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Information on home prices and the situation in the housing and commercial real estate market in Poland in 2022 Q2.

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The analysis of the situation in the real estate market in Poland in 2022 Q2¹ leads to the following conclusions:

- The number of housing construction contracts sold in the largest primary markets in 2022 Q2 was low and amounted to c. 9.3 thousand, compared to the quarterly average of 14.5 thousand in 2021. A shift in the demand towards cheaper dwellings in smaller towns within conurbations continued. There was a significant drop in the number of new housing loan agreements resulting from growing interest rates and tightening of banks' lending policies. At the same time, 54.7 thousand new dwellings were completed, which was the highest quarterly number since 2005. However, this was a result of developers' activity in the previous years. Home construction costs, such as costs of material, labour, lease of equipment as well as costs of construction sites increased significantly. The average transaction prices per one square meter of housing rose both in the primary and in the secondary markets, as did the rental transaction rates.
- The second quarter of 2021 saw a further increase in the nominal prices of dwellings in most of the cities under analysis and in the growth rates of prices (see Table 1). Offer prices (primary market, offer - PMO) and transaction prices (primary market, transactions - PMT) in the primary market went up, especially in Poznań, Kraków and Gdynia. To a certain extent, the rise stemmed from a change in the structure of dwellings sold (a higher proportion of transactions in better locations rather than on the outskirts). The secondary market also observed an increase in offer prices (secondary market, offers - SMO) and transaction prices (secondary market, transactions SMT) in all the groups of cities, while the increases in real prices were much smaller (see Figure 7). Transaction prices in the secondary market rose particularly in Łódź, Wrocław and Gdynia. Demand grew for older dwellings, though smaller and in better locations. Hedonic index-adjusted prices rose in all the groups of cities, which means that similar dwellings were sold at higher prices than in the previous quarter.

Table 1 Price growth of a square metre of housing in the analysed cities in 2022 Q2.

	q/q				y/y			
	RPO	RPT	RWO	RWT	RPO	RPT	RWO	RWT
Gdańsk	2.4%	-2.9%	0.7%	4.5%	19.8%	6.3%	11.8%	15.3%
Gdynia	8.9%	5.8%	0.5%	5.2%	17.0%	26.6%	15.6%	14.1%
Kraków	2.1%	6.3%	1.4%	1.5%	12.3%	18.0%	17.4%	11.8%
Łódź	4.1%	2.7%	-0.6%	7.0%	14.5%	18.8%	16.0%	14.7%
Poznań	1.2%	8.3%	1.2%	3.8%	20.7%	20.1%	17.0%	7.6%
Wrocław	4.2%	3.1%	3.8%	5.3%	14.9%	20.5%	16.4%	13.8%
Waraw	3.0%	-0.1%	5.2%	3.0%	14.1%	15.6%	12.8%	5.2%
6 cities	3.5%	4.1%	1.3%	4.1%	15.5%	18.3%	16.6%	12.8%
10 cities	4.4%	3.4%	2.7%	3.6%	17.3%	19.1%	16.6%	16.8%

Source: NBP

Note to Table 1: the growth rates resulting from the average transaction price 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.

¹ The analysis carried out in this issue of the *Information* is based on data available as at the end of 2022 Q2. Data collected in the NBP database during the listings include offers valid as at 1 June 2022 and transactions concluded in the period from 1 March to 31 May 2022. Due to delays in availability of certain data, some charts include information until 2022 Q1. 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. Historic data are subject to revision. In the housing price survey (BaRN database) concerning 2022 Q2, c. 120.1 thousand records were collected, of which c. 28.7% concerned transactions and 65.1% concerned offers. Altogether, approx. 4.4 million records have been collected in the BaRN database, of which 25.3% concern transactions and 74.8% concern offers.

- **The average transaction rental rates per 1 sq. m of housing** (excluding service charges and utility fees) **increased in quarter-on-quarter terms in Warsaw as well as in the 6 and the 10 cities** (see: Figure 15). Demand for rental dwellings² had been growing since 2021 H2, boosted in February 2022 by a strong influx of refugees from war-stricken Ukraine. The number of dwellings available to rent had been steadily decreasing. Investors continued to seek safe investment in real estate, while attractive rates of return were a secondary consideration. Investment funds, including foreign funds have shown increased interest in the purchase of rental dwellings in the recent years³. The domestic Housing for Rent Fund operated by The Bank Gospodarstwa Krajowego (BGK), has traditionally played a major role in this market.
- **The increase in the level of rent rates in the long-term rental (on average in the 7 big cities) resulted in a slightly higher level of the rental profitability indicator, but only in the case of dwellings bought for cash** (see: Figure 25)⁴. Home purchase (disregarding the transaction costs) was still more profitable than a term deposit with a bank, given the prevailing deposit interest rates. The profitability of an investment in a dwelling to rent compared with the yields on 10-year Treasury bonds became negative due to growing interest rates on Treasury securities.
- **The estimated residential mortgage loan affordability index in the 7 big cities** (based on the average wages in the enterprise sector) **decreased slightly in quarter-on-quarter terms** since the prices of dwellings were growing faster than wages (see: Figure 16). The estimated maximum available residential mortgage loan⁵ also decreased, as did the estimated affordability of loan-financed housing⁶. What contributed to the decrease in the two availability indicators are growing interest rates and home prices.
- **Quarterly sales of housing construction contracts in the six largest primary markets in Poland**⁷ (see: Figure 57) were about 12% lower than in the previous quarter and amounted to ca. **9.3 thousand dwellings at the end of June 2022**. At the same time, **approximately 19.2 thousand home construction contracts were put up for sale**⁸, which was about 42% more q/q. **The supply of unsold home construction contracts in the 7 biggest markets increased** by ca. 10.5 thousand dwellings compared with the previous quarter, **to 50.8 thousand at the end of the period**. The number of contracts for “turnkey” dwellings offered in the 6 markets decreased slightly on the previous quarter to about 2.7 thousand. According to data supplied by Statistics Poland, **at the end of June 2022, the number of**

² Based on the outcome of NBP’s study “The Secondary Housing 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 Q2 2022”.

⁵ The maximum value of residential loan available in a particular market is a measure expressed in PLN thousand, taking into account bank’s lending requirements and 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 criteria and the terms and criteria of the loan.

⁶ Affordability of loan-financed housing – a measure specifying how many square metres of housing may be purchased with a residential mortgage loan, taking into account 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 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 (former REAS) data.

⁸ According to information from the market, such investment projects were placed on the market mainly in late June so that the sale could be closed according to the rules effective until July 1st, meaning without the developer having to satisfy the conditions of the amended Developer Act requiring developers, among other things, 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.

dwelling under construction in single-family houses and blocks of flats in Poland was at an all-time high of 881.5 thousand.

- **The time to sell a home construction contract in the primary market in the 6 biggest markets, calculated on the basis of sales figures in the previous quarter increased to 3.5 quarters from 2.7 quarters in 2022 Q1** (see: Figure 64).
- **In 2022 Q2, the value of new residential mortgage loans disbursed in Poland was significantly lower than in the same period of 2021.** The value of new agreements for PLN-denominated residential mortgage loans granted to households^{9, 10} (excluding renegotiated agreements), according to NBP data¹¹, amounted to PLN 15.6bn, i.e. it was by about PLN 2bn (-11%) lower than in the previous quarter and by about PLN 6.6bn (-30%) lower than in 2021 Q2. NBP estimates that in 2022 Q2, c. 52% of dwellings in the primary market were purchased with buyers' own funds (see: Table 2). The results of the NBP survey on the situation in the credit market in 2022 Q2¹² indicate that most banks had once again tightened their criteria for granting residential mortgage loans, claiming a forecast downturn in the economy and the rising interest rates. According to the banks, the major drop in demand for residential mortgage loans resulted from worsened financial standing of households, changes in consumer spending patterns and tightened lending policies. The surveyed banks expected a further tightening of residential mortgage loan granting criteria and a sharp decline in demand for such loans in 2022 Q3.
- **The estimated return on equity (ROE) on development projects for housing developers approximated 19%, i.e. it decreased compared with the previous quarter,** though it was still relatively high. The level of ROE was influenced by an increase in transaction prices offsetting the higher costs incurred by the developers. According to Coface report¹³, the estimated number of bankruptcies in the construction sector increased to 139 in 2022 H1 from 109 in 2021 H1, while the number of bankruptcies in the real estate services business fell from 48 to 26 (see: Figure 36). However, the authors of the report point out

⁹ According to data provided by BIK, in 2022 Q2, the banks and credit unions granted about 38.4 thousand residential mortgage loans to retail customers, amounting to c. PLN 13.5bn (72.5 thousand loans, PLN 23.4bn in 2021 Q2, respectively). The negative y/y sales growth rates of residential mortgage loans reported in 2022 Q2 were recorded in all the loan amount brackets. In the period from 2021 Q3 to 2022 Q2, approximately 232.2 thousand (a y/y growth of c. 16%) residential mortgage loans were taken out, totalling PLN 79.3bn (c. 24% up y/y).

¹⁰ According to the AMRON report, 38.4 thousand new residential mortgage loans were granted in 2022 Q2 (47.8 thousand in the previous quarter and 67.0 thousand in 2021 Q2) whereas the value of the new residential mortgage loans reached PLN 13.5bn (compared with PLN 16.9bn in the previous quarter and PLN 22.1bn in 2021 Q2). (while the average amount of a residential mortgage loan granted was ca. PLN 350.6 thousand (PLN 351.3 thousand in 2022 Q1). The most frequently granted loans were still those within the PLN 200-300 thousand range (24.8% vs. 24.3% in Q1), there was also an uptick in the number of loans exceeding PLN 1 million, while the number of loans in the other amount brackets decreased. In total new loans, the percentage of loans with the LtV of 30-50% and 50%-80% increased, reaching 12.6% and 55.9% respectively, whereas the percentage of loans with the LtV of up to 30% decreased to 12.6% and that of LtV of over 80% dropped to 18.9%. Compared to the previous quarter, there was a slight increase in the number of residential mortgage loans with a maturity of up to 15 years (6.0%) and 15-25 years (27.2%), whereas the share of loans maturing in 25-35 years (66.1%) and more than 35 years (0.7%) decreased. At the end of 2022 Q2, the number of outstanding loan agreements approximated 2.48 million (2.53 million in 2022 Q1) and their total amount at the end of the period reached PLN 508.3bn (PLN 511.7bn in Q1).

¹¹ The data concerning 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 June 2022, the value of residential mortgage loans granted by the banks to households totalled PLN 509.7bn, i.e. the amount was by PLN 2.7bn lower than in the previous quarter, while at the same time nearly PLN 22.8bn higher than in June 2021 (4.7% up y/y, compared with a 5.2% increase in 2021 Q2).

¹² "Situation in the credit market - results of the senior loan officer opinion survey, 2022 Q3", NBP, July 2022 https://www.nbp.pl/systemfinansowy/rynek_kredytowy_2022_3.pdf.

¹³ According to Coface experts (Coface Report titled *Insolvencies of Polish Companies in the First Half of 2022*), the macroeconomic environment is becoming more and more challenging to companies and it will contribute to a growing number of insolvency cases. The building industry is facing challenges posed by a limited indexation mechanism (with indexes below the current inflation rates), more difficult in the case of public contracts.

that given the numerous legislative changes since 2020, the bankruptcies in the construction sector are hard to quantify. The stock market indices of the construction and development companies did not change (see: Figure 36).

- **In 2022 Q2, over 54.6 thousand dwellings were completed¹⁴ in Poland, a record number for the second quarter of the year, 4.2% more than in 2021 Q2.** (see: Figure 52). Those dwellings were primarily for sale or rental (61%) as well as for owner occupancy (38%). The proportion of the number of dwellings completed in the 17 biggest cities to the total number of dwellings completed decreased (from c. 44% in 2021 Q2 to c. 30% in 2022 Q2), while it increased in the rest of Poland. **The number of c. 66,4 thousand dwellings whose construction commenced¹⁵ was 17.9% lower than in 2021 Q2** (see: Figure 53). It should be added that the number of home construction starts also decreased in the biggest cities (17.7% vs. 19.2% in 2021 Q2). Predominant here were also dwellings for sale or rental (60%) and for owner occupancy (38%). The figures relate to the administrative city boundaries and so dwellings located within the conurbation but outside the city boundaries are recognised as part of the so-called 'rest of Poland'.
- **The still relatively high rates of return on housing development projects and persistent investment demand as well as measures taken by developers in anticipation of the effective date of the amended Developer Act¹⁶ contributed to a sharp increase in the number of new home building permits¹⁷.** Permits were granted mainly for the construction of dwellings for sale and rental (about 70% of all the building permits) and private construction for owner occupancy (ca. 29% of all permits). In the period discussed, the share of building permits granted for cooperative home construction was close to zero. The number of building permits grew significantly in Warsaw and the so-called 'rest of Poland', with only a slight increase in the 6 cities. The high number of building permits was to a large extent a consequence of the fact that projects were placed on the market mainly in late June so that they could be sold without the obligation to satisfy the requirements of the amended Developer Act¹⁸.
- **A slight upward trend in the vacancy rate continued in the biggest office real estate markets in 2022 Q2.** The supply of new office space and space under construction remained high, though it was lower than in the previous quarter. According to the data released by consulting companies, at the end of the

¹⁴ According to data published by Statistics Poland, more than 54.7 thousand dwellings were completed in 2022 Q2 in Poland, meaning 2.2 thousand more than in 2021 Q2, but about 0.3 thousand fewer than in 2022 Q1. Altogether, over 238.6 thousand dwellings completed in the past four quarters, an all-time high, nearly 9.4 thousand more than in the corresponding period of 2021 (4.1% up y/y).

¹⁵ According to data published by Statistics Poland, the construction of 66.4 thousand dwellings commenced in 2022 Q2 in Poland, nearly 14.5 thousand fewer than in 2021 Q2, but 13.1 thousand more than in the preceding quarter of 2022. In the past four quarters, the building of a total of 252.6 thousand flats was commenced, i.e. 15.9 thousand fewer than in the same period of 2021 (5.9% drop y/y).

¹⁶ On 20 May 2021, the Sejm passed a bill on the protection of the rights of the buyers of flats or single-family houses, and the Developer Guarantee Fund, that is a so-called "New Developer Act". Taking effect on 1 July 2022, the amended act establishes, among other things */a Developer Guarantee Fund for projects whose sale will commence after the effective date, */extends a list of disclosures in the information prospectus, */new rules concerning the final inspection of and the fixing of defects in the dwelling, */additional options for the buyer to withdraw from the contract. Housing projects which commenced earlier will gain greater protection starting from 1 July 2024.

¹⁷ According to data published by Statistics Poland, c. 92.8 thousand home building permits were issued in Poland in 2022 Q2, roughly 5.7 thousand more than in 2021 Q2 and 14.9 thousand more than in the previous quarter. In the past four quarters, a total of c. 340.1 thousand permits were issued, i.e. approximately 14.6 thousand more than in the corresponding period of 2021 (an increase of 4.5% y/y).

¹⁸ Newly placed on the market were projects which had been in the pipeline for months but had not been placed on the market earlier on account of the reduced demand and the continuously growing construction costs. As a matter of fact, they will most likely be made available for sale either at the end of 2022 or in the early quarters of 2023. The practice of placing project on the market "for later" has reached the largest scale in three agglomerations: Warsaw, Tri-City and Wrocław.

period under discussion, the total stock of office space in the largest office markets¹⁹ stood at approximately 12.6 million square metres, with ca780,000 sq. m in the pipeline. The vacancy rate in the 9 biggest markets amounted to 13.6% (13.8% in Q1), whereas in Warsaw alone it amounted to 11.9%²⁰, which means a decrease of 0.6 p.p. on the previous quarter. The vacancy rate of office space depends on the age²¹ but primarily on the location²² of the office building. The construction of additional offices does not mean an automatic increase in the vacancy rates, though it will generate significant competition for tenants, especially as regards older buildings or those at poorer locations.

- **In 2022 Q2, the retail sector completely recovered from the COVID-19 pandemic.** The stock of modern commercial space at the end of 2022 Q2 exceeded 12.5 million sq. m, meaning a saturation of 318 sq. m per 1,000 inhabitants²³, with another 325.0 thousand sq. m²⁴ under construction. It can be concluded that investors consider the retail market in the largest cities to be saturated. On the other hand, a market for small retail parks for daily shopping in smaller towns is growing dynamically.
- **The market for modern warehouse space in Poland was in a rapid expansion phase for another quarter, driven by the continued development of e-commerce, while the supply and demand also remained high.** Developers responded to the rapidly growing demand and the supply was on the rise. 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. By the end of 2022 Q2, the total stock of warehouse space had grown to 25.9 million sq. m²⁵, with more than 4.3 million sq. m of modern warehouse space under construction. The vacancy rate across the country declined further to 3.2% compared to 3.1% in 2022 Q1. 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 demand for industrial and logistics facilities.
- **In 2022 H1, the estimated value of transactions over commercial real estate purchased as an investment²⁶, i.e. for rental, was close to EUR 3bn.** Approximately 34.4% of that value concerned warehouse space, 39.5% office space, and only 23.5% of the transactions concerned retail space.
- **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. One is related to loan financing of a particular property.** Usually, in such a case, the loan is secured on the financed property, but alternative forms of security are also possible. At the end of 2022 Q2, the value of such loans granted

¹⁹ The ten office space markets include: Warsaw, Kraków, Wrocław, Tri-City, Katowice, Łódź, Poznań, Szczecin, Lublin.

²⁰ See: Colliers International Report: Market Insights, 2022 H1, Poland.

²¹ Cushman & Wakefield, Marketing as one of the key factors supporting the modernisation process of older office buildings, 2018.

²² See: Knight Frank, Report: Poland, Commercial Market, 2018 H1.

²³ It is estimated that this value is 15% lower than the average for the entire European Union.

²⁴ See: Colliers International Report: Market Insights, 2022 H1, Poland.

²⁵ See : Colliers International Report: Polska Branża Logistyczno Przemysłowa , Kierunki Rozwoju z Perspektywy 2022, Polska.

²⁶ Based on data published by Comparables.pl. The above-mentioned investments concern the sale of an entire operating company rents out a building and derives income from it. Such transactions take place between: 1/ a real estate developer who has commercialised a property and sells it to an investor, or 2/ between two investors.

by the banks in Poland²⁷ amounted to PLN 61bn²⁸, and 57% of the loans were denominated in EUR. The corporate debt resulting from the financing of residential real estate had not changed at the end of 2022 Q2, amounting to PLN 4.1bn. The amount of loans financing office real estate had not changed either and remained at PLN 14.3bn. The value of loans granted for retail real estate stood at PLN 15.8bn whereas the financing for warehouse and industrial property grew to PLN 10.5bn from PLN 10bn in 2022 Q1. The value of loans for other real estate remained at PLN 15.9bn. **The other 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 Q2, the corporate loans secured with mortgages on commercial real property amounted to PLN 138bn²⁹, and 39% of such loans were denominated in EUR.

- **The quality of 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 remained at 6.4%. In the case of loans financing commercial real estate, the NPL ratio increased slightly to 14.3% from 14.2% in 2022 Q1. The NPL ratio decreased to 4.8% from 5.1% in 2022 Q1 in the case of loans for warehouse and industrial real estate; and grew to 8.7% from 8.1% as regards loans for other real estate. The NPL ratio for loans financing developer housing projects increased somewhat to 13.8% from 13.7% in 2022 Q1. The relatively high value of the ratio was mainly due to the fact that the banks were holding non-performing loans from the previous years in their portfolios³⁰.
- **In the markets for small office real estate, the median of offer prices all over Poland and in the majority of the biggest cities saw a slight increase.** Similarly, the median of offer prices for small commercial real estate grew a little in most big cities, except for Łódź, where it decreased compared to 2022 Q1.

The following charts illustrate the key developments in the housing market in Poland's major cities in 2022 Q2. They show:

- 1) home prices (Figures 1–15),
- 2) availability of loan-financed housing, loan availability, profitability of housing investment (Figures 16–25),
- 3) mortgage loan disbursements and interest rates (Figures 26–35),
- 4) operating profitability of housing and real estate development projects, costs of construction and assembly output and economic situation of real estate developers in Poland (Figures 36–51),
- 5) housing construction and the residential market in selected cities in Poland (Figures 52–65),
- 6) analysis of profitability of investment in housing for rent in selected cities in Poland in 2022 Q2 (Figures 66–78),
- 7) an analysis of the standing of developers (Figures 79–110), building industry (Figures 111–134) and related entities (Figures 135–173).

²⁷ According to our expert estimate, loans intended for the construction of commercial real estate (office, retail, warehouse and other) extended by foreign banks amounted to PLN 87bn as at the end of 2021. The estimate has been arrived at as follows: In line with the 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%. It may be inferred 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, that the total amount of the loans financing such real estate was about PLN 142bn at the end of 2021. By deducting the loans granted by banks operating in Poland to finance such real estate (PLN 55bn, excluding loans to developers) one arrives at an estimate of loans granted directly and indirectly by banks operating abroad, i.e. PLN 87bn.

²⁸ FINREP data.

²⁹ The fall in debt by PLN 4.6 billion in comparison with Q3 was mainly due to the repayment of loans denominated in PLN.

³⁰ See: Financial Stability Report, NBP, December 2018.

The analysis of housing prices per 1 square meter (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 (f/k/a 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 data³¹ were used.

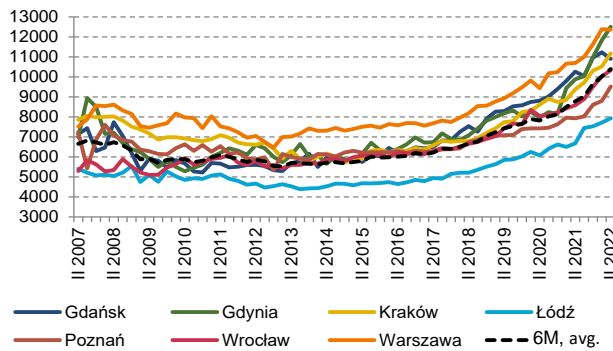
³¹ The authors used data and studies by Sekocenbud, Spectis, PAB, OLX Group.

List of Abbreviations:

5M	5 biggest cities: Gdańsk, Kraków, Łódź, Poznań, Wrocław
6M	6 biggest cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław
7M	7 biggest cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warszawa, 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
Statistics Poland	Central Statistical Office
EURIBOR	Euro Interbank Offered Rate
KNF	Polish Financial Supervision Authority
LIBOR	London Interbank Offered Rate
LTV	The relation of loan value to home value, i.e. Loan-to-Value
MDM	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	Housing scheme "Rodzina na Swoim" (Family on their Own)
PM	Primary housing market
SM	Secondary housing market
ROE	Return on Equity
WIBOR	Warsaw Interbank Offer Rate
WIG20	Index including 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' credit policy criteria

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

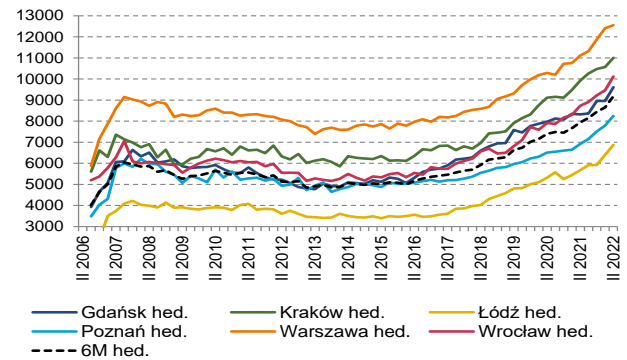
Figure 1 Transaction prices per sq.m of housing in Warsaw and in 6M- PM, in PLN



Note: the home price database of NBP (BaRN) has existed since 2006 Q3; 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 base period multiplied by the hedonic index (reflects pure price change, ignores differences in housing quality).

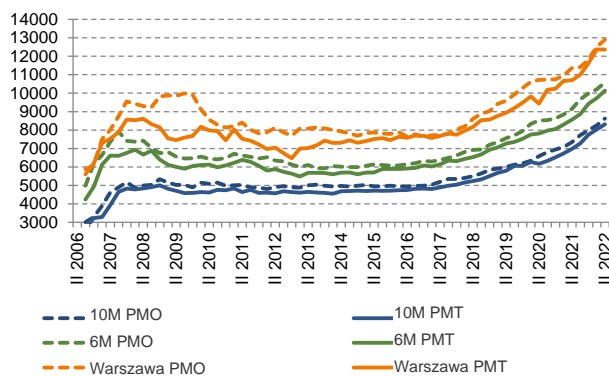
Source: NBP

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



Source: NBP

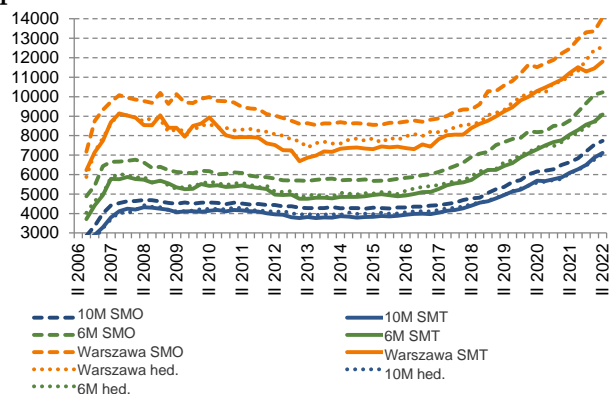
Figure 3 Weighted average price per sq. m of housing, offers (O) and transactions (T) - PM



Note 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.

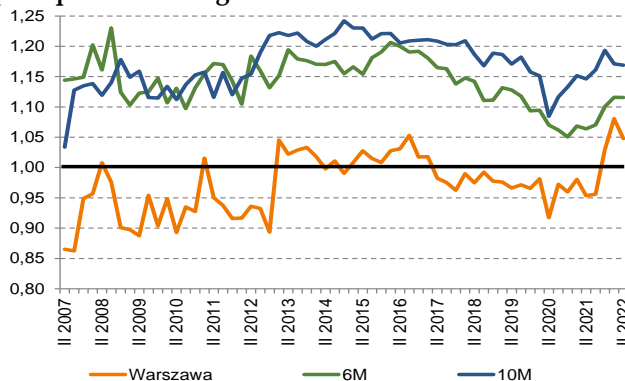
Source: NBP

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



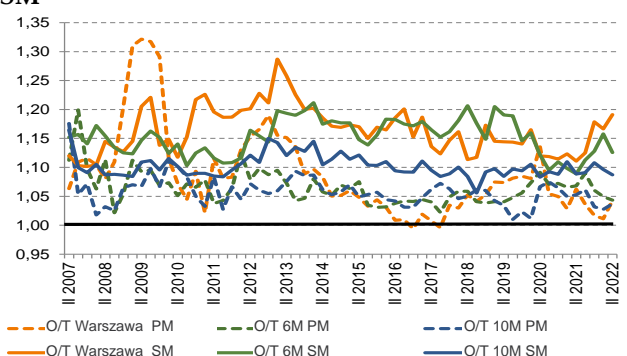
Source: NBP

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



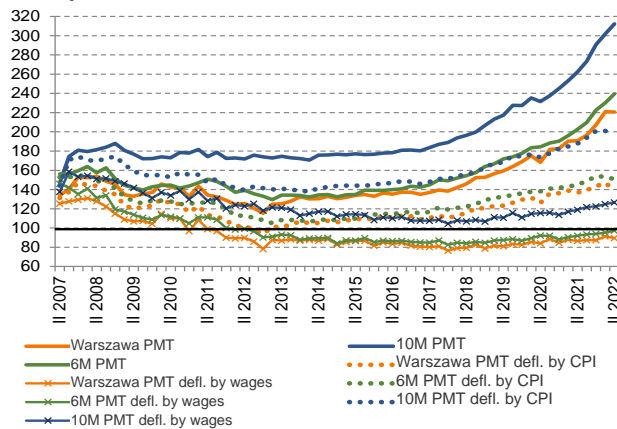
Source: NBP

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



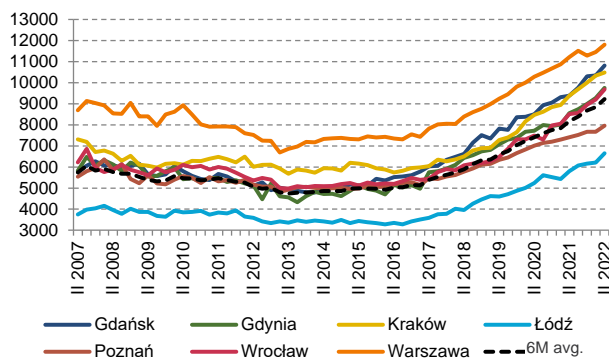
Source: NBP

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



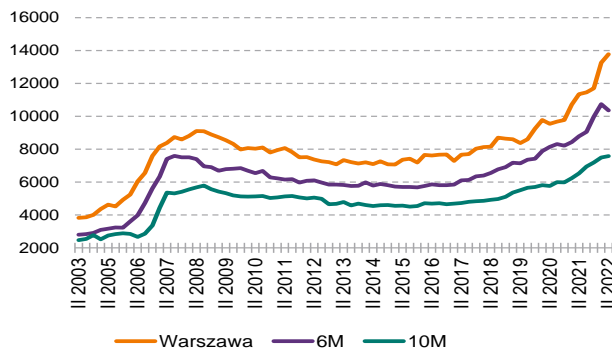
Source: NBP, ZBP (AMRON), Statistics Poland

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



Source: NBP

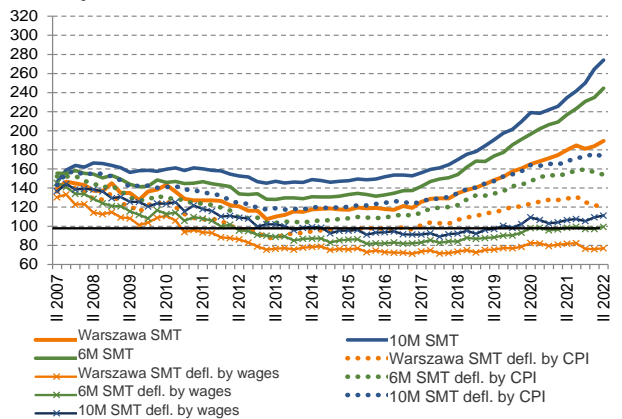
Figure 11 Average offer prices per sq.m. of housing in PM in selected markets



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

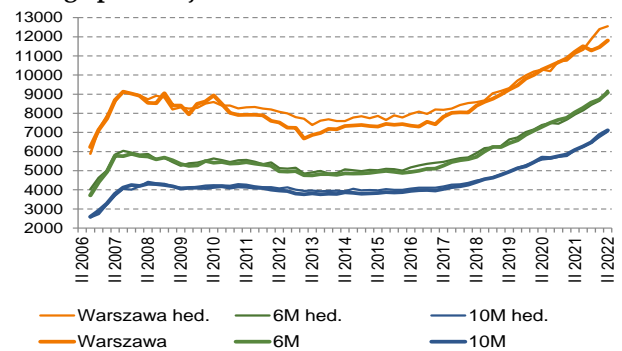
Source: PONT Info Nieruchomości

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



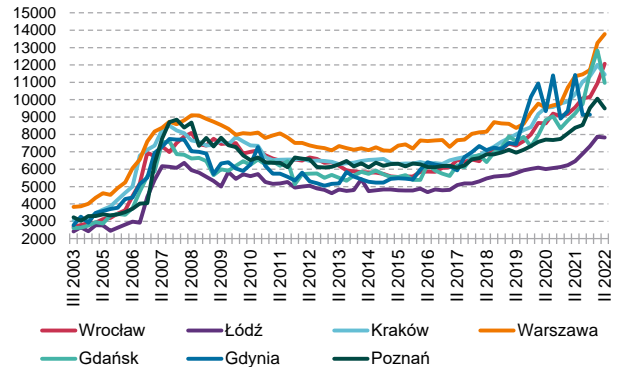
Source: NBP, ZBP (AMRON), Statistics Poland

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



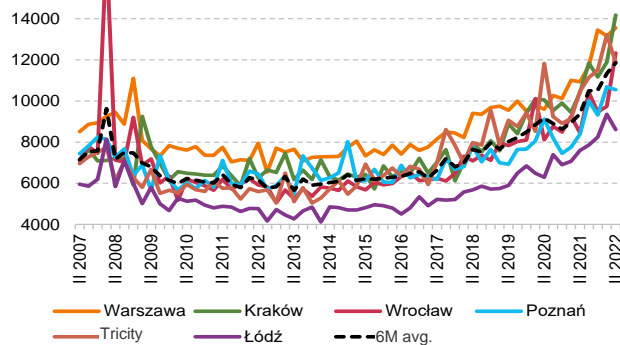
Source: NBP

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



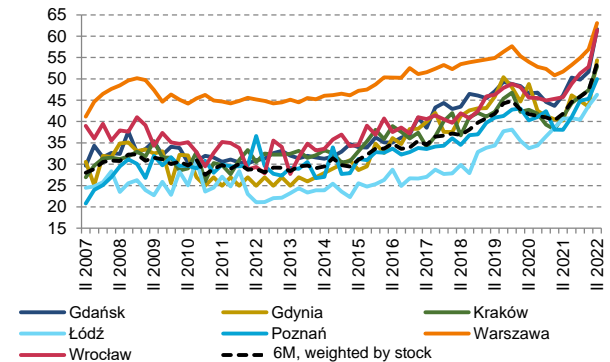
Source: PONT Info Nieruchomości

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



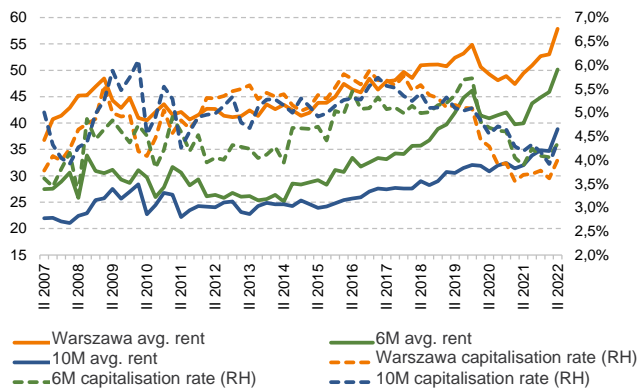
Note: prices refer only to new contracts put on the market for the first time. *Source: JLL/f/k/a REAS*

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



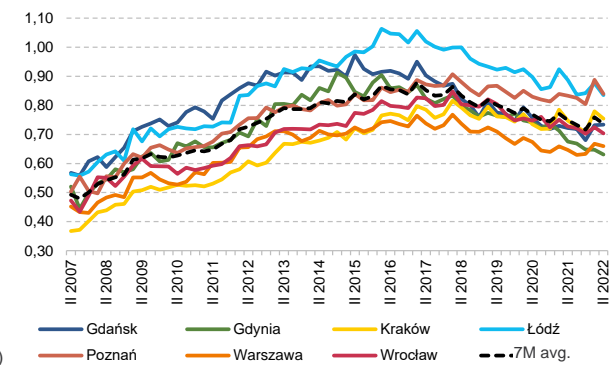
Note: a change in the sample occurred in. *Source: NBP, OLX Group*

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



Note do Figure 15: the average transaction price per 1 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)

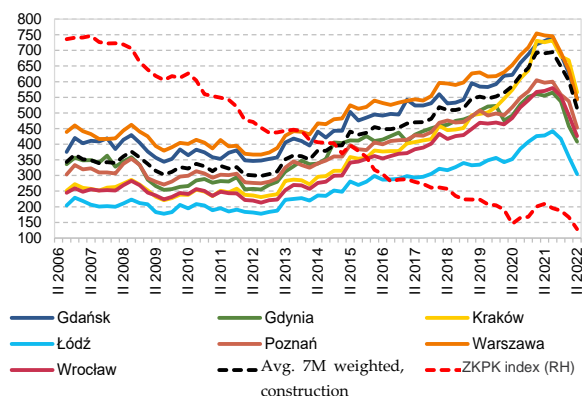


Housing affordability – a measure of potential affordability to purchase housing at the transaction price for an average wage in the enterprise sector in a particular city. It expresses the number of square meters of housing that can be purchased for an average wage in the enterprise sector in a particular 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 the banks concerning housing (ZKPK; RHS)



Source: NBP, Statistics Poland

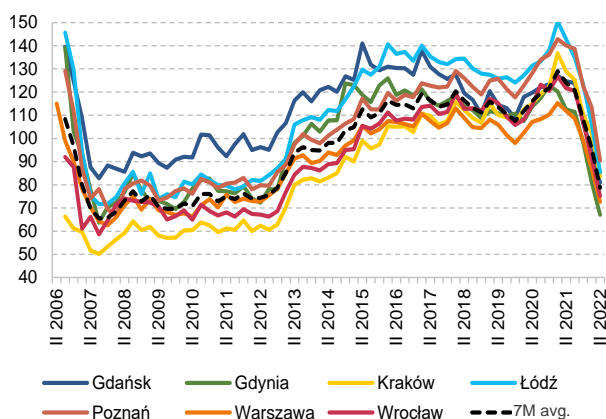
Affordable residential mortgage loan – a metric specifying the potential maximum residential mortgage loan; expressed in PLN thousand in a given market taking into account banks' lending requirements and loan parameters (interest rate, amortisation period, minimum subsistence wage as the minimum income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

Affordability of loan-financed housing – a measure specifying how many square meters of housing may be purchased with a mortgage loan obtained basing on the average monthly wage in the enterprises sector in a particular market (Statistics Poland), in view of bank's lending requirements and loan parameters (interest rate, depreciation period, social minimum wage understood as the minimum income after 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.

ZKPK Index – accumulated 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. Computing methods of the index are described in the Financial Stability Report, December 2012, NBP

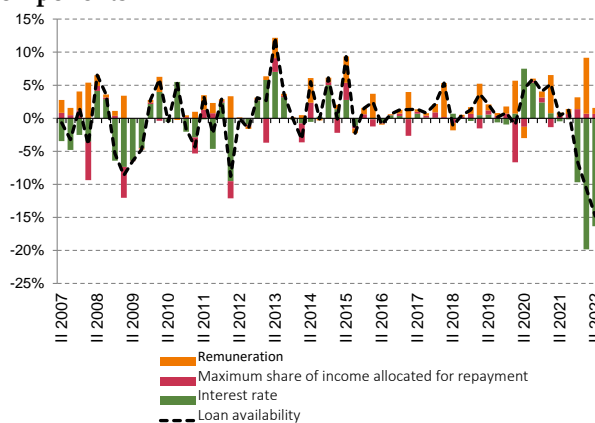
The interest rate on the residential mortgage loan weighted by the proportions of PLN- and foreign-currency denominated loans.

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



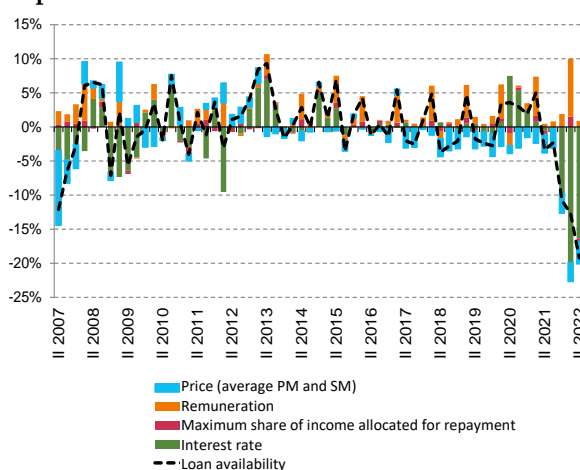
Source: NBP, Statistics Poland

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



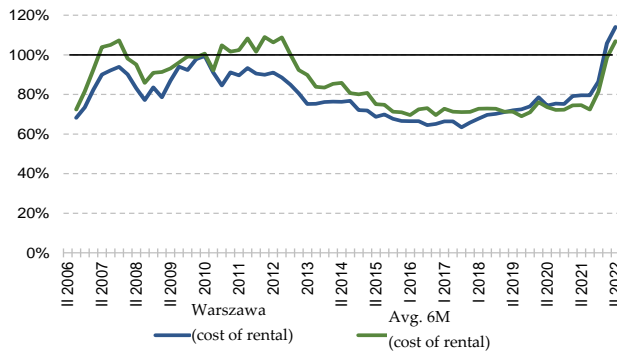
Source: NBP, Statistics Poland

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

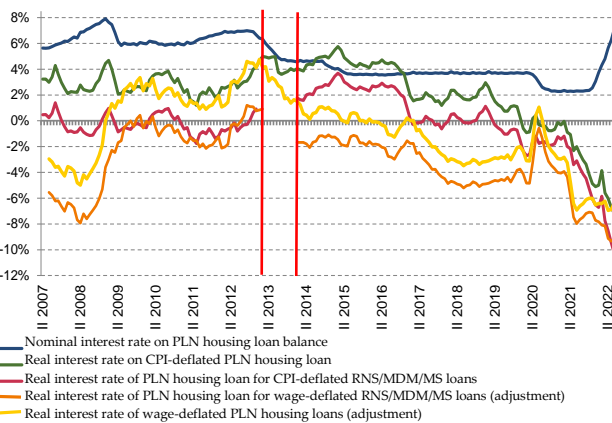
Figure 21 Estimated cost of servicing of a residential mortgage loan in relation to the cost of home rental



Note: the estimate concerns an average 50 sq.m flat; transaction price per 1 sq.m of a flat in PM and SM; residential mortgage loan with a floating interest rate, LTV=80%; rent 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; 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)

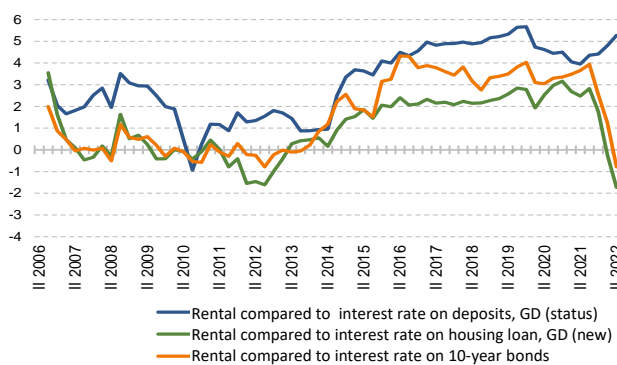
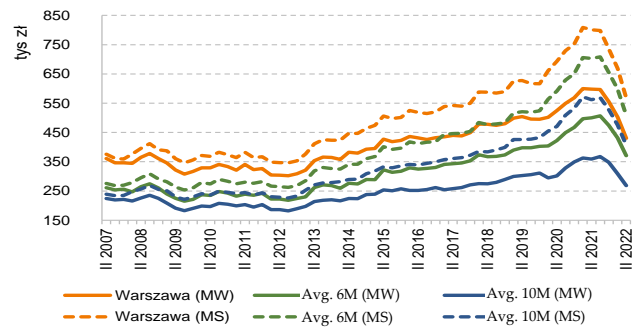


Figure 22 Estimated mortgage loan that can be afforded for an average gross wage in the enterprise sector in selected cities

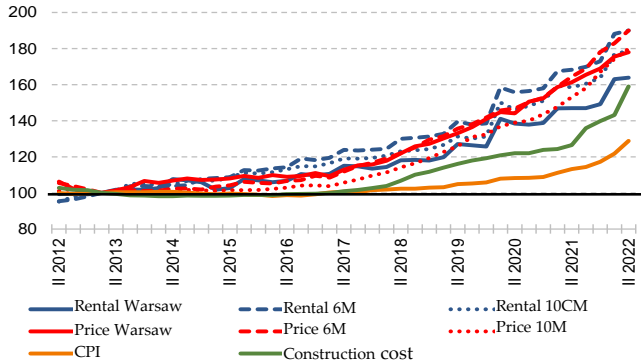


Note:

values estimated with the criterion of minimum subsistence wage left (MS) or average monthly wage in the enterprise sector (MW).

Source: NBP, Statistics Poland, BGK

Figure 24 Changes in the level of transaction priced (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 1 sq. m in Warsaw, +PLN 950 per 1 sq. m in the 6 cities and +PLN 850 per 1 sq. m in the 7 other cities)). The cost of construction of a half of the 1121-302 building (see footnote 32 for details).

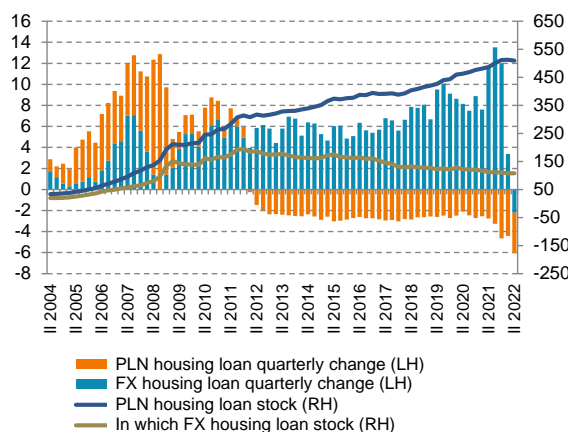
Source: NBP, Statistics Poland

Note do Figure 25: values exceeding 0 denote a higher profitability of purchasing property for rental to third parties than other household investment. 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

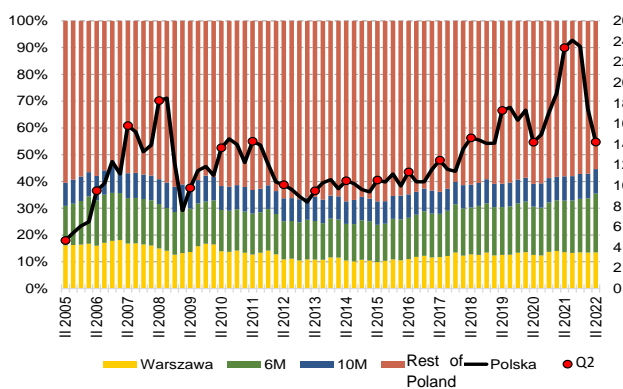
3. Disbursements of residential mortgage loans, interest rates

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



Source: NBP

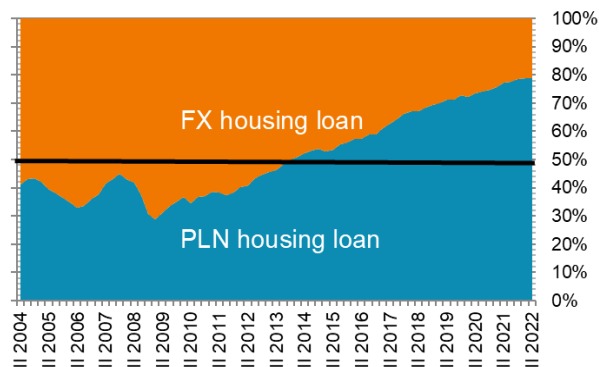
Figure 28 Geographical structure of the value of new PLN-denominated residential mortgage loan contracts in Poland's selected cities (LH scale) and the value of contracts in Poland (RH scale), quarterly data



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

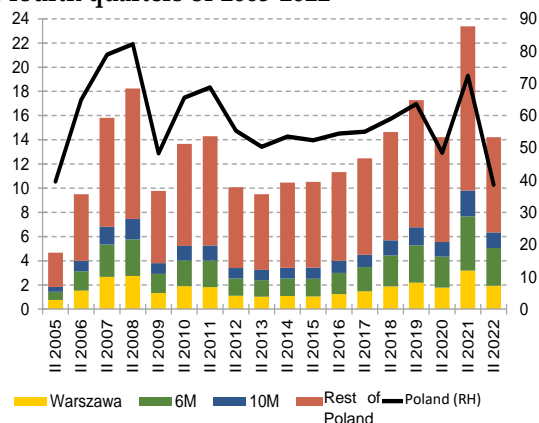
Source: BIK

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



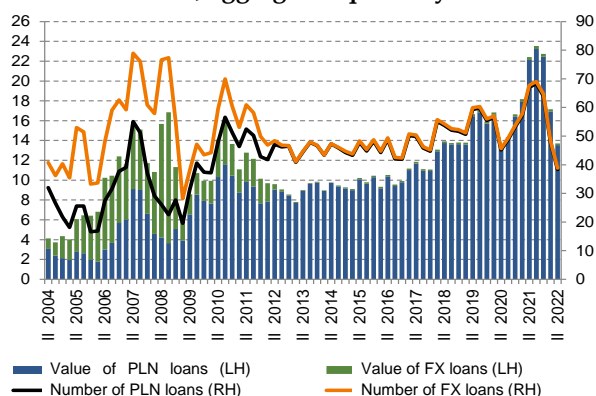
Source: NBP

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



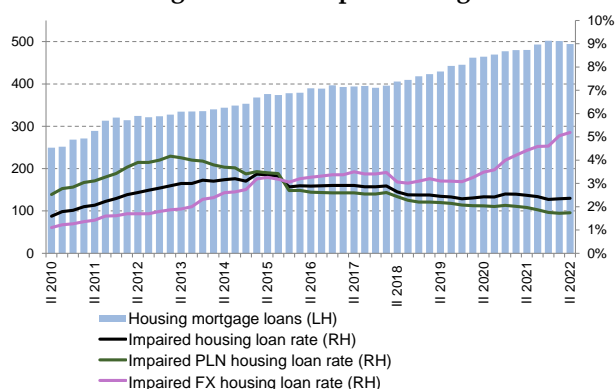
Source: BIK

Figure 30 New residential mortgage loan contracts: 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 banks applying the PASs).

Source: NBP

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

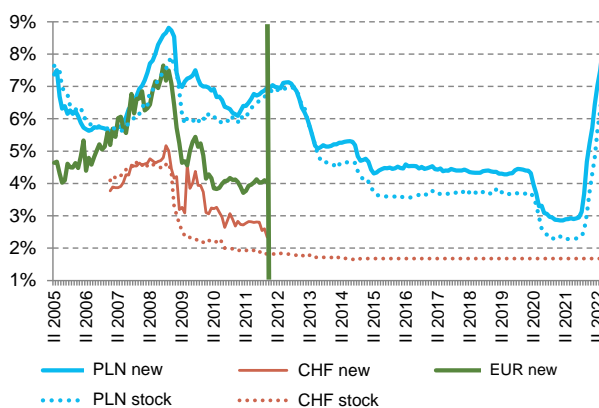
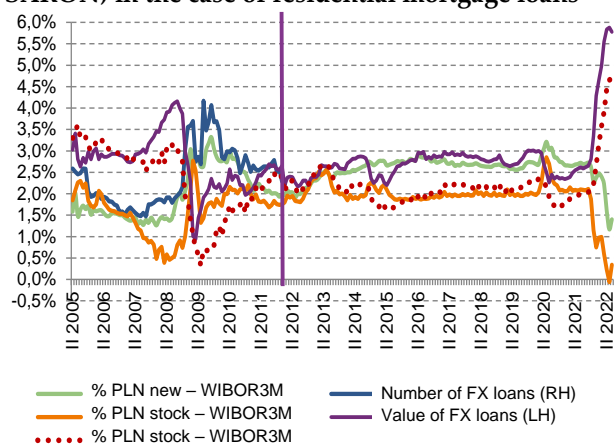


Figure 33 Bank margins (for WIBOR 3M, LIBOR, SARON) in the case of residential mortgage loans



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).

Source: NBP

Source: NBP

Table 1. 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	5385	3135	1228	307	1907	71%
2012 Q2	7325	3079	1670	418	1409	59%
2012 Q3	7661	2773	1747	437	1026	53%
2012 Q4	7441	3164	1697	424	1467	60%
2018 Q1	11914	7015	2716	679	4299	71%
2018 Q2	12807	6072	2920	730	3152	64%
2018 Q3	13024	5697	2969	742	2727	61%
2018 Q4	12584	6759	2869	717	3890	68%
2019 Q1	11865	7156	2705	676	4450	72%
2019 Q2	14653	6713	3341	835	3372	63%
2019 Q3	14554	7282	3318	830	3964	66%
2019 Q4	12770	8147	2912	728	5235	73%
2020 Q1	14871	9059	3391	848	5669	72%
2020 Q2	13009	3260	2966	742	294	32%***/
2020 Q3	13859	6565	3160	790	3405	64%
2020 Q4	16185	6834	3690	923	3144	60%
2021 Q1	17392	9875	3965	991	5909	70%
2021 Q2	22244	10072	5072	1268	5000	62%
2021 Q3	23607	8009	5382	1346	2626	50%
2021 Q4	23074	8509	5261	1315	3249	54%
2022 Q1	17591	6171	4011	1003	2160	51%
2022 Q2	15601	5611	3557	889	2054	52%

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/f/k/a 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 proportion 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/f/k/a REAS, ZBP, Statistics Poland

Figure 34 Estimated ROE on residential mortgage loans denominated in PLN for banks in Poland, taking into account interest income and non-interest profit, as well as operating expenses and bank tax

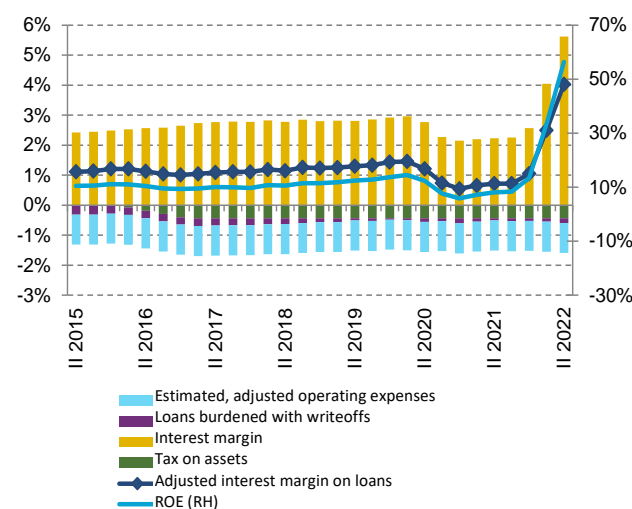
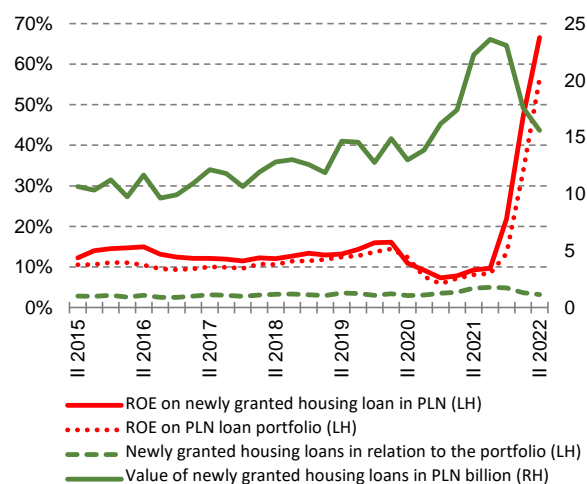


Figure 35 Estimated ROE on residential mortgage loans denominated in PLN for banks in Poland, taking into account interest income and non-interest profit and operating expenses and bank tax



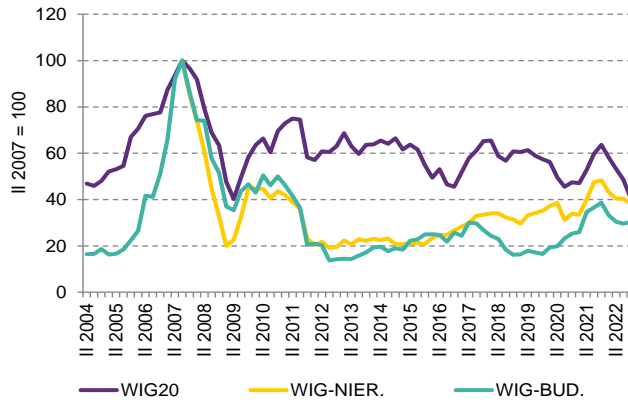
Note to Figures 34 and 35: the calculation includes interest income, non-interest income and operating expenses. The estimated ROE (Return on Equity) is calculated as the adjusted interest margin relative to equity. The adjusted interest margin is the interest margin less write-downs, estimated operating expenses (adjusted for the net non-interest income on residential mortgage loans) and bank tax. Operating expenses less net non-interest income was estimated at 1% of the value of the loan portfolio and 1.5% of the value of newly granted loans. Data concerning equity originate from publications by KNF. Interest margin is calculated as the spread between the interest rate on loans and the interest rate on deposits. The one-off surge in ROE (estimated return) on newly granted residential mortgage loans denominated in PLN in the case of the banks in Poland was a product of coincidence of two developments: 1/ a significant rise in the interest rates on new loans granted in 2022 Q1 and 2/ a slight increase in the cost of funding for banks measured by the interest rate on the stock of deposits.

Source: NBP, KNF

Source: NBP, KNF

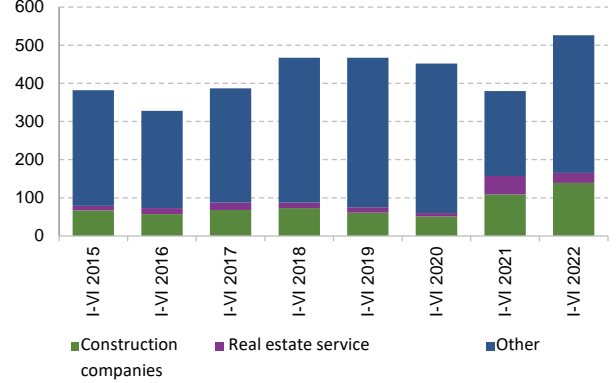
4. Operating ROE on housing and real estate development projects, costs of construction and assembly output and economic situation of real estate developers in Poland

Figure 36 Rescaled stock exchange indices: WIG20 and for real estate developers (WIG-NIER) and construction companies (WIG-BUD) (2007 Q2=100)



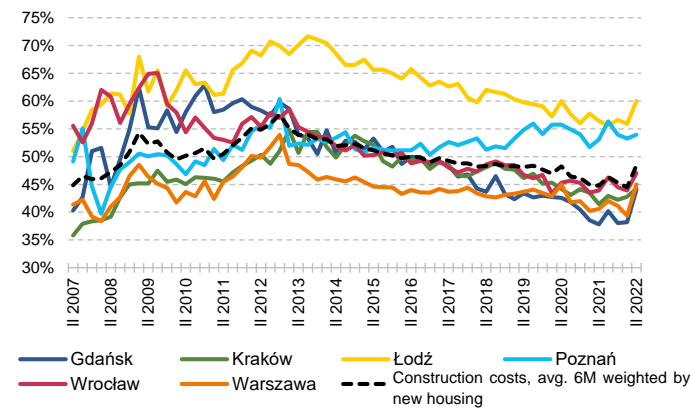
Note: data standardised, 2007 Q2 = 100 (developers' WIG has been listed since 2007 Q2); 2022 Q2, as at 13 September 2022.
Source: Warsaw Stock Exchange

Figure 37 Number of bankruptcies of enterprises, including in the construction industry (end of 2022 H1)



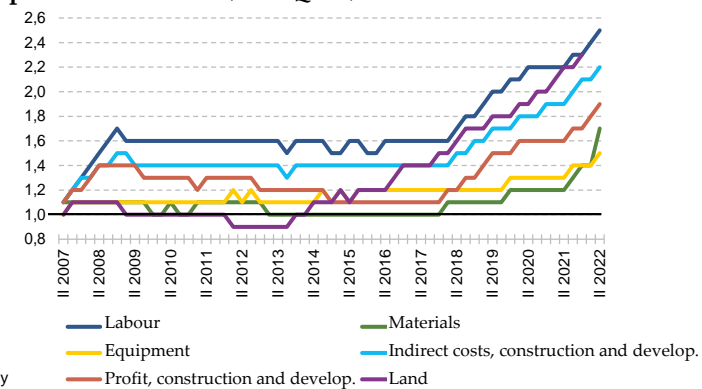
Note: breakdown according to the first entry in the National Court Register (KRS).
Source: Coface Poland

Figure 38 Estimated share of direct construction costs per square metre of usable floorage of a residential building (type 1122-302³²) in net transaction price in PM 6M



Note to Figures 38 and 39: Since 2014, NBP has used its own appraisal of land for residential multifamily construction.
Source: NBP based on Sekocenbud

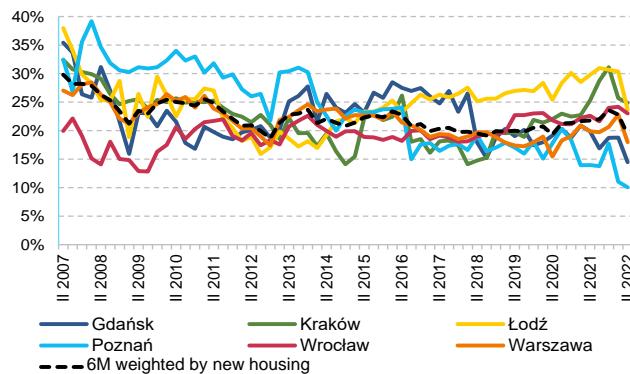
Figure 39 Estimated share of various construction costs per square metre of the residential building's usable floor area (type 1122-30232) in net transaction price in PM of 6M (2007 Q1=1)



Source: NBP based on Sekocenbud

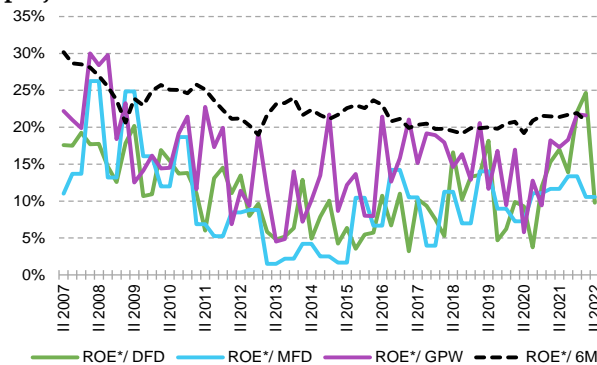
³² Half of the building (type 1122-302) monitored by the National Bank of Poland since the second half of 2016 based on Sekocenbud data. An average residential, multi-family, five-storey building with an underground garage, built in the following technology: footings, structural walls and ceilings - monolithic reinforced concrete, curtain walls made of MAX hollow bricks. The change of the type of the analyzed building in 2017 is related to the closure of the cost estimation of the building 1121. The analytical assumptions from the building 1121 have been retained.

Figure 40 Estimated rate of return on development projects (type 1122-30232/) in the largest cities



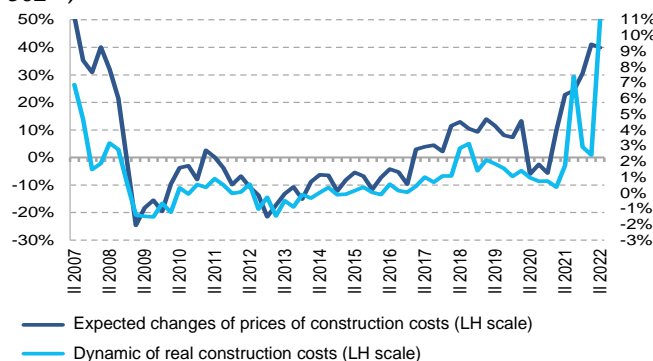
*/modified ROE = net financial result / (sales revenue – net sales revenue); **/ DFD – average Big Developer (with 50 and more staff, according to Statistics Poland), ***/ MFD – average Small Developer (with 9-49 staff),
 Source: NBP, based on Sekocenbud, Statistics Poland (F01)

Figure 41 Estimated ROE achieved on development projects by developers listed on the Warsaw Stock Exchange*, big developers (DFD)/ and small developers (MFD)***/ as well as on investment projects in 6M**



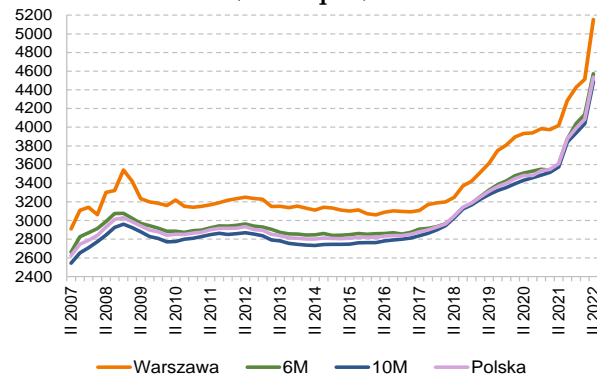
Source: NBP, based on Sekocenbud, financial statements, Statistics Poland (F01)

Figure 42 Expected changes in prices of construction and assembly works (+3M) and growth in construction costs of usable floor area of a residential building (type 1122-302 32)



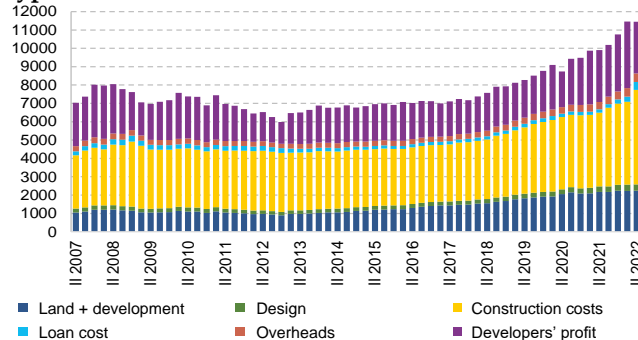
Source: NBP, based on data published by Statistics Poland (business conditions survey), Sekocenbud

Figure 43 Average cost of building 1 sq. m of usable floor area of a residential building (type 1122-302 32) in selected markets (PLN/sq. m)



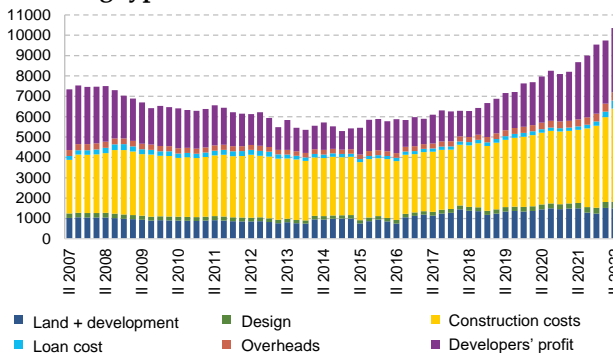
Source: NBP, based on Sekocenbud

Figure 44 Warszawa – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302 32) for the consumer



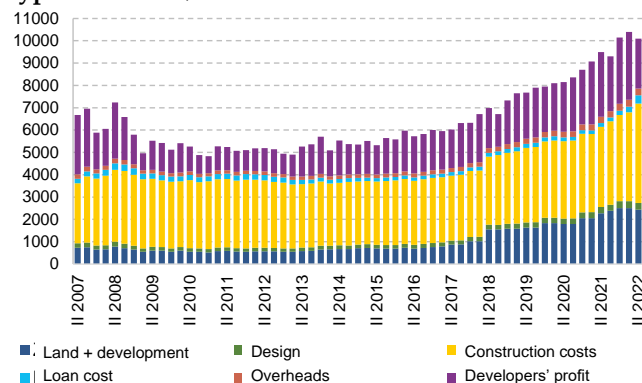
Source: NBP based on Sekocenbud, JLL (f/k/a REAS)

Figure 45 Kraków - estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302 32) for the consumer



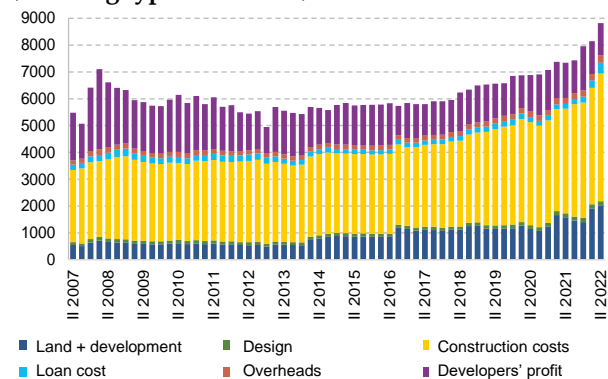
Source: NBP based on Sekocenbud, JLL (f/k/a REAS)

Figure 46 Gdańsk – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302 ³²) for the consumer



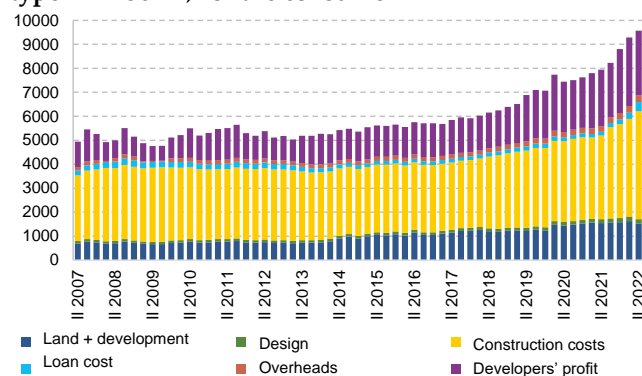
Source: NBP based on Sekocenbud, JLL (f/k/a REAS)

Figure 47 Poznań – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302 ³²) for the consumer



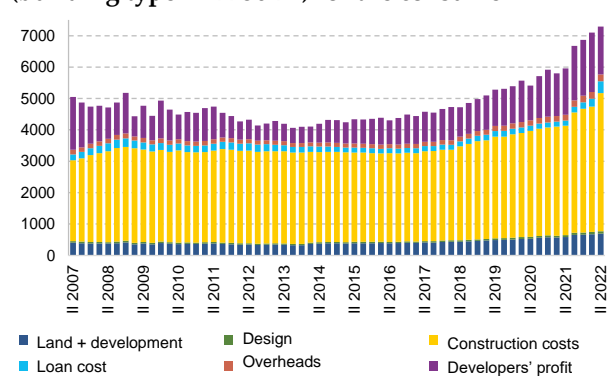
Source: NBP based on Sekocenbud, JLL (f/k/a REAS)

Figure 48 Wrocław – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302 ³²) for the consumer



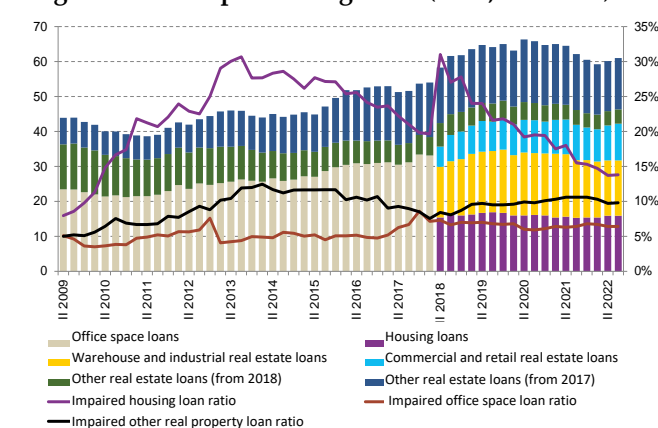
Source: NBP based on Sekocenbud, JLL (f/k/a REAS)

Figure 49 Łódź – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302 ³²) for the consumer



Source: NBP based on Sekocenbud, JLL (f/k/a REAS)

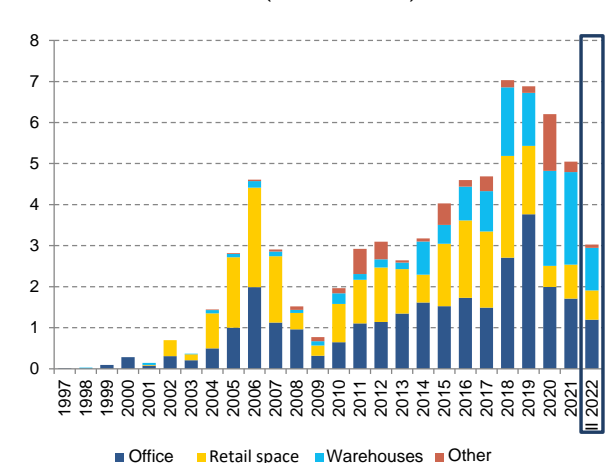
Figure 50 Loans to corporations for real estate purchases (in PLN billion, LH scale) and the share of loans recognised as non-performing loans (in %, RH scale)



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

Source: NBP

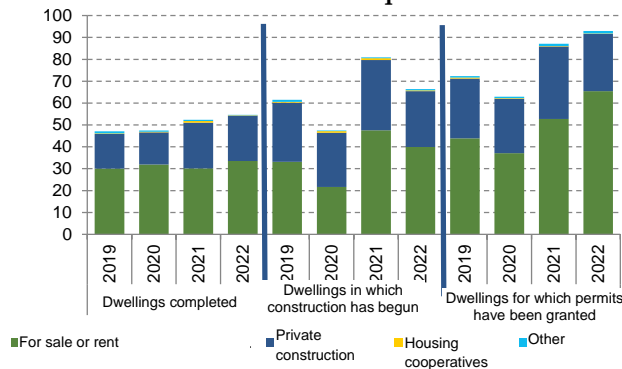
Figure 51 Value of investment transactions in commercial real estate (EUR billion)



Source: Comparables.pl

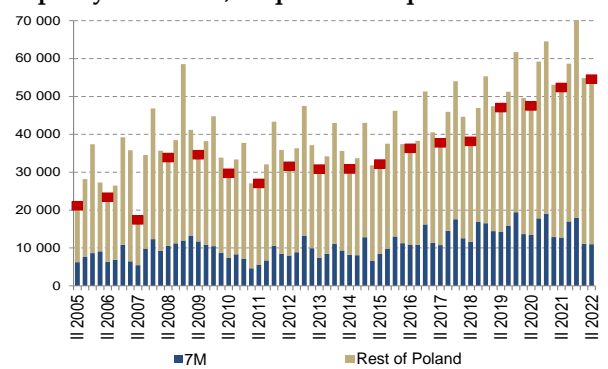
5. Residential construction industry and the housing market in selected cities in Poland

Figure 52 Structure of residential construction investors in Poland in the fourth quarters in 2019–2022



Source: Statistics Poland

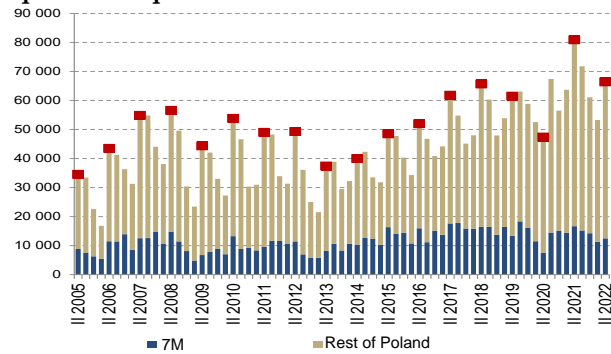
Figure 53 Dwellings completed and made ready for occupancy in Poland, in quarter-on-quarter terms



Note: the red dots indicate second quarters only.

Source: Statistics Poland

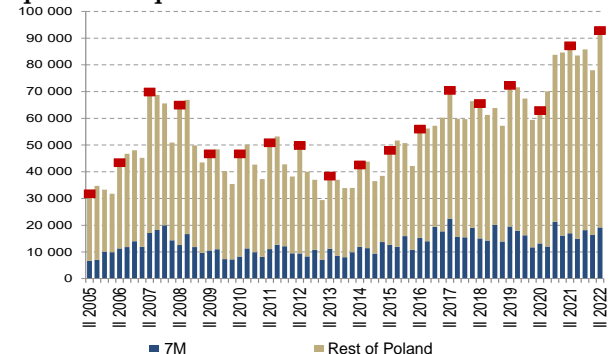
Figure 54 Dwellings under construction in Poland, in quarter-on-quarter terms



Note: the red dots indicate second quarters only.

Source: Statistics Poland

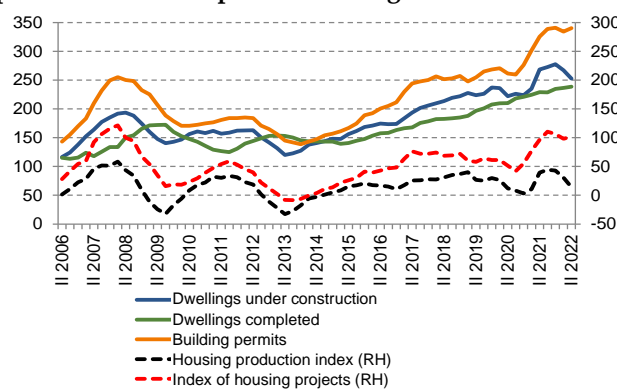
Figure 55 Home building permits issued in Poland, in quarter-on-quarter terms



Note: the red dots indicate second quarters only.

Source: Statistics Poland

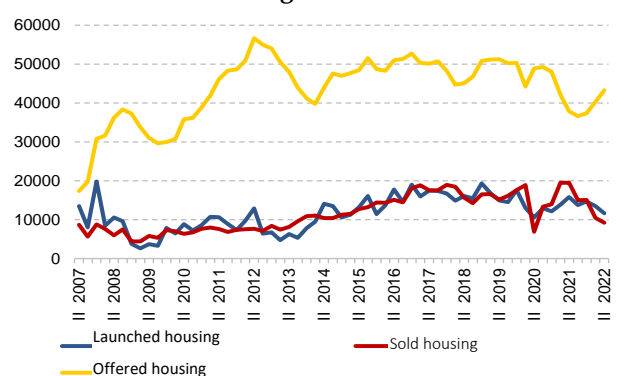
Figure 56 Housing construction in Poland (in thousands of dwellings), dwellings under construction (started dwellings minus completed dwellings) and investment projects in progress (home building permits minus completed dwellings)



Note: rolling averages for four consecutive quarters.

Source: NBP, based on PABB and Statistics Poland

Figure 57 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, Tricity, Wrocław, Poznań, Łódź. Source: JLL (f/k/a REAS)

Figure 58 Housing supply and the estimated rate of return on housing development projects in PM in 7M

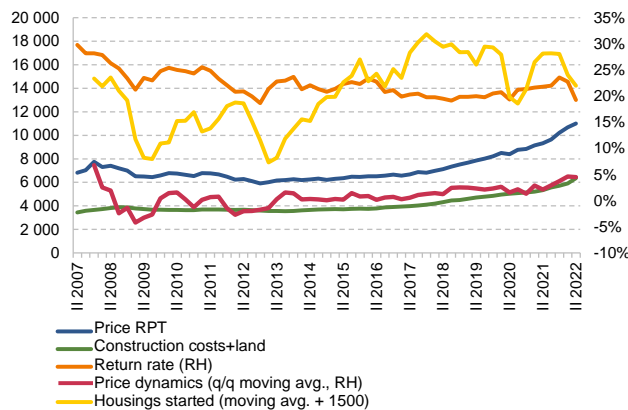
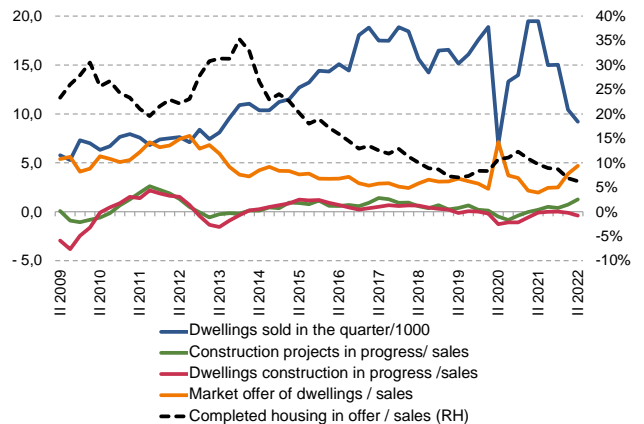


Figure 59 Housing projects, dwellings under construction and finished dwellings offered relative to sales in 7M



Note to Figure 59: 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 (f/k/a REAS), Sekocenbud

Source: NBP based on Statistics Poland, JLL (f/k/a REAS)

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

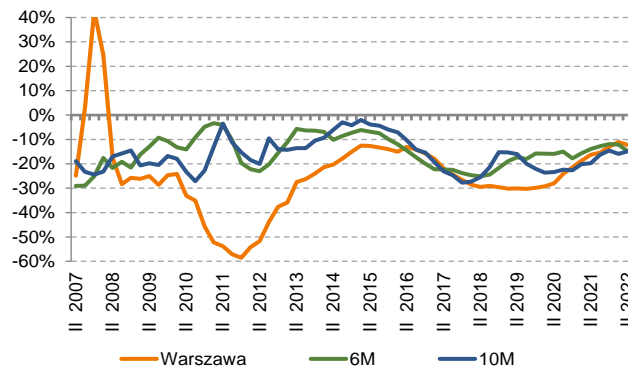
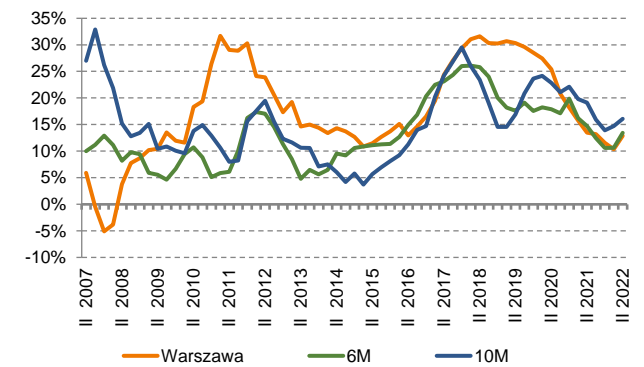


Figure 61 Measure of the match between dwellings offered vs. demand in terms of floorage >50 sq. m, PM in selected cities of Poland



Note: Figure 60 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 meters offered for sale to the number of transactions involving dwellings with a total area of up to 50 square meters (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 61 is parallel for the space above 50 sq.m. Figures 62-63 are parallel, but they concern the SM only.

Source: NBP

Source: NBP

Figure 62 Measure of the match between dwellings offered vs. demand in terms of floorage ≤ 50 sq. m, SM in selected cities of Poland

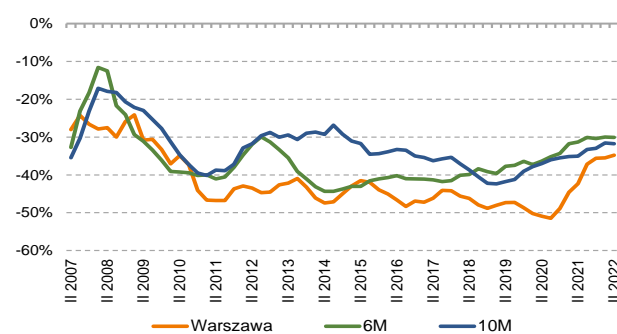
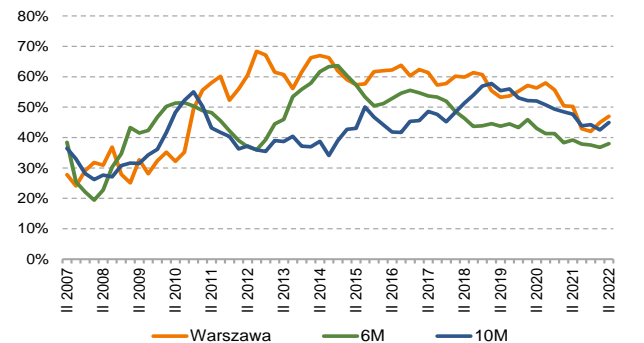


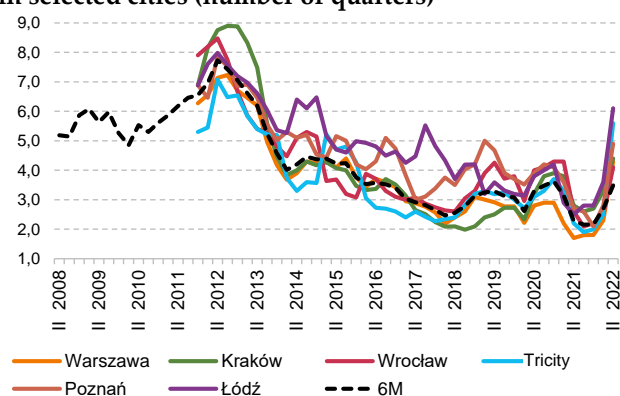
Figure 63 Measure of the match between dwellings offered vs. demand in terms of floorage >50 sq. m, SM in selected cities of Poland



Source: NBP

Source: NBP

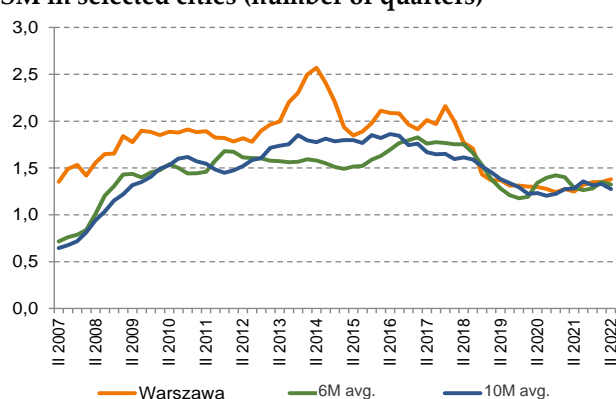
Figure 64 Timeline for selling dwellings offered in PM in selected cities (number of quarters)



Note: Timeline for selling dwellings in a primary real estate market is the relation of the number of dwellings on offer at the end of the current quarter to the average number of dwellings sold in the past four quarters.

Source: NBP based on JLL (f/k/a REAS)

Figure 65 Timeline for selling dwellings offered in SM in selected cities (number of quarters)



Note: Timeline for selling dwellings, averaged for the past four quarters; the data are not comparable to Figure 64. Only closed sale transactions are included in the time to sell a dwelling in the secondary property markets. The data are understated since they do not contain offers listed but not yet sold.

Source: NBP

Table 2 Average prices per 1 sq. m of housing in PM in Gdańsk

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 714	10 257	10 310	10 043	11 185	10 958	11 356	11 231	11 632	10 903
growth (q-o-q)	96,5	104,7	106,1	97,9	108,5	109,1	101,5	102,5	102,4	97,1
growth (y-o-y)	99,3	116,5	107,2	111,3	115,4	116,6	112,8	114,7	119,8	106,3
dwelling price range	4 194	2 199	4 079	1 635	4 161	1 612	5 215	1 225	6 060	1 380
<=8 000 PLN/sq.m	1 173	555	783	382	397	240	491	209	452	133
(8 001; 10 000] PLN/sq.m	1 721	650	1 659	634	1 717	608	1 998	406	2 403	566
(10 001; 12 000] PLN/sq.m	447	338	545	221	640	248	803	182	1 002	191
(12 001; 14 000] PLN/sq.m	512	453	599	249	697	201	967	148	870	318
>14 001 PLN/sq.m	341	203	493	149	710	315	956	280	1 333	172
dwelling space range	4 194	2 199	4 079	1 635	4 161	1 612	5 215	1 225	6 060	1 380
<= 40 sq.m	799	526	807	328	759	327	924	326	966	415
(40,1; 60] sq.m	1820	1008	1730	755	1808	757	2295	559	2629	591
(60,1; 80] sq.m	1180	461	1138	421	1185	357	1452	254	1801	277
> 80,1 sq.m	395	204	404	131	409	171	544	86	664	97
average price of 1 sq.m. of dwelling	9 714	10 257	10 310	10 043	11 185	10 958	11 356	11 231	11 632	10 903
<=4 000 sq.m	10 424	11 164	10622	10356	11376	11117	12059	11048	12 045	11 161
(40,1; 60] sq.m	9 446	9 905	10183	9710	11090	10920	11157	11036	11 582	10 538
(60,1; 80] sq.m	9 372	9 625	9953	10166	10864	10591	10946	11049	11 160	10 712
> 80,1 sq.m	10 533	11 083	11230	10786	12182	11591	12098	13732	12 512	12 568
average offer price deviation	-5,3%	x	2,7%	x	2,1%	x	1,1%	x	6,7%	x
<= 40 sq.m	-6,6%	x	2,6%	x	2,3%	x	9,1%	x	7,9%	x
(40,1; 60] sq.m	-4,6%	x	4,9%	x	1,6%	x	1,1%	x	9,9%	x
(60,1; 80] sq.m	-2,6%	x	-2,1%	x	2,6%	x	-0,9%	x	4,2%	x
> 80,1 sq.m	-5,0%	x	4,1%	x	5,1%	x	-11,9%	x	-0,4%	x

Source: NBP

Table 3 Average prices per 1 sq. m of housing in SM in Gdańsk

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 819	9 379	11 156	9 766	11 444	10 307	12 012	10 346	12 097	10 813
growth (q-o-q)	102,8	100,7	103,1	104,1	102,6	105,5	105,0	100,4	100,7	104,5
growth (y-o-y)	104,7	110,3	108,7	109,3	108,8	113,9	114,1	111,1	111,8	115,3
dwelling price range	2 223	1 437	1 776	1 538	1 539	1 315	1 672	965	2 101	321
<=8 000 PLN/sq.m	274	415	209	340	113	220	80	150	72	33
(8 001; 10 000] PLN/sq.m	828	571	575	636	467	500	402	348	477	94
(10 001; 12 000] PLN/sq.m	460	270	420	317	450	310	504	268	673	102
(12 001; 14 000] PLN/sq.m	309	99	231	141	234	150	300	114	407	63
>14 001 PLN/sq.m	352	82	341	104	275	135	386	85	472	29
dwelling space range	2 223	1 437	1 776	1 538	1 539	1 315	1 672	965	2 101	321
<= 40 sq.m	375	363	284	391	198	293	269	231	342	96
(40,1; 60] sq.m	931	645	696	696	624	638	702	464	923	150
(60,1; 80] sq.m	619	336	521	358	483	283	456	202	586	64
> 80,1 sq.m	298	93	275	93	234	101	245	68	250	11
average price of 1 sq.m. of dwelling	10 819	9 379	11 156	9 766	11 444	10 307	12 012	10 346	12 097	10 813
<=4 000 sq.m	12 001	10 176	12535	10571	12806	11223	13722	11366	13 427	11 958
(40,1; 60] sq.m	10 840	9 342	11060	9724	11489	10248	12128	10258	12 226	10 737
(60,1; 80] sq.m	10 357	8 845	10850	9189	11155	9847	11199	9674	11 371	9 541
> 80,1 sq.m	10 226	8 448	10557	8922	10769	9316	11319	9477	11 502	9 248
average offer price deviation	15,4%	x	14,2%	x	11,0%	x	16,1%	x	11,9%	x
<= 40 sq.m	17,9%	x	18,6%	x	14,1%	x	20,7%	x	12,3%	x
(40,1; 60] sq.m	16,0%	x	13,7%	x	12,1%	x	18,2%	x	13,9%	x
(60,1; 80] sq.m	17,1%	x	18,1%	x	13,3%	x	15,8%	x	19,2%	x
> 80,1 sq.m	21,0%	x	18,3%	x	15,6%	x	19,4%	x	24,4%	x

Source: NBP

Table 4 Average prices per 1 sq. m of housing in PM in Kraków

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 145	9 375	10 621	9 720	11 010	10 308	11 161	10 518	11 395	11 181
growth (q-o-q)	104,1	105,8	104,7	103,7	103,7	106,1	101,4	102,0	102,1	106,3
growth (y-o-y)	104,0	108,9	112,2	109,0	114,5	117,9	114,6	118,7	112,3	119,3
dwelling price range	6 456	2 760	5 889	2 005	7 073	1 760	6 612	1 572	7 326	1 569
<=4 000 PLN/sq.m	701	659	336	373	246	157	169	86	126	47
(4 001; 6 000] PLN/sq.m	2 793	1 278	2 148	935	2 351	728	1 871	635	2 071	510
(6 001; 8 000] PLN/sq.m	1 858	500	2 064	391	2 827	534	2 895	556	2 961	600
(8 001; 10 000] PLN/sq.m	846	266	1 028	221	1 061	260	1 053	209	1 151	221
>10 001 PLN/sq.m	258	57	313	85	588	81	624	86	1 017	191
dwelling space range	6 456	2 760	5 889	2 005	7 073	1 760	6 612	1 572	7 326	1 569
<= 40 sq.m	1482	652	1369	461	1578	477	1328	445	1451	444
(40,1; 60] sq.m	2765	1247	2530	893	3138	736	3050	632	3444	696
(60,1; 80] sq.m	1726	670	1585	477	1864	395	1737	380	1894	305
> 80,1 sq.m	483	191	405	174	493	152	497	115	537	124
average price of 1 sq.m. of dwelling	10 145	9 375	10 621	9 720	11 010	10 308	11 161	10 518	11 395	11 181
<=4 000 sq.m	10821	10252	11399	10409	11789	10847	12015	11150	12599	11557
(40,1; 60] sq.m	10146	9225	10626	9727	10959	10310	11084	10469	11212	11063
(60,1; 80] sq.m	9581	8794	10019	9022	10395	9816	10624	9846	10769	10644
> 80,1 sq.m	10078	9391	10308	9776	11173	9888	11233	10560	11516	11820
average offer price deviation	8,2%	x	9,3%	x	6,8%	x	6,1%	x	1,9%	x
<= 40 sq.m	5,6%	x	9,5%	x	8,7%	x	7,8%	x	9,0%	x
(40,1; 60] sq.m	10,0%	x	9,2%	x	6,3%	x	5,9%	x	1,4%	x
(60,1; 80] sq.m	8,9%	x	11,1%	x	5,9%	x	7,9%	x	1,2%	x
> 80,1 sq.m	7,3%	x	5,4%	x	13,0%	x	6,4%	x	-2,6%	x

Source: NBP

Table 5 Average prices per 1 sq. m of housing in SM in Kraków

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 231	9 380	10 614	9 695	11 416	10 001	11 845	10 331	12 014	10 487
growth (q-o-q)	103,4	104,9	103,7	103,4	107,5	103,2	103,8	103,3	101,4	101,5
growth (y-o-y)	105,8	110,8	111,2	112,5	116,3	113,0	119,7	115,6	117,4	111,8
dwelling price range	697	1 684	865	1 768	1 210	1 820	1 535	1 615	1 511	1 066
<=8 000 PLN/sq.m	82	441	81	392	77	307	48	202	27	122
(8 001; 10 000] PLN/sq.m	304	690	332	737	340	719	366	611	328	376
(10 001; 12 000] PLN/sq.m	190	381	250	371	369	490	498	485	511	325
(12 001; 14 000] PLN/sq.m	75	117	127	168	230	213	355	195	371	171
>14 001 PLN/sq.m	46	55	75	100	194	91	268	122	274	72
dwelling space range	697	1 684	865	1 768	1 210	1 820	1 535	1 615	1 511	1 066
<= 40 sq.m	159	617	217	623	290	633	410	559	385	400
(40,1; 60] sq.m	332	707	380	773	479	838	628	727	662	470
(60,1; 80] sq.m	155	270	192	253	285	264	327	240	334	149
> 80,1 sq.m	51	90	76	119	156	85	170	89	130	47
average price of 1 sq.m. of dwelling	10 231	9 380	10 614	9 695	11 416	10 001	11 845	10 331	12 014	10 487
<=4 000 sq.m	11 182	9 805	11 554	10 259	12 427	10 575	12 686	10 927	12 941	10 988
(40,1; 60] sq.m	9 965	9 123	10 200	9 479	11 206	9 667	11 374	9 923	11 636	10 229
(60,1; 80] sq.m	9 678	9 034	10 346	9 316	10 971	9 622	11 507	10 015	11 604	9 911
> 80,1 sq.m	10 681	9 521	10 679	8 952	10 993	10 191	12 211	10 772	12 241	10 633
average offer price deviation	9,1%	x	9,5%	x	14,1%	x	14,7%	x	14,6%	x
<= 40 sq.m	14,0%	x	12,6%	x	17,5%	x	16,1%	x	17,8%	x
(40,1; 60] sq.m	9,2%	x	7,6%	x	15,9%	x	14,6%	x	13,8%	x
(60,1; 80] sq.m	7,1%	x	11,1%	x	14,0%	x	14,9%	x	17,1%	x
> 80,1 sq.m	12,2%	x	19,3%	x	7,9%	x	13,4%	x	15,1%	x

Source: NBP

Table 6 Average prices per 1 sq. m of housing in PM in Łódź

specification	II Q 2021		III Q 2021		IV Q 2021		I 2022		II 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	7 409	6 676	8 006	7 451	8 117	7 528	8 145	7 718	8 481	7 929
growth (q-o-q)	108,1	102,7	108,1	111,6	101,4	101,0	100,3	102,5	104,1	102,7
growth (y-o-y)	113,8	109,8	118,9	116,3	120,1	113,6	118,8	118,7	114,5	118,8
dwelling price range	1 642	624	1 693	458	1 847	471	2 215	403	3 035	649
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	74	126	57	22	43	24	53	8	14	5
(6 001; 8 000] PLN/sq.m	1 147	473	754	283	683	317	933	248	1 135	377
(8 001; 10 000] PLN/sq.m	415	25	840	148	1 066	126	1 131	142	1 574	251
> 10 000 PLN/sq.m	6	0	42	5	55	4	98	5	312	16
dwelling space range	1 642	624	1 693	458	1 847	471	2 215	403	3 035	649
<= 40 sq.m	374	106	503	152	537	139	620	111	878	225
(40,1; 60] sq.m	742	323	623	204	702	181	915	173	1 312	254
(60,1; 80] sq.m	410	143	475	70	500	124	546	107	691	124
> 80,1 sq.m	116	52	92	32	108	27	134	12	154	46
average price of 1 sq.m. of dwelling	7 409	6 676	8 006	7 451	8 117	7 528	8 145	7 718	8 481	7 929
<=4 000 sq.m	8 022	7 035	8 873	8 023	8 977	8 195	8 989	8 411	9 248	8 454
(40,1; 60] sq.m	7 350	6 764	7 757	7 293	7 892	7 474	8 000	7 549	8 338	7 799
(60,1; 80] sq.m	7 039	6 339	7 519	6 866	7 630	6 863	7 538	7 302	7 912	7 476
> 80,1 sq.m	7 110	6 322	7 457	7 016	7 561	7 499	7 705	7 450	7 880	7 294
average offer price deviation	11,0%	x	7,4%	x	7,8%	x	5,5%	x	7,0%	x
<= 40 sq.m	14,0%	x	10,6%	x	9,5%	x	6,9%	x	9,4%	x
(40,1; 60] sq.m	8,7%	x	6,4%	x	5,6%	x	6,0%	x	6,9%	x
(60,1; 80] sq.m	11,0%	x	9,5%	x	11,2%	x	3,2%	x	5,8%	x
> 80,1 sq.m	12,5%	x	6,3%	x	0,8%	x	3,4%	x	8,0%	x

Source: NBP

Table 7 Average prices per 1 sq. m of housing in SM in Łódź

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	6 012	5 800	6 683	6 075	6 667	6 158	7 018	6 214	6 974	6 652
growth (q-o-q)	101,8	106,7	111,2	104,7	99,8	101,4	105,3	100,9	99,4	107,0
growth (y-o-y)	110,7	110,6	122,3	108,2	116,5	111,5	118,9	114,4	116,0	114,7
dwelling price range	318	81	1 226	90	751	93	868	157	973	188
<= 4 000 PLN/sq.m	19	5	14	2	15	2	11	10	3	4
(4 001; 6 000] PLN/sq.m	150	44	417	43	239	43	183	67	206	57
(6 001; 8 000] PLN/sq.m	129	29	590	44	381	41	492	62	581	95
(8 001; 10 000] PLN/sq.m	18	3	172	1	104	7	158	17	177	31
> 10 001 PLN/sq.m	2	0	33	0	12	0	24	1	6	1
dwelling space range	318	81	1 226	90	751	93	868	157	973	188
<= 40 sq.m	51	27	324	30	190	33	215	56	212	67
(40,1; 60] sq.m	130	32	523	45	284	36	352	74	486	85
(60,1; 80] sq.m	78	18	217	9	153	16	172	16	166	29
> 80,1 sq.m	59	4	162	6	124	8	129	11	109	7
average price of 1 sq.m. of dwelling	6 012	5 800	6 683	6 075	6 667	6 158	7 018	6 214	6 974	6 652
<=4 000 sq.m	6 697	6 215	7 089	6 593	7 079	6 433	7 307	6 480	7 332	6 873
(40,1; 60] sq.m	6 110	5 903	6 625	5 971	6 748	6 002	7 019	6 298	6 980	6 554
(60,1; 80] sq.m	5 755	5 233	6 530	5 304	6 482	6 107	7 030	5 703	6 921	6 758
> 80,1 sq.m	5 543	4 730	6 264	5 416	6 074	5 833	6 519	5 041	6 327	5 294
average offer price deviation	3,7%	x	10,0%	x	8,3%	x	12,9%	x	4,8%	x
<= 40 sq.m	7,7%	x	7,5%	x	10,1%	x	12,8%	x	6,7%	x
(40,1; 60] sq.m	3,5%	x	10,9%	x	12,4%	x	11,4%	x	6,5%	x
(60,1; 80] sq.m	10,0%	x	23,1%	x	6,2%	x	23,3%	x	2,4%	x
> 80,1 sq.m	17,2%	x	15,7%	x	4,1%	x	29,3%	x	19,5%	x

Source: NBP

Table 8 Average prices per 1 sq. m of housing in PM in Poznań

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	8 257	7 927	8 780	8 025	9 199	8 592	9 842	8 794	9 965	9 524
growth (q-o-q)	103	100	106	101	105	107	107	102	101	108
growth (y-o-y)	106	107	111	108	115	113	123	111	121	120
dwelling price range	5 330	2 307	5 324	1 497	4 738	1 743	5 081	1 213	5 217	1 091
<=7 000 PLN/sq.m	799	493	557	286	257	253	106	106	49	34
(7 001; 9 000] PLN/sq.m	3 407	1 463	3 178	967	2 566	966	1 908	702	1 727	561
(9 001; 11 000] PLN/sq.m	939	328	1 148	199	1 399	408	2 029	321	2 276	335
(11 001; 13 000] PLN/sq.m	80	14	163	15	279	62	609	42	769	62
>13 001 PLN/sq.m	105	9	278	30	237	64	429	42	396	99
dwelling space range	5 330	2 307	5 324	1 497	4 738	1 753	5 081	1 213	5 217	1 091
<= 40 sq.m	995	674	1 038	334	910	444	1 024	269	1 077	275
(40,1; 60] sq.m	2 243	970	2 252	635	2 156	729	2 281	504	2 334	489
(60,1; 80] sq.m	1 615	515	1 577	396	1 301	438	1 358	337	1 393	235
> 80,1 sq.m	477	148	457	132	371	142	418	103	413	92
average price of 1 sq.m. of dwelling	8 257	7 927	8 781	8 025	9 199	8 597	9 842	8 794	9 965	9 524
<=4 000 sq.m	9 081	8 384	9 430	8 536	9 846	9 458	10 562	9 561	10 799	9 870
(40,1; 60] sq.m	8 313	7 932	8 786	8 096	9 137	8 553	9 790	8 811	9 816	9 494
(60,1; 80] sq.m	7 686	7 354	8 148	7 560	8 638	7 848	9 305	8 105	9 488	8 939
> 80,1 sq.m	8 202	7 814	9 463	7 787	9 943	8 443	10 110	8 971	10 237	10 145
average offer price deviation	4,2%	x	9,4%	x	7,0%	x	11,9%	x	4,6%	x
<= 40 sq.m	8,3%	x	10,5%	x	4,1%	x	10,5%	x	9,4%	x
(40,1; 60] sq.m	4,8%	x	8,5%	x	6,8%	x	11,1%	x	3,4%	x
(60,1; 80] sq.m	4,5%	x	7,8%	x	10,1%	x	14,8%	x	6,1%	x
> 80,1 sq.m	5,0%	x	21,5%	x	17,8%	x	12,7%	x	0,9%	x

Source: NBP

Table 9 Average prices per 1 sq. m of housing in SM in Poznań

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	8 137	7 408	8 322	7 518	8 952	7 675	9 402	7 677	9 517	7 967
growth (q-o-q)	102,4	101,4	102,3	101,5	107,6	102,1	105,0	100,0	101,2	103,8
growth (y-o-y)	104,0	105,6	106,0	105,3	114,6	106,5	118,4	105,1	117,0	107,6
dwelling price range	865	1 168	935	970	885	842	984	593	1 069	391
<=7 000 PLN/sq.m	237	492	213	373	122	318	83	206	67	86
(7 001; 9 000] PLN/sq.m	412	509	452	451	407	382	406	290	433	231
(9 001; 11 000] PLN/sq.m	168	141	207	116	243	110	331	80	367	65
(11 001; 13 000] PLN/sq.m	36	20	46	27	76	19	105	14	136	7
>13 001 PLN/sq.m	12	6	17	3	37	13	59	3	66	2
dwelling space range	865	1 168	935	970	885	842	984	593	1 069	391
<= 40 sq.m	186	353	173	305	176	259	225	181	214	107
(40,1; 60] sq.m	385	538	420	443	383	380	437	269	517	191
(60,1; 80] sq.m	221	206	262	178	229	171	245	122	251	78
> 80,1 sq.m	73	71	80	44	97	32	77	21	87	15
average price of 1 sq.m. of dwelling	8 137	7 408	8 322	7 518	8 952	7 675	9 402	7 677	9 517	7 967
<=4 000 sq.m	9 063	8 070	9 363	8 213	9 901	8 410	10 035	8 495	10 493	8 902
(40,1; 60] sq.m	8 224	7 323	8 369	7 505	8 885	7 556	9 318	7 580	9 496	7 829
(60,1; 80] sq.m	7 316	6 818	7 716	6 637	8 347	6 943	8 915	6 869	8 852	7 118
> 80,1 sq.m	7 803	6 472	7 806	6 405	8 920	7 059	9 579	6 579	9 158	7 463
average offer price deviation	9,8%	x	10,7%	x	16,6%	x	22,5%	x	19,5%	x
<= 40 sq.m	12,3%	x	14,0%	x	17,7%	x	18,1%	x	17,9%	x
(40,1; 60] sq.m	12,3%	x	11,5%	x	17,6%	x	22,9%	x	21,3%	x
(60,1; 80] sq.m	7,3%	x	16,3%	x	20,2%	x	29,8%	x	24,4%	x
> 80,1 sq.m	20,6%	x	21,9%	x	26,4%	x	45,6%	x	22,7%	x

Source: NBP

Table 10 Average prices per 1 sq. m of housing in PM in Warsaw

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 362	10 696	11 406	11 006	11 820	11 621	12 518	12 381	12 896	12 368
growth (q-o-q)	103,6	100,3	100,4	102,8	103,6	105,7	105,9	106,5	103,0	99,9
growth (y-o-y)	106,0	113,3	106,2	107,9	109,9	113,5	114,1	116,1	113,5	115,6
dwellings price range	8 421	4 657	9 042	3 774	8 140	3 895	9 727	3 025	9 643	2 203
<=9 500 PLN/sq.m	2 365	1 607	2 478	1 082	1 633	823	1 498	441	1 145	269
(9 501; 11 500] PLN/sq.m	2 574	1 647	2 793	1 357	3 011	1 403	2 870	955	2 261	663
(11 501; 13 500] PLN/sq.m	2 015	917	2 217	894	1 702	868	2 402	779	2 966	677
(13 501; 15 500] PLN/sq.m	767	314	826	283	809	479	1 502	359	1 763	334
>15 001 PLN/sq.m	700	172	728	158	985	322	1 455	491	1 508	260
dwellings space range	8 421	4 657	9 042	3 774	8 140	3 895	9 727	3 025	9 643	2 203
<= 40 sq.m	1 359	850	1 771	906	1 714	969	2 115	844	2 068	663
(40,1; 60] sq.m	3 543	2 080	3 803	1 522	3 328	1 602	4 158	1 263	4 122	886
(60,1; 80] sq.m	2 397	1 224	2 465	966	2 197	902	2 478	622	2 431	442
> 80,1 sq.m	1 122	503	1 003	380	901	422	976	296	1 022	212
average price of 1 sq.m. of dwelling	11 362	10 696	11 406	11 006	11 820	11 621	12 518	12 381	12 896	12 368
<=4 000 sq.m	12 819	11 290	12 548	11 445	13 232	12 223	13 814	12 790	14 222	12 759
(40,1; 60] sq.m	11 215	10 765	11 241	11 014	11 556	11 496	12 340	12 378	12 759	12 220
(60,1; 80] sq.m	10 608	10 012	10 664	10 506	10 960	11 079	11 482	11 795	11 790	11 893
> 80,1 sq.m	11 669	11 069	11 834	11 196	12 204	11 866	13 100	12 457	13 395	12 757
average offer price deviation	6,2%	x	3,6%	x	1,7%	x	1,1%	x	4,3%	x
<= 40 sq.m	13,5%	x	9,6%	x	8,3%	x	8,0%	x	11,5%	x
(40,1; 60] sq.m	4,2%	x	2,1%	x	0,5%	x	-0,3%	x	4,4%	x
(60,1; 80] sq.m	6,0%	x	1,5%	x	-1,1%	x	-2,7%	x	-0,9%	x
> 80,1 sq.m	5,4%	x	5,7%	x	2,8%	x	5,2%	x	5,0%	x

Source: NBP

Table 11 Average prices per 1 sq. m of housing in SM in Warsaw

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 463	11 218	12 953	11 512	13 305	11 288	13 366	11 457	14 061	11 805
growth (q-o-q)	102,0	103,2	103,9	99,4	102,7	101,0	100,5	101,5	105,2	103,0
growth (y-o-y)	108,2	109,3	110,6	106,7	111,9	105,8	109,4	105,3	112,8	105,2
dwellings price range	2 351	4 646	2 406	4 216	1 989	1 494	1 975	1 320	1 728	1 268
<=9 500 PLN/sq.m	381	1 298	281	1 012	203	343	172	265	92	200
(9 501; 11 500] PLN/sq.m	657	1 477	632	1 329	465	564	450	481	366	464
(11 501; 13 500] PLN/sq.m	587	1 084	626	1 025	508	354	530	343	405	332
(13 501; 15 500] PLN/sq.m	360	509	404	521	367	154	377	148	336	171
>15 501 PLN/sq.m	366	278	463	329	446	79	446	83	529	101
dwellings space range	2 351	4 646	2 406	4 216	1 989	1 494	1 975	1 320	1 728	1 268
<= 40 sq.m	429	1 349	480	1 250	358	498	346	455	314	425
(40,1; 60] sq.m	884	2 036	871	1 840	804	657	832	589	733	612
(60,1; 80] sq.m	548	810	574	680	487	215	456	204	368	165
> 80,1 sq.m	490	451	481	446	340	124	341	72	313	66
average price of 1 sq.m. of dwelling	12 463	11 218	12 953	11 512	13 305	11 288	13 366	11 457	14 061	11 805
<=4 000 sq.m	13 954	11 657	14 433	12 041	14 824	12 156	14 798	12 289	15 612	12 713
(40,1; 60] sq.m	12 001	10 859	12 483	11 108	12 865	10 721	12 920	10 964	13 579	11 273
(60,1; 80] sq.m	11 691	11 016	12 160	11 142	12 586	10 635	12 588	10 810	13 360	11 427
> 80,1 sq.m	12 854	11 885	13 273	12 259	13 776	11 942	14 039	12 067	14 458	11 836
average offer price deviation	11,1%	x	12,5%	x	17,9%	x	16,7%	x	19,1%	x
<= 40 sq.m	19,7%	x	19,9%	x	22,0%	x	20,4%	x	22,8%	x
(40,1; 60] sq.m	10,5%	x	12,4%	x	20,0%	x	17,8%	x	20,5%	x
(60,1; 80] sq.m	6,1%	x	9,1%	x	18,3%	x	16,5%	x	16,9%	x
> 80,1 sq.m	8,2%	x	8,3%	x	15,4%	x	16,3%	x	22,2%	x

Source: NBP

Table 12 Average prices per 1 sq. m of housing in PM in Wrocław

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 387	8 578	9 965	8 891	10 189	9 507	10 352	10 029	10 789	10 338
growth (q-o-q)	103,6	101,8	106,2	103,7	102,2	106,9	101,6	105,5	104,2	103,1
growth (y-o-y)	108,5	106,7	114,9	109,6	118,1	115,5	114,2	119,1	114,9	120,5
dwellings price range	4 827	2 030	4 441	1 618	4 514	1 556	4 605	1 034	4 501	1 123
<=7 000 PLN/sq.m	501	400	240	159	154	72	106	11	67	21
(7 001; 9 000] PLN/sq.m	1 925	892	1 571	834	1 493	663	1 317	327	1 170	332
(9 001; 11 000] PLN/sq.m	1 450	563	1 337	413	1 361	517	1 611	384	1 301	404
(11 001; 13 000] PLN/sq.m	634	142	826	158	960	226	900	251	1 042	226
>13 001 PLN/sq.m	317	33	467	54	546	78	671	61	921	140
dwellings space range	4 827	2 030	4 441	1 618	4 514	1 556	4 605	1 034	4 501	1 123
<= 40 sq.m	959	397	797	356	883	369	896	219	848	307
(40,1; 60] sq.m	2244	982	2035	767	2102	707	2088	478	2024	504
(60,1; 80] sq.m	1241	511	1242	371	1177	359	1227	259	1236	239
> 80,1 sq.m	383	140	367	124	352	121	394	78	393	73
average price of 1 sq.m. of dwelling	9 387	8 578	9 965	8 891	10 189	9 507	10 352	10 029	10 789	10 338
<=4 000 sq.m	10207	9587	11185	9398	11362	10171	12011	10758	12602	11389
(40,1; 60] sq.m	9340	8515	9840	8841	10033	9380	10076	10142	10532	10097
(60,1; 80] sq.m	8794	7819	9322	8328	9578	8980	9745	9280	10075	9585
> 80,1 sq.m	9536	8926	10182	9426	10215	9785	9930	9780	10444	10042
average offer price deviation	9,4%	x	12,1%	x	7,2%	x	3,2%	x	4,4%	x
<= 40 sq.m	6,5%	x	19,0%	x	11,7%	x	11,7%	x	10,6%	x
(40,1; 60] sq.m	9,7%	x	11,3%	x	7,0%	x	-0,7%	x	4,3%	x
(60,1; 80] sq.m	12,5%	x	11,9%	x	6,7%	x	5,0%	x	5,1%	x
> 80,1 sq.m	6,8%	x	8,0%	x	4,4%	x	1,5%	x	4,0%	x

Source: NBP

Table 13 Average prices per 1 sq. m of housing in SM in Wrocław

specification	II Q 2021		III Q 2021		IV Q 2021		I Q 2022		II Q 2022	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	8 982	8 510	9 160	8 563	9 327	8 953	10 075	9 202	10 453	9 686
growth (q-o-q)	103,1	105,6	102,0	100,6	101,8	104,6	108,0	102,8	103,8	105,3
growth (y-o-y)	111,9	113,5	110,3	117,3	108,5	112,3	115,6	114,2	116,4	113,8
dwellings price range	2 623	796	2 071	827	2 007	1 085	1 741	1 004	2 058	933
<=7 000 PLN/sq.m	326	165	199	160	155	142	72	129	41	76
(7 001; 9 000] PLN/sq.m	1 192	362	911	381	835	489	543	383	516	302
(9 001; 11 000] PLN/sq.m	748	195	653	187	694	309	664	331	832	334
(11 001; 13 000] PLN/sq.m	246	55	218	78	217	110	279	106	439	161
>13 001 PLN/sq.m	111	19	90	21	106	35	183	55	230	60
dwellings space range	2 623	796	2 071	827	2 007	1 085	1 741	1 004	2 058	933
<= 40 sq.m	367	201	264	218	252	270	222	231	285	239
(40,1; 60] sq.m	1075	395	852	386	793	540	699	500	887	457
(60,1; 80] sq.m	797	142	621	163	631	217	548	200	630	186
> 80,1 sq.m	384	58	334	60	331	58	272	73	256	51
average price of 1 sq.m. of dwelling	8 982	8 510	9 160	8 563	9 327	8 953	10 075	9 202	10 453	9 686
<=4 000 sq.m	10 660	9 314	10 622	9 672	10 673	9 829	11 456	10 183	12 077	10 625
(40,1; 60] sq.m	9 022	8 307	9 357	8 432	9 407	8 827	10 261	8 998	10 527	9 667
(60,1; 80] sq.m	8 448	7 852	8 684	7 826	9 043	8 361	9 539	8 811	9 985	8 791
> 80,1 sq.m	8 373	8 714	8 386	7 380	8 651	8 266	9 549	8 571	9 542	8 721
average offer price deviation	5,5%	x	7,0%	x	4,2%	x	9,5%	x	7,9%	x
<= 40 sq.m	14,4%	x	9,8%	x	8,6%	x	12,5%	x	13,7%	x
(40,1; 60] sq.m	8,6%	x	11,0%	x	6,6%	x	14,0%	x	8,9%	x
(60,1; 80] sq.m	7,6%	x	11,0%	x	8,1%	x	8,3%	x	13,6%	x
> 80,1 sq.m	-3,9%	x	13,6%	x	4,7%	x	11,4%	x	9,4%	x

Source: NBP

6. Analysis of profitability of investment in housing in selected cities in Poland in 2022 Q2.³³

2022 Q2 saw quite significant changes in the profitability of investment in housing for rental. 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 drivers of change in the period under analysis.

The prices of dwellings affect rates of return on new contracts concerning newly purchased flats and as such they underpin investment decisions and demand for dwellings. 2022 Q2 saw further increases in the estimated transaction prices of dwellings. They reached PLN 12,612 per 1 sq. m in Warsaw, meaning a 13.6% rise y/y. In turn, the prices in the 6 cities group came to PLN 10,639 per 1 sq. m (15.6% up y/y) and PLN 8,284 per 1 sq. m (17.6% up y/y). The changes turned out to be much smaller compared to the previous quarter: 1.4% in Warsaw, 3.0% in the 6 cities and 3.2% in other cities of Poland. The changes show that the estimated prices of dwellings continue to rise, though at a much slower rate.

Rental rates, which increased in the housing rental segment in 2022 Q2, affect new contracts as well as the existing ones, though with a lag (as the existing contracts expire). Compared with the same period of 2021, the rates grew 21.9% in Warsaw (PLN 63.1 per 1 sq. m), 30.1% in the group of 6 cities (PLN 56.4 per 1 sq. m) and 21.9% in the group of other cities (PLN 40.8 per 1 sq. m), and the growth rate accelerated significantly compared to 2022 Q1: by 9.9 p.p., 14.1 p.p. and 11.3 p.p., respectively. A similar change in rent rates was seen in comparison to the previous quarter. Following relatively sharp decreases in the second half of 2020 and 2021 Q1, rental rates started to recover to the levels seen in earlier periods and the pace of the increase considerably picked up in 2022 Q2. Given a noticeable drop in the number of rental offers in recent months and changes caused in the market segment by the influx of Ukrainian refugees, it may be concluded that the upswing in rental rates might have been a result of a drop in supply. In addition, there was an increase in the number of rental transactions directly between owners of dwellings and tenants, bypassing real estate agencies and classifieds sites.

The changes in the two real estate market segments outlined above clearly acted towards the reversal of the trend in capitalisation in 2022 Q2. This was a direct consequence of the adopted methodology, according to which it is the ratio of the annual income from the rental of housing to its purchase price per 1 sq. m. In the quarter under analysis, the capitalisation rate of an investment in rental dwellings reached 6.0% (growing by 7.3 % y/y) in Warsaw, 6.4% (11.6% up y/y) in the 6 cities and by 5.9% (3.6% up y/y) in the other cities. Similar were the changes in 2022 Q2 compared to the preceding quarter of the year. In this case, the capitalisation

³³ We have presented 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 a group of 6 cities (Gdańska, Gdynia, Kraków, Łódź, Poznań and Wrocław) and a 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 reviewed 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 is calculated as a ratio of the annual rental income to the price of one square metre of housing. On the other hand, the ROE was calculated as a net profit relative to committed capital. 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 1 sq. m. of an average dwelling was determined by summing up 50% of the average transaction price in both the primary and the secondary market. The price in the primary market was boosted by the cost of finishing (in 2021 Q4, + PLN 1,050 per 1 sq. m in Warsaw, + PLN 950 in the 6 cities (Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław) and + PLN 850 in the group of 10 cities (Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin and Zielona Góra), whereas three cities were omitted from the analysis, as mentioned above. The underlying assumptions include a PLN-denominated loan for 25 years, with equal instalments payable 4 times a year and a 95% occupancy rate. From 2022, investment profitability analyses are prepared on a quarterly basis.

rate increased by 9.3% in Warsaw, 12.7% in the 6 cities and by 6.4% in the rest of the analysed cities. The results are illustrative of an effort to restore the level of capitalisation, which has been clearly going down since 2020.

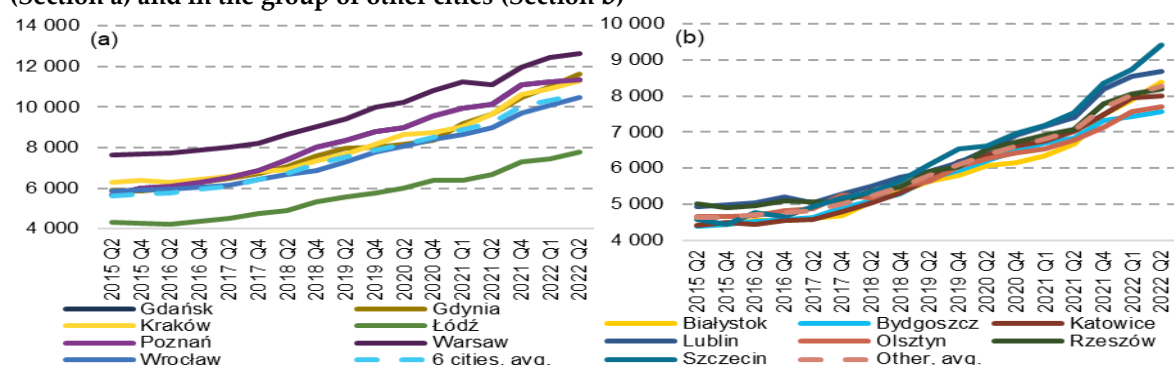
The capitalisation rate is a simple measure comprising a cost element (depreciation). Therefore, in the Polish economy, a profitability analysis of such kind of investment is supplemented by estimated ROE ratios. Major differences were observed depending on the leverage of home purchase with a loan, as expressed by the LTV ratio. In the case of investments in rental housing characterised by the LTV leverage rate of 0%, a marked adjustment was observed in the downward trends first seen in 2020. The ROE ratio came to 3.5% (11.6% up y/y) in Warsaw, 3.9% (19.1% up y/y) in the group of 6 cities and 3.4% (7.3% up y/y) in the group of the remaining cities under analysis. This means an absolute increase in profitability by 0.4 p.p., 0.6 p.p. and 0.2 p.p., respectively, on 2021 Q1. The change in the levels of ROE on the previous quarter was similar. The ROE ratio increased by 14.4% in Warsaw, 20.4% the group of 6 cities and 11.3% in the other cities. This demonstrates that 2022 Q2 was a time when profitability of investment in rental housing went up within a short period. The ROE ratio for LTV=0% grew the most in Poznań and Gdańsk (by 30.9% y/y to 4.0%), Wrocław (127.3% y/y to 4.6%), Bydgoszcz (123.5% y/y to 3.7%) and Gdynia (121.1% y/y to 3.2%).

The ROE ratio concerning loans leveraged at LTV=50% changed differently in 2022 Q2: it dropped in comparison to the corresponding quarter of 2021 by 3.9 p.p. to -0.5% in Warsaw, by 3.4 p.p. to 0.2% in the 6 cities and by 4.2 p.p. to -0.8% in the other cities under analysis. It was the first time the ROE had fallen below zero in Warsaw and in the group of the other cities. Compared to the previous quarter of 2022, the ROE for LTV=50% decreased by 0.9 p.p. in Warsaw, 0.5 p.p. in the 6 cities and 1.1 p.p. in the other cities. Such changes reveal that the ratio decrease rate clearly decelerated during the analysed period.

A visible downward trend, which had started at the beginning of 2021, continued in the case of investments financed with a residential mortgage loan with the LTV=80%. The ROE in this group of investments dropped in comparison to 2021 Q2 by as many as 16.9 p.p. in Warsaw, 15.6 p.p. in the 6 cities and 17.5 p.p. in the other cities. Thus, it was the second quarter when the ROE had been below zero. In Warsaw it amounted to -12.7%, -10.9% in the six cities, reaching -13.3% in the group of the other cities. These figures were also lower than those seen in the previous quarter of the year. In this case, decreases reached 4.9 p.p., 3.8 p.p. and 5.4 p.p., respectively.

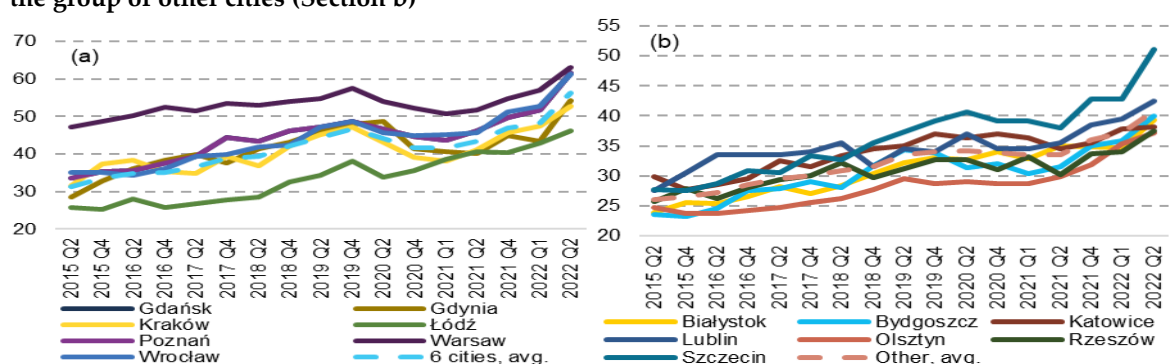
An increase in the leverage ratio had an adverse effect on the profitability of investment. This in turn was a direct consequence of growing costs, mainly those of new residential mortgage loans. 2022 Q2 was another period when rising financial costs had a big impact on changes in the ROE with the LTV at 50% and 80%. In addition, the evaluation of the profitability of this kind of investment is affected by changes in the financial markets. During the period, the interest rate on 10-year treasury bonds once again exceeded the capitalization rate, while the average interest rates on new term deposits went up markedly. All this made investments in rental housing – especially where the leverage rate was medium or high – become less attractive than other forms of investing in the period under analysis.

Figure 66 Estimated transaction prices of an average dwelling (PLN/sq. m) in the group of 6 cities, Warsaw (Section a) and in the group of other cities (Section b)



Source: NBP

Figure 67 Transaction rents for dwellings (PLN/sq. m) in the group of 6 cities, Warsaw (Section a) and in the group of other cities (Section b)



Source: NBP

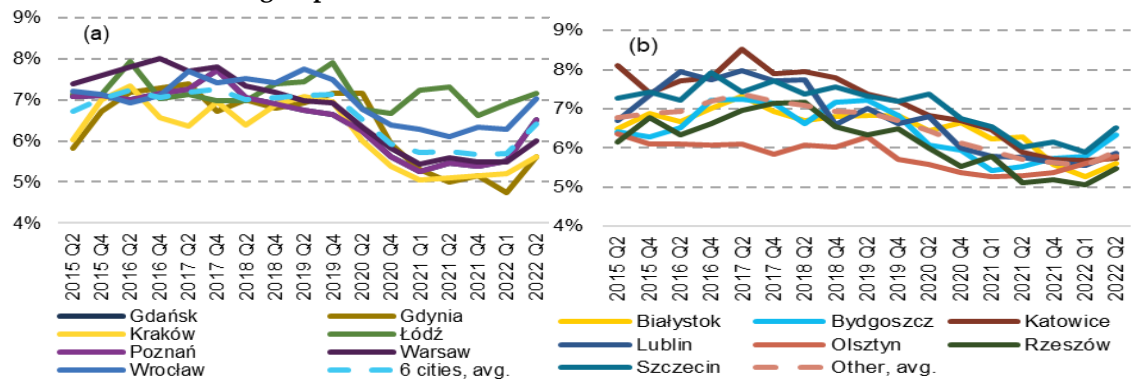
Table 14 Estimated capitalisation rate (return on rental expected by the property buyer expressed as a percentage of the property purchase price fully paid in cash) in selected cities (%)

Period	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2016 Q2	6.7%	6.5%	7.0%	7.2%	7.7%	7.3%	8.0%	7.9%	6.1%	7.0%	6.3%	7.2%	6.9%	7.8%	7.2%	6.9%
2016 Q4	7.0%	7.2%	7.2%	7.3%	7.8%	6.6%	7.7%	7.0%	6.1%	7.2%	6.6%	7.9%	7.1%	8.0%	7.1%	7.2%
2017 Q2	7.3%	7.2%	7.3%	7.4%	8.5%	6.4%	8.0%	7.1%	6.1%	7.3%	6.9%	7.4%	7.7%	7.7%	7.2%	7.4%
2017 Q4	6.9%	7.1%	7.7%	6.7%	7.9%	7.0%	7.7%	7.0%	5.8%	7.7%	7.1%	7.7%	7.4%	7.8%	7.3%	7.2%
2018 Q2	6.7%	6.6%	7.1%	7.0%	7.9%	6.4%	7.7%	7.0%	6.1%	7.1%	7.2%	7.4%	7.5%	7.3%	7.0%	7.1%
2018 Q4	6.8%	7.2%	6.9%	6.8%	7.8%	6.9%	6.6%	7.4%	6.0%	6.9%	6.5%	7.6%	7.4%	7.2%	7.0%	6.9%
2019 Q2	6.8%	7.2%	6.7%	6.9%	7.4%	7.1%	7.0%	7.4%	6.3%	6.7%	6.3%	7.3%	7.8%	7.0%	7.1%	6.9%
2019 Q4	6.8%	6.8%	6.7%	7.2%	7.2%	6.9%	6.6%	7.9%	5.7%	6.7%	6.5%	7.2%	7.5%	6.9%	7.1%	6.7%
2020 Q2	6.4%	6.1%	6.2%	7.2%	6.8%	6.0%	6.8%	6.8%	5.6%	6.2%	6.0%	7.4%	6.8%	6.3%	6.5%	6.4%
2020 Q4	6.7%	5.9%	5.6%	5.9%	6.7%	5.4%	6.0%	6.7%	5.4%	5.6%	5.5%	6.7%	6.4%	5.8%	5.9%	6.1%
2021 Q1	6.2%	5.4%	5.3%	5.3%	6.5%	5.0%	5.8%	7.2%	5.3%	5.3%	5.8%	6.5%	6.3%	5.4%	5.7%	5.9%
2021 Q2	6.3%	5.5%	5.5%	5.0%	5.9%	5.1%	5.8%	7.3%	5.3%	5.5%	5.1%	6.0%	6.1%	5.6%	5.7%	5.7%
2021 Q4	5.6%	5.7%	5.4%	5.1%	5.7%	5.2%	5.6%	6.6%	5.4%	5.4%	5.2%	6.2%	6.3%	5.5%	5.7%	5.6%
2022 Q1	5.3%	5.8%	5.5%	4.7%	5.7%	5.2%	5.5%	6.9%	5.6%	5.5%	5.1%	5.9%	6.3%	5.5%	5.7%	5.5%
2022 Q2	5.6%	6.3%	6.5%	5.6%	5.7%	5.6%	5.9%	7.2%	5.8%	6.5%	5.5%	6.5%	7.0%	6.0%	6.4%	5.9%

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.

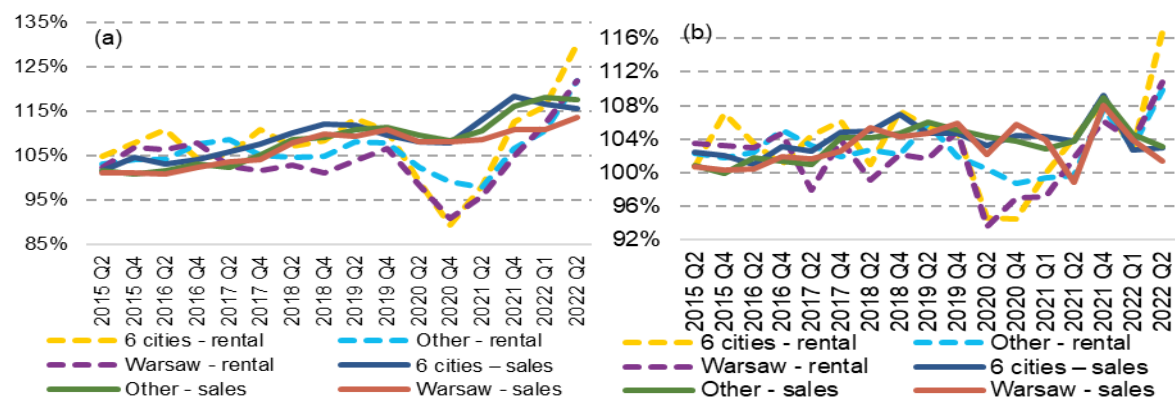
Source: NBP

Figure 68 Estimated capitalisation rate (return rate expected by the property buyer expressed as a percentage of the property purchase price fully paid in cash – in %) in the group of 6 cities, Warsaw (Section a) and in the group of other cities (Section b)



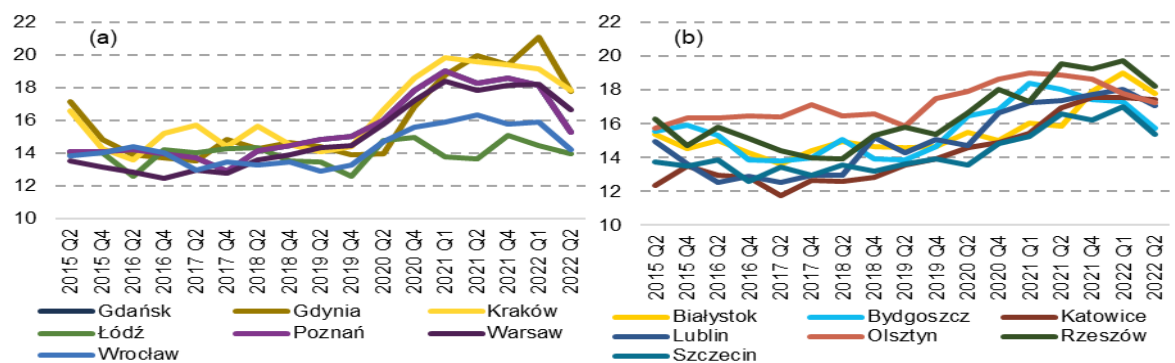
Source: NBP

Figure 69 Changes, y/y (Section a) and q/q (Section b), in the estimated transaction prices and rent rates in the group of 6 cities, other cities of Poland and in Warsaw



Source: NBP

Figure 70 Estimated timing of payback from investment in the group of 6 cities and in Warsaw (Section a) and in the group of other cities (Section b)



Source: NBP

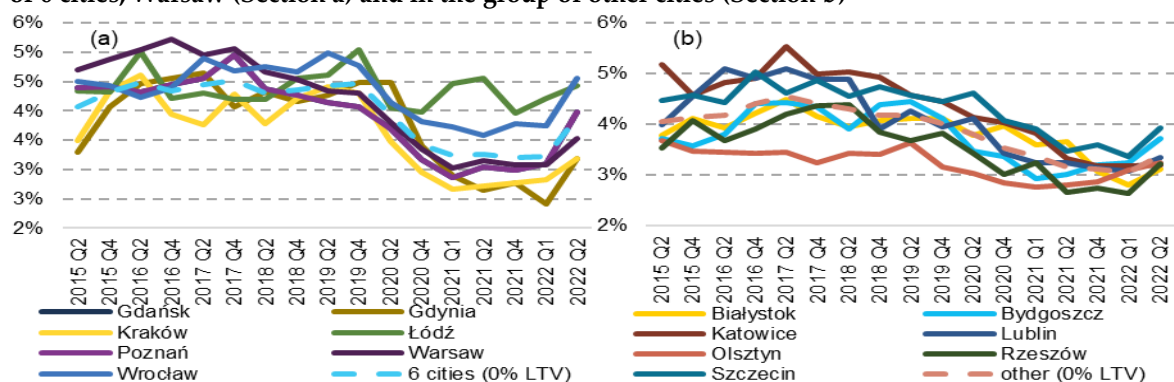
Table 15 Return on Equity (ROE, %) on a fully cash-funded housing investment (LTV = 0%) in selected cities

Period	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2016 Q2	3.9%	3.8%	4.3%	4.5%	4.8%	4.6%	5.1%	5.0%	3.5%	4.3%	3.7%	4.4%	4.2%	5.0%	4.5%	4.2%
2016 Q4	4.2%	4.4%	4.5%	4.6%	4.9%	3.9%	4.9%	4.2%	3.4%	4.5%	3.9%	5.0%	4.4%	5.2%	4.3%	4.4%
2017 Q2	4.5%	4.4%	4.6%	4.6%	5.5%	3.8%	5.1%	4.3%	3.4%	4.6%	4.2%	4.6%	4.9%	5.0%	4.5%	4.5%
2017 Q4	4.2%	4.4%	5.0%	4.1%	5.0%	4.3%	4.9%	4.2%	3.2%	5.0%	4.4%	4.9%	4.7%	5.1%	4.5%	4.4%
2018 Q2	4.0%	3.9%	4.4%	4.3%	5.0%	3.8%	4.9%	4.2%	3.4%	4.4%	4.4%	4.6%	4.8%	4.7%	4.3%	4.3%
2018 Q4	4.1%	4.4%	4.3%	4.2%	4.9%	4.2%	3.9%	4.6%	3.4%	4.3%	3.8%	4.7%	4.7%	4.5%	4.4%	4.2%
2019 Q2	4.1%	4.4%	4.1%	4.3%	4.6%	4.4%	4.3%	4.6%	3.6%	4.1%	3.7%	4.6%	5.0%	4.3%	4.4%	4.2%
2019 Q4	4.1%	4.1%	4.1%	4.5%	4.4%	4.3%	3.9%	5.0%	3.2%	4.1%	3.8%	4.5%	4.8%	4.3%	4.5%	4.0%
2020 Q2	3.8%	3.5%	3.7%	4.5%	4.1%	3.5%	4.1%	4.0%	3.0%	3.7%	3.4%	4.6%	4.1%	3.8%	3.9%	3.8%
2020 Q4	4.0%	3.4%	3.2%	3.4%	4.0%	2.9%	3.4%	4.0%	2.9%	3.2%	3.0%	4.1%	3.8%	3.3%	3.4%	3.5%
2021 Q1	3.6%	2.9%	2.9%	2.9%	3.8%	2.7%	3.3%	4.5%	2.8%	2.9%	3.2%	3.9%	3.7%	3.0%	3.2%	3.4%
2021 Q2	3.7%	3.0%	3.0%	2.6%	3.3%	2.7%	3.2%	4.6%	2.8%	3.0%	2.7%	3.5%	3.6%	3.2%	3.3%	3.2%
2021 Q4	3.1%	3.2%	3.0%	2.8%	3.2%	2.8%	3.1%	4.0%	2.9%	3.0%	2.7%	3.6%	3.8%	3.1%	3.2%	3.1%
2022 Q1	2.8%	3.2%	3.1%	2.4%	3.2%	2.8%	3.1%	4.2%	3.1%	3.1%	2.6%	3.4%	3.7%	3.1%	3.2%	3.1%
2022 Q2	3.1%	3.7%	4.0%	3.2%	3.2%	3.2%	3.3%	4.4%	3.2%	4.0%	3.2%	3.9%	4.6%	3.5%	3.9%	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 71 Return on Equity (ROE, %) on a fully cash-funded housing investment (LTV = 0%) in the group of 6 cities, Warsaw (Section a) and in the group of other cities (Section b)



Source: NBP

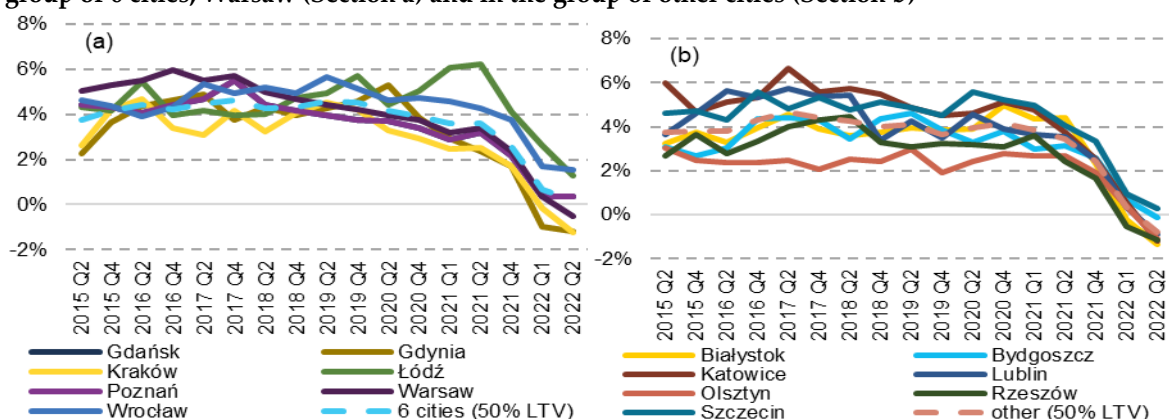
Table 16 Return on Equity (ROE, %) in the case of a leveraged housing investment (LTV = 50%) in selected cities

Period	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2016 Q2	3.3%	3.1%	4.1%	4.4%	5.1%	4.7%	5.6%	5.4%	2.4%	4.1%	2.8%	4.3%	3.9%	5.5%	4.4%	3.8%
2016 Q4	4.0%	4.3%	4.4%	4.6%	5.3%	3.4%	5.3%	4.0%	2.4%	4.4%	3.4%	5.6%	4.3%	6.0%	4.2%	4.3%
2017 Q2	4.6%	4.4%	4.7%	4.9%	6.7%	3.1%	5.8%	4.2%	2.5%	4.7%	4.0%	4.8%	5.4%	5.5%	4.5%	4.7%
2017 Q4	3.9%	4.3%	5.5%	3.7%	5.6%	4.2%	5.4%	4.0%	2.1%	5.5%	4.3%	5.3%	4.9%	5.7%	4.6%	4.4%
2018 Q2	3.6%	3.5%	4.4%	4.3%	5.7%	3.2%	5.4%	4.0%	2.5%	4.4%	4.5%	4.8%	5.2%	5.0%	4.3%	4.3%
2018 Q4	3.8%	4.4%	4.1%	3.9%	5.5%	4.0%	3.4%	4.7%	2.4%	4.1%	3.3%	5.1%	4.9%	4.7%	4.3%	4.0%
2019 Q2	3.9%	4.6%	4.0%	4.3%	4.9%	4.5%	4.3%	4.9%	3.0%	4.0%	3.1%	4.8%	5.7%	4.4%	4.6%	4.1%
2019 Q4	3.8%	3.8%	3.7%	4.6%	4.5%	4.2%	3.5%	5.7%	1.9%	3.7%	3.3%	4.5%	5.2%	4.2%	4.5%	3.6%
2020 Q2	3.9%	3.3%	3.7%	5.3%	4.6%	3.3%	4.6%	4.4%	2.4%	3.7%	3.2%	5.6%	4.6%	3.9%	4.2%	3.9%
2020 Q4	5.0%	3.8%	3.4%	3.9%	5.1%	3.0%	3.9%	5.0%	2.8%	3.4%	3.1%	5.2%	4.7%	3.8%	3.9%	4.1%
2021 Q1	4.3%	3.0%	2.9%	2.9%	4.8%	2.4%	3.6%	6.1%	2.7%	2.9%	3.6%	5.0%	4.6%	3.2%	3.6%	3.9%
2021 Q2	4.4%	3.1%	3.2%	2.4%	3.8%	2.5%	3.6%	6.2%	2.7%	3.2%	2.4%	4.0%	4.3%	3.4%	3.6%	3.4%
2021 Q4	2.3%	2.6%	2.1%	1.7%	2.5%	1.7%	2.5%	4.1%	1.9%	2.1%	1.7%	3.4%	3.7%	2.3%	2.6%	2.4%
2022 Q1	-0.2%	0.7%	0.4%	-1.0%	0.6%	-0.1%	0.3%	2.6%	0.4%	0.4%	-0.5%	0.9%	1.7%	0.4%	0.7%	0.3%
2022 Q2	-1.3%	-0.1%	0.4%	-1.2%	-1.2%	-1.2%	-0.9%	1.3%	-1.1%	0.4%	-1.2%	0.3%	1.5%	-0.5%	0.2%	-0.8%

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



Source: NBP

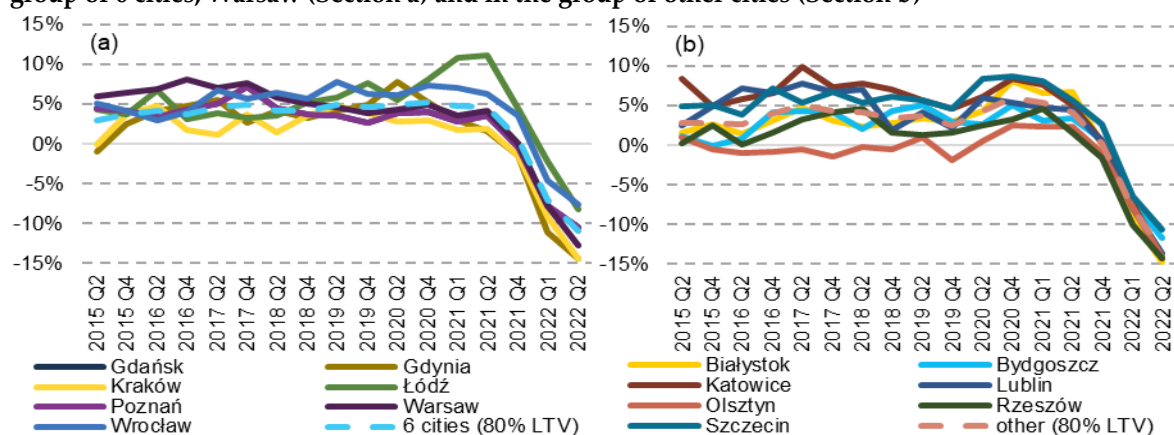
Table 17 Return on Equity (ROE, %) in the case of a leveraged housing investment (LTV = 80%) in selected cities

Period	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2016 Q2	1.4%	0.8%	3.4%	4.1%	5.9%	4.8%	7.2%	6.8%	-0.9%	3.4%	0.2%	3.9%	3.0%	7.0%	4.2%	2.7%
2016 Q4	3.2%	4.2%	4.4%	4.9%	6.6%	1.8%	6.6%	3.2%	-0.8%	4.4%	1.7%	7.2%	4.1%	8.2%	3.8%	4.1%
2017 Q2	4.8%	4.4%	5.1%	5.5%	10.0%	1.1%	7.8%	3.8%	-0.5%	5.1%	3.3%	5.4%	6.8%	7.1%	4.6%	5.0%
2017 Q4	3.2%	4.1%	7.2%	2.8%	7.4%	3.8%	6.8%	3.3%	-1.4%	7.2%	4.2%	6.8%	5.8%	7.6%	5.0%	4.4%
2018 Q2	2.4%	2.1%	4.5%	4.2%	7.8%	1.5%	7.1%	3.6%	-0.2%	4.5%	4.6%	5.4%	6.4%	5.9%	4.1%	4.2%
2018 Q4	2.8%	4.4%	3.8%	3.3%	7.1%	3.5%	2.0%	5.3%	-0.5%	3.8%	1.6%	6.2%	5.8%	5.1%	4.2%	3.4%
2019 Q2	3.4%	5.1%	3.5%	4.2%	5.8%	4.9%	4.2%	5.9%	1.0%	3.5%	1.3%	5.7%	7.8%	4.6%	5.0%	3.8%
2019 Q4	3.0%	3.0%	2.8%	4.9%	4.7%	3.9%	2.2%	7.7%	-1.8%	2.8%	1.6%	4.7%	6.3%	4.0%	4.7%	2.5%
2020 Q2	4.3%	2.7%	3.8%	7.8%	6.1%	2.8%	6.0%	5.6%	0.6%	3.8%	2.5%	8.4%	6.1%	4.4%	5.0%	4.4%
2020 Q4	8.1%	5.1%	4.1%	5.3%	8.4%	3.0%	5.4%	8.2%	2.5%	4.1%	3.4%	8.7%	7.4%	5.0%	5.3%	5.9%
2021 Q1	6.6%	3.2%	2.9%	3.0%	7.7%	1.8%	4.8%	10.9%	2.4%	2.9%	4.7%	8.1%	7.1%	3.7%	4.8%	5.3%
2021 Q2	6.7%	3.5%	3.6%	1.6%	5.0%	2.0%	4.5%	11.2%	2.4%	3.6%	1.7%	5.7%	6.3%	4.2%	4.7%	4.2%
2021 Q4	0.1%	0.7%	-0.4%	-1.5%	0.6%	-1.4%	0.4%	4.5%	-1.0%	-0.4%	-1.6%	2.7%	3.6%	0.1%	0.8%	0.3%
2022 Q1	-9.2%	-7.0%	-7.7%	-11.1%	-7.3%	-9.0%	-7.9%	-2.1%	-7.7%	-7.7%	-10.0%	-6.3%	-4.5%	-7.8%	-7.0%	-7.9%
2022 Q2	-14.7%	-11.7%	-10.4%	-14.4%	-14.3%	-14.4%	-13.6%	-8.2%	-14.1%	-10.4%	-14.2%	-10.7%	-7.5%	-12.7%	-10.9%	-13.3%

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.

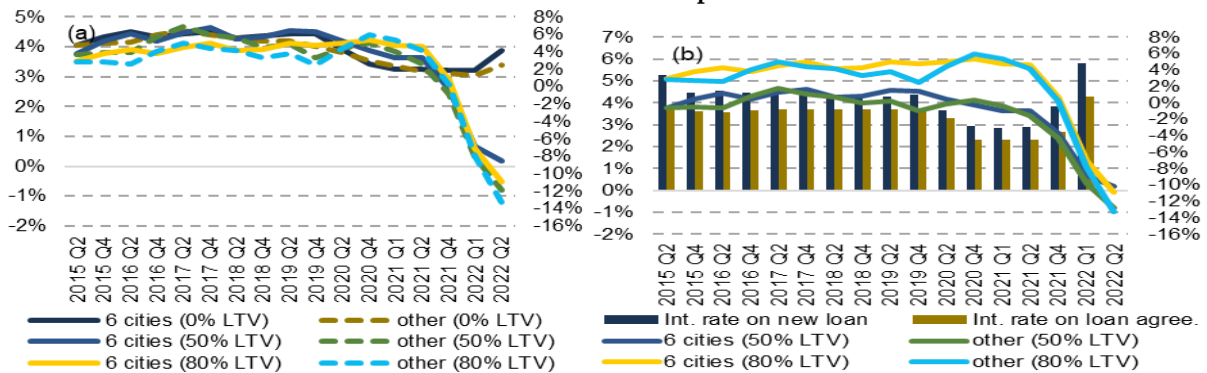
Source: NBP

Figure 73 Return on Equity (ROE, %) in the case of a leveraged housing investment (LTV = 80%) in the group of 6 cities, Warsaw (Section a) and in the group of other cities (Section b)



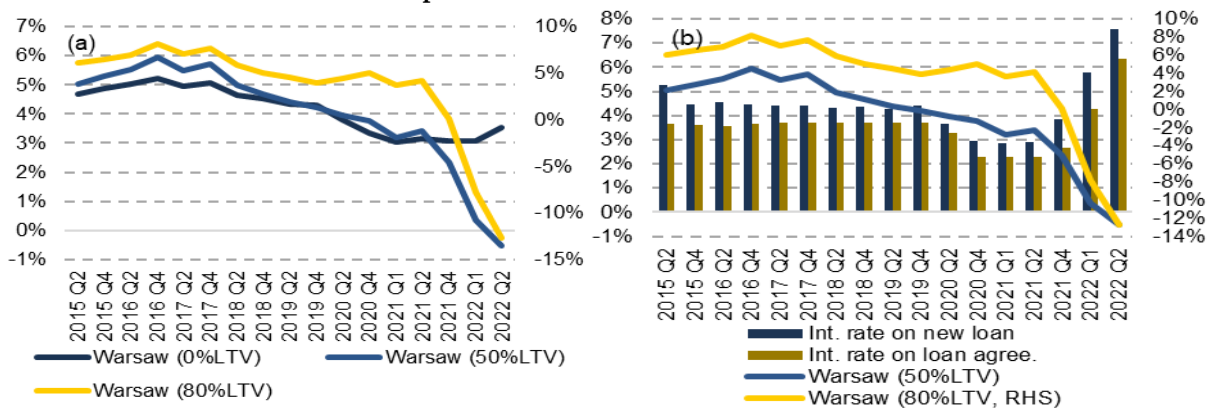
Source: NBP

Figure 74 Comparison of the Return on Equity (ROE, %) on a housing investment in the groups of 6 cities and of other at selected LTV levels (Section a) and ROE compared to the loan interest rate (Section b)



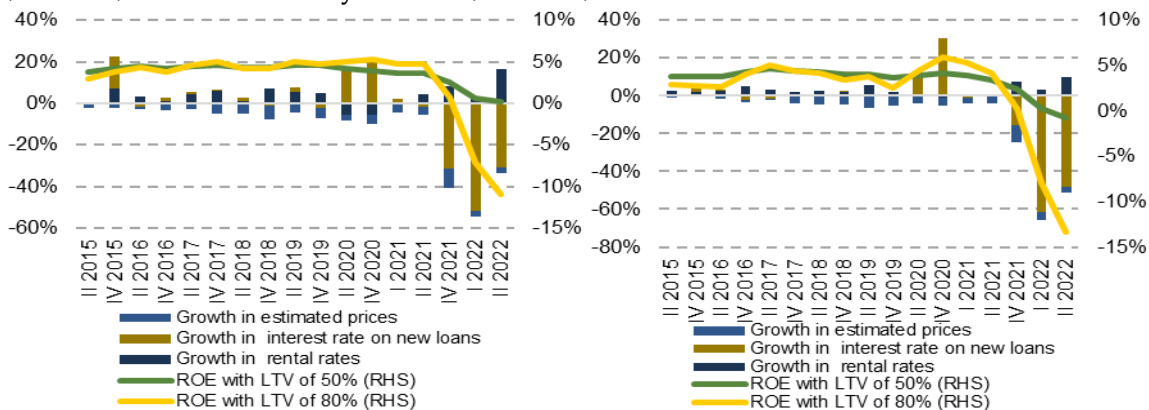
Source: NBP

Figure 75 Comparison of the Return on Equity (ROE, %) on a housing investment in Warsaw at selected LTV levels (Section a) and ROE compared to the loan interest rate (Section b)



Source: NBP

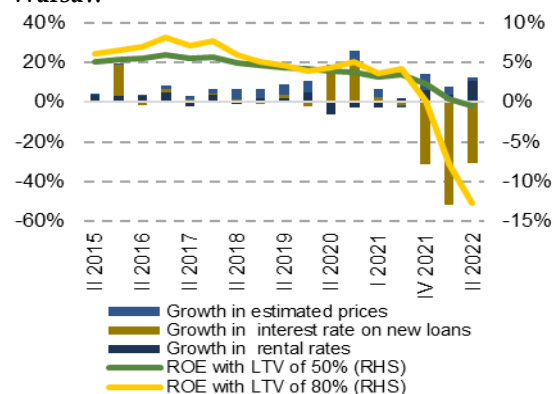
Figure 76 Estimated ROE where LTV=50% and 80%, and the impact of quarterly changes in interest rates on new housing loans, estimated housing transaction prices and rental rates in the group of 6 cities (Section a) and the other analysed cities (Section b)



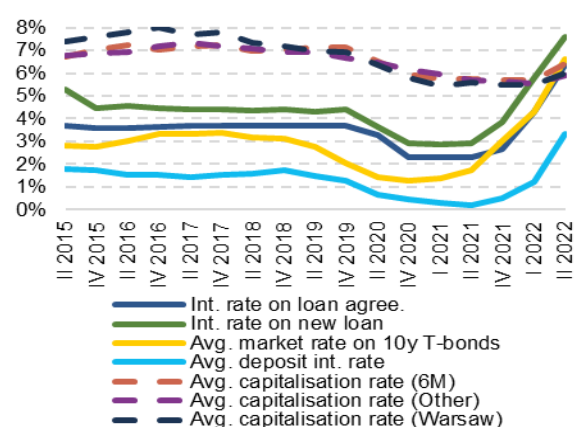
Source: NBP

Figure 77 Estimated ROE where LTV=50% and Figure 78 Comparison of interest rates on bonds, 80%, and the impact of quarterly changes in deposits and the costs of credit to the average interest rates on new housing loans, estimated capitalisation rate of an investment in dwellings for housing transaction prices and rental rates in rental

Warsaw



Source: NBP



Source: NBP

7. An extended analysis of the standing of developers, the residential and non-residential construction industry and related entities

Analysis of the financial standing of developers³⁴

According to the financial data presented in F01 reports and data gathered by NBP for 2022 Q1 and Q2, the financial standing of real estate developers remained good until June 2022, with a drop in the number of dwellings sold, a slightly worse return on sales, a high output level, continuing growth in the costs of building and reduced capital expenditure. A significant decline in demand was confirmed by the sales results reported by fifteen developers listed on the Warsaw Stock Exchange (a decrease of 40.9% in 2022 Q2 on 2021 Q2 and of 32.3% in 2022 H1 compared to 2021 H1). The increase in interest rates, which reduced buyers' creditworthiness, became the main factor affecting demand. The significant drop was also a consequence of the high base effect.

What is noteworthy is a stable and stronger financial position of larger real estate developer and those listed on the Warsaw Stock Exchange than that of smaller ones. Nevertheless, profitable developers accounted for 67% of larger and smaller developers in the first half of both 2022 and 2021.

A review of the financial data in the F01 reports for 2022 Q2 of the larger development firms (with more than 49 staff) points to a smaller return on sales, assets and equity compared to the preceding quarter of 2022 and the corresponding period of 2021, resulting from a faster growth in total expenses than that of total income. The growing costs led to a significant drop in the net financial result and thus lower return on sales (8.9%), equity (3.3%) and total assets (1.7%), compared to higher results reported last year (14.5%, 7.4% and 2.5% in

³⁴ The calculations and the conclusions presented in this edition of Information are primarily based on data stated in 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 the end of 2022 H1) 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 Q1.

2021 Q2, respectively). The results were comparable to the average ones for the years 2020 – 2019 (8.7%, 4.0% and 1.6%, respectively).

An analysis of the levels of current assets, which are the most liquid and profitable assets, shows that the average volume of ongoing investment projects decreased 5%, the number of completed dwellings by 15%, land reserves by 10% and cash reserves by 18% in 2022 Q2 compared with the previous quarter, which may imply a cautious investment policy of the developers, including with regard to starting new projects. The current assets mentioned above were at higher levels than a year before as they increased in 2021 Q4 and 2022 Q1. Ongoing investment projects made up the biggest part (36.1%) of total assets reported at the end of June 2022, having decreased slightly from 38.2% in the previous quarter and 37.5% a year before. The fact that major developers reduced production shows that they were taking steps to prepare for an economic downturn and the waning demand in the housing market.

According to the data published by Statistics Poland, the number of dwellings for sale or rental which started to be built in Poland in 2022 Q2 (39,888) and the whole first half of 2022 (71,563) also decreased in comparison to the corresponding periods of 2021 (16% and 18%, respectively). The major increase (26%) in the number of dwellings started in 2022 Q2 compared to the previous quarter was partly the effect of a low base in 2022 Q1 and partly of a formally higher activity in May and June 2022. By putting new investment projects on the market by the end of June 2022, the developers made sure that projects could be completed according to the rules applicable prior to the amended “Developer Act” taking effect on 1 July 2022. The start of the sale of dwellings in new projects could have also led to the formal commencement of the building, which contributed to the high number of dwellings under construction reported in the financial statements. The cautious investment policy of the developers is confirmed by a 27% decrease in investment outlays in 2022 Q2 compared to 2021 Q2.

There was a significant increase in the costs of third-party services (46% up y/y), yet the biggest growth was seen in the average own costs, where costs of materials and electricity used surged by 67%, social security contributions went up 40% while wages 33%, which changed the structure of operating expenses. The increased proportion of own costs (an increase to 41% on average during the period from 2021 Q3 to 2022 Q2 compared to 36% in the preceding five quarters) was mainly the result of increased costs of electricity. The operating expense ratio reported in 2022 Q2 (0.90) was one of the worst in two years (0.83). As construction costs increased and demand weakened, developers planning to start new projects as well as construction companies providing building services were facing a risk concerning the realistic assessment of the cost of general contracting as underestimated contracts may result in financial difficulties.

Equity had been the main and predominating source of financing of the bigger developers for the third consecutive quarter (accounting for 51% of total liabilities on average) whereas during the past five years, the reported levels were much lower (39% of total liabilities on average). The developers had thus been able to raise their capital thanks to earning satisfactory profits and passing growing construction costs on to home buyers. As equity increased and the proportion of liabilities to external parties decreased, the general debt ratios, the debt to collateral ratio and the assets to equity ratio had been better for the past three quarters than in the preceding periods, which ensured safety of the funds provided by creditors.

A reduced level of contracts for dwellings in 2022 H1 resulted in a decrease in the proportion of prepayments by the buyers of dwellings (17% of total liabilities in 2022 Q2, 18% in 2021 Q1 and 21% on average in all the quarters of 2021). Prepayments by home buyers are a significant source of financing of the ongoing

investment projects. The continuing strong demand on the part of investors was an opportunity for ensuring liquidity and completion of the initiated projects. The business of developers in Poland relies on the sale of work in progress and the high level of related contracts represents liabilities towards buyers which will have to be satisfied in spite of any difficulties in the building process.

In 2022 Q2, along with a slight decrease in funds from prepayments and securities issued, major developers increased their debt arising from bank loans (by 3% on average compared to the previous quarter and by as much as 24% compared to 2021 Q2). Nevertheless, the proportion of loans in total liabilities increased only marginally (by 0.5% to 5.5%) and was lower than the average for 2020 and 2021 (10%-6% of total liabilities, respectively). The value of corporate bonds issued by developers in the Catalyst market decreased (from PLN 7,274.9 million to PLN 6,938.7 million, or 5%) while the interest rates on developers' bond continued to grow (the average interest rate being 8.78% in 2022 Q2, 6.21% in the preceding quarter and 4.25% in the corresponding period of 2021). The increase in the interest rates on bank deposits and bonds may lead to a drop in investors' demand for dwellings.

The developers' production capacity improved, i.e., the total number of building permits issued for dwellings for sale or rental in Poland increased (by 24% on 2022 Q1 and 23% on 2021 Q2.). The number of permits issued from April to June 2022 (64,984) marks an all-time high in Poland and attests to the considerable production capacity of developers. As the housing market recovers, developers will be able to start new projects and put them on the market rather quickly.

The increase in the number of completed dwellings for sale or rental by 10% on 2021 Q2 and 4% in 2021 Q2 was due to improved consumer sentiments and business climate in the residential construction industry as well as the commencement of new multi-family housing projects following a temporary slowdown in production in mid-2020 caused by the spread of the COVID-19 pandemic.

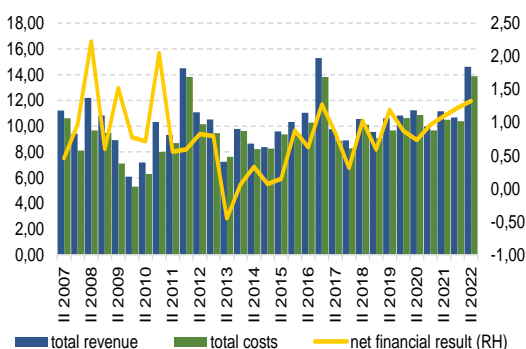
The group of major developers is characterised by good financial liquidity, even though their effectiveness in debt collection got a little worse in 2022 Q2 compared to 2022 Q1. The time of payment of payables to contractors and the inventory turnover period shortened marginally.

According to the financial data presented in F01 reports available by the end of 2022 H1, small developers (with staff of 9 to 49) experienced deteriorated liquidity in 2022 H1 owing to a major increase in work in progress and payables to contractors. Their return on sales declined (9.5% in 2022 H1 vs. 11.8% in 2021 H2 and 10.4% in 2021 H1) due to a much higher increase in operating expenses than in sales revenue. The value of all the components of operating expenses increased, which slightly changed their structure in 2022 H1: the proportion of costs of materials and energy consumed increased to 25% from 23% a year before. The proportion of equity in total liabilities decreased further (35% in 2022 H1 vs. 40% in 2021 and 46% on average in earlier years), as a result of which the debt-to-equity ratio got rather disadvantageous. Return on equity slightly improved (8.2% in 2022 H1 vs. 7.9% in H2 2021 and 7.1% in 2021 H1). Smaller developers recorded a shorter receivables collection period and payables payment period than bigger developers. There was an increase in external financing, principally in prepayments by home buyers, followed by payables to contractors and borrowings from banks. The change caused the proportion of prepayments by home buyers to grow to 23% from 16% in 2021 and that of payables to contractors to 18% from 15% in 2021.

According to financial data until March 2022, the dozen or so developers listed on the Warsaw Stock Exchange saw a significant increase in inventories, which points mainly to increased work in progress. This group of developers reports a stable operating expense ratio (0.71), the best among the three groups of firms

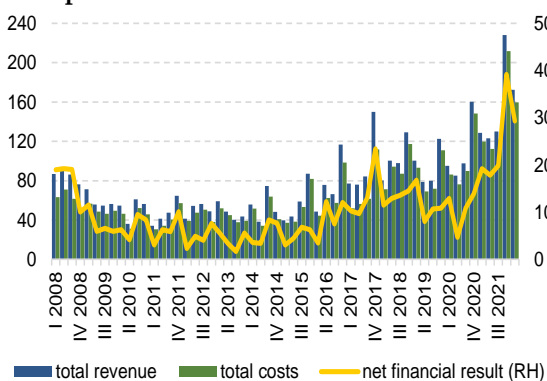
we analysed. The change in total income and total expenses in 2022 Q1 was similar, which enabled them to achieve satisfactory net financial results. Return on Sales remained solid (17.8% in 2022 Q1 vs. 17.9% in 2022 Q4 and 16.4% in 2021 Q1) as did Return on Equity (5.1% in 2022 Q1. vs. 7.5% in 2022 Q4 and 3.7% in 2021 Q1) and Return on Assets (2.0% in 2022 Q1. vs. 3.2% in 2022 Q4 and 1.7% in 2021 Q1). The listed developers had no major problems collecting their receivables, but on the other hand their payables payment periods were among the longest. The proportion of payables to contractors grew to 21% of total liabilities, compared to 19% in 2022 Q1 and 16% a year before. The financial liquidity of the listed developers was stable, albeit worse than in the other two groups of developers in our study. Equity, whose proportion in total liabilities (40%) had been lower (by 2 p.p.) for a year, though still high, ensured the financing of total non-current assets, which attests to the sound capital foundations of the listed developers and their financial independence. Prepayments by home buyers played an important role in external sources of funding and their share in total liabilities had been higher than 21% for four quarters. The proportion of bank loans decreased to about 9% in 2022 Q1. vs. 11%-12% during two preceding years. Debt securities had accounted for more than 9% of total liabilities for more than a year. A positive balance of net cash flows and cash flows from operating activities for a second quarter in a row confirmed that the companies were generating higher income than expenses and earned a net profit in cash terms. Negative cash flows from financing activities coupled with positive cash flows from other activities (from investing and operating activities) indicate that assets were sold, and the proceeds were allocated to the payment of expenses in financing activities, which confirms the reported drop in non-current assets at the end of March 2022.

Figure 79 Performance indicators of developers with 9 - 49 staff



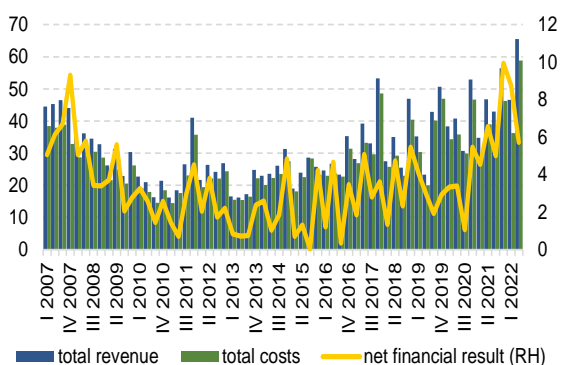
Source: NBP, based on Statistics Poland (F01)

Figure 81 Performance indicators of the developers listed on the WSE



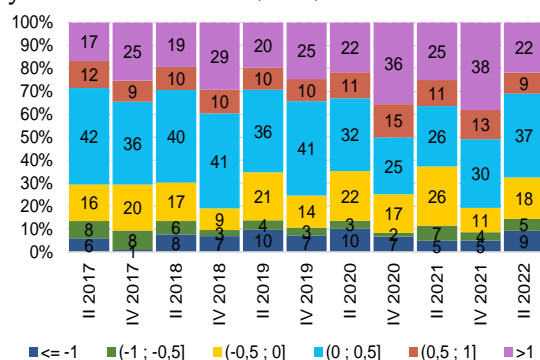
Source: NBP, based on Quant Research sp. z o.o.

Figure 80 Performance indicators of developers with more than 49 staff



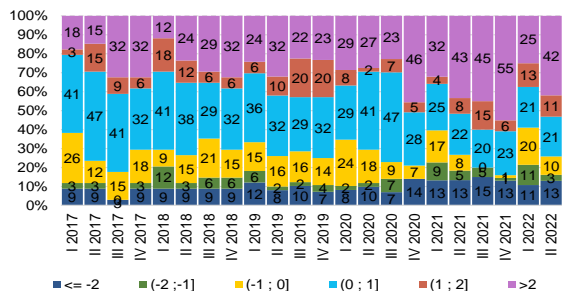
Source: NBP, based on Statistics Poland (F01)

Figure 82 Developers with 9 - 49 staff broken down by net financial result (in %)



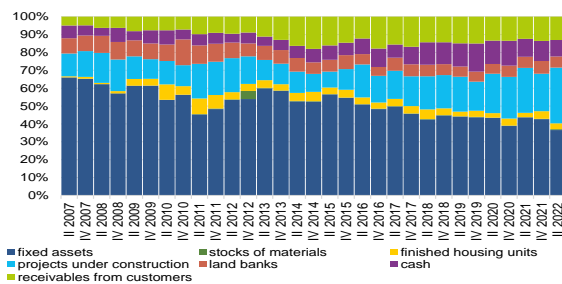
Source: NBP, based on Statistics Poland (F01)

Figure 83 Developers with more than 49 staff broken down by net financial result (in %)



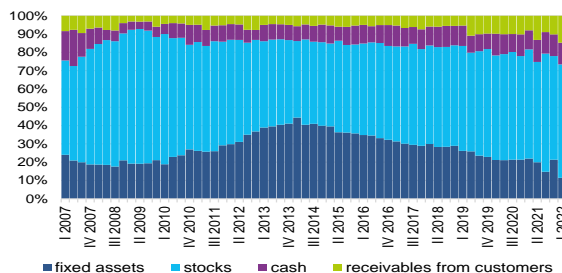
Source: NBP, based on Statistics Poland (F01)

Figure 85 Structure of assets of developers with 9 - 49 staff



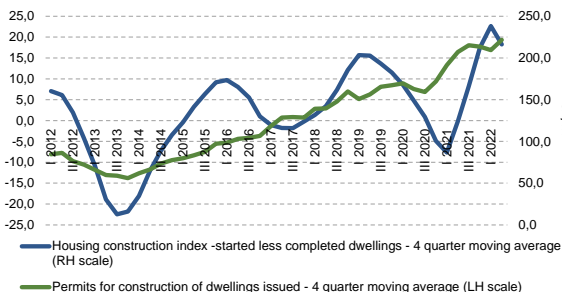
Source: NBP, based on Statistics Poland (F01)

Figure 87 Structure of assets of the developers listed on WSE



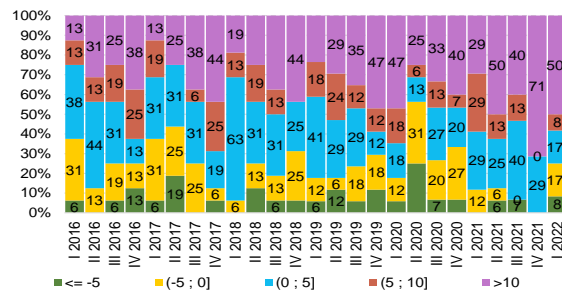
Source: NBP, based on Quant Research sp. z o.o.

Figure 89 Housing construction indicator and building permits issued for dwellings for sale or rental



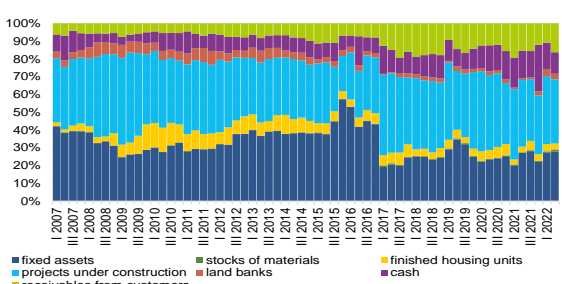
Source: NBP, based on Statistics Poland

Figure 84 Developers listed on the WSE broken down by net financial result (in %)



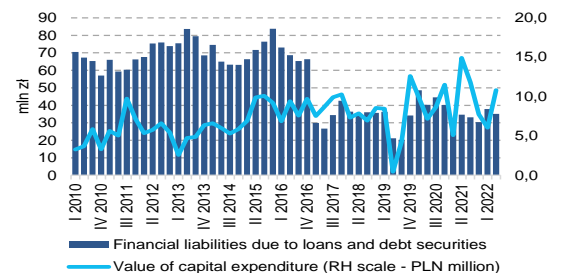
Source: NBP, based on Quant Research sp. z o.o.

Figure 86 Structure of assets of developers with more than 49 staff



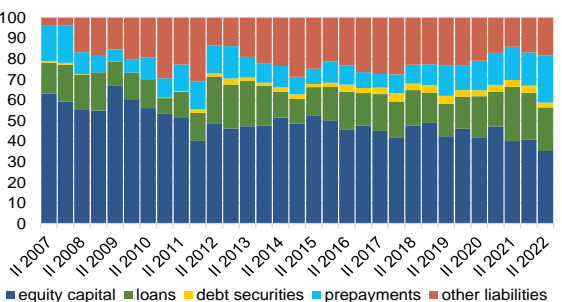
Source: NBP, based on Statistics Poland (F01)

Figure 88 Investment activity of developers with more than 49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 90 Structure of liabilities of developers with 9 - 49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 91 Structure of liabilities of developers with more than 49 staff

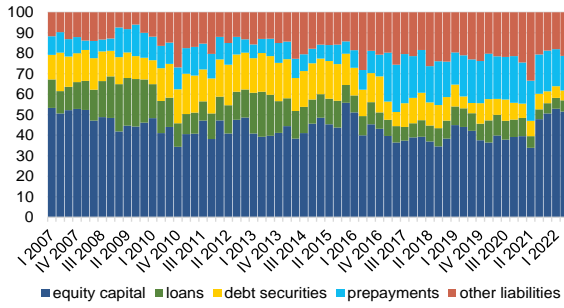


Figure 92 Structure of liabilities of the developers listed on the WSE

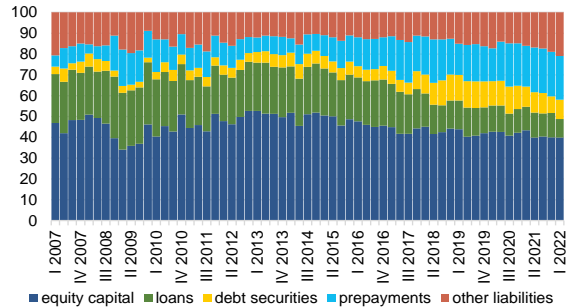


Figure 93 Situation of developers with 9 - 49 staff

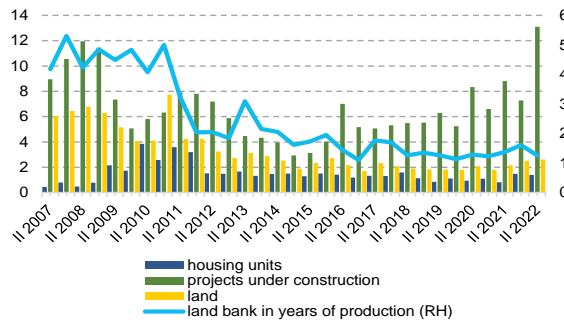
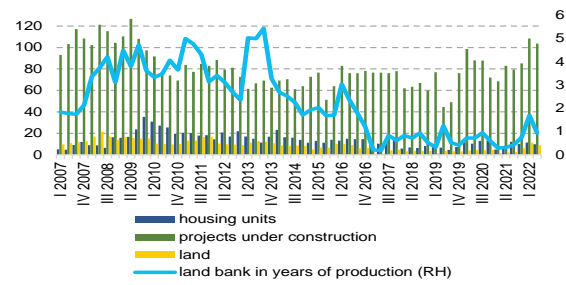


Figure 94 Situation of developers with more than 49 staff



Source: NBP, based on Statistics Poland (F01)

Source: NBP, based on Statistics Poland (F01)

Figure 95 Operating expenses of developers with 9 - 49 staff

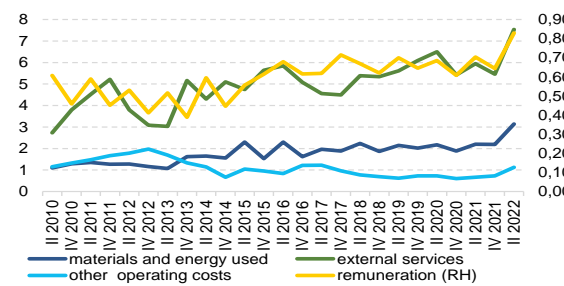
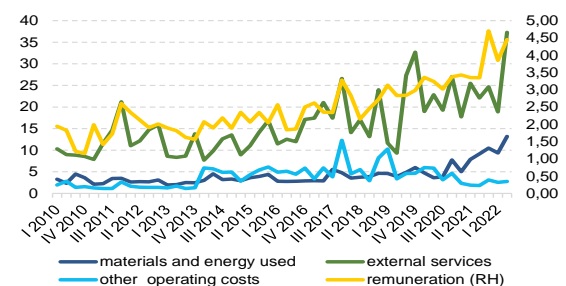


Figure 96 Operating expenses of developers with more than 49 staff



Source: NBP, based on Statistics Poland (F01)

Source: NBP, based on Statistics Poland (F01)

Figure 97 Structure of operating expenses of developers with 9 - 49 staff

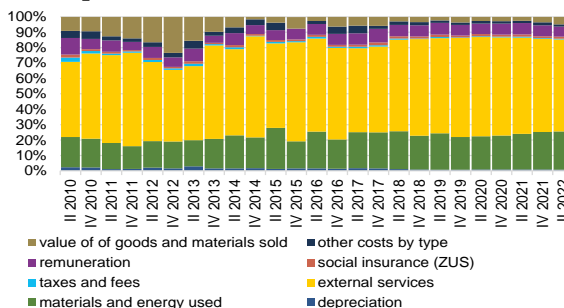
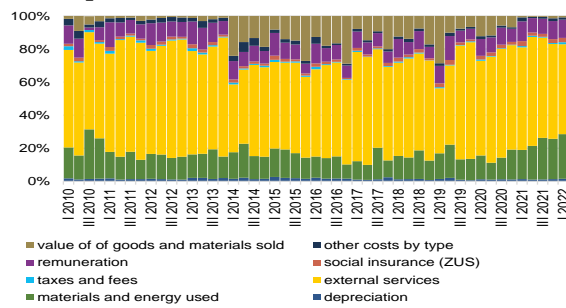


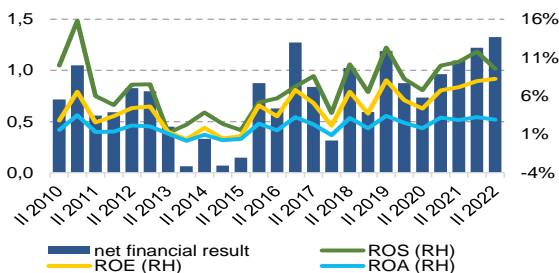
Figure 98 Structure of operating expenses of developers with more than 49 staff



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

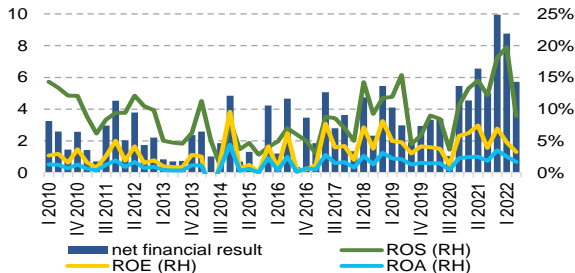
Source: NBP, based on Statistics Poland (F01) and financial statements

Figure 99 Profitability of developers with 9 - 49 staff



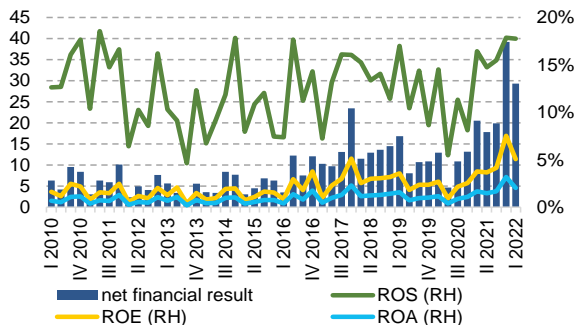
Source: NBP, based on Statistics Poland (F01)

Figure 100 Profitability of developers with more than 49 staff



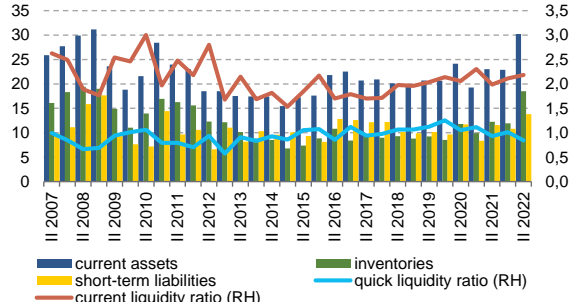
Source: NBP, based on Statistics Poland (F01)

Figure 101 Profitability of the developers listed on the WSE



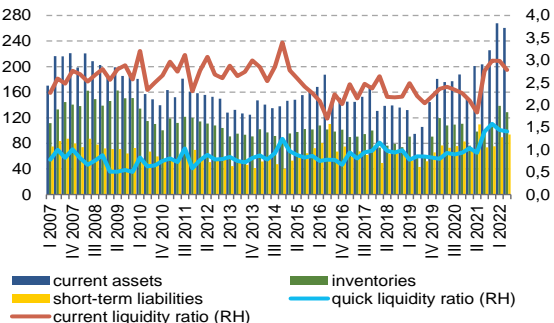
Source: NBP, based on Quant Research sp. z o.o.

Figure 102 Liquidity ratios of developers with 9 - 49 staff



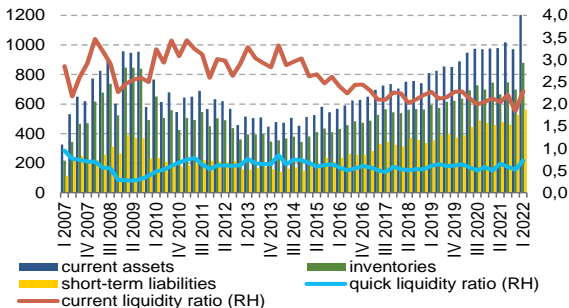
Source: NBP, based on Statistics Poland (F01)

Figure 103 Liquidity ratios of developers with more than 49 staff



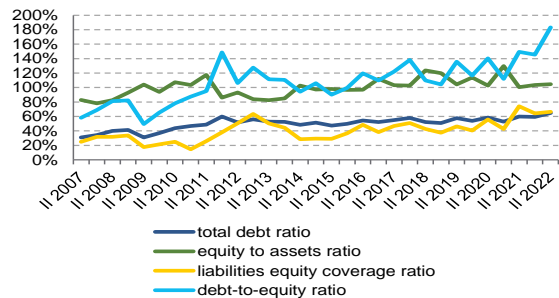
Source: NBP, based on Statistics Poland (F01)

Figure 104 Liquidity ratios of the developers listed on the WSE



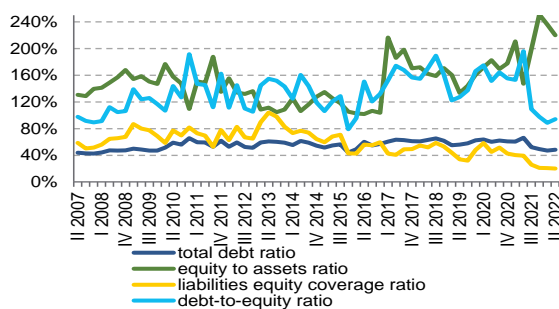
Source: NBP, based on Quant Research sp. z o.o.

Figure 105 Debt and equity ratios of developers with 9 - 49 staff



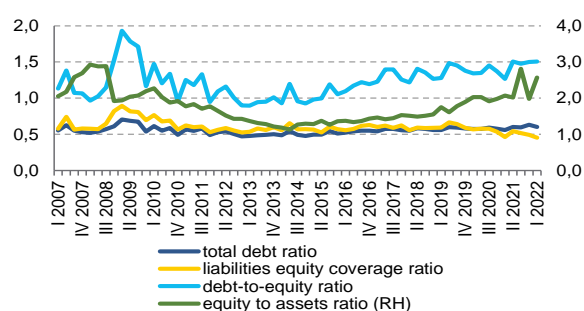
Source: NBP, based on Statistics Poland (F01)

Figure 106 Debt and equity ratios of developers with more than 49 staff



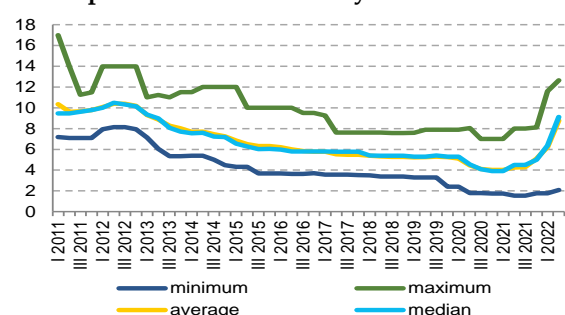
Source: NBP, based on Statistics Poland (F01)

Figure 107 Debt and equity ratios of the developers listed on the WSE



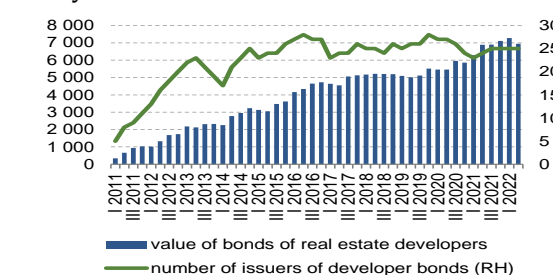
Source: NBP, based on Quant Research sp. z o.o.

Figure 109 Coupon rates on bonds issued by developers listed on the Catalyst market



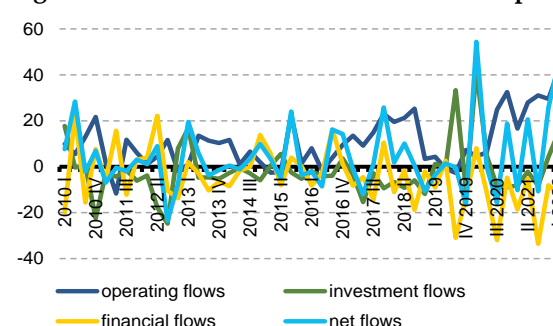
Source: NBP, based on data from Catalyst

Figure 108 Value of developer bonds and the number of issuers of developer bonds in the Catalyst market



Source: NBP, based on data from Catalyst

Figure 110 Cash flows of 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

In 2022 Q2, growth in the construction and assembly output came to an abrupt halt. This is confirmed by the accelerated decrease in the home building indicator during the period. Following a substantial recovery in the residential and non-residential construction industry in 2021, sentiments subsided again in 2022 H1. Large residential and non-residential construction companies had to bear increased production costs (14.5% y/y). Nevertheless, such entities reported high sales results and healthy profits at the end of 2022 Q2. This might have been due to correctly calculated budgets and the utilisation of materials purchased earlier at lower prices. These factors contributed to an improvement in margins amid rising inflation and growing prices of most of the elements determining the final price of a finished dwelling. They achieved one of the best expense ratios (0.88, against a less beneficial ratio of 0.97 in the preceding quarters) and a more satisfactory sales margin (11.8% in 2022 Q2 vs. the average of 6.3% in 2021 and 5.0% in 2020). An analysis of the operating expenses incurred in 2022 Q2 showed that the profit was influenced by a slower growth in wages than the growth in income. Changes in the nominal value of third party services led to a change in the structure of costs, which in 2022 Q2 accounted for 56% of operating expenses, compared to 62% in 2021 Q2. The proportion of wages shrank to 8% from 9% a year before. The high net financial result also contributed to a

³⁵ The calculations and the conclusions presented in this edition of Information are primarily based on data stated in 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 companies with more than 49 staff (data available on a quarterly basis until the end of 2022 H1) which perform construction works connected with the construction of residential and non-residential buildings (PKD 41.20).

major improvement in return on assets (ROA of 4.3% in 2022 Q2 vs. 1.9% on average in 2021) and return on equity (ROE of 11% in 2022 Q2 vs. 4.9% on average in 2021).

The pace of changes in the value of assets of major construction companies in 2022 Q2 and changes in their structure reveal a slight decline in the output of the residential and non-residential construction industry and to a certain extent account for heightened uncertainty in the assessment of the overall business climate. The increase in income of the major companies led to an increase in current assets of 30% y/y. A major growth driver in nominal terms was a 73% increase in finished products. At the same time, a 43% surge in receivables from buyers pushed the proportion of receivables in total assets as far up as 36% (the relevant figures in 2021 and 2020 were lower: 32% and 30%, respectively), which given a shorter collection period (75 days) compared to the corresponding period of 2021 (90 days) may suggest that the companies had entered the phase of final settlement of contracts with no prospects for getting new ones. Given a relatively high value of work in progress, the companies stated in the business conditions survey by Statistics Poland that they had enough business lined up for up to 9 months ahead. An increase in the nominal value of materials, seen for the third consecutive quarter, to the highest level since 2017 is a consequence of higher prices, a bid to avoid inflation by buying inventory and building up inventory to ensure business continuity. The proportion of cash in total assets dropped to 16% as at the end of June 2022 from 20% at the end of June 2021. In spite of a slight decrease, financial liquidity remained sound.

Our analysis of total liabilities and equity at the end of 2022 Q2 uncovered no major changes from the previous quarters, though the amount and management of liabilities point to the emergence of significant differences compared to the previous periods. Equity remained the principal source of financing, accounting for 44% of total liabilities (45% a year before) and its size was similar to the levels seen in several prior quarters. The proportion of liabilities to contractors in total liabilities grew to 46% (by 1 p.p. y/y) as their value increased 37% y/y, with short-term liabilities growing 45% y/y, while the payment period significantly shortened (by 15 days y/y) compared to the corresponding periods of the previous years. This change, coupled with the fact that companies spent cash to buy inventory in a bid to avoid inflation, shows that liabilities were managed differently than during the economic boom. Uncertainty had risen, as a result of which demand for working capital increased. The share of outstanding bank loans had been lower (9% on average) for a year than in the earlier years (11%-12%).

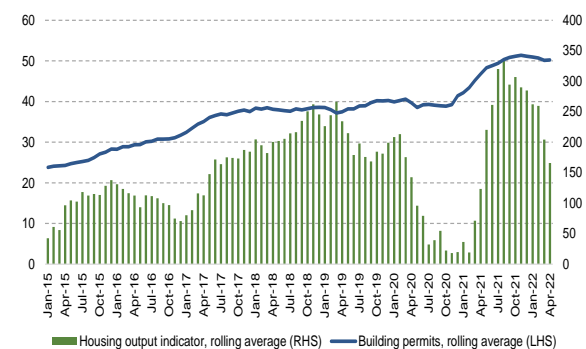
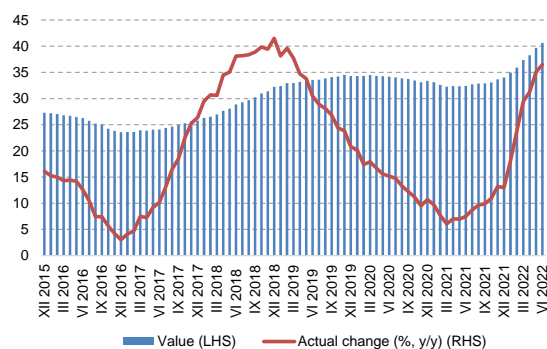
The very good performance of the companies operating in the residential and non-residential construction industry explains to a certain extent the financial data of small companies (employing 9 to 49 staff), which very often operate as sub-contractors for big companies. According to the financial information presented in F01 reports available until June 2022, the firms' total income grew 12% in 2022 H1 compared to the corresponding period of 2021, which – given a 14% increase in expenses – resulted in a net financial result that was 27% lower. Small firms did not manage to reduce the costs of third party services (15% up y/y), materials and energy consumed (28% up y/y) and wages (12% up y/y) to a level that was lower than the increase in income, which contributed to a less profitable expense ratio (0.97 in 2022 H1 vs. 0.95 in 2021 H1). The changes in the nominal amounts resulted in an increase to 28% (2 p.p. y/y) of the proportion of costs of materials and energy consumed and a drop to 54% (by 1 pp y/y) in the proportion of costs of third party services in total operating expenses.

A greater increase in expenses than in income in the group of small residential and non-residential construction companies contributed to less satisfactory profitability ratios. In 2022 H1, return on sales came down to 5.0%, ROE amounted to 4.8% whereas ROA 2.3%, compared 7.9%, 5.9% and 3.1%, respectively, in 2021 H1.

The most significant change in the assets of small firms in 2022 H1 compared to 2021 H1 was a 18% increase in work in progress. Its proportion in total assets grew by 4 p.p. to a record high of 22% over the period of 6 months under analysis, which provides optimistic short-term prospects for continuation of the business. On the other hand, an increase in the proportion of receivables from contractors by 2 p.p. y/y (to 20% in 2022 H1 vs. 18% in 2021 H1), coupled with the shortening of the collection period and a decrease in the proportion of cash (to 12% in 2022 H1 from 14% in 2021 H1) resulted in a slightly worse assets structure and liquidity ratios, which remained safe despite small changes. As a result of the changes in assets, the ability to build up the inventory of materials was limited, and the inventory remained at the same level as a year before. Both groups of residential and non-residential construction companies, i.e., the big and the small ones, saw a substantial upswing in ROA, which attests to a reasonable management of assets.

These changes in assets and a relatively low net financial result reported by small companies in 2022 H1 made them increase the funding of their operations with external capital. The proportion of external sources of funding to total liabilities grew to 43% at the end of June 2022 vs. 41% at the end of June 2021. The share of payables to contractors increased to 26% (by 3 p.p. y/y), while the payment period shortened, which might have been a result of a greater uncertainty of short-term projections. The debt ratios of small residential and non-residential construction companies remained very safe, though they were worse than in 2021 H1.

Figure 111 Construction and assembly output – construction of buildings (PKD 41), 12-month rolling sum **Figure 112 Total housing output per month, 12-month rolling average**



Source: NBP, based on Statistics Poland

Source: NBP, based on Statistics Poland

Figure 113 Business conditions in the construction industry

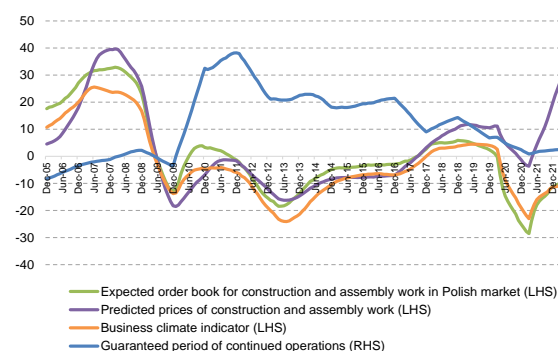
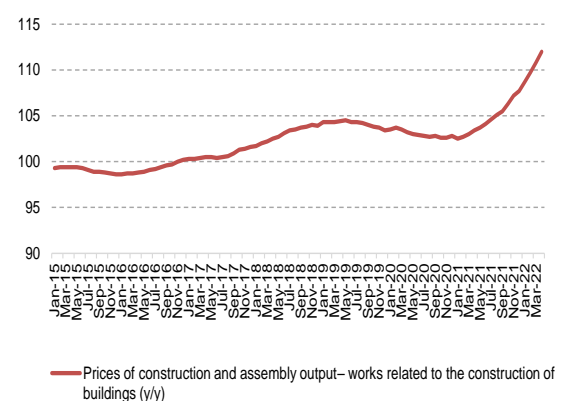


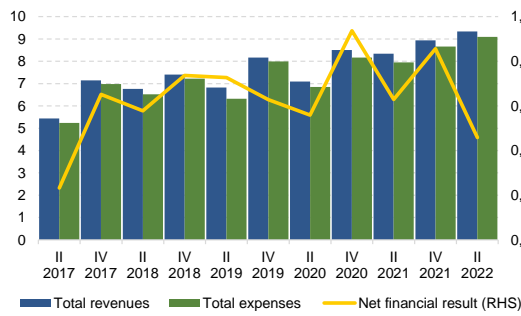
Figure 114 Changes in the prices of construction and assembly output (y/y).



Source: NBP, based on Statistics Poland

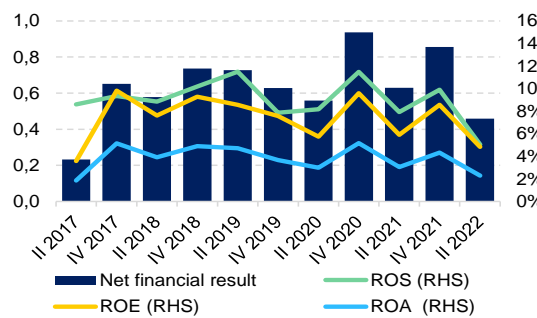
Source: NBP, based on Statistics Poland

Figure 115 Performance indicators of construction companies with 9 - 49 staff



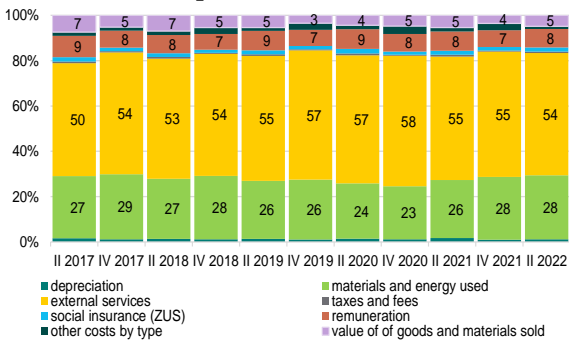
Source: NBP, based on Statistics Poland

Figure 117 Profitability of construction companies with 9 - 49 staff



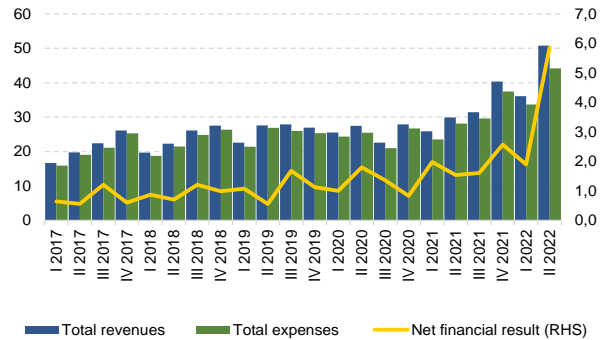
Source: NBP, based on Statistics Poland

Figure 119 Structure of operating expenses of construction companies with 9 - 49 staff



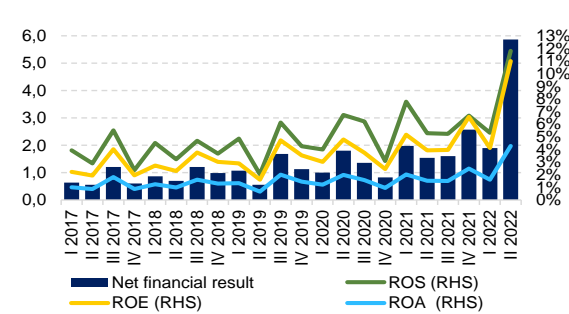
Source: NBP, based on Statistics Poland

Figure 116 Performance indicators of construction companies with more than 49 staff



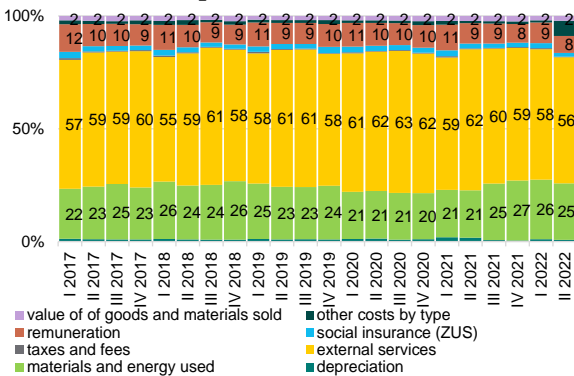
Source: NBP, based on Statistics Poland

Figure 118 Profitability of construction companies with more than 49 staff



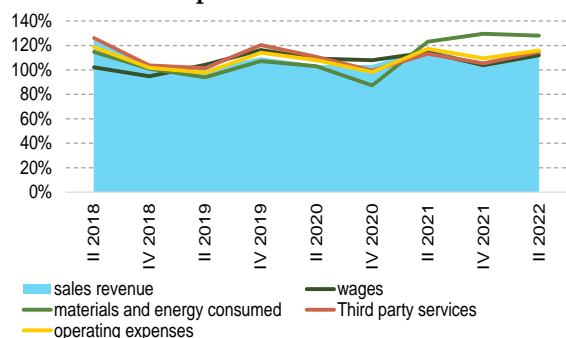
Source: NBP, based on Statistics Poland

Figure 120 Structure of operating expenses of construction companies with more than 49 staff



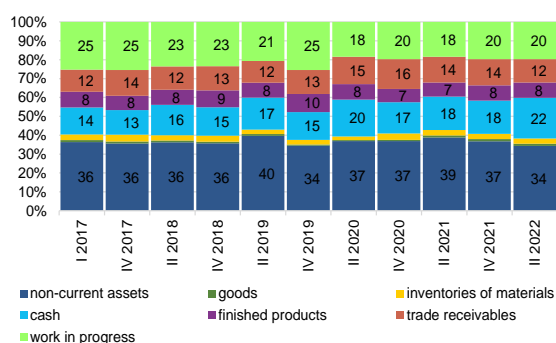
Source: NBP, based on Statistics Poland

Figure 121 Y/y change in the main components of operating expenses and sales revenue of construction companies with 9 - 49 staff



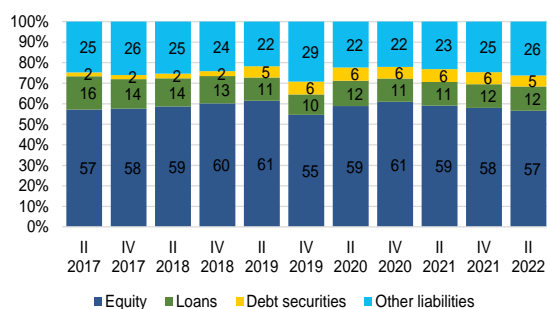
Source: NBP, based on Statistics Poland

Figure 123 Structure of assets of construction companies with 9 - 49 staff



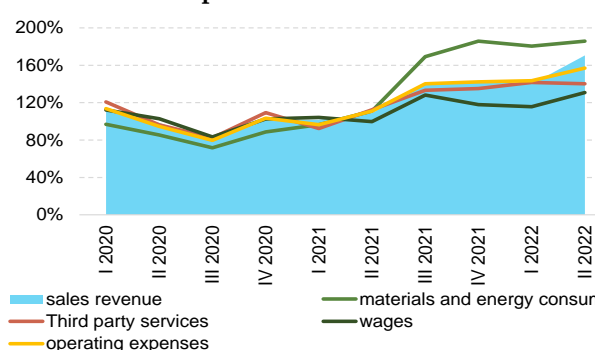
Source: NBP, based on Statistics Poland

Figure 125 Structure of liabilities of construction companies with 9 - 49 staff



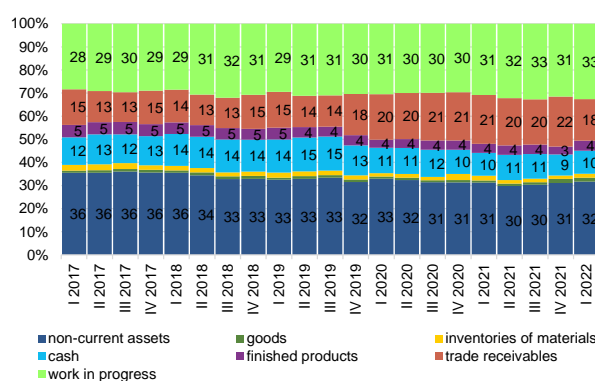
Source: NBP, based on Statistics Poland

Figure 122 Y/y change in the main components of operating expenses and sales revenues of construction companies with more than 49 staff



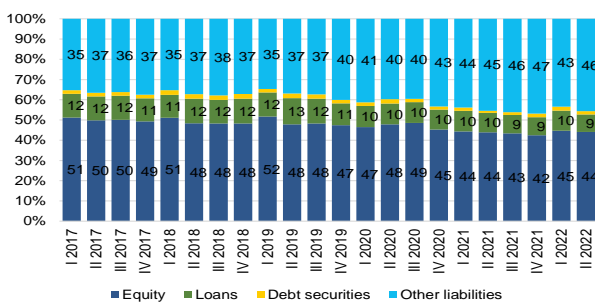
Source: NBP, based on Statistics Poland

Figure 124 Structure of assets of construction companies with more than 49 staff



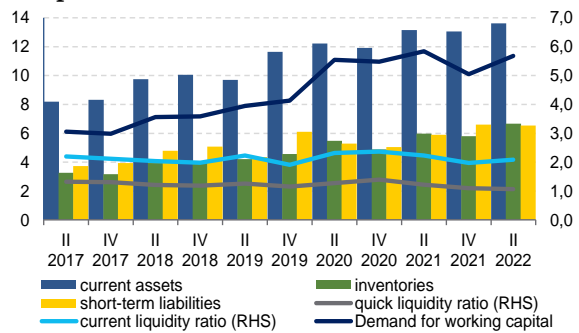
Source: NBP, based on Statistics Poland

Figure 126 Structure of liabilities of construction companies with more than 49 staff



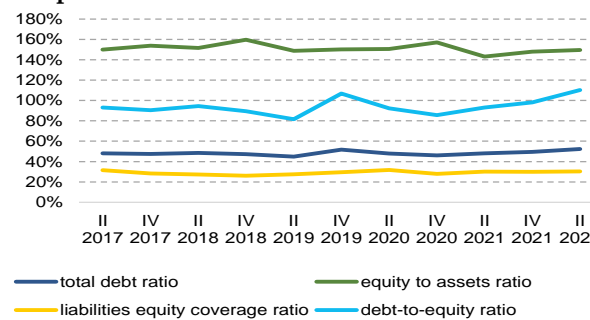
Source: NBP, based on Statistics Poland

Figure 127 Liquidity ratios of construction companies with 9 - 49 staff



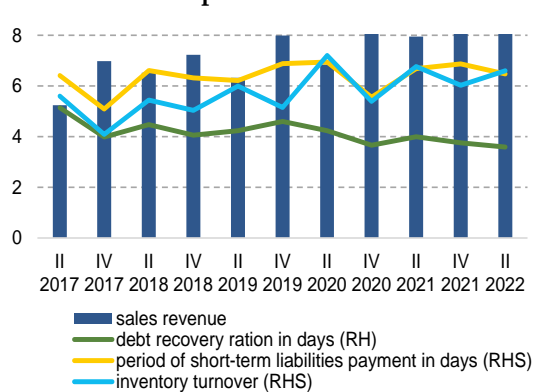
Source: NBP, based on Statistics Poland

Figure 129 Debt and equity ratios of construction companies with 9 - 49 staff



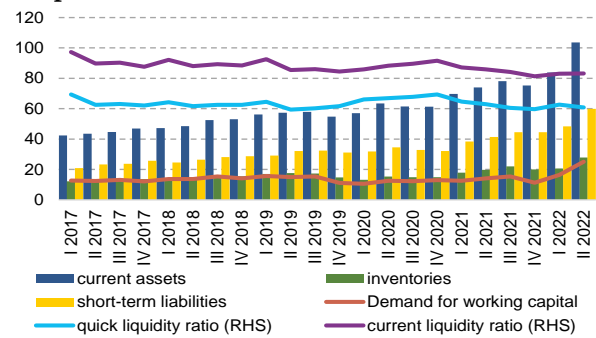
Source: NBP, based on Statistics Poland

Figure 131 Inventory turnover, receivables collection and payables payment periods of construction companies with 9 - 49 staff



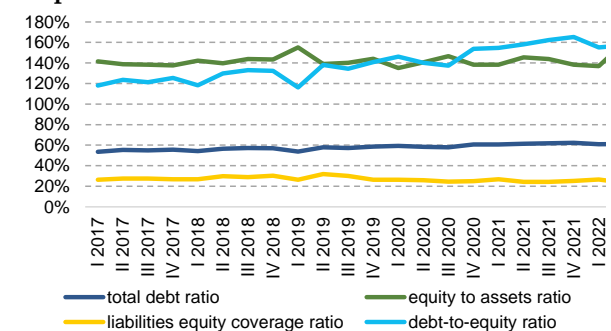
Source: NBP, based on Statistics Poland

Figure 128 Liquidity ratios of construction companies with more than 49 staff



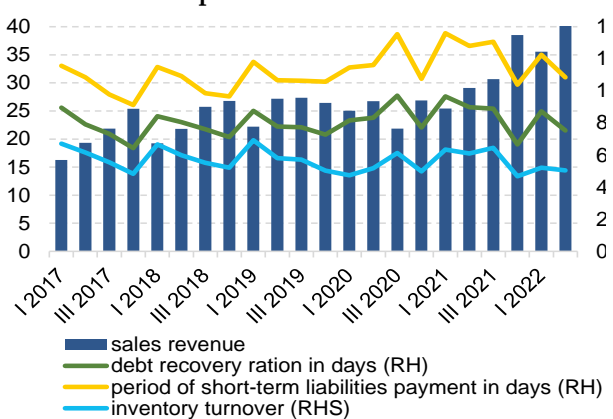
Source: NBP, based on Statistics Poland

Figure 130 Debt and equity ratios of construction companies with more than 49 staff



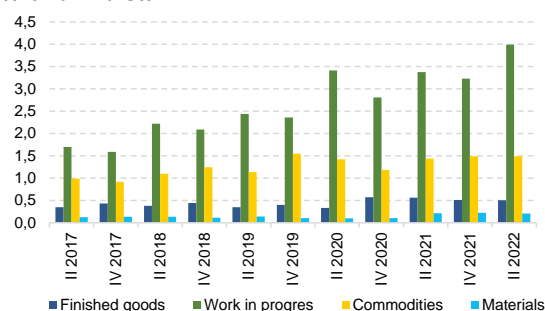
Source: NBP, based on Statistics Poland

Figure 132 Inventory turnover, receivables collection and payables payment periods of construction companies with more than 49 staff



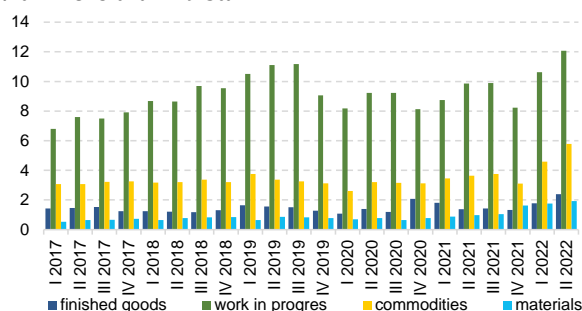
Source: NBP, based on Statistics Poland

Figure 133 Situation of construction companies with 9 - 49 staff



Source: NBP, based on Statistics Poland

Figure 134 Situation 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 surge in the costs of building materials are some of the key factors determining profitability of projects and liquidity of businesses. According to data provided by Grupa Polskie Składy Budowlane, the prices of materials increased by the average of 30.0% from January to June 2022 compared with the same period in 2021 in all the categories of goods under analysis, which means that they maintained the upward trend in 2022 H1 (the increase from January to March reached 29.0%). A year earlier, i.e., from January to June 2021, the increase was much smaller: 5.5%. The prices increased in all 20 categories of goods in the early months of 2022. From January to June 2022, the increase in prices in comparison to the same period of 2021 also concerned all 20 categories and was as follows: thermal insulation (+64%), OSB (+51%), drywall partitioning (+45%), roofs, gutters (+37%), walls, chimneys (+34%), surroundings of the house (+31%), waterproofing membranes (+31%), garden and hobby (+27%), installations, heating (+25%), finishing (+21%), tiles, bathrooms, kitchens (+21%), automotive articles (+19%), lighting, electricity (+19%), joinery (+19%), tools (+19%), construction chemicals (+17%), fittings, household appliances (+16%), cement, lime (+16%), decorations (+16%), paints and varnishes (+12%).

The analysis of data in the F01 reports available for periods until June 2022 showed a slight weakening of the general financial standing of wholesalers of building materials, and in this respect smaller companies (with 9 to 49 staff) fared better than bigger ones (with more than 49 staff). Wholesalers of building materials, like construction companies, took steps to mitigate the risk posed by inflation by “getting rid” of cash by buying more stock of building materials.

In 2022 Q2, larger wholesalers saw an increase in average total income with a somewhat bigger rise in total expenses in comparison to both the previous quarter and the corresponding period of 2021. As a result, the net financial result for 2022 Q2 decreased by 9.7% on 2022 Q1 and was also 7.5% lower than in 2021 Q2. Small wholesalers reported similar increases in income and expenses in 2022 H1 compared to the same period of 2021 (by 12.9% and 12.5%, respectively), owing to which their net financial result was 15.0% better. Comparing the results to the previous six months, we saw a decline in total income (by 1.4%) as well as in total expenses (by 2.0%) and a resulting increase of 4.4% in the net financial result. The proportion of

³⁶ The calculations and the conclusions presented in this edition of Information are primarily based on data stated in 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 the end of 2022 H1) 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] in June 2022 and June 2021, Grupa PSB Handel S.A., July 2021 and July 2022).

profitable entities grew a little in the group of small wholesalers (87.3% in 2022 H1 vs. 86.5% in 2021 H1). As far as bigger entities are concerned, the proportion of profitable businesses slightly decreased (90.8% in 2022 Q2 vs. 91.6% in 2021 Q2.).

A small decline in the financial liquidity ratios in both groups resulted from an increase in the inventory of goods. At the end of June 2022, the proportion of inventory in total assets in the group of larger wholesalers rose to over 28% whereas in the group of smaller ones to 31%, compared to 27% at the end of March 2022 and 28% at the end of December 2021. The increase in the inventory of goods was a consequence of growing prices coupled with a drop in sales and the safeguarding of funds against inflation by amassing building materials. At the same time, inventory turnover became several days longer, which did not lead to any liquidity issues nor affect the financial standing of the wholesalers of building materials. Comparing performance of both groups of companies at the end of June 2022 to June 2021, one can see a slight improvement in receivables collection to about 52 days while at the same the proportion of receivables in total assets decreased by 2 p.p. The payables payment period also improved a little (to 69 days in the case of bigger companies and to 63 days in the case of smaller ones), the proportion of payables to counterparties in the total assets of larger wholesalers remained at 37% whereas in the case of smaller ones it was 36%.

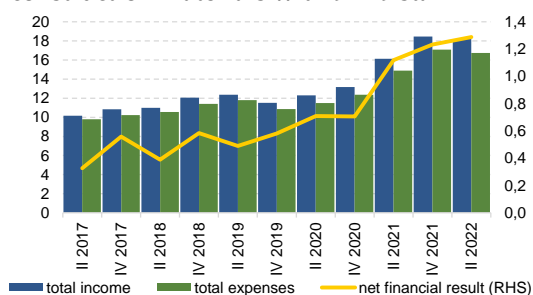
Equity remained a stable and predominant source of funding and at the end of June 2022 its share in total liabilities was 50% in the case of larger wholesalers and 53% in the case of smaller ones. Total debt, assets to equity, financial liabilities to equity and debt to equity were at good and safe levels, and in this regard smaller entities performed better.

Wholesalers of building materials used bank loans only to a limited extent. The share of such loans in total liabilities was stable in larger companies (12% in 2020-2022) and tended to decline in small ones (11% at the end of June 2022 vs. 14% on average in 2021 and 12% in 2020).

Both categories of wholesalers saw a slight fluctuation in profitability, which had been more satisfactory in the case of smaller companies for several years. In 2022 H1, smaller firms achieved return on sales (ROS) of 7.2%, return on equity (ROE) of 16.1% and return on assets (ROA) of 8.3%. In 2021H1, the respective ratios were as follows: ROS of 7.1%, ROE of 17.3% and ROA of 7.7%. The group of larger companies reported a small decline in profitability (5.2% ROS, 5.8% ROE and 2.8% ROA in 2022 Q2 vs. 6.8% ROS, 6.9% ROE and 3.5% ROA in 2021 Q2.).

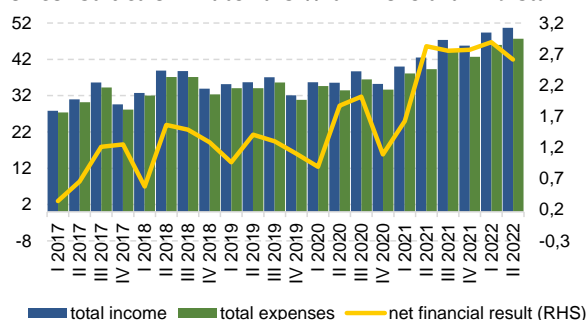
The better financial standing of small wholesalers than that of larger ones is illustrated by the operating expense ratio, which had been a little better in their case for three years: 0.92 in 2022 H1 and 0.93 in 2021 in vs. 0.94 in 2022 Q2 and the whole 2021 in the case of big companies.

Figure 135 Performance indicators of wholesalers of construction materials with 9 - 49 staff



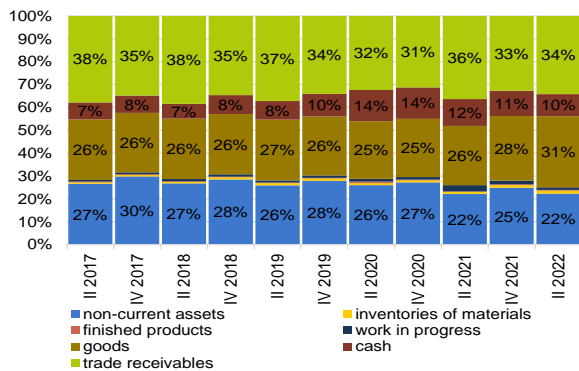
Source: NBP, based on Statistics Poland (F01)

Figure 136 Performance indicators of wholesalers of construction materials with more than 49 staff



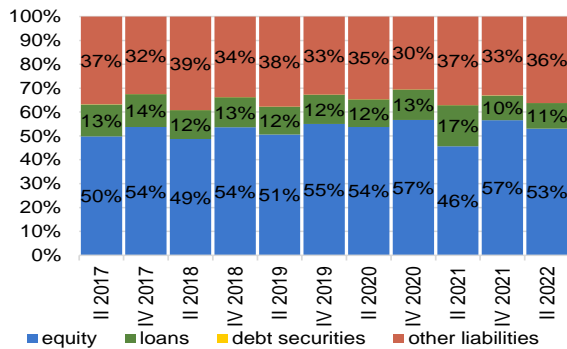
Source: NBP, based on Statistics Poland (F01)

Figure 137 Structure of assets of wholesalers of construction materials with 9 - 49 staff



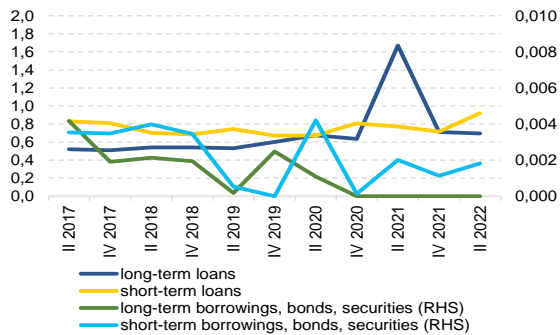
Source: NBP, based on Statistics Poland (F01)

Figure 139 Structure of liabilities of wholesalers of construction materials with 9 - 49 staff



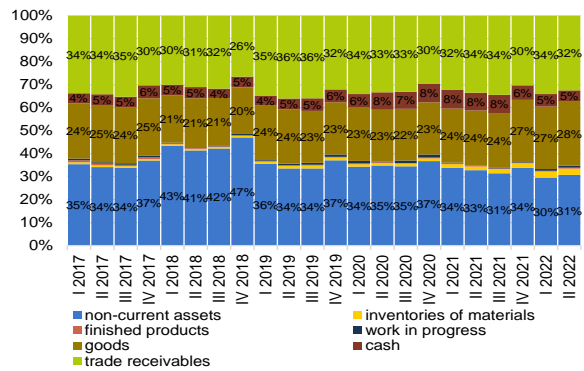
Source: NBP, based on Statistics Poland (F01)

Figure 141 Sources of financing of wholesalers of construction materials with 9 - 49 staff



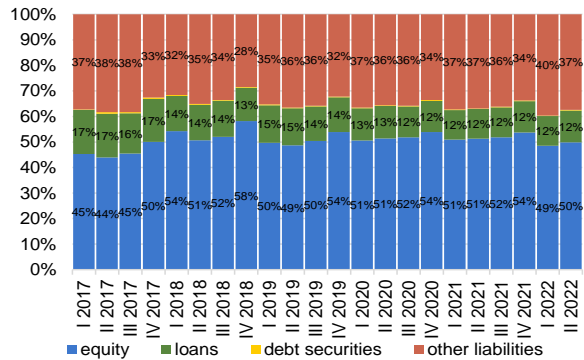
Source: NBP, based on Statistics Poland (F01)

Figure 138 Structure of assets of wholesalers of construction materials with more than 49 staff



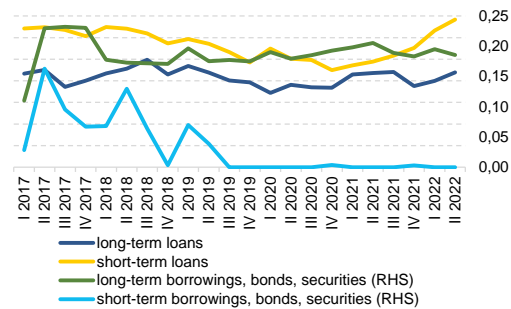
Source: NBP, based on Statistics Poland (F01)

Figure 140 Structure of liabilities of wholesalers of construction materials with more than 49 staff



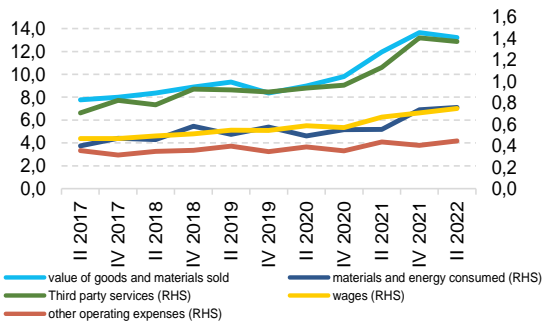
Source: NBP, based on Statistics Poland (F01)

Figure 142 Sources of financing of wholesalers of construction materials with more than 49 staff



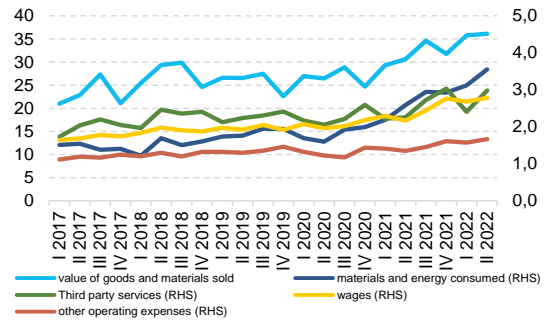
Source: NBP, based on Statistics Poland (F01)

Figure 143 Operating expenses of wholesalers of construction materials with 9 - 49 staff



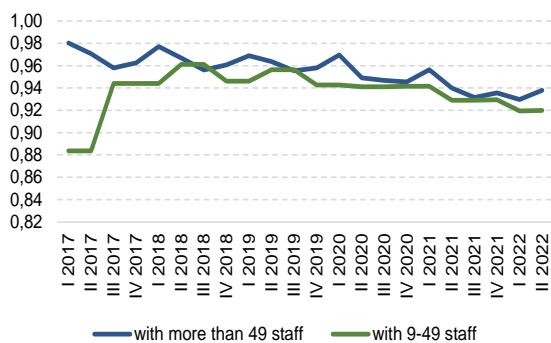
Source: NBP, based on Statistics Poland (F01)

Figure 144 Operating expenses of wholesalers of construction materials with more than 49 staff



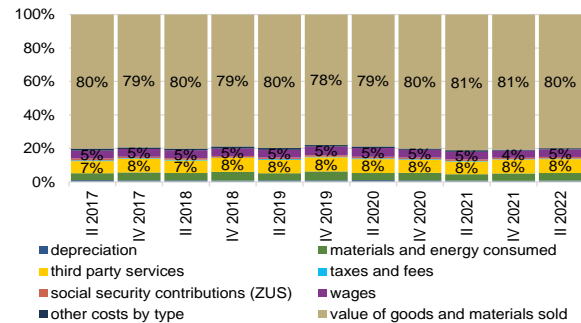
Source: NBP, based on Statistics Poland (F01)

Figure 145 Operating expense ratio by type of wholesalers of construction materials



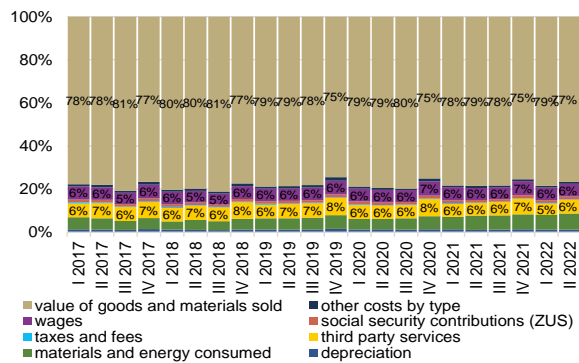
Source: NBP, based on Statistics Poland (F01)

Figure 146 Structure of operating expenses of wholesalers of construction materials with 9 - 49 staff



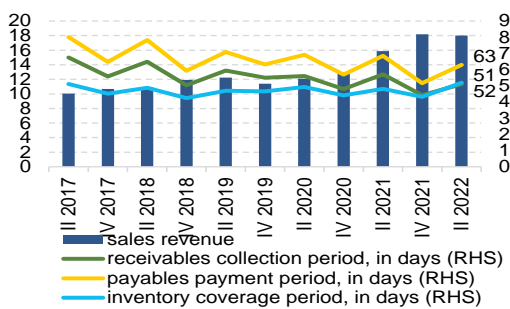
Source: NBP, based on Statistics Poland (F01)

Figure 147 Structure of operating expenses of wholesalers of construction materials with more than 49 staff



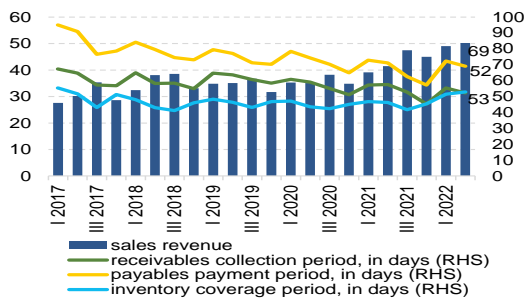
Source: NBP, based on Statistics Poland (F01)

Figure 148 Inventory turnover, receivables collection and payables payment periods of wholesalers of construction materials with 9 - 49 staff



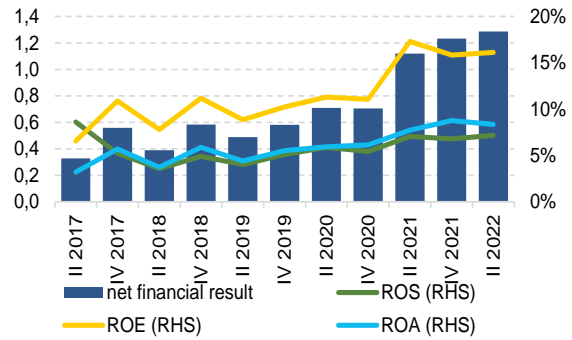
Source: NBP, based on Statistics Poland (F01)

Figure 149 Inventory turnover, receivables collection and payables payment periods of wholesalers of construction materials with more than 49 staff



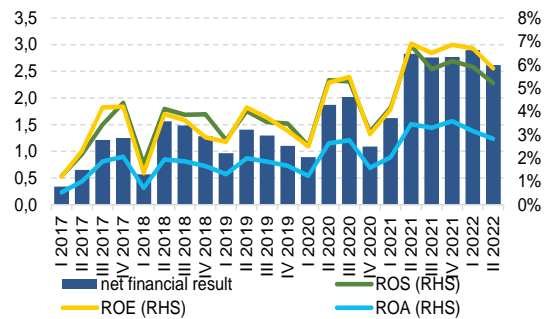
Source: NBP, based on Statistics Poland (F01)

Figure 150 Profitability of wholesalers of construction materials with 9 - 49 staff



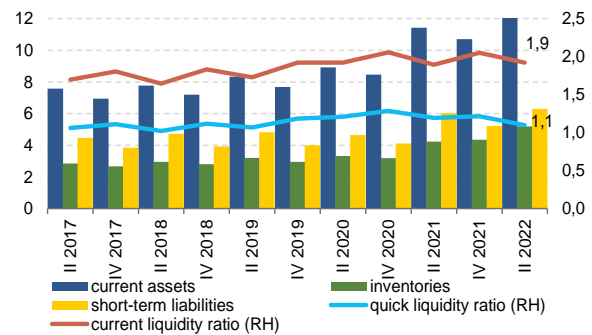
Source: NBP, based on Statistics Poland (F01)

Figure 151 Profitability of wholesalers of construction materials with more than 49 staff



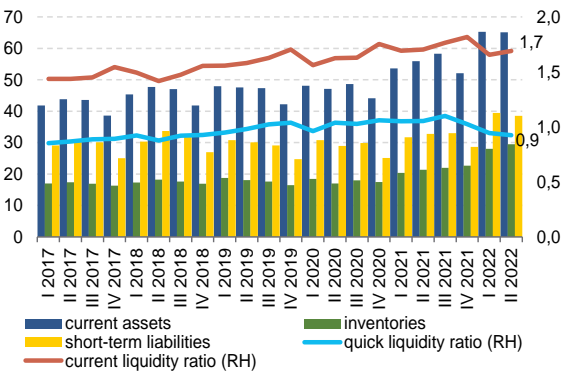
Source: NBP, based on Statistics Poland (F01)

Figure 152 Liquidity ratios of wholesalers of construction materials with 9 - 49 staff



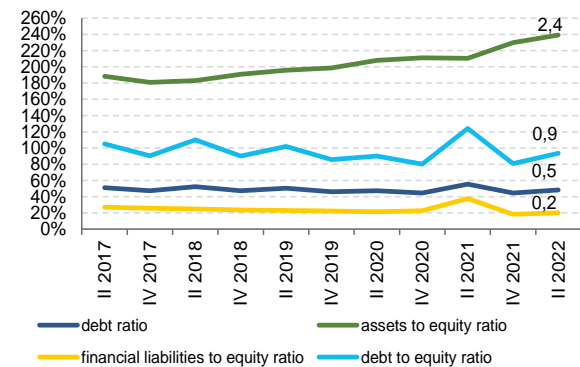
Source: NBP, based on Statistics Poland (F01)

Figure 153 Liquidity ratios of wholesalers of construction materials with more than 49 staff



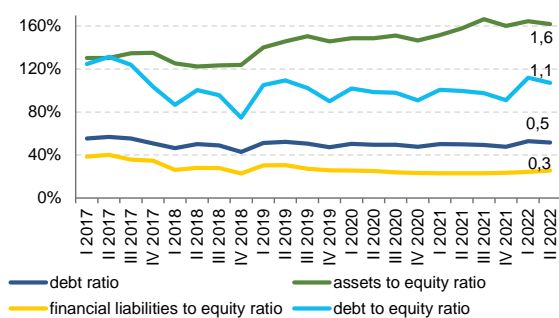
Source: NBP, based on Statistics Poland (F01)

Figure 154 Debt and equity ratios of wholesalers of construction materials with 9 - 49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 155 Debt and equity ratios of wholesalers of construction 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 in 2022 H1, as was the case of the other groups of companies included in our analysis, such as high prices of commodities in the global markets and uncertainty, particularly manifest at the early stages of the war in Ukraine in a drop of demand for building materials as activity in the construction sector subsided.

According to the financial data in F01 reports until June 2022, in spite of challenges in business, both larger and smaller manufacturers reported an increase in the key economic ratios in annual terms (total income up 35% and 20%, total expenses up 37% and 20% respectively, resulting in the net financial result being 23% and 28% better, respectively), which, however, did not contribute to any improvement in business profitability.

Bigger manufacturers reported a small decrease in return on sales in 2022 Q2 in comparison to 2021 Q2 (11.4% vs. 12.6%, respectively) and a worsened operating expense ratio (0.91 vs. 0.87, respectively). Small manufacturers of building materials achieved a smaller sales margin (7.1% in 2022 H1 vs. 6.7% in 2021 H1) and a less favourable level of operating expense ratio (0.93 vs. 0.94). There were significantly more profitable companies among large manufacturers (86%) than among small ones (66%) at the end of June 2022.

In 2022 H1, both groups of manufacturers saw a considerable increase in the share of the cost of materials and energy consumed in operating expenses (7 p.p. up, to 57% as far as big companies are concerned, and 6 p.p., to 55% in the group of small ones). Our analysis of changes in expenses showed an increase in all components of operating expenses, where materials and energy consumed (45% up), third party services (42% up), materials and goods sold (24% up) and wages (also c. 24% up) grew the most.

Financial liquidity deteriorated slightly, though it still was safe in both categories of firms, ensuring their ability to settle short-term liabilities. Small manufacturers reported better ROE (9.7%) and ROA (5.4%) ratios than large companies. Stable and good general debt ratios indicate that the assets and operations of the companies were to a larger extent financed with equity than with debt, which protected them from loss of liquidity and bankruptcy in the event of economic downturn. Both big and small manufacturers of building materials reported very high equity (61% of total liabilities of larger companies and 59% in the case of smaller companies at 30 June 2022).

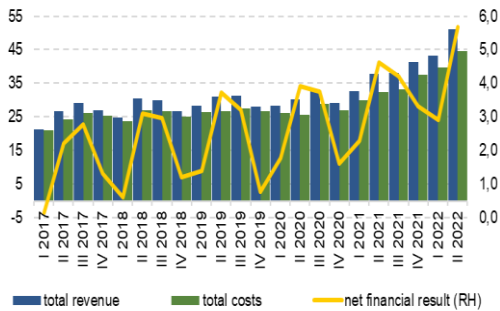
Both groups of manufacturers saw an increase in the proportion of payables to suppliers of raw materials and subcontractors (27% of total liabilities of larger producers and 30% of total liabilities of smaller entities at the end of June 2022 vs. 25% and 27% respectively as at 30 June 2021) and had a low share of bank loans (12%

³⁷ The calculations and the conclusions presented in this edition of Information are primarily based on data stated in 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 the end of 2022 H1) which manufacture building materials (PKD 1623, 2223, 2320, 2332, 2351, 2352, 2361, 2362, 2363, 2364).

and 11% of total liabilities as at 30 June 2022, respectively), which had had been going down for another year in the group of small producers.

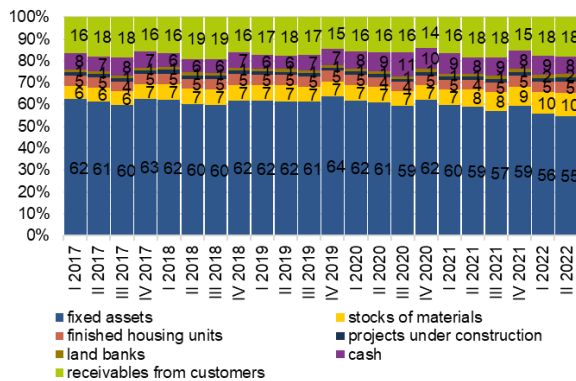
At the end of 2022 H1, the amount of unpaid receivables from contractors in the group of big producers was low (18% of total assets) and they reported good receivables collection (43 days) and payables payment (66 days) periods. Small producers were coping with bigger amounts of unpaid receivables from buyers (27% of total liabilities), longer receivables collection (62 days on average) periods and payables payment periods (77 days on average).

Figure 156 Performance indicators of producers of building materials with more than 49 staff



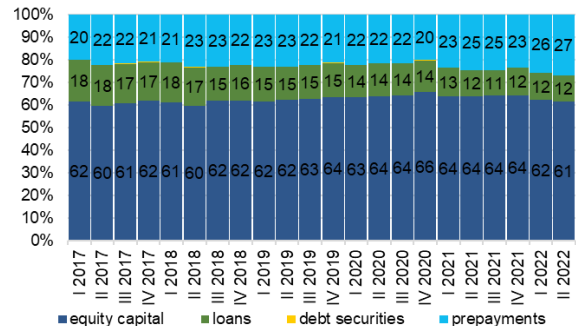
Source: NBP, based on Statistics Poland (F01)

Figure 158 Structure of assets of producers of building materials with more than 49 staff



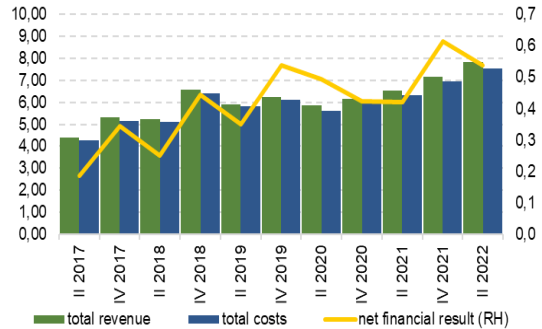
Source: NBP, based on Statistics Poland (F01)

Figure 160 Structure of liabilities of producers of building materials with more than 49 staff



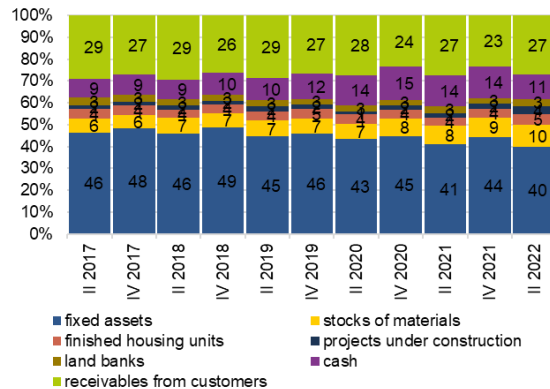
Source: NBP, based on Statistics Poland (F01)

Figure 157 Performance indicators of producers of building materials with 9 - 49 staff



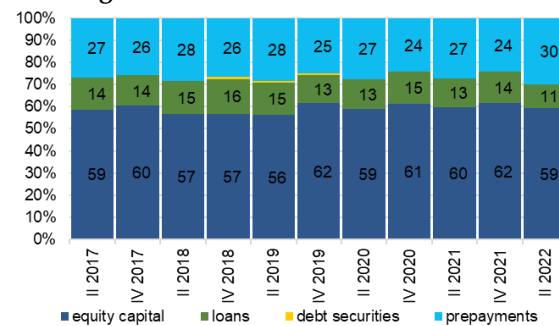
Source: NBP, based on Statistics Poland (F01)

Figure 159 Structure of assets of producers of building materials with 9 - 49 staff



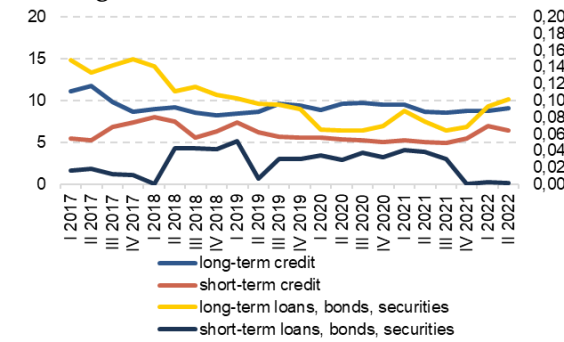
Source: NBP, based on Statistics Poland (F01)

Figure 161 Structure of liabilities of producers of building materials with 9 - 49 staff



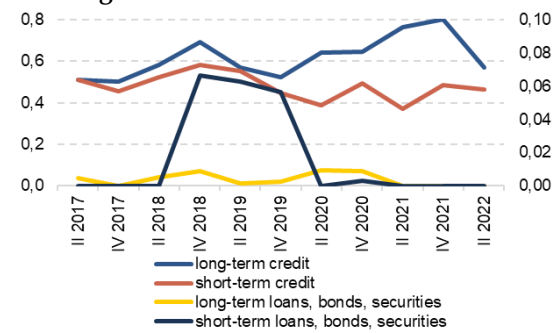
Source: NBP, based on Statistics Poland (F01)

Figure 162 Operating expenses of producers of building materials with more than 49 staff



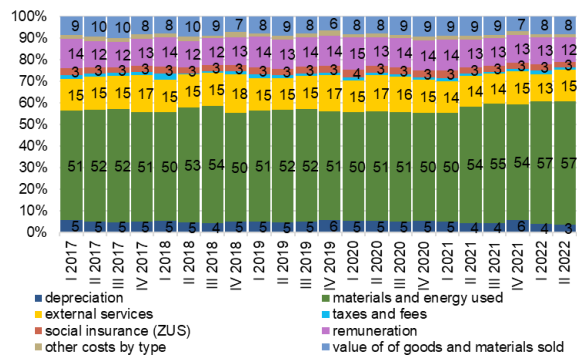
Source: NBP, based on Statistics Poland (F01)

Figure 163 Operating expenses of producers of building materials with 9 - 49 staff



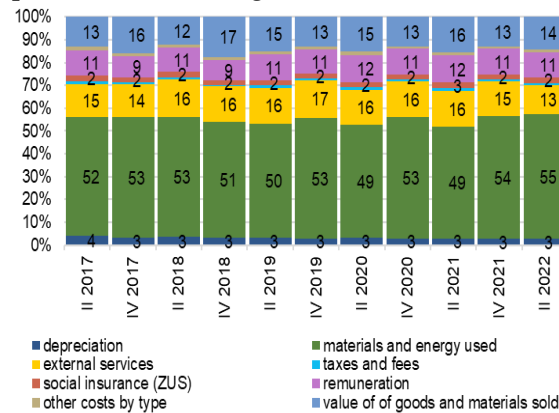
Source: NBP, based on Statistics Poland (F01)

Figure 164 Structure of operating expenses of producers of building materials with more than 49 staff



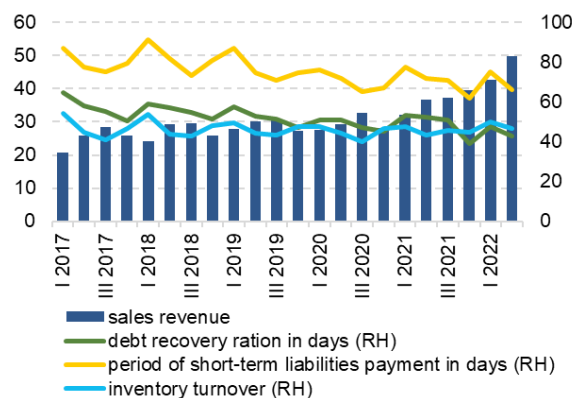
Source: NBP, based on Statistics Poland (F01)

Figure 165 Structure of operating expenses of producers of building materials with 9 - 49 staff



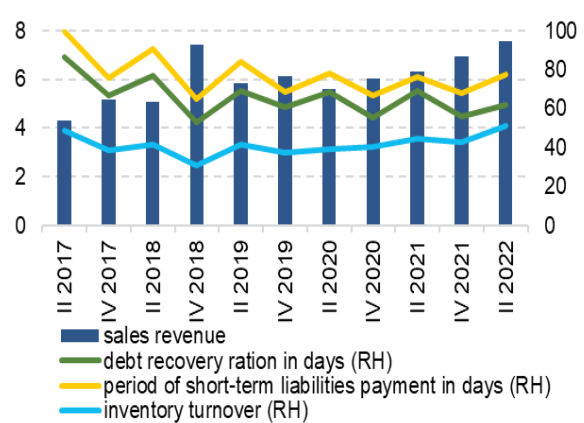
Source: NBP, based on Statistics Poland (F01)

Figure 166 Inventory turnover, receivables collection and payables payment periods producers of building materials with more than 49 staff



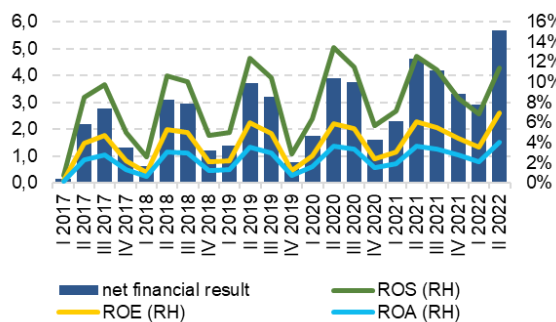
Source: NBP, based on Statistics Poland (F01)

Figure 167 Inventory turnover, receivables collection and payables payment periods producers of building materials with 9 - 49 staff



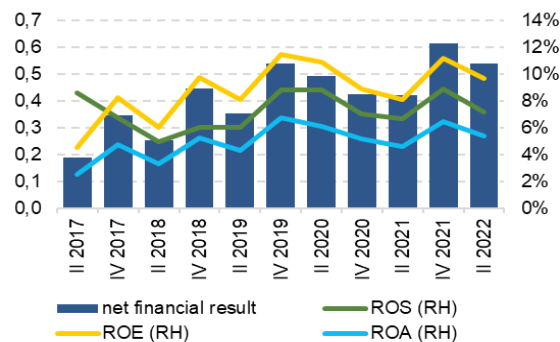
Source: NBP, based on Statistics Poland (F01)

Figure 168 Profitability of producers of building materials with more than 49 staff



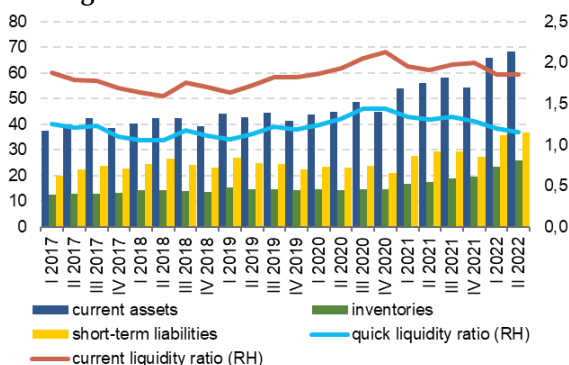
Source: NBP, based on Statistics Poland (F01)

Figure 169 Profitability of producers of building materials with 9 - 49 staff



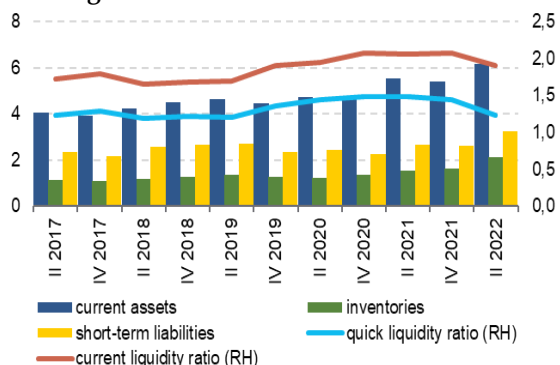
Source: NBP, based on Statistics Poland (F01)

Figure 170 Liquidity ratios of producers of building materials with more than 49 staff



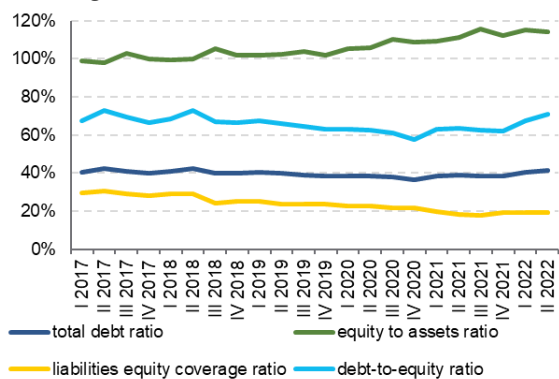
Source: NBP, based on Statistics Poland (F01)

Figure 171 Liquidity ratios of producers of building materials with 9 - 49 staff



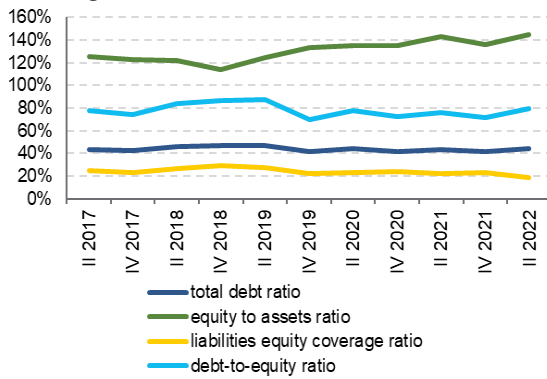
Source: NBP, based on Statistics Poland (F01)

Figure 172 Debt and equity ratios of producers of building materials with more than 49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 173 Debt and equity ratios of producers of building materials with 9 - 49 staff



Source: NBP, based on Statistics Poland (F01)

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