolvencies in the construction sector increased to 212 during the first three quarters of 2022 from 178 in the same period of 2021, while the number of insolvencies in the real estate services business fell from 58 to 45 (see Figure 36). However, the authors of the report point out that given the numerous legislative developments since 2020, insolvencies in the construction industry are hard to quantify. At the same time, the stock market indices of the construction and real estate developers did not change, while the WIG20 went down (see Figure 36).
- **In 2022 Q3, over 57.6 thousand dwellings were completed and made ready for occupancy¹⁴ in Poland, 1.8% less than in 2021 Q3** (see Figure 52). Those dwellings were primarily for sale or rental (approx. 60%), or owner occupancy (approx. 39%). The proportion of dwellings completed and made ready for occupancy in the so-called “rest of Poland” (especially around large cities) to the total number of dwellings completed increased from approx. 36.8% in 2021 Q3 to approx. 37.2% in 2022 Q3. The number of **housing starts (45.1 thousand)¹⁵ was 23.8% lower than in 2021 Q3** (see Figure 53). It should be added that the

maturity of up to 15 years (7.7%) and 15-25 years (28.5%), whereas the share of loans maturing in 25-35 years (63.6%) and more than 35 years (0.6%) decreased. At the end of 2022 Q3, the number of active loan agreements (during repayment) approximated 2.44 million (compared to 2.48 million in 2022 Q2), and their value amounted to PLN 510.4 bn (compared to PLN 508.3 bn in 2022 Q2).

¹² “Situation in the credit market - results of the senior loan officer opinion survey, 2022 Q4”, NBP, October 2022. .

¹³ According to Coface experts (Coface Report titled *Insolvencies of Polish Companies During Three Quarters of 2022*), the macroeconomic environment is becoming more and more challenging to companies and will contribute to a growing number of insolvency cases. The building industry is facing challenges posed by rising prices of materials, fuel, energy, wages as well as rising costs of debt servicing and lease payments, coupled with declining demand for services. Government-generated demand for road works continues, although difficulties have appeared in the railway infrastructure. Demand for dwellings and office space is dwindling.

¹⁴ According to Statistics Poland data, more than 57.6 thousand were completed and made ready for occupancy in Poland in 2022 Q3, 1.1 thousand fewer than in 2021 Q3, but 2.9 thousand more than in the previous quarter. Altogether, over 237.6 thousand dwellings were completed in the past four quarters, an all-time high, nearly 8.9 thousand more than in the corresponding period of 2021 (an increase of 3.9% y/y).

¹⁵ According to Statistics Poland data, the construction of 45.1 thousand dwellings was commenced in 2022 Q3, approx. 26.7 thousand fewer than in 2021 Q3 and approx. 21.4 thousand fewer than in the previous quarter. All in all, the construction of 225.9 thousand dwellings was started in the past four quarters, 47.0 thousand fewer than in the same period of 2021 (a decrease of 17.2% y/y).

number of housing starts decreased both in the biggest cities and in the “rest of Poland”. Dominant here were dwellings for sale and rental (approx. 60%) and for owner occupancy (approx. 39%).

- **The still relatively high estimated rates of return on housing development projects, compared to other industries, and sustained investment demand incited investors to take action to get more building permits.**¹⁶ It should be noted that developers had started a lot of projects in the preceding period so as to avoid changes brought about by the amendment of the Developer Act. As the base was very high, the number of building permits declined in 2022 Q3. The building permits issued mainly concerned the construction of dwellings for sale and rental (approx. 62% of all the permits) and for owner occupancy (approx. 37% of all the permits). The number of building permits concerning dwellings for sale and for rental increased in Warsaw, Gdańsk and Szczecin, as well as the so-called “rest of Poland” (including near large cities). The share of building permits granted for cooperative house construction was marginal during the period.
- **There was no major change in the vacancy rates in the biggest office real estate markets in 2022 Q3,** with the supply of office space under construction remaining high, though lower than in the previous quarter. According to information provided by consulting companies, at the end of 2022 Q3, the total stock of office space in the 9 largest office markets¹⁷ was approx. 12.7 million sq. m, with approx. 750,000 sq. m still under construction. The vacancy rate in those markets remained at 13.6% and in Warsaw alone it stood at 12.1%.¹⁸ The office space vacancy rate depends on age¹⁹ but primarily on the location²⁰ of the office building. The construction of additional offices does not mean an automatic increase in the vacancy rates, although it will generate significant competition for tenants, especially in the case of older buildings or those at less convenient locations.
- **In 2022 Q3, the retail property sector had completely recovered from the COVID-19 pandemic.** At the end of the quarter, the stock of modern commercial space exceeded 12.57 million sq. m, meaning a saturation of 321 sq. m per 1,000 inhabitants.²¹ Approximately 32 thousand sq. m²² of modern retail space was under construction. It may be inferred that investors treat the commercial market in the biggest cities as saturated.
- **The market for modern warehouse space in Poland was in a rapid expansion phase, driven by the continued development of e-commerce, while supply and demand also remained high.** The market segment of warehouses located in urban areas, including relatively close locations, continued to develop very rapidly in order to reduce the time necessary to deliver products to the customer. Developers invested in solar power solutions, seeking to reduce the energy bill. At the end of 2022 Q3, the total stock of warehouse space had grown to 27.1 million sq. m²³, with more than 4.0 million sq. m of modern

¹⁶ According to data published by Statistics Poland, approx. 66.1 thousand home building permits were issued in Poland in 2022 Q3, approx. 17.4 thousand fewer than in 2021 Q3 and 26.8 thousand fewer than in the previous period. Altogether, about 322.7 thousand permits were issued in the past four quarters, approx. 16.3 thousand fewer than in the same period in 2021 (down 4.8% y/y).

¹⁷ The ten office space markets include: Warsaw, Kraków, Wrocław, Tri-City, Katowice, Łódź, Poznań, Szczecin, Lublin.

¹⁸ See: Colliers International Report: Market Insights, 2022 Q3, Poland.

¹⁹ Cushman & Wakefield, Marketing as one of the key factors supporting the modernisation process of older office buildings, 2018.

²⁰ See: Knight Frank, Report: Poland, Commercial Market, 2018 H1.

²¹ This value is estimated to be 15% lower than the average for the whole European Union.

²² See: Colliers International Report: Market Insights, 2022 Q3, Poland.

²³ See: Colliers International Report: Market Insights, 2022 Q3, Poland.

warehouse space under construction. The vacancy rate across the country grew to 4.1% from 3.2% in 2022 Q2. It is expected that some companies located in the areas affected by hostilities may wish to relocate to safe countries, which is likely to boost the demand for industrial and logistics facilities.

- **In the first three quarters of 2022, the estimated value of transactions of commercial real estate purchased as an investment²⁴, i.e. for rental, was close to EUR 3.8 bn.** Warehouse space accounted for approximately 37.6% of that amount, office space 39.2% and retail space only 18.2% of the transactions.
- **The exposure of the financial sector to commercial real estate (loans to housing developers, loans for office, retail, warehouse real estate and other loans) comes in two main forms. The first is real estate purchased with a loan.** Usually, in such a case, the loan is secured on the financed property, but alternative forms of collateral are also possible. At the end of 2022 Q3, the value of such loans granted by the banks in Poland²⁵ amounted to PLN 63 bn²⁶, with 58% of such loans denominated in EUR. The total amount of corporate loans consisted of the following categories. The outstanding amount owed by corporations related to residential real estate (developer, cooperative, to be overhauled, etc.) stood at PLN 4.5 bn. The amount of loans financing office real estate went up to PLN 15.5 bn from 14.7 bn in 2022 Q2. The value of loans financing retail real estate was PLN 16.2 bn, whereas those financing warehouse and industrial real estate grew to PLN 11.0 bn from PLN 10.5 bn in 2022 Q2. The amount of loans for other real estate remained at PLN 15.9 bn. **The second form of exposure of the banks are loans taken out by companies for various purposes, but secured on real estate.** At the end of 2022 Q3, the value of corporate loans secured with mortgages on commercial real estate amounted to PLN 141 bn²⁷ and 42% of such loans were denominated in euro. When the value of loans granted for the purchase of real estate is subtracted from the value of loans secured on real estate, it can be estimated that companies took out approx. PLN 78 bn worth of mortgage-secured loans for other purposes, including revolving loans and capital investment loans.
- **The quality of the loans granted to enterprises to finance real estate did not change significantly in relation to the previous quarter.** The non-performing loan ratio in the case of loans financing office real estate increased to 7.1% from 6.4% in 2022 Q2. In the case of loans financing commercial real estate, the NPL ratio went up slightly to 14.4% from 14.3% in 2022 Q2. The NPL ratio decreased to 4.5% from 4.8% in 2022 Q2 in the case of loans for warehouse and industrial real estate and grew to 9.7% from 8.7% in the case of loans for other real estate. The NPL ratio for loans financing developers' housing projects decreased somewhat to 12.3% from 13.8% in 2022 Q2. The relatively high value of the ratio was mainly

²⁴ Based on data published by Comparables.pl. The above-mentioned investments concern the sale of an entire operating company which rents out a building and derives income from it. Such transactions take place between: 1/ a real estate developer which has commercialised a property and sells it to an investor, or 2/ between two investors.

²⁵ According to our expert estimate, loans intended for commercial real estate (office, retail, warehouse and other) extended by foreign banks amounted to PLN 87 bn at the end of 2021. The estimate was arrived at as follows: in line with international experience, it can be assumed that the LTV ratio in the total stock is 50%. However, 2021 saw a decline in the amount of loans for commercial real estate extended by the Polish banks while the stock continued to grow, so the ratio should be pared down to 40%. Based on the estimated value of the stock of office, retail and warehouse real estate, which at the end of 2021 amounted to PLN 355bn, it may be inferred that the total amount of the loans financing such real estate was approx. PLN 142 bn at the end of 2021. By deducting the loans granted by banks operating in Poland to finance such real estate (PLN 55 bn, excluding loans to developers) we arrive at an estimate of the loans granted directly and indirectly by banks operating abroad, i.e. PLN 87 bn.

²⁶ FINREP data.

²⁷ The decrease in the debt by PLN 4.6 bn in comparison with Q2 was mainly due to the repayment of PLN-denominated loans.

due to the fact that the banks were holding non-performing loans from the previous years in their portfolios.²⁸

- **In the markets for small office real estate, the median of offer prices in the majority of the largest cities increased slightly.** Similarly, the median of the offer price for small retail and service premises went up a little in Warsaw and Wrocław, but declined slightly in other large cities in comparison to 2022 Q2.

The following charts illustrate the key developments in the housing market in Poland's major cities in 2022 Q3. They show:

- 1) home prices (Figures 1–15),
- 2) affordability of loan-financed housing, loan affordability, profitability of housing investment (Figures 16–25),
- 3) mortgage loan disbursements and interest rates (Figures 26–33),
- 4) operating profitability of housing and real estate development projects, costs of construction and assembly output and the economic situation of real estate developers in Poland (Figures 34–49),
- 5) housing construction and the residential market in selected cities in Poland (Figures 50–63),
- 6) offer prices of commercial real estate and the estimated rate of return (Figures 64–74),
- 7) analysis of profitability of investment in housing for rental in selected cities in Poland in 2022 Q3 (Figures 75–88),
- 8) analysis of the situation of the following types of companies: developers (Figures 89–120), residential and non-residential construction companies (Figures 121–145), wholesalers of building materials (Figures 146–166) and producers of building materials (Figures 167–182).

The analysis of housing prices per sq. m (offer, transaction and hedonic) in the primary and secondary markets as well as housing rents relies on the data acquired from the housing market survey of the Real Estate Market Database (BaRN). On the other hand, as part of the survey of the commercial real estate market, the Commercial Real Estate Market Database (BaNK) data on rent, offer prices and transaction prices of commercial real estate are collected and analysed.

In addition, the analyses relied on the data from PONT Info Nieruchomości, AMRON and SARFIN Polish Bank Association and Comparables.pl. The analyses and reports of JLL (formerly REAS), the Polish Financial Supervision Authority and the aggregate credit data from the Credit Information Bureau were also used. For the structural market analysis, data published by Statistics Poland and many studies containing industry data²⁹ were used.

²⁸ See Financial Stability Report, NBP, December 2018.

²⁹ The authors used data and studies by Sekocenbud, Spectis, PAB, OLX Group.

List of Abbreviations:

| | |
|----------------|---|
| 5M | 5 largest cities: Gdańsk, Kraków, Łódź, Poznań, Wrocław |
| 6M | 6 largest cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław |
| 7M | 7 largest cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warsaw, Wrocław |
| 10M | 10 big cities: Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin, Zielona Góra |
| BaNK | Commercial Real Estate Market Database (NBP) |
| BaRN | Real Estate Market Database (NBP) |
| BIK | Biuro Informacji Kredytowej |
| CPI | Consumer Price Index |
| DFD | Large real estate development company |
| GD | Households |
| GUS | Statistics Poland |
| EURIBOR | Euro Interbank Offered Rate |
| KNF | Polish Financial Supervisory Authority |
| LIBOR | London Interbank Offered Rate |
| LTV | The relation of loan value to home value, i.e. Loan-to-Value |
| MDM | Government-subsidised housing scheme "Mieszkanie dla Młodych" (Housing for the Young) |
| MnS | Housing scheme "Mieszkanie na start" (Housing for the start) |
| NBP | Narodowy Bank Polski |
| PONT | PONT Info Nieruchomości |
| RNS | Government-subsidised housing scheme "Rodzina na Swoim" (Family on their Own) |
| RP | Primary housing market |
| RW | Secondary housing market |
| ROE | Return on Equity |
| WIBOR | Warsaw Interbank Offer Rate; the reference interest rate on loans in the Polish interbank market |
| WIG20 | Index including the top 20 companies listed on the Warsaw Stock Exchange with the highest value of publicly traded shares |
| ZBP | Polish Bank Association |
| ZKPK | Accumulated index of changes in banks' lending policy criteria concerning residential mortgage loans |

1. Transaction, hedonic and offer prices of housing in the primary market (PM) and in the secondary market (SM)

Figure 1 Transaction prices per sq. m of housing in Warsaw and in 6M- PM, in PLN

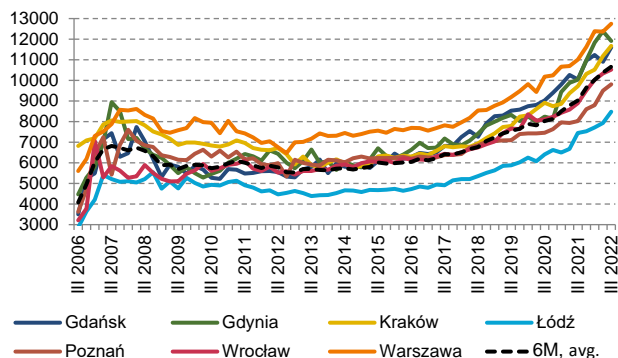
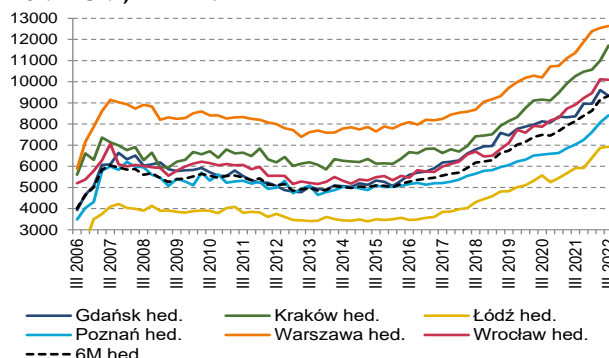


Figure 2 Transaction prices per sq. m of housing adjusted by the hedonic index (hed.)* in Warsaw and in 6M - SM, in PLN



Note: the home price database of NBP (BaRN) has existed since 2006 Q3; a description of the database is available on the bank's website: https://www.nbp.pl/home.aspx?f=/publikacje/rynek_nieruchomosci/ankieta.html. */ The price adjusted by the hedonic index is the average price of the reference period multiplied by the hedonic index (it reflects pure price change, but ignores differences in housing quality).

Source: NBP

Source: NBP

Figure 3 Weighted average price per sq. m of housing, offers (O) and transactions (T) - PM

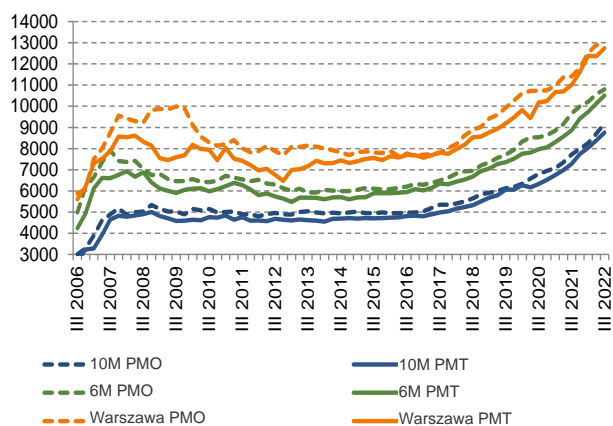
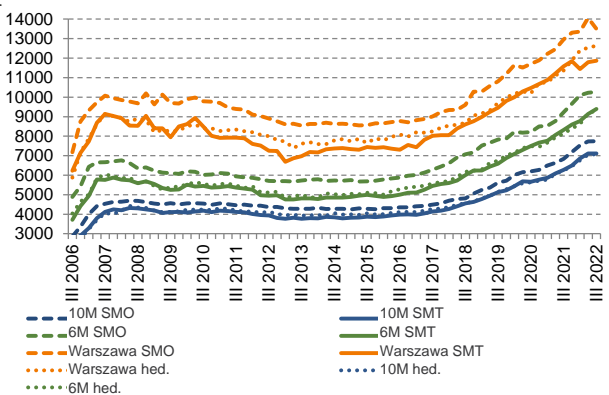


Figure 4 Weighted average price per sq. m of housing, offers (O) and transactions (T) and hedonic (hed.) prices - SM

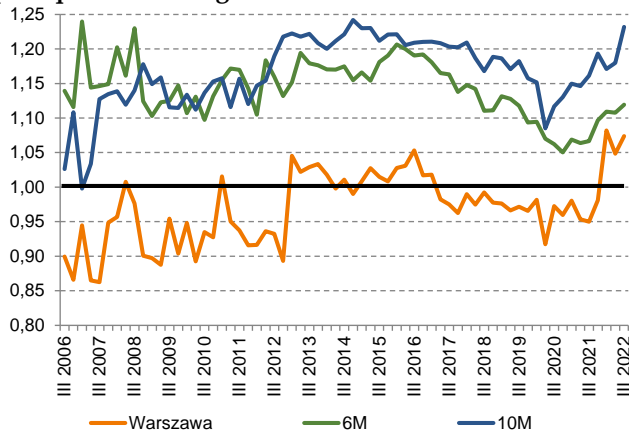


Notes to Figures 3–10 and 14-15: prices and rents in 6M and 10M weighted with the share of the housing stock; the average price for Warsaw.

Source: NBP

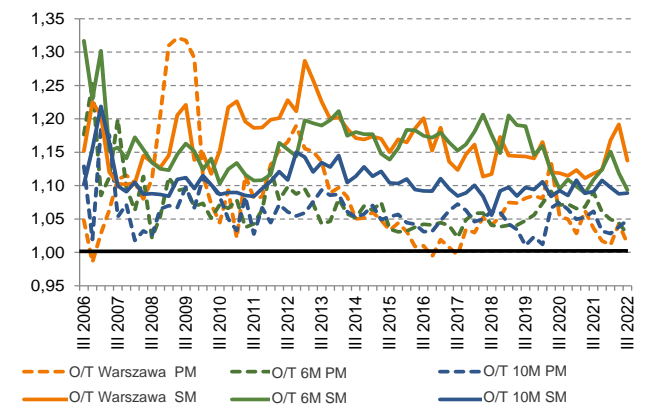
Source: NBP

Figure 5 Ratio of the weighted average transaction price per sq. m of housing – PM to SM



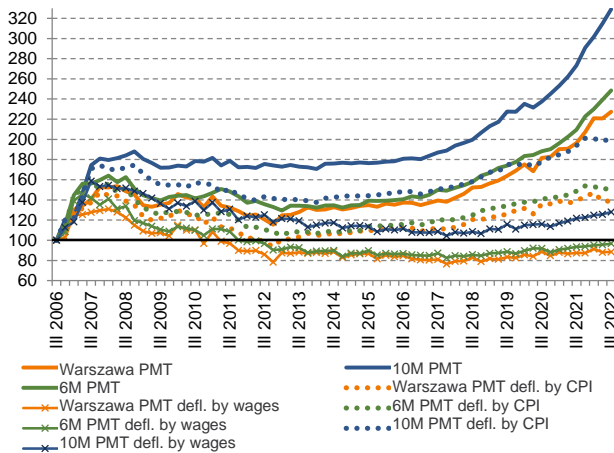
Source: NBP

Figure 6 Ratio of the weighted average offer price (O) to transaction price (T) per sq. m of housing – PM and SM



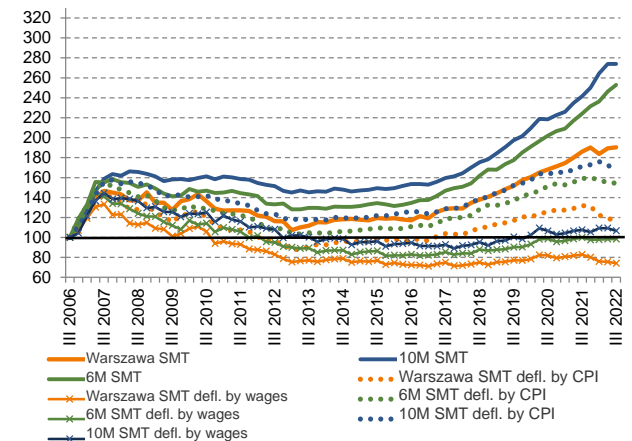
Source: NBP

Figure 7 Index of the weighted average transaction price per sq. m of housing in PM, and real price to CPI deflated price and real price to average wage in the enterprise sector (2006 Q3 = 100)



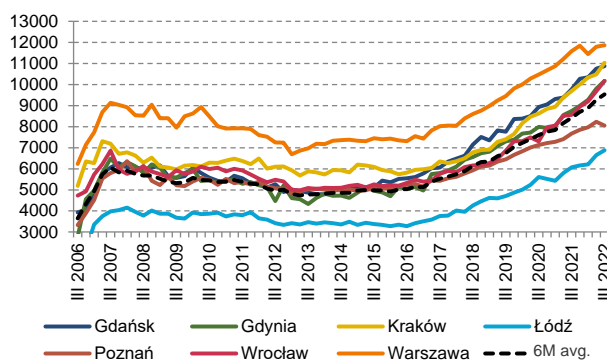
Source: NBP, ZBP (AMRON), Statistics Poland

Figure 8 Index of the weighted average transaction price per sq. m of housing in SM, and real price to CPI deflated price and real price to average wage in the enterprise sector (2006 Q3 = 100)



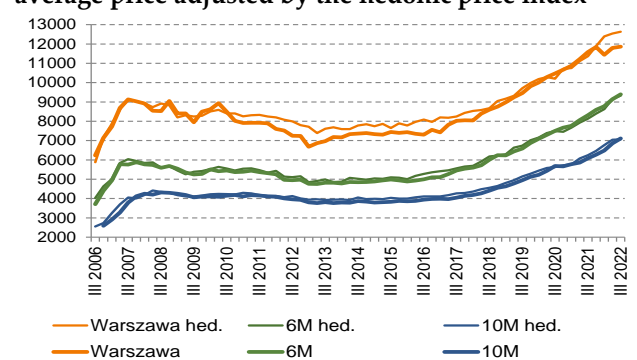
Source: NBP, ZBP (AMRON), Statistics Poland

Figure 9 Transaction price per sq. m of housing in SM in Warsaw and in 6M



Source: NBP

Figure 10 Weighted average transaction price per sq. m of housing in SM in selected markets and the average price adjusted by the hedonic price index



Source: NBP

Figure 11 Average offer prices per sq. m. of housing in PM in selected markets

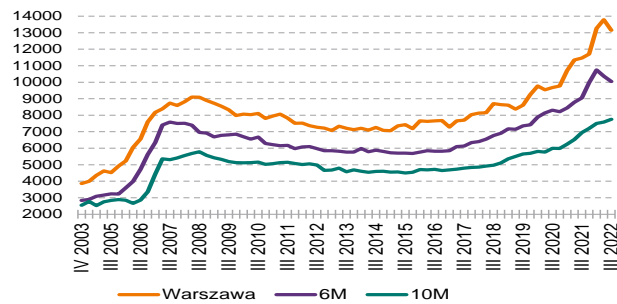
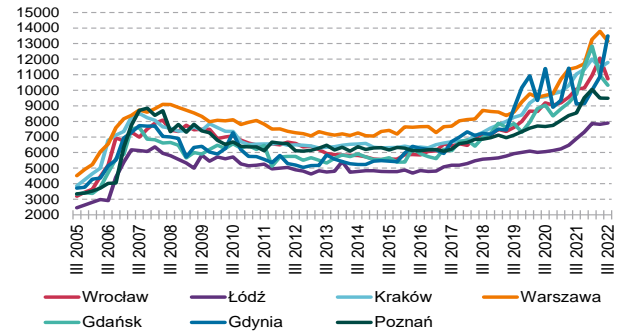


Figure 12 Average offer prices per sq. m of housing in PM in Warsaw and 6 cities

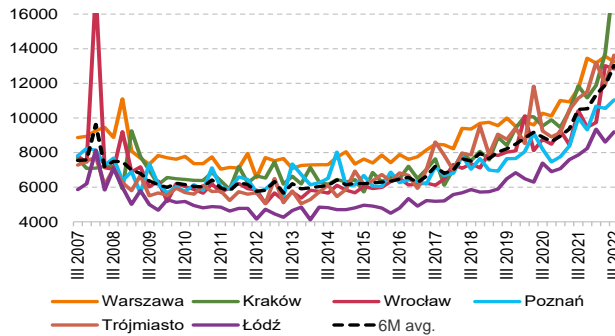


Note to Figures 11-12: prices collected from all available sources.

Source: PONT Info Nieruchomości

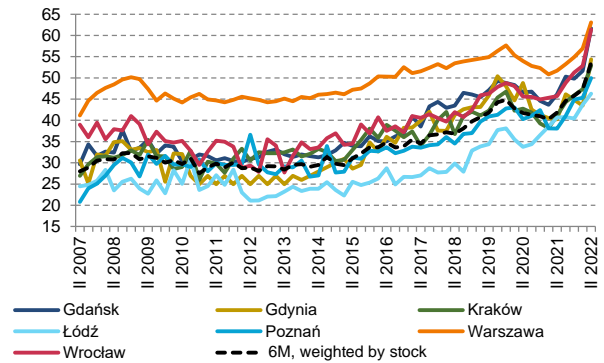
Source: PONT Info Nieruchomości

Figure 13 Average offer prices per sq. m of housing in selected markets, new home construction contracts – PM



Note: the prices refer only to new contracts put on the market for the first time. Source: JLL (formerly formerly REAS)

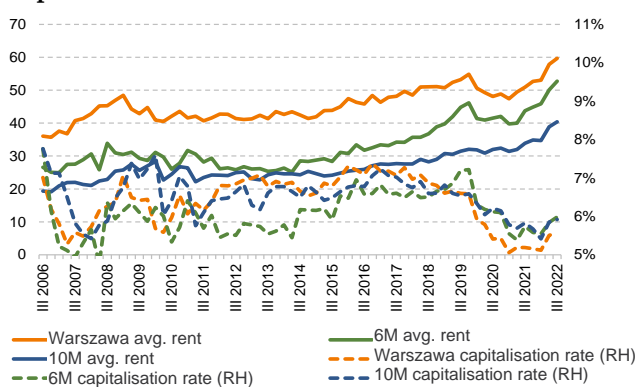
Figure 14 Average rental rates per sq. m of housing (offers and transactions) in selected cities - SM



Note: a change in the sample occurred in 2020.

Source: NBP, OLX Group

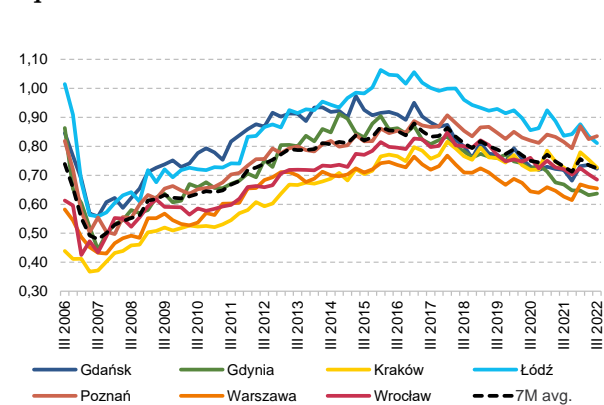
Figure 15 Average rental rates (transactions) in PLN per sq. m of housing in SM (LHS) and the estimated profitability of housing rental (RHS) in selected groups of cities



Note to Figure 15: the average transaction price per sq. m of housing calculated as 50% of PM price and 50% of SM price; the price per square metre of housing in the PM was increased to include the average costs of home finishing and 1.5% amortisation; the analysis does not take into account the high transaction costs in the housing market and the potentially long period of divestment.

Source: NBP, OLX Group

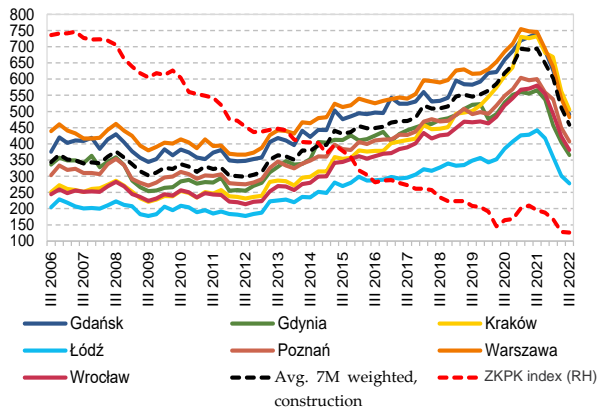
Figure 16 Estimated affordability of housing in 7M based on average wage in the enterprise sector (sq.m)



Housing affordability – a measure of potential ability to afford to buy housing at the transaction price for an average wage in the enterprise sector in a particular city. It expresses the number of square metres of housing that can be purchased for an average wage in the enterprise sector in a particular city (Statistics Poland) and at an average transaction price in a particular market (40% in the PM and 60% in the SM according to the NBP database). Source: NBP, Statistics Poland

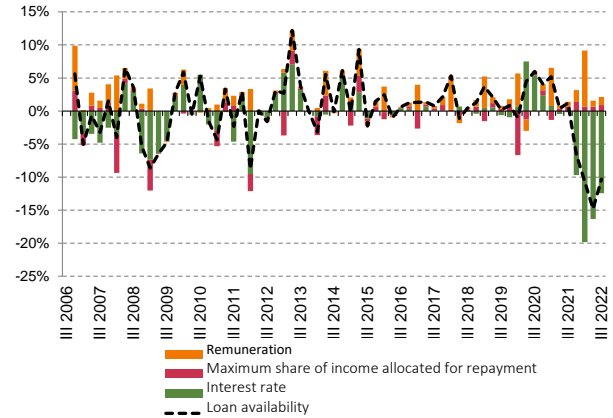
2. Affordability of loan-financed housing, loan availability, profitability of investment in housing

Figure 17 Estimated affordability of loan-financed housing and Accumulated Lending Policy Index of banks' mortgage lending policy (ZKPK; RHS)



Source: NBP, Statistics Poland

Figure 18 Quarterly changes in the estimated affordability of loan-financed housing in 7M and the force and directions of the impact of particular components



Source: NBP, Statistics Poland

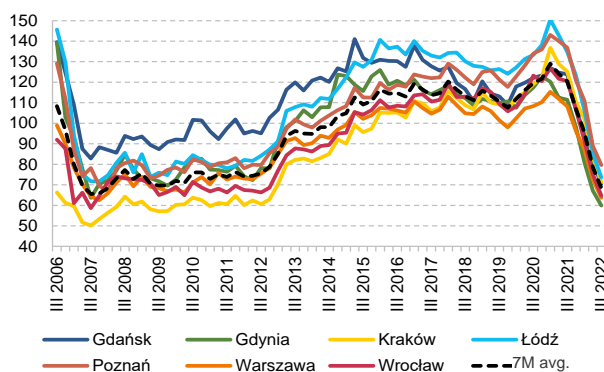
Affordable residential mortgage loan – a measure specifying the potential maximum residential mortgage loan; expressed in PLN thousand in a given market taking into account banks' lending requirements and loan parameters (interest rate, amortisation period, minimum subsistence wage as the minimum income after payment of loan instalments).

Affordability of loan-financed housing – a measure specifying how many square metres of housing may be purchased with a residential mortgage loan based on the average monthly wage in the enterprises sector in a particular market (Statistics Poland), in view of the bank's lending requirements and loan parameters (interest rate, depreciation period, minimum subsistence wage understood as the minimum income after payment of loan instalments) at the average transaction price of housing (40% in the PM and 60% in the SM) in a particular market (BaRN). The pace of changes of the index and differences between particular markets provide important information.

ZKPK Index – aggregated index of changes in banks' lending policy criteria; positive values mean easing, and negative values tightening of lending policy as compared to the initial period, i.e. 2003 Q4. The method of calculating the index is specified in the *Financial Stability Report, December 2012*, NBP

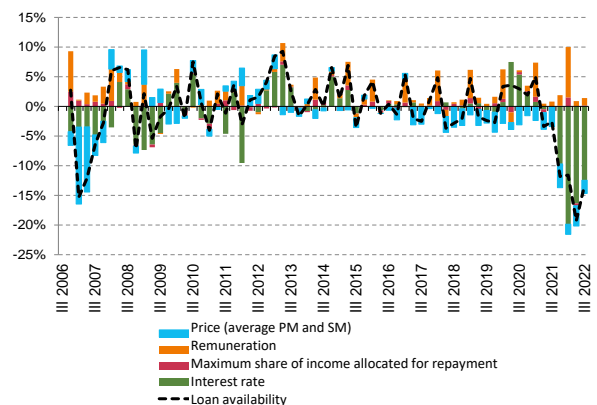
The interest rate on the residential mortgage loan weighted by the proportions of PLN- and foreign-currency denominated loans

Figure 19 Estimated average affordability of loan-financed housing in 7M



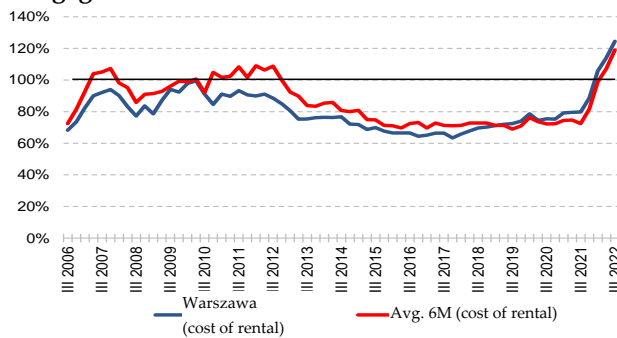
Source: NBP, Statistics Poland

Figure 20 Quarterly changes in the estimated affordability of loan-financed housing in 7M and the force and directions of the impact of individual components



Source: NBP, Statistics Poland

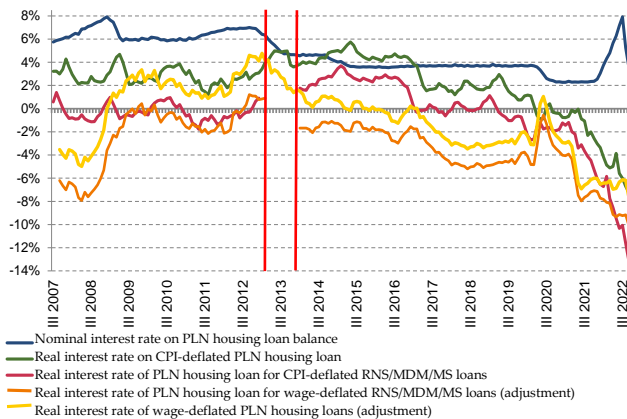
Figure 21 Estimated cost of servicing of a residential mortgage loan in relation to the cost of home rental



Note: the estimate concerns an average 50 sq. m dwelling; transaction price per sq. m of housing in PM and SM; residential mortgage loan with a floating interest rate, LTV=80%; rental rate being the average of offer and transaction prices.

Source: NBP, Statistics Poland

Figure 23 Residential mortgage loan burden for consumer; indices deflated with CPI or wage growth in the enterprise sector



Note: values below 0 denote a negative real interest rate for the borrower; the red lines separate the period of the absence of the government-subsidised housing scheme, i.e. the RNS scheme (2007-2012), the MDM scheme (2014-2018) and the Housing for the Start (MS) operating since 2019.

Source: NBP, Statistics Poland, BGK

Figure 25 Profitability of home rental (average in Warsaw and 6M) compared to alternative household investments (differences in interest rates)

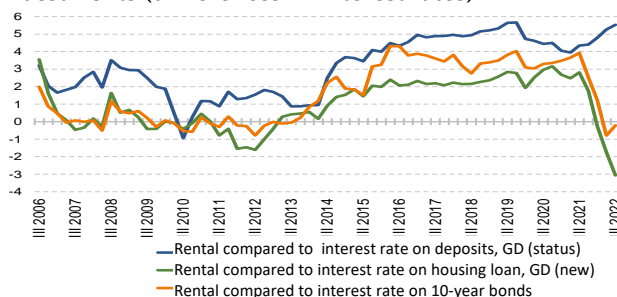
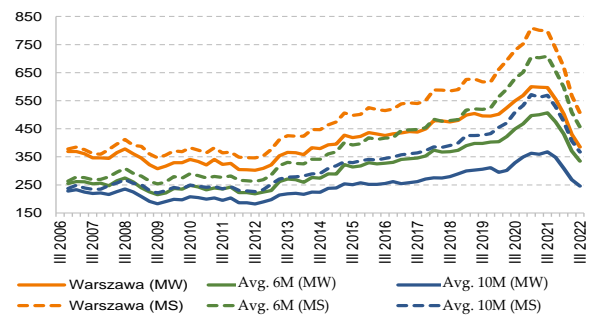
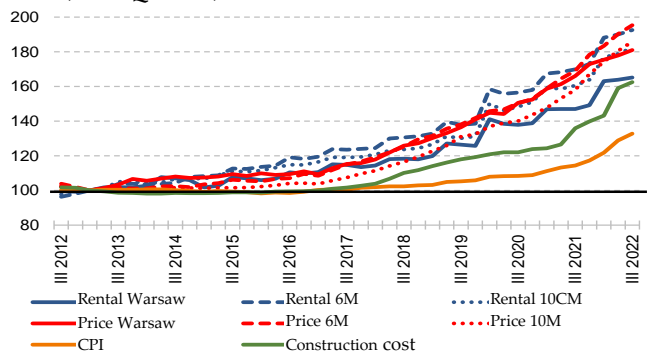


Figure 22 Estimated residential mortgage loan that can be afforded for the average gross wage in the enterprise sector in selected cities



Note: values estimated with the criterion of minimum subsistence wage (MS) or average monthly wage in the enterprise sector (MW). Source: NBP, Statistics Poland, BGK

Figure 24 Change in the level of transaction prices (Price) and household income (Wages), home construction costs and CPI, average in Warsaw, 6M and 10M (2013 Q1=100)



Note: transaction price of 1 sq. m of a dwelling 50% SM and 50% PM (including costs of finishing); The primary market price was increased to include the cost of finishing (in 2021 Q4: +PLN 1,050 per sq. m in Warsaw, +PLN 950 per sq. m in the 6 cities and + PLN 850 per sq. m in the 7 other cities). The cost of construction of a 1121-302 building (see footnote 32 for details).

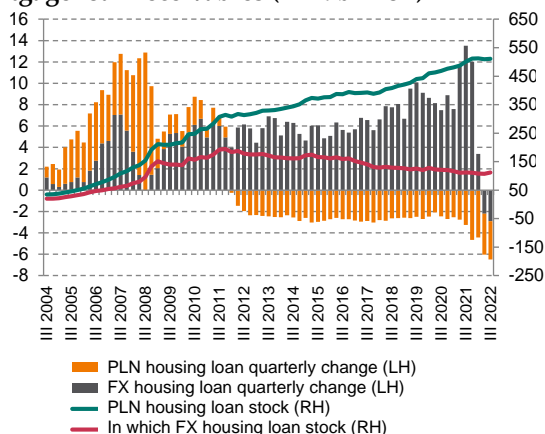
Source: NBP, Statistics Poland

Note do Figure 25: values exceeding 0 denote a higher profitability of purchasing property for rental to third parties than other household investments. This analysis does not take into account high transaction costs in the residential market and the potentially long time of divestment.

Source: NBP, Statistics Poland

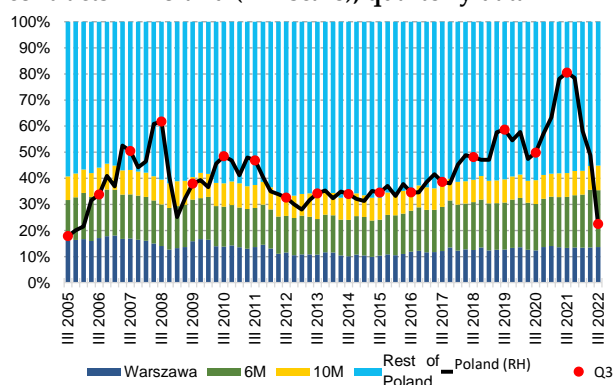
3. Disbursements of residential mortgage residential mortgage loans, interest rates

Figure 26 Stock and quarter-on-quarter changes in residential mortgage loan receivables from households after adjustments and the currency structure of quarter-on-quarter changes in residential mortgage loan receivables (PLN billion)



Source: NBP

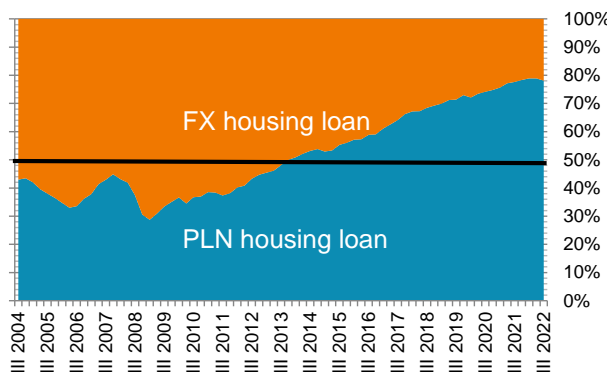
Figure 28 Geographical structure of the value of new PLN-denominated residential mortgage loan contracts in Poland's selected cities (LH scale) and the value of contracts in Poland (RH scale), quarterly data



Note do Figures 28 and 29: the data signify concluded residential mortgage loan agreements rather than the actual disbursement of loans. Only the third quarters are marked by red dots in Figure 28.

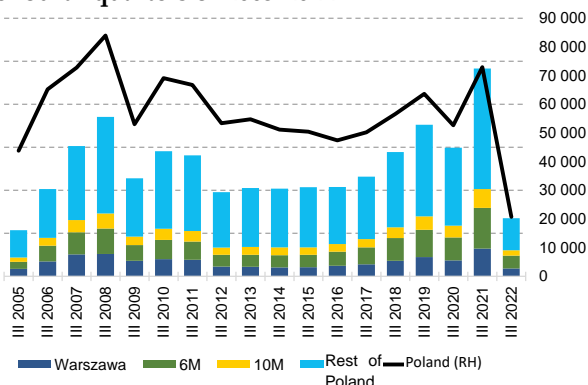
Source: BIK

Figure 27 Currency structure of housing loan receivables from households (%)



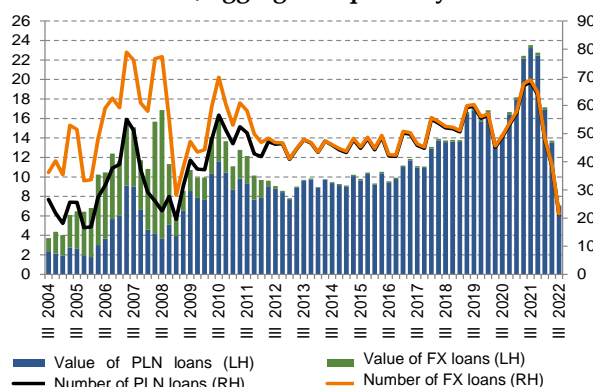
Source: NBP

Figure 29 Value in PLN bn (LH scale) and number (RH scale) of new PLN-denominated residential mortgage loan contracts in Poland's selected cities in the fourth quarters of 2005-2022



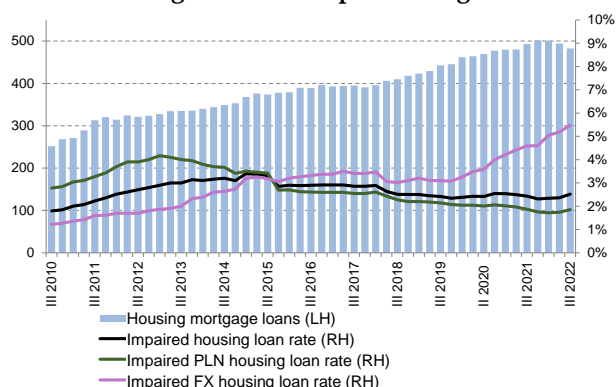
Source: BIK

Figure 30 New residential mortgage loan agreements: value and number, aggregated quarterly data



Source: ZBP (AMRON)

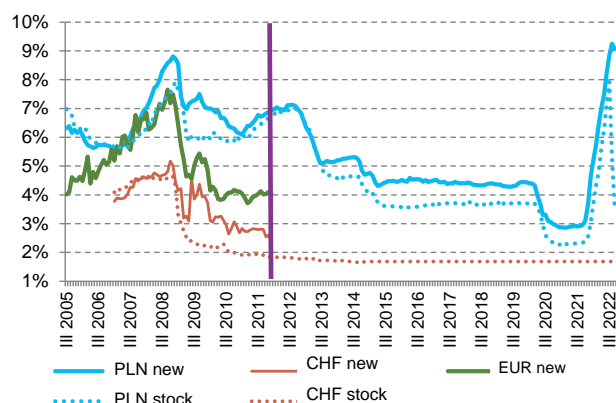
Figure 31 Loans to households for housing real estate and loans recognised as non-performing loans



Note: impaired receivables (loans) – receivables in portfolio B in whose case the objective evidence of impairment and a decrease in the amount of expected future cash flows have been identified (in the banks applying the IFRSs) or which have been recognized as non-performing loan receivables in accordance with the Ordinance of the Minister of Finance on establishing provisions against the risk associated with banking activities (in the banks applying the Polish PAS).

Source: NBP

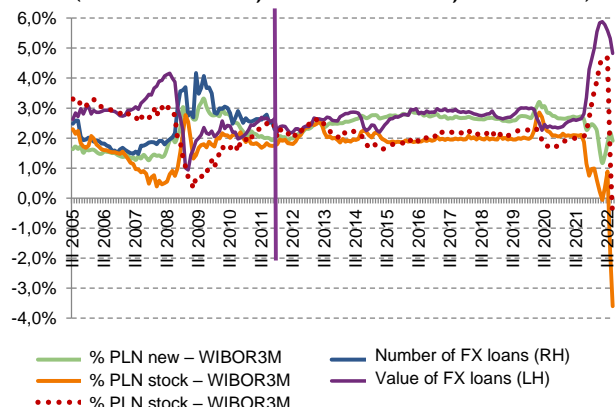
Figure 32 Interest rates on residential mortgage loans for households in Poland



Note to Figures 32 and 33: the purple vertical line separates a period with no FX loans, which have not been granted virtually since 2012. Note to Figure 33: the bank margin is the difference between the interest rate on the residential mortgage loan (NBP data) and WIBOR3M or LIBORCHF3M/SARON3M (since 2022). The interest rate on the stock of residential mortgage loans is a value illustrating the average interest rate on all the loan agreements existing at the end of the reporting period, whether concluded before the reporting month and continuing in force and new loan agreements, according to the method stated in "Instrukcja dla użytkowników statystyki stóp procentowych" [Instructions for the Users of Interest Rates Statistics] (https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_and_bankowa/oprocentowanie.html). The visible decrease in the interest rates on stock of loans in each month of 2022 Q3 is a consequence of the introduction of a so-called "mortgage holiday" scheme. It resulted in a decrease in accrued interest in comparison to monthly average amounts of all the residential mortgage loan agreements.

Source: NBP

Figure 33 Bank margins on residential mortgage loans (for 3M WIBOR, LIBOR/SARON, EURIBOR)



Source: NBP

Table 2 Estimated gross residential mortgage loan disbursements to households in Poland and the estimated value of cash-financed and loan-financed*/ purchases of developer-built housing in 7 cities (7M; in PLN million)

| Date | Disbursement of residential mortgage loans in Poland | Estimated value of housing transactions in the PM in 7M | Loan demand including client's down payment in the PM in 7M | Client's down payment to loans in the PM in 7M | Cash demand for housing (without down payment) in the PM in 7M | Estimated share of cash home purchases in the RP in 7M**/ |
|---------|--|---|---|--|--|---|
| 2012 Q1 | 5,385 | 3,135 | 1,228 | 307 | 1,907 | 71% |
| 2012 Q2 | 7,325 | 3,079 | 1,670 | 418 | 1,409 | 59% |
| 2012 Q3 | 7,661 | 2,773 | 1,747 | 437 | 1,026 | 53% |
| 2012 Q4 | 7,441 | 3,164 | 1,697 | 424 | 1,467 | 60% |
| 2018 Q1 | 11,914 | 7,015 | 2,716 | 679 | 4,299 | 71% |
| 2018 Q2 | 12,807 | 6,072 | 2,920 | 730 | 3,152 | 64% |
| 2018 Q3 | 13,024 | 5,697 | 2,969 | 742 | 2,727 | 61% |
| 2018 Q4 | 12,584 | 6,759 | 2,869 | 717 | 3,890 | 68% |
| 2019 Q1 | 11,865 | 7,156 | 2,705 | 676 | 4,450 | 72% |
| 2019 Q2 | 14,653 | 6,713 | 3,341 | 835 | 3,372 | 63% |
| 2019 Q3 | 14,554 | 7,282 | 3,318 | 830 | 3,964 | 66% |
| 2019 Q4 | 12,770 | 8,147 | 2,912 | 728 | 5,235 | 73% |
| 2020 Q1 | 14,871 | 9,059 | 3,391 | 848 | 5,669 | 72% |
| 2020 Q2 | 13,009 | 3,260 | 2,966 | 742 | 294 | 32%***/ |
| 2020 Q3 | 13,859 | 6,565 | 3,160 | 790 | 3,405 | 64% |
| 2020 Q4 | 16,185 | 6,834 | 3,690 | 923 | 3,144 | 60% |
| 2021 Q1 | 17,392 | 9,875 | 3,965 | 991 | 5,909 | 70% |
| 2021 Q2 | 22,244 | 10,072 | 5,072 | 1268 | 5,000 | 62% |
| 2021 Q3 | 23,607 | 8,009 | 5,382 | 1346 | 2,626 | 50% |
| 2021 Q4 | 23,074 | 8,509 | 5,261 | 1315 | 3,249 | 54% |
| 2022 Q1 | 17,591 | 6,171 | 4,011 | 1003 | 2,160 | 51% |
| 2022 Q2 | 15,601 | 5,611 | 3,557 | 889 | 2,054 | 52% |
| 2022 Q3 | 9,196 | 4,165 | 2,097 | 524 | 2,068 | 62% |

Note to Table 2: the estimates are based on the following assumptions:

The value of loan disbursements is based on data collected from the banks.

*/ Loan-financed home purchases comprise purchases made with a loan and a minimum portion of cash (a down payment of 25% was assumed, which is a more prudent approach in big cities than the 20% down payment requirement set forth in the amended Recommendation S), whereas home purchases for cash are the difference between the value of the transactions and loaned funds. The estimated value of a transaction in the PM in 7M (Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warsaw, Wrocław) was calculated by multiplying the average price of a dwelling in 7M (NBP) by the average size of a dwelling in sq. m (Statistics Poland) and the number of dwellings sold (JLL (formerly REAS)). Based on ZBP data, it was assumed that the value of newly granted residential mortgage loans in the primary markets of 7M was about 57%. The estimated value of cash transactions was calculated as the difference between transactions in 7M and disbursements of loans requiring buyer's own contribution (down-payment). Data concerning prices and floorage in all the periods are updated.

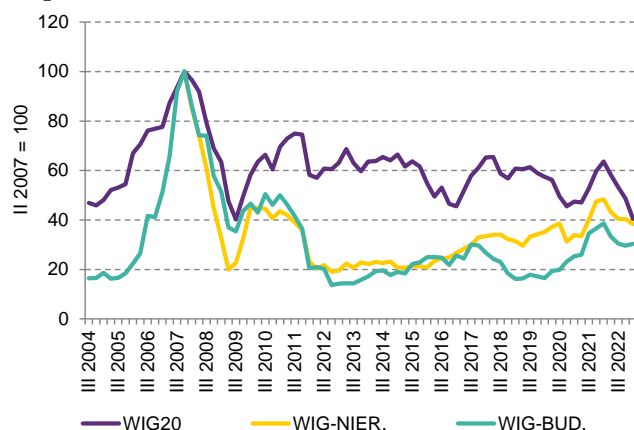
**/ Other real estate sold/exchanged may also be the source of own funds.

***/ The decline in the estimated share of home purchases in the PM in 7M involving the buyers' own funds seen in 2020 Q2 was due to very low sales of dwellings resulting from pandemic restrictions on movement and the disbursements under loan agreements entered into in prior periods.

Source: NBP, JLL (formerly REAS), ZBP, Statistics Poland

4. Operating ROE on housing and developer projects, costs of construction and assembly work and the financial standing of developers in Poland

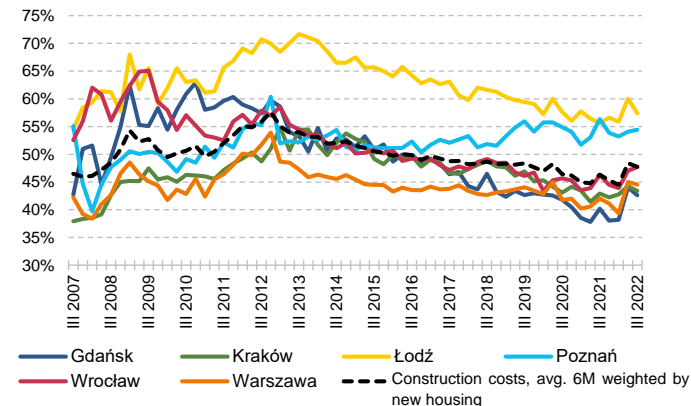
Figure 34 Rescaled stock exchange indices: WIG20 and for real estate developers (WIG-NIER) and construction companies (WIG-BUD) (2007 Q2=100)



Note: data have been standardised, 2007 Q2 = 100 (developers' WIG has been listed since 2007 Q2); 2022 Q3, as at 6 December 2022.

Source: Warsaw Stock Exchange

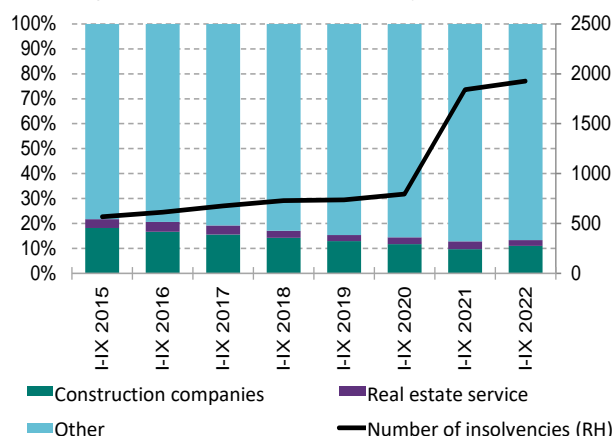
Figure 36 Estimated share of direct construction costs per square metre of usable floor area of a residential building (type 1122-302³⁰) in net transaction price in PM 6M



Note to Figures 36 and 37: Since 2014, NBP has used its own appraisal of land for residential multifamily construction

Source: NBP, based on Sekocenbud

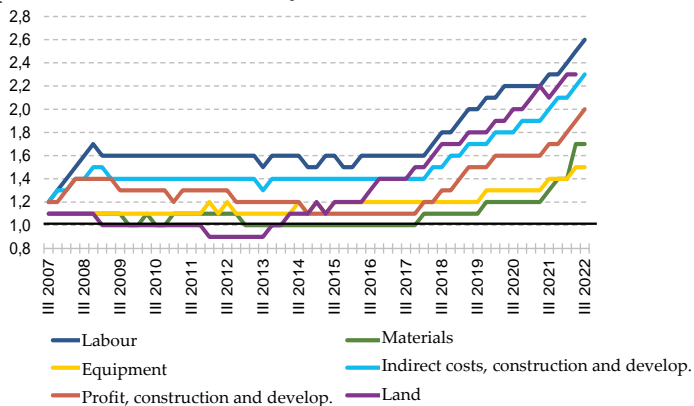
Figure 35 Structure and number of insolvencies, including in the construction industry (end of Q3)



Note: breakdown according to the first entry in the National Court Register (KRS).

Source: Coface Poland

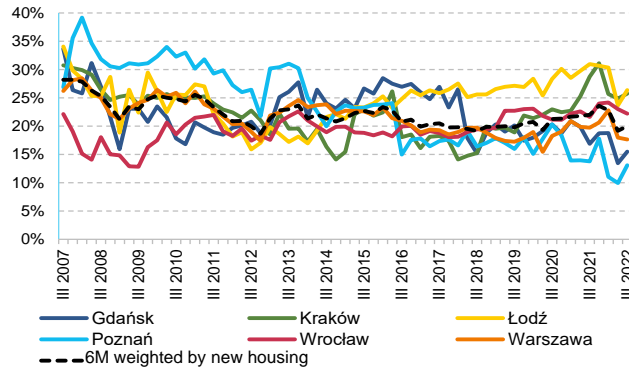
Figure 37 Estimated share of various construction costs per square metre of the residential building's usable floor area (type 1122-302³⁰) in net transaction price in PM of 6M (2007 Q1=1)



Source: NBP, based on Sekocenbud

³⁰ Half of the building (type 1122-302) monitored by NBP since 2016 H2 based on Sekocenbud data. An average five-storey residential, multi-family building, with an underground garage, built using the following technology: foundation footings, load-bearing walls and ceilings – monolithic reinforced concrete, curtain walling – bricked walls of hollow MAX blocks. The change of the type of the building under analysis implemented in 2017 is connected with the end of preparation of a priced bill of quantities concerning building 1121. The analytical assumptions underlying building 1121 were maintained.

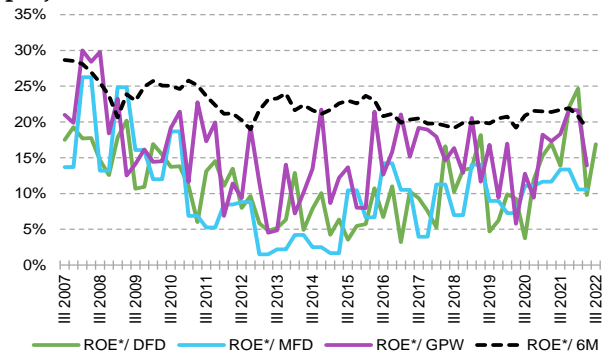
Figure 38 Estimated ROE on investment projects (type 1122-302³⁰) in the largest cities



*/modified ROE = net financial result / (sales revenues – net sales revenues); **/ DFD – average Big Developer (with 50 and more staff, according to Statistics Poland), ***/ MFD – average Small Developer (with 9-49 staff),

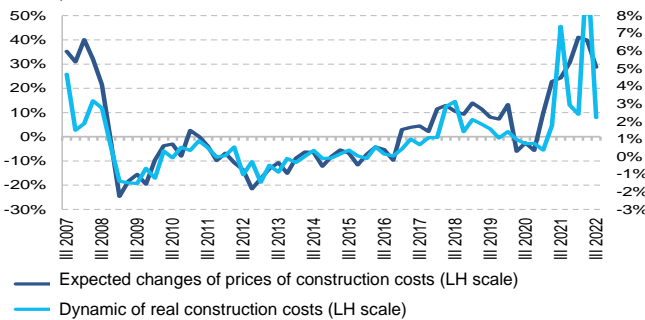
Source: NBP, based on Sekocenbud, Statistics Poland (F01)

Figure 39 Estimated ROE achieved on development projects by the developers listed on the Warsaw Stock Exchange*, big developers (DFD)/ and small developers (MFD)***/ as well as on investment projects in 6M**



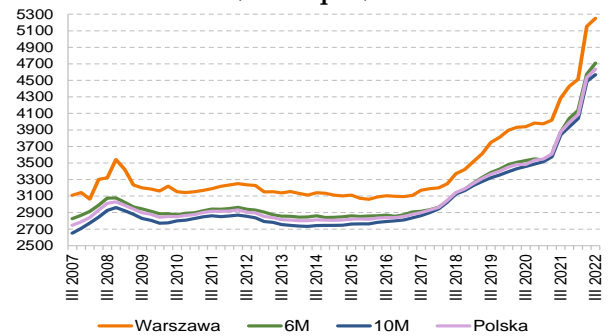
Source: NBP, based on Sekocenbud, financial statements, Statistics Poland (F01)

Figure 40 Expected changes in prices of construction and assembly works (+3M) and change in construction costs of usable floor area of a residential building (type 1122-302³⁰)



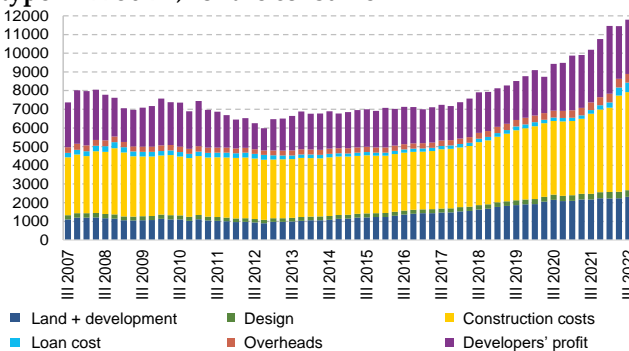
Source: NBP, based on data published by Statistics Poland (business conditions survey), Sekocenbud

Figure 41 Average cost of building 1 sq. m of usable floor area of a residential building (type 1122-302³⁰) in selected markets (PLN/sq. m)



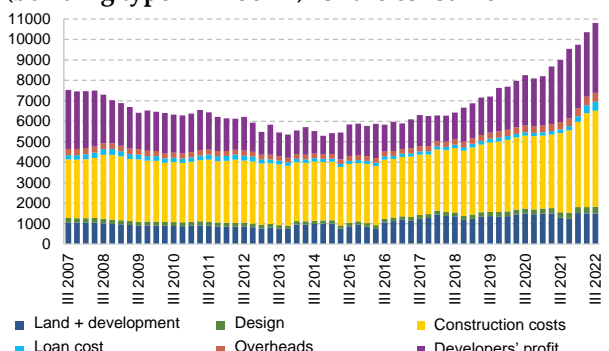
Source: NBP, based on Sekocenbud

Figure 42 Warsaw – estimated structure of net price per sq. m of usable floor area of a dwelling in PM (building type 1122-302³⁰) for the consumer



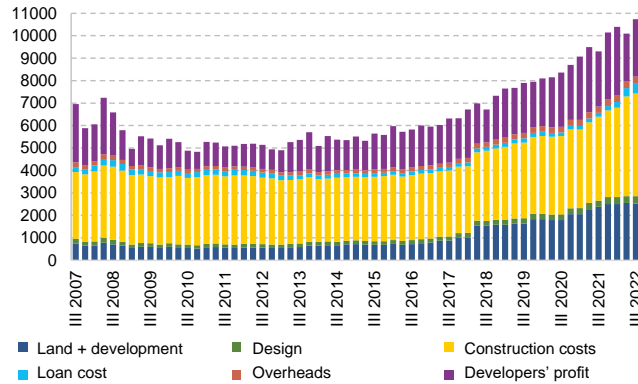
Source: NBP, based on Sekocenbud, JLL (formerly formerly REAS)

Figure 43 Kraków – estimated structure of net price per sq. m of usable floor area of a dwelling in PM (building type 1122-302³⁰) for the consumer



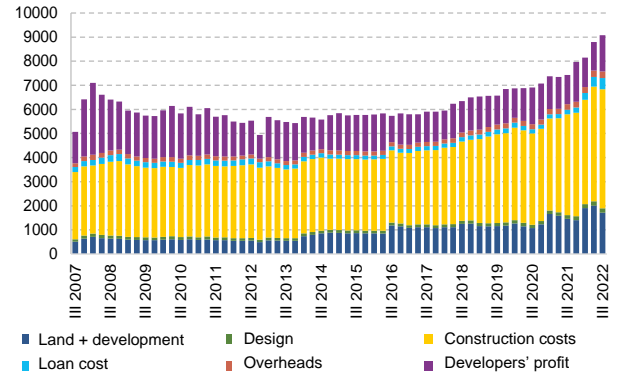
Source: NBP, based on Sekocenbud, JLL (formerly formerly REAS)

Figure 44 Gdańsk – estimated structure of net price per sq. m of usable floor area of a dwelling in PM (building type 1122-302³⁰) for the consumer



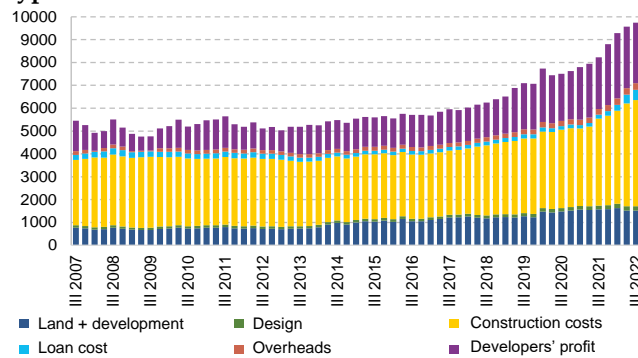
Source: NBP, based on Sekocenbud, JLL (formerly REAS)

Figure 45 Poznań – estimated structure of net price per sq. m of usable floor area of a dwelling in PM (building type 1122-302³⁰) for the consumer



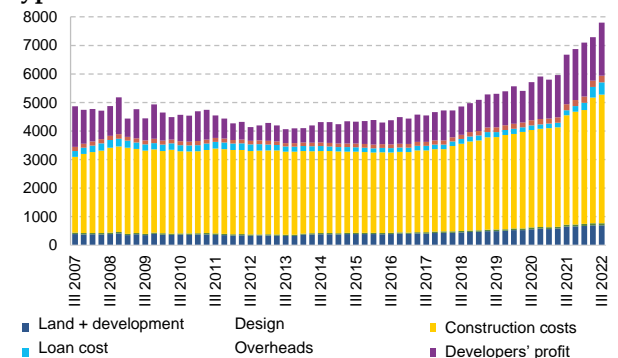
Source: NBP, based on Sekocenbud, JLL (formerly REAS)

Figure 46 Wrocław – estimated structure of price per sq. m of usable floor area of a dwelling in PM (building type 1122-302³⁰) for the consumer



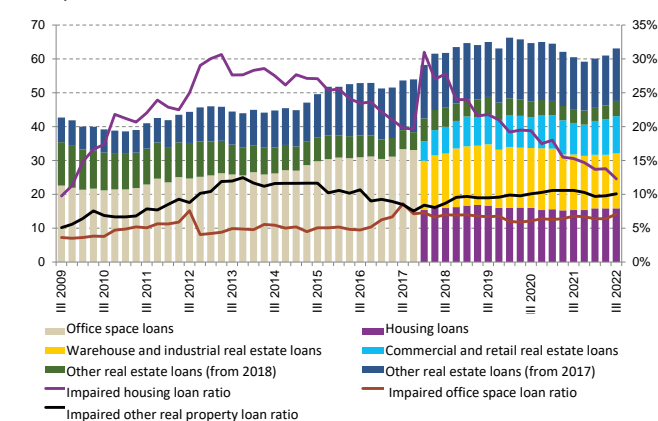
Source: NBP, based on Sekocenbud, JLL (formerly REAS)

Figure 47 Łódź – estimated structure of price per sq. m of usable floor area of a dwelling in PM (building type 1122-302³⁰) for the consumer



Source: NBP, based on Sekocenbud, JLL (formerly REAS)

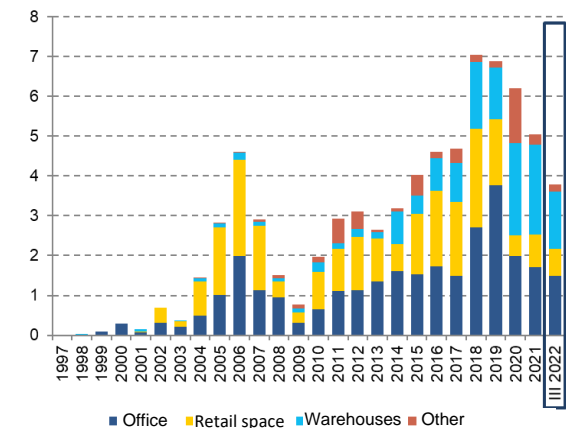
Figure 48 Loans to corporations for real estate purchases (in PLN billion, LHS) and the non-performing loan ratio (in %, RHS)



Note: Excluding BGK. Since 2018, new accounting standards have been in place.

Source: NBP

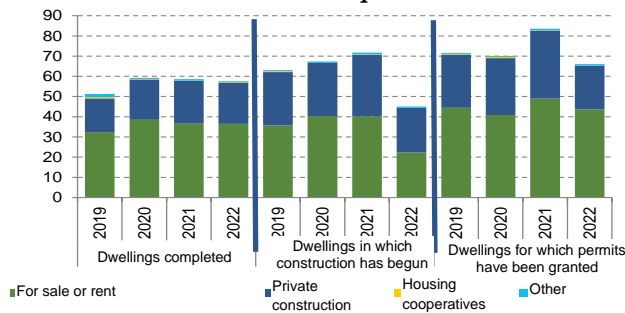
Figure 49 Value of investment transactions in commercial real estate (EUR billion)



Source: Comparables.pl

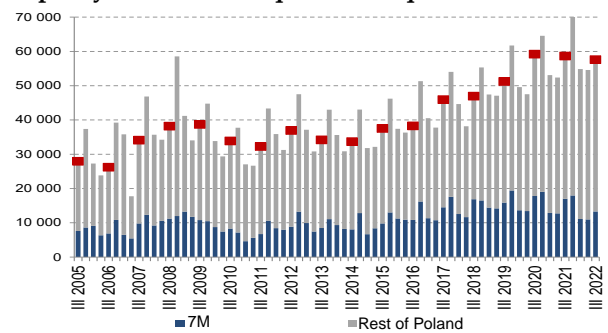
5. Residential construction industry and the housing market in selected cities in Poland

Figure 50 Structure of residential construction investors in Poland in the third quarters in 2019–2022



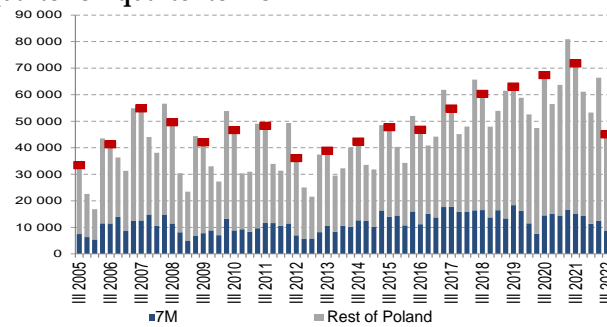
Source: Statistics Poland

Figure 51 Dwellings completed and made ready for occupancy in Poland, in quarter-on-quarter terms



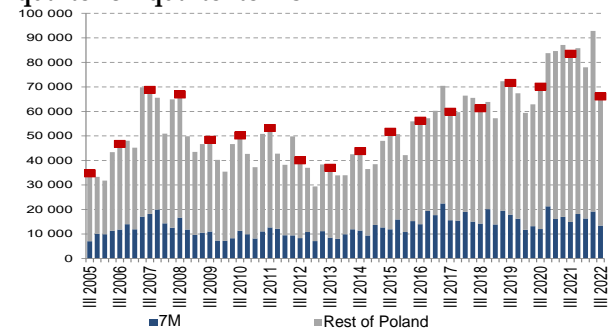
Note: the red dots indicate third quarters only. Source: Statistics Poland

Figure 52 New home construction starts in Poland, in quarter-on-quarter terms



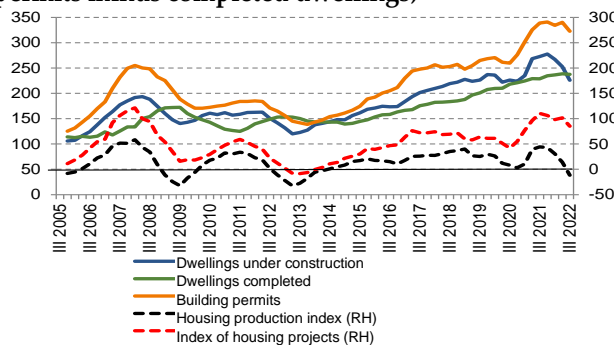
Note: the red dots indicate third quarters only. Source: Statistics Poland

Figure 53 Home building permits issued in Poland, in quarter-on-quarter terms



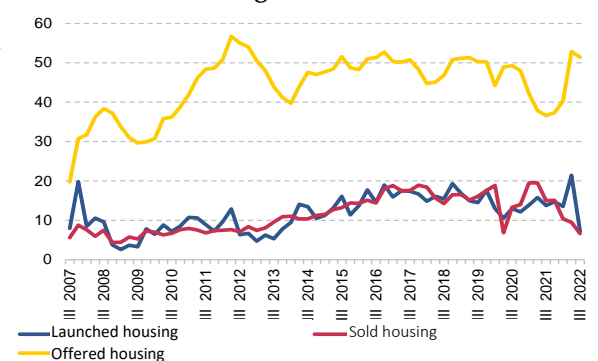
Note: the red dots indicate third quarters only. Source: Statistics Poland

Figure 54 Housing construction in Poland (in thousands of dwellings), dwellings under construction (started dwellings minus completed dwellings) and investment projects in progress (home building permits minus completed dwellings)



Note: moving averages for four consecutive quarters. Source: NBP, based on PABB and Statistics Poland

Figure 55 Number of contracts for the construction of dwellings put on the market, both sold and offered for sale in Poland's 6 largest markets.* /



Note: an estimate of the number of dwellings put on the market in actual rather than statistical terms; */Warsaw, Kraków, Tri-City, Wrocław, Poznań, Łódź. Source: JLL (formerly REAS)

Figure 56 Housing supply and the estimated rate of return on housing development projects in PM on average in 7M

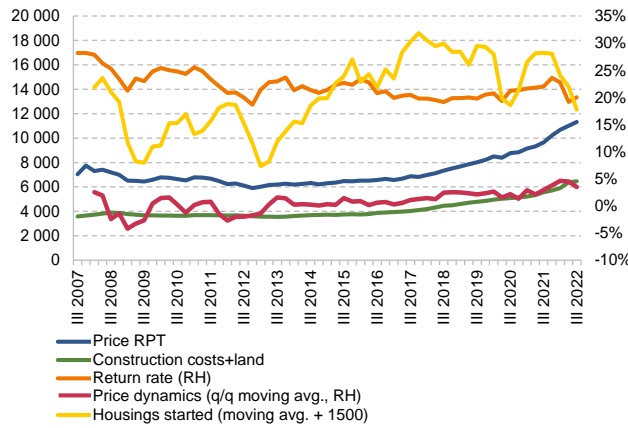
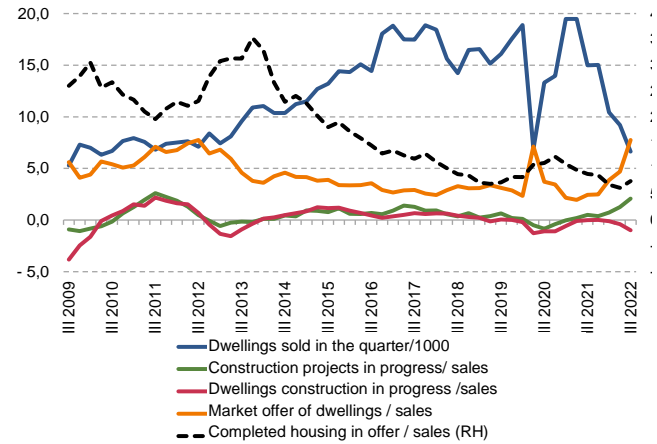


Figure 57 Housing projects, dwellings under construction and finished dwellings offered relative to sales in 7M



Note on Figure 57: Housing projects under construction = building permits for dwellings minus completed dwellings; dwellings under construction= started dwellings minus completed dwellings. Aggregate values for the last 4 quarters, divided by sales in the given period.

Source: NBP, Statistics Poland, JLL (formerly REAS), Sekocenbud

Source: NBP, based on Statistics Poland, JLL (formerly REAS)

Figure 58 Measure of the match between dwellings offered vs. demand in terms of floor area ≤ 50 sq. m, PM in selected cities of Poland

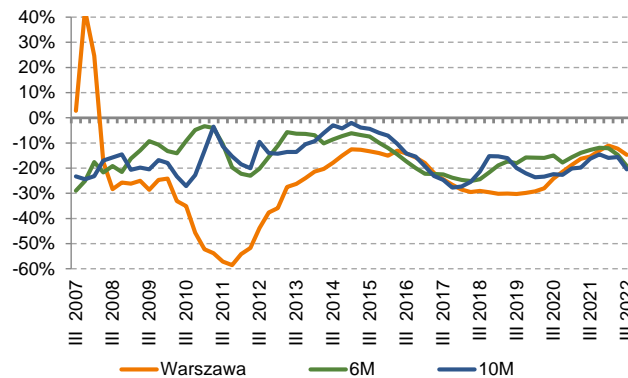
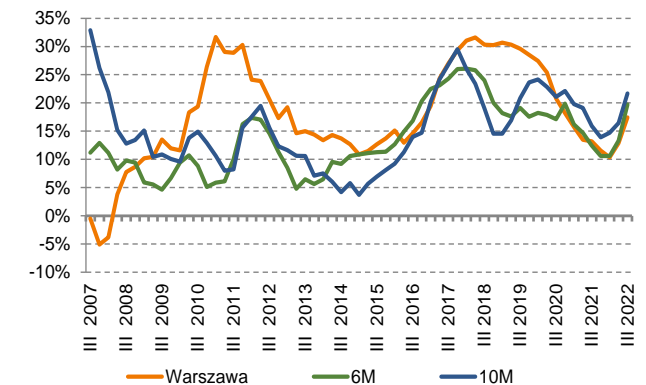


Figure 59 Measure of the match between dwellings offered vs. demand in terms of floor area over 50 sq. m, PM in selected cities of Poland

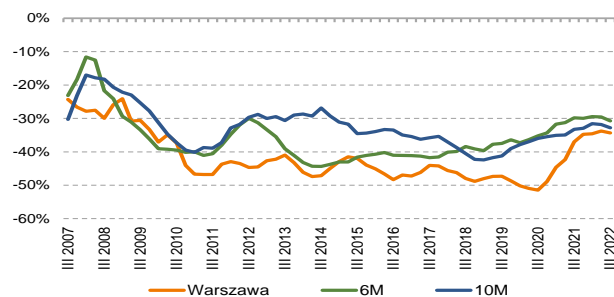


Note: Figure 58 presents, in percentage terms, a short-term mismatch in the primary market between supply (developers' offer of dwellings) and the estimated demand (housing transactions) in terms of the dwelling's size, according to the data from the BaRN database. The mismatch is calculated as the ratio of the share of dwellings with a usable floor area of up to 50 square metres offered for sale to the number of transactions involving dwellings with a total area of up to 50 sq. m (the average figure for the last four quarters). A positive result (above the black line) indicates a surplus of housing of this particular size, whereas a negative result indicates a shortage thereof. Figure 59 is parallel for the space above 50 sq.m. Figures 60-61 are parallel, but they concern the SM only.

Source: NBP

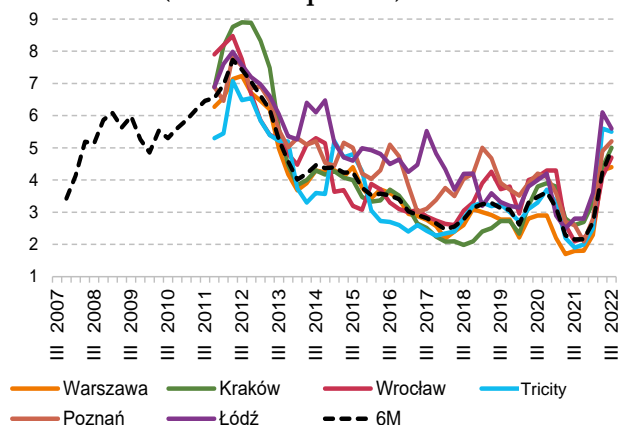
Source: NBP

Figure 60 Measure of the match between dwellings offered vs. demand in terms of floor area ≤ 50 sq. m, SM in selected cities of Poland



Source: NBP

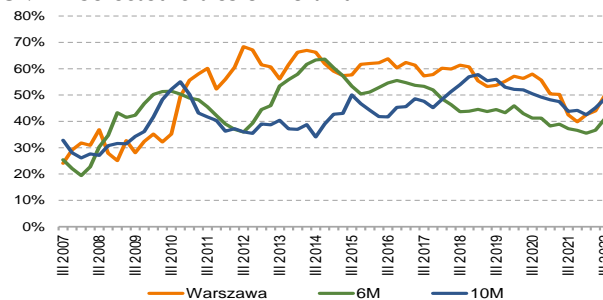
Figure 62 Selling time of dwellings offered in PM in selected cities (number of quarters)



Note: Selling time in a primary real estate market is the ratio of the number of dwellings on offer at the end of the current quarter to the number of contracts sold in the previous quarter.

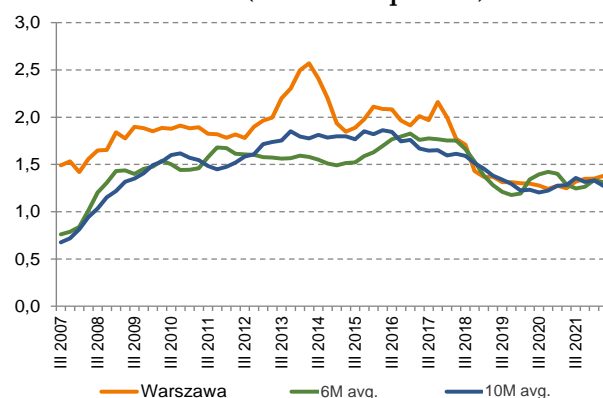
Source: NBP, based on JLL (formerly REAS)

Figure 61 Measure of the match between dwellings offered vs. demand in terms of floor area >50 sq. m, SM in selected cities of Poland



Source: NBP

Figure 63 Timeline for selling dwellings offered in SM in selected cities (number of quarters)

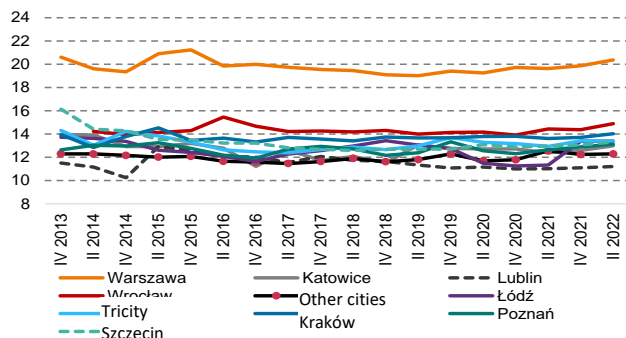


Note: Real selling time, averaged for the previous four quarters; the data are not comparable to Figure 62. Only closed sale transactions are included in the selling time of housing in the secondary property markets. The data are understated since they do not contain offers listed but not yet sold.

Source: NBP

6. Offer prices for commercial real estate and the estimated rate of return

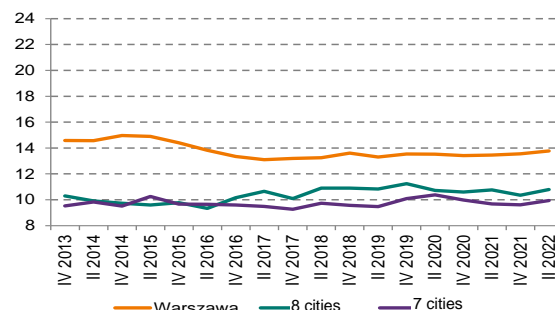
Figure 64 Transaction rents for class A office space (avg. in euro/sq. m/month)



Note: "Other cities" include Białystok, Bydgoszcz, Kielce, Olsztyn, Opole, Rzeszów, Zielona Góra.

Source: NBP

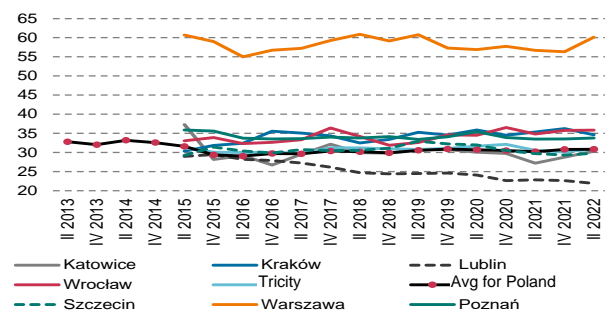
Figure 65 Transaction rents for class B office space (avg. in euro/sq. m/month)



Note: "8 cities" include Katowice, Kraków, Lublin, Łódź, Poznań, Szczecin, Tri-City, Wrocław. "7 cities" are Białystok, Bydgoszcz, Kielce, Olsztyn, Opole, Rzeszów, Zielona Góra.

Source: NBP

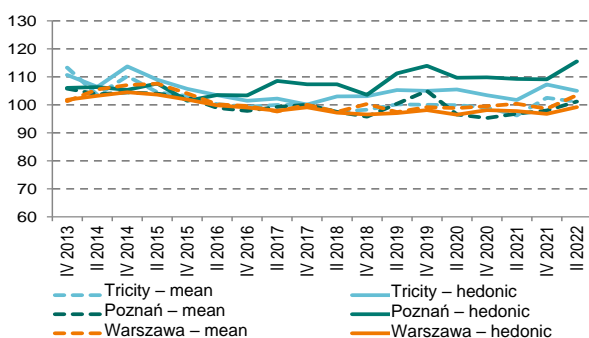
Figure 66 Transaction rents for the lease of 100-500 sq. m of retail space in shopping centres (euro/sq. m/month)



Source: NBP

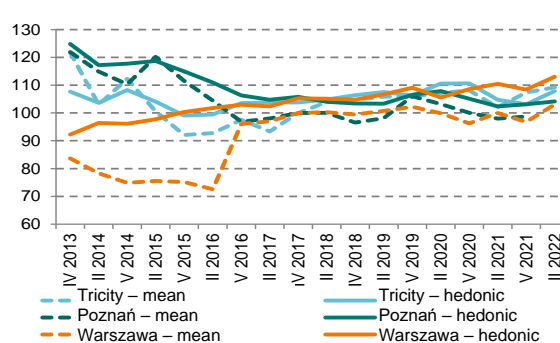
Note on Figure 68: starting from 2015 Q4, the number of collected records and of respondents increased considerably and so the analysed sample changed.

Figure 67 Index of rents for offices, average and hedonic (2017 Q4=100)



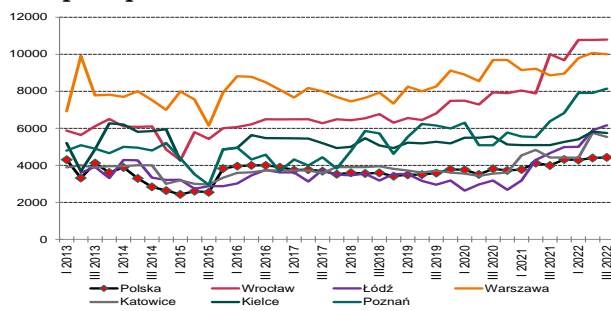
Source: NBP

Figure 68 Index of rents for shopping centres, average and hedonic (2017 Q4=100)



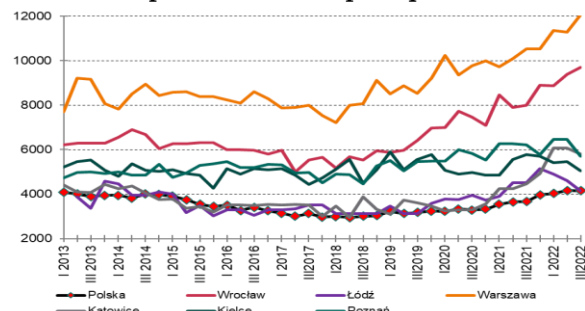
Source: NBP

Figure 69 Median offer price to sell small offices in PM (per sq. m)



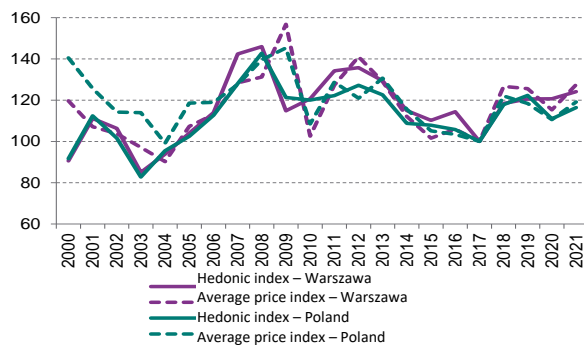
Source: PONT, compilation by NBP

Figure 70 Median offer price to sell small commercial premises in SM (per sq. m)



Source: PONT, compilation by NBP

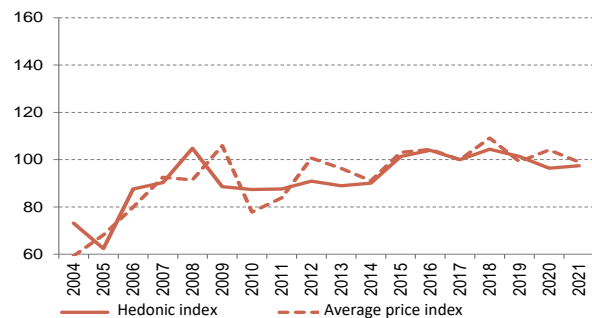
Figure 71 Change in average and hedonic prices of office real estate in Warsaw and the whole of Poland (2017=100) and the implied price index for Warsaw



Note: The analysis covers transaction prices and bank appraisals of commercial real estate.

Source: NBP, Comparables.pl, AMRON

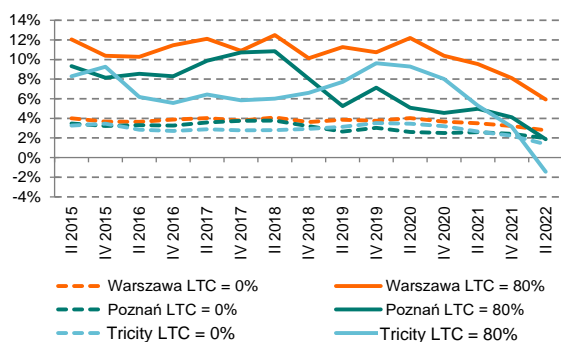
Figure 72 Change in average and hedonic prices of commercial real estate in the whole of Poland (2017=100)



Note: The analysis covers transaction prices and bank appraisals of commercial real estate.

Source: NBP, Comparables.pl, AMRON

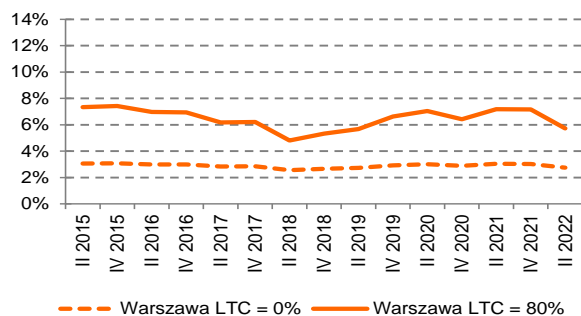
Figure 73 Estimated Return on Equity (ROE) on an investment in the construction and commercialisation of a class A office building



Note: A description of the method of calculating ROE is provided under Tables 3 to 5. Differences in ROE between cities result from different levels of construction costs and different effective levels of rent, meaning rents adjusted by the vacancy rate in the relevant market.

Source: NBP, Sekocenbud, compilation by NBP

Figure 74 Estimated Return on Equity (ROE) on an investment concerning the purchase of an existing class B office building in Warsaw



Note: A description of the method of calculating ROE can be found under Table 6.

Source: NBP, Comparables.pl, AMRON, compilation by NBP

Table 3 Estimated Return on Equity (ROE) on an investment in the construction and commercialisation of a class A office building in Warsaw

| Date | Avg. rent per sq. m of area in EUR - class A | Cost of constructed usable area of offices including land, per sq. m in EUR | ROE at LTC= 0% | ROE at LTC= 50% | ROE at LTC= 80% | Average market yields on 10-year Treasury bonds |
|---------|--|---|----------------|-----------------|-----------------|---|
| 2015 Q4 | 21.23 | 2,774 | 3.7% | 5.3% | 10.4% | 2.8% |
| 2016 Q4 | 19.96 | 2,714 | 3.9% | 5.8% | 11.5% | 3.3% |
| 2017 Q4 | 19.53 | 2,846 | 3.8% | 5.5% | 10.9% | 3.4% |
| 2018 Q4 | 18.95 | 2,949 | 3.6% | 5.2% | 10.1% | 3.1% |
| 2019 Q4 | 19.34 | 3,123 | 3.7% | 5.5% | 10.7% | 2.0% |
| 2020 Q2 | 19.15 | 3,028 | 4.0% | 6.1% | 12.2% | 1.4% |
| 2020 Q4 | 19.71 | 3,052 | 3.7% | 5.3% | 10.4% | 1.3% |
| 2021 Q2 | 19.63 | 3,065 | 3.5% | 5.0% | 9.5% | 1.5% |
| 2021 Q4 | 19.86 | 3,252 | 3.2% | 4.4% | 8.1% | 2.4% |
| 2022 Q2 | 20.37 | 3,615 | 2.8% | 3.6% | 5.9% | 5.5% |

Assumptions: The costs of construction of the office building (data from Sekocenbud) were increased by 15% of the developer's costs related to the arrangement of the investment and the commercialisation of the building as well as an expert-estimate of the cost of land (based on public information). A loan in euro for 25 years, equal instalments payable 4 times a year. Building depreciation rate of 2.5%, standard for commercial real estate. As regards income, the effective rent, meaning the average rent adjusted by the vacancy rate in the given market has been taken into account. The resulting capitalisation rate includes the cost of depreciation of the building. CIT included. ROE means net profit/ equity contributed.

Source: NBP (rents and calculations), MoF (yields on 10-year bonds), calculation of the construction costs based on Sekocenbud data, "Biuletyn cen obiektów budowlanych BCO cz. I – obiekty kubaturowe, obiekt 1220-102" [Bulletin of Prices of BCO building facilities, Part 1 – residential and non-residential buildings, building 1220-102"].

Table 4 Estimated Return on Equity (ROE) on an investment in the construction and commercialisation of a class A office building in Poznań

| Date | Avg. rent per sq. m of area in EUR - class A | Cost of constructed usable area of offices including land, per sq. m in EUR | ROE at LTC= 0% | ROE at LTC= 50% | ROE at LTC= 80% | Average market yields on 10-year Treasury bonds |
|---------|--|---|----------------|-----------------|-----------------|---|
| 2015 Q4 | 12.8 | 1,645 | 3.2% | 4.5% | 8.1% | 2.8% |
| 2016 Q4 | 11.9 | 1,593 | 3.3% | 4.5% | 8.3% | 3.3% |
| 2017 Q4 | 12.9 | 1,731 | 3.7% | 5.5% | 10.7% | 3.4% |
| 2018 Q4 | 12.2 | 1,825 | 3.2% | 4.4% | 8.0% | 3.1% |
| 2019 Q4 | 13.3 | 1,984 | 3.0% | 4.1% | 7.1% | 2.0% |
| 2020 Q2 | 12.6 | 1,977 | 2.6% | 3.2% | 5.1% | 1.4% |
| 2020 Q4 | 12.3 | 1,989 | 2.5% | 3.0% | 4.6% | 1.3% |
| 2021 Q2 | 12.7 | 2,012 | 2.6% | 3.2% | 5.0% | 1.5% |
| 2021 Q4 | 12.7 | 2,168 | 2.4% | 2.8% | 4.1% | 2.4% |
| 2022 Q2 | 12.9 | 2,430 | 2.0% | 2.0% | 1.9% | 5.5% |

Assumptions: See Table 3.

Source: NBP (rents and calculations), MoF (yields on 10-year bonds), calculation of the construction costs on the basis of Sekocenbud data, "Biuletyn cen obiektów budowlanych BCO cz. I – obiekty kubaturowe, obiekt 1220-102" [Bulletin of Prices of BCO building facilities, Part 1 – residential and non-residential buildings, building 1220-102"].

Table 5 Estimated Return on Equity (ROE) on an investment in the construction and commercialisation of a class A office building in Tri-City

Assumptions: The costs of construction of the office building (data from Sekocenbud) were increased by 15% of the developer's costs related to the arrangement of the investment and the commercialisation of the building as well as an expert-estimate of the cost of land (based on public information).

| Date | Avg. rent per sq. m of area in EUR - class A | Construction costs of a usable floor area of office land, per sq. m in EUR | ROE at LTC= 0% | ROE at LTC= 50% | ROE at LTC= 80% | Average market yields on 10-year Treasury bonds |
|---------|--|--|----------------|-----------------|-----------------|---|
| 2015 Q4 | 12.7 | 1,728 | 3.5% | 4.9% | 9.2% | 2.8% |
| 2016 Q4 | 12.1 | 1,696 | 2.7% | 3.4% | 5.6% | 3.3% |
| 2017 Q4 | 12.1 | 1,778 | 2.8% | 3.6% | 5.9% | 3.4% |
| 2018 Q4 | 12.7 | 1,829 | 2.9% | 3.8% | 6.6% | 3.1% |
| 2019 Q4 | 13.5 | 1,972 | 3.5% | 5.1% | 9.6% | 2.0% |
| 2020 Q2 | 13.2 | 2,013 | 3.5% | 4.9% | 9.3% | 1.4% |
| 2020 Q4 | 13.0 | 2,040 | 3.2% | 4.4% | 8.0% | 1.3% |
| 2021 Q2 | 12.8 | 2,106 | 2.7% | 3.3% | 5.3% | 1.5% |
| 2021 Q4 | 13.2 | 2,214 | 2.2% | 2.5% | 3.1% | 2.4% |
| 2022 Q2 | 13.3 | 2,549 | 1.4% | 0.7% | -1.4% | 5.5% |

Assumptions: see Table 3.

Source: NBP (rents and calculations), MoF (yields on 10-year bonds), calculation of the construction costs based on Sekocenbud data, "Biuletyn cen obiektów budowlanych BCO cz. I – obiekty kubaturowe, obiekt 1220-102" [Bulletin of Prices of BCO building facilities, Part 1 – residential and non-residential buildings, building 1220-102"].

Table 6 Estimated Return on Equity (ROE) on an investment concerning the purchase of an existing class B office building in Warsaw

| Data | Avg. rent per sq. m of area in EUR | Smoothed average price per sq. m of area in EUR | Calculated capitalisation rate (yield) | ROE at LTC= 0% | ROE at LTC= 50% | ROE at LTC= 80% | Average market yields on 10-year Treasury bonds |
|---------|------------------------------------|---|--|----------------|-----------------|-----------------|---|
| 2016 Q2 | 13.8 | 2,162 | 7.7% | 3.0% | 4.0% | 7.0% | 3.0% |
| 2016 Q4 | 13.3 | 2,080 | 7.7% | 3.0% | 4.0% | 6.9% | 3.3% |
| 2017 Q2 | 13.1 | 2,104 | 7.5% | 2.8% | 3.7% | 6.2% | 3.3% |
| 2017 Q4 | 13.2 | 2,117 | 7.5% | 2.8% | 3.7% | 6.2% | 3.4% |
| 2018 Q2 | 13.2 | 2,268 | 7.0% | 2.6% | 3.1% | 4.8% | 3.2% |
| 2018 Q4 | 13.6 | 2,284 | 7.1% | 2.7% | 3.3% | 5.3% | 3.1% |
| 2019 Q2 | 13.3 | 2,194 | 7.3% | 2.7% | 3.5% | 5.7% | 2.7% |
| 2019 Q4 | 13.5 | 2,144 | 7.6% | 2.9% | 3.8% | 6.6% | 2.0% |
| 2020 Q2 | 13.5 | 2,102 | 7.7% | 3.0% | 4.0% | 7.0% | 1.4% |
| 2020 Q4 | 13.4 | 2,143 | 7.5% | 2.9% | 3.8% | 6.4% | 1.3% |
| 2021 Q2 | 13.5 | 2,085 | 7.8% | 3.0% | 4.1% | 7.2% | 1.5% |
| 2021 Q4 | 13.6 | 2,104 | 7.8% | 3.0% | 4.1% | 7.2% | 2.4% |
| 2022 Q2 | 13.8 | 2,274 | 7.3% | 2.7% | 3.5% | 5.7% | 5.5% |

Assumption: The analysis assumes contractual rental rates for class B offices as well as transaction prices and appraisals of class B office real estate. Because relatively few transaction prices and appraisals of class B office real estate are available in any 6-month period, a moving average was used. It was calculated on the basis of a price from a given month as well as the preceding and following months, with equal weights. We assumed a loan for 25 years denominated in euro with equated instalments payable 4 times a year. Standard building depreciation rate of 2.5%, standard for commercial real estate. We assumed that the cost of land counted for 20% of the cost of the investment project. The resulting capitalisation rate includes the cost of depreciation of the building. CIT included. ROE means net profit/equity engaged. Source: NBP (data and calculations), MoF (yields on 10-year bonds)

Table 7 Average prices per sq. m of housing in PM in Gdańsk

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 10 310 | 10 043 | 10 856 | 10 958 | 11 356 | 11 231 | 11 632 | 10 903 | 11 620 | 11 599 |
| growth (q-o-q) | 106,1 | 97,9 | 105,3 | 109,1 | 104,6 | 102,5 | 102,4 | 97,1 | 99,9 | 106,4 |
| growth (y-o-y) | 107,2 | 111,3 | 112,0 | 116,6 | 112,8 | 114,7 | 119,8 | 106,3 | 112,7 | 115,5 |
| dwelling price range | 4 079 | 1 635 | 4 161 | 1 612 | 5 215 | 1 225 | 6 060 | 1 380 | 6 549 | 904 |
| <=8 000 PLN/sq.m | 783 | 382 | 397 | 240 | 491 | 209 | 452 | 133 | 384 | 96 |
| (8 001; 10 000] PLN/sq.m | 1 659 | 634 | 1 717 | 608 | 1 998 | 406 | 2 403 | 566 | 2 637 | 348 |
| (10 001; 12 000] PLN/sq.m | 545 | 221 | 640 | 248 | 803 | 182 | 1 002 | 191 | 1 166 | 124 |
| (12 001; 14 000] PLN/sq.m | 599 | 249 | 697 | 201 | 967 | 148 | 870 | 318 | 1 010 | 118 |
| >14 001 PLN/sq.m | 493 | 149 | 710 | 315 | 956 | 280 | 1 333 | 172 | 1 352 | 218 |
| dwelling space range | 4 079 | 1 635 | 4 161 | 1 612 | 5 215 | 1 225 | 6 060 | 1 380 | 6 549 | 904 |
| <= 40 sq.m | 807 | 328 | 759 | 327 | 924 | 326 | 966 | 415 | 1 144 | 282 |
| (40,1; 60] sq.m | 1 730 | 755 | 1 808 | 757 | 2 295 | 559 | 2 629 | 591 | 2 915 | 376 |
| (60,1; 80] sq.m | 1 138 | 421 | 1 185 | 357 | 1 452 | 254 | 1 801 | 277 | 1 862 | 160 |
| > 80,1 sq.m | 404 | 131 | 409 | 171 | 544 | 86 | 664 | 97 | 628 | 86 |
| average price of 1 sq.m. of dwelling | 10 310 | 10 043 | 10 856 | 10 958 | 11 356 | 11 231 | 11 632 | 10 903 | 11 620 | 11 599 |
| <=4 000 sq.m | 10 622 | 10 356 | 11 376 | 11 117 | 12 059 | 11 048 | 12 045 | 11 161 | 12 005 | 10 846 |
| (40,1; 60] sq.m | 10 183 | 9 710 | 11 090 | 10 920 | 11 157 | 11 036 | 11 582 | 10 538 | 11 547 | 11 523 |
| (60,1; 80] sq.m | 9 953 | 10 166 | 10 864 | 10 591 | 10 946 | 11 049 | 11 160 | 10 712 | 11 158 | 11 968 |
| > 80,1 sq.m | 11 230 | 10 786 | 12 182 | 11 591 | 12 098 | 13 732 | 12 512 | 12 568 | 12 625 | 13 708 |
| average offer price deviation | 2,7% | x | -0,9% | x | 1,1% | x | 6,7% | x | 0,2% | x |
| <= 40 sq.m | 2,6% | x | 2,3% | x | 9,1% | x | 7,9% | x | 10,7% | x |
| (40,1; 60] sq.m | 4,9% | x | 1,6% | x | 1,1% | x | 9,9% | x | 0,2% | x |
| (60,1; 80] sq.m | -2,1% | x | 2,6% | x | -0,9% | x | 4,2% | x | -6,8% | x |
| > 80,1 sq.m | 4,1% | x | 5,1% | x | -11,9% | x | -0,4% | x | -7,9% | x |

Source: NBP

Table 8 Average prices per sq. m of housing in SM in Gdańsk

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 11 156 | 9 771 | 11 444 | 10 275 | 12 012 | 10 341 | 12 097 | 10 758 | 11 931 | 10 880 |
| growth (q-o-q) | 103,1 | 104,2 | 102,6 | 105,2 | 105,0 | 100,6 | 100,7 | 104,0 | 98,6 | 101,1 |
| growth (y-o-y) | 108,7 | 109,4 | 108,8 | 113,5 | 114,1 | 111,0 | 111,8 | 114,7 | 106,9 | 111,3 |
| dwelling price range | 1 776 | 1 593 | 1 539 | 1 410 | 1 672 | 1 252 | 2 101 | 1 025 | 2 336 | 387 |
| <=8 000 PLN/sq.m | 209 | 355 | 113 | 241 | 80 | 196 | 72 | 145 | 100 | 41 |
| (8 001; 10 000] PLN/sq.m | 575 | 654 | 467 | 529 | 402 | 443 | 477 | 279 | 589 | 120 |
| (10 001; 12 000] PLN/sq.m | 420 | 325 | 450 | 338 | 504 | 350 | 673 | 314 | 699 | 122 |
| (12 001; 14 000] PLN/sq.m | 231 | 149 | 234 | 161 | 300 | 156 | 407 | 185 | 458 | 59 |
| >14 001 PLN/sq.m | 341 | 110 | 275 | 141 | 386 | 107 | 472 | 102 | 490 | 45 |
| dwelling space range | 1 776 | 1 593 | 1 539 | 1 410 | 1 672 | 1 252 | 2 101 | 1 025 | 2 336 | 387 |
| <= 40 sq.m | 284 | 400 | 198 | 318 | 269 | 305 | 342 | 255 | 365 | 111 |
| (40,1; 60] sq.m | 696 | 725 | 624 | 674 | 702 | 588 | 923 | 475 | 991 | 175 |
| (60,1; 80] sq.m | 521 | 371 | 483 | 304 | 456 | 263 | 586 | 211 | 678 | 72 |
| > 80,1 sq.m | 275 | 97 | 234 | 114 | 245 | 96 | 250 | 84 | 302 | 29 |
| average price of 1 sq.m. of dwelling | 11 156 | 9 771 | 11 444 | 10 275 | 12 012 | 10 341 | 12 097 | 10 758 | 11 931 | 10 880 |
| <=4 000 sq.m | 12 535 | 10 590 | 12 806 | 11 280 | 13 722 | 11 320 | 13 427 | 11 960 | 13 155 | 11 634 |
| (40,1; 60] sq.m | 11 060 | 9 732 | 11 489 | 10 228 | 12 128 | 10 296 | 12 226 | 10 871 | 12 052 | 10 957 |
| (60,1; 80] sq.m | 10 850 | 9 199 | 11 155 | 9 782 | 11 199 | 9 695 | 11 371 | 9 713 | 11 368 | 10 098 |
| > 80,1 sq.m | 10 557 | 8 871 | 10 769 | 9 065 | 11 319 | 9 276 | 11 502 | 9 091 | 11 316 | 9 469 |
| average offer price deviation | 14,2% | x | 11,4% | x | 16,2% | x | 12,4% | x | 9,7% | x |
| <= 40 sq.m | 18,4% | x | 13,5% | x | 21,2% | x | 12,3% | x | 13,1% | x |
| (40,1; 60] sq.m | 13,6% | x | 12,3% | x | 17,8% | x | 12,5% | x | 10,0% | x |
| (60,1; 80] sq.m | 17,9% | x | 14,0% | x | 15,5% | x | 17,1% | x | 12,6% | x |
| > 80,1 sq.m | 19,0% | x | 18,8% | x | 22,0% | x | 26,5% | x | 19,5% | x |

Source: NBP

Table 9 Average prices per sq. m of housing in PM in Kraków

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 10 621 | 9 720 | 11 010 | 10 308 | 11 161 | 10 518 | 11 395 | 11 181 | 11 758 | 11 669 |
| growth (q-o-q) | 104,7 | 103,7 | 103,7 | 106,1 | 101,4 | 102,0 | 102,1 | 106,3 | 103,2 | 104,4 |
| growth (y-o-y) | 112,2 | 109,0 | 114,5 | 117,9 | 114,6 | 118,7 | 112,3 | 119,3 | 110,7 | 120,0 |
| dwelling price range | 5 889 | 2 005 | 7 073 | 1 760 | 6 612 | 1 572 | 7 326 | 1 569 | 6 917 | 943 |
| <=8 000 PLN/sq.m | 336 | 373 | 246 | 157 | 169 | 86 | 126 | 47 | 113 | 27 |
| (8 001; 10 000] PLN/sq.m | 2 148 | 935 | 2 351 | 728 | 1 871 | 635 | 2 071 | 510 | 1 600 | 280 |
| (10 001; 12 000] PLN/sq.m | 2 064 | 391 | 2 827 | 534 | 2 895 | 556 | 2 961 | 600 | 2 730 | 288 |
| (12 001; 14 000] PLN/sq.m | 1 028 | 221 | 1 061 | 260 | 1 053 | 209 | 1 151 | 221 | 1 235 | 122 |
| >14 001 PLN/sq.m | 313 | 85 | 588 | 81 | 624 | 86 | 1 017 | 191 | 1 239 | 226 |
| dwelling space range | 5 889 | 2 005 | 7 073 | 1 760 | 6 612 | 1 572 | 7 326 | 1 569 | 6 917 | 943 |
| <= 40 sq.m | 1369 | 461 | 1578 | 477 | 1328 | 445 | 1451 | 444 | 1247 | 293 |
| (40,1; 60] sq.m | 2530 | 893 | 3138 | 736 | 3050 | 632 | 3444 | 696 | 3422 | 408 |
| (60,1; 80] sq.m | 1585 | 477 | 1864 | 395 | 1737 | 380 | 1894 | 305 | 1765 | 178 |
| > 80,1 sq.m | 405 | 174 | 493 | 152 | 497 | 115 | 537 | 124 | 483 | 64 |
| average price of 1 sq.m. of dwelling | 10 621 | 9 720 | 11 010 | 10 308 | 11 161 | 10 518 | 11 395 | 11 181 | 11 758 | 11 669 |
| <=4 000 sq.m | 11399 | 10409 | 11789 | 10847 | 12015 | 11150 | 12599 | 11557 | 12925 | 12421 |
| (40,1; 60] sq.m | 10626 | 9727 | 10959 | 10310 | 11084 | 10469 | 11212 | 11063 | 11638 | 11193 |
| (60,1; 80] sq.m | 10019 | 9022 | 10395 | 9816 | 10624 | 9846 | 10769 | 10644 | 11175 | 11098 |
| > 80,1 sq.m | 10308 | 9776 | 11173 | 9888 | 11233 | 10560 | 11516 | 11820 | 11727 | 12849 |
| average offer price deviation | 9,3% | x | 6,8% | x | 6,1% | x | 1,9% | x | 0,8% | x |
| <= 40 sq.m | 9,5% | x | 8,7% | x | 7,8% | x | 9,0% | x | 4,1% | x |
| (40,1; 60] sq.m | 9,2% | x | 6,3% | x | 5,9% | x | 1,4% | x | 4,0% | x |
| (60,1; 80] sq.m | 11,1% | x | 5,9% | x | 7,9% | x | 1,2% | x | 0,7% | x |
| > 80,1 sq.m | 5,4% | x | 13,0% | x | 6,4% | x | -2,6% | x | -8,7% | x |

Source: NBP

Table 10 Average prices per sq. m of housing in SM in Kraków

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 10 614 | 9 695 | 11 416 | 10 001 | 11 845 | 10 331 | 12 014 | 10 487 | 12 247 | 11 037 |
| growth (q-o-q) | 103,7 | 103,4 | 107,5 | 103,2 | 103,8 | 103,3 | 101,4 | 101,5 | 101,9 | 105,2 |
| growth (y-o-y) | 111,2 | 112,5 | 116,3 | 113,0 | 119,7 | 115,6 | 117,4 | 111,8 | 115,4 | 113,8 |
| dwelling price range | 865 | 1 768 | 1 210 | 1 820 | 1 535 | 1 615 | 1 511 | 1 066 | 1 510 | 1 029 |
| <=8 000 PLN/sq.m | 81 | 392 | 77 | 307 | 48 | 202 | 27 | 122 | 27 | 90 |
| (8 001; 10 000] PLN/sq.m | 332 | 737 | 340 | 719 | 366 | 611 | 328 | 376 | 335 | 284 |
| (10 001; 12 000] PLN/sq.m | 250 | 371 | 369 | 490 | 498 | 485 | 511 | 325 | 485 | 360 |
| (12 001; 14 000] PLN/sq.m | 127 | 168 | 230 | 213 | 355 | 195 | 371 | 171 | 353 | 178 |
| >14 001 PLN/sq.m | 75 | 100 | 194 | 91 | 268 | 122 | 274 | 72 | 310 | 117 |
| dwelling space range | 865 | 1 768 | 1 210 | 1 820 | 1 535 | 1 615 | 1 511 | 1 066 | 1 510 | 1 029 |
| <= 40 sq.m | 217 | 623 | 290 | 633 | 410 | 559 | 385 | 400 | 374 | 399 |
| (40,1; 60] sq.m | 380 | 773 | 479 | 838 | 628 | 727 | 662 | 470 | 692 | 443 |
| (60,1; 80] sq.m | 192 | 253 | 285 | 264 | 327 | 240 | 334 | 149 | 323 | 127 |
| > 80,1 sq.m | 76 | 119 | 156 | 85 | 170 | 89 | 130 | 47 | 121 | 60 |
| average price of 1 sq.m. of dwelling | 10 614 | 9 695 | 11 416 | 10 001 | 11 845 | 10 331 | 12 014 | 10 487 | 12 247 | 11 037 |
| <=4 000 sq.m | 11554 | 10259 | 12427 | 10575 | 12686 | 10927 | 12 941 | 10 988 | 13388 | 11457 |
| (40,1; 60] sq.m | 10200 | 9479 | 11206 | 9667 | 11374 | 9923 | 11 636 | 10 229 | 11785 | 10632 |
| (60,1; 80] sq.m | 10346 | 9316 | 10971 | 9622 | 11507 | 10015 | 11 604 | 9 911 | 11656 | 10689 |
| > 80,1 sq.m | 10679 | 8952 | 10993 | 10191 | 12211 | 10772 | 12 241 | 10 633 | 12937 | 11967 |
| average offer price deviation | 9,5% | x | 14,1% | x | 14,7% | x | 14,6% | x | 11,0% | x |
| <= 40 sq.m | 12,6% | x | 17,5% | x | 16,1% | x | 17,8% | x | 16,9% | x |
| (40,1; 60] sq.m | 7,6% | x | 15,9% | x | 14,6% | x | 13,8% | x | 10,8% | x |
| (60,1; 80] sq.m | 11,1% | x | 14,0% | x | 14,9% | x | 17,1% | x | 9,0% | x |
| > 80,1 sq.m | 19,3% | x | 7,9% | x | 13,4% | x | 15,1% | x | 8,1% | x |

Source: NBP

Table 11 Average prices per sq. m of housing in PM in Łódź

| specification | III 2021 | | IV 2021 | | I 2022 | | II 2022 | | III 2022 | |
|--------------------------------------|----------|--------|---------|--------|--------|--------|---------|--------|----------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 8 006 | 7 451 | 8 117 | 7 528 | 8 145 | 7 718 | 8 481 | 7 929 | 8 973 | 8 475 |
| growth (q-o-q) | 108,1 | 111,6 | 101,4 | 101,0 | 100,3 | 102,5 | 104,1 | 102,7 | 105,8 | 106,9 |
| growth (y-o-y) | 118,9 | 116,3 | 120,1 | 113,6 | 118,8 | 118,7 | 114,5 | 118,8 | 112,1 | 113,8 |
| dwelling price range | 1 693 | 458 | 1 847 | 471 | 2 215 | 403 | 3 035 | 649 | 3 251 | 365 |
| <=4 000 PLN/sq.m | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (4 001; 6 000] PLN/sq.m | 57 | 22 | 43 | 24 | 53 | 8 | 14 | 5 | 12 | 0 |
| (6 001; 8 000] PLN/sq.m | 754 | 283 | 683 | 317 | 933 | 248 | 1 135 | 377 | 789 | 143 |
| (8 001; 10 000] PLN/sq.m | 840 | 148 | 1 066 | 126 | 1 131 | 142 | 1 574 | 251 | 1 708 | 198 |
| > 10 000 PLN/sq.m | 42 | 5 | 55 | 4 | 98 | 5 | 312 | 16 | 742 | 24 |
| dwelling space range | 1 693 | 458 | 1 847 | 471 | 2 215 | 403 | 3 035 | 649 | 3 251 | 365 |
| <= 40 sq.m | 503 | 152 | 537 | 139 | 620 | 111 | 878 | 225 | 924 | 154 |
| (40,1; 60] sq.m | 623 | 204 | 702 | 181 | 915 | 173 | 1312 | 254 | 1437 | 144 |
| (60,1; 80] sq.m | 475 | 70 | 500 | 124 | 546 | 107 | 691 | 124 | 750 | 55 |
| > 80,1 sq.m | 92 | 32 | 108 | 27 | 134 | 12 | 154 | 46 | 140 | 12 |
| average price of 1 sq.m. of dwelling | 8 006 | 7 451 | 8 117 | 7 528 | 8 145 | 7 718 | 8 481 | 7 929 | 8 973 | 8 475 |
| <=4 000 sq.m | 8873 | 8023 | 8977 | 8195 | 8989 | 8411 | 9248 | 8454 | 9509 | 8926 |
| (40,1; 60] sq.m | 7757 | 7293 | 7892 | 7474 | 8000 | 7549 | 8338 | 7799 | 8826 | 8244 |
| (60,1; 80] sq.m | 7519 | 6866 | 7630 | 6863 | 7538 | 7302 | 7912 | 7476 | 8598 | 7823 |
| > 80,1 sq.m | 7457 | 7016 | 7561 | 7499 | 7705 | 7450 | 7880 | 7294 | 8941 | 8457 |
| average offer price deviation | 7,4% | x | 7,8% | x | 5,5% | x | 7,0% | x | 5,9% | x |
| <= 40 sq.m | 10,6% | x | 9,5% | x | 6,9% | x | 9,4% | x | 6,5% | x |
| (40,1; 60] sq.m | 6,4% | x | 5,6% | x | 6,0% | x | 6,9% | x | 7,1% | x |
| (60,1; 80] sq.m | 9,5% | x | 11,2% | x | 3,2% | x | 5,8% | x | 9,9% | x |
| > 80,1 sq.m | 6,3% | x | 0,8% | x | 3,4% | x | 8,0% | x | 5,7% | x |

Source: NBP

Table 12 Average prices per sq. m of housing in SM in Łódź

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 6 683 | 6 075 | 6 667 | 6 158 | 7 018 | 6 214 | 6 974 | 6 652 | 7 164 | 6 887 |
| growth (q-o-q) | 111,2 | 104,7 | 99,8 | 101,4 | 105,3 | 100,9 | 99,4 | 107,0 | 102,7 | 103,5 |
| growth (y-o-y) | 122,3 | 108,2 | 116,5 | 111,5 | 118,9 | 114,4 | 116,0 | 114,7 | 107,2 | 113,4 |
| dwelling price range | 1 226 | 90 | 751 | 93 | 868 | 157 | 973 | 188 | 1 145 | 77 |
| <=4 000 PLN/sq.m | 14 | 2 | 15 | 2 | 11 | 10 | 3 | 4 | 6 | 2 |
| (4 001; 6 000] PLN/sq.m | 417 | 43 | 239 | 43 | 183 | 67 | 206 | 57 | 202 | 21 |
| (6 001; 8 000] PLN/sq.m | 590 | 44 | 381 | 41 | 492 | 62 | 581 | 95 | 669 | 40 |
| (8 001; 10 000] PLN/sq.m | 172 | 1 | 104 | 7 | 158 | 17 | 177 | 31 | 226 | 11 |
| >10 001 PLN/sq.m | 33 | 0 | 12 | 0 | 24 | 1 | 6 | 1 | 42 | 3 |
| dwelling space range | 1 226 | 90 | 751 | 93 | 868 | 157 | 973 | 188 | 1 145 | 77 |
| <= 40 sq.m | 324 | 30 | 190 | 33 | 215 | 56 | 212 | 67 | 286 | 33 |
| (40,1; 60] sq.m | 523 | 45 | 284 | 36 | 352 | 74 | 486 | 85 | 566 | 25 |
| (60,1; 80] sq.m | 217 | 9 | 153 | 16 | 172 | 16 | 166 | 29 | 170 | 11 |
| > 80,1 sq.m | 162 | 6 | 124 | 8 | 129 | 11 | 109 | 7 | 123 | 8 |
| average price of 1 sq.m. of dwelling | 6 683 | 6 075 | 6 667 | 6 158 | 7 018 | 6 214 | 6 974 | 6 652 | 7 164 | 6 887 |
| <=4 000 sq.m | 7 089 | 6 593 | 7 079 | 6 433 | 7 307 | 6 480 | 7 332 | 6 873 | 7 483 | 7 268 |
| (40,1; 60] sq.m | 6 625 | 5 971 | 6 748 | 6 002 | 7 019 | 6 298 | 6 980 | 6 554 | 7 001 | 6 872 |
| (60,1; 80] sq.m | 6 530 | 5 304 | 6 482 | 6 107 | 7 030 | 5 703 | 6 921 | 6 758 | 7 273 | 7 222 |
| > 80,1 sq.m | 6 264 | 5 416 | 6 074 | 5 833 | 6 519 | 5 041 | 6 327 | 5 294 | 7 021 | 4 899 |
| average offer price deviation | 10,0% | x | 8,3% | x | 12,9% | x | 4,8% | x | 4,0% | x |
| <= 40 sq.m | 7,5% | x | 10,1% | x | 12,8% | x | 6,7% | x | 3,0% | x |
| (40,1; 60] sq.m | 10,9% | x | 12,4% | x | 11,4% | x | 6,5% | x | 1,9% | x |
| (60,1; 80] sq.m | 23,1% | x | 6,2% | x | 23,3% | x | 2,4% | x | 0,7% | x |
| > 80,1 sq.m | 15,7% | x | 4,1% | x | 29,3% | x | 19,5% | x | 43,3% | x |

Source: NBP

Table 13 Average prices per sq. m of housing in PM in Poznań

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 8 781 | 8 026 | 9 199 | 8 606 | 9 842 | 8 796 | 9 968 | 9 503 | 10 138 | 9 804 |
| growth (q-o-q) | 106,4 | 101,2 | 104,8 | 107,2 | 107,0 | 102,2 | 101,3 | 108,0 | 101,7 | 103,2 |
| growth (y-o-y) | 110,8 | 107,6 | 115,3 | 112,7 | 123,2 | 110,5 | 120,7 | 119,8 | 115,5 | 122,2 |
| dwelling price range | 5 324 | 1 499 | 4 738 | 1 760 | 5 081 | 1 216 | 5 203 | 1 121 | 5 345 | 733 |
| <=7 000 PLN/sq.m | 557 | 286 | 257 | 253 | 106 | 106 | 49 | 34 | 48 | 7 |
| (7 001; 9 000] PLN/sq.m | 3 178 | 969 | 2 566 | 967 | 1 908 | 703 | 1 716 | 584 | 1 531 | 275 |
| (9 001; 11 000] PLN/sq.m | 1 148 | 199 | 1 399 | 411 | 2 029 | 322 | 2 274 | 341 | 2 400 | 330 |
| (11 001; 13 000] PLN/sq.m | 163 | 15 | 279 | 65 | 609 | 43 | 768 | 63 | 976 | 67 |
| >13 001 PLN/sq.m | 278 | 30 | 237 | 64 | 429 | 42 | 396 | 99 | 390 | 54 |
| dwelling space range | 5 324 | 1 499 | 4 738 | 1 760 | 5 081 | 1 216 | 5 203 | 1 121 | 5 345 | 733 |
| <= 40 sq.m | 1038 | 335 | 910 | 448 | 1024 | 269 | 1076 | 279 | 1037 | 221 |
| (40,1; 60] sq.m | 2252 | 636 | 2156 | 729 | 2281 | 506 | 2330 | 498 | 2493 | 343 |
| (60,1; 80] sq.m | 1577 | 396 | 1301 | 441 | 1358 | 337 | 1385 | 248 | 1401 | 126 |
| > 80,1 sq.m | 457 | 132 | 371 | 142 | 418 | 104 | 412 | 96 | 414 | 43 |
| average price of 1 sq.m. of dwelling | 8 781 | 8 026 | 9 199 | 8 606 | 9 842 | 8 796 | 9 968 | 9 503 | 10 138 | 9 804 |
| <=4 000 sq.m | 9 430 | 8 536 | 9 846 | 9 481 | 10 562 | 9 561 | 10 800 | 9 865 | 10 952 | 10 419 |
| (40,1; 60] sq.m | 8 786 | 8 096 | 9 137 | 8 553 | 9 790 | 8 813 | 9 819 | 9 477 | 10 056 | 9 551 |
| (60,1; 80] sq.m | 8 148 | 7 560 | 8 638 | 7 857 | 9 305 | 8 105 | 9 493 | 8 916 | 9 599 | 9 293 |
| > 80,1 sq.m | 9 463 | 7 787 | 9 943 | 8 443 | 10 110 | 8 976 | 10 231 | 10 103 | 10 424 | 10 160 |
| average offer price deviation | 9,4% | x | 6,9% | x | 11,9% | x | 4,9% | x | 3,4% | x |
| <= 40 sq.m | 10,5% | x | 3,8% | x | 10,5% | x | 9,5% | x | 5,1% | x |
| (40,1; 60] sq.m | 8,5% | x | 6,8% | x | 11,1% | x | 3,6% | x | 5,3% | x |
| (60,1; 80] sq.m | 7,8% | x | 9,9% | x | 14,8% | x | 6,5% | x | 3,3% | x |
| > 80,1 sq.m | 0 | x | 0 | x | 0 | x | 1,3% | x | 0 | x |

Source: NBP

Table 14 Average prices per sq. m of housing in SM in Poznań

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 8 322 | 7 677 | 8 952 | 7 852 | 9 402 | 7 972 | 9 517 | 8 233 | 9 438 | 8 050 |
| growth (q-o-q) | 102,3 | 103,5 | 107,6 | 102,3 | 105,0 | 101,5 | 101,2 | 103,3 | 99,2 | 97,8 |
| growth (y-o-y) | 106,0 | 107,6 | 114,6 | 108,8 | 118,4 | 109,4 | 117,0 | 111,0 | 113,4 | 104,9 |
| dwelling price range | 935 | 1 446 | 885 | 1 371 | 984 | 923 | 1069 | 576 | 1 104 | 328 |
| <=7 000 PLN/sq.m | 213 | 525 | 122 | 456 | 83 | 283 | 67 | 109 | 87 | 66 |
| (7 001; 9 000] PLN/sq.m | 452 | 650 | 407 | 614 | 406 | 413 | 433 | 317 | 455 | 182 |
| (9 001; 11 000] PLN/sq.m | 207 | 209 | 243 | 240 | 331 | 179 | 367 | 122 | 353 | 70 |
| (11 001; 13 000] PLN/sq.m | 46 | 50 | 76 | 39 | 105 | 41 | 136 | 19 | 141 | 9 |
| >13 001 PLN/sq.m | 17 | 12 | 37 | 22 | 59 | 7 | 66 | 9 | 68 | 1 |
| dwelling space range | 935 | 1 446 | 885 | 1 371 | 984 | 923 | 1069 | 576 | 1 104 | 328 |
| <= 40 sq.m | 173 | 437 | 176 | 403 | 225 | 268 | 214 | 180 | 240 | 106 |
| (40,1; 60] sq.m | 420 | 648 | 383 | 628 | 437 | 422 | 517 | 268 | 503 | 168 |
| (60,1; 80] sq.m | 262 | 258 | 229 | 267 | 245 | 187 | 251 | 100 | 269 | 43 |
| > 80,1 sq.m | 80 | 103 | 97 | 73 | 77 | 46 | 87 | 28 | 92 | 11 |
| average price of 1 sq.m. of dwelling | 8 322 | 7 677 | 8 952 | 7 852 | 9 402 | 7 972 | 9 517 | 8 233 | 9 438 | 8 050 |
| <=4 000 sq.m | 9 363 | 8 440 | 9 901 | 8 489 | 10 035 | 8 677 | 10 493 | 9 032 | 10 473 | 8 609 |
| (40,1; 60] sq.m | 8 369 | 7 608 | 8 885 | 7 881 | 9 318 | 7 933 | 9 496 | 7 987 | 9 336 | 7 921 |
| (60,1; 80] sq.m | 7 716 | 6 903 | 8 347 | 7 073 | 8 915 | 7 224 | 8 852 | 7 274 | 8 994 | 7 335 |
| > 80,1 sq.m | 7 806 | 6 808 | 8 920 | 6 945 | 9 579 | 7 250 | 9 158 | 8 884 | 8 595 | 7 445 |
| average offer price deviation | 8,4% | x | 14,0% | x | 17,9% | x | 15,6% | x | 17,2% | x |
| <= 40 sq.m | 10,9% | x | 16,6% | x | 15,6% | x | 16,2% | x | 21,7% | x |
| (40,1; 60] sq.m | 10,0% | x | 12,7% | x | 17,5% | x | 18,9% | x | 17,9% | x |
| (60,1; 80] sq.m | 11,8% | x | 18,0% | x | 23,4% | x | 21,7% | x | 22,6% | x |
| > 80,1 sq.m | 14,7% | x | 28,4% | x | 32,1% | x | 3,1% | x | 15,5% | x |

Source: NBP

Table 15 Average prices per sq. m of housing in PM in Warsaw

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 11 406 | 11 006 | 11 820 | 11 621 | 12 518 | 12 381 | 12 896 | 12 368 | 12 911 | 12 742 |
| growth (q-o-q) | 100,4 | 102,8 | 103,6 | 105,7 | 105,9 | 106,5 | 103,0 | 99,9 | 100,1 | 103,0 |
| growth (y-o-y) | 106,2 | 107,9 | 109,9 | 113,5 | 114,1 | 116,1 | 113,5 | 115,6 | 113,2 | 115,8 |
| dwelling price range | 9 042 | 3 774 | 8 140 | 3 895 | 9 727 | 3 025 | 9 643 | 2 203 | 15 497 | 1 761 |
| <=9 500 PLN/sq.m | 2 478 | 1 082 | 1 633 | 823 | 1 498 | 441 | 1 145 | 269 | 1 145 | 161 |
| (9 501; 11 500] PLN/sq.m | 2 793 | 1 357 | 3 011 | 1 403 | 2 870 | 955 | 2 261 | 663 | 3 367 | 435 |
| (11 501; 13 500] PLN/sq.m | 2 217 | 894 | 1 702 | 868 | 2 402 | 779 | 2 966 | 677 | 5 887 | 621 |
| (13 501; 15 500] PLN/sq.m | 826 | 283 | 809 | 479 | 1 502 | 359 | 1 763 | 334 | 3 256 | 308 |
| >15 501 PLN/sq.m | 728 | 158 | 985 | 322 | 1 455 | 491 | 1 508 | 260 | 1 842 | 236 |
| dwelling space range | 9 042 | 3 774 | 8 140 | 3 895 | 9 727 | 3 025 | 9 643 | 2 203 | 15 497 | 1 761 |
| <= 40 sq.m | 1 771 | 906 | 1 714 | 969 | 2 115 | 844 | 2 068 | 663 | 3 464 | 592 |
| (40,1; 60] sq.m | 3 803 | 1 522 | 3 328 | 1 602 | 4 158 | 1 263 | 4 122 | 886 | 6 664 | 704 |
| (60,1; 80] sq.m | 2 465 | 966 | 2 197 | 902 | 2 478 | 622 | 2 431 | 442 | 3 573 | 286 |
| > 80,1 sq.m | 1 003 | 380 | 901 | 422 | 976 | 296 | 1 022 | 212 | 1 796 | 179 |
| average price of 1 sq.m. of dwelling | 11 406 | 11 006 | 11 820 | 11 621 | 12 518 | 12 381 | 12 896 | 12 368 | 12 911 | 12 742 |
| <=4 000 sq.m | 12 548 | 11 445 | 13 232 | 12 223 | 13 814 | 12 790 | 14 222 | 12 759 | 13 939 | 12 773 |
| (40,1; 60] sq.m | 11 241 | 11 014 | 11 556 | 11 496 | 12 340 | 12 378 | 12 759 | 12 220 | 12 779 | 12 714 |
| (60,1; 80] sq.m | 10 664 | 10 506 | 10 960 | 11 079 | 11 482 | 11 795 | 11 790 | 11 893 | 12 030 | 12 259 |
| > 80,1 sq.m | 11 834 | 11 196 | 12 204 | 11 866 | 13 100 | 12 457 | 13 395 | 12 757 | 13 174 | 13 521 |
| average offer price deviation | 3,6% | x | 1,7% | x | 1,1% | x | 4,3% | x | 1,3% | x |
| <= 40 sq.m | 9,6% | x | 8,3% | x | 8,0% | x | 11,5% | x | 9,1% | x |
| (40,1; 60] sq.m | 2,1% | x | 0,5% | x | -0,3% | x | 4,4% | x | 0,5% | x |
| (60,1; 80] sq.m | 1,5% | x | -1,1% | x | -2,7% | x | -0,9% | x | -1,9% | x |
| > 80,1 sq.m | 5,7% | x | 2,8% | x | 5,2% | x | 5,0% | x | -2,6% | x |

Source: NBP

Table 16 Average prices per sq. m of housing in SM in Warsaw

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 12 953 | 11 585 | 13 305 | 11 845 | 13 366 | 11 443 | 14 061 | 11 798 | 13 496 | 11 866 |
| growth (q-o-q) | 103,9 | 99,4 | 102,7 | 101,0 | 100,5 | 96,6 | 105,2 | 103,1 | 96,0 | 100,6 |
| growth (y-o-y) | 110,6 | 106,7 | 111,9 | 105,8 | 109,4 | 105,2 | 112,8 | 105,2 | 104,2 | 102,4 |
| dwelling price range | 2 406 | 4 756 | 1 989 | 3 930 | 1 975 | 1 328 | 1 728 | 1 290 | 1 632 | 981 |
| <=9 500 PLN/sq.m | 281 | 1 089 | 203 | 743 | 172 | 271 | 92 | 206 | 100 | 151 |
| (9 501; 11 500] PLN/sq.m | 632 | 1 492 | 465 | 1 261 | 450 | 482 | 366 | 470 | 377 | 339 |
| (11 501; 13 500] PLN/sq.m | 626 | 1 182 | 508 | 993 | 530 | 344 | 405 | 337 | 443 | 263 |
| (13 501; 15 500] PLN/sq.m | 404 | 609 | 367 | 569 | 377 | 148 | 336 | 176 | 328 | 146 |
| >15 501 PLN/sq.m | 463 | 384 | 446 | 364 | 446 | 83 | 529 | 101 | 384 | 82 |
| dwelling space range | 2 406 | 4 756 | 1 989 | 3 930 | 1 975 | 1 328 | 1 728 | 1 290 | 1 632 | 981 |
| <= 40 sq.m | 480 | 1 368 | 358 | 1 208 | 346 | 457 | 314 | 431 | 324 | 338 |
| (40,1; 60] sq.m | 871 | 2 087 | 804 | 1 711 | 832 | 592 | 733 | 622 | 724 | 454 |
| (60,1; 80] sq.m | 574 | 782 | 487 | 625 | 456 | 207 | 368 | 171 | 380 | 144 |
| > 80,1 sq.m | 481 | 519 | 340 | 386 | 341 | 72 | 313 | 66 | 204 | 45 |
| average price of 1 sq.m. of dwelling | 12 953 | 11 585 | 13 305 | 11 845 | 13 366 | 11 443 | 14 061 | 11 798 | 13 496 | 11 866 |
| <=4 000 sq.m | 14 433 | 12 094 | 14 824 | 12 411 | 14 798 | 12 286 | 15 612 | 12 710 | 14 934 | 12 729 |
| (40,1; 60] sq.m | 12 483 | 11 193 | 12 865 | 11 401 | 12 920 | 10 953 | 13 579 | 11 267 | 13 046 | 11 319 |
| (60,1; 80] sq.m | 12 160 | 11 270 | 12 586 | 11 591 | 12 588 | 10 771 | 13 360 | 11 429 | 13 076 | 11 217 |
| > 80,1 sq.m | 13 273 | 12 290 | 13 776 | 12 453 | 14 039 | 12 067 | 14 458 | 11 806 | 13 591 | 12 973 |
| average offer price deviation | 11,8% | x | 12,3% | x | 16,8% | x | 19,2% | x | 13,7% | x |
| <= 40 sq.m | 19,3% | x | 19,4% | x | 20,4% | x | 22,8% | x | 17,3% | x |
| (40,1; 60] sq.m | 11,5% | x | 12,8% | x | 18,0% | x | 20,5% | x | 15,3% | x |
| (60,1; 80] sq.m | 7,9% | x | 8,6% | x | 16,9% | x | 16,9% | x | 16,6% | x |
| > 80,1 sq.m | 8,0% | x | 10,6% | x | 16,3% | x | 22,5% | x | 4,8% | x |

Source: NBP

Table 17 Average prices per sq. m of housing in PM in Wrocław

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 9 965 | 8 891 | 10 189 | 9 507 | 10 352 | 10 029 | 10 789 | 10 338 | 10 963 | 10 520 |
| growth (q-o-q) | 106,2 | 103,7 | 102,2 | 106,9 | 101,6 | 105,5 | 104,2 | 103,1 | 101,6 | 101,8 |
| growth (y-o-y) | 114,9 | 109,6 | 118,1 | 115,5 | 114,2 | 119,1 | 114,9 | 120,5 | 110,0 | 118,3 |
| dwelling price range | 4 441 | 1 618 | 4 514 | 1 556 | 4 605 | 1 034 | 4 501 | 1 123 | 5 333 | 874 |
| <=7 000 PLN/sq.m | 240 | 159 | 154 | 72 | 106 | 11 | 67 | 21 | 43 | 5 |
| (7 001; 9 000] PLN/sq.m | 1 571 | 834 | 1 493 | 663 | 1 317 | 327 | 1 170 | 332 | 969 | 225 |
| (9 001; 11 000] PLN/sq.m | 1 337 | 413 | 1 361 | 517 | 1 611 | 384 | 1 301 | 404 | 1 909 | 325 |
| (11 001; 13 000] PLN/sq.m | 826 | 158 | 960 | 226 | 900 | 251 | 1 042 | 226 | 1 480 | 213 |
| >13 001 PLN/sq.m | 467 | 54 | 546 | 78 | 671 | 61 | 921 | 140 | 932 | 106 |
| dwelling space range | 4 441 | 1 618 | 4 514 | 1 556 | 4 605 | 1 034 | 4 501 | 1 123 | 5 333 | 874 |
| <= 40 sq.m | 797 | 356 | 883 | 369 | 896 | 219 | 848 | 307 | 901 | 287 |
| (40,1; 60] sq.m | 2 035 | 767 | 2 102 | 707 | 2 088 | 478 | 2 024 | 504 | 2 570 | 404 |
| (60,1; 80] sq.m | 1 242 | 371 | 1 177 | 359 | 1 227 | 259 | 1 236 | 239 | 1 397 | 134 |
| > 80,1 sq.m | 367 | 124 | 352 | 121 | 394 | 78 | 393 | 73 | 465 | 49 |
| average price of 1 sq.m. of dwelling | 9 965 | 8 891 | 10 189 | 9 507 | 10 352 | 10 029 | 10 789 | 10 338 | 10 963 | 10 520 |
| <=4 000 sq.m | 11 185 | 9 398 | 11 362 | 10 171 | 12 011 | 10 758 | 12 602 | 11 389 | 12 607 | 11 367 |
| (40,1; 60] sq.m | 9 840 | 8 841 | 10 033 | 9 380 | 10 076 | 10 142 | 10 532 | 10 097 | 10 801 | 10 143 |
| (60,1; 80] sq.m | 9 322 | 8 328 | 9 578 | 8 980 | 9 745 | 9 280 | 10 075 | 9 585 | 10 318 | 9 707 |
| > 80,1 sq.m | 10 182 | 9 426 | 10 215 | 9 785 | 9 930 | 9 780 | 10 444 | 10 042 | 10 608 | 10 883 |
| average offer price deviation | 12,1% | x | 7,2% | x | 3,2% | x | 4,4% | x | 4,2% | x |
| <= 40 sq.m | 19,0% | x | 11,7% | x | 11,7% | x | 10,6% | x | 10,9% | x |
| (40,1; 60] sq.m | 11,3% | x | 7,0% | x | -0,7% | x | 4,3% | x | 6,5% | x |
| (60,1; 80] sq.m | 11,9% | x | 6,7% | x | 5,0% | x | 5,1% | x | 6,3% | x |
| > 80,1 sq.m | 8,0% | x | 4,4% | x | 1,5% | x | 4,0% | x | -2,5% | x |

Source: NBP

Table 18 Average prices per sq. m of housing in SM in Wrocław

| specification | III Q 2021 | | IV Q 2021 | | I Q 2022 | | II Q 2022 | | III Q 2022 | |
|--------------------------------------|------------|--------|-----------|--------|----------|--------|-----------|--------|------------|--------|
| | offer | trans. | offer | trans. | offer | trans. | offer | trans. | offer | trans. |
| average price (PLN/sq.m.) | 9 160 | 8 563 | 9 327 | 8 953 | 10 075 | 9 202 | 10 453 | 9 686 | 10 591 | 10 178 |
| growth (q-o-q) | 102,0 | 100,6 | 101,8 | 104,6 | 108,0 | 102,8 | 103,8 | 105,3 | 101,3 | 105,1 |
| growth (y-o-y) | 110,3 | 117,3 | 108,5 | 112,3 | 115,6 | 114,2 | 116,4 | 113,8 | 115,6 | 118,9 |
| dwelling price range | 2 071 | 827 | 2 007 | 1 085 | 1 741 | 1 004 | 2 058 | 933 | 1 374 | 1 030 |
| <=7 000 PLN/sq.m | 199 | 160 | 155 | 142 | 72 | 129 | 41 | 76 | 32 | 54 |
| (7 001; 9 000] PLN/sq.m | 911 | 381 | 835 | 489 | 543 | 383 | 516 | 302 | 304 | 297 |
| (9 001; 11 000] PLN/sq.m | 653 | 187 | 694 | 309 | 664 | 331 | 832 | 334 | 566 | 355 |
| (11 001; 13 000] PLN/sq.m | 218 | 78 | 217 | 110 | 279 | 106 | 439 | 161 | 302 | 210 |
| >13 001 PLN/sq.m | 90 | 21 | 106 | 35 | 183 | 55 | 230 | 60 | 170 | 114 |
| dwelling space range | 2 071 | 827 | 2 007 | 1 085 | 1 741 | 1 004 | 2 058 | 933 | 1 374 | 1 029 |
| <= 40 sq.m | 264 | 218 | 252 | 270 | 222 | 231 | 285 | 239 | 194 | 298 |
| (40,1; 60] sq.m | 852 | 386 | 793 | 540 | 699 | 500 | 887 | 457 | 578 | 487 |
| (60,1; 80] sq.m | 621 | 163 | 631 | 217 | 548 | 200 | 630 | 186 | 396 | 198 |
| > 80,1 sq.m | 334 | 60 | 331 | 58 | 272 | 73 | 256 | 51 | 206 | 46 |
| average price of 1 sq.m. of dwelling | 9 160 | 8 563 | 9 327 | 8 953 | 10 075 | 9 202 | 10 453 | 9 686 | 10 591 | 10 178 |
| <=4 000 sq.m | 10 622 | 9 672 | 10 673 | 9 829 | 11 456 | 10 183 | 12 077 | 10 625 | 12 157 | 11 138 |
| (40,1; 60] sq.m | 9 357 | 8 432 | 9 407 | 8 827 | 10 261 | 8 998 | 10 527 | 9 667 | 10 587 | 9 890 |
| (60,1; 80] sq.m | 8 684 | 7 826 | 9 043 | 8 361 | 9 539 | 8 811 | 9 985 | 8 791 | 10 145 | 9 652 |
| > 80,1 sq.m | 8 386 | 7 380 | 8 651 | 8 266 | 9 549 | 8 571 | 9 542 | 8 721 | 9 988 | 9 264 |
| average offer price deviation | 7,0% | x | 4,2% | x | 9,5% | x | 7,9% | x | 4,1% | x |
| <= 40 sq.m | 9,8% | x | 8,6% | x | 12,5% | x | 13,7% | x | 9,2% | x |
| (40,1; 60] sq.m | 11,0% | x | 6,6% | x | 14,0% | x | 8,9% | x | 7,0% | x |
| (60,1; 80] sq.m | 11,0% | x | 8,1% | x | 8,3% | x | 13,6% | x | 5,1% | x |
| > 80,1 sq.m | 13,6% | x | 4,7% | x | 11,4% | x | 9,4% | x | 7,8% | x |

Source: NBP

7. Analysis of profitability of investment in housing in selected cities in Poland in 2022 Q3³¹

The third quarter of 2022³² saw the continuation of the changes arising in the previous quarters as regards the profitability of investment in dwellings for rental. A significant increase in the estimated prices of dwellings and even stronger growth in the rental rates improved the capitalisation rate. However, the costs of external financing of the purchase of dwellings led to a visible decline in the profitability of leveraged investments at LTV=50% and 80%. The focus of the analyses presented below is on the prices of dwellings, rental rates and financial expenses, which proved to be the most important change drivers in the period under analysis.

During the quarter of analysis, estimated average transaction prices of dwellings went up again. The respective prices came to PLN 12,864 per sq. m in Warsaw, PLN 11,009 per sq. m in the 6 cities group and PLN 8,460 per sq. m in the group of other cities of Poland. This means that the prices grew by 12.6%, 16.7% and 16.1% respectively in comparison to 2021 Q3. In comparison to 2022 Q2, the prices increased by 2.0% in Warsaw, 3.6% in the 6 cities group and by 1.6% in other cities. These observations reveal a sustained upward trend of the estimated transaction prices of dwellings. Moreover, the year-on-year rate of quarterly change has been high since 2021 Q4. In the past four quarters, the average rate of change reached 112.6% in Warsaw, 116.7% in the 6 cities group and 117.2% in the remaining cities. The average rates of change in the period from 2016 were 107.6%, 109.6% and 108.8% respectively.

Even higher rates of change were observed in the home rental segment in 2022 Q3. Relative to 2022 Q2, the average rental rates increased by 25.4% in Warsaw, 26.4% in the 6 cities group and 20.6% in the other analysed cities of Poland. As a result, the rental rates came to PLN 66.6 per sq. m, PLN 59.0 per sq. m and PLN 42.8 per sq. m, respectively. At the same time, it should be noted that the rate of quarterly change had clearly picked up in 2022 Q3 since the second half of 2021. Quarterly changes indicate a slight slowdown in the change in the rental rates. In this case, the rates of change in 2022 Q3 reached 105.7% for Warsaw, 104.7% for the group of 6 cities and 104.6% for the other cities compared to the previous quarter. In 2022 Q2, the rate of change stood at

³¹ Presented here is a simplified analysis of an investment in a dwelling for rental by a private individual subject to flat-rate tax. The profitability of this type of investment in the group of 6 cities (Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław) and the group of other cities (Białystok, Bydgoszcz, Katowice, Lublin, Olsztyn, Rzeszów and Szczecin) was analysed. Three voivodship capitals (Opole, Kielce and Zielona Góra) were omitted due to an insufficient sample size of home rental transactions. Warsaw's real estate market is analysed and presented separately, owing to its size. The profitability of investing in rental housing was determined by calculating the capitalisation rate and the ROE (Return on Equity). The capitalisation rate was calculated as the ratio of the annual rental income to the price of one square metre of housing. The ROE, in turn, was calculated as net profit divided by equity engaged. The estimated net operating profit was reduced by the estimated operating expenses. The estimated operating expenses were calculated on the basis of an average dwelling (50 sq. m) at the following rates: PLN 14 per sq. m. in Warsaw, 11 per sq. m in the group of 6 cities and PLN 10 per sq. m in the group of 10 cities. The net operating profit is the basis for calculating EBITDA. In this case, different possible levels of leverage were adopted: a fully cash-funded investment (with the LTV of 0%) and a loan-financed investment with the LTV of 50% as well as a highly leveraged investment with the LTV of 80%. To calculate the financial profit, we took into account rental income and deducted the flat-rate tax of 8.5%, the repayment of interest on the loan as well as depreciation of the building at the rate of 1.5% of its value (assuming two general overhauls in a period of 100 years). The tax is paid on all rental income, before cost deduction. The transaction price per sq. m. of an average dwelling was determined by summing up 50% of the average transaction price in the primary market and in the secondary market. The price in the primary market was increased by the cost of finishing. Starting from 2022 Q3, we assumed the costs of finishing at PLN 1,120 per sq. m in Warsaw, PLN 1,050 in the 6 cities and PLN 940 in the group of 10 cities. We also assumed a PLN-denominated loan for 25 years, with equal instalments payable 4 times a year and a 95% occupancy rate.

³² Starting from 2022 Q3, the methodology of estimation of the profitability of housing investment was changed. The change concerns the frequency of reviews: quarterly instead of half-yearly reviews were introduced. This way a more precise depiction of changes occurring in this section of the property market in Poland was achieved. No other aspects of the methodology were changed.

110.8% in Warsaw, 116.7% in the 6 cities group and 110.2% in the other cities, which means that the pace of change in the rental rates slowed down somewhat after a strong acceleration in the first half of 2022.

Changes in the rental rates observed in Szczecin should be noted here. In 2022 Q3, they reached PLN 54.6 per sq. m, an increase of 30.8% on 2021 Q3, which is the third biggest increase in the rental rates in Poland after Wrocław and Kraków. The reason for this was a large increase in the number of upmarket dwellings of a higher finishing standard and in very attractive locations. The vast majority of flats with high rental rates are located in relatively new apartment buildings, where the selling price is also higher than the average price in the group of other cities of Poland. Some high-standard dwellings may not have found buyers in the sales market, and that is why they may have been offered to rent in the rental market and relevant transactions were actually concluded. The situation may also be explained by the overrepresentation of more expensive dwellings resulting from limitations in data acquisition.

The developments specified above significantly affected the capitalisation rate of investment in dwellings for rent. This is first of all a result of the relationship between the estimated annual income from rental to the price of a dwelling per sq. m in the sales market. This dependency, or rather the relationship between the changes in the two cause a rapid surge in the capitalisation rate in 2022 Q3. The rate of change compared to 2022 Q2 reached 111.3% in Warsaw, 108.1% in the 6 cities group and 103.6% in the group of other cities. Thus, the capitalisation rate amounted to 6.2% in the capital city, 6.5% in the 6 cities group and 6.1% in the other cities of Poland included in the analysis. This means that the capitalisation rate grew by 0.6 p.p., 0.5 p.p. and 0.2 p.p. respectively in comparison to the same quarter of 2021. The changes in this metric were also positive in comparison to 2022 Q2. In this case, the capitalisation rate increased by 3.6% in Warsaw, 0.8% in the 6 cities group and 2.8% in the group of other cities. This reveals a certain slowdown in the quarterly changes compared with the changes in the previous quarter. In spite of this, a marked increase in the capitalisation rate can be seen and an upward trend started to transpire from the beginning of 2022. This may be a signal that the metric rebounded after a decline resulting from the turmoil during the slowdown in the economy caused by the COVID-19 pandemic. The changes in the capitalisation rate directly contribute to the shortening of the payback time of an investment in dwellings for rent. It was noticed in 2022 Q3 that the payback time had shortened by 6 months in Warsaw and the group of other cities, and by 2 months in the group of the 6 cities of Poland. This means that the payback time is 16 years and 1 month in Warsaw, 15 years and 7 months in the 6 cities group and 16 years and 7 months in the other cities of Poland under analysis.

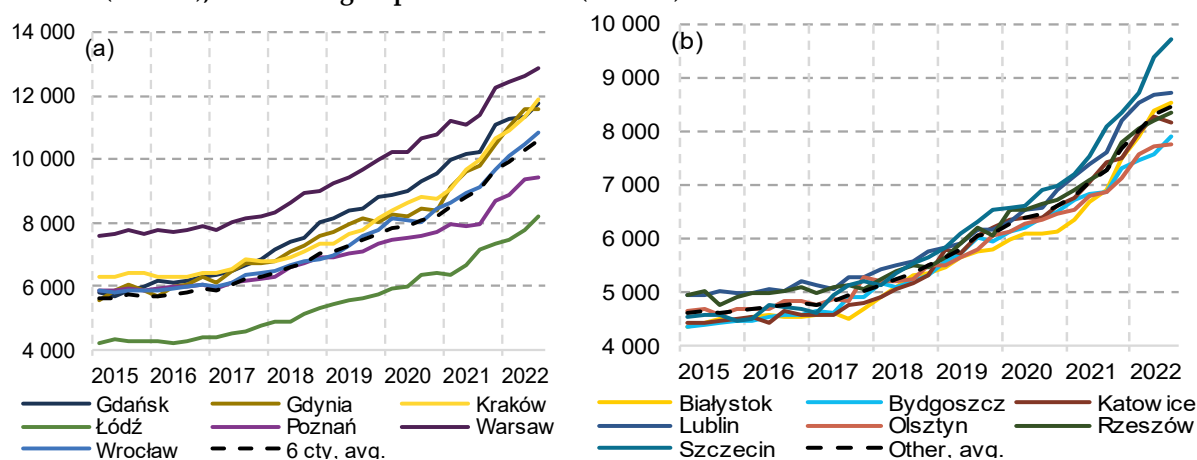
ROE is an equally important measure of profitability of investment in dwellings to rent. It was estimated on the basis of three scenarios which differ in the financial leverage ratio. In 2022 Q3, ROE grew again in regard to investments where no external capital was involved (LTV=0%). In Warsaw, this was the third quarter in a row with a positive change in ROE. Compared to 2022 Q2, the ratio increased to 3.7% and the rate of change increased. In 2022 Q2, it amounted to 111.7% whereas in Q1 it was 102.1% y/y. As regards the other two groups of cities, it was the second quarter when ROE grew. It reached 3.9% in the 6 cities group and 3.5% in the group of other Polish cities, meaning that the metric increased by 12.5% and 6.0%, respectively, relative to 2021 Q3. However, such rapid acceleration was not seen in this case. In the previous quarter, the rate of change was 6.0 p.p. higher than in Q3 in the 6 cities group and 0.1 p.p. higher in the group of other cities. Nevertheless, 2022 Q3 was a period of improvement in the Return on Equity on investment in dwellings for rent, where no financial leverage was involved. This means a return to the situation existing before the series of decreases in ROE during the period of economic slowdown caused mainly by the COVID-19 pandemic.

Different results can be seen in the case of investment projects leveraged with residential mortgage loans at LTV=50%. In 2022 Q3, ROE dropped below zero in all the cities under analysis. In Warsaw, it reached -1.6%, in the 6 cities group -1.2% and -2.0% in the group of other cities. This means a drop in the return rate by 3.8 p.p., 3.8 p.p. and 4.5 p.p., respectively, compared to 2021 Q3. ROE also decreased in comparison to the previous quarter: by -1,1 p.p., - 1,4 p.p. and -1,2 p.p., respectively. This means a sustained sharp downward trend which started at the beginning of 2022. The cost of a new residential mortgage loan remained the key driver of change and the increase in the cost of raising external funding for investment was stronger than the change in the relationship between the rental rates and the transaction prices of dwellings.

In the case of investments leveraged at LTV=80%, the drops in ROE in 2022 Q3 were even sharper. This was a direct consequence of the increase in the proportion of external capital in the financing of the purchase of dwellings. It was the fourth quarter in a row when ROE in Warsaw had been below zero. In 2022 Q3, it stood at -17.6%, which means a decrease of 17.3 p.p. on 2021 Q3 and of 5 p.p. relative to the previous quarter of 2022. In the two groups of cities under analysis, ROE remained below zero for the third consecutive quarter. It reached the level of -16.6% in the 6 cities and -18.7% in the other cities of Poland, representing a decrease of 17.4 p.p. and 19,0 p.p., respectively, on 2021 Q3. Compared to 2022 Q2, ROE fell by 5.7 p.p. in the 6 cities group and 5.2 p.p. in the group of other Polish cities. These results confirm the conclusion presented above concerning a very significant impact of the costs of new mortgage on the final return on investment in dwellings for rent. An increase in the share of external capital in the financing of investments to LTV=80 causes a sharp fall in ROE.

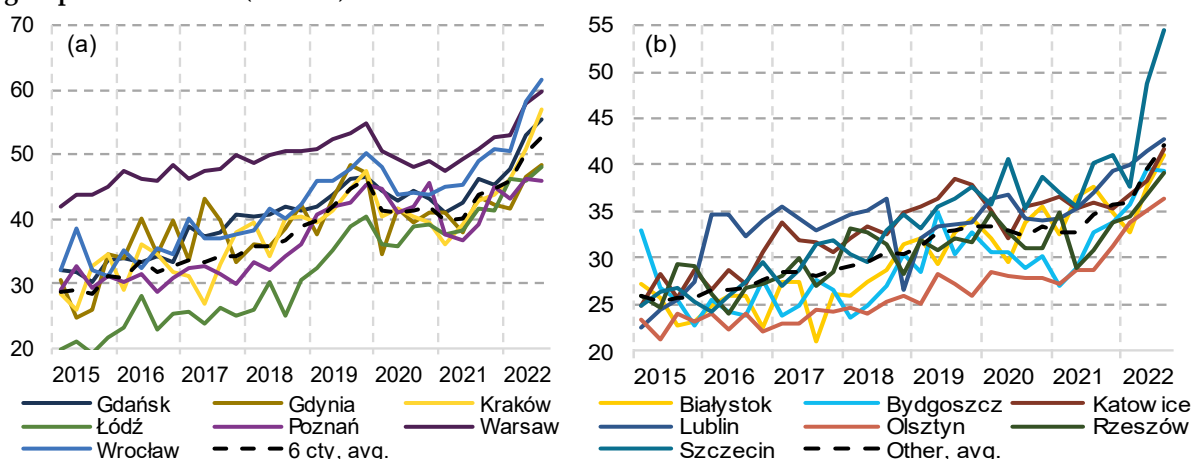
A positive change in the rental rates was observed yet again in 2022 Q3 in virtually all the cities of Poland under analysis. The change in rental rate proved to be higher than changes in the estimated prices of housing in the primary and in the secondary markets. As a consequence, the investment capitalisation rate increased in comparison to 2021 Q3. The changes also proved to be one of the drivers of ROE growth, but solely in the case of investments where no external capital was involved (LTV=0%). Where leverage was used for the purpose of financing the purchase of housing, be it at LTV=50% or LTV 80%, the ROE for this group of investment decreased visibly in 2022 Q3. These developments show that the costs of external financing, namely the increase in such costs, turned out to be much stronger than the positive changes, from the point of view of the investor leasing out flats, in the prices of dwellings and rents. In this case, the return rate was below zero in all the groups of cities. 2022 Q3 was another period when the profitability of investment in dwellings for rental was strongly dependent on the financial conditions, which were much more significant than the conditions of the transaction as such.

Figure 75 Estimated transaction prices of an average dwelling (PLN/sq. m) in the group of 6 cities and Warsaw (Panel a), and in the group of other cities (Panel b)



Source: NBP

Figure 76 Average home rental rates (PLN/sq. m) in the group of 6 cities and Warsaw (Panel a), and in the group of other cities (Panel b)



Source: NBP

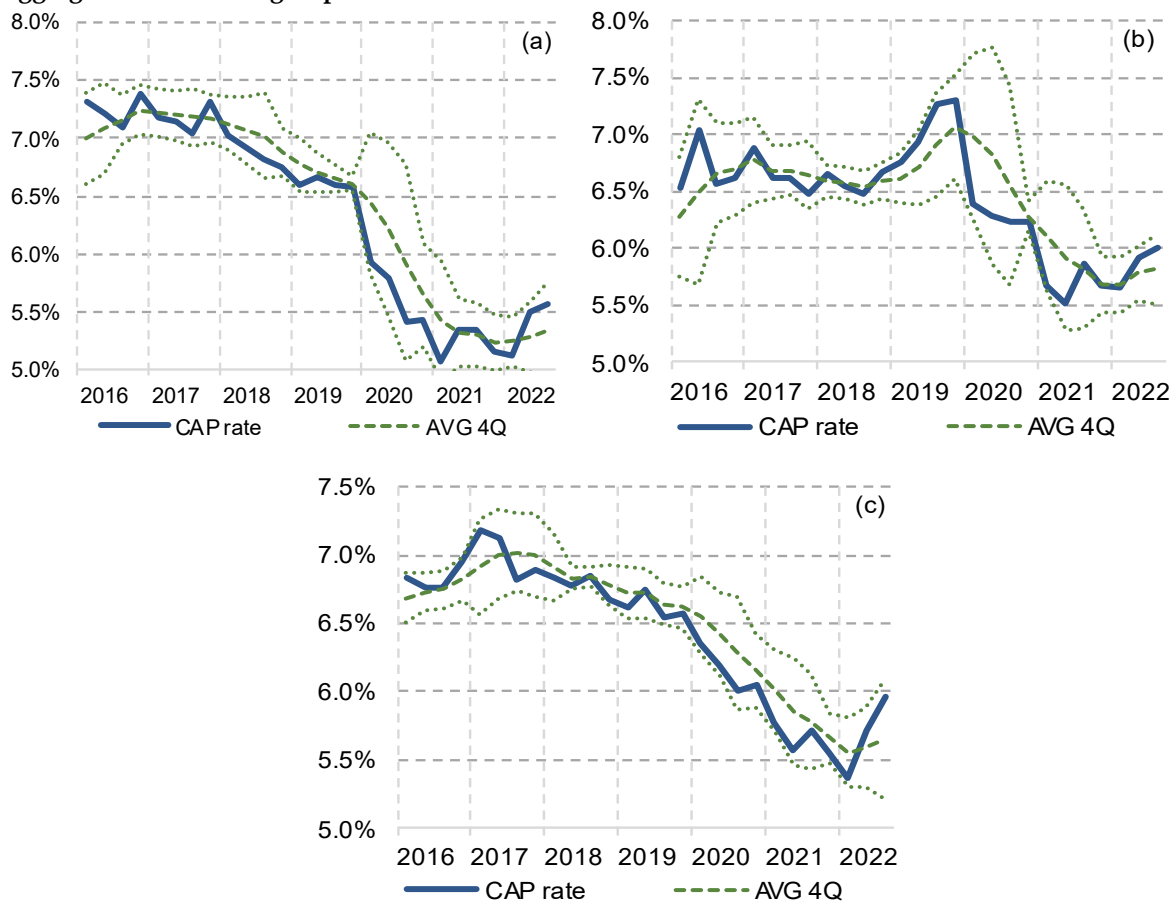
Table 19 Estimated capitalisation rate in selected cities (%)

| Quarter | Białystok | Bydgoszcz | Gdańsk | Gdynia | Katowice | Kraków | Lublin | Łódź | Olsztyn | Poznań | Rzeszów | Szczecin | Wrocław | Warszawa | 6 cities | Other |
|---------|-----------|-----------|--------|--------|----------|--------|--------|------|---------|--------|---------|----------|---------|----------|----------|-------|
| 2019 Q1 | 7.1% | 6.2% | 6.2% | 5.9% | 7.3% | 6.4% | 6.6% | 7.2% | 5.5% | 7.1% | 6.8% | 6.8% | 7.9% | 6.6% | 6.8% | 6.6% |
| 2019 Q2 | 6.2% | 7.3% | 6.3% | 6.5% | 7.7% | 6.5% | 6.8% | 7.6% | 6.0% | 7.2% | 6.3% | 7.0% | 7.6% | 6.7% | 6.9% | 6.7% |
| 2019 Q3 | 6.9% | 6.1% | 6.6% | 7.1% | 7.6% | 6.9% | 6.5% | 8.3% | 5.6% | 7.2% | 6.2% | 6.9% | 7.6% | 6.6% | 7.3% | 6.5% |
| 2019 Q4 | 7.1% | 6.6% | 6.3% | 7.1% | 7.4% | 7.0% | 6.6% | 8.4% | 5.1% | 7.4% | 6.3% | 6.9% | 7.7% | 6.6% | 7.3% | 6.6% |
| 2020 Q1 | 6.4% | 6.0% | 6.0% | 5.0% | 6.7% | 5.8% | 6.9% | 7.3% | 5.6% | 7.2% | 6.4% | 6.5% | 7.1% | 5.9% | 6.4% | 6.4% |
| 2020 Q2 | 5.9% | 5.9% | 5.7% | 6.1% | 6.0% | 5.8% | 6.8% | 7.1% | 5.4% | 6.5% | 6.0% | 7.4% | 6.5% | 5.8% | 6.3% | 6.2% |
| 2020 Q3 | 6.7% | 5.4% | 5.7% | 5.6% | 6.7% | 5.5% | 6.3% | 7.4% | 5.3% | 6.6% | 5.6% | 6.1% | 6.6% | 5.4% | 6.2% | 6.0% |
| 2020 Q4 | 6.9% | 5.6% | 5.4% | 5.9% | 6.5% | 5.4% | 5.9% | 7.3% | 5.2% | 7.1% | 5.5% | 6.7% | 6.2% | 5.4% | 6.2% | 6.1% |
| 2021 Q1 | 6.2% | 4.8% | 4.9% | 5.4% | 6.5% | 4.8% | 5.7% | 7.1% | 5.0% | 5.7% | 6.1% | 6.2% | 6.2% | 5.1% | 5.7% | 5.8% |
| 2021 Q2 | 6.6% | 5.1% | 5.0% | 4.7% | 6.0% | 4.9% | 5.7% | 6.9% | 5.1% | 5.6% | 4.9% | 5.6% | 6.1% | 5.3% | 5.5% | 5.6% |
| 2021 Q3 | 6.6% | 5.7% | 5.4% | 5.3% | 5.8% | 5.2% | 5.8% | 7.0% | 5.0% | 5.9% | 5.1% | 6.0% | 6.4% | 5.4% | 5.9% | 5.7% |
| 2021 Q4 | 5.6% | 5.6% | 4.9% | 4.9% | 5.7% | 5.0% | 5.8% | 6.8% | 5.2% | 6.2% | 5.2% | 5.9% | 6.3% | 5.2% | 5.7% | 5.6% |
| 2022 Q1 | 5.0% | 5.8% | 5.1% | 4.5% | 5.5% | 5.1% | 5.6% | 7.4% | 5.4% | 5.8% | 5.1% | 5.2% | 6.0% | 5.1% | 5.7% | 5.4% |
| 2022 Q2 | 5.4% | 6.3% | 5.6% | 4.8% | 5.5% | 5.4% | 5.7% | 7.1% | 5.5% | 5.9% | 5.4% | 6.2% | 6.7% | 5.5% | 5.9% | 5.7% |
| 2022 Q3 | 5.8% | 6.0% | 5.7% | 5.0% | 6.1% | 5.8% | 5.9% | 7.0% | 5.6% | 5.8% | 5.6% | 6.7% | 6.8% | 5.6% | 6.0% | 6.0% |

Note: The group of 6 cities comprises Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław. Other cities are Białystok, Bydgoszcz, Katowice, Lublin, Olsztyn, Rzeszów and Szczecin.

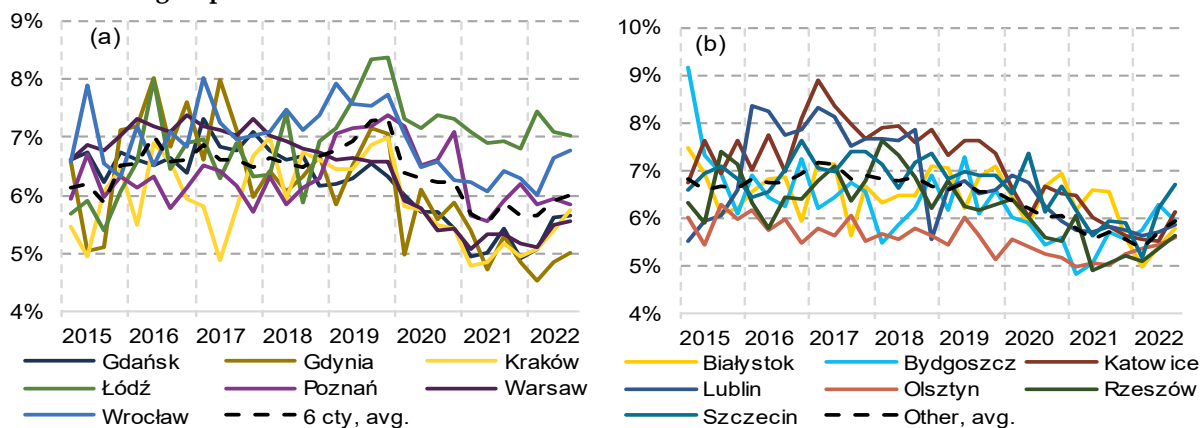
Source: NBP

Figure 77 Estimated capitalisation rate and its annual moving average for Warsaw (Panel a) and the aggregated one for the group of 6 cities (Panel b) and other cities of Poland (Panel c)



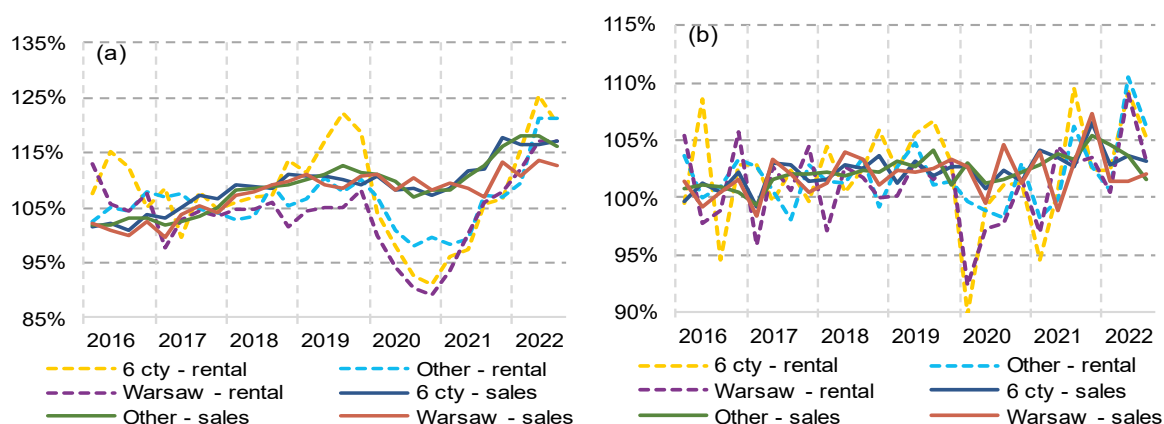
Source: NBP

Figure 78 Estimated capitalisation rate for the individual cities in the group of 6 cities and in Warsaw (Panel a) and in the group of other cities (Panel b)



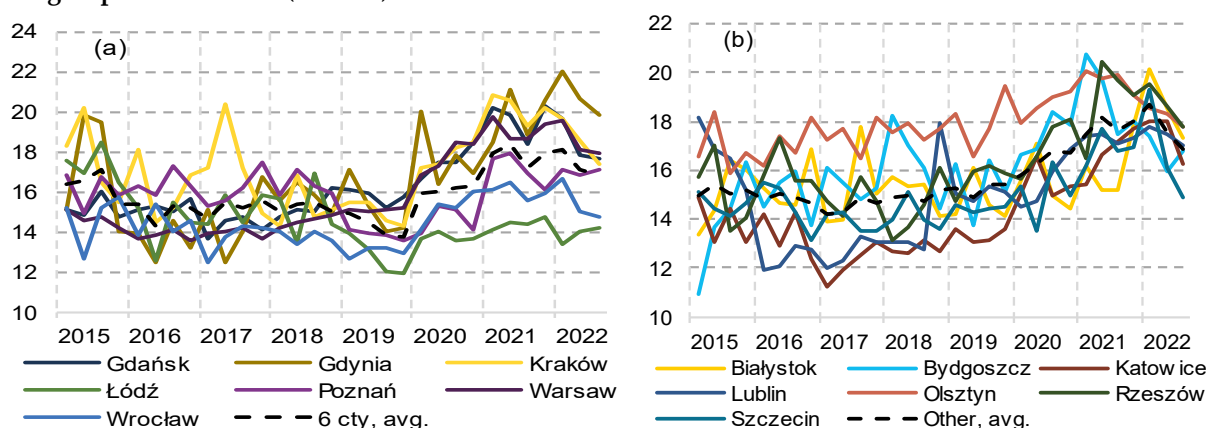
Source: NBP

Figure 79 Changes, y/y (Panel a) and q/q (Panel b) in the estimated transaction prices and rental rates in the group of 6 cities, other cities of Poland and in Warsaw



Source: NBP

Figure 80 Estimated timing of return on investment in the group of 6 cities and in Warsaw (Panel a) and in the group of other cities (Panel b)



Source: NBP

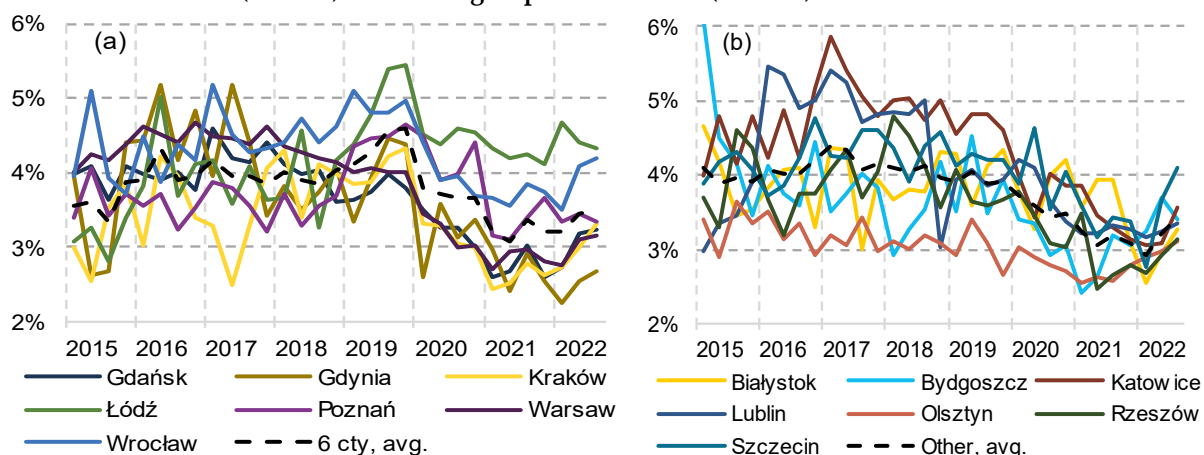
Table 20 Return on Equity (ROE, %) on fully cash-funded housing investment (LTV = 0%) in selected cities

| Quarter | Białystok | Bydgoszcz | Gdańsk | Gdynia | Katowice | Kraków | Lublin | Łódź | Olsztyn | Poznań | Rzeszów | Szczecin | Wrocław | Warszawa | 6 cities | Other |
|---------|-----------|-----------|--------|--------|----------|--------|--------|------|---------|--------|---------|----------|---------|----------|----------|-------|
| 2019 Q1 | 4.3% | 3.5% | 3.6% | 3.3% | 4.6% | 3.8% | 3.9% | 4.4% | 2.9% | 4.4% | 4.1% | 4.1% | 5.1% | 4.0% | 4.1% | 3.9% |
| 2019 Q2 | 3.6% | 4.5% | 3.7% | 3.9% | 4.8% | 3.9% | 4.1% | 4.8% | 3.4% | 4.5% | 3.6% | 4.3% | 4.8% | 4.1% | 4.3% | 4.0% |
| 2019 Q3 | 4.1% | 3.5% | 4.0% | 4.5% | 4.8% | 4.2% | 3.9% | 5.4% | 3.1% | 4.5% | 3.6% | 4.2% | 4.8% | 4.0% | 4.6% | 3.9% |
| 2019 Q4 | 4.3% | 3.9% | 3.8% | 4.4% | 4.6% | 4.3% | 3.9% | 5.5% | 2.7% | 4.7% | 3.7% | 4.2% | 5.0% | 4.0% | 4.6% | 3.9% |
| 2020 Q1 | 3.8% | 3.4% | 3.5% | 2.6% | 4.0% | 3.3% | 4.2% | 4.5% | 3.0% | 4.5% | 3.8% | 3.9% | 4.4% | 3.4% | 3.8% | 3.7% |
| 2020 Q2 | 3.3% | 3.3% | 3.3% | 3.6% | 3.4% | 3.3% | 4.1% | 4.4% | 2.9% | 3.9% | 3.4% | 4.6% | 3.9% | 3.3% | 3.7% | 3.6% |
| 2020 Q3 | 4.0% | 2.9% | 3.3% | 3.1% | 4.0% | 3.1% | 3.6% | 4.6% | 2.8% | 4.0% | 3.1% | 3.6% | 4.0% | 3.0% | 3.7% | 3.4% |
| 2020 Q4 | 4.2% | 3.1% | 3.0% | 3.4% | 3.9% | 3.0% | 3.4% | 4.6% | 2.7% | 4.4% | 3.0% | 4.0% | 3.7% | 3.0% | 3.7% | 3.5% |
| 2021 Q1 | 3.6% | 2.4% | 2.6% | 3.0% | 3.9% | 2.4% | 3.2% | 4.3% | 2.5% | 3.2% | 3.5% | 3.6% | 3.7% | 2.7% | 3.2% | 3.2% |
| 2021 Q2 | 3.9% | 2.6% | 2.7% | 2.4% | 3.5% | 2.5% | 3.2% | 4.2% | 2.6% | 3.1% | 2.5% | 3.2% | 3.6% | 3.0% | 3.1% | 3.1% |
| 2021 Q3 | 3.9% | 3.2% | 3.0% | 2.9% | 3.3% | 2.8% | 3.3% | 4.3% | 2.6% | 3.4% | 2.6% | 3.4% | 3.9% | 3.0% | 3.4% | 3.2% |
| 2021 Q4 | 3.1% | 3.1% | 2.6% | 2.5% | 3.1% | 2.6% | 3.3% | 4.1% | 2.8% | 3.7% | 2.8% | 3.4% | 3.8% | 2.8% | 3.2% | 3.1% |
| 2022 Q1 | 2.6% | 3.2% | 2.7% | 2.2% | 3.1% | 2.7% | 3.2% | 4.7% | 2.9% | 3.3% | 2.7% | 2.8% | 3.5% | 2.8% | 3.2% | 2.9% |
| 2022 Q2 | 2.9% | 3.7% | 3.2% | 2.5% | 3.1% | 3.0% | 3.2% | 4.4% | 3.0% | 3.4% | 2.9% | 3.7% | 4.1% | 3.1% | 3.4% | 3.2% |
| 2022 Q3 | 3.3% | 3.4% | 3.2% | 2.7% | 3.6% | 3.3% | 3.4% | 4.3% | 3.1% | 3.3% | 3.1% | 4.1% | 4.2% | 3.2% | 3.5% | 3.4% |

Note: The group of 6 cities comprises Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław. Other cities are Białystok, Bydgoszcz, Katowice, Lublin, Olsztyn, Rzeszów and Szczecin.

Source: NBP

Figure 81 Return on Equity (ROE, %) on fully cash-funded housing investment (LTV = 0%) in the group of 6 cities and Warsaw (Panel a) and in the group of other cities (Panel b)



Source: NBP

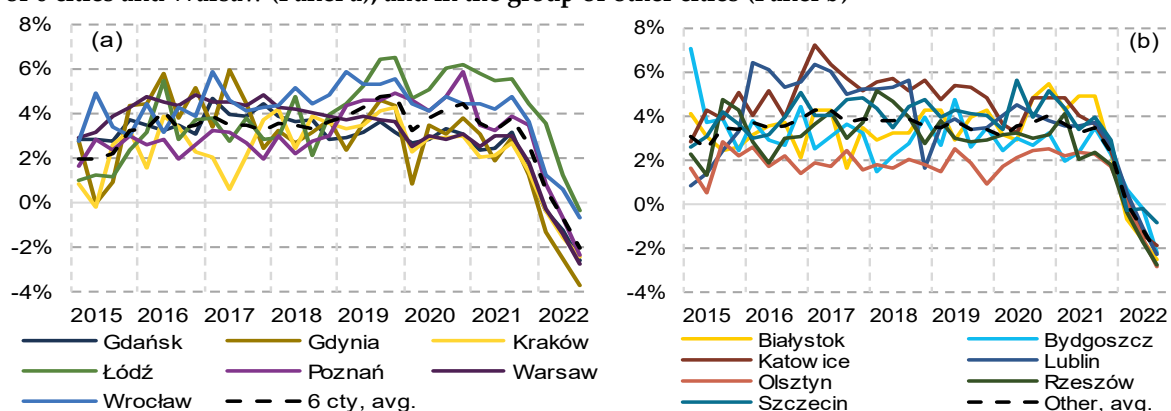
Table 21 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 50%) in selected cities

| Quarter | Białystok | Bydgoszcz | Gdańsk | Gdynia | Katowice | Kraków | Lublin | Łódź | Olsztyn | Poznań | Rzeszów | Szczecin | Wrocław | Warszawa | 6 cities | Other |
|---------|-----------|-----------|--------|--------|----------|--------|--------|-------|---------|--------|---------|----------|---------|----------|----------|-------|
| 2019 Q1 | 4.2% | 2.7% | 3.0% | 2.3% | 4.8% | 3.3% | 3.6% | 4.4% | 1.5% | 4.4% | 3.8% | 3.9% | 5.9% | 3.7% | 3.9% | 3.5% |
| 2019 Q2 | 2.9% | 4.7% | 3.2% | 3.6% | 5.4% | 3.4% | 3.9% | 5.3% | 2.5% | 4.6% | 3.0% | 4.3% | 5.4% | 3.9% | 4.2% | 3.8% |
| 2019 Q3 | 3.9% | 2.6% | 3.6% | 4.6% | 5.3% | 4.1% | 3.4% | 6.5% | 1.8% | 4.6% | 2.8% | 4.1% | 5.3% | 3.7% | 4.8% | 3.4% |
| 2019 Q4 | 4.3% | 3.5% | 3.2% | 4.4% | 4.8% | 4.3% | 3.5% | 6.5% | 0.9% | 4.9% | 2.9% | 4.0% | 5.5% | 3.6% | 4.8% | 3.4% |
| 2020 Q1 | 3.2% | 2.5% | 2.6% | 0.8% | 3.6% | 2.3% | 4.0% | 4.7% | 1.7% | 4.6% | 3.2% | 3.4% | 4.4% | 2.5% | 3.2% | 3.1% |
| 2020 Q2 | 2.9% | 3.0% | 2.9% | 3.5% | 3.2% | 2.9% | 4.5% | 5.1% | 2.1% | 4.2% | 3.2% | 5.6% | 4.1% | 3.0% | 3.8% | 3.5% |
| 2020 Q3 | 4.8% | 2.7% | 3.4% | 3.1% | 4.9% | 3.0% | 4.1% | 6.1% | 2.4% | 4.8% | 3.0% | 3.9% | 4.8% | 2.8% | 4.2% | 3.7% |
| 2020 Q4 | 5.5% | 3.2% | 3.1% | 3.8% | 4.8% | 3.0% | 3.8% | 6.2% | 2.5% | 5.9% | 3.1% | 5.1% | 4.5% | 3.1% | 4.4% | 4.0% |
| 2021 Q1 | 4.3% | 1.9% | 2.3% | 3.1% | 4.9% | 2.0% | 3.6% | 5.8% | 2.2% | 3.5% | 4.1% | 4.3% | 4.5% | 2.6% | 3.5% | 3.6% |
| 2021 Q2 | 5.0% | 2.3% | 2.4% | 1.9% | 4.0% | 2.1% | 3.5% | 5.5% | 2.3% | 3.3% | 2.1% | 3.4% | 4.2% | 3.0% | 3.2% | 3.2% |
| 2021 Q3 | 4.9% | 3.5% | 3.1% | 2.9% | 3.7% | 2.7% | 3.7% | 5.6% | 2.2% | 3.8% | 2.4% | 3.9% | 4.8% | 3.0% | 3.8% | 3.5% |
| 2021 Q4 | 2.4% | 2.3% | 1.4% | 1.2% | 2.5% | 1.4% | 2.7% | 4.4% | 1.7% | 3.5% | 1.8% | 2.9% | 3.7% | 1.8% | 2.6% | 2.3% |
| 2022 Q1 | -0.7% | 0.7% | -0.3% | -1.3% | 0.3% | -0.3% | 0.5% | 3.6% | 0.0% | 0.9% | -0.4% | -0.3% | 1.2% | -0.3% | 0.6% | 0.0% |
| 2022 Q2 | -1.7% | -0.2% | -1.2% | -2.5% | -1.4% | -1.6% | -1.1% | 1.2% | -1.6% | -0.7% | -1.7% | -0.2% | 0.6% | -1.4% | -0.7% | -1.1% |
| 2022 Q3 | -2.5% | -2.3% | -2.6% | -3.7% | -1.9% | -2.4% | -2.3% | -0.4% | -2.9% | -2.4% | -2.8% | -0.8% | -0.7% | -2.7% | -2.0% | -2.2% |

Note: The group of 6 cities comprises Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław. Other cities are Białystok, Bydgoszcz, Katowice, Lublin, Olsztyn, Rzeszów and Szczecin.

Source: NBP

Figure 82 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 50%) in the group of 6 cities and Warsaw (Panel a), and in the group of other cities (Panel b)



Source: NBP

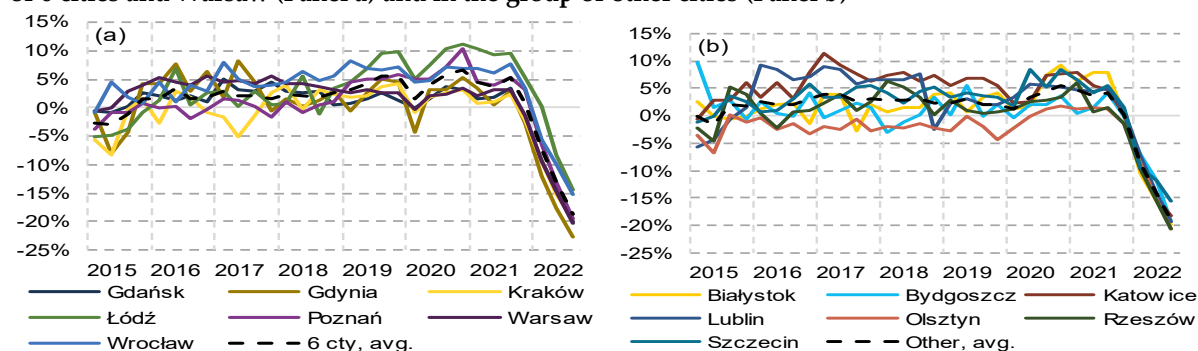
Table 22 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 80%) in selected cities

| Quarter | Białystok | Bydgoszcz | Gdańsk | Gdynia | Katowice | Kraków | Lublin | Łódź | Olsztyn | Poznań | Rzeszów | Szczecin | Wrocław | Warszawa | 6 cities | Other |
|---------|-----------|-----------|--------|--------|----------|--------|--------|--------|---------|--------|---------|----------|---------|----------|----------|--------|
| 2019 Q1 | 4.1% | 0.3% | 0.9% | -0.7% | 5.5% | 1.8% | 2.4% | 4.5% | -2.6% | 4.5% | 2.9% | 3.3% | 8.2% | 2.7% | 3.2% | 2.2% |
| 2019 Q2 | 0.8% | 5.4% | 1.5% | 2.5% | 7.0% | 2.2% | 3.2% | 6.8% | -0.1% | 5.1% | 1.0% | 4.2% | 7.0% | 3.2% | 4.2% | 3.1% |
| 2019 Q3 | 3.3% | 0.0% | 2.5% | 5.0% | 6.7% | 3.8% | 2.0% | 9.6% | -1.9% | 5.1% | 0.5% | 3.7% | 6.7% | 2.7% | 5.4% | 2.1% |
| 2019 Q4 | 4.2% | 2.1% | 1.4% | 4.4% | 5.4% | 4.1% | 2.1% | 9.7% | -4.2% | 5.7% | 0.8% | 3.5% | 7.3% | 2.5% | 5.4% | 2.0% |
| 2020 Q1 | 1.4% | -0.4% | 0.1% | -4.5% | 2.4% | -0.9% | 3.5% | 5.1% | -2.3% | 5.0% | 1.4% | 1.9% | 4.5% | -0.3% | 1.6% | 1.1% |
| 2020 Q2 | 1.8% | 2.1% | 1.7% | 3.3% | 2.6% | 1.8% | 5.9% | 7.3% | -0.2% | 4.9% | 2.6% | 8.5% | 4.9% | 2.0% | 4.0% | 3.3% |
| 2020 Q3 | 7.3% | 2.0% | 3.7% | 3.1% | 7.5% | 2.7% | 5.6% | 10.4% | 1.3% | 7.3% | 2.8% | 5.1% | 7.2% | 2.4% | 5.7% | 4.5% |
| 2020 Q4 | 9.3% | 3.6% | 3.3% | 5.2% | 7.6% | 3.2% | 5.1% | 11.0% | 1.9% | 10.3% | 3.4% | 8.4% | 6.8% | 3.4% | 6.6% | 5.6% |
| 2021 Q1 | 6.4% | 0.6% | 1.5% | 3.4% | 7.8% | 0.7% | 4.6% | 10.3% | 1.2% | 4.4% | 6.0% | 6.5% | 6.9% | 2.1% | 4.5% | 4.7% |
| 2021 Q2 | 8.0% | 1.5% | 1.7% | 0.4% | 5.6% | 0.9% | 4.5% | 9.4% | 1.5% | 3.8% | 0.8% | 4.1% | 6.1% | 3.1% | 3.7% | 3.7% |
| 2021 Q3 | 7.9% | 4.3% | 3.4% | 2.8% | 4.8% | 2.3% | 4.9% | 9.6% | 1.2% | 5.2% | 1.5% | 5.5% | 7.6% | 3.1% | 5.2% | 4.3% |
| 2021 Q4 | 0.2% | 0.0% | -2.4% | -2.7% | 0.4% | -2.2% | 1.0% | 5.3% | -1.4% | 3.0% | -1.4% | 1.6% | 3.5% | -1.3% | 0.8% | 0.1% |
| 2022 Q1 | -10.4% | -7.0% | -9.5% | -11.9% | -7.9% | -9.5% | -7.4% | 0.3% | -8.6% | -6.5% | -9.7% | -9.4% | -5.7% | -9.4% | -7.1% | -8.6% |
| 2022 Q2 | -15.6% | -11.9% | -14.4% | -17.7% | -15.0% | -15.3% | -14.2% | -8.3% | -15.4% | -13.1% | -15.7% | -11.9% | -9.9% | -14.8% | -13.1% | -14.2% |
| 2022 Q3 | -19.9% | -19.2% | -20.1% | -22.8% | -18.4% | -19.6% | -19.4% | -14.6% | -20.7% | -19.5% | -20.6% | -15.7% | -15.3% | -20.5% | -18.6% | -19.1% |

Note: The group of 6 cities comprises Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław. Other cities are Białystok, Bydgoszcz, Katowice, Lublin, Olsztyn, Rzeszów and Szczecin.

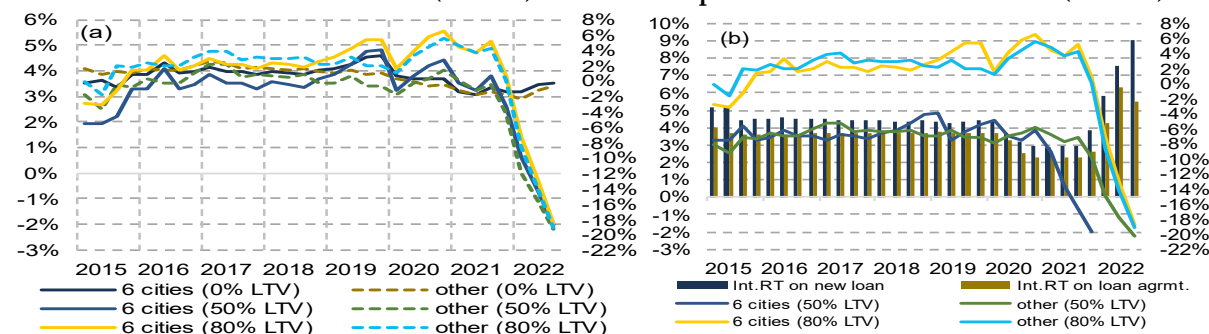
Source: NBP

Figure 83 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 80%) in the group of 6 cities and Warsaw (Panel a) and in the group of other cities (Panel b)



Source: NBP

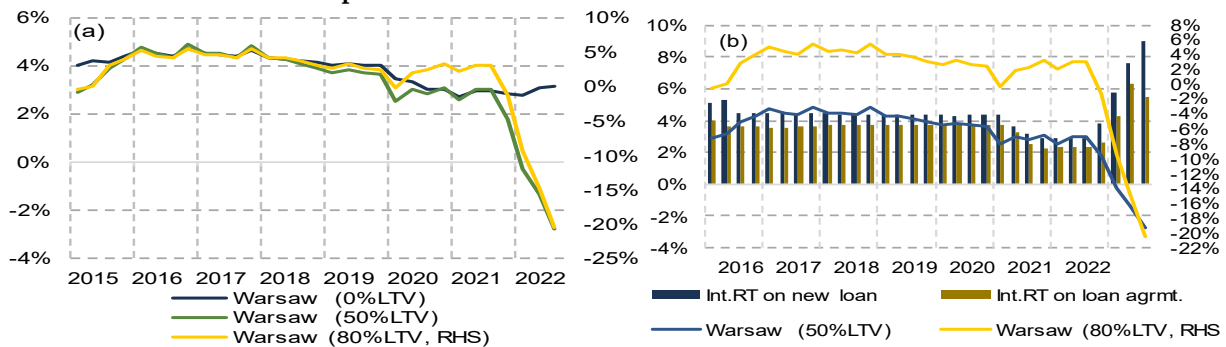
Figure 84 Comparison of the Return on Equity (ROE, %) on housing investment in the groups of 6 cities and of other cities at selected LTV levels (Panel a) and ROE compared to the loan interest rate³³ (Panel b)



Source: NBP

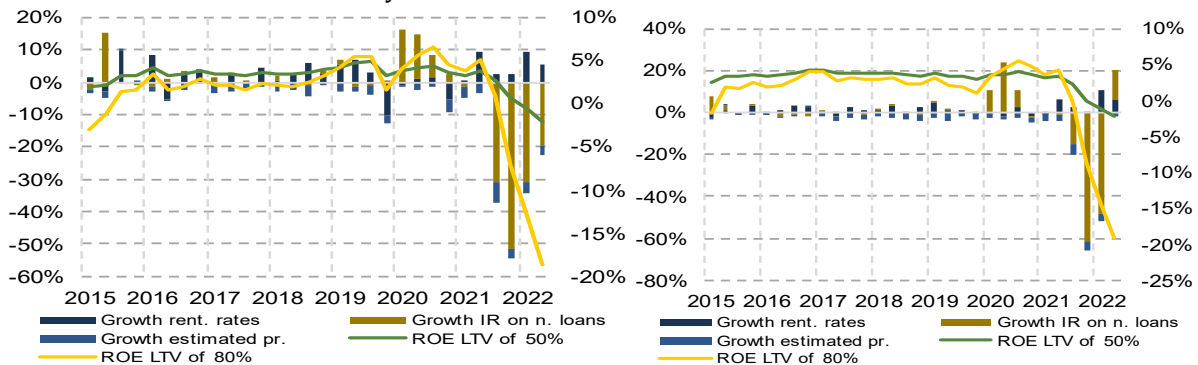
³³ The interest rate on the stock of residential mortgage loans is a value illustrating the average interest rate on all the loan agreements existing at the end of the reporting period, whether concluded before the reporting month and continuing in force and new loan agreements, according to the method stated in "Instrukcja dla użytkowników statystyki stóp procentowych" [Instructions for the Users of Interest Rates Statistics] (https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_and_bankowa/oprocentowanie.html). The visible decrease in the interest rates on balance in each month of 2022 Q3 is a consequence of the introduction of a so-called "mortgage holiday" scheme. It resulted in a decrease in accrued interest in comparison to monthly average amounts of all the residential mortgage loan agreements.

Figure 85 Comparison of the Return on Equity (ROE, %) on housing investment in Warsaw at selected LTV levels (Panel a) and ROE compared to the loan interest rate (Panel b)



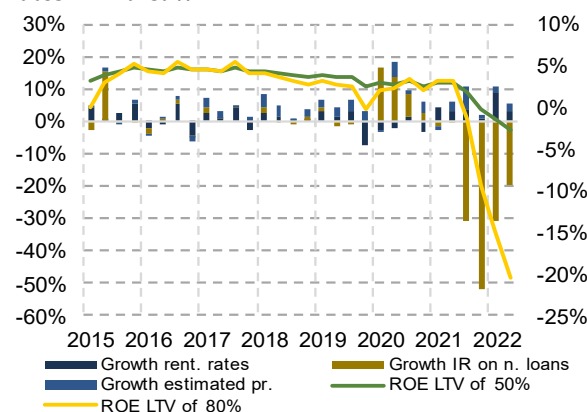
Source: NBP

Figure 86. Estimated ROE where LTV=50% and 80%, and the impact of quarterly changes in interest rates on new residential mortgage loans, estimated housing transaction prices and rental rates in the group of 6 cities (Panel a) and the other analysed cities (Panel b)



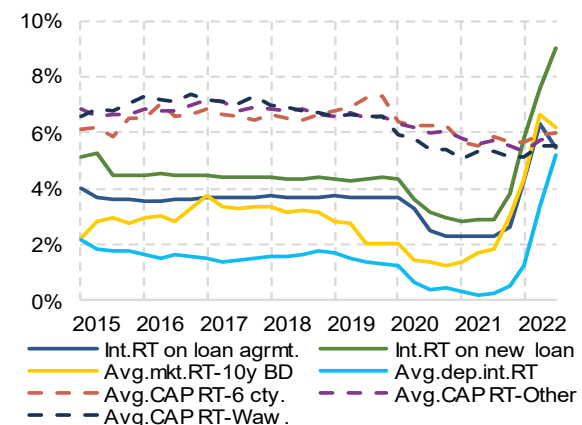
Source: NBP

Figure 87. Estimated ROE where LTV=50% and 80%, and the impact of quarterly changes in interest rates on new residential mortgage loans, estimated housing transaction prices and rental rates in Warsaw



Source: NBP

Figure 88. Comparison of interest rates on bonds, deposits and the costs of credit to the average capitalisation rate of an investment in dwellings for rental



Source: NBP

8. Extended analysis of the financial standing of developers, residential and non-residential construction companies and related entities

Analysis of the financial standing of developers³⁴

According to the financial data presented in the F01 reports submitted by September 2022 by major real estate developers (with more than 49 staff) and data registered by NBP until 2022 Q3, while considerably fewer dwellings were sold, the financial position of some of the major development firms worsened only marginally and remained at a good level. Their performance in terms of payment of their payables and financial liquidity deteriorated slightly. Work in progress remained at a high level in spite of the fact that the developers had scaled down new project starts. The 14-strong group of developers listed on the Warsaw Stock Exchange also saw dwindling sales. In 2022 Q3, this group concluded contracts for 3,524 dwellings, marking a 47% drop on the analogous quarter of 2021 and a 17% decline on the previous quarter of 2022. The parameters had been slightly better in 2022 Q2 (minus 41% and minus 16%, respectively). The sharp fall in the sales of dwellings in 2022 was a consequence of the tightening of the terms of residential mortgage loans, the worsened standing of households and a high base effect compared to 2021. The sales of dwellings reported in 2022 Q3 were comparable with the results from 2014, i.e. the beginning of a several-year period of dynamic growth in housing construction, which decelerated in late 2021.

In 2022 Q3, the top development firms reported higher total income than total expenses in their F01 reports, which meant that they earned sizeable net profits and achieved better return rates than in the preceding quarter and a year before (14.5% ROS, 5.1% ROE and 2.4% ROA in 2022 Q3 vs. 12.2% ROS, 3.9% ROE and 1.9% ROA in 2021 Q3.). The proportion of profitable entities remained unchanged (80% in 2022 Q3 and 80% in 2021 Q3). Considering the accounting policies of real estate developers, the reported net financial results reflect the margin earned on dwellings handed over for use to the buyers during the period under analysis, i.e. ones the contracts for which had been concluded about two years earlier.

Even though the developers retained more or less the same structure of assets, including current assets, the average value of different current assets (except for cash) decreased in another quarter, which confirms that bigger developers scaled down their activity in terms of starting new projects and were aiming to complete the projects which way under way. Compared to the previous quarter, the value of finished dwellings (accounting for as little as 3% of total assets) and work in progress had decreased the most. In spite of a change in value in the third quarter, the proportion of work in progress was higher than a year before (36.8% in 2022 Q3 vs. 34.7% in 2021 Q3). The fact that the development output slowed down considerably is confirmed, apart from the decrease in the value during the period, by a smaller number of starts of dwellings for sale or rental (44% down in 2022 Q3 compared to the preceding quarter and 27% down during the period from January to September 2022, compared to the same period of 2021).

³⁴ The calculations and the conclusions presented in this edition of the Information are primarily based on data stated in the F01 reports submitted to Statistics Poland by two groups of entities: small businesses with 9-49 staff (data available on a semi-annual basis until the end of 2022 H1) and bigger companies with over 49 staff (data available on a quarterly basis until 2022 Q3) whose business is the development of building projects (PKD 41.10). The review of the financial statements of the developers listed on the Warsaw Stock Exchange is based on data for the period until 2022 Q2.

On an annual basis, there was a significant increase in the value of land reserves, material reserves and receivables from buyers in 2022 Q3. Investment in land and inventories of building materials as well as a growing cash balance confirm that the financial standing of most of the analysed real estate developers continued to be good.

A higher proportion of equity to total liabilities seen in the past quarters than during earlier periods was the consequence of the appropriation of net profits to equity in order to secure liquidity when sales revenues remained low. A dip in equity compared to the previous quarter (to 46% in 2022 Q3 vs. 52% in 2022 Q2) coupled with an increase in the share of external debt resulted in a slightly worse assets to equity ratio and an increased debt to equity ratio. Although the ratios worsened a little, the level of developers' indebtedness and of collateral on their liabilities remained very strong and safe.

As regards external sources of financing, the share of debt arising from bank loans grew a little (to just over 7% of total liabilities in 2022 Q3 compared to approx. 5% during the previous five quarters), which was mainly a consequence of an increase in liabilities due to short-term loans (13% up on 2022 Q2 and 18% up on 2021 Q3.). On the other hand, the amount of long-term loans, borrowings, bonds and securities decreased (by 19% on 2022 Q2 and by 30% on 2021 Q3.). Investment outlays by major developers were very low during the analysed quarter. According to data from the Catalyst market, the value of bonds issued by developers decreased (by 4% compared to 2022 Q2 and by 3% compared to 2021 Q3) while the number of issuers remained the same. The average coupon rates on developers' bonds grew to 9.74%, compared to 12.64% in the preceding quarter and 8% a year before.

As the number of dwellings for which contracts were sold decreased, the past three quarters had seen a small decrease in the share of funds originating from prepayments by home buyers (18% of total liabilities at the end of 2022 Q3, 17% at the end of 2022 Q2 and 18% at the end of 2022 Q1 compared to nearly 20% at the end of 2021 and 21% in 2020) and an increase in liabilities to contractors and subcontractors (23% of total liabilities at the end of 2022 Q3 and 21% at the end of 2022 Q2, compared to nearly 20% in 2021). If the trend continues, payment bottlenecks may aggravate and developers' financial liquidity may suffer. In 2022 Q3, the financial liquidity of major developers remained safe, in spite of a slight deterioration. An adjustment in prepayments from home buyers commensurate to a drop in work in progress points to a punctual completion of construction works and regular payments of funds from escrow accounts, which are a significant source of funding of construction projects. Performance in terms of payment of short-term liabilities worsened a little (to 176 days) and so did the inventory turnover cycle (to 235 days). The receivables collection period remained stable (79 days).

Limited production activity of the developers led to a significant decrease in the different operating expenses compared to the previous quarter, including a 26% drop in services provided by construction companies and subcontractors. Overheads were reduced to a bigger extent than the costs of third party services, as a result of which the proportion of the former to total operating expenses declined (to 31% in 2022 Q3 compared to 35% in 2022 Q2 and 39% in 2021 Q3). Third party services, which predominate operating expenses, accounted for about 70% of those in 2022 Q3

According to data published by Statistics Poland, there was a major decrease in the number of dwellings for sale and rental covered by building permits issued in 2022 Q3, compared to 2022 Q2 (33% down). However, the considerable number of building permits obtained in the two preceding quarters suggests large production

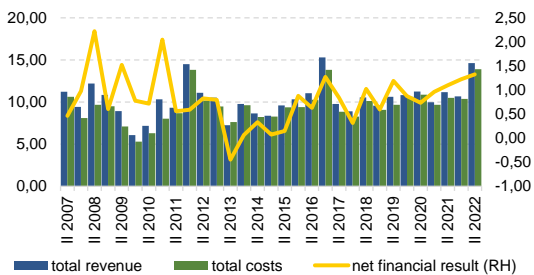
capacities of the developers (2% more building permits were issued from January to September 2022 than in the same period of 2021). As the housing market recovers, the developers will be able to start and market new projects rather quickly.

A 10% increase in the number of completed dwellings for sale or rental compared to 2022 Q2 and a 2% rise during the first three quarters of 2022 compared to the same period of 2021 was a result of improved sentiments and a recovery in the housing construction industry as well as the starting of new projects in the multifamily housing sector following a brief slowdown in production in mid-2020, caused by the spread of the COVID-19 pandemic.

According to financial data available as at June 2022, the dozen or so developers listed on the Warsaw Stock Exchange reported yet another quarter of growing inventories, which primarily implies growing work in progress. This group of developers has the best operating expense ratio (0.77) of the three group of entities under analysis, even though the relationship between the expenses and sales revenues worsened in 2022 Q3. Total income and total expenses, which had been in decline for three quarters, though still higher than before 2021 Q4, suggest a high number of completed projects and dwellings handed over to the buyers. Since expenses were growing faster than revenues, the return on sales in the completed projects declined (12.2% in 2022 Q3 compared to 17.8% in 2022 Q2 and 16.4 in 2021 Q3). The WSE-listed developers are characterised by a short receivables collection period but a long and growing payables payment period and inventory turnover cycle than the other two categories of development firms covered by the analysis. Trade payables increased and accounted for more than 22% of total liabilities, compared to approx. 21% in 2022 Q2 and 17% in 2021 Q3. The financial liquidity of listed developers remains low, but stable and safe. An increase in the value of external funding in 2022 Q2 compared to 2022 Q1 (loans 3% up, prepayments 7% up and payables to contractors and subcontractors 6% up) coupled with a 9% decline in equity only marginally weakened Return on Equity (3.5% ROE in 2022 Q2 compared to 5.1% in 2022 Q1 and 3.7% in 2021 Q2). Yet the debt ratio, debt to equity ratio and the assets to equity ratio remained good.

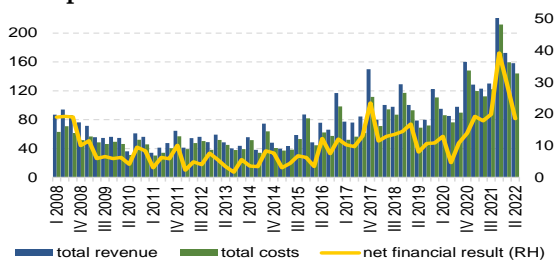
According to financial data stated in F-01 reports available until June 2022, the financial liquidity of small companies (with 9–49 staff) worsened due to a major increase in work in progress as well as trade payables. Return on sales declined slightly (9.5% in 2022 H1 compared to 11.8% in 2021 H2 and 10.4% in 2021 H1) as a result of much stronger growth in operating expenses than in sales revenues. All the components of operating expenses increased and thus their structure changed a little in the first half of 2022, and in this regard the share of costs of materials and energy consumed grew to 25% (23% in 2021 Q3). The proportion of equity to total liabilities decreased further (35% in the first half of 2022 vs. 40% in 2021 and 46% on average in earlier years), bringing the debt to equity ratio close to an unfavourable level. Return on equity improved slightly (8.2% in the first half of 2022 compared to 7.9% in 2021 H2 and 7.1% in 2021 H1). Smaller developers had shorter receivables collection periods and payables payment periods than larger ones and collected their receivables and paid their payables sooner. The value of external financing increased, mainly prepayments by home buyers, followed by payables to contractors and bank loans. This development caused an increase in the share of prepayments by home buyers to 23% of total liabilities, compared to 16% in 2021, and of payables to contractors to 18% compared to 15% in 2021.

Figure 89 Performance indicators of developers with 9–49 staff



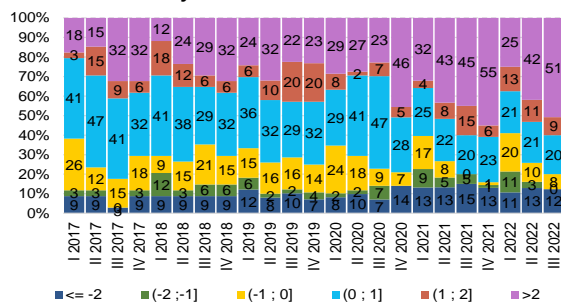
Source: NBP, based on Statistics Poland (F01)

Figure 91 Performance indicators of the developers listed on the WSE



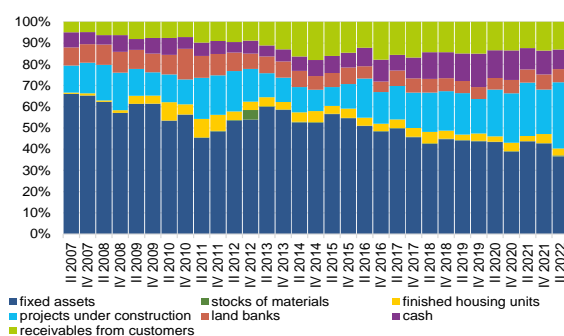
Source: NBP, based on Quant Research sp. z o.o.

Figure 93 Developers with more than 49 staff broken down by net financial result (in %)



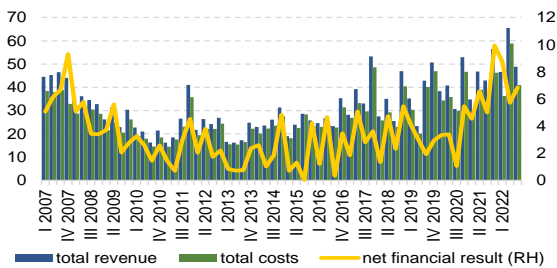
Source: NBP, based on Statistics Poland (F01)

Figure 95 Structure of assets of developers with 9–49 staff



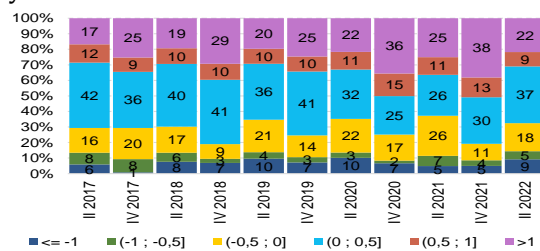
Source: NBP, based on Statistics Poland (F01)

Figure 90 Performance indicators of developers with more than 49 staff



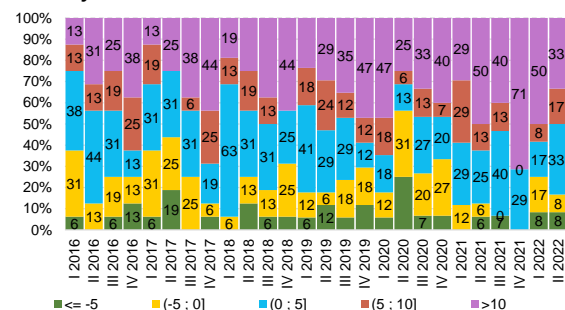
Source: NBP, based on Statistics Poland (F01)

Figure 92 Developers with 9–49 staff broken down by net financial result (in %)



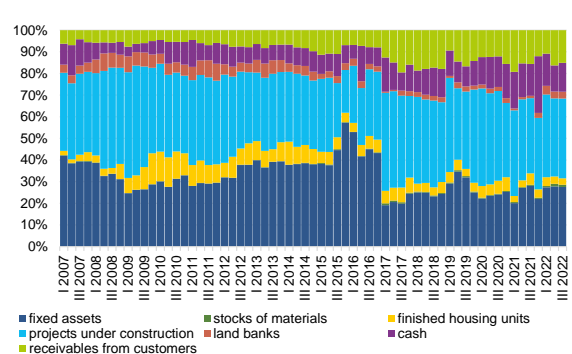
Source: NBP, based on Statistics Poland (F01)

Figure 94 Developers listed on the WSE broken down by net financial result (in %)



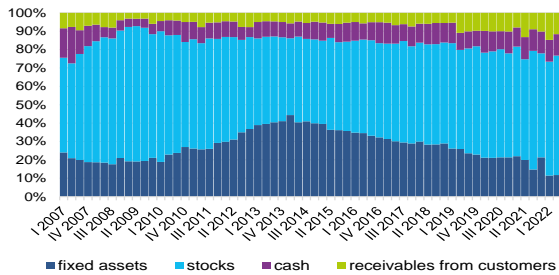
Source: NBP, based on Quant Research sp. z o.o.

Figure 96 Structure of assets of developers with more than 49 staff



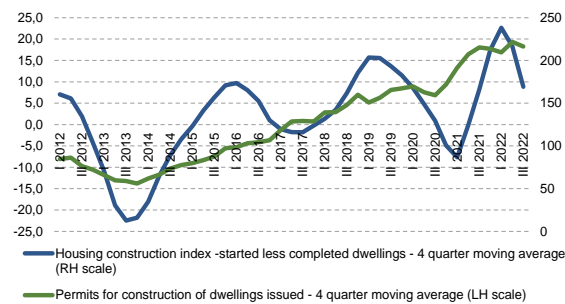
Source: NBP, based on Statistics Poland (F01)

Figure 97 Structure of assets of the developers listed on the WSE



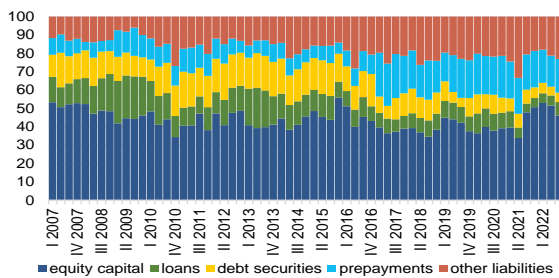
Source: NBP, based on Quant Research sp. z o.o.

Figure 99 Housing construction indicator and building permits issued for dwellings for sale or rental



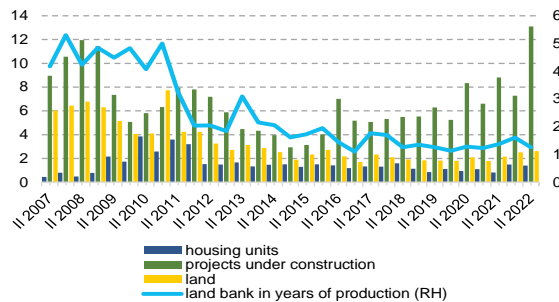
Source: NBP, based on Statistics Poland

Figure 101 Structure of liabilities of developers with more than 49 staff



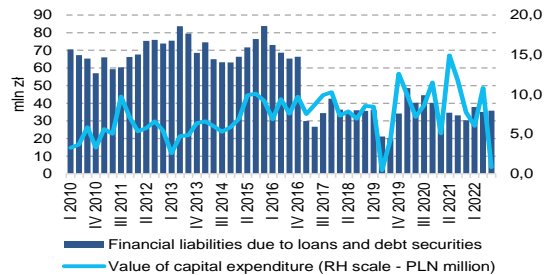
Source: NBP, based on Statistics Poland (F01)

Figure 103 Situation of developers with 9–49 staff



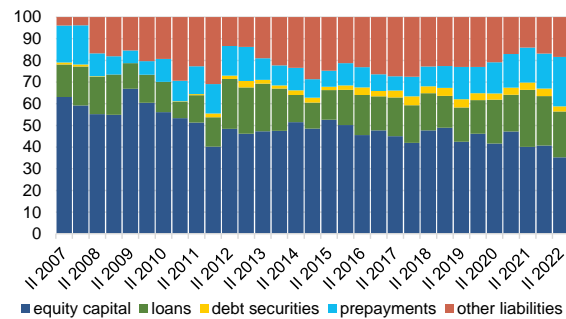
Source: NBP, based on Statistics Poland (F01)

Figure 98 Investment activity of developers with more than 49 staff



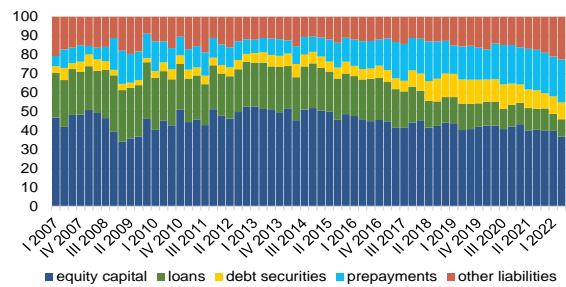
Source: NBP, based on Statistics Poland (F01)

Figure 100 Structure of liabilities of developers with 9–49 staff



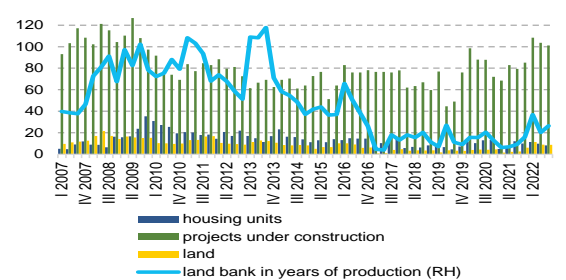
Source: NBP, based on Statistics Poland (F01)

Figure 102 Structure of liabilities of the developers listed on the WSE



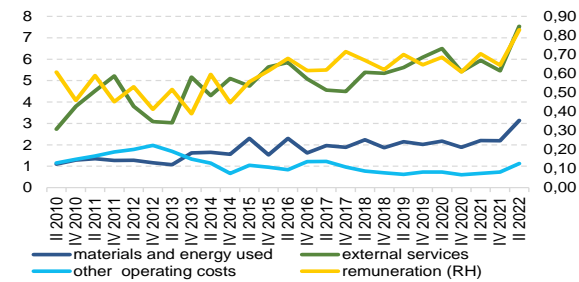
Source: NBP, based on Quant Research sp. z o.o.

Figure 104 Situation of developers with more than 49 staff



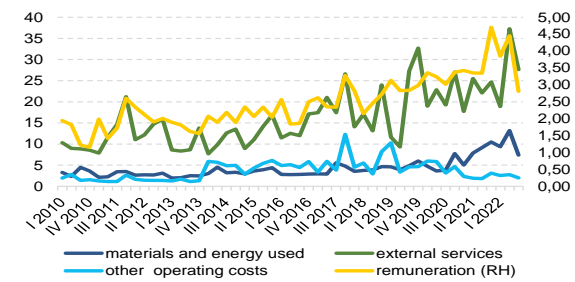
Source: NBP, based on Statistics Poland (F01)

Figure 105 Operating expenses of developers with 9–49 staff



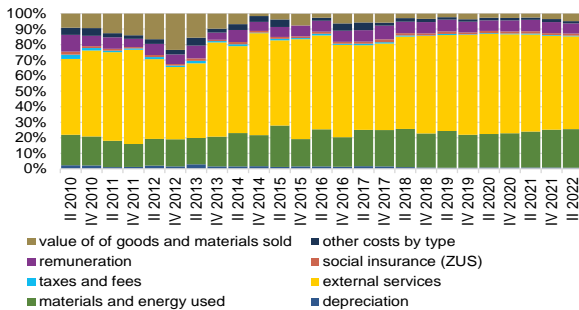
Source: NBP, based on Statistics Poland (F01)

Figure 106 Operating expenses of developers with more than 49 staff



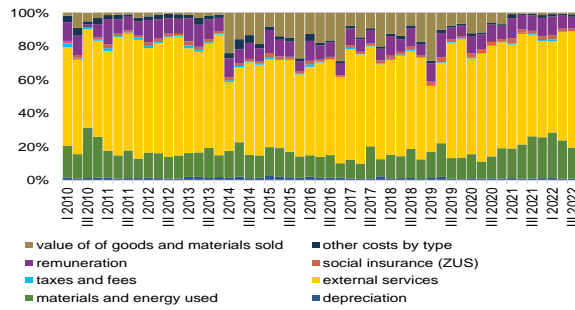
Source: NBP, based on Statistics Poland (F01)

Figure 107 Structure of operating expenses of developers with 9–49 staff



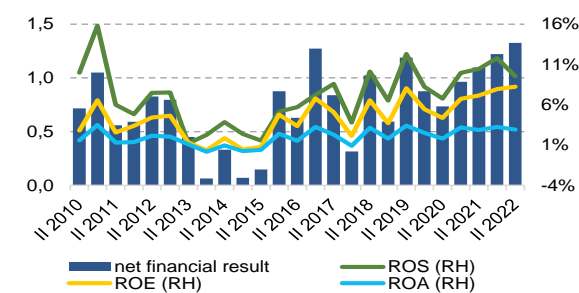
Source: NBP, based on Statistics Poland (F01) and financial statements

Figure 108 Structure of operating expenses of developers with more than 49 staff



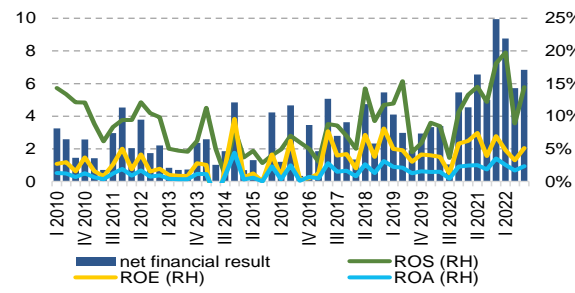
Source: NBP, based on Statistics Poland (F01) and financial statements

Figure 109 Profitability of developers with 9–49 staff



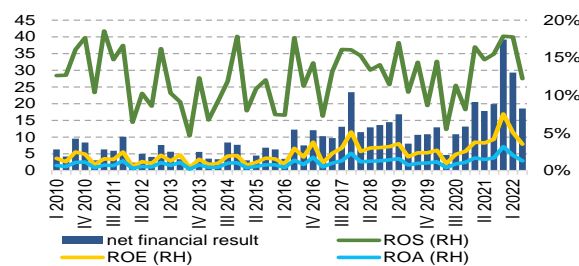
Source: NBP, based on Statistics Poland (F01)

Figure 110 Profitability of developers with more than 49 staff



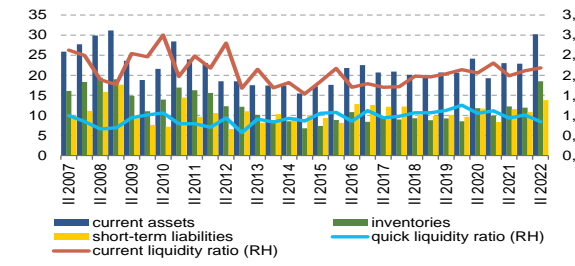
Source: NBP, based on Statistics Poland (F01)

Figure 111 Profitability of the developers listed on the WSE



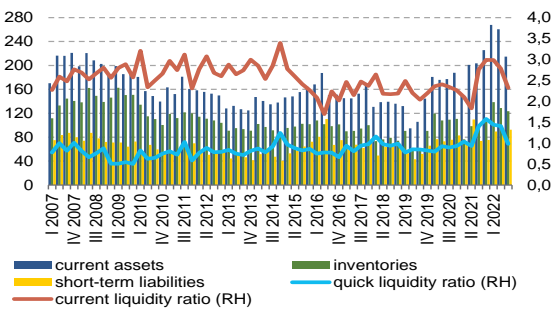
Source: NBP, based on Quant Research sp. z o.o.

Figure 112 Liquidity ratios of developers with 9–49 staff



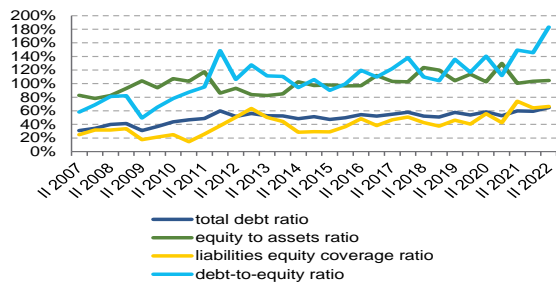
Source: NBP, based on Statistics Poland (F01)

Figure 113 Liquidity ratios of developers with more than 49 staff



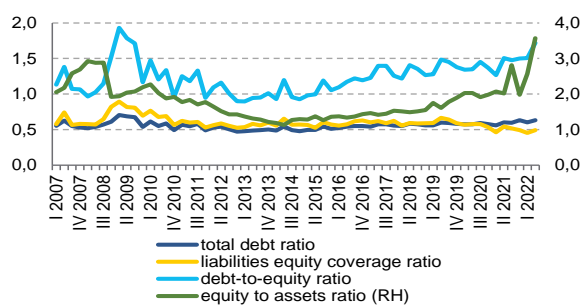
Source: NBP, based on Statistics Poland (F01)

Figure 115 Debt and equity ratios of developers with 9–49 staff



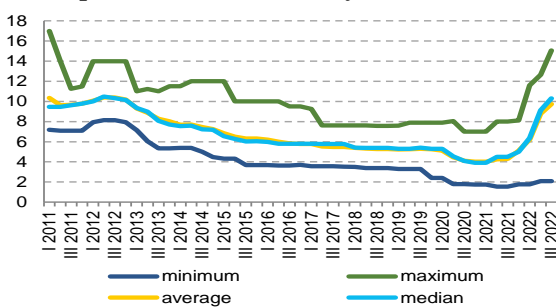
Source: NBP, based on Statistics Poland (F01)

Figure 117 Debt and equity ratios of the developers listed on the WSE



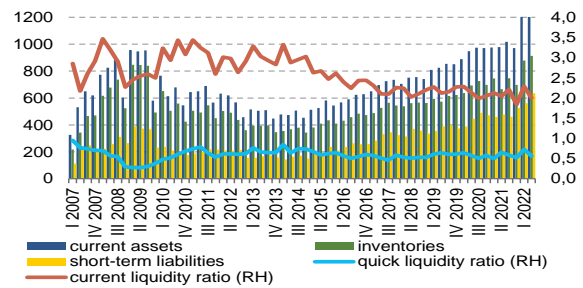
Source: NBP, based on Quant Research sp. z o.o.

Figure 119 Coupon rates on bonds issued by the developers listed on the Catalyst market



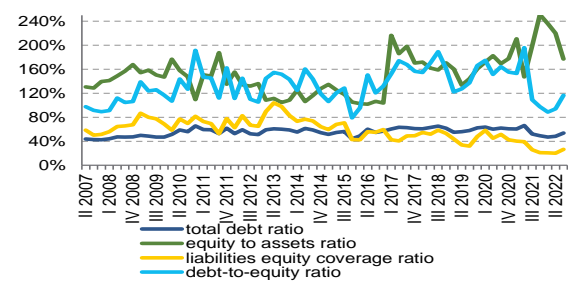
Source: NBP, based on Catalyst data

Figure 114 Liquidity ratios of the developers listed on the WSE



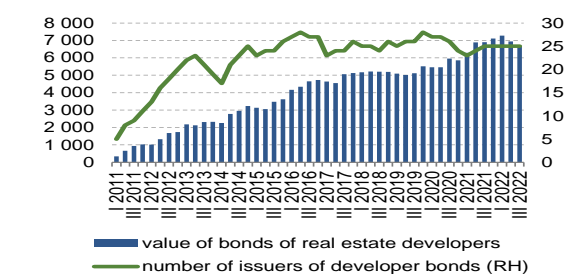
Source: NBP, based on Quant Research sp. z o.o.

Figure 116 Debt and equity ratios of developers with more than 49 staff



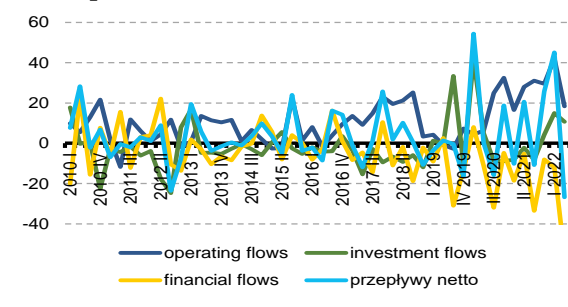
Source: NBP, based on Statistics Poland (F01)

Figure 118 Value of developer bonds and the number of issuers of developer bonds in the Catalyst market



Source: NBP, based on Catalyst data

Figure 120 Cash flows of the WSE-listed developers



Source: NBP, based on Quant Research sp. z o.o.

Analysis of the financial standing of residential and non-residential construction companies³⁵

The slump in the sales of dwellings, both in the primary and the secondary markets, in 2022 prompted the developers to limit supply, which was in turn reflected in a decline in the housing production indicator. The sinking moods among construction companies were visible in a continuous decrease of the metrics applied by Statistics Poland to indicate the climate in the construction industry. The performance of construction companies was mainly and adversely affected by the continued sharp increase in operating expenses.

The drop in the production of dwellings and in the production capacity of construction companies to the level of 82% was a consequence of the fact that the revenues earned by bigger construction companies (with more than 49 staff) in 2022 Q3 were 31% lower than in 2022 Q2. On the other hand, revenues continued to grow on a year-on-year basis (12% up). In 2022 Q3, as the operating expense ratio was less good (0.97) than in the earlier quarters, the sales margin of construction companies declined to 8.8% from 11.8% in Q2 and 5.2% in 2021 Q3. The averaged net financial result increased by 89% y/y. The analysis of the breakdown of the gross financial result showed that sales profit accounted for 95% of gross profit, 2% was contributed by the operating activity and over 2% by financial activity.

Changes in the values of the assets of major construction companies in 2022 Q3 and changes in the structure of assets compared to 2021 Q3 show that the decline in the output of the residential and non-residential construction industry seen in 2022 Q2 became steeper and caused adverse changes in assets. A much bigger increase in current assets excluding cash (27% up y/y) than in revenues (12% up y/y) was a consequence of a high stock of finished products (increase of 52% y/y) and a high inventory of materials (60% up y/y), which had existed since the beginning of 2022. The proportion of receivables to total assets (36% on average) had been among the highest on record for a year and the receivables collection period extended to 99 days. On the other hand, liquidity ratio remained at relatively high and advantageous levels.

The increase in assets in 2022 Q3 connected with the deteriorating quality of settlements of accounts with buyers and the increase in inventories while prices were on the rise, in spite of an increase in the share of equity in the financing of business (from 43% to 47% y/y), led to an increase in loan-related indebtedness (by 13% y/y) and in debt securities issued (by 58% y/y). In spite of the changes in the sources of financing, the structure of liabilities changed very little in 2022 Q3: the share of bank loans remained the same (9%), whereas the share of payables to subcontractors decreased (to 42% from 46% in 2021 Q3). The payables payment period stayed at 128 days. Increased demand for working capital (66% up) was satisfied by issuing more debt securities, which remained a fairly insignificant though rather stable source of financing (accounting for approx. 2% of total assets). The changes in the sources of financing improved the debt ratios of larger residential and non-residential construction companies.

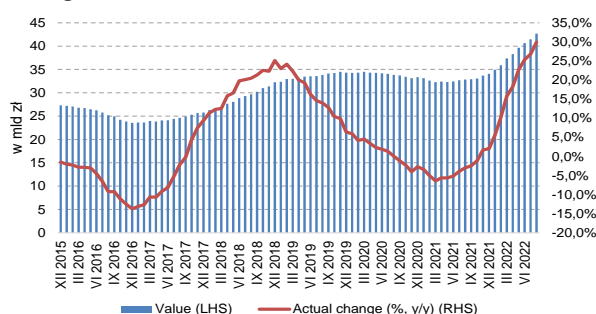
A comparison of the financial data of small companies for the first half of 2022 with the same period in 2021 shows negative consequences of the dynamic increase in business expenses. According to F01 reports available until June 2022, small firms' revenues grew by 12% while total expenses increased by 14%, as a consequence of which their net financial result was 27% lower. A higher growth rate of the principal cost components (third

³⁵ The calculations and the conclusions presented in this edition of the Information are primarily based on data stated in the F01 reports submitted to Statistics Poland by two groups of companies: small companies with 9–49 staff (data available on a semi-annual basis until 2022 H1) and bigger companies with more than 49 staff (data available on a quarterly basis until 2022 Q3) which perform construction works connected with the construction of residential and non-residential buildings (PKD 41.20).

party services 15% up, materials and energy consumed 28% up, wages 12% up) worsened the operating expense ratio (0.97 in 2022 H1 compared to 0.95 in 2021 H1). The companies achieved lower return rates than last year (5.0% ROS, 4.8% ROE and 2.3% ROA compared to 7.9%, 5.9% and 3.1%, respectively). When compared to bigger entities, small firms reported a similar return on sales and a better Return on Equity, in spite of the decline, which was the consequence of a much lower share of payables to contractors and a much higher share of equity (26% and 57%, respectively, in the first half of 2022). An increase in work in progress of 18% y/y (to 22% of total assets) suggests positive prospects for ensuring business continuity. As a result of an increase in the proportion of receivables from contractors by 2 p.p. y/y (to 20% of total assets in 2022 H1 from 18% in 2021 H1), the shortening of the collection period and a decline in the proportion of cash (to 12% of total assets in 2022 H1 from 14% in 2021 H1), the liquidity ratios worsened a little but nevertheless remained good.

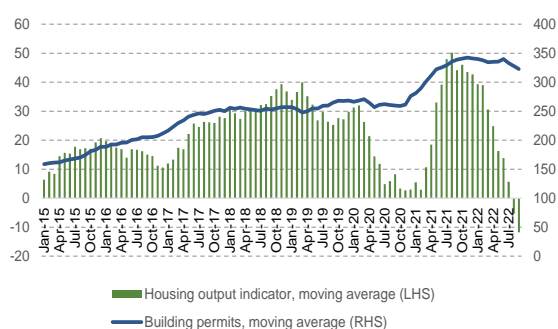
Both bigger and smaller residential and non-residential construction companies saw a significant increase in return on assets, which is proof that they managed their assets reasonably. The debt ratios of small residential and non-residential construction companies remained safe, though worse than in the first half of 2021.

Figure 121 Construction and assembly output – construction of buildings (PKD 41), 12-month moving sum



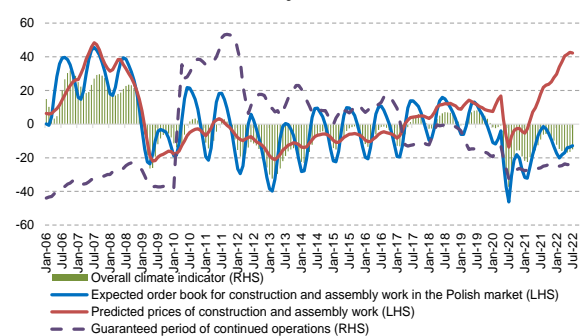
Source: NBP, based on Statistics Poland

Figure 122 Total housing output per month, 12-month moving average



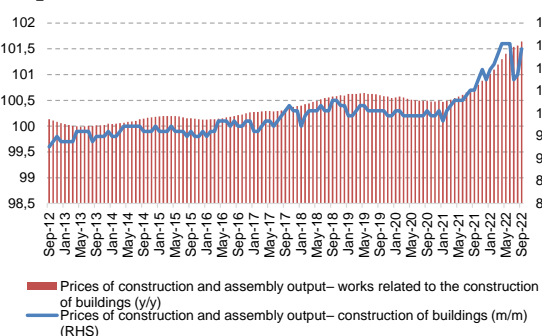
Source: NBP, based on Statistics Poland

Figure 123 Selected indicators of business climate in the construction industry



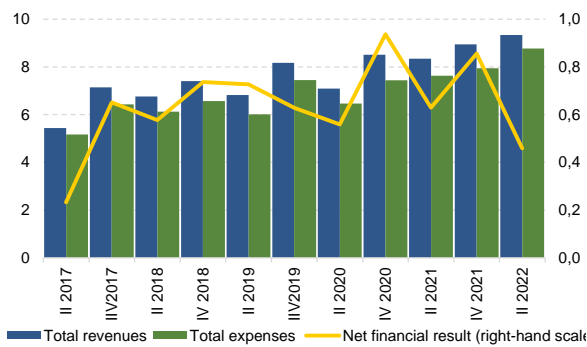
Source: NBP, based on Statistics Poland

Figure 124 Prices of construction and assembly output



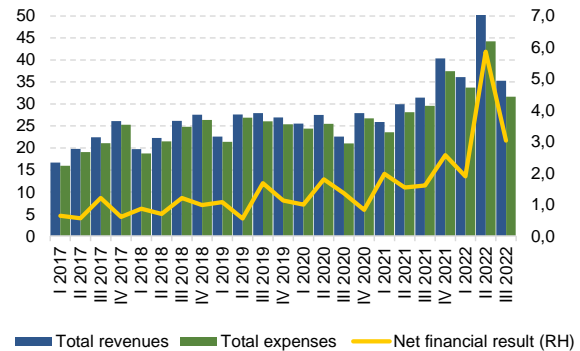
Source: NBP, based on Statistics Poland

Figure 125 Performance indicators of construction companies with 9–49 staff



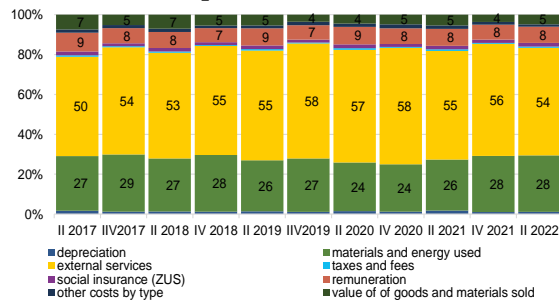
Source: NBP, based on Statistics Poland

Figure 126 Performance indicators of construction companies with more than 49 staff



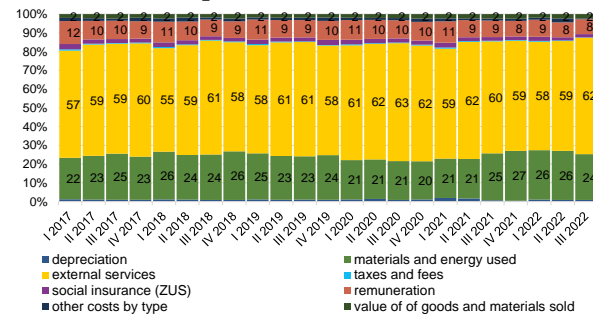
Source: NBP, based on Statistics Poland

Figure 127 Structure of operating expenses of construction companies with 9–49 staff



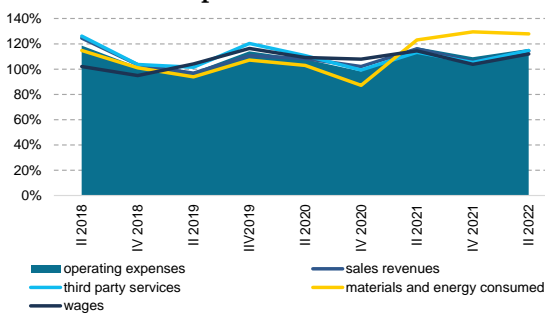
Source: NBP, based on Statistics Poland

Figure 128 Structure of operating expenses of construction companies with more than 49 staff



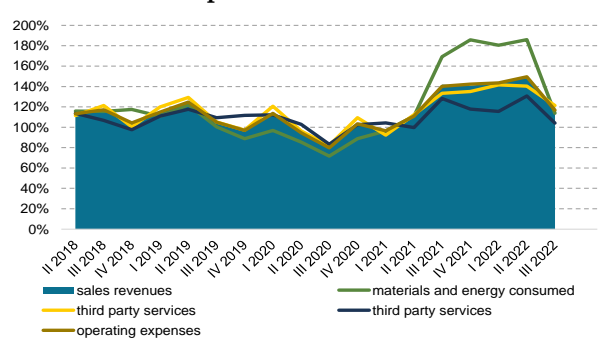
Source: NBP, based on Statistics Poland

Figure 129 Y/y change in the main components of operating expenses and sales revenues of construction companies with 9–49 staff



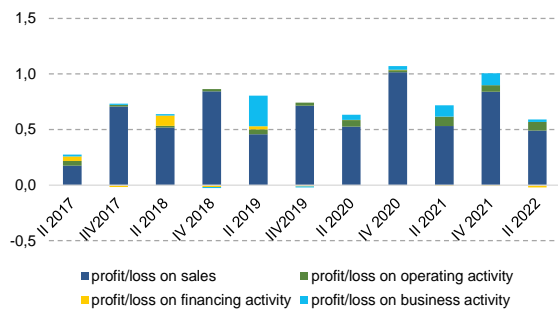
Source: NBP, based on Statistics Poland

Figure 130 Y/y change in the main components of operating expenses and sales revenues of construction companies with more than 49 staff



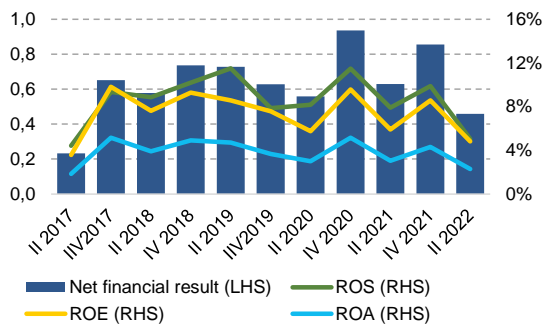
Source: NBP, based on Statistics Poland

Figure 131 Breakdown of the gross financial result of construction companies with 9–49 staff



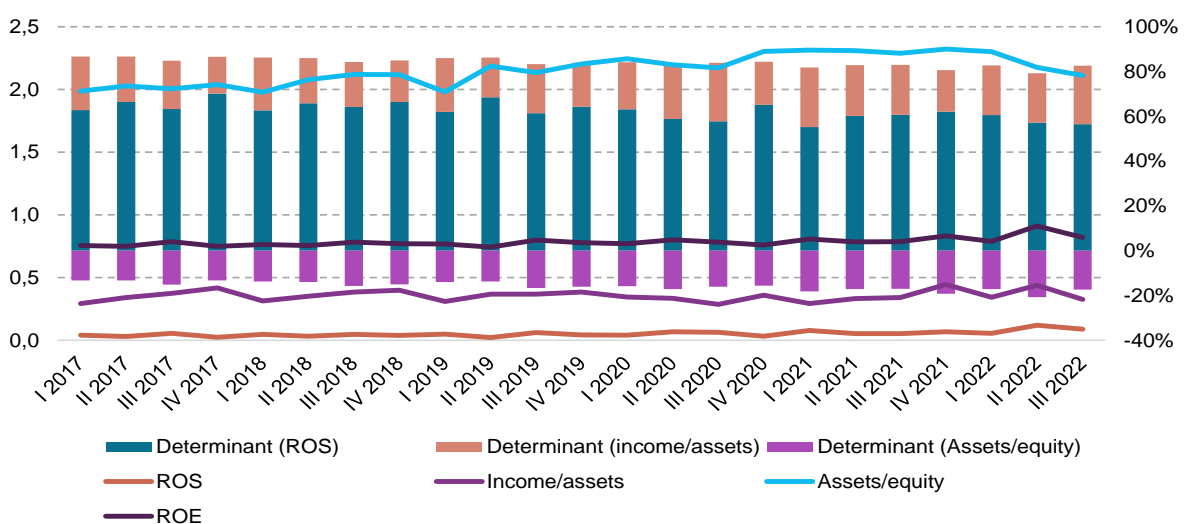
Source: NBP, based on Statistics Poland

Figure 133 Profitability of construction companies with 9 – 49 staff



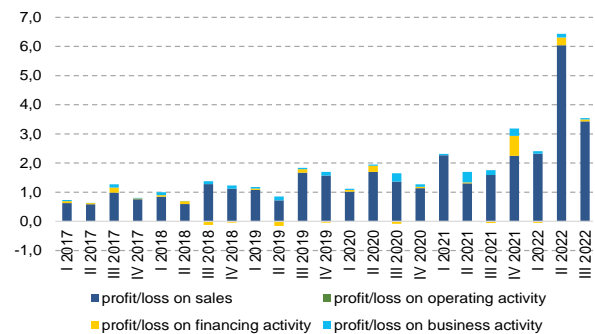
Source: NBP, based on Statistics Poland

Figure 135 Return on Equity and its determinants (Du Pont method) of construction companies with more than 49 staff



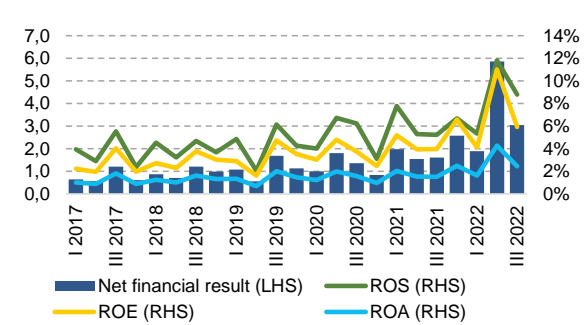
Source: NBP, based on Statistics Poland

Figure 132 Breakdown of the gross financial result of construction companies with more than 49 staff



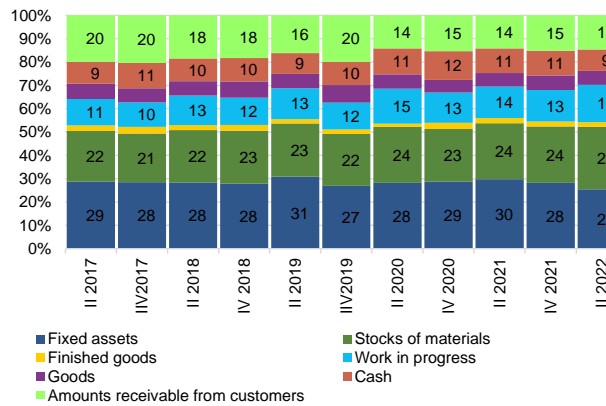
Source: NBP, based on Statistics Poland

Figure 134 Profitability of construction companies with more than 49 staff



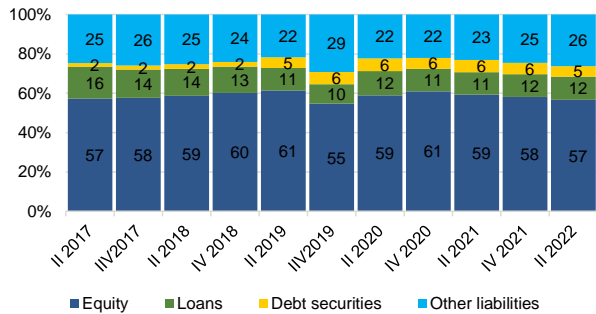
Source: NBP, based on Statistics Poland

Figure 136 Structure of assets of construction companies with 9–49 staff



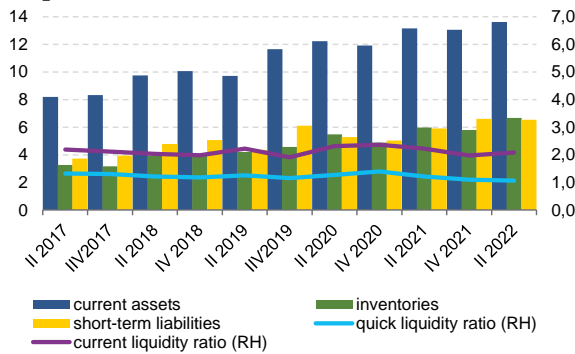
Source: NBP, based on Statistics Poland

Figure 138 Structure of liabilities of construction companies with 9–49 staff



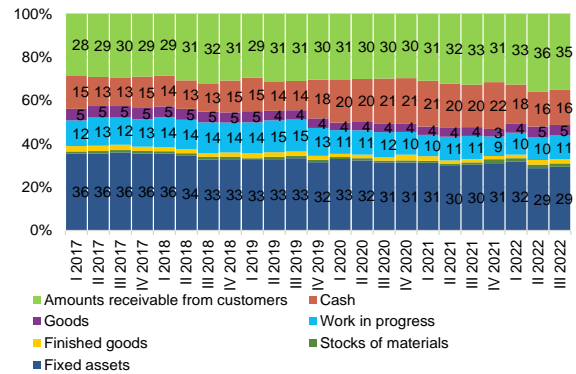
Source: NBP, based on Statistics Poland

Figure 140 Liquidity ratios of construction companies with 9–49 staff



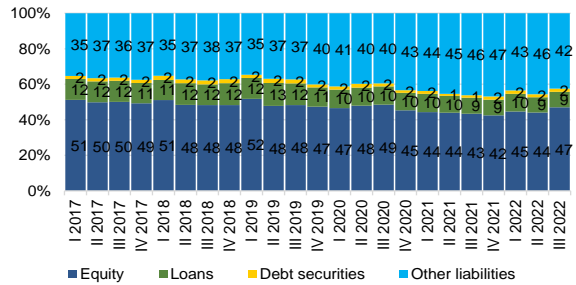
Source: NBP, based on Statistics Poland

Figure 137 Structure of assets of construction companies with more than 49 staff



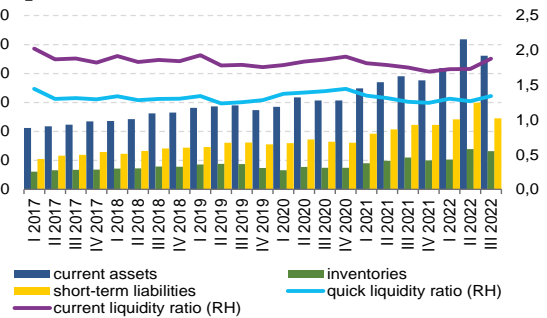
Source: NBP, based on Statistics Poland

Figure 139 Structure of liabilities of construction companies with more than 49 staff



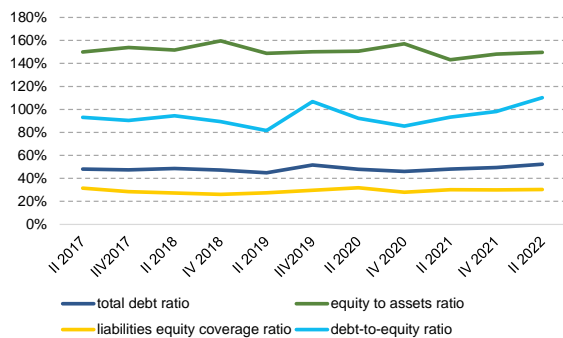
Source: NBP, based on Statistics Poland

Figure 141 Liquidity ratios of construction companies with more than 49 staff



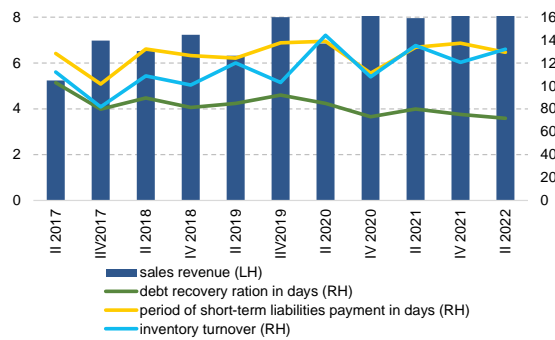
Source: NBP, based on Statistics Poland

Figure 142 Debt and equity ratios of construction companies with 9–49 staff



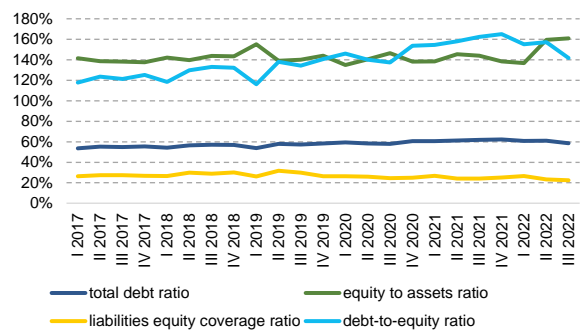
Source: NBP, based on Statistics Poland

Figure 144 Inventory turnover, receivables collection and payables payment periods of construction companies with 9–49 staff



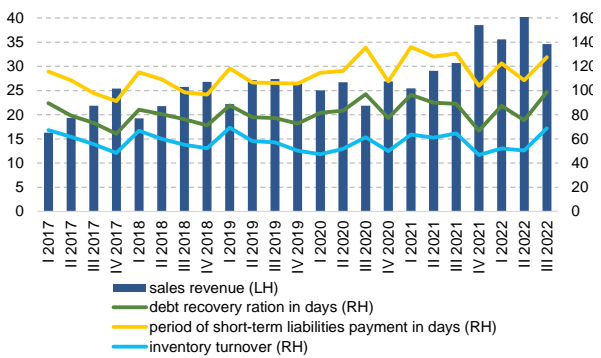
Source: NBP, based on Statistics Poland

Figure 143 Debt and equity ratios of construction companies with more than 49 staff



Source: NBP, based on Statistics Poland

Figure 145 Inventory turnover, receivables collection and payables payment periods of construction companies with more than 49 staff



Source: NBP, based on Statistics Poland

Analysis of the financial standing of wholesalers of building materials³⁶

The continued upward trend of construction costs and a significant increase in the costs of building materials are some of the key factors determining the profitability of projects and the liquidity of businesses. According to data provided by Grupa Polskie Składy Budowlane, the prices of materials increased by the average of 27.0% from January to September 2022 compared with the same period in 2021 in all the categories of goods under analysis, which means slightly slower growth during the first three quarters of 2022 (a 30% increase in the period from January to June 2022 and 29% in January-March 2022). The increase in prices in the period from January to September 2022 in comparison to the same period of 2021 concerned all 20 categories and was as follows: thermal insulation (+60%), OSB (+43%), drywall partitioning (+41%), walls, chimneys (+39%), roofs, gutters (+39%), waterproofing membranes (+33%), surroundings of the house (+33%), garden and hobby (+27%), installations, heating (+26%), finishing (+24%), tiles, bathrooms, kitchens (+23%), cement, lime (+22%), automotive (+21%), joinery (+21%), tools (+20%), construction chemicals (+19%), lighting, electricity (+18%), fittings, household appliances (+17%), decorations (+16%), paints and varnishes (+15%). The year before, i.e. from January to September 2021, the increase in the prices of materials was considerably smaller (9.8%).

The analysis of data in the F01 reports of bigger wholesalers of constructions materials (with more than 49 staff) submitted by September 2022 revealed that their overall financial standing had weakened slightly. Such companies had seen the profitability ratios deteriorate for four quarters, whereas the same ratios were better and more stable in the group of smaller entities (with 9–49 staff). Financial liquidity remained safe in both groups, with a better reading in the group of smaller companies. A better overall standing of smaller than bigger companies transpired.

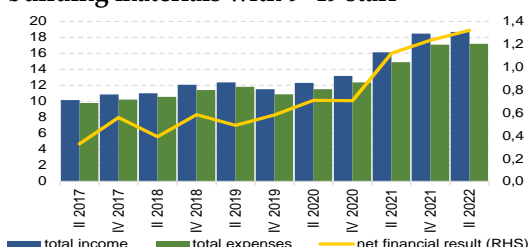
In 2022 Q3, bigger wholesalers saw a decline in average total income and it decreased more than total expenses in comparison to the preceding quarter and to the same period in 2021. As a result, the net financial result fell considerably when compared to 2022 Q2 (45.4% down), and to 2021 Q3 (48.2% down). The fact that there were more companies which reported a net profit this quarter than in the previous one (92.3% in 2022 Q3 vs. 90.8% in 2022 Q2) and a drop in the reported net financial results mean that most wholesalers achieved less satisfying margins on the building materials sold than in the preceding period. A slight improvement in the financial liquidity ratios was a consequence of a dip in short-term liabilities (to 36.5% from 37.4% in 2022 Q2). Higher inventories of goods during the three quarters of 2022 than in earlier periods were a consequence of a slowdown in construction, among other things. At the same time, the wholesalers amassed building materials to safeguard their cash against inflation in the environment of soaring prices. Consequently, the inventory turnover cycle became longer, which however did not affect financial liquidity. The receivables collection and payables payment periods got a little worse. However, the levels of receivables and payables were similar to those in earlier periods. Equity remained a stable and predominant source of financing and its proportion to total liabilities at the end of September 2022 exceeded 50%. Total debt, assets to equity and debt to equity ratios

³⁶ The calculations and the conclusions presented in this edition of Information are primarily based on data stated in the F01 reports submitted to Statistics Poland by two groups of companies: small companies with 9-49 staff (data available on a semi-annual basis until the end of 2022 H1) and bigger companies with more than 49 staff (data available on a quarterly basis until 2022 Q3) which pursue the activity of agents involved in the sale of timber and building materials (PKD 4613) and wholesale of wood, construction materials and sanitary equipment (PKD 4673). Accounting records have been supplemented with information about changes in the prices of building materials („Zmiana cen materiałów dla budownictwa oraz do domu and ogrodu – analiza PSB” [Changes in the prices of materials for construction and for home and garden], October, July and April 2022, and October 2021).

were at a good and safe level. The analysis of external sources of funding revealed a stable proportion of bank loans (13% of total liabilities for more than 2 years).

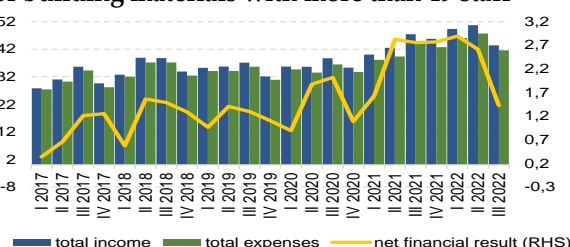
Data available as at June 2022 showed that small wholesalers (with 9–49 staff) had stable return ratios (7.2% ROS, 16.1% ROE and 8.3% ROA in 2022 H1 compared to 7.1% ROS, 17.3% ROE and 7.7% ROA in 2021 H1). The better financial standing of small wholesalers is signalled by a slightly stronger operating expense ratio in the past three years (0.92 in 2022 H1 and 0.93 on average in 2021) than in the group of bigger companies (0.97 in 2022 Q3 and 0.94 in the whole of 2021). Small wholesalers reported a similar growth in total income and total expenses in the first half of 2022 compared to the same period of 2021 (12.9% and 12.5% up, respectively), as a result of which they achieved a 15.0% higher net financial result. There was an increase in the proportion of profitable small companies to 87.3% of all entities in the first half of 2022 compared to 86.5% in the first half of 2021. However, there are more profitable wholesalers in the group of bigger firms.

Figure 146 Performance indicators of wholesalers of building materials with 9–49 staff



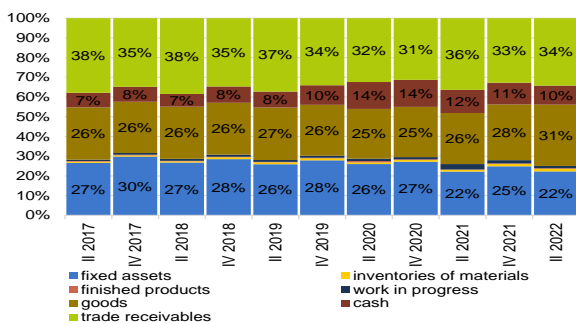
Source: NBP, based on Statistics Poland (F01)

Figure 147 Performance indicators of wholesalers of building materials with more than 49 staff



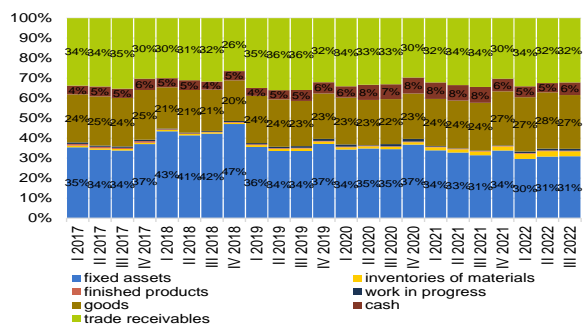
Source: NBP, based on Statistics Poland (F01)

Figure 148 Structure of assets of wholesalers of building materials with –49 staff



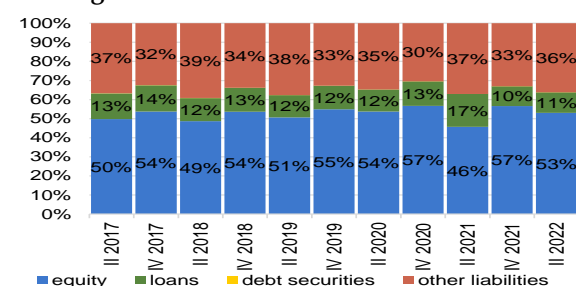
Source: NBP, based on Statistics Poland (F01)

Figure 149 Structure of assets of wholesalers of building materials with more than 49 staff



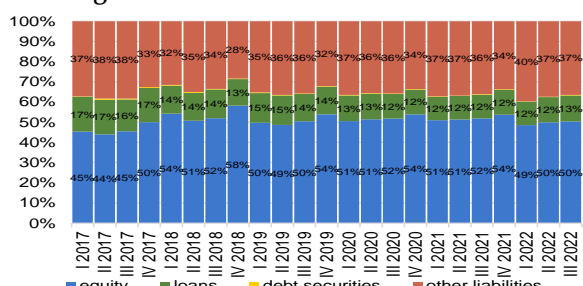
Source: NBP, based on Statistics Poland (F01)

Figure 150 Structure of liabilities of wholesalers of building materials with 9–49 staff



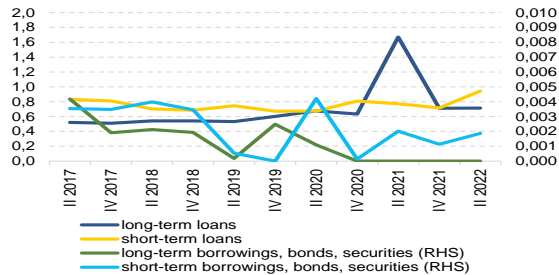
Source: NBP, based on Statistics Poland (F01)

Figure 151 Structure of liabilities of wholesalers of building materials with more than 49 staff



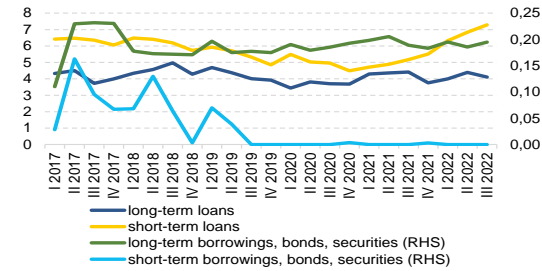
Source: NBP, based on Statistics Poland (F01)

Figure 152 Sources of financing of wholesalers of building materials with 9–49 staff



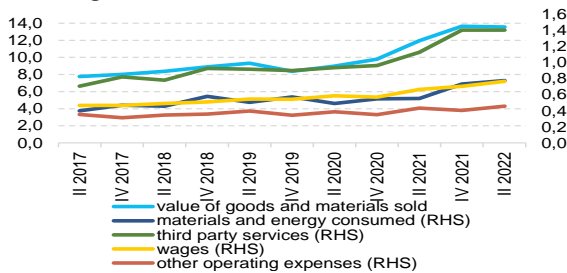
Source: NBP, based on Statistics Poland (F01)

Figure 153 Sources of financing of wholesalers of building materials with more than 49 staff



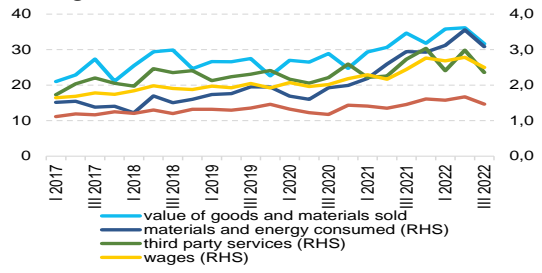
Source: NBP, based on Statistics Poland (F01)

Figure 154 Operating expenses of wholesalers of building materials with 9–49 staff



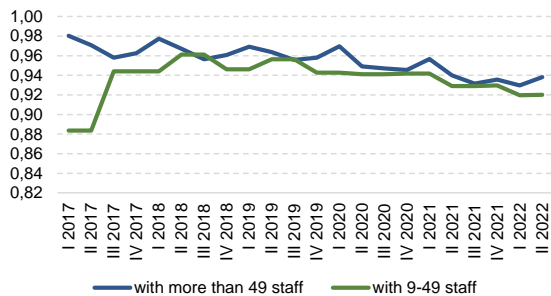
Source: NBP, based on Statistics Poland (F01)

Figure 155 Operating expenses of wholesalers of building materials with more than 49 staff



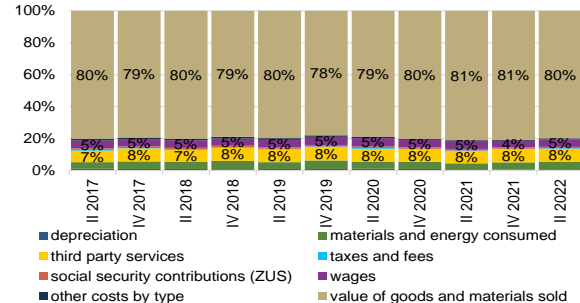
Source: NBP, based on Statistics Poland (F01)

Figure 156 Operating expense ratio by type of wholesalers of building materials



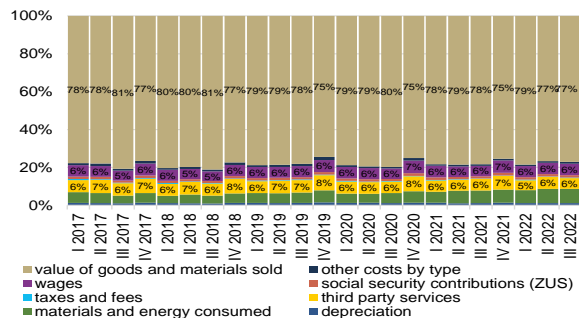
Source: NBP, based on Statistics Poland (F01)

Figure 157 Structure of operating expenses of wholesalers of building materials with 9–49 staff



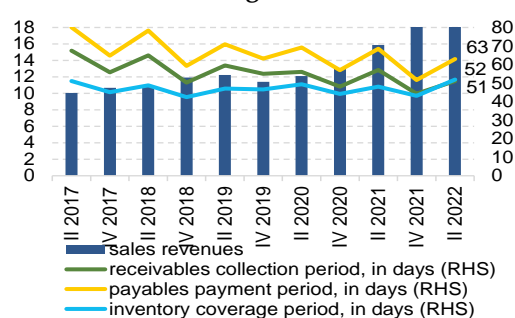
Source: NBP, based on Statistics Poland (F01)

Figure 158 Structure of operating expenses of wholesalers of building materials with more than 49 staff



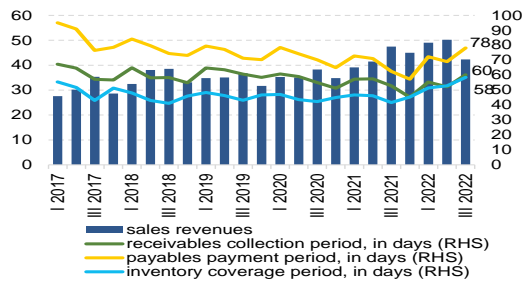
Source: NBP, based on Statistics Poland (F01)

Figure 159 Inventory turnover, receivables collection and payables payment periods of wholesalers of building materials with 9–49 staff



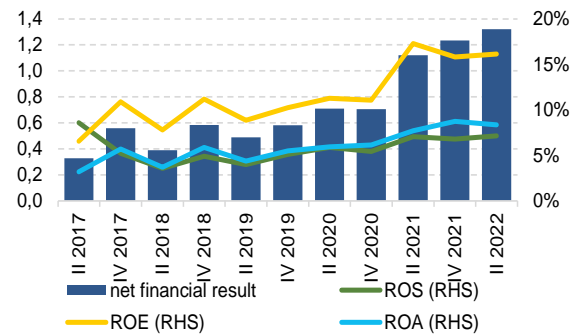
Source: NBP, based on Statistics Poland (F01)

Figure 160 Inventory turnover, receivables collection and payables payment periods of wholesalers of building materials with more than 49 staff



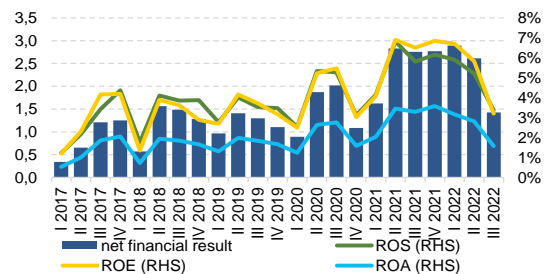
Source: NBP, based on Statistics Poland (F01)

Figure 161 Profitability of wholesalers of building materials with 9–49 staff



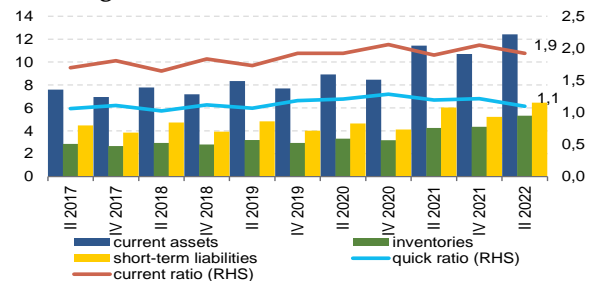
Source: NBP, based on Statistics Poland (F01)

Figure 162 Profitability of wholesalers of building materials with more than 49 staff



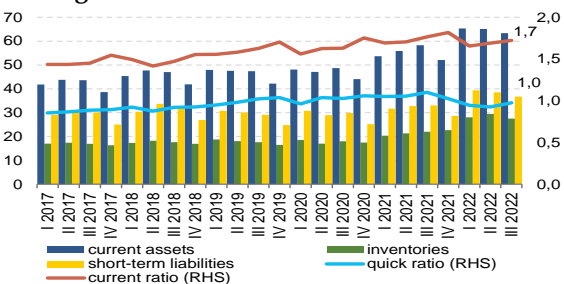
Source: NBP, based on Statistics Poland (F01)

Figure 163 Liquidity ratios of wholesalers of building materials with 9–49 staff



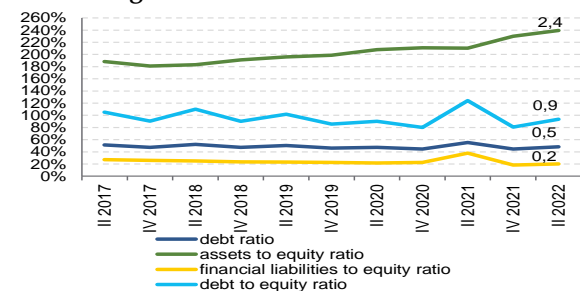
Source: NBP, based on Statistics Poland (F01)

Figure 164 Liquidity ratios of wholesalers of building materials with more than 49 staff



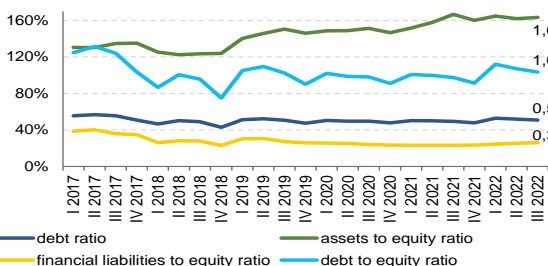
Source: NBP, based on Statistics Poland (F01)

Figure 165 Debt and equity ratios of wholesalers of building materials with 9–49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 166 Debt and equity ratios of wholesalers of building materials with more than 49 staff



Source: NBP, based on Statistics Poland (F01)

Analysis of the financial standing of producers of building materials³⁷

Several factors determined the financial standing and profitability of producers of building materials, as was the case of the other groups of companies covered by the analysis. They included high commodity prices, reduced investment outlays and activity in residential and non-residential construction as well as a general economic uncertainty. In 2022 Q3, bigger producers of building materials saw their returns on sales weaken as a result of a faster growth in expenses than in revenues. They performed well as regards receivables collection and payment of payables. The financial standing of smaller producers was weaker, they achieved lower returns on sales and had occasional difficulties in collecting receivables and paying their liabilities.

At the end of 2022 Q3, bigger producers reported 18% higher total income and a 21% increase in total expenses on an annual basis but compared with the previous quarter, total income and total expenses were lower (by 12% and 10%, respectively). The growing production costs brought down the average net financial result in the group of bigger producers (by 29% compared to 2022 Q2 and 5% compared to 2021 Q3). Consequently, return on sales shrank (9.2% in 2022 Q3 compared to 11.4% in 2022 Q2 and 11.2% in 2021 Q3) and the operating expense ratio deteriorated a little (to 0.90 in 2022 Q3 vs. 0.88 in 2022 Q2 and 0.88 in 2021 Q3). As demand for building materials declined, the amounts of all the components of operating expenses decreased compared to the previous quarter. However, in the longer time perspective, costs of materials and energy consumed still made up most of the operating expenses (58% in 2022 Q3 compared to 54% in 2021 Q3 and 51% in 2020 Q3).

For years, trade receivables had been low in the group of big producers (17% of total assets in 2022 Q3 compared to 16%-18% on average in the analysed quarters since 2017), which means a short receivables collection period (47 days in 2022 Q3). The share of payables to suppliers of materials and subcontractors had been growing for three quarters (27%, 27%, 26%, 23% of total liabilities in 2022 Q3, Q2 and Q1, and in 2021 Q4, as appropriate), but the average period of payment of trade payables was relatively short (72 days in 2022 Q3). Inventories of materials and finished products had been steadily growing since mid-2021 (to 10% and 6% in 2022 Q3 compared to 8% and 4% in 2021 Q2).

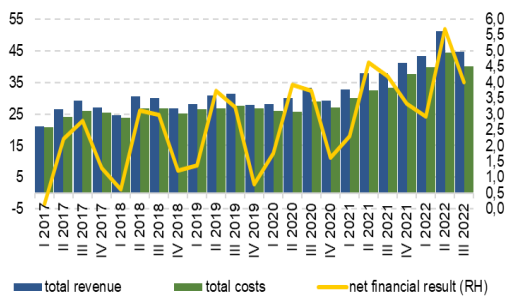
Equity remained the primary source of financing, in spite of a slight decrease in its proportion to total liabilities (61% at the end of 2022 Q3 vs. 64% in 2021 Q3). The proportion of bank loans was stable (approximating 12% of total liabilities since the beginning of 2021, compared to 14% in 2020 and 15% in 2019). As the financial result worsened, the proportion of equity declined a little and external debt increased, return on equity was lower than in the preceding quarter (4.9% in 2022 Q3 compared to 6.9% in 2022 Q2 and 5.5% in 2021 Q3) and so was return on assets (2.9 in 2022 Q3 vs. 4.0% in 2022 Q2 and 3.4% in 2021 Q3). Financial liquidity remained stable and safe.

According to the financial data stated in the F01 financial reports submitted by June 2022, the group of small producers increased turnover. In spite of the smaller number of new construction projects, work on the projects then in progress continued without any disruptions, which still generated high demand for building materials. Since the increase in revenues and in expenses was similar, the companies reported 28% higher financial results in the first half of 2022 than in the first half of 2021. Small producers reported a slight improvement in return on sales (7.1% in 2022 H1 and 6.7% in 2021 H1), although it was still less satisfying than in the bigger companies. Their operating expense ratio was also worse (0.93 in 2022 H1 and 0.94 in 2021 H1). Sixty-six percent of small

³⁷ The calculations and the conclusions presented in this edition of Information are primarily based on data stated in the F01 reports submitted to Statistics Poland by two groups of companies: small companies with 9-49 staff (data available on a semi-annual basis until the end of 2022 H1) and bigger companies with over 49 staff (data available on a quarterly basis until 2022 Q3) which manufacture building materials (PKD 1623, 2223, 2320, 2332, 2351, 2352, 2361, 2362, 2363, 2364).

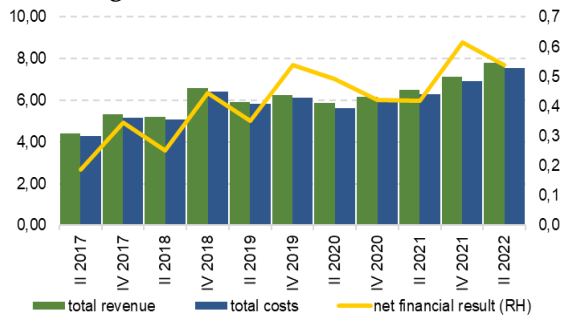
producers of building materials were profitable at the end of 2022 H1. Such companies coped with a higher balance of trade receivables (27% of total assets), a slightly longer receivable collection period (62 days on average) and a longer payables payment period (77 days on average). As was the case of bigger companies, the group of smaller producers saw an increase in the share of trade payables to suppliers and subcontractors (to 30% at the end of June 2022). The share of bank loans decreased (to 11% at the end of June 2022 compared to 14% at the end of June 2021). Small producers reported better rates of return on equity (9.7%) and return on assets (5.4%). In the first half of 2022, their financial liquidity weakened a little, though it still remained at a safe level ensuring that they were capable of paying their current liabilities.

Figure 167 Performance indicators of producers of building materials with more than 49 staff



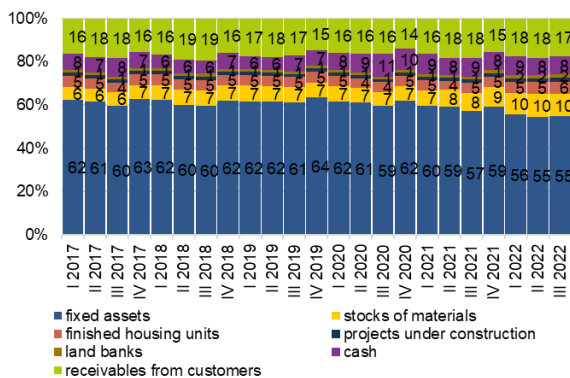
Source: NBP, based on Statistics Poland (F01)

Figure 168 Performance indicators of producers of building materials with 9–49 staff



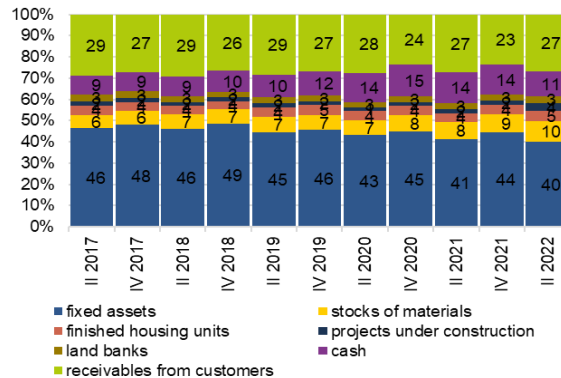
Source: NBP, based on Statistics Poland (F01)

Figure 169 Structure of assets of producers of building materials with more than 49 staff



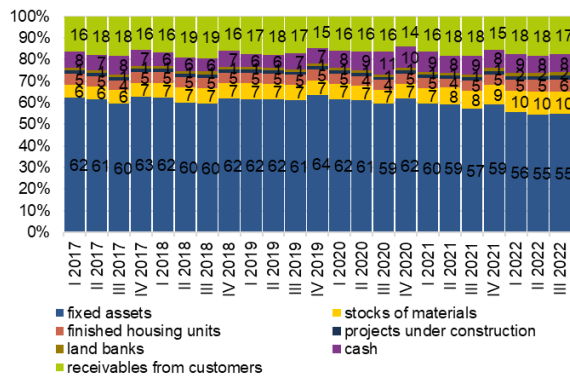
Source: NBP, based on Statistics Poland (F01)

Figure 170 Structure of assets of producers of building materials with 9–49 staff



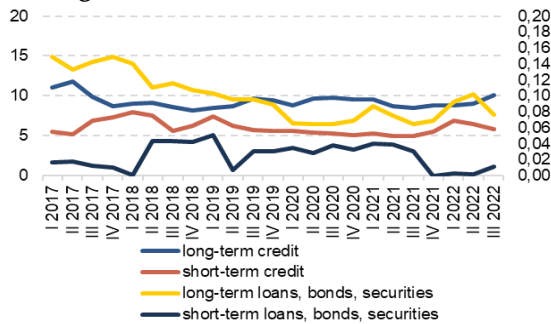
Source: NBP, based on Statistics Poland (F01)

Figure 171 Structure of liabilities of producers of building materials with more than 49 staff



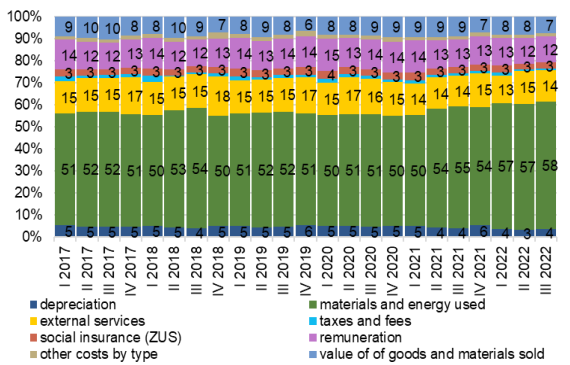
Source: NBP, based on Statistics Poland (F01)

Figure 173 Operating expenses of producers of building materials with more than 49 staff



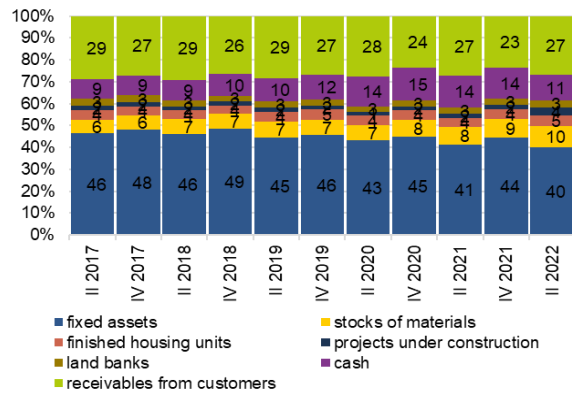
Source: NBP, based on Statistics Poland (F01)

Figure 175 Structure of operating expenses of producers of building materials with more than 49 staff



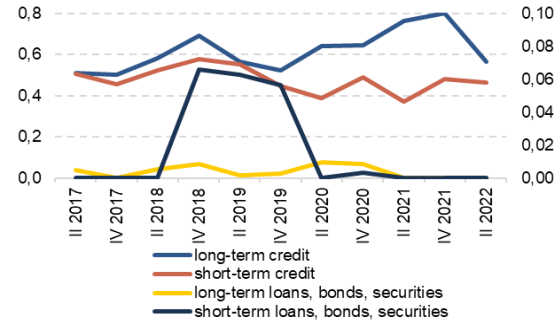
Source: NBP, based on Statistics Poland (F01)

Figure 172 Structure of liabilities of producers of building materials with 9–49 staff



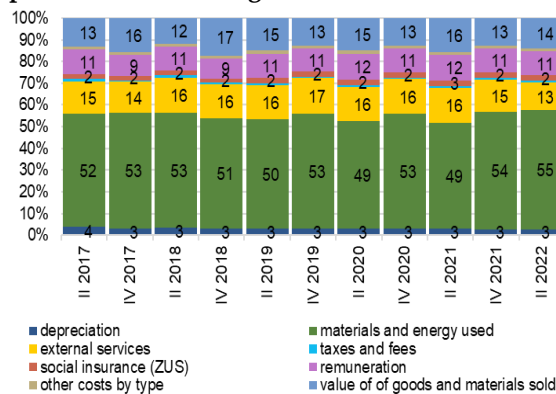
Source: NBP, based on Statistics Poland (F01)

Figure 174 Operating expenses of producers of building materials with 9 - 49 staff



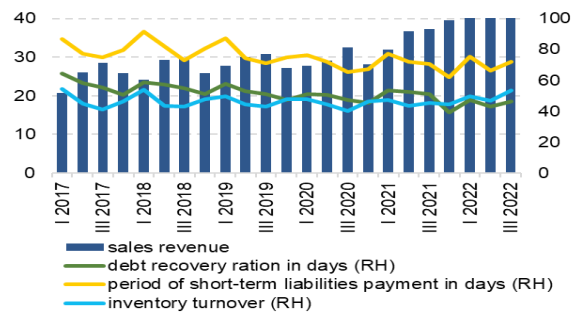
Source: NBP, based on Statistics Poland (F01)

Figure 176 Structure of operating expenses of producers of building materials with 9–49 staff



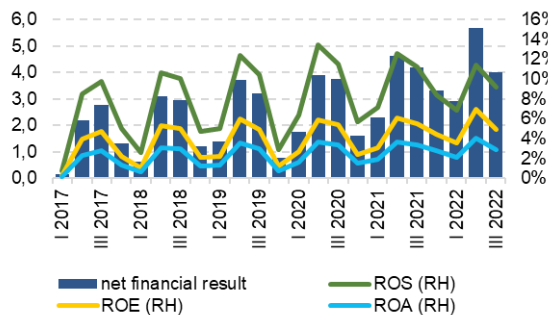
Source: NBP, based on Statistics Poland (F01)

Figure 177 Inventory turnover, receivables collection and payables payment periods of producers of building materials with more than 49 staff



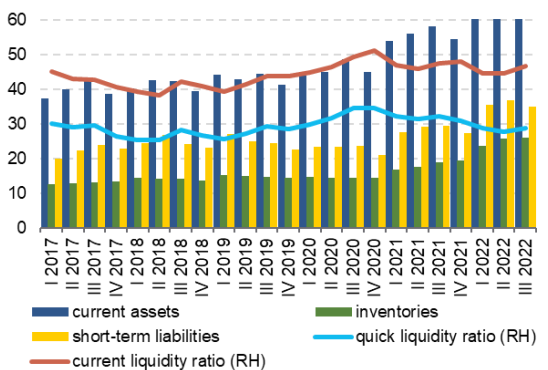
Source: NBP, based on Statistics Poland (F01)

Figure 179 Profitability of producers of building materials with more than 49 staff



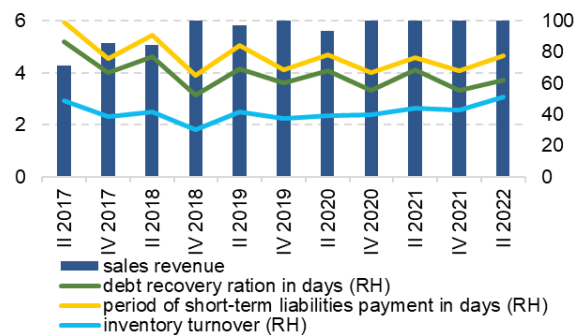
Source: NBP, based on Statistics Poland (F01)

Figure 181 Liquidity ratios of producers of building materials with more than 49 staff



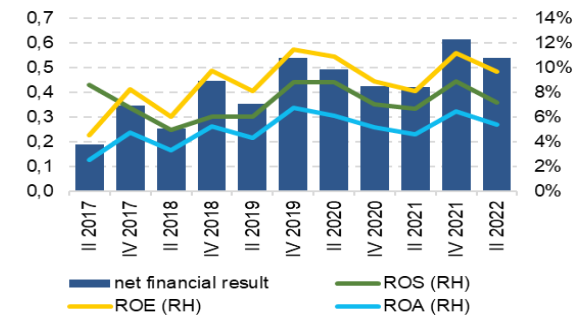
Source: NBP, based on Statistics Poland (F01)

Figure 178 Inventory turnover, receivables collection and payables payment periods of producers of building materials with 9–49 staff



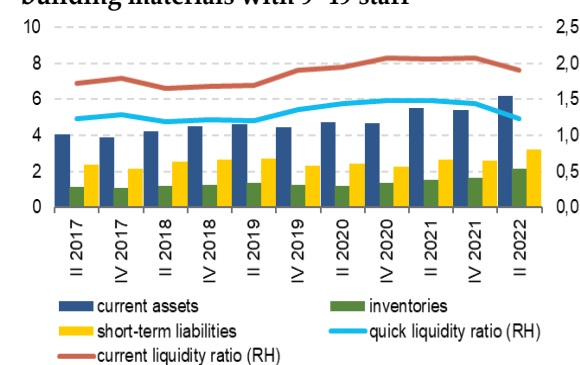
Source: NBP, based on Statistics Poland (F01)

Figure 180 Profitability of producers of building materials with 9–49 staff



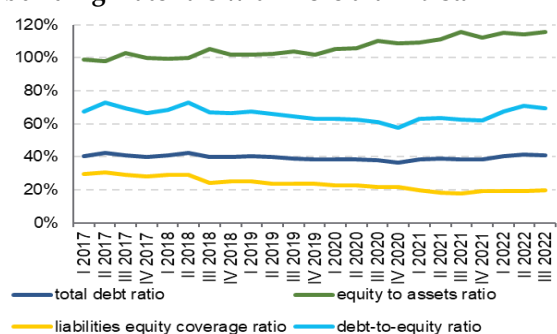
Source: NBP, based on Statistics Poland (F01)

Figure 182 Liquidity ratios of producers of building materials with 9–49 staff



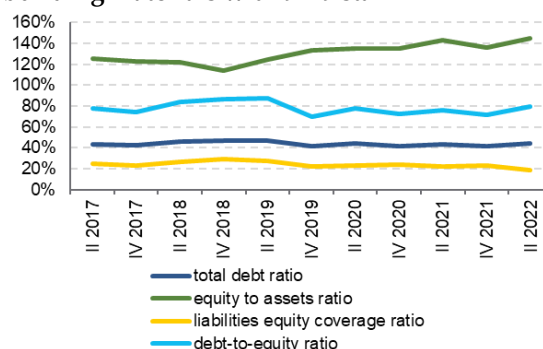
Source: NBP, based on Statistics Poland (F01)

Figure 183 Debt and equity ratios of producers of building materials with more than 49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 184 Debt and equity ratios of producers of building materials with 9–49 staff



Source: NBP, based on Statistics Poland (F01)

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