



NARODOWY
BANK POLSKI

June 2023

Information on home prices and the situation in the housing and commercial real estate market in Poland in 2023 Q1

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The information was prepared in the Financial Stability Department for the needs of the NBP governing bodies. The opinions expressed in this publication are those of their respective authors and they do not represent the position of the governing bodies of Narodowy Bank Polski.

The analysis of the situation in the real estate market in Poland in 2023 Q1¹ leads to the following conclusions:

- The housing market fairly stabilised after the demand correction observed virtually throughout 2022. In the past 4 quarters, a total of 36 thousand dwellings were sold in the largest market in Poland², i.e. approx. 24 thousand fewer than at the corresponding period last year, meaning a 40% drop in the number of transactions. Demand recovered in 2023 Q1, and the number of developer contracts for the construction of dwellings reached approx. 11.4 thousand³ (see Table 1).

Table 1 The number of housing construction contracts put on the market, sold and remaining on offer in the 6 largest housing markets in Poland (quarterly data)

	Put on market	Sold	On offer
2020 Q1	13,001	18,883	44,254
2020 Q2	10,547	6,866	48,914
2020 Q3	12,953	13,313	49,289
2020 Q4	12,122	13,963	48,028
2021 Q1	13,851	19,482	42,129
2021 Q2	15,803	19,491	37,844
2021 Q3	13,770	14,994	36,624
2021 Q4	14,685	15,036	37,361
2022 Q1	13,498	10,410	40,457
2022 Q2	21,446	9,458	52,955
2022 Q3	7,290	6,598	51,396
2022 Q4	6,782	8,493	48,592
2023 Q1	6,852	11,421	43,752

Source: JLL

- The continuation of the developers' projects started in the past years yielded 54.9 thousand dwellings completed and made ready for occupancy in the whole of Poland in 2023 Q1 (an increase of approx. 0.4% y/y and a decrease of approx. 23.3% q/q). In 2023 Q1, 38.6 thousand dwellings were started, approx. 27.6% fewer in year-on-year terms but 8.6% more in quarter-on-quarter terms. 51.6 thousand building permits were issued, marking a decrease of approx. 33.8% y/y and 14.7% q/q.
- The growth of home construction expenses (i.e. costs of materials, labour, lease of equipment) slowed down a little, which was connected with the smaller scale of housing construction and assembly production. Interest in buying land for development decreased and the prices dipped as well. At the

¹ The analysis carried out in this issue of the *Information* is based on data available as at the end of 2023 Q1. Data collected in the NBP database during the listings include offers valid as at 1 March 2023 and transactions concluded in the period from 1 December 2022 to 28 February 2023. Due to delays in the availability of certain data, some charts and tables include information until the end of 2022 Q4. The data series with average prices per square metre of housing, commercial rents and transaction prices per square metre of retail space reflect the pool of data available at the cut-off-date. Historical data are subject to revision. In the housing price survey (BaRN database) concerning 2023 Q1, approx. 116.8 thousand records were collected, of which approx. 21.8% concerned transactions and 78.2% concerned offers. Altogether, approx. 5.0 million records have been collected in the BaRN database, of which 25.1% concerned transactions and 74.9% concerned offers.

² The 7 largest cities are: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warsaw, Wrocław

³ Based on NBP and JLL data.

same time, **transactional rental rates per square metre of dwelling increased and so did the average nominal transactional prices of dwellings in the primary markets**, albeit less than in the previous quarters.

- **In the primary markets, the average nominal transactional prices per sq .m of new dwellings (PMT) went up a little in the 10 cities, Kraków and Wrocław, and they decreased in the 6 cities, especially in Gdynia** (see Table 2). The increases in transactional prices were partly due to a change in the structure of dwellings sold (a higher percentage of transactions in better locations rather than on city outskirts), rather than price adjustments by the developers. **The real transactional prices decreased in the primary markets, both in relations to CPI and changes in wages to the year-on-year as well as quarter-on-quarter.**
- **The secondary market saw declining growth in prices, both nominal and real**, particularly strong in in Gdańsk and Warsaw. **Prices of dwellings adjusted by the hedonic index# remained virtually stable in the 6 and the 10 cities, but dropped in Warsaw** (see Figure 10). This means that similar dwellings in the 6 and the 10 cities were sold at similar prices to those in the previous quarter, whereas they were cheaper in Warsaw. Older and smaller dwellings in better locations continued to be in demand owing to the lower purchase cost.

Table 2 Change in transaction prices per sq. m of dwelling in the analysed cities in 2023 Q1.

	Change in nominal prices, q/q		Change in nominal prices, y/y		Change in real prices relative to CPI */ q/q		Change in real prices relative to CPI */ y/y	
	PMT	SMT	PMT	SMT	PMT	SMT	PMT	SMT
Gdańsk	1.6%	-2.9%	-3.2%	6.1%	-2.6%	-6.9%	-17.9%	-10.0%
Gdynia	-8.4%	-3.2%	5.1%	1.8%	-12.2%	-7.2%	-10.8%	-13.6%
Kraków	2.3%	-1.9%	8.6%	5.2%	-2.0%	-6.0%	-2.7%	-10.7%
Łódź	-0.8%	3.1%	9.5%	5.9%	-4.9%	-10.5%	-7.1%	-10.2%
Poznań	2.8%	-5.0%	13.5%	2.1%	-1.5%	-8.9%	-3.7%	-13.4%
Wrocław	6.3%	-1.3%	10.8%	8.5%	1.9%	-5.4%	-6.0%	-8.0%
Warsaw	0.2%	-0.9%	3.9%	-2.5%	-3.9%	-5.0%	-11.9%	-17.3%
6 cities	-1.0%	-1.5%	7.8%	5.2%	-3.9%	-6.2%	-9.3%	-11.0%
10 cities	2.4%	-0.5%	12.2%	3.4%	-1.1%	-4.7%	-4.3%	-11.3%

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

- **The number of dwellings offered to rent grew in 2023 Q1⁴.** Investors continued to invest in real estate, considering it as safe capital investment, rather than expecting attractive rates of return. **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 10 cities** (see Figures 14 and 15), which made rental more profitable. Recently, investment funds, including foreign ones, have showed less interest in buying

⁴ Based on NBP's data and Otodom's publication titled "Raport z rynku najmu – marzec 2023" ["Report on Rental Market – March 2023"].

dwellings to rent, which may be linked to legal and economic conditions⁵. So far, the Housing for Rent Fund managed by the BGK played a dominant role in the market.

- **The increase in the level of rents in long-term rental** (on average in the 7 large cities) **resulted in a slightly higher level of the rental profitability indicator concerning dwellings bought for cash**⁶ (see table 22). 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 was negative due to growing interest rates on Treasury securities.
- **The estimated housing affordability index in the 7 large cities** (based on the average wages in the enterprise sector) **decreased slightly in quarter-on-quarter terms**, mainly due to growing wages (see Figure 16). The estimated maximum affordable residential mortgage loan⁷ increased in q/q terms, as did the estimated affordability of loan-financed housing⁸. What led to the increase in the two affordability indicators was a similar increase in wages and a slight decrease in interest rates on residential mortgage loans.
- **Quarterly sales of housing construction contracts in the 6 largest primary markets in Poland**⁹ (see Table 1 and Figure 57) were approx. 35% higher than in the previous quarter, **reaching approximately 11.4 thousand units** at the end of March 2023. In the past fourth quarters in aggregate, approx. 36 thousand housing construction contracts were sold in the largest markets, meaning approx. 24 thousand less (- 40% down y/y). In the past fourth quarters in aggregate, approx. 42 thousand housing construction contracts were put on sale in the largest markets, meaning approx. 15.4 fewer (- 27% y/y). **The supply of unsold housing construction contracts in the 6 largest markets decreased on the previous quarter by approx. 4.8 thousand units and amounted to approx. 43.8 thousand at the end of 1q 2023**. The number of contracts for dwelling units contractually defined as “turn-key” went slightly up compared to the previous quarter, reaching approx. 5.8 thousand.
- **The selling time of a housing construction contract in the primary market, average for the 6 largest markets, calculated on the basis of sales figures in the previous quarter, decreased to 4.9 quarters in 2023 Q1 from 5.6 quarters in 2022 Q4** (see figure 62).

⁵ The decrease in the profitability of investment is connected, among other things, with the levying of tax on so-called shopping centres (i.e. buildings worth above PLN 10 million) and the imposition of a ban on depreciation of dwellings for tax purposes has caused more and more companies to withdraw from the housing rental market in Poland.

⁶ For more information about the rental market, see Chapter 7 “Analysis of profitability of investment in housing in selected cities in Poland in 2023 Q1.”.

⁷ The maximum value of residential loan available in a particular market is a measure expressed in PLN thousand, taking into account banks’ 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 and changes in the buffer for interest rate hikes.

⁸ 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.

⁹ Based on JLL data.

- **In 2023 Q1, the value of new residential mortgage loans disbursed in Poland was lower than in the corresponding period of 2022.** The value of new agreements for PLN-denominated residential mortgage loans granted to households^{10, 11} (excluding renegotiated agreements), according to NBP data¹², reached PLN 7.3 billion, which was approx. PLN 0.9 billion (14.9%) more than in the preceding quarter, but PLN 10.3 billion (-59%) less than in 2022 Q1. Currently, more than 82% of the money financing the purchase of homes in the 6 largest markets are households' own funds (see Table 3). Demand for credit has picked up a little since 2022, mainly as a result of the announced launch of the government's "Safe 2% Loan" programme, and due to a reduction of the buffer applied by the banks in the calculation of creditworthiness. The results of the NBP survey on the situation in the credit market in 2023 Q2¹³ point to the easing of banks' lending policies caused by a drop in demand for residential mortgage loans and the lowering of the creditworthiness criteria by UKNF, with a simultaneous raising of margins on higher risk loans and other loans. The surveyed banks expected the tightening of the lending policy and a further increase in demand for residential mortgage loans in 2023 Q3.
- **Residential mortgage loans with temporarily fixed interest rates accounted for more than half of the total lending volume for the fourth quarter in a row.** According to the AMRON data, the percentage of new fixed-rate loans in the total amount of new residential mortgage loans amounted to 54.3% in 2023 Q1, which means that it has decreased by approx. 9 pp. q/q and increased by 28 pp. y/y (see figure 30).
- **The estimated Return on Equity (ROE)¹⁴ on development projects for housing developers approximated 21%, having increased slightly on the previous quarter,** and still remaining relatively high. What contributed to such a level of ROE was the increase in transaction prices, which covered the

¹⁰ According to data provided by BIK, in 2023 Q1 the banks and credit unions granted approx. 22.4 thousand loans to retail customers, totalling approx. PLN 7.5 billion (50.1 thousand loans, PLN 17.4 billion in 2022 Q1). The negative y/y sales growth rates of residential mortgage loans reported in 2023 Q1 were recorded in all the loan amount brackets. In the period from 2022 Q2 to 2023 Q1, approx. 106.0 thousand residential mortgage loans were taken out (a decrease of approx. 60% y/y) for the total of PLN 35.7 billion (approx. 59% down y/y).

¹¹ According to AMRON data, 22.0 thousand new residential mortgage loans were granted in 2023 Q1 (vs. 18.9 thousand in 2022 Q4 and 47.8 thousand in 2022 Q1), and the value of the new mortgage loans reached PLN 7.5 billion (vs. PLN 6.2 billion in 2022 Q4 and PLN 16.9 billion in 2022 Q1). In 2023 Q1 the most frequently granted loans fell within the range of PLN 200-300 thousand (approx. 25%, though 0.5 p.p. less than in Q1 2022), the percentage of loans in the range of PLN 100-200 thousand and those up to PLN 100 thousand increased, whereas the percentages of loans within the remaining brackets fell. As regards the structure of new loans in 2023 Q1, the share of loans with the LtV of 50-80% and over 80% increased to approx. 53% and 19%, respectively, while the share of loans with LtV of up to 30% and 30-50% decreased to approx. 16% and 13%, respectively. It was another quarter with a slight uptick in the share of residential mortgage loans with maturities of up to 15 years (10%) and 15- 25 years (32%), while the share of loans maturing within 25 - 35 years (57%) and after 35 years (0.6%) decreased. At the end of 2023 Q1, the number of outstanding loan agreements (being repaid) approximated 2.33 million (vs. 2.37 million in 2022 Q4), and their total amount was PLN 486 billion (PLN 496 billion in 2022 Q4.).

¹² 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://nbp.pl/statystyka-i-sprawozdawczosc/statystyka-monetarna-i-finansowa/statystyka-stop-procentowych/>. According to the NBP data, at the end of March 2023, the stock of residential mortgage loans granted by the banks to households totalled PLN 485.9 billion, i.e. it was by PLN 10.7 billion lower than in 2022 Q4 and by approx. PLN 26.6 billion lower than in March 2022 (a 5.2% decrease y/y, whereas it had grown 0.1% in 2022 Q1). In 2023 Q1, the stock of PLN-denominated residential mortgage loans decreased (- PLN 14.1 billion on 2022 Q1), which was also the case of foreign currency loans (- PLN 12.5 billion).

¹³ "Situation in the credit market - results of the senior loan officer opinion survey, 2023 Q2", NBP, April 2023 <https://nbp.pl/system-finansowy/sytuacja-na-ryнку-kredytowym/>.

¹⁴ Gross margin should not be equated with developer's profit and depending on the organization of the developer/developer's group, it may include various cost items.

growth in the developers' costs. According to Coface report¹⁵, the estimated number of insolvencies in the construction sector was 162 in 2023 Q1 (compared to 66 in 2022 Q1 and 280 in the whole of 2022), while the number of insolvencies in the real estate services doubled, reaching 24 (see Figure 34). The authors of the report point out that given the numerous legislative changes and technical problems connected with the roll out of the National Debtor Register system in 2022, the number of insolvencies in the construction industry is hard to quantify. At the same time, the stock market indices of the construction and development companies went up a little in 2023 (see Figure 34).

- **In 2023 Q1 approx. 54.9 thousand dwellings were completed and made ready for occupancy¹⁶ in Poland, 0.4% more than in 2022 Q1** (see Figure 51). Those dwellings were primarily intended for sale or rental (approx. 55%) and for owner occupancy (approx. 43%). The proportion of dwellings completed in the so-called "rest of Poland" to the total number of dwellings completed decreased, especially around large cities, from approx. 73.4% in 2022 Q1 to approx. 71.9% in 2023 Q1. It is connected with high demand in large agglomerations and the decreasing availability of land for construction in good locations. **The number of approx. 38.6 thousand dwellings started¹⁷ was 27.6% lower than in 2022 Q1** (see figure 52). It should be added that the number of home construction starts decreased in the largest cities as well as in the rest of Poland. Predominant here were also dwellings intended for sale or rental (approx. 60.7%) and for owner occupancy (approx. 38%).
- **In spite of the continuing subdued demand for dwellings, the high (compared to other industries) estimated return rates on housing projects led developers to apply for more building permits¹⁸, though the growth rate was slower in this case** (the number of building permits decreased by 33.8% y/y in 2023 Q1). Permits were granted mainly for the construction of dwellings intended for sale and rental (approx. 66.2% of all permits) and private construction for owner occupancy (approx. 30.3%). The share of building permits granted for cooperative or social housing construction was still marginal during the period, in spite of the increased y/y growth.

¹⁵ According to the opinion of Coface's experts (*Coface Report – Insolvency of Businesses in Poland in 2023 Q1*), the macroeconomic environment in Poland and abroad is becoming more and more disadvantageous to businesses and will contribute to an increase in the number of insolvencies. Most of the insolvent businesses belonged to the small business category. The dynamically growing number of insolvency cases in the construction industry is coping with high costs of materials, fuel, energy, wages as well as the cost of debt service and leases, while demand for services is waning. The infrastructure construction segment has achieved indexation security between the contractors and the General Directorate for National Roads and Highways (GDDKiA), but it is facing uncertainty regarding the payment of funds from the National Recovery Plan and the cohesion fund.

¹⁶ According to Statistics Poland, approx. 54.8 thousand dwellings were completed and made ready for occupancy in Poland in 2023 Q1, i.e. approx. 0.2 thousand more than in 2022 Q1 and approx. 16.7 thousand fewer than in 2022 Q4. Altogether in the past four quarters (2022 Q2 – 2023 Q1) a record high of 238.8 thousand dwellings were completed and made ready for occupancy, i.e. approx. 2.5 thousand more than a year before (an increase of 1.1% y/y).

¹⁷ According to Statistics Poland, the building of approx. 38.6 thousand dwellings started in Poland in 2023 Q1, or approx. 14.7 thousand fewer than in 2022 Q1 and approx. 3.0 thousand more than in 2022 Q4. Altogether in the past four quarters (2022 Q2 – 2023 Q1) the building of approx. 185.6 thousand dwellings was started, i.e. about 81.5 thousand fewer than a year before (a decrease of 30.5% y/y).

¹⁸ According to Statistics Poland, approx. 51.6 thousand building permits were issued in Poland in 2023 Q1, i.e. approx. 26.4 thousand fewer than in 2022 Q1 and approx. 8.9 thousand fewer than in 2022 Q4. Altogether in the past four quarters (2022 Q2 – 2023 Q1) approx. 271.1 thousand building permits were issued, i.e. approx. 63.4 thousand fewer than in 2022 Q1 (a decrease of 19.9% y/y).

- **There was no major change in the vacancy rates in the largest office real estate markets in 2023 Q1.** The overall supply of office space in the 9 largest office markets¹⁹ approximated 12.7 million sq. m²⁰ at the end of 2023 Q1, where the supply of new offices was close to 68.2 thousand sq. m. Office space under construction was about 700 thousand sq. m²¹, which means a visible decline in investors' activity compared to the 1 million sq. m reported a year ago. The vacancy rate grew in these markets from 13.5% in 2022 Q4 to 13.8% in 2023 Q1, whereas in Warsaw it amounted to 11.6%²². The vacancy rate of office space depends on the age²³ but primarily on the location²⁴ 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 (more energy-intensive) or those at worse locations. Estimated ROE on an investment in the building and commercialisation of a class A office building in Warsaw, assuming a financial leverage rate of 80% decreased from approx. 10% at the beginning of the pandemic to approx. 6%, which was a consequence of the growing construction costs and practically stable rents. The other office markets under analysis saw similar decreases in the estimated return on equity.
- **In 2023 Q1, the retail sector operated without any major change, though e-commerce continues to grow and will compete with traditional retailing.** The stock of modern retail space at the end of 2022 was approx. 12.8 million sq. m, which means a saturation at the level of 330 sq. m per 1,000 inhabitants²⁵. At the end of 2023 Q1, approx. 322 thousand sq. m²⁶ of modern retail space was under construction, corresponding to approx. 2.5% of the existing space. It may be concluded that investors consider the traditional retail market in the largest cities to be saturated and investment projects are being conducted largely in smaller towns. There is a clear trend continuing for another quarter for shops and services outlets to invest in energy-efficient lighting and in reducing the use of electricity. Also, a further development of shopping centres towards multi-functional centres is observed. The average rent index²⁷ and the hedonic-adjusted rent index for commercial space increased in Warsaw, remained stable in Poznań and dipped in the Tri-City agglomeration.
- **The market for modern warehouse space in Poland continued to grow, though the supply of news pace slowed down a little.** At the end of 2023 Q1, the total stock of warehouse space had grown by 1.6 million sq. m on the preceding quarter, i.e. to 29.6 million sq. m²⁸, with over 2.2 million sq. m of modern warehouse

¹⁹ The ten office real estate markets are: Warsaw, Kraków, Wrocław, Tri-City, Katowice, Łódź, Poznań, Szczecin, Lublin.

²⁰ See JLL's Report *Office Market in Poland*, May 2023

²¹ An estimate based on information from JLL's Report *Office Market in Poland*, May 2023 and BNP Paribas report *Real Estate, At a Glance Office real Estate Market*, 2023 Q1.

²² See Cushman & Wakefield Report: *Poland's Office Market*, 2023 Q1, Poland.

²³ See Cushman & Wakefield Report, *Marketing as one of the key factors supporting the modernisation process of older office buildings*, 2018.

²⁴ See Knight Frank, Report: *Poland, Commercial Market*, 2018 H1.

²⁵ It is estimated that this value is 15% lower than the average for the entire European Union.

²⁶ See Colliers International Report: *Retail Market*, 2023 Q1, Poland.

²⁷ The average rent index and the hedonic-adjusted rent index for commercial space was reworked for the whole analysed period. The new index is not calculated using the imputation method as before, but on the basis of hedonic regression with zero-one time variables. It is calculated on the basis of rents for retail premises quoted in four consecutive periods. The adjusted index is more resilient to the occasional changes in the number of analysed estates and the premises to let contained in them occurring between the quotations.

²⁸ See Colliers International Report: *Warehouse Market*, 2023 Q1, Poland.

space still under construction. The vacancy rate grew to 6.2% in the whole of Poland from 4.0% in 2022 Q4.

- **In 2023 Q1, the estimated value of transactions over commercial real estate purchased as an investment²⁹, i.e. for rental, was close to EUR 790 million.** Approximately 34.6% of that value concerned warehouse space, 44.3% office space, and only 18.7% of the transactions involving 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 2023 Q1, the value of such loans granted by banks in Poland³⁰ decreased to PLN 59.6 billion³¹ (from PLN 62.3 billion at the end of 2022), and 59% of the loans were denominated in EUR. The total amount of corporate loans consisted of the following categories. The corporate debt resulting from the financing of residential real estate (loans for developers, cooperatives to finance refurbishments, etc.) increased slightly to PLN 4.7 billion at the end of 2023 Q1. The amount of loans financing office real estate decreased on the previous quarter to PLN 14.7 billion. The amount of loans financing retail property went down to PLN 15.1 billion (from 16.3 billion), while loans for warehouse stood at PLN 10.4 billion (no significant change). However, the amount of loans financing other types of real estate decreased to PLN 14.7 from PLN 15.3 billion in 2022 Q4. **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 2023 Q1, corporate loans secured with mortgages on commercial property amounted to PLN 139 billion, and 43% of such loans were denominated in euro. By deducting the amount of loans taken to finance commercial property from the total amount, one may estimate that corporations have about PLN 77 billion in mortgage-backed loans for other purposes, not related to the collateral, including working capital loans and project finance loans.
- **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 (phase 3) in the case of loans financing office real estate remained at 6.2%. In the case of loans financing commercial real estate, the NPL ratio improved a little, falling to 13% from 14.5% in 2022 Q4. The NPL ratio in the case of loans for warehouse and industrial real estate remained at 3.8%, whereas in the case of other real estate, it stood at 10%. The NPL ratio for loans financing developer housing projects decreased somewhat to 10.4% from 11.1% in 2022 Q4.

²⁹ Based on data from Comparables.pl. The investments concern the sale of an entire operating company which leases a building and derives revenue from that. Such transactions occur between: 1/ a developer who has commercialised the building and an investor to whom the building is sold, or 2/ two investors.

³⁰ According to our expert estimates, loans intended for the construction of commercial real estate (office, retail, warehouse and other) extended by foreign banks amounted to PLN 87 billion as at the end of 2021. The estimate is made 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 355 billion, that the total amount of the loans financing such real estate was about PLN 142 billion at the end of 2021. By deducting the loans granted by banks operating in Poland to finance such real estate (PLN 55 billion, excluding loans to developers) one arrives at an estimate of loans granted directly and indirectly by banks operating abroad, i.e. PLN 87 billion.

³¹ FINREP data.

- **In order to illustrate the level of risk in the commercial real estate market, we may look at the share of loans with a major increase in credit risk (phase 2).** The indicator had been improving significantly in the case of loans financing office and commercial real estate since 2022 Q2, and in the case of loans for office real estate, it went back to the level seen before the pandemic. It should be added that the indicator had developed differently over time in the case of the two market segments. As a consequence of the introduction of containment measures following the outbreak of the COVID-19 pandemic, especially in brick-and-mortar retail, the indicator in the case of commercial real estate soared to 32.5% in 2020 Q2 from 9.5% in 2020 Q1. The indicator peaked at 41.1% in 2021 Q1 and then started to improve, decreasing to 23.3% in 2023 Q1. The indicator for office real estate loans increased more slowly after the outbreak of the pandemic, from 7.4% in 2020 Q1 to 10.8% in 2020 Q2. 2020. The highest level of the indicator, namely 20.2%, was observed in 2022 Q2. It may thus be concluded that banks saw credit risk in the commercial real estate market as growing more sharply and earlier than in the office market. This can be explained by the fact that rents in the office market are fixed for a certain period, whereas in the case of commercial space they depend to a large extent on turnover, which indeed decreased, especially in the initial phase of the pandemic. As far as the office market is concerned, the pandemic precipitated the transformation of working methods towards teleworking, which enabled companies to reduce the leased office space after the expiry of the lease contract or to lease smaller office space, if they were negotiating the contract.
- **In the markets for small office real estate, the median of offer prices was in the upward trend in Warsaw and Wrocław, while being fairly stable in the other cities.** The median of offer prices for small retail real estate was on the rise in most large cities, except for Kielce and Łódź, where it decreased a little.

The following figures illustrate the key developments in the housing market in Poland's major cities in 2023 Q1. They show:

- 1) home prices (Figures 1–15),
- 2) affordability of loan-financed housing, loan availability, profitability of housing (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) offer prices for commercial real estate and the estimate return rate on commercial real estate (Figures 66–76),
- 7) results of the profitability analysis of an investment in real property for rental in selected cities of Poland in 2023 Q1 (Figures 77–90),
- 8) results of a survey of supply with elements of demand in the primary market and the research on the economic standing and production capacity of construction companies providing housing construction services, including an analysis of the standing of developers (Figures 91–122), housing construction companies (figures 123–147), firms selling construction materials (Figures 148–168), firms producing construction materials (Figures 169–186).

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 Polish Bank Association's SARFIN and Comparables.pl. The analyses and reports of JLL, 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 data were used³².

³² The authors used data and studies by Sekocenbud, Spectis, PAB, OLX Group.

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

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

Figure 1 Transaction prices per sq. m of housing in Warsaw and in the 6 cities – PM, in PLN

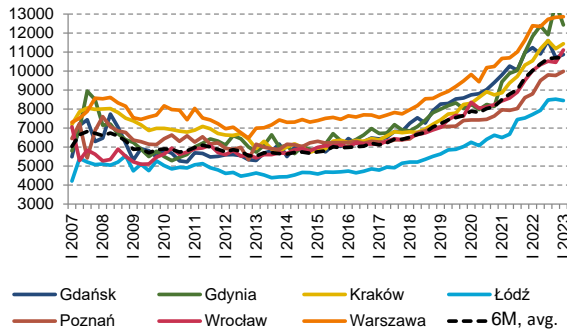
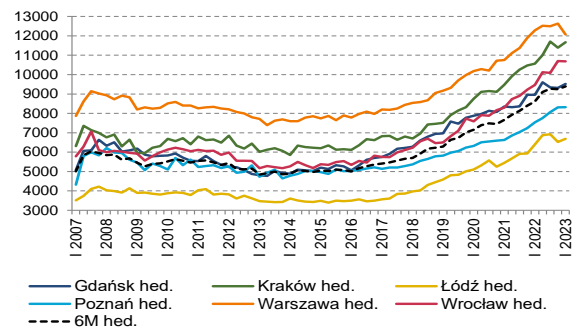


Figure 2 Transaction prices per sq. m of housing adjusted by the hedonic index (hed.)* in Warsaw and in the 6 cities - SM, in PLN



Note: the home price database of NBP (BaRN) has existed since 2006 Q3; a description of the database is available on the Bank's website: <https://nbp.pl/publikacje/cykliczne-materialy-analityczne-nbp/rynek-nieruchomosci/informacja-kwartalna/>. */ The price adjusted by the hedonic index is the average price of the base period multiplied by the hedonic index (it reflects the pure price change, ignores differences in housing quality). *Source: NBP*

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

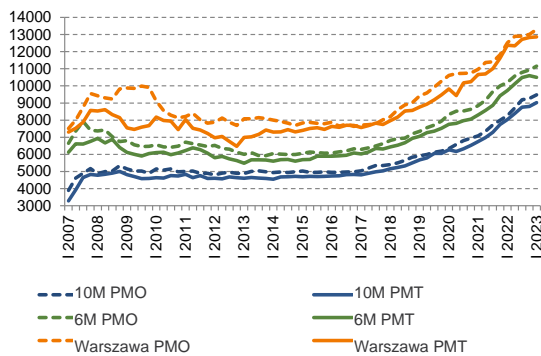
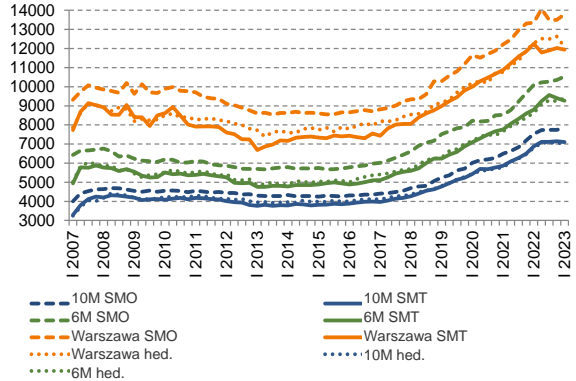


Figure 4 Weighted average price per sq. m of housing, offers (O), transactions (T) and hedonic prices-SM

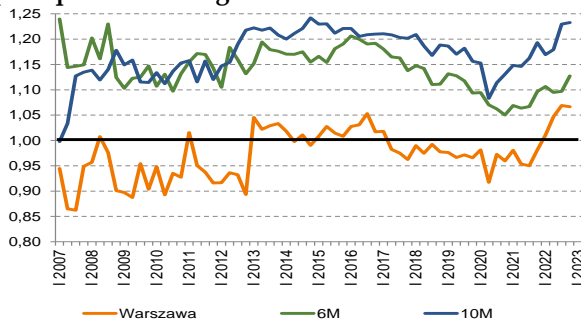


Note to Figures 3–10 and 14-15: prices and rents in the 6 cities and in the 10 cities weighted with the share of the housing stock; the average price for Warsaw.

Source: NBP

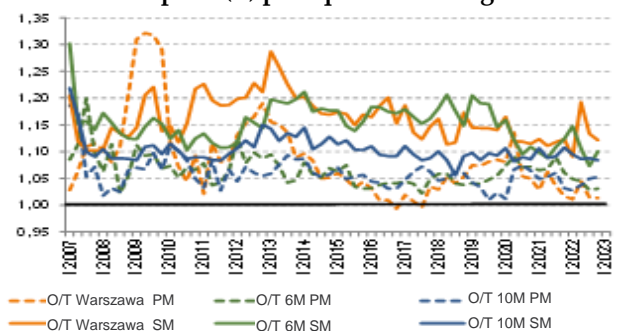
Source: NBP

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



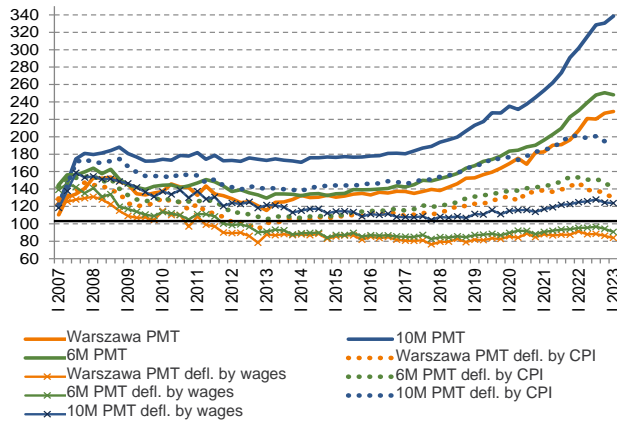
Source: NBP

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



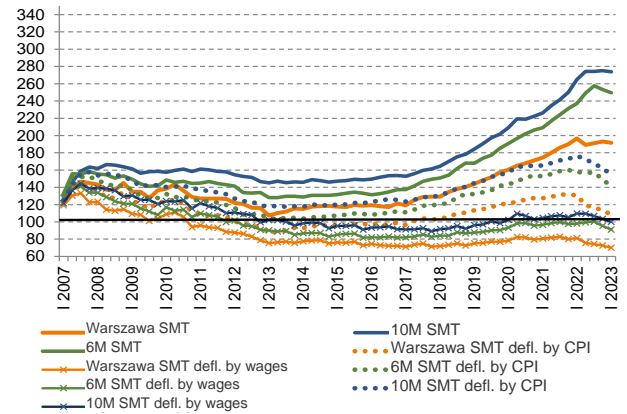
Source: NBP

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



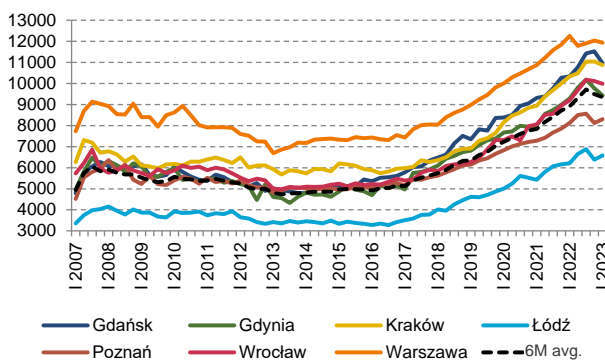
Source: NBP, ZBP (AMRON), Statistics Poland

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



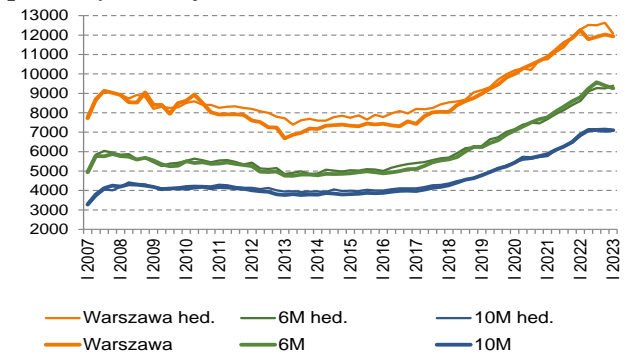
Source: NBP, ZBP (AMRON), Statistics Poland

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



Source: NBP

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



Source: NBP

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

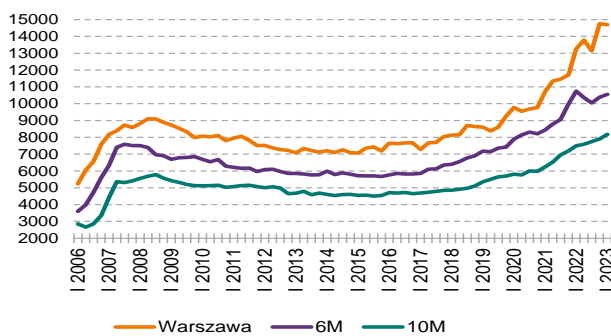
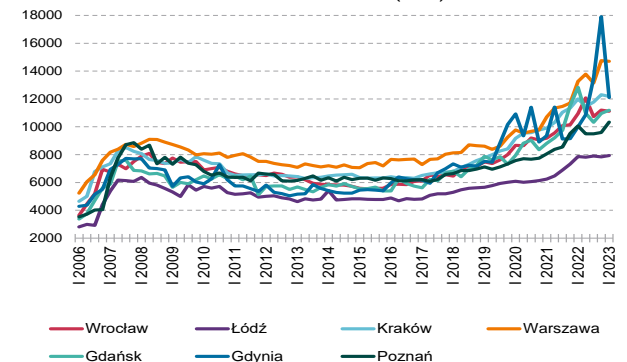


Figure 12 Average offer prices per sq. m of housing in PM in Warsaw and in the 6 cities (6M)

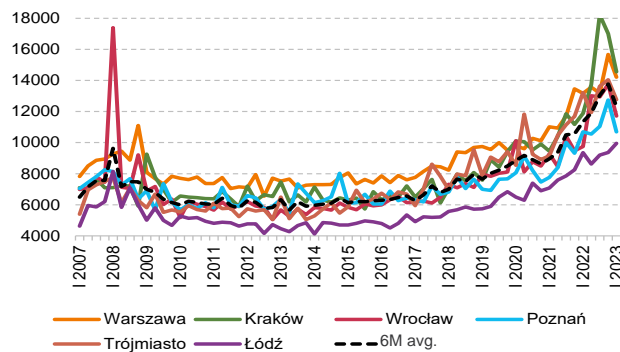


Note to Figures 11-12: prices collected from all available sources.

Source: PONT Info Nieruchomości

Source: PONT Info Nieruchomości

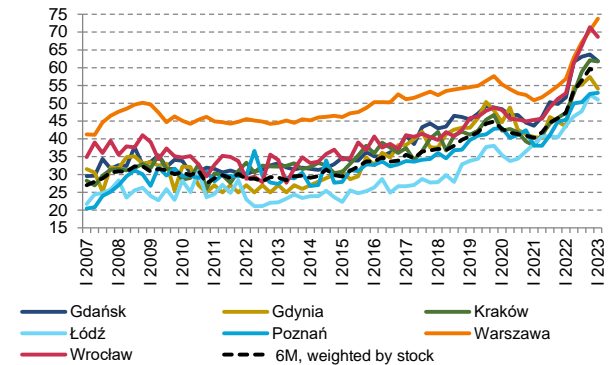
Figure 13 Average offer prices per sq. m housing, new home construction contracts – PM, selected markets



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

Source: JLL

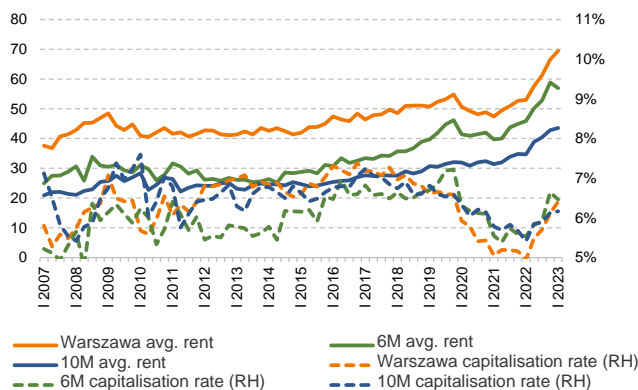
Figure 14 Average rent rates (offers and transactions) per sq. m of housing - SM, selected markets



Note: a change in the sample occurred in 2020.

Source: NBP

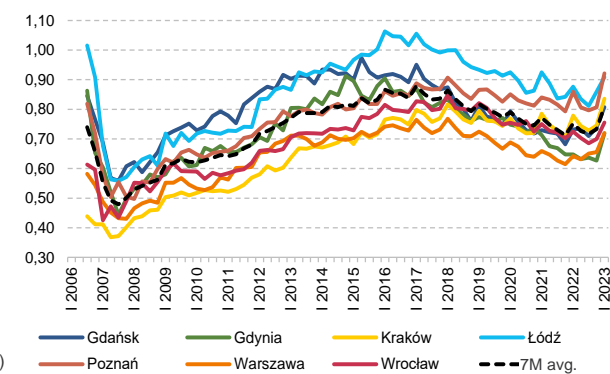
Figure 15 Average rent rates (transactions) in PLN per sq. m of housing in SM (LHS) and the estimated capitalisation rate of an investment in housing for rental (RHS) in selected groups of cities



Note to 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

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

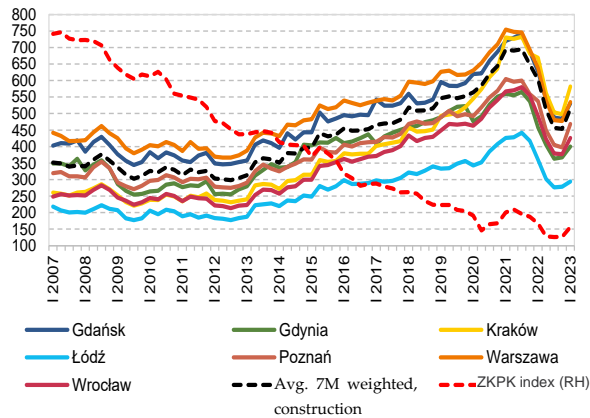


Housing affordability – a measure of potential affordability to purchase housing at the transaction price for an average wage in the enterprise sector in a particular city. It expresses the number of square meters of housing that can be purchased for an average wage in the enterprise sector in a particular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

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



Source: NBP, Statistics Poland

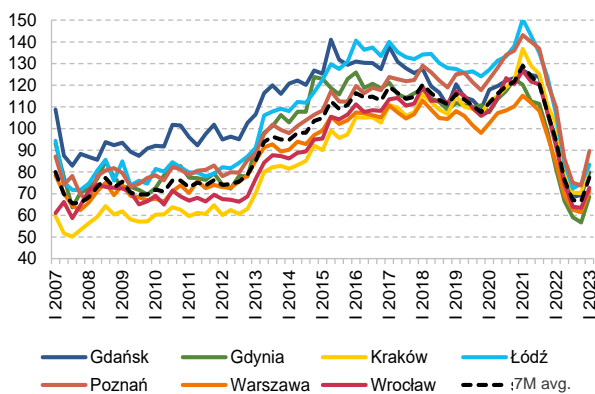
Affordable residential mortgage loan – a measure specifying the potential maximum residential mortgage loan; expressed in PLN thousand in a given market taking into account banks' lending requirements and loan parameters (interest rate, amortisation period, minimum subsistence wage as the minimum income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

Affordability of loan-financed housing – a measure specifying how many square meters of housing can 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. ZKPK have been updated. The index calculation method is outlined in *Sytuacja na rynku kredytowym wyniki ankiety do przewodniczących komitetów kredytowych, październik 2012 r.* [Situation in the lending market; results of the senior loan officer survey; October 2012], NBP.

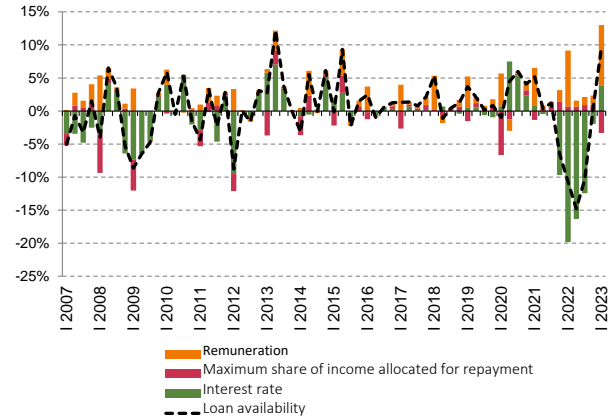
The interest rate on the residential mortgage loan weighted by the proportions of PLN- and foreign-currency denominated loans.

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



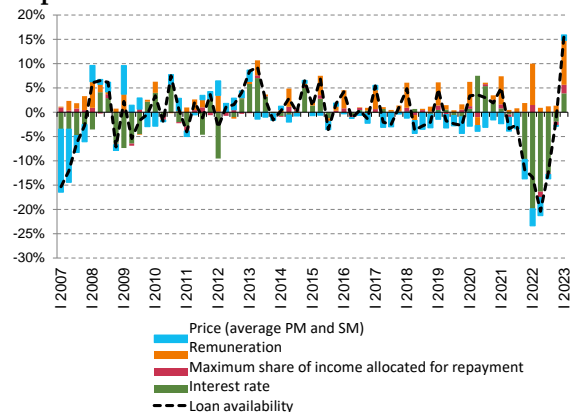
Source: NBP, Statistics Poland

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



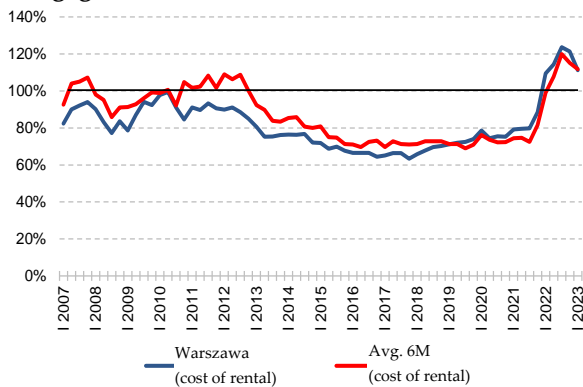
Source: NBP, Statistics Poland

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

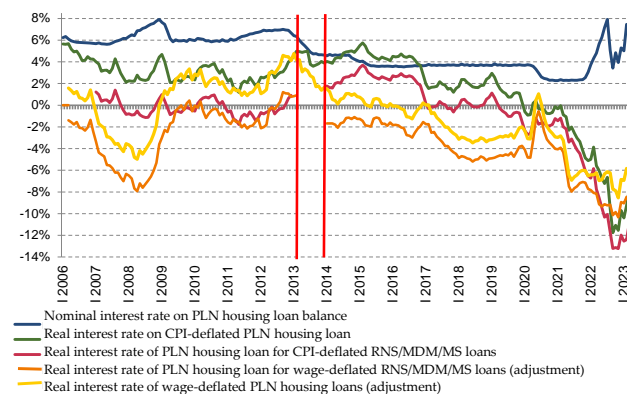
Figure 21 Estimated cost of servicing of a residential mortgage loan in relation to the cost of home rental



Note: the estimate concerns an average 50 sq. m of housing ; transaction price per 1 sq. m of housing 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)

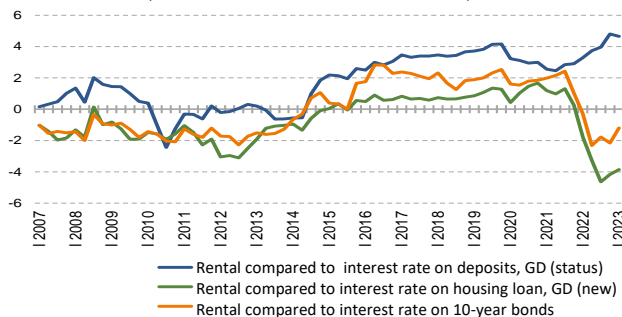
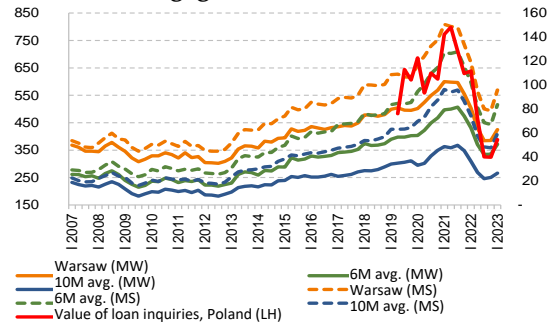


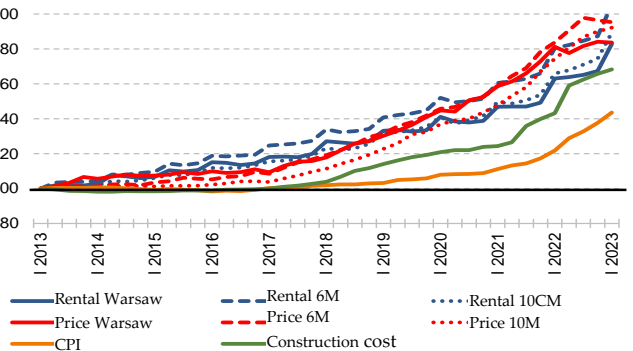
Figure 22 Estimated mortgage loan that can be afforded for an average gross wage in the enterprise sector in selected cities and the values of inquiries about a residential mortgage loan in Poland



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

Source: NBP, Statistics Poland, BGK, BIK

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



Note: transaction price of 1 sq. m of a dwelling 50% SM and 50%PM (including costs of finishing). The primary market price was increased to include the cost of finishing. The cost of construction of a half of the 1121-302 building (see footnote 33 for details).

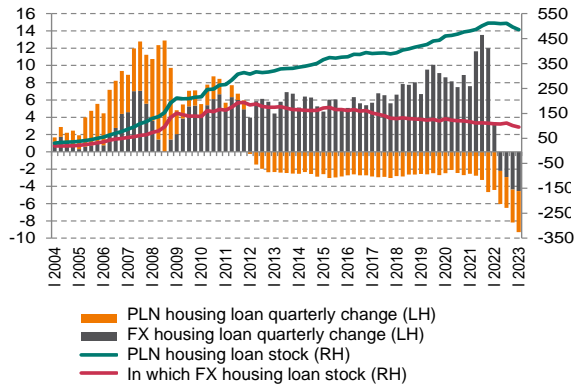
Source: NBP, Statistics Poland

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

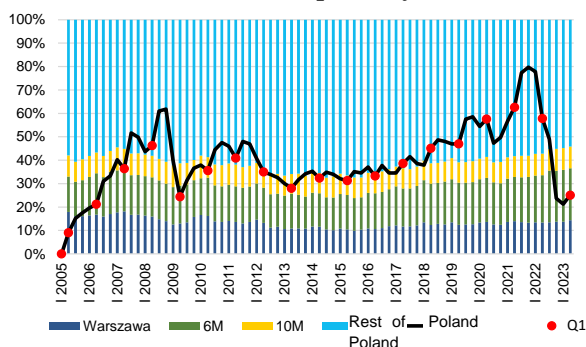
3. Disbursements of residential mortgage loans, interest rates

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



Source: NBP

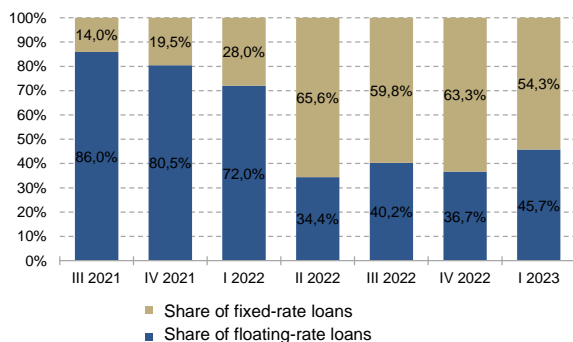
Figure 28 Geographical structure of the value of new PLN-denominated residential mortgage loan agreements in Poland's selected cities (LHS) and the value of contracts in Poland (RHS), quarterly data



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

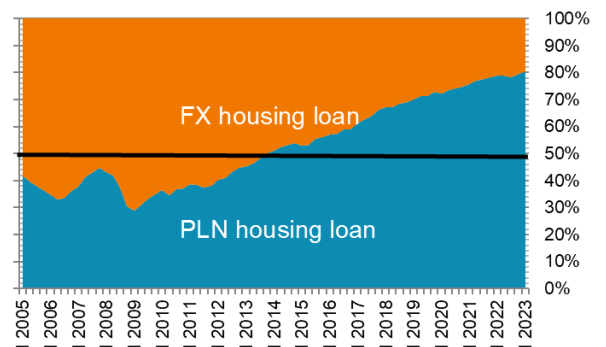
Source: BIK

Figure 30 New residential mortgage loans by type of interest rate



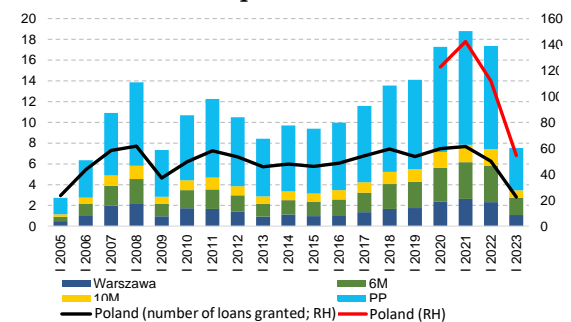
Source: ZBP (AMRON Report, 2023 Q1)

Figure 27 Residential mortgage loan receivables from households (%) by currency



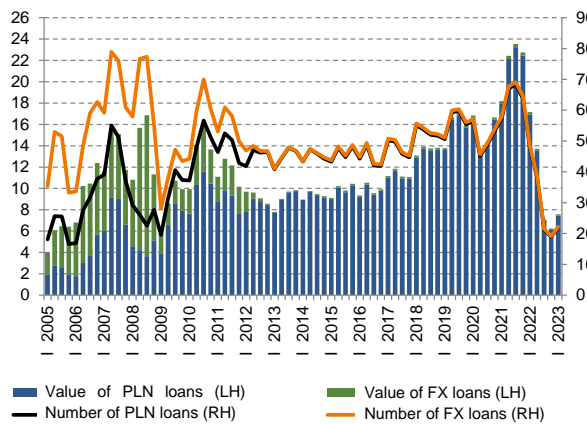
Source: NBP

Figure 29 Value (PLN billion, LHS) and number (thousands, RHS) of new PLN-denominated residential mortgage loan agreements in selected cities of Poland in the first quarters of 2005-2023 and the number of loan inquiries



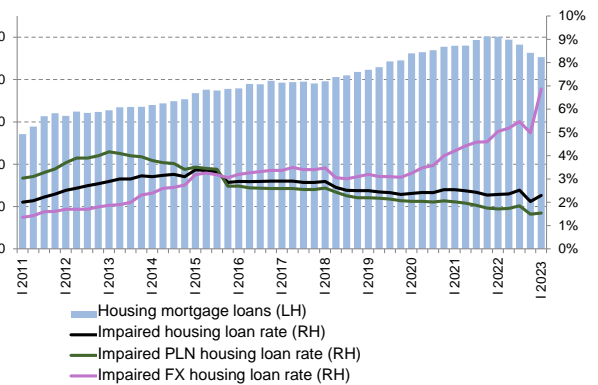
Source: BIK

Figure 31 New residential mortgage loan agreements: value and number, aggregated quarterly data



Source: ZBP (AMRON)

Figure 32 Loans to households for housing real estate and loans recognised as non-performing loans



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

Source: NBP

Figure 33 Interest rates on residential mortgage loans for households in Poland

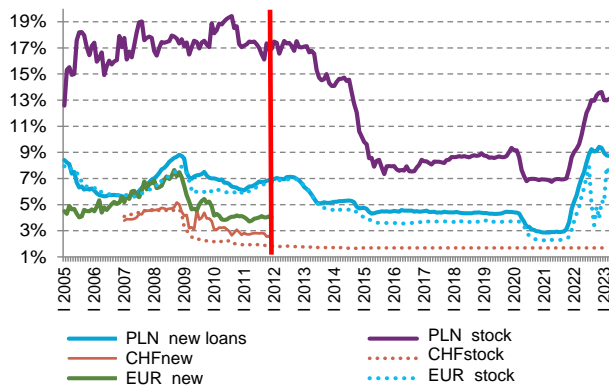
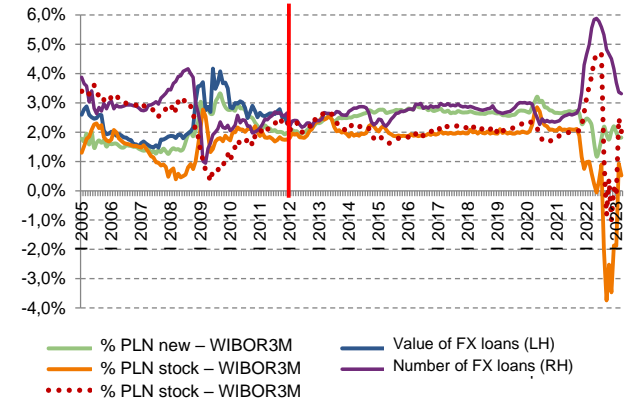


Figure 34 Bank margins on residential mortgage loans (for 3M WIBOR, LIBOR/SARON, EURIBOR)



Note to Figures 33 and 34: the red vertical line separates a period with no FX loans, which have not been granted virtually since 2012. Note to Figure 33: the bank margin is the difference between the interest rate on the residential mortgage loan (NBP data) and WIBOR3M or LIBORCHF3M/SARON3M (since 2022). The interest rate on the stock of residential mortgage loans is a value illustrating the average interest rate on all the loan agreements existing at the end of the reporting period, whether concluded before the reporting month and continuing in force and new loan agreements, according to the method stated in “Instrukcja dla użytkowników statystyki stóp procentowych” [Instructions for the Users of Interest Rates Statistics] (https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_and_bankowa/oprocentowanie.html). The visible decrease in the interest rates on stock of loans in each month of the second half of 2022 is a consequence of the introduction of a so-called “mortgage holiday” scheme. It resulted in a decrease in accrued interest in comparison to monthly average amounts of all the residential mortgage loan agreements.

Source: NBP

Source: NBP

Table 3 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 the 7 cities (7M; in PLN million)

Date	Disbursement of residential mortgage loans in Poland	Estimated value of housing transactions in the PM in 7M	Loan demand including client's down payment in the PM in 7M	Client's down payment to loans in the PM in 7M	Cash demand for housing (without down payment) in the PM in 7M	Estimated share of cash home purchases in the RP in 7M**/
2012 Q1	5,385	3,135	1,228	307	1,907	71%
2012 Q2	7,325	3,079	1,670	418	1,409	59%
2012 Q3	7,661	2,773	1,747	437	1,026	53%
2012 Q4	7,441	3,164	1,697	424	1,467	60%
2022 Q1	17,591	6,158	4,011	1,003	2,148	51%
2022 Q2	15,601	5,757	3,557	889	2,200	54%
2022 Q3	9,196	4,134	2,097	524	2,037	62%
2022 Q4	6,321	5,377	1,441	360	3,935	80%
2023 Q1	7,263	7,179	1,656	414	5,523	82%

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.

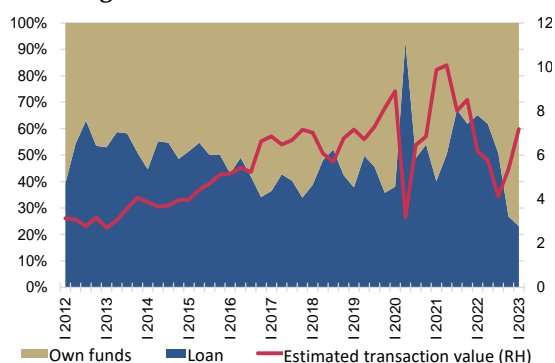
*/ Loan-financed home purchases comprise purchases made with a loan and a minimum portion of cash (a down payment of 25% was assumed, which is a more prudent approach in large cities than the 20% down payment requirement set forth in the amended Recommendation S), whereas home purchases for cash are the difference between the value of the transactions and loaned funds.

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

The estimated value of a transaction in the primary market 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). 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. . Data concerning prices and floor area in all the periods are updated.

Source: NBP, JLL, ZBP, Statistics Poland

Figure 35 Estimated value of purchases of homes from developers in 7M (PLN million) for cash and using loans

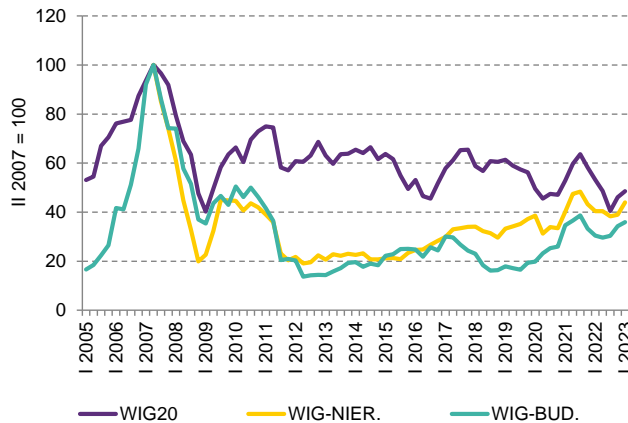


Note to Figure 35: a graphic representation of the full data from Table 3. The decline in the estimated share of home purchases in the PM in 7M involving the buyers' own funds seen in 2020 Q2 was due to very low sales of dwellings resulting from pandemic restrictions on movement and the disbursements under loan agreements entered into in prior periods.

Source: NBP, JLL, ZBP, Statistics Poland

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

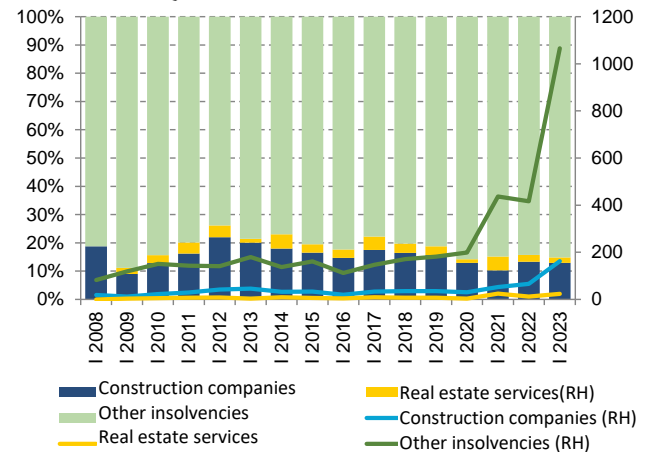
Figure 36 Rescaled stock exchange indices: WIG20 and for real estate developers (WIG-NIER) and construction companies (WIG-BUD) (2007 Q2=100)



Note: data have been standardised, 2007 Q2 = 100 (developers' WIG has been listed since 2007 Q2); 2023 Q1, as at 23 May 2023

Source: Warsaw Stock Exchange

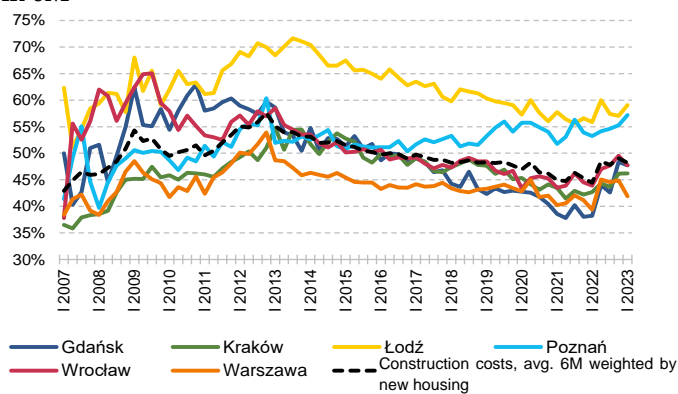
Figure 37 Structure and number of insolvencies of enterprises, including in the construction industry (end of 2023 Q1)



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

Source: Coface Poland

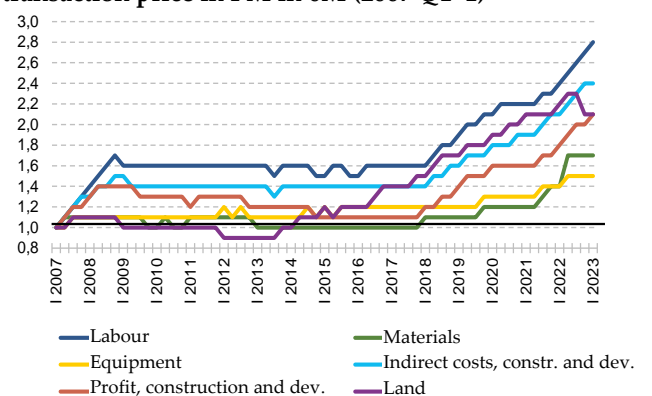
Figure 38 Estimated share of direct construction costs per square metre of usable floor area of a residential building (type 1122-302³³) in net transaction price in PM in 6M



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

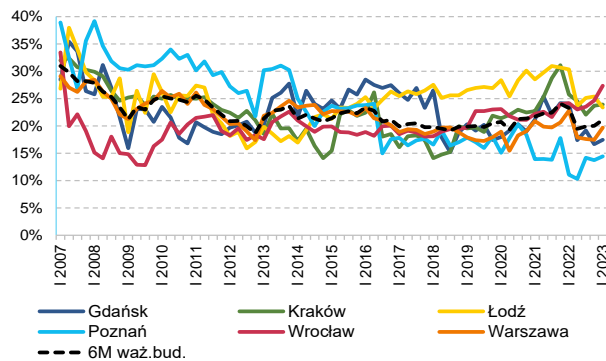
Figure 39 Change in the estimated share of construction costs per square metre of usable floor area of a residential building (type 1122-302³³) net transaction price in PM in 6M (2007 Q1=1)



Source: NBP based on Sekocenbud

³³ Half of the building (type 1122-302) monitored by NBP since the second half of 2016 based on Sekocenbud data. An average five-storey residential, multi-family building, with an underground garage, built using the following technology: foundation footings, load-bearing walls and ceilings – monolithic reinforced concrete, curtain walling – bricked walls of hollow MAX blocks. The change of the type of the building under analysis implemented in 2017 is connected with the end of preparation of a priced bill of quantities concerning building 1121. The analytical assumptions underlying building 1121 were maintained.

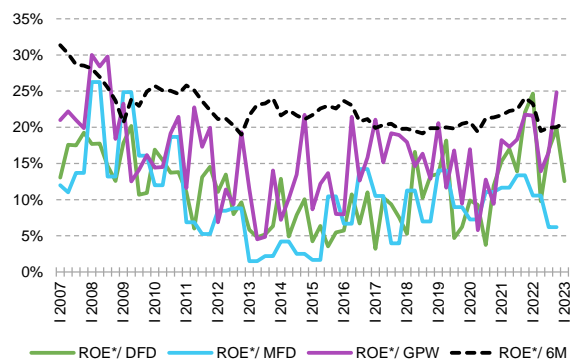
Figure 40 Estimated ROE on investment projects (type 1122-302³³) in the largest cities



*/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)

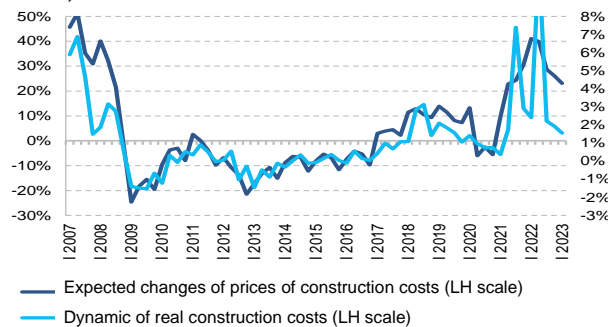
Source: NBP based on Sekocenbud, Statistics Poland (F01)

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**



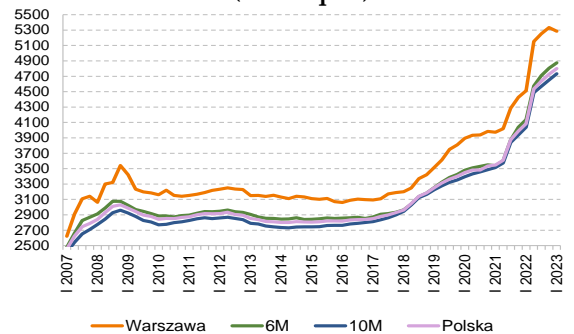
Source: NBP based on Sekocenbud, Financial statements, Statistics Poland (F01)

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 1122-302³³)



Source: NBP based on Statistics Poland's data (business conditions survey), Sekocenbud

Figure 43 Average cost of building 1 sq. m of usable floor area of a residential building (type 1122-302³³) in selected markets (PLN/sq. m)



Source: NBP based on Sekocenbud

Figure 44 Warsaw – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302³³) for the consumer

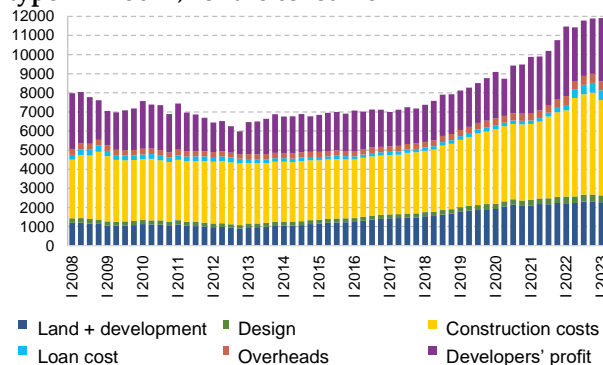
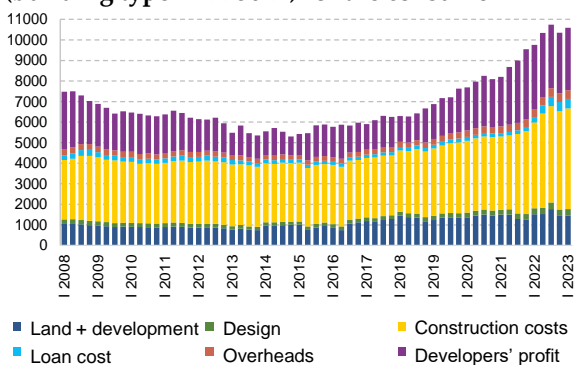


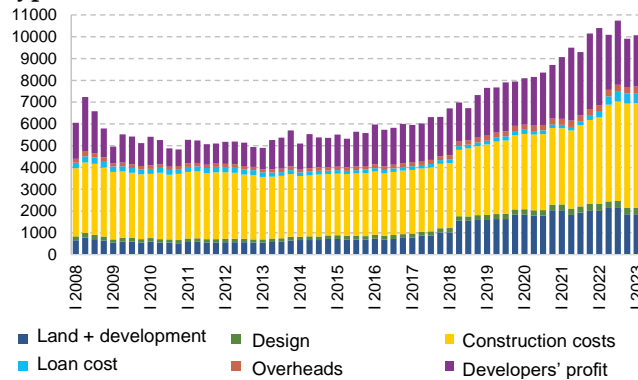
Figure 45 Kraków - estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302³³) for the consumer



Comment on figures 44-49: The calculation of „Gross sales profit” does not include general and administrative expenses and the developer’s general financial expenses.

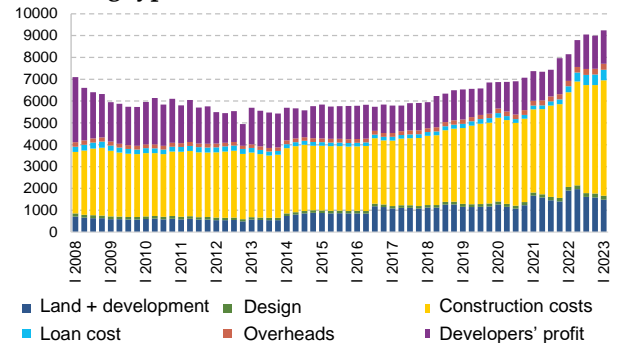
Source: NBP based on Sekocenbud, JLL

Figure 46 Gdańsk – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302³³) for the consumer



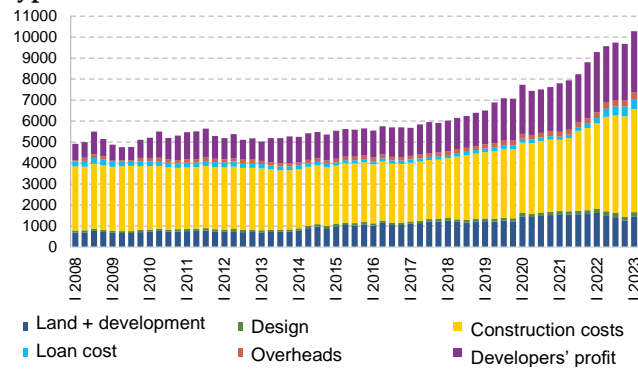
Source: NBP based on Sekocenbud, JLL

Figure 47 Poznań – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302³³) for the consumer



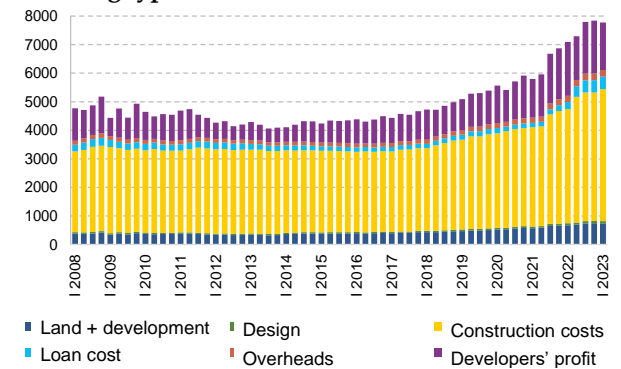
Source: NBP based on Sekocenbud, JLL

Figure 48 Wrocław – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302³³) for the consumer



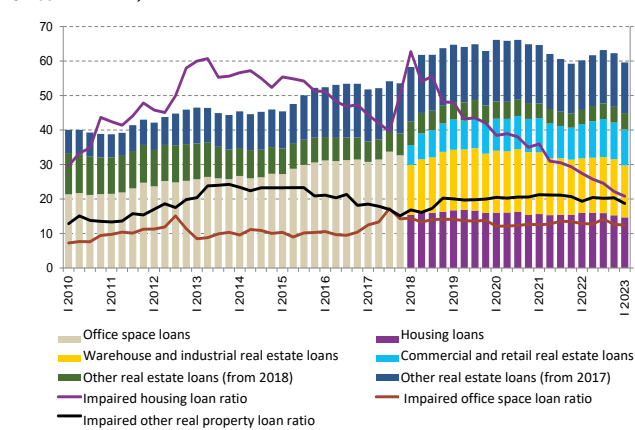
Source: NBP based on Sekocenbud, JLL

Figure 49 Łódź – estimated structure of price per 1 sq. m of usable floor area of a dwelling in PM (building type 1122-302³³) for the consumer



Source: NBP based on Sekocenbud, JLL

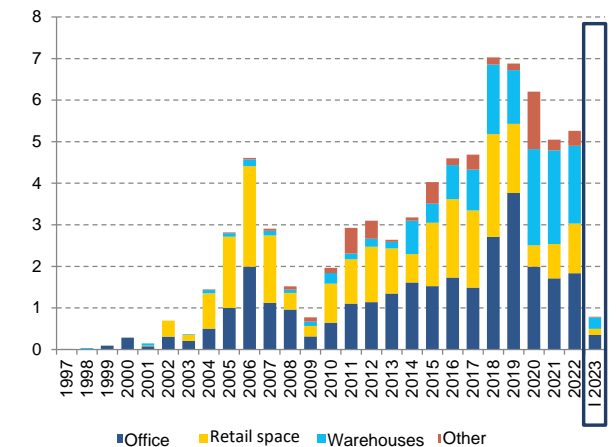
Figure 50 Loans to corporations for real estate purchases (in PLN billion, LHS) and the non-performing loan ratio (RHS)



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

Source: NBP

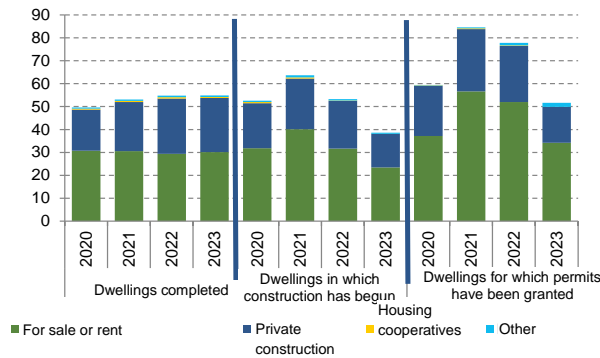
Figure 51 Value of investment transactions in commercial real estate (EUR billion)



Source: Comparables.pl

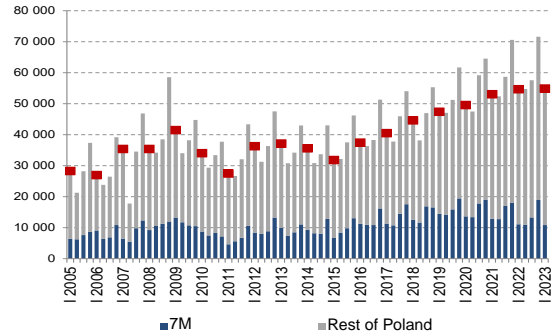
5. Residential construction industry and the housing market in selected cities in Poland

Figure 52 Structure of residential construction investors in Poland in the first quarters in 2019–2023



Source: Statistics Poland

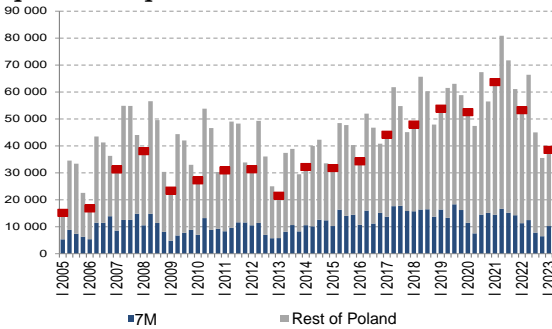
Figure 53 Dwellings completed and made ready for occupancy in Poland, in quarter-on-quarter terms



Note: the red dots indicate first quarters only.

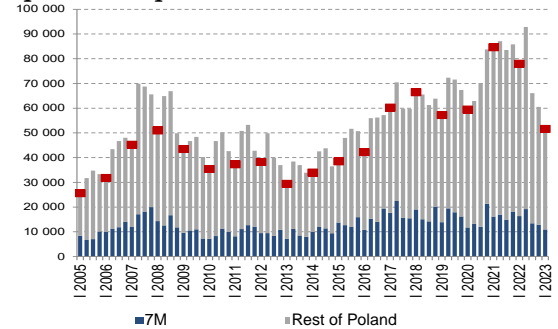
Source: Statistics Poland

Figure 54 New home construction starts in Poland, in quarter-on-quarter terms



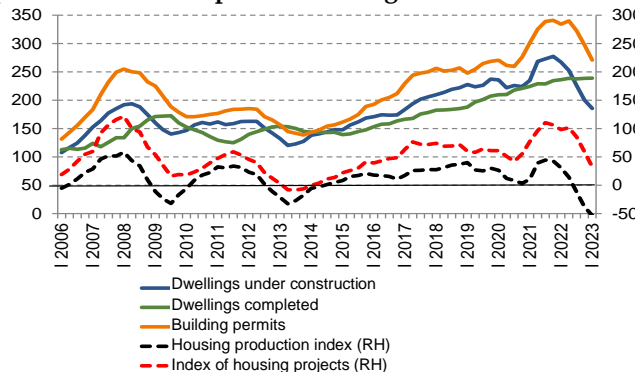
Note: the red dots indicate first quarters only. Source: Statistics Poland

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



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

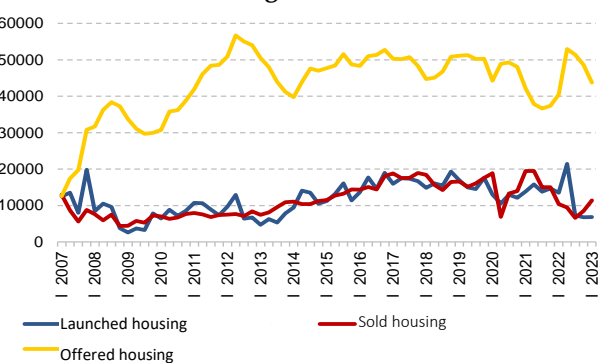
Figure 56 Housing construction in Poland (in thousands of dwellings), dwellings under construction (started dwellings minus completed dwellings) and investment projects in progress (home building permits minus completed dwellings)



Note: moving averages for the past four 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, Tri-City, Wrocław, Poznań, Łódź.

Source: JLL

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

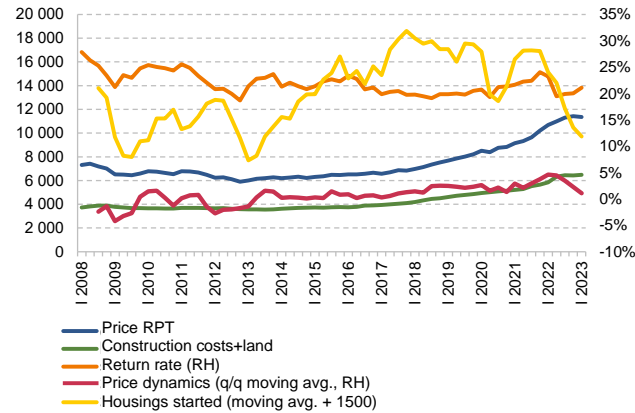
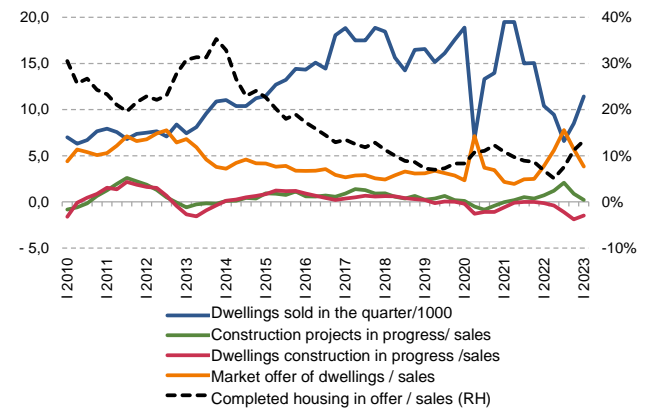


Figure 59 Housing projects, dwellings under construction and finished dwellings offered relative to sales in 7M



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, Sekocenbud

Source: NBP, based on Statistics Poland, JLL

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

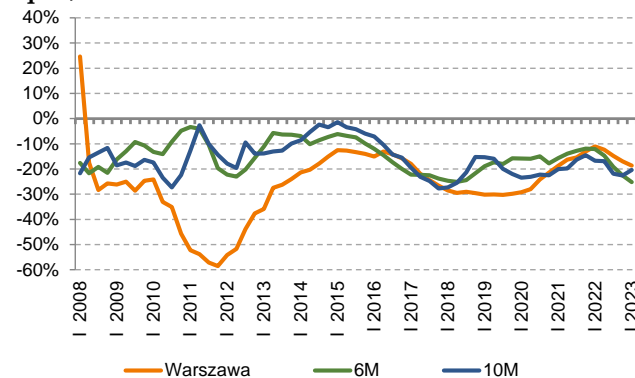
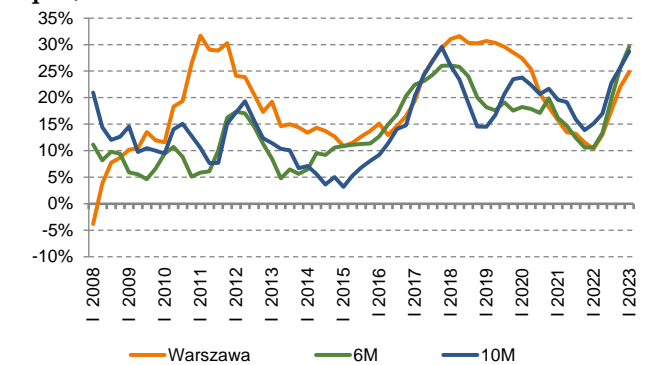


Figure 61 Measure of the match between dwellings offered vs. demand in terms of usable floor area > 50 sq. m, PM in selected cities of Poland

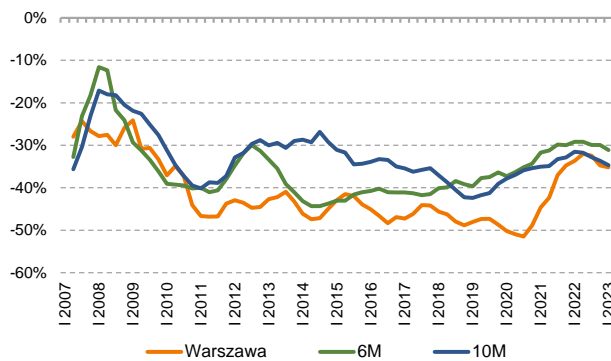


Note: Figure 60 presents, in percentage terms, a short-term mismatch in the primary market between supply (developers' offer of dwellings) and the estimated demand (housing transactions) in terms of the dwelling's size, according to the data from the BaRN database. The mismatch is calculated as the ratio 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

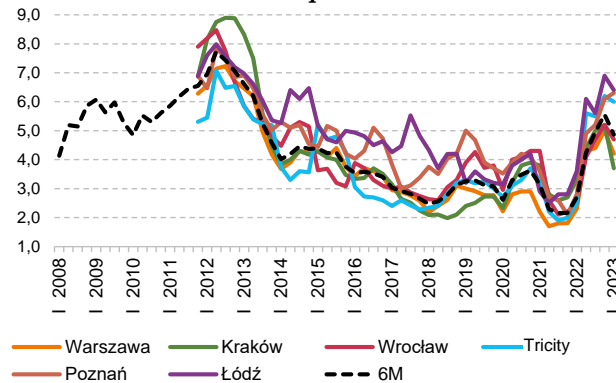
Source: NBP

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



Source: NBP

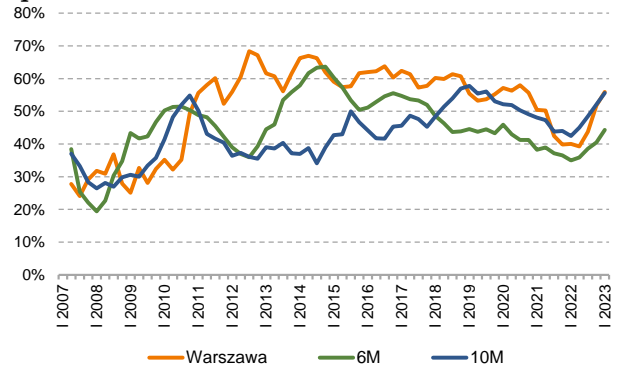
Figure 64 Selling time of dwellings offered in PM in selected cities (number of quarters)



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

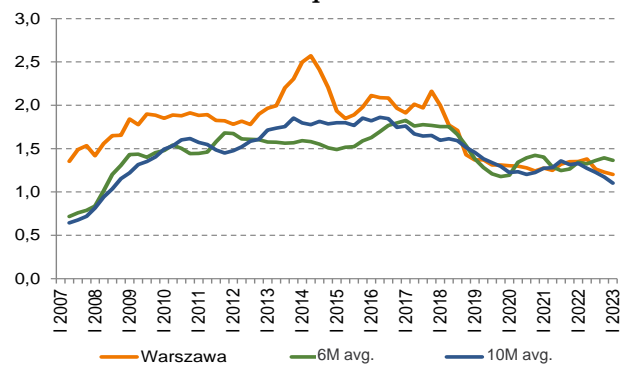
Source: NBP based on JLL

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



Source: NBP

Figure 65 Selling time of dwellings offered in SM in selected cities (number of quarters)

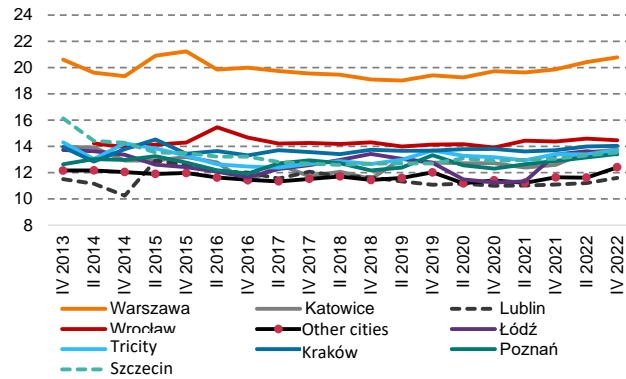


Note: Real selling time, averaged for the previous four quarters; the data are not comparable to Figure 64. Only closed sale transactions are included in the selling time of housing in the secondary property markets. The data are understated since they do not contain offers listed but not yet sold.

Source: NBP

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

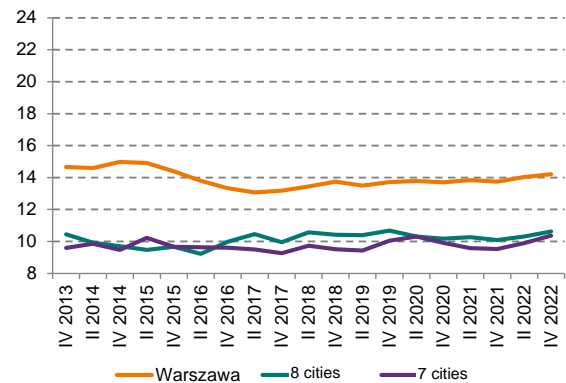
Figure 66 Transaction rents for Class A office space (avg. in euro/sq. m/month)



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

Source: NBP

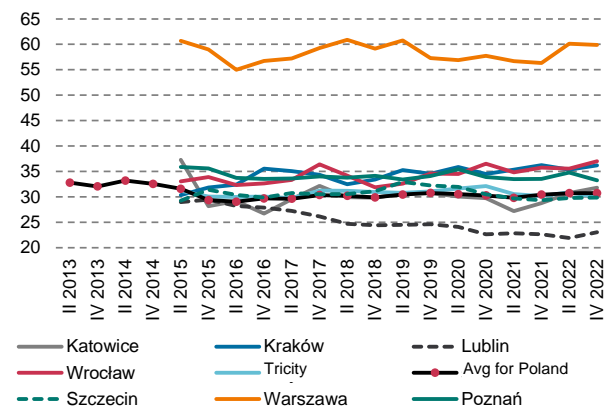
Figure 67 Transaction rents for Class B office space (avg. in euro/sq. m/month)



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

Source: NBP

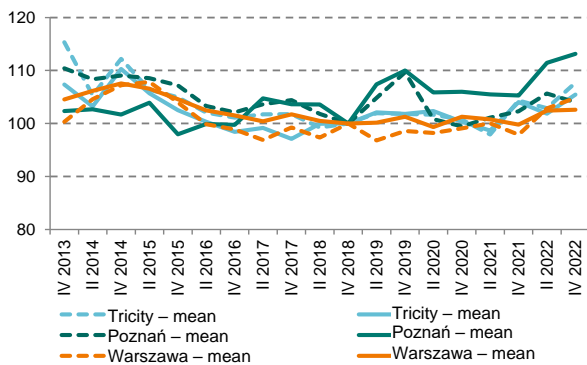
Figure 68 Transaction rents for the lease of 100-500 sq. m of retail space in shopping centres (euro/sq. m/month)



Source: NBP

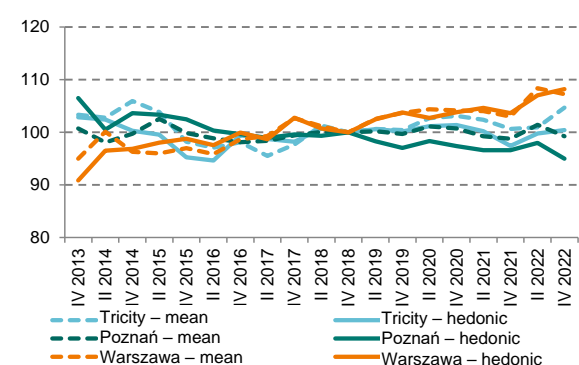
Note on Figure 68: starting from 2015 Q4, the number of collected records and of respondents increased considerably and so the analysed sample changed.

Figure 69 Index of rents for offices, average and hedonic (2018 Q4=100)



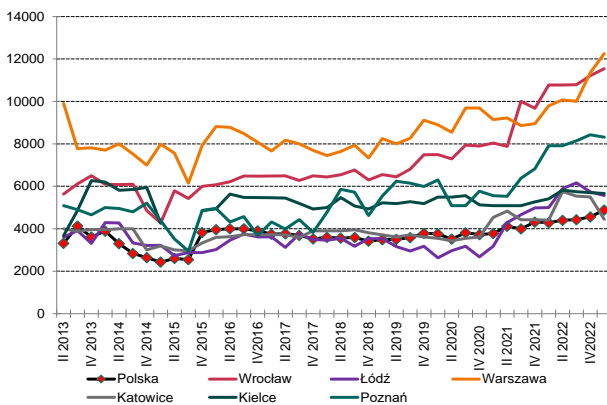
Source: NBP

Figure 70 Index of rents for shopping centres, average and hedonic (2018 Q4=100)



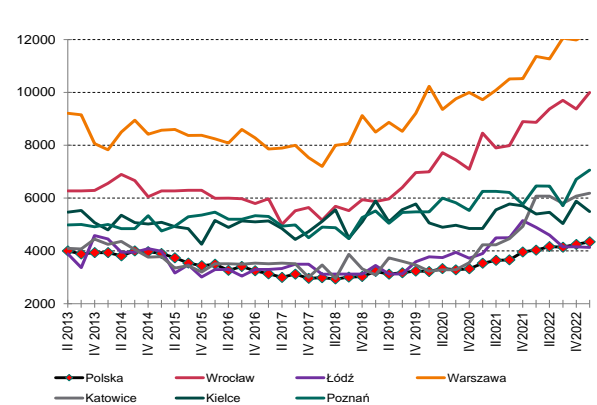
Source: NBP

Figure 71 Median offer price to sell small offices in PM (per sq. m)



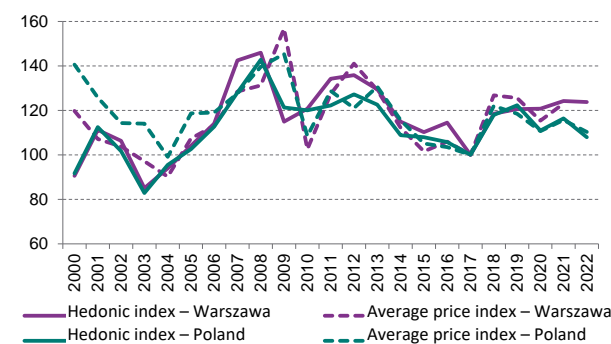
Source: PONT, opracowanie NBP

Figure 72 Median offer price to sell small commercial premises in SM (per sq. m)



Source: PONT, opracowanie NBP

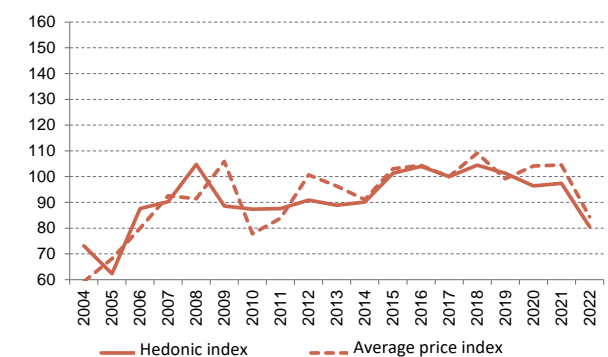
Figure 73 Change in average and hedonic prices of office real estate in Warsaw and the whole of Poland (2017=100) and the implied price index for Warsaw



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

Source: NBP, Comparables.pl, AMRON

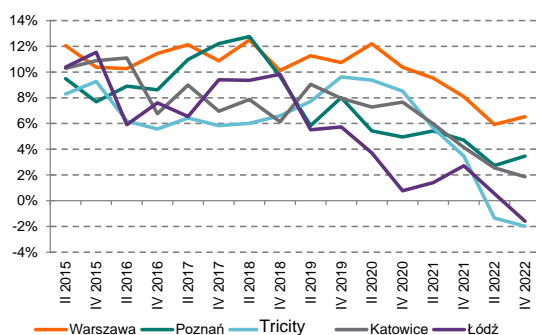
Figure 74 Change in average and hedonic prices of commercial real estate in the whole of Poland (2017=100)



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

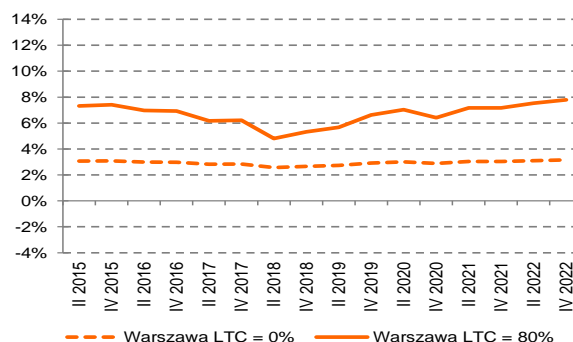
Source: NBP, Comparables.pl, AMRON

Figure 75 Estimated Return on Equity (ROE) on an investment in the construction and commercialisation of a Class A office building, assuming financial leverage of LTC=80%



Note: A description of the method of calculating ROE is provided under Tables 3 to 7. Differences in ROE between cities result from different levels of construction costs and different effective levels of rent, meaning rents adjusted by the vacancy rate in the relevant market. Source: NBP, Sekocenbud, compilation by NBP

Figure 76 Estimated Return on Equity (ROE) on an investment concerning the purchase of an existing Class B office building in Warsaw



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

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

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

Date	Avg. rent per sq. m of area in EUR - Class A	Cost of constructed usable area of offices including land, per sq. m in EUR	ROE at LTC= 0%	ROE at LTC= 50%	ROE at LTC= 80%	Average market yields on 10-year Treasury bonds
2015 Q2	12.91	1,781	3.7%	5.3%	10.3%	2.8%
2015 Q4	13.19	1,716	3.8%	5.6%	10.9%	2.8%
2016 Q2	12.78	1,664	3.8%	5.6%	11.1%	3.0%
2016 Q4	11.22	1,679	3.0%	3.9%	6.8%	3.3%
2017 Q2	12.63	1,762	3.4%	4.8%	9.0%	3.3%
2017 Q4	11.72	1,773	3.0%	4.0%	7.0%	3.4%
2018 Q2	12.08	1,796	3.2%	4.3%	7.9%	3.2%
2018 Q4	11.53	1,862	2.8%	3.7%	6.1%	3.1%
2019 Q2	13.07	1,925	3.4%	4.8%	9.1%	2.7%
2019 Q4	12.84	1,983	3.2%	4.4%	8.0%	2.0%
2020 Q2	12.20	1,928	3.1%	4.1%	7.3%	1.4%
2020 Q4	12.79	1,962	3.1%	4.3%	7.7%	1.3%
2021 Q2	12.29	1,998	2.8%	3.6%	6.0%	1.7%
2021 Q4	12.71	2,225	2.4%	2.9%	4.1%	3.0%
2022 Q2	13.55	2,467	2.1%	2.2%	2.6%	6.6%
2022 Q4	13.76	2,575	2.0%	1.9%	1.9%	7.3%

Assumptions: The costs of construction of the office building (data from Sekocenbud) were increased by 15% of the developer's costs related to the arrangement of the investment and the commercialisation of the building as well as an expert-estimate of the cost of land (based on public information). A loan in euro for 25 years, equal instalments payable 4 times a year. Building depreciation rate of 2.5%, standard for commercial real estate. As regards income, the effective rent, meaning the average rent adjusted by the vacancy rate in the given market has been taken into account. The resulting capitalisation rate includes the cost of depreciation of the building. CIT included. ROE means net profit/ equity contributed. Source: NBP (rents and calculations), MoF (yields on 10-year bonds), calculation of the construction costs based on Sekocenbud data, "Biuletyn cen obiektów budowlanych BCO cz. I – obiekty kubaturowe, obiekt 1220-102" [Bulletin of Prices of BCO building facilities, Part 1 – residential and non-residential buildings, building 1220-102"].

Table 5 Estimated Return on Equity (ROE) on investment in the construction and commercialisation of a Class A office building in Łódź

Date	Avg. rent per sq. m of area in EUR - Class A	Cost of constructed usable area of offices including land, per sq. m in EUR	ROE at LTC= 0%	ROE at LTC= 50%	ROE at LTC= 80%	Average market yields on 10-year Treasury bonds
2015 Q2	12.61	1,804	3.7%	5.4%	10.4%	2.8%
2015 Q4	12.34	1,708	3.9%	5.8%	11.5%	2.8%
2016 Q2	12.04	1,673	2.8%	3.6%	5.9%	3.0%
2016 Q4	11.66	1,670	3.1%	4.2%	7.6%	3.3%
2017 Q2	12.15	1,766	2.9%	3.8%	6.5%	3.3%
2017 Q4	12.58	1,767	3.5%	5.0%	9.4%	3.4%
2018 Q2	12.97	1,821	3.5%	4.9%	9.4%	3.2%
2018 Q4	12.96	1,875	3.6%	5.1%	9.8%	3.1%
2019 Q2	12.90	1,887	2.7%	3.4%	5.5%	2.7%
2019 Q4	12.69	1,928	2.7%	3.5%	5.7%	2.0%
2020 Q2	11.63	1,935	2.3%	2.7%	3.7%	1.4%
2020 Q4	11.25	1,973	1.8%	1.5%	0.8%	1.3%
2021 Q2	11.53	2,006	1.9%	1.8%	1.4%	1.7%
2021 Q4	13.39	2,210	2.1%	2.3%	2.7%	3.0%
2022 Q2	13.64	2,392	1.7%	1.4%	0.6%	6.6%
2022 Q4	13.40	2,433	1.3%	0.7%	-1.6%	7.3%

Assumptions: see Table 4.

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

Table 6 Estimated Return on Equity (ROE) on investment in the construction and commercialisation of a Class A office building in Poznań

Date	Avg. rent per sq. m of area in EUR - Class A	Cost of constructed usable area of offices including land, per sq. m in EUR	ROE at LTC= 0%	ROE at LTC= 50%	ROE at LTC= 80%	Average market yields on 10-year Treasury bonds
2015 Q2	13.25	1,753	3.5%	5.0%	9.5%	2.4%
2015 Q4	12.77	1,682	3.1%	4.3%	7.7%	2.2%
2016 Q2	12.20	1,665	3.4%	4.8%	8.9%	2.3%
2016 Q4	11.93	1,644	3.3%	4.6%	8.6%	2.7%
2017 Q2	12.71	1,765	3.8%	5.6%	11.0%	2.8%
2017 Q4	12.94	1,784	4.0%	6.1%	12.2%	2.7%
2018 Q2	12.71	1,798	4.2%	6.3%	12.8%	2.5%
2018 Q4	12.16	1,874	3.5%	5.1%	9.7%	2.5%
2019 Q2	12.39	1,975	2.8%	3.5%	5.8%	2.2%
2019 Q4	13.33	2,031	3.2%	4.4%	8.0%	1.8%
2020 Q2	12.56	1,978	2.7%	3.4%	5.4%	1.0%
2020 Q4	12.31	1,989	2.6%	3.2%	5.0%	0.5%
2021 Q2	12.65	2,013	2.7%	3.4%	5.4%	1.1%
2021 Q4	12.90	2,168	2.5%	3.1%	4.7%	3.0%
2022 Q2	13.16	2,430	2.1%	2.3%	2.7%	7.0%
2022 Q4	13.43	2,494	2.3%	2.6%	3.5%	7.5%

Assumptions: see Table 4. NBP (rents and calculations), MoF (yields on 10-year bonds), calculation of the construction costs on the basis of Sekocenbud data, "Biuletyn cen obiektów budowlanych BCO cz. I – obiekty kubaturowe, obiekt 1220-102" [Bulletin of Prices of BCO building facilities, Part 1 – residential and non-residential buildings, building 1220-102"].

Table 7 Estimated Return on Equity (ROE) on investment in the construction and commercialisation of a Class A office building in Tri-City

Date	Avg. rent per sq. m of area in EUR - Class A	Cost of constructed usable area of offices including land, per sq. m in EUR	ROE at LTC= 0%	ROE at LTC= 50%	ROE at LTC= 80%	Average market yields on 10-year Treasury bonds
2015 Q2	13.0	1,858.2	3.3%	4.5%	8.3%	2.8%
2015 Q4	12.7	1,816.9	3.5%	4.9%	9.3%	2.8%
2016 Q2	12.3	1,735.7	2.8%	3.7%	6.2%	3.0%
2016 Q4	12.1	1,783.1	2.7%	3.4%	5.6%	3.3%
2017 Q2	12.0	1,842.3	2.9%	3.8%	6.4%	3.3%
2017 Q4	12.1	1,872.5	2.8%	3.5%	5.8%	3.4%
2018 Q2	12.7	1,896.6	2.8%	3.6%	6.0%	3.2%
2018 Q4	12.7	1,927.2	2.9%	3.8%	6.6%	3.1%
2019 Q2	12.8	2,027.9	3.1%	4.3%	7.7%	2.7%
2019 Q4	13.5	2,077.5	3.5%	5.0%	9.6%	2.0%
2020 Q2	13.3	2,013.4	3.5%	5.0%	9.4%	1.4%
2020 Q4	13.2	2,040.4	3.2%	4.6%	8.5%	1.3%
2021 Q2	12.9	2,106.3	2.7%	3.5%	5.7%	1.7%
2021 Q4	13.4	2,214.9	2.3%	2.6%	3.5%	3.0%
2022 Q2	13.4	2,549.3	1.4%	0.8%	-1.3%	6.6%
2022 Q4	13.7	2,632.1	1.3%	0.6%	-2.0%	7.3%

Assumptions: see Table 4.

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

Table 8 Estimated Return on Equity (ROE) on investment in the construction and commercialisation of a Class A office building in Warsaw

Date	Avg. rent per sq. m of area in EUR - Class A	Cost of constructed usable area of offices including land, per sq. m in EUR	ROE at LTC= 0%	ROE at LTC= 50%	ROE at LTC= 80%	Average market yields on 10-year Treasury bonds
2015 Q2	20.91	2,897	4.0%	6.0%	12.1%	2.8%
2015 Q4	21.23	2,774	3.7%	5.3%	10.4%	2.8%
2016 Q2	19.85	2,714	3.7%	5.3%	10.4%	3.0%
2016 Q4	19.96	2,714	3.9%	5.8%	11.5%	3.3%
2017 Q2	19.73	2,835	4.0%	6.1%	12.2%	3.3%
2017 Q4	19.53	2,846	3.8%	5.6%	10.9%	3.4%
2018 Q2	19.33	2,868	4.1%	6.3%	12.7%	3.2%
2018 Q4	18.95	2,949	3.7%	5.4%	10.4%	3.1%
2019 Q2	18.93	3,041	3.9%	5.8%	11.5%	2.7%
2019 Q4	19.34	3,123	3.8%	5.6%	10.9%	2.0%
2020 Q2	19.15	3,028	4.1%	6.2%	12.4%	1.4%
2020 Q4	19.71	3,052	3.7%	5.3%	10.3%	1.3%
2021 Q2	19.63	3,065	3.5%	5.0%	9.5%	1.7%
2021 Q4	19.86	3,252	3.2%	4.5%	8.1%	3.0%
2022 Q2	20.37	3,615	2.8%	3.6%	6.0%	6.6%
IV 2022	20.74	3,606	2.9%	3.8%	6.5%	7.3%

Assumptions: see Table 4.

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

Table 9 Estimated Return on Equity (ROE) on investment involving the purchase of an existing Class B office building in Warsaw

Date	Avg. rent per sq. m of area in EUR - Class A	Cost of constructed usable area of offices including land, per sq. m in EUR	ROE at LTC= 0%	ROE at LTC= 50%	ROE at LTC= 80%	Average market yields on 10-year Treasury bonds	Date
2014 Q2	14.6	2,312	7.6%	3.0%	3.9%	6.8%	3.4%
2014 Q4	15.0	2,289	7.8%	3.1%	4.3%	7.8%	2.6%
2015 Q2	14.9	2,319	7.7%	3.1%	4.1%	7.3%	2.8%
2015 Q4	14.4	2,222	7.8%	3.1%	4.2%	7.4%	2.8%
2016 Q2	13.8	2,162	7.7%	3.0%	4.0%	7.0%	3.0%
2016 Q4	13.3	2,080	7.7%	3.0%	4.0%	6.9%	3.3%
2017 Q2	13.1	2,104	7.5%	2.8%	3.7%	6.2%	3.3%
2017 Q4	13.2	2,117	7.5%	2.8%	3.7%	6.2%	3.4%
2018 Q2	13.2	2,268	7.0%	2.6%	3.1%	4.8%	3.2%
2018 Q4	13.6	2,284	7.1%	2.7%	3.3%	5.3%	3.1%
2019 Q2	13.3	2,194	7.3%	2.7%	3.5%	5.7%	2.7%
2019 Q4	13.5	2,144	7.6%	2.9%	3.8%	6.6%	2.0%
2020 Q2	13.5	2,102	7.7%	3.0%	4.0%	7.0%	1.4%
2020 Q4	13.4	2,143	7.5%	2.9%	3.8%	6.4%	1.3%
2021 Q2	13.5	2,085	7.8%	3.0%	4.1%	7.2%	1.5%
2021 Q4	13.6	2,104	7.8%	3.0%	4.1%	7.2%	2.4%
2022 Q2	14.0	2,147	7.8%	3.1%	4.2%	7.5%	5.5%
2022 Q4	14.2	2,155	7.9%	3.2%	4.3%	7.8%	6.7%

Assumption: The analysis assumes contractual rental rates for Class B offices as well as transaction prices and appraisals of Class B office real estate. Because relatively few transaction prices and appraisals of Class B office real estate are available in any 6-month period, a moving average was used. It was calculated on the basis of a price from a given month as well as the preceding and following months, with equal weights.

We assumed a loan for 25 years denominated in euro with equated instalments payable 4 times a year. Standard building depreciation rate of 2.5%, standard for commercial real estate. We assumed that the cost of land accounted for 20% of the cost of the investment project. The resulting capitalisation rate includes the cost of depreciation of the building. CIT included. ROE means net profit/equity engaged.

Source: NBP (data and calculations), MoF (yields on 10-year bonds)

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

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 356	11 231	11 632	10 903	11 620	11 599	11 655	10 703	11 808	10 874
growth (q-o-q)	104,6	102,5	102,4	97,1	99,9	106,4	100,3	92,3	101,3	101,6
growth (y-o-y)	112,8	114,7	119,8	106,3	112,7	115,5	107,4	97,7	104,0	96,8
dwelling price range	5 215	1 225	6 060	1 380	6 549	904	6 356	676	5 725	763
<=8 000 PLN/sq.m	491	209	452	133	384	96	387	94	329	100
(8 001; 10 000] PLN/sq.m	1 998	406	2 403	566	2 637	348	2 465	310	1 984	328
(10 001; 12 000] PLN/sq.m	803	182	1 002	191	1 166	124	1 212	76	1 250	89
(12 001; 14 000] PLN/sq.m	967	148	870	318	1 010	118	963	99	874	121
>14 001 PLN/sq.m	956	280	1 333	172	1 352	218	1 329	97	1 288	125
dwelling space range	5 215	1 225	6 060	1 380	6 549	904	6 356	676	5 725	763
<= 40 sq.m	924	326	966	415	1 144	282	1 067	171	935	186
(40,1; 60] sq.m	2295	559	2629	591	2915	376	2758	344	2484	332
(60,1; 80] sq.m	1452	254	1801	277	1862	160	1875	131	1690	201
> 80,1 sq.m	544	86	664	97	628	86	656	30	616	44
average price of 1 sq.m. of dwelling	11 356	11 231	11 632	10 903	11 620	11 599	11 655	10 703	11 808	10 874
<=4 000 sq.m	12059	11048	12045	11161	12005	10846	12145	10771	12341	11166
(40,1; 60] sq.m	11157	11036	11582	10538	11547	11523	11657	10486	11811	10750
(60,1; 80] sq.m	10946	11049	11160	10712	11158	11968	11106	10419	11295	10180
> 80,1 sq.m	12098	13732	12512	12568	12625	13708	12423	14038	12395	13744
average offer price deviation	1,1%	x	6,7%	x	0,2%	x	8,9%	x	8,6%	x
<= 40 sq.m	9,1%	x	7,9%	x	10,7%	x	12,8%	x	10,5%	x
(40,1; 60] sq.m	1,1%	x	9,9%	x	0,2%	x	11,2%	x	9,9%	x
(60,1; 80] sq.m	-0,9%	x	4,2%	x	-6,8%	x	6,6%	x	11,0%	x
> 80,1 sq.m	-11,9%	x	-0,4%	x	-7,9%	x	-11,5%	x	-9,8%	x

Source: NBP

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

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 012	10 336	12 097	10 771	11 931	11 208	12 219	11 294	12 223	10 963
growth (q-o-q)	105,0	100,6	100,7	104,2	98,6	104,1	102,4	100,8	100,0	97,1
growth (y-o-y)	114,1	111,0	111,8	114,8	106,9	114,7	106,8	109,9	101,8	106,1
dwelling price range	1 672	1 254	2 101	1 206	2 336	1 005	2 508	873	2 394	533
<=8 000 PLN/sq.m	80	197	72	162	100	92	122	97	87	59
(8 001; 10 000] PLN/sq.m	402	444	477	337	589	275	572	242	538	155
(10 001; 12 000] PLN/sq.m	504	350	673	378	699	332	758	251	787	170
(12 001; 14 000] PLN/sq.m	300	156	407	205	458	154	463	136	430	75
>14 001 PLN/sq.m	386	107	472	124	490	152	593	147	552	74
dwelling space range	1 672	1 254	2 101	1 206	2 336	1 005	2 508	873	2 394	533
<= 40 sq.m	269	306	342	300	365	272	430	239	407	136
(40,1; 60] sq.m	702	588	923	561	991	493	1036	420	1019	263
(60,1; 80] sq.m	456	263	586	251	678	190	726	165	688	103
> 80,1 sq.m	245	97	250	94	302	50	316	49	280	31
average price of 1 sq.m. of dwelling	12 012	10 336	12 097	10 771	11 931	11 208	12 219	11 294	12 223	10 963
<=4 000 sq.m	13722	11306	13427	11952	13155	12016	13573	11992	13537	11526
(40,1; 60] sq.m	12128	10296	12226	10837	12052	11141	12189	11269	12031	10888
(60,1; 80] sq.m	11199	9695	11371	9810	11368	10648	11590	10784	11877	10343
> 80,1 sq.m	11319	9265	11502	9180	11316	9594	11916	9818	11865	11188
average offer price deviation	16,2%	x	12,3%	x	6,4%	x	8,2%	x	11,5%	x
<= 40 sq.m	21,4%	x	12,3%	x	9,5%	x	13,2%	x	17,4%	x
(40,1; 60] sq.m	17,8%	x	12,8%	x	8,2%	x	8,2%	x	10,5%	x
(60,1; 80] sq.m	15,5%	x	15,9%	x	6,8%	x	7,5%	x	14,8%	x
> 80,1 sq.m	22,2%	x	25,3%	x	17,9%	x	21,4%	x	6,1%	x

Source: NBP

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

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 156	10 537	11 390	11 143	11 731	11 610	11 930	12 130	12 081	11 442
growth (q-o-q)	101,3	102,2	102,1	105,7	103,0	104,2	101,7	104,5	101,3	94,3
growth (y-o-y)	114,5	118,9	112,3	118,8	110,5	119,4	108,4	117,7	108,3	108,6
dwelling price range	6 590	1 580	7 284	1 656	7 176	1 061	6 432	1 404	5 487	1 124
<=8 000 PLN/sq.m	169	86	126	47	113	27	79	46	42	34
(8 001; 10 000] PLN/sq.m	1 864	636	2 058	552	1 667	313	1 436	351	1 168	329
(10 001; 12 000] PLN/sq.m	2 894	556	2 953	636	2 865	345	2 445	444	1 921	430
(12 001; 14 000] PLN/sq.m	1 049	209	1 143	227	1 297	147	1 219	143	1 181	148
>14 001 PLN/sq.m	614	93	1 004	194	1 234	229	1 253	420	1 175	183
dwelling space range	6 590	1 580	7 284	1 656	7 176	1 061	6 432	1 404	5 487	1 124
<= 40 sq.m	1324	445	1443	482	1271	339	1000	420	890	295
(40,1; 60] sq.m	3041	637	3428	726	3534	454	3207	699	2830	506
(60,1; 80] sq.m	1731	380	1880	322	1874	194	1758	227	1388	257
> 80,1 sq.m	494	118	533	126	497	74	467	58	379	66
average price of 1 sq.m. of dwelling	11 156	10 537	11 390	11 143	11 731	11 610	11 930	12 130	12 081	11 442
<=4 000 sq.m	12007	11150	12592	11481	12901	12292	13504	12607	13865	12264
(40,1; 60] sq.m	11078	10493	11208	11029	11623	11161	11814	12160	11956	11339
(60,1; 80] sq.m	10625	9855	10768	10625	11151	10985	11274	11173	11389	10668
> 80,1 sq.m	11214	10666	11492	11837	11697	12872	11828	12041	11359	11566
average offer price deviation	5,9%	x	2,2%	x	1,0%	x	-1,6%	x	5,6%	x
<= 40 sq.m	7,7%	x	9,7%	x	5,0%	x	7,1%	x	13,0%	x
(40,1; 60] sq.m	5,6%	x	1,6%	x	4,1%	x	-2,9%	x	5,4%	x
(60,1; 80] sq.m	7,8%	x	1,4%	x	1,5%	x	0,9%	x	6,8%	x
> 80,1 sq.m	5,1%	x	-2,9%	x	-9,1%	x	-1,8%	x	-1,8%	x

Source: NBP

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

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 845	10 331	12 106	10 750	12 247	11 057	12 433	11 086	12 649	10 872
growth (q-o-q)	103,8	103,3	102,2	104,1	101,2	102,9	101,5	100,3	101,7	98,1
growth (y-o-y)	119,7	115,6	118,3	114,6	115,4	114,1	108,9	110,9	106,8	105,2
dwelling price range	1 535	1 615	1 521	1 626	1 510	1 617	1 274	1 308	1 228	879
<=8 000 PLN/sq.m	48	202	26	166	27	129	35	123	26	81
(8 001; 10 000] PLN/sq.m	366	611	328	527	335	437	288	365	253	277
(10 001; 12 000] PLN/sq.m	498	485	511	508	485	580	377	414	364	282
(12 001; 14 000] PLN/sq.m	355	195	370	281	353	297	284	237	277	147
>14 001 PLN/sq.m	268	122	286	144	310	174	290	169	308	92
dwelling space range	1 535	1 615	1 521	1 626	1 510	1 617	1 274	1 308	1 228	879
<= 40 sq.m	410	559	390	602	374	605	272	475	265	354
(40,1; 60] sq.m	628	727	665	719	692	706	559	588	550	377
(60,1; 80] sq.m	327	240	337	233	323	217	289	182	290	98
> 80,1 sq.m	170	89	129	72	121	89	154	63	123	50
average price of 1 sq.m. of dwelling	11 845	10 331	12 106	10 750	12 247	11 057	12 433	11 086	12 649	10 872
<=4 000 sq.m	12686	10927	13075	11326	13388	11433	13361	11643	13878	11295
(40,1; 60] sq.m	11374	9923	11688	10380	11785	10721	11875	10659	12040	10512
(60,1; 80] sq.m	11507	10015	11710	10284	11656	10880	12289	10884	12442	10735
> 80,1 sq.m	12211	10772	12365	11135	12937	11606	13085	11461	13213	10863
average offer price deviation	14,7%	x	12,6%	x	10,8%	x	12,1%	x	16,3%	x
<= 40 sq.m	16,1%	x	15,4%	x	17,1%	x	14,8%	x	22,9%	x
(40,1; 60] sq.m	14,6%	x	12,6%	x	9,9%	x	11,4%	x	14,5%	x
(60,1; 80] sq.m	14,9%	x	13,9%	x	7,1%	x	12,9%	x	15,9%	x
> 80,1 sq.m	13,4%	x	11,0%	x	11,5%	x	14,2%	x	21,6%	x

Source: NBP

Table 14 Average prices per sq. m of housing in PM in Łódź

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	8 145	7 718	8 481	7 929	8 973	8 475	9 152	8 520	9 391	8 451
growth (q-o-q)	100,3	102,5	104,1	102,7	105,8	106,9	102,0	100,5	102,6	99,2
growth (y-o-y)	118,8	118,7	114,5	118,8	112,1	113,8	112,7	113,2	115,3	109,5
dwelling price range	2 215	403	3 035	649	3 251	365	3 254	381	3 506	405
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	53	8	14	5	12	0	13	0	4	1
(6 001; 8 000] PLN/sq.m	933	248	1 135	377	789	143	681	150	617	164
(8 001; 10 000] PLN/sq.m	1 131	142	1 574	251	1 708	198	1 663	191	1 712	207
> 10 000 PLN/sq.m	98	5	312	16	742	24	897	40	1 173	33
dwelling space range	2 215	403	3 035	649	3 251	365	3 254	381	3 506	405
<= 40 sq.m	620	111	878	225	924	154	903	143	1049	120
(40,1; 60] sq.m	915	173	1312	254	1437	144	1435	173	1560	179
(60,1; 80] sq.m	546	107	691	124	750	55	764	49	752	90
> 80,1 sq.m	134	12	154	46	140	12	152	16	145	16
average price of 1 sq.m. of dwelling	8 145	7 718	8 481	7 929	8 973	8 475	9 152	8 520	9 391	8 451
<=4 000 sq.m	8989	8411	9248	8454	9509	8926	9712	9166	9989	9163
(40,1; 60] sq.m	8000	7549	8338	7799	8826	8244	9049	8170	9265	8320
(60,1; 80] sq.m	7538	7302	7912	7476	8598	7823	8631	7856	8760	7790
> 80,1 sq.m	7705	7450	7880	7294	8941	8457	9422	8575	9684	8286
average offer price deviation	5,5%	x	7,0%	x	5,9%	x	7,4%	x	11,1%	x
<= 40 sq.m	6,9%	x	9,4%	x	6,5%	x	6,0%	x	9,0%	x
(40,1; 60] sq.m	6,0%	x	6,9%	x	7,1%	x	10,8%	x	11,4%	x
(60,1; 80] sq.m	3,2%	x	5,8%	x	9,9%	x	9,9%	x	12,5%	x
> 80,1 sq.m	3,4%	x	8,0%	x	5,7%	x	9,9%	x	16,9%	x

Source: NBP

Table 15 Average prices per sq. m of housing in SM in Łódź

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	7 018	6 214	6 974	6 652	7 164	6 887	7 203	6 384	7 373	6 579
growth (q-o-q)	105,3	100,9	99,4	107,0	102,7	103,5	100,5	92,7	102,4	103,1
growth (y-o-y)	118,9	114,4	116,0	114,7	107,2	113,4	108,0	103,7	105,1	105,9
dwelling price range	868	157	973	188	1 145	77	1 133	157	1 167	125
<= 4 000 PLN/sq.m	11	10	3	4	6	2	7	13	5	1
(4 001; 6 000] PLN/sq.m	183	67	206	57	202	21	244	56	231	55
(6 001; 8 000] PLN/sq.m	492	62	581	95	669	40	596	64	602	50
(8 001; 10 000] PLN/sq.m	158	17	177	31	226	11	222	17	239	12
> 10 001 PLN/sq.m	24	1	6	1	42	3	64	7	90	7
dwelling space range	868	157	973	188	1 145	77	1 133	157	1 167	125
<= 40 sq.m	215	56	212	67	286	33	265	77	276	45
(40,1; 60] sq.m	352	74	486	85	566	25	553	61	557	56
(60,1; 80] sq.m	172	16	166	29	170	11	190	9	201	15
> 80,1 sq.m	129	11	109	7	123	8	125	10	133	9
average price of 1 sq.m. of dwelling	7 018	6 214	6 974	6 652	7 164	6 887	7 203	6 384	7 373	6 579
<=4 000 sq.m	7307	6480	7332	6873	7483	7268	7544	6835	7693	6832
(40,1; 60] sq.m	7019	6298	6980	6554	7001	6872	7067	6132	7177	6233
(60,1; 80] sq.m	7030	5703	6921	6758	7273	7222	7157	5712	7523	6699
> 80,1 sq.m	6519	5041	6327	5294	7021	4899	7153	5058	7307	7269
average offer price deviation	12,9%	x	4,8%	x	4,0%	x	12,8%	x	12,1%	x
<= 40 sq.m	12,8%	x	6,7%	x	3,0%	x	10,4%	x	12,6%	x
(40,1; 60] sq.m	11,4%	x	6,5%	x	1,9%	x	15,3%	x	15,1%	x
(60,1; 80] sq.m	23,3%	x	2,4%	x	0,7%	x	25,3%	x	12,3%	x
> 80,1 sq.m	29,3%	x	19,5%	x	43,3%	x	41,4%	x	0,5%	x

Source: NBP

Table 16 Average prices per sq. m of housing in PM in Poznań

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 842	8 795	9 968	9 495	10 145	9 775	10 325	9 711	10 682	9 980
growth (q-o-q)	107,0	102,2	101,3	108,0	101,8	102,9	101,8	99,3	103,5	102,8
growth (y-o-y)	123,2	110,5	120,7	119,7	115,5	121,8	112,2	112,8	108,5	113,5
dwelling price range	5 078	1 222	5 201	1 134	5 313	778	4 941	845	4 705	737
<=7 000 PLN/sq.m	105	107	49	34	48	7	35	4	37	2
(7 001; 9 000] PLN/sq.m	1 908	707	1 714	593	1 510	300	1 273	299	1 002	250
(9 001; 11 000] PLN/sq.m	2 028	322	2 274	345	2 391	344	2 114	418	2 027	311
(11 001; 13 000] PLN/sq.m	609	43	768	63	975	72	1 124	74	1 029	142
>13 001 PLN/sq.m	428	43	396	99	389	55	395	50	610	32
dwelling space range	5 078	1 222	5 201	1 134	5 313	778	4 941	845	4 705	737
<= 40 sq.m	1024	270	1076	284	1031	231	973	239	830	225
(40,1; 60] sq.m	2280	509	2329	505	2476	365	2293	427	2212	334
(60,1; 80] sq.m	1356	339	1384	249	1393	135	1318	138	1302	145
> 80,1 sq.m	418	104	412	96	413	47	357	41	361	33
average price of 1 sq.m. of dwelling	9 842	8 795	9 968	9 495	10 145	9 775	10 325	9 711	10 682	9 980
<=4 000 sq.m	10562	9555	10800	9851	10953	10424	11294	10172	11956	10677
(40,1; 60] sq.m	9787	8820	9819	9466	10065	9525	10249	9628	10503	9881
(60,1; 80] sq.m	9307	8098	9494	8912	9606	9218	9724	9121	10143	9168
> 80,1 sq.m	10110	8976	10230	10103	10425	10118	10385	9863	10794	9785
average offer price deviation	11,9%	x	5,0%	x	3,8%	x	6,3%	x	7,0%	x
<= 40 sq.m	10,5%	x	9,6%	x	5,1%	x	11,0%	x	12,0%	x
(40,1; 60] sq.m	11,0%	x	3,7%	x	5,7%	x	6,4%	x	6,3%	x
(60,1; 80] sq.m	14,9%	x	6,5%	x	4,2%	x	6,6%	x	10,6%	x
> 80,1 sq.m	12,6%	x	1,3%	x	3,0%	x	5,3%	x	10,3%	x

Source: NBP

Table 17 Average prices per sq. m of housing in SM in Poznań

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 402	8 130	9 517	8 564	9 438	8 770	9 543	8 735	9 914	8 302
growth (q-o-q)	105,0	103,4	101,2	105,3	99,2	102,4	101,1	99,6	103,9	95,0
growth (y-o-y)	118,4	111,6	117,0	115,4	113,4	114,3	106,6	111,1	105,4	102,1
dwelling price range	984	1 274	1 069	1 238	1 104	939	858	701	858	312
<=7 000 PLN/sq.m	83	364	67	215	87	152	73	133	67	65
(7 001; 9 000] PLN/sq.m	406	559	433	560	455	394	344	292	291	159
(9 001; 11 000] PLN/sq.m	331	265	367	364	353	289	262	181	268	72
(11 001; 13 000] PLN/sq.m	105	69	136	74	141	75	121	77	158	12
>13 001 PLN/sq.m	59	17	66	25	68	29	58	18	74	4
dwelling space range	984	1 274	1 069	1 238	1 104	939	858	701	858	312
<= 40 sq.m	225	356	214	400	240	297	175	231	174	120
(40,1; 60] sq.m	437	563	517	548	503	434	382	328	354	137
(60,1; 80] sq.m	245	258	251	214	269	141	212	106	242	46
> 80,1 sq.m	77	97	87	76	92	67	89	36	88	9
average price of 1 sq.m. of dwelling	9 402	8 130	9 517	8 564	9 438	8 770	9 543	8 735	9 914	8 302
<=4 000 sq.m	10035	8834	10493	9237	10473	9402	10411	9535	11029	9012
(40,1; 60] sq.m	9318	8156	9496	8338	9336	8702	9441	8442	9808	8078
(60,1; 80] sq.m	8915	7501	8852	7832	8994	7987	8999	7947	9333	7173
> 80,1 sq.m	9579	7073	9158	8711	8595	8058	9567	8583	9730	8013
average offer price deviation	15,6%	x	11,1%	x	7,6%	x	9,2%	x	19,4%	x
<= 40 sq.m	13,6%	x	13,6%	x	11,4%	x	9,2%	x	22,4%	x
(40,1; 60] sq.m	14,2%	x	13,9%	x	7,3%	x	11,8%	x	21,4%	x
(60,1; 80] sq.m	18,8%	x	13,0%	x	12,6%	x	13,2%	x	30,1%	x
> 80,1 sq.m	35,4%	x	5,1%	x	6,7%	x	11,5%	x	21,4%	x

Source: NBP

Table 18 Average prices per sq. m of housing in PM in Warsaw

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 517	12 381	12 895	12 343	12 912	12 727	13 009	12 836	13 302	12 861
growth (q-o-q)	105,9	106,5	103,0	99,7	100,1	103,1	100,8	100,9	102,2	100,2
growth (y-o-y)	114,1	116,1	113,5	115,4	113,2	115,6	110,1	110,5	106,3	103,9
dwelling price range	9 723	3 025	9 640	2 220	15 481	1 768	12 833	1 849	12 256	2 291
<=9 500 PLN/sq.m	1 498	441	1 145	279	1 145	163	924	135	867	155
(9 501; 11 500] PLN/sq.m	2 870	955	2 261	671	3 355	440	2 695	476	2 245	564
(11 501; 13 500] PLN/sq.m	2 401	779	2 965	677	5 886	621	4 865	671	4 538	859
(13 501; 15 500] PLN/sq.m	1 500	359	1 762	333	3 254	309	2 635	316	2 734	402
>15 501 PLN/sq.m	1 454	491	1 507	260	1 841	235	1 714	251	1 872	311
dwelling space range	9 723	3 025	9 640	2 220	15 481	1 768	12 833	1 849	12 256	2 291
<= 40 sq.m	2111	844	2065	671	3448	593	2874	583	2648	716
(40,1; 60] sq.m	4158	1263	4122	894	6664	706	5469	771	5214	928
(60,1; 80] sq.m	2478	622	2431	443	3573	289	2974	319	2971	444
> 80,1 sq.m	976	296	1022	212	1796	180	1516	176	1423	203
average price of 1 sq.m. of dwelling	12 517	12 381	12 895	12 343	12 912	12 727	13 009	12 836	13 302	12 861
<=4 000 sq.m	13811	12790	14220	12718	13947	12759	14023	13517	14344	13440
(40,1; 60] sq.m	12340	12378	12759	12191	12779	12705	12859	12587	13107	12645
(60,1; 80] sq.m	11482	11795	11790	11884	12030	12233	12133	11975	12484	12156
> 80,1 sq.m	13100	12457	13395	12757	13174	13495	13348	13231	13780	13346
average offer price deviation	1,1%	x	4,5%	x	1,5%	x	1,3%	x	3,4%	x
<= 40 sq.m	8,0%	x	11,8%	x	9,3%	x	3,7%	x	6,7%	x
(40,1; 60] sq.m	-0,3%	x	4,7%	x	0,6%	x	2,2%	x	3,7%	x
(60,1; 80] sq.m	-2,7%	x	-0,8%	x	-1,7%	x	1,3%	x	2,7%	x
> 80,1 sq.m	5,2%	x	5,0%	x	-2,4%	x	0,9%	x	3,2%	x

Source: NBP

Table 19 Average prices per sq. m of housing in SM in Warsaw

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	13 366	12 251	14 073	12 714	13 499	12 013	13 501	12 046	13 802	11 940
growth (q-o-q)	100,5	103,4	105,3	103,8	95,9	94,5	100,0	100,3	102,2	99,1
growth (y-o-y)	109,4	112,6	112,9	113,3	104,2	103,7	101,5	101,7	103,3	97,5
dwelling price range	1 975	3 716	1 719	3 932	1 631	1 066	1 391	834	1 191	509
<=9 500 PLN/sq.m	172	569	91	443	99	154	88	102	64	97
(9 501; 11 500] PLN/sq.m	450	1 111	362	1 083	377	359	374	304	284	166
(11 501; 13 500] PLN/sq.m	530	1 000	402	1 053	443	285	334	226	305	113
(13 501; 15 500] PLN/sq.m	377	567	336	724	328	164	255	119	219	78
>15 501 PLN/sq.m	446	469	528	629	384	104	340	83	319	55
dwelling space range	1 975	3 716	1 719	3 932	1 631	1 066	1 391	834	1 191	509
<= 40 sq.m	346	1098	312	1204	324	364	245	338	215	170
(40,1; 60] sq.m	832	1690	730	1811	724	490	594	342	526	222
(60,1; 80] sq.m	456	608	366	596	380	160	348	114	295	91
> 80,1 sq.m	341	320	311	321	203	52	204	40	155	26
average price of 1 sq.m. of dwelling	13 366	12 251	14 073	12 714	13 499	12 013	13 501	12 046	13 802	11 940
<=4 000 sq.m	14798	12832	15624	13209	14934	12828	15049	12729	15182	13139
(40,1; 60] sq.m	12920	11794	13586	12226	13046	11426	12981	11420	13424	11416
(60,1; 80] sq.m	12588	11839	13374	12705	13076	11476	12901	11464	13424	10651
> 80,1 sq.m	14039	13455	14484	13628	13612	13504	14180	13281	13893	13099
average offer price deviation	9,1%	x	10,7%	x	12,4%	x	12,1%	x	15,6%	x
<= 40 sq.m	15,3%	x	18,3%	x	16,4%	x	18,2%	x	15,5%	x
(40,1; 60] sq.m	9,6%	x	11,1%	x	14,2%	x	13,7%	x	17,6%	x
(60,1; 80] sq.m	6,3%	x	5,3%	x	13,9%	x	12,5%	x	26,0%	x
> 80,1 sq.m	4,3%	x	6,3%	x	0,8%	x	6,8%	x	6,1%	x

Source: NBP

Table 20 Average prices per sq. m of housing in PM in Wrocław

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 352	10 029	10 789	10 338	10 963	10 520	11 384	10 453	11 948	11 112
growth (q-o-q)	101,6	105,5	104,2	103,1	101,6	101,8	103,8	99,4	105,0	106,3
growth (y-o-y)	114,2	119,1	114,9	120,5	110,0	118,3	111,7	110,0	115,4	110,8
dwelling price range	4 605	1 034	4 501	1 123	5 333	874	4 720	742	4 248	954
<=7 000 PLN/sq.m	106	11	67	21	43	5	26	11	19	7
(7 001; 9 000] PLN/sq.m	1 317	327	1 170	332	969	225	793	212	603	202
(9 001; 11 000] PLN/sq.m	1 611	384	1 301	404	1 909	325	1 267	247	996	309
(11 001; 13 000] PLN/sq.m	900	251	1 042	226	1 480	213	1 625	180	1 470	237
>13 001 PLN/sq.m	671	61	921	140	932	106	1 009	92	1 160	199
dwelling space range	4 605	1 034	4 501	1 123	5 333	874	4 720	742	4 248	954
<= 40 sq.m	896	219	848	307	901	287	393	214	742	255
(40,1; 60] sq.m	2088	478	2024	504	2570	404	1637	323	2011	442
(60,1; 80] sq.m	1227	259	1236	239	1397	134	1918	155	1074	203
> 80,1 sq.m	394	78	393	73	465	49	772	50	421	54
average price of 1 sq.m. of dwelling	10 352	10 029	10 789	10 338	10 963	10 520	11 384	10 453	11 948	11 112
<=4 000 sq.m	12011	10758	12602	11389	12607	11367	14408	11667	14778	12913
(40,1; 60] sq.m	10076	10142	10532	10097	10801	10143	11562	10050	11589	10608
(60,1; 80] sq.m	9745	9280	10075	9585	10318	9707	10525	9801	10646	10153
> 80,1 sq.m	9930	9780	10444	10042	10608	10883	11604	9884	11999	10333
average offer price deviation	3,2%	x	4,4%	x	4,2%	x	8,9%	x	7,5%	x
<= 40 sq.m	11,7%	x	10,6%	x	10,9%	x	23,5%	x	14,4%	x
(40,1; 60] sq.m	-0,7%	x	4,3%	x	6,5%	x	15,0%	x	9,2%	x
(60,1; 80] sq.m	5,0%	x	5,1%	x	6,3%	x	7,4%	x	4,9%	x
> 80,1 sq.m	1,5%	x	4,0%	x	-2,5%	x	17,4%	x	16,1%	x

Source: NBP

Table 21 Average prices per sq. m of housing in SM in Wrocław

specification	I Q 2022		II Q 2022		III Q 2022		IV Q 2022		I Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 075	9 202	10 453	9 686	10 591	10 178	10 672	10 114	10 978	9 980
growth (q-o-q)	108,0	102,8	103,8	105,3	101,3	105,1	100,8	99,4	102,9	98,7
growth (y-o-y)	115,6	114,2	116,4	113,8	115,6	118,9	114,4	113,0	109,0	108,5
dwelling price range	1 741	1 004	2 058	933	1 374	1 030	2 504	760	2 440	742
<=7 000 PLN/sq.m	72	129	41	76	32	54	54	49	26	58
(7 001; 9 000] PLN/sq.m	543	383	516	302	304	297	542	193	475	197
(9 001; 11 000] PLN/sq.m	664	331	832	334	566	355	1 032	290	979	275
(11 001; 13 000] PLN/sq.m	279	106	439	161	302	210	520	159	555	139
>13 001 PLN/sq.m	183	55	230	60	170	114	356	69	405	73
dwelling space range	1 741	1 004	2 058	933	1 374	1 029	2 504	760	2 440	742
<= 40 sq.m	222	231	285	239	194	298	336	202	309	193
(40,1; 60] sq.m	699	500	887	457	578	487	1113	387	1103	351
(60,1; 80] sq.m	548	200	630	186	396	198	729	125	733	148
> 80,1 sq.m	272	73	256	51	206	46	326	46	295	50
average price of 1 sq.m. of dwelling	10 075	9 202	10 453	9 686	10 591	10 178	10 672	10 114	10 978	9 980
<=4 000 sq.m	11456	10183	12077	10625	12157	11138	12449	10960	12821	11248
(40,1; 60] sq.m	10261	8998	10527	9667	10587	9890	10711	9853	11052	9792
(60,1; 80] sq.m	9539	8811	9985	8791	10145	9652	10095	9673	10498	8959
> 80,1 sq.m	9549	8571	9542	8721	9988	9264	9995	9796	9965	9433
average offer price deviation	9,5%	x	7,9%	x	4,1%	x	5,5%	x	10,0%	x
<= 40 sq.m	12,5%	x	13,7%	x	9,2%	x	13,6%	x	14,0%	x
(40,1; 60] sq.m	14,0%	x	8,9%	x	7,0%	x	8,7%	x	12,9%	x
(60,1; 80] sq.m	8,3%	x	13,6%	x	5,1%	x	4,4%	x	17,2%	x
> 80,1 sq.m	11,4%	x	9,4%	x	7,8%	x	2,0%	x	5,6%	x

Source: NBP

7. Analysis of profitability of investment in housing in selected cities in Poland in 2023 Q1³⁴

In 2023 Q1, the change in the capitalisation rates and profitability of investment in housing for rental continued. Although the cost of new residential mortgage loan remained high during the period, the profitability of such investment improved, also in terms of ROE, with the medium and high involvement of external capital. This was to a large extent a consequence of faster changes in rents than those of transaction process of dwellings and a slight improvement in the financial conditions of residential mortgage loans.

In 2023 Q1, the growth in estimated transaction prices of average dwellings slowed down in the analysed cities, especially in the group of 6 cities and Warsaw. Compared to 2022 Q1, the prices of dwellings increased by 1.4% in Warsaw, 6.7% in the group of 6 cities and by 8.3% y/y in the group of other cities of Poland included in the analysis. The slowdown in the growth rate of estimated transaction prices is also observed in comparison to 2022 Q4. In this case, the prices decreased in 2023 Q1 by 0.3% in Warsaw and 0.7% in the group of 6 cities, but grew by 1.7% in the other cities in relation to 2022 Q4. The changes in the estimated transaction prices of dwellings had a significant impact on changes in the capitalisation level of investments in housing, especially in the context of changes in rents.

In 2023 Q1, the upward trend of rent rates continued, with a minor correction in the group of the 6 cities. The average rents for housing reached PLN 69.5 /sq. m in Warsaw, PLN 56.9/sq. m in the group of the 6 cities and PLN 44.8/sq. m in the group of the remaining 7 analysed cities. This means that they grew by 31.3%, 24.1% and 24.7% y/y, respectively. It should be underlined at the same time that the year-on-year change in rents turned out to be 29.9 pp. higher in Warsaw, 17.4 pp. in the group of 6 cities and 16.4 pp. in the other cities in Poland than the change in estimated transaction prices of dwellings. Such a distribution of changes proved to be important for the estimated capitalisation levels of housing investments. In spite of a slight slowdown of the quarterly change rate in rents in 2023 Q1, a clear upward trend has been seen in estimated average rents for dwellings in the analysed Polish cities since the second half of 2021.

The changes that occurred in 2023 Q1, had a critical impact on the level of capitalisation of housing investments. This was due to the fact that the capitalisation rate is determined by the annual income from rental and the price per 1 sq.m of housing in the sales market. The level of capitalisation of housing investments in 2023 Q1 grew in all the analysed cities, though especially in Warsaw, where it reached 6.4%, 6.5% in the 6 cities and

³⁴ Presented here is a simplified analysis of an investment in a dwelling for rental by a private individual subject to flat-rate taxation. 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 analysed and presented separately, owing to its specific character. The profitability of investing in rental housing was determined by calculating the capitalisation rate and ROE (Return on Equity). The capitalisation rate was calculated as the ratio of the annual rental income to the price of one square metre of housing. The ROE, in turn, was calculated as net profit divided by equity engaged. The estimated net operating profit was reduced by the estimated total operating expenses (estimated separately for each analysed city based on data supplied by the OLX Group, verified by expert opinions). The net operating profit calculated this way serves as the basis for calculation of EBITDA. In this case, different possible levels of leverage were adopted: a fully cash-funded investment (with the LTV of 0%) and a loan-financed investment with the LTV of 50% as well as a highly leveraged investment with the LTV of 80%. To calculate the financial profit, we took into account rental income and deducted the flat-rate tax of 8.5%, the repayment of interest on the loan as well as depreciation of the building at the rate of 1.5% of its value (assuming two general overhauls in a period of 100 years). The tax is paid on all rental income, before cost deduction. The transaction price per 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. Starting from 2022 Q4, we adopted the finishing costs according to estimates based on prices quoted by Sekocenbud. The underlying assumptions include a PLN-denominated loan for 25 years, with equal instalments payable 4 times a year and a 95% occupancy rate.

6.2% in the other analysed cities. The figures mean an increase of 29.5%, 15.3% and 15.2%, respectively, on 2022 Q1. Having analysed the causes of this state of affairs, we should emphasise the identified differences between the y/y change in rents and in estimated prices of dwellings. What transpired is that in the cities where the capitalisation rates had grown the most, the differences between the growth rates were the biggest as well. Such observations suggest – similarly to the previous quarter – that changes in supply and demand had a bigger impact on the capitalisation rate in the analysed quarter, determining the level of prices than macroeconomic factors connected, for example, with financing costs.

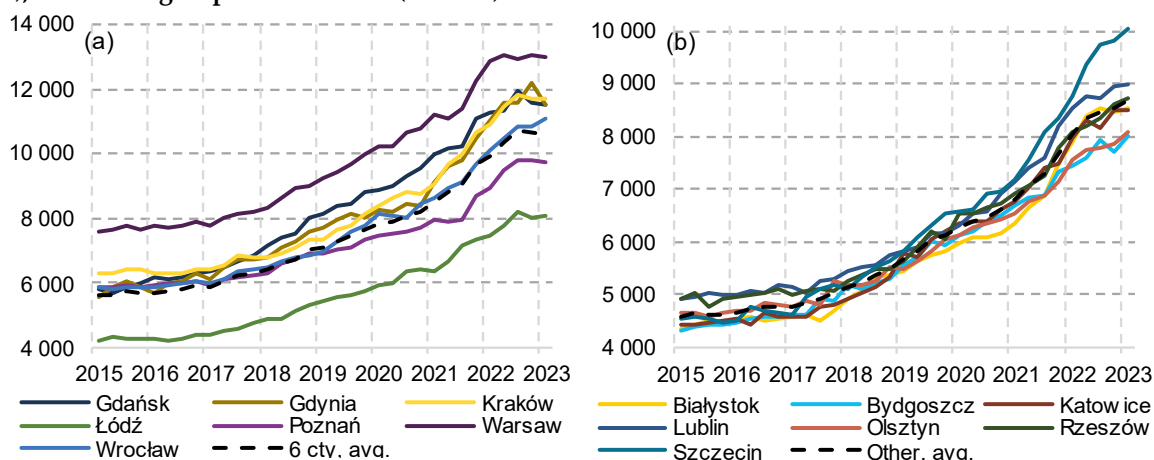
The developments outlined above were also reflected in the profitability of investment in housing expressed by ROE. The net profit generated was discounted by the costs of external capital in the form of a mortgage loan. The level of costs of such sources of founding was still high though it dipped a little in the analysed period. The average interest rate of 8.8% on new mortgage loans was used in the analysis, meaning a decrease of 0.5 p.p. on 2022 Q4. In 2023 Q1, ROE, assuming LTV=0% (no mortgage loan) reached 3.9% in Warsaw and the group of 6 cities, and 3.6% in the other 7 cities. Therefore, it increased by 1.3 pp. in Warsaw, 0.7 pp. in the groups of 6 and of 7 cities on 2022 Q1.

The situation of investments leverage with a residential mortgage loan at LTV=50% was totally different. In this case, ROE reached the level of -1.0% in Warsaw, -0.9% in the group of 6 cities and -1.6% in the group of 7 cities. This in turn means further decreases compared to the same quarter of last year. During this period, ROE for LTV=50% dropped 0.5 pp., 1.5 pp. and 1.6 pp, respectively. However, a certain improvement in the profitability ratios could be seen in 2023 Q1 compared to the preceding quarter. In this case, ROE gained 1.0 pp. in Warsaw, 0.2 pp. in the 6 cities and 0.7 pp., in the group of the other analysed cities of Poland. These results might imply that profitability of investments in housing is beginning to grow from the low levels seen in the second half of 2022. Yet any further increase in ROE strongly depends on changes in the costs of external funding of such investments.

Similar conclusions can be drawn from the analysis of changes in the profitability ratios of housing investments leveraged with a residential mortgage loan with LTV=80%. In this case, in 2023 Q1, ROE reached – 15.8% in Warsaw, -15.5% in the 6 cities and -17.2% in the 7 cities of Poland. Such results mean that profitability decreased by 14.6 pp. in Warsaw, 16.3 pp. in the 6 cities and by 17.3 pp. in 7 cities compared to 2022 Q1. On the other hand, when compared with 2022 Q4, ROE with LTV=80% increased by 3.1 pp., 1.1 pp. and 2.4 pp, respectively. The conclusions here are very similar to those concerning housing investments leveraged at LTV=50%. The first quarter of 2023 brought about a clear recovery of ROE from the low levels seen in the second half of 2022.

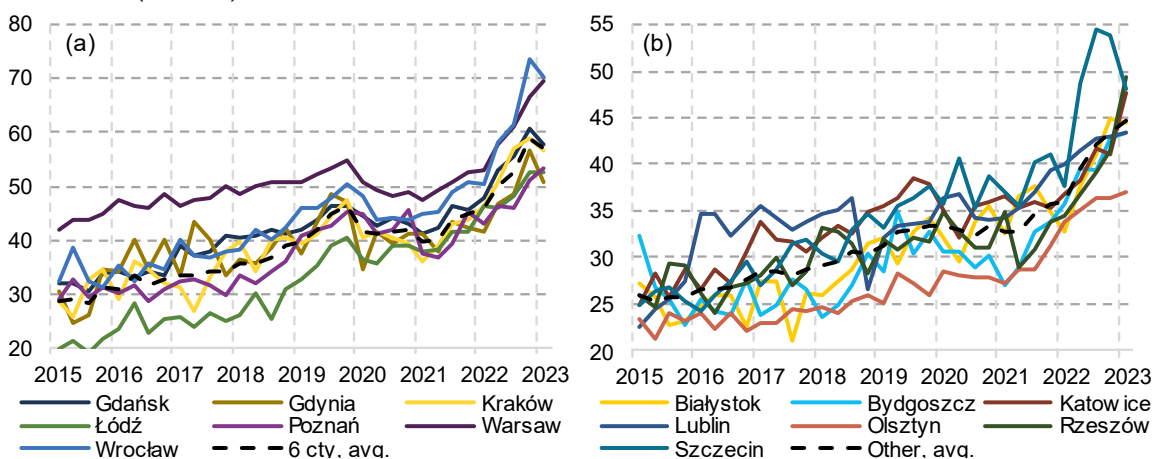
To sum up, the correction of the downward trend of the profitability of housing investments continued and the growth in capitalisation levels accelerated in 2023 Q1. What may be regarded as the main driver of the changes is the interplay between demand and supply in the home rental segment, which however is strongly influenced by the high costs of mortgage loans. Not least important are also differences in the changes in the prices of homes and rental rates in the analysed cities of Poland. Housing investments, which continue to be an attractive form of investing capital, remained under the influence of numerous factors, going beyond purely financial ones.

Figure 77 Estimated transaction prices of an average dwelling (PLN/sq. m) in the 6 cities and Warsaw (Panel a), and in the group of other cities (Panel b)



Source: NBP

Figure 78 Average home rental rates (PLN/sq. m) in the 6 cities and Warsaw (Panel a), and in the group of other cities (Panel b)



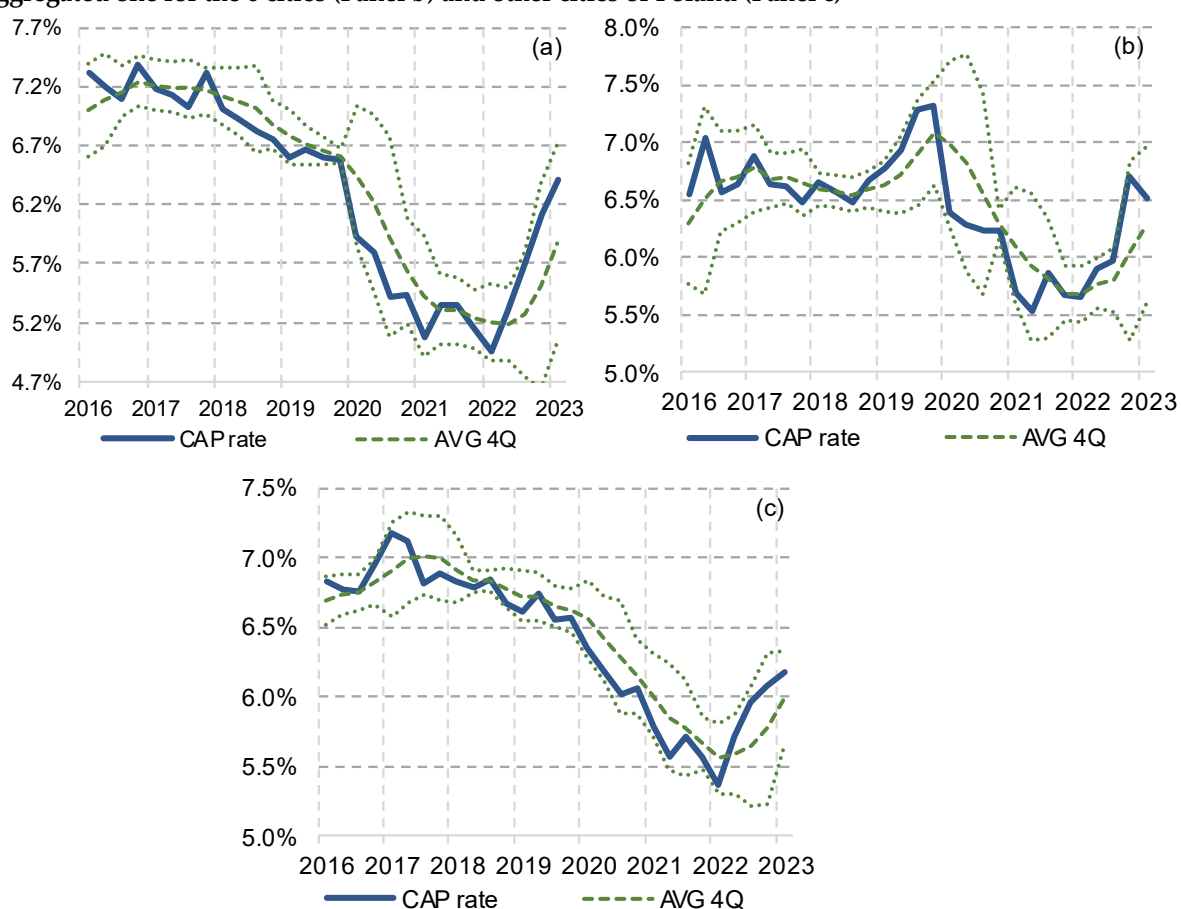
Source: NBP

Table 22 Estimated capitalisation rate in selected cities (%)

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2020 Q1	6.4%	6.0%	6.0%	5.0%	6.7%	5.8%	6.9%	7.3%	5.6%	7.2%	6.4%	6.5%	7.1%	5.9%	6.4%	6.4%
2020 Q2	5.9%	5.9%	5.7%	6.1%	6.0%	5.8%	6.8%	7.1%	5.4%	6.5%	6.0%	7.4%	6.5%	5.8%	6.3%	6.2%
2020 Q3	6.7%	5.4%	5.7%	5.6%	6.7%	5.5%	6.3%	7.4%	5.3%	6.6%	5.6%	6.1%	6.6%	5.4%	6.2%	6.0%
2020 Q4	6.9%	5.6%	5.4%	5.9%	6.5%	5.4%	5.9%	7.3%	5.2%	7.1%	5.5%	6.7%	6.2%	5.4%	6.2%	6.1%
2021 Q1	6.2%	4.8%	4.9%	5.4%	6.5%	4.8%	5.7%	7.1%	5.0%	5.7%	6.1%	6.2%	6.2%	5.1%	5.7%	5.8%
2021 Q2	6.6%	5.1%	5.0%	4.7%	6.0%	4.9%	5.7%	6.9%	5.1%	5.6%	4.9%	5.6%	6.1%	5.3%	5.5%	5.6%
2021 Q3	6.6%	5.7%	5.4%	5.3%	5.8%	5.2%	5.8%	7.0%	5.0%	5.9%	5.1%	6.0%	6.4%	5.4%	5.9%	5.7%
2021 Q4	5.6%	5.6%	4.9%	4.9%	5.7%	5.0%	5.8%	6.8%	5.2%	6.2%	5.2%	5.9%	6.3%	5.2%	5.7%	5.6%
2022 Q1	5.0%	5.8%	5.1%	4.5%	5.5%	5.1%	5.6%	7.4%	5.4%	5.8%	5.1%	5.2%	6.0%	4.9%	5.7%	5.4%
2022 Q2	5.4%	6.3%	5.6%	4.8%	5.5%	5.3%	5.7%	7.1%	5.5%	5.8%	5.4%	6.2%	6.7%	5.3%	5.9%	5.7%
2022 Q3	5.8%	6.0%	5.6%	5.0%	6.1%	5.8%	5.9%	7.0%	5.6%	5.6%	5.6%	6.7%	6.8%	5.7%	6.0%	6.0%
2022 Q4	6.3%	6.7%	6.3%	5.6%	5.8%	6.0%	5.8%	7.9%	5.6%	6.3%	5.8%	6.6%	8.1%	6.1%	6.7%	6.1%
2023 Q1	6.2%	6.5%	6.0%	5.3%	6.7%	5.8%	5.8%	7.8%	5.5%	6.6%	6.8%	5.7%	7.6%	6.4%	6.5%	6.2%

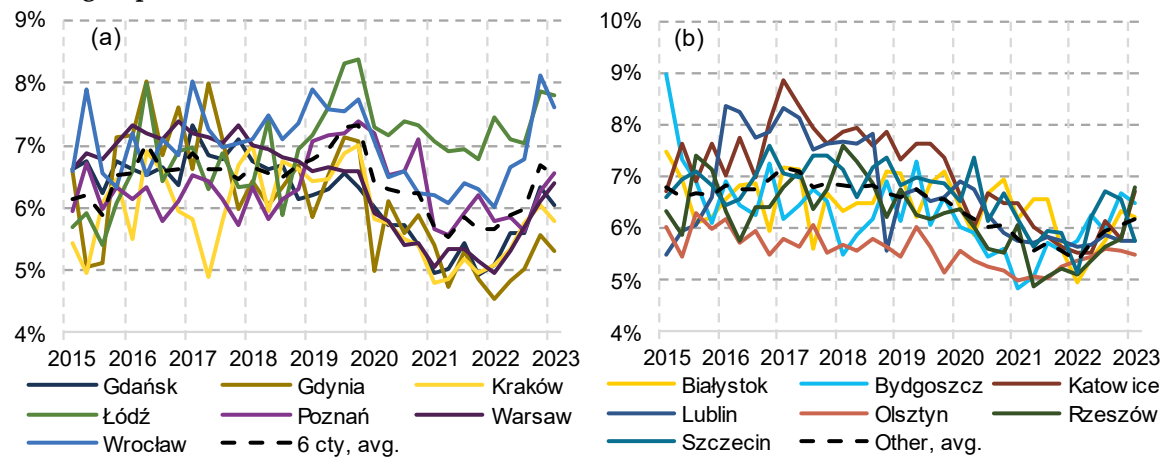
Source: NBP

Figure 79 Estimated capitalisation rate and its annual moving average for Warsaw (Panel a) and the aggregated one for the 6 cities (Panel b) and other cities of Poland (Panel c)



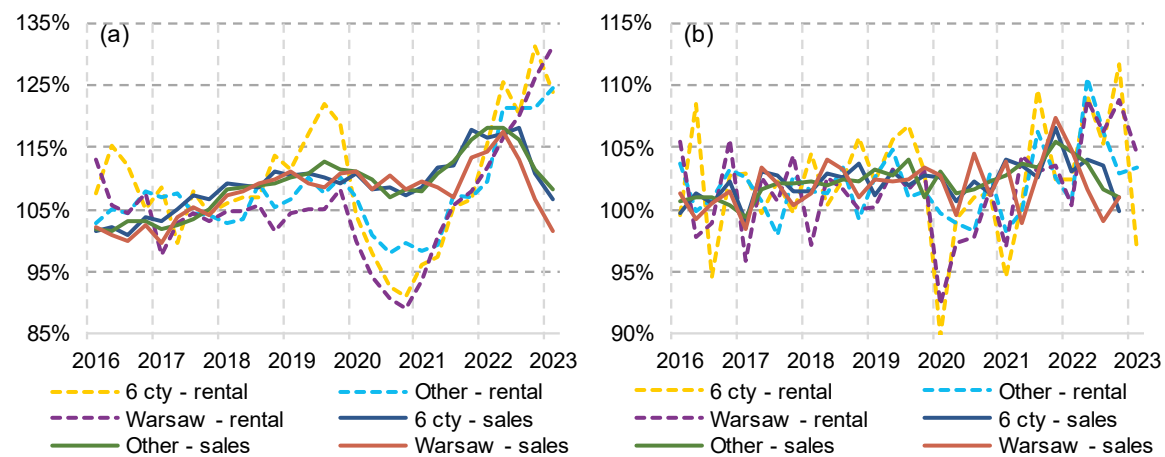
Source: NBP

Figure 80 Estimated capitalisation rate for the individual cities in the 6 cities and in Warsaw (Panel a) and in the group of other cities (Panel b)



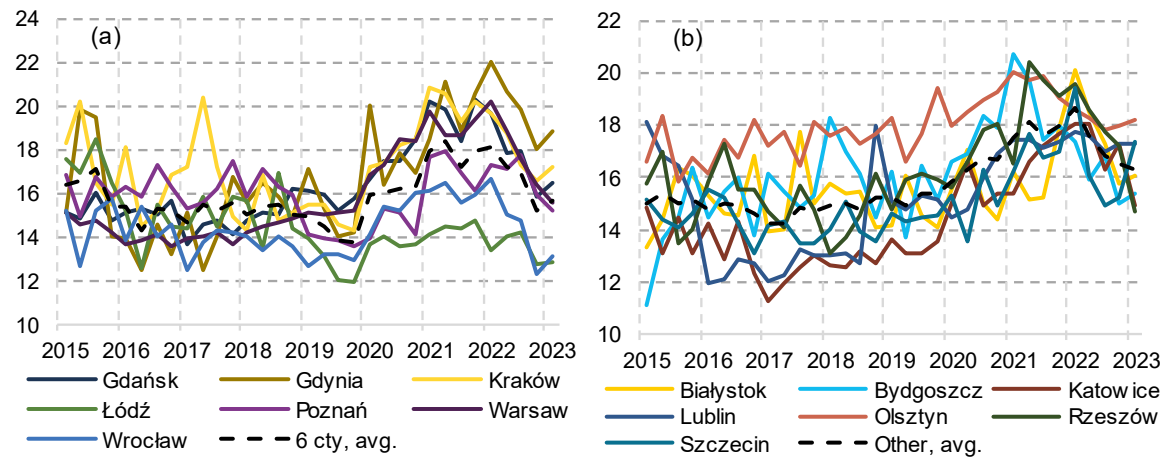
Source: NBP

Figure 81 Change in y/y terms (Panel a) and in q/q terms (Panel b) in the estimated transaction prices and rental rates in the 6 cities, other cities of Poland and in Warsaw



Source: NBP

Figure 82 Estimated timing of return on investment in the group of 6 cities and in Warsaw (Panel a) and in the group of other cities (Panel b)



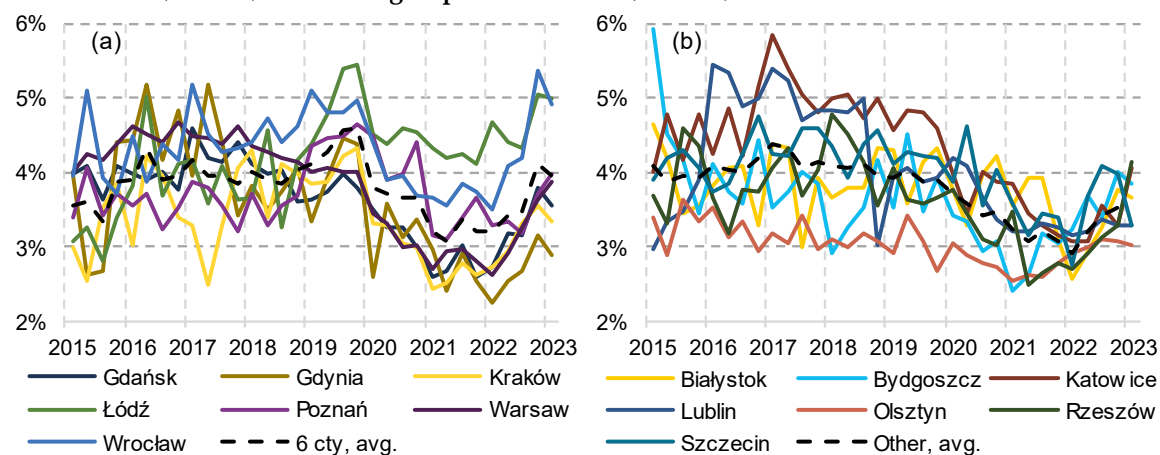
Source: NBP

Table 23 Return on Equity (ROE, %) on fully cash-funded housing investment (LTV = 0%) in selected cities

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2020 Q1	3.8%	3.4%	3.5%	2.6%	4.0%	3.3%	4.2%	4.5%	3.0%	4.5%	3.8%	3.9%	4.4%	3.4%	3.8%	3.7%
2020 Q2	3.3%	3.3%	3.3%	3.6%	3.4%	3.3%	4.1%	4.4%	2.9%	3.9%	3.4%	4.6%	3.9%	3.3%	3.7%	3.6%
2020 Q3	4.0%	2.9%	3.3%	3.1%	4.0%	3.1%	3.6%	4.6%	2.8%	4.0%	3.1%	3.6%	4.0%	3.0%	3.7%	3.4%
2020 Q4	4.2%	3.1%	3.0%	3.4%	3.9%	3.0%	3.4%	4.6%	2.7%	4.4%	3.0%	4.0%	3.7%	3.0%	3.7%	3.5%
2021 Q1	3.6%	2.4%	2.6%	3.0%	3.9%	2.4%	3.2%	4.3%	2.5%	3.2%	3.5%	3.6%	3.7%	2.7%	3.2%	3.2%
2021 Q2	3.9%	2.6%	2.7%	2.4%	3.5%	2.5%	3.2%	4.2%	2.6%	3.1%	2.5%	3.2%	3.6%	3.0%	3.1%	3.1%
2021 Q3	3.9%	3.2%	3.0%	2.9%	3.3%	2.8%	3.3%	4.3%	2.6%	3.4%	2.6%	3.4%	3.9%	3.0%	3.4%	3.2%
2021 Q4	3.1%	3.1%	2.6%	2.5%	3.1%	2.6%	3.3%	4.1%	2.8%	3.7%	2.8%	3.4%	3.8%	2.8%	3.2%	3.1%
2022 Q1	2.6%	3.2%	2.7%	2.2%	3.1%	2.7%	3.2%	4.7%	2.9%	3.3%	2.7%	2.7%	3.5%	2.6%	3.2%	2.9%
2022 Q2	2.9%	3.7%	3.2%	2.5%	3.1%	2.9%	3.2%	4.4%	3.0%	3.4%	2.9%	3.7%	4.1%	2.9%	3.4%	3.2%
2022 Q3	3.3%	3.4%	3.2%	2.7%	3.6%	3.3%	3.4%	4.3%	3.1%	3.2%	3.1%	4.1%	4.2%	3.3%	3.5%	3.4%
2022 Q4	3.8%	4.0%	3.8%	3.1%	3.3%	3.6%	3.3%	5.0%	3.1%	3.7%	3.3%	4.0%	5.4%	3.6%	4.1%	3.5%
2023 Q1	3.7%	3.9%	3.6%	2.9%	4.1%	3.3%	3.3%	5.0%	3.0%	4.0%	4.2%	3.3%	4.9%	3.9%	3.9%	3.6%

Source: NBP

Figure 83 Return on Equity (ROE, %) on fully cash-funded housing investment (LTV = 0%) in the 6 cities and Warsaw (Panel a) and in the group of other cities (Panel b)



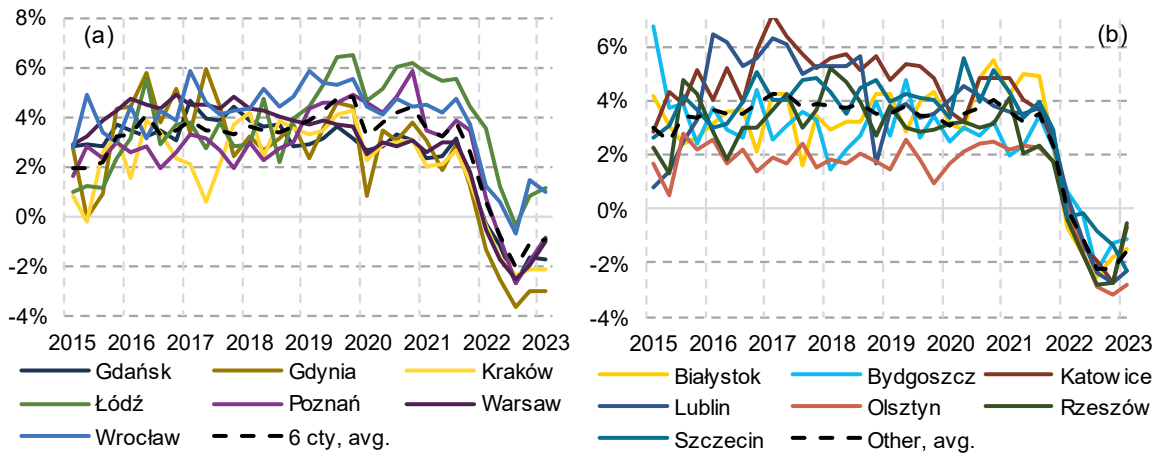
Source: NBP

Table 24 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 50%) in selected cities

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2020 Q1	3.2%	2.5%	2.6%	0.8%	3.6%	2.3%	4.0%	4.7%	1.7%	4.6%	3.2%	3.4%	4.4%	2.5%	3.2%	3.1%
2020 Q2	2.9%	3.0%	2.9%	3.5%	3.2%	2.9%	4.5%	5.1%	2.1%	4.2%	3.2%	5.6%	4.1%	3.0%	3.8%	3.5%
2020 Q3	4.8%	2.7%	3.4%	3.1%	4.9%	3.0%	4.1%	6.1%	2.4%	4.8%	3.0%	3.9%	4.8%	2.8%	4.2%	3.7%
2020 Q4	5.5%	3.2%	3.1%	3.8%	4.8%	3.0%	3.8%	6.2%	2.5%	5.9%	3.1%	5.1%	4.5%	3.1%	4.4%	4.0%
2021 Q1	4.3%	1.9%	2.3%	3.1%	4.9%	2.0%	3.6%	5.8%	2.2%	3.5%	4.1%	4.3%	4.5%	2.6%	3.5%	3.6%
2021 Q2	5.0%	2.3%	2.4%	1.9%	4.0%	2.1%	3.5%	5.5%	2.3%	3.3%	2.1%	3.4%	4.2%	3.0%	3.2%	3.2%
2021 Q3	4.9%	3.5%	3.1%	2.9%	3.7%	2.7%	3.7%	5.6%	2.2%	3.8%	2.4%	3.9%	4.8%	3.0%	3.8%	3.5%
2021 Q4	2.4%	2.3%	1.4%	1.2%	2.5%	1.4%	2.7%	4.4%	1.7%	3.5%	1.8%	2.9%	3.7%	1.8%	2.6%	2.3%
2022 Q1	-0.7%	0.7%	-0.3%	-1.3%	0.3%	-0.3%	0.5%	3.6%	0.0%	0.8%	-0.4%	-0.3%	1.2%	-0.6%	0.6%	0.0%
2022 Q2	-1.7%	-0.2%	-1.2%	-2.5%	-1.4%	-1.7%	-1.2%	1.2%	-1.6%	-0.9%	-1.7%	-0.2%	0.6%	-1.7%	-0.7%	-1.1%
2022 Q3	-2.5%	-2.3%	-2.7%	-3.7%	-1.9%	-2.4%	-2.3%	-0.4%	-2.9%	-2.7%	-2.8%	-0.8%	-0.7%	-2.6%	-2.1%	-2.2%
2022 Q4	-1.8%	-1.3%	-1.7%	-3.0%	-2.7%	-2.2%	-2.7%	0.8%	-3.2%	-1.8%	-2.7%	-1.3%	1.4%	-2.0%	-1.1%	-2.2%
2023 Q1	-1.5%	-1.1%	-1.7%	-3.0%	-0.7%	-2.1%	-2.3%	1.2%	-2.8%	-0.9%	-0.5%	-2.3%	1.0%	-1.0%	-0.9%	-1.6%

Source: NBP

Figure 84 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 50%) in the group of 6 cities and Warsaw (Panel a), and in the group of other cities (Panel b)



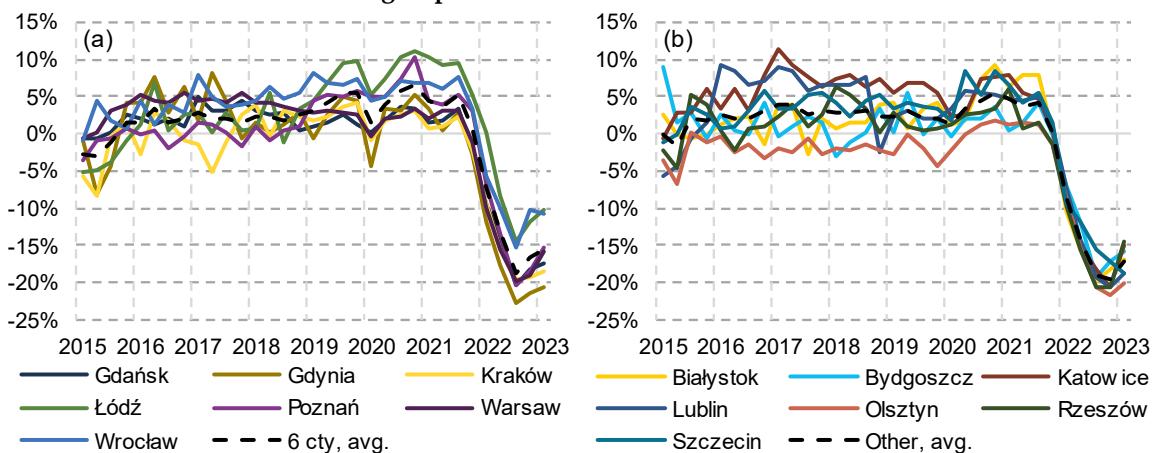
Source: NBP

Table 25 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 80%) in selected cities

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Wrocław	Warszawa	6 cities	Other
2020 Q1	1.4%	-0.4%	0.1%	-4.5%	2.4%	-0.9%	3.5%	5.1%	-2.3%	5.0%	1.4%	1.9%	4.5%	-0.3%	1.6%	1.1%
2020 Q2	1.8%	2.1%	1.7%	3.3%	2.6%	1.8%	5.9%	7.3%	-0.2%	4.9%	2.6%	8.5%	4.9%	2.0%	4.0%	3.3%
2020 Q3	7.3%	2.0%	3.7%	3.1%	7.5%	2.7%	5.6%	10.4%	1.3%	7.3%	2.8%	5.1%	7.2%	2.4%	5.7%	4.5%
2020 Q4	9.3%	3.6%	3.3%	5.2%	7.6%	3.2%	5.1%	11.0%	1.9%	10.3%	3.4%	8.4%	6.8%	3.4%	6.6%	5.6%
2021 Q1	6.4%	0.6%	1.5%	3.4%	7.8%	0.7%	4.6%	10.3%	1.2%	4.4%	6.0%	6.5%	6.9%	2.1%	4.5%	4.7%
2021 Q2	8.0%	1.5%	1.7%	0.4%	5.6%	0.9%	4.5%	9.4%	1.5%	3.8%	0.8%	4.1%	6.1%	3.1%	3.7%	3.7%
2021 Q3	7.9%	4.3%	3.4%	2.8%	4.8%	2.3%	4.9%	9.6%	1.2%	5.2%	1.5%	5.5%	7.6%	3.1%	5.2%	4.3%
2021 Q4	0.2%	0.0%	-2.4%	-2.7%	0.4%	-2.2%	1.0%	5.3%	-1.4%	3.0%	-1.4%	1.6%	3.5%	-1.3%	0.8%	0.1%
2022 Q1	-10.4%	-7.0%	-9.5%	-11.9%	-7.9%	-9.5%	-7.4%	0.3%	-8.7%	-6.7%	-9.7%	-9.4%	-5.7%	-10.1%	-7.2%	-8.6%
2022 Q2	-15.6%	-11.9%	-14.4%	-17.7%	-15.0%	-15.6%	-14.3%	-8.3%	-15.4%	-13.6%	-15.7%	-11.9%	-9.9%	-15.7%	-13.2%	-14.2%
2022 Q3	-19.9%	-19.2%	-20.4%	-22.8%	-18.4%	-19.6%	-19.4%	-14.6%	-20.8%	-20.3%	-20.6%	-15.7%	-15.3%	-20.0%	-18.8%	-19.1%
2022 Q4	-18.4%	-17.1%	-18.2%	-21.5%	-20.8%	-19.4%	-20.8%	-11.9%	-21.8%	-18.6%	-20.7%	-17.2%	-10.3%	-19.0%	-16.6%	-19.5%
2023 Q1	-16.9%	-16.0%	-17.5%	-20.8%	-15.0%	-18.6%	-18.9%	-10.3%	-20.2%	-15.4%	-14.5%	-18.9%	-10.7%	-15.8%	-15.5%	-17.2%

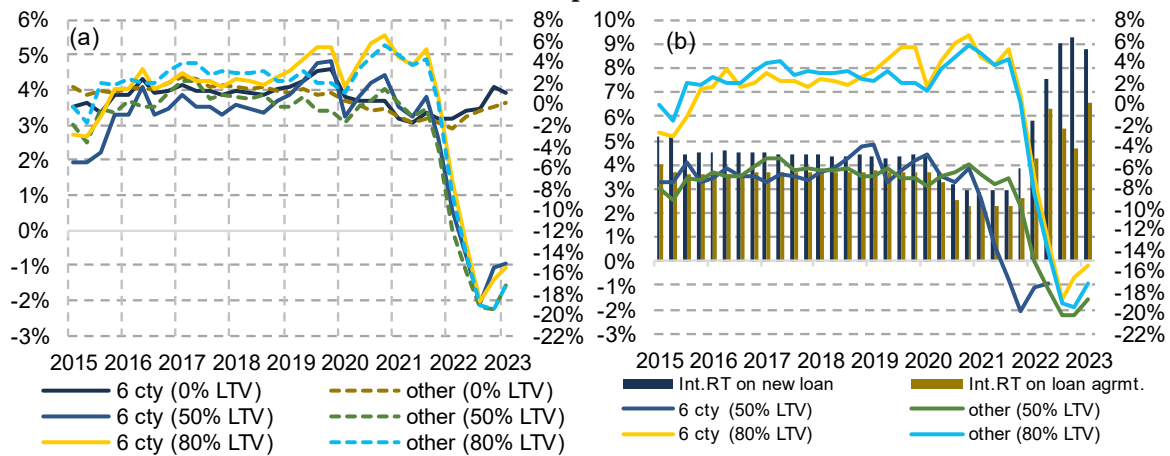
Source: NBP

Figure 85 Return on Equity (ROE, %) in the case of leveraged housing investment (LTV = 80%) in the 6 cities and Warsaw (Panel a) and in the group of other cities (Panel b)



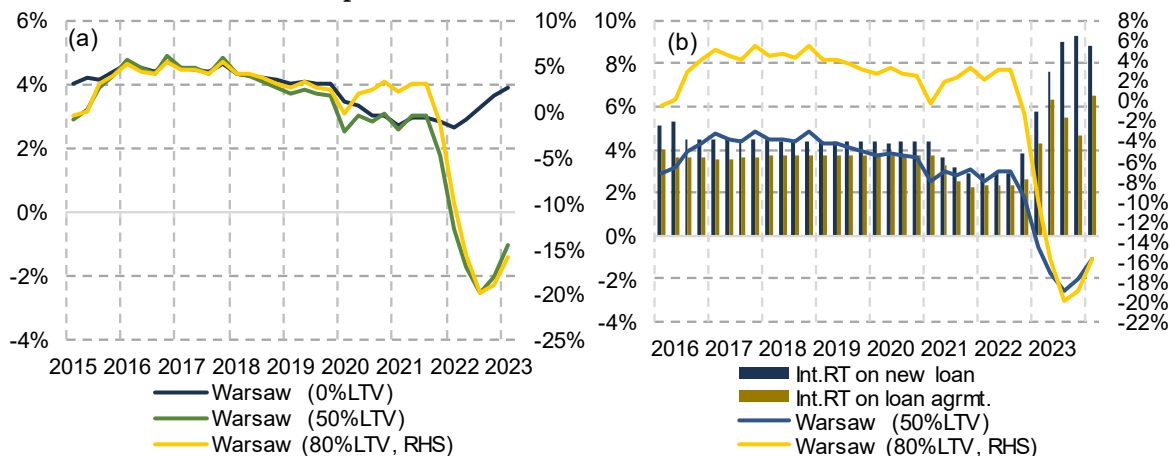
Source: NBP

Figure 86 Comparison of Return on Equity (ROE, %) on housing investment in the 6 cities and of other cities at selected LTV levels (Panel a) and the ROE compared to the loan interest rate (Panel b)



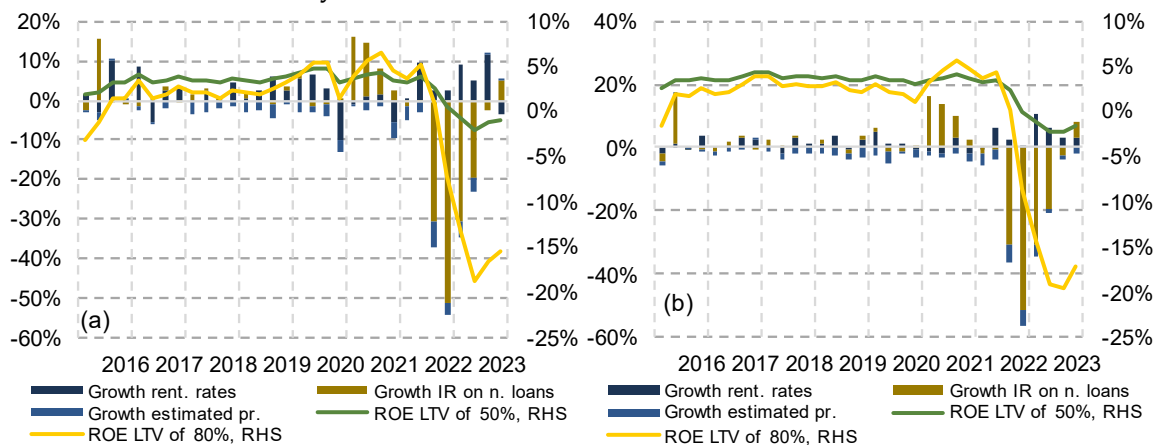
Source: NBP

Figure 87 Comparison of Return on Equity (ROE, %) on housing investment in Warsaw at selected LTV levels (Panel a) and ROE compared to the loan interest rate (Panel b)



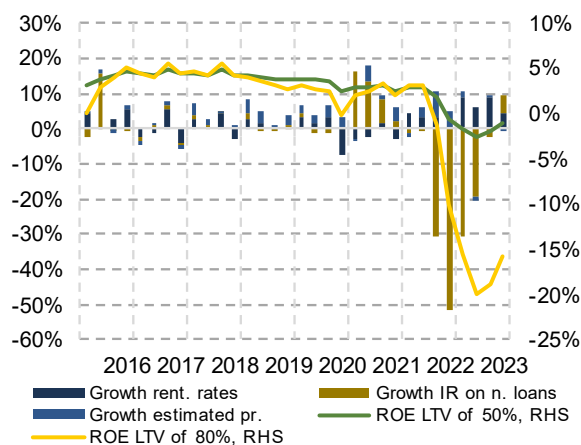
Source: NBP

Figure 88. Estimated ROE where LTV=50% and 80%, and the impact of quarterly changes in interest rates on new residential mortgage loans, estimated housing transaction prices and rental rates in the 6 cities (Panel a) and the other analysed cities (Panel b)



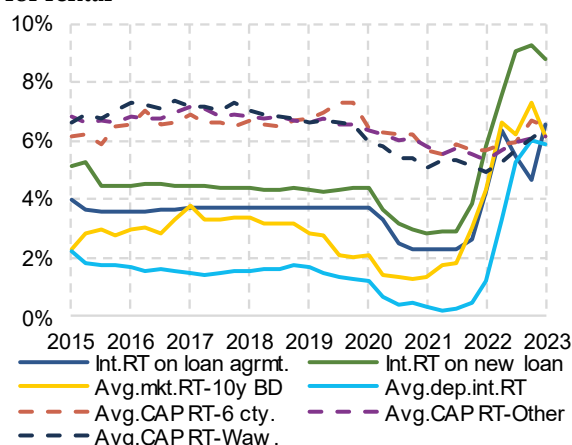
Source: NBP

Figure 89. Estimated ROE where LTV=50% and 80%, and the impact of quarterly changes in interest rates on new residential mortgage loans, estimated housing transaction prices and rental rates in Warsaw



Source: NBP

Figure 90. Comparison of interest rates on bonds, deposits and the costs of credit to the average capitalisation rate of an investment in dwellings for rental



Source: NBP

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

Analysis of the financial standing of developers³⁵

According to the financial data presented in F01 reports³⁶ until March 2023 and data from NBP surveys, developers continued to limit the number of dwellings they put on the market. They did so in spite of a gradual recovery of demand, including an increase in the number of buyers financing their purchase with a bank loan. Developers concentrated on finalising their ongoing projects, maintaining the prices of dwellings and the economic balance of their operations. They either put off the launch of new projects or divided projects into smaller stages. The slight recovery in demand in 2023 Q1 is confirmed by the sales results reported by the 17 biggest developers in Poland, including those listed on Warsaw Stock Exchange and the Catalyst market. They signed contracts for a total of 5,347 homes. Thirteen of these companies achieved bigger sales than in 2022 Q4,

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 the second half 2022) and bigger companies with over 49 staff (data available on a quarterly basis until 2023 Q1), 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 Q4.

³⁶ The data concerns the group of bigger developers (with more than 49 staff).

and 9 managed to increase the number of contracts for home construction compared to 2022 Q1. Several other developers reported declining sales. The improvement in contracting, which started in late 2022 and continued in 2023 Q1, points to the stabilisation of demand on a lower level than before the end of 2021. The high number of home building permits suggests that new projects can be launched quickly and supply in the primary market may increase. In the current situation where demand is low, dwellings are bought mostly for cash and where housing production costs are growing faster than the sale prices, well-experienced developers with a more stable financial standing, offering smaller dwellings at locations where homes are bought for rental are better off.

According to financial data presented in F01 reports, in 2023 Q1 the group of bigger developers (with more than 49 staff) reported a decrease in profitability, but still had a relatively good financial standing. Their profitability ratios deteriorated, net profits decreased, while the number of dwellings ready to be sold was low and the level of bank loans as well as investment outlays grew a little. The lower, but still high level of work in progress in a period of growing costs and weak demand creates a risk of a further deterioration of the financial standing. The fact that about 75% of bigger developers reporting profits whereas 25% reported net losses in the whole of 2022 points to a considerable diversification of the standing of the companies in the analysed group.

The higher growth in total expenses than in total income resulted from the growing costs of construction, purchase of land and the financing of operations while the growth in the prices of housing was lower, which resulted in lower net financial profits and consequently worse profitability ratios (ROS at 11.1%, ROE 2.6% and ROA 1.5% in 2023 Q1 vs. ROS 19.8%, ROE 4.8% and ROA 2.5% in 2022 Q1 and ROS 16.5%, ROE 4.0% and ROA 2.4% in 2022 Q4). The percentage of profitable businesses (i.e. reporting net profits) increased in comparison to 2022 Q1 (66% at the end of March 2023 vs. 59% at the end of March 2022), while productivity improved. The high level of total income and expenses reported by the developers confirmed that they were focused on finalising projects they had started earlier. The reported net financial results are a consequence of the handovers, i.e. the conclusion of final agreements transferring the titles to dwellings sold mostly in 2021 and they illustrate the profitability of operations as it had been several quarters earlier rather than the current operations. The worse financial results and profitability ratios confirm the ongoing economic slowdown.

As far as total assets are concerned, the value and percentage share of current assets, i.e. the most liquid ones, of the major developers continued to decrease in 2023 Q1. Over the past four quarters, projects in progress decreased the most (to 29% of total assets at the end of 2023 Q1, vs. 38% at the end of 2022 Q1). This, coupled with the reduced number of sales offers, confirms that the major developers are less active in starting new projects. In spite of a gradual decrease, the value of projects in progress reported at the end of March 2023 remained high, which – coupled with continued low sales and growing costs - might undermine the financial standing of some developers and related entities. Putting new projects on hold enabled them not to commit additional capital, saved them from growing indebtedness, and ensured continuation of good financial standing.

With a decreased supply of dwellings in the primary market, the average value and percentage of completed dwellings dropped to a very low level (3% of total assets at the end of 2023 Q1, vs. 4% at the end of 2022 Q1), which suggests that the bigger developers do not have any major problems with inventory turnover cycle. The average inventory turnover cycle was 195 days in the past two quarters.

The early months of 2023 also saw a slight dip in the average value and share of land reserves, but that amount has been higher since 2022 Q2 than in earlier periods, which confirms that developers have less difficulty in buying land for construction during the economic slowdown. The fact that the average value of the inventory of construction materials, land reserves and cash has been higher than in previous years for a year now confirms that developers invest cash to protect it against inflation and that the financial standing of most of the analysed development companies is good.

The increase in the share of equity in total liabilities since mid-2022 (59% in 2023 Q1 vs. 53% in 2022 Q1 and 40% in 2021 Q1) is a result of the allocation of net profit to equity in order to ensure financial liquidity during the slowdown in the housing market. The increase in equity and a decrease in the share of external financing led to an improvement in debt ratios and liabilities coverage ratio.

As far as external sources of financing are concerned, although their share in total assets shrank, a small but steady increase in the average debt resulting from bank loans was observed, which the financing banks interpret as a confirmation of the good financial standing and creditworthiness of some developers. The proportion of debt arising from bank loans to total liabilities was slightly higher for the second month in a row, although still low (6% in 2023 Q1 and 6% in 2022 Q4 vs. 5% in 2022 Q1). In year-on-year terms, the amount of long-term as well as short-term loans increased. Debt arising from long-term debt securities held by larger developers grew as did the value of bonds issued by the developers listed on the Catalyst market (by 1% on 2022 Q4 and 16% on 2022 Q1), while the number of issuers decreased. 2023 Q1 was the first quarter in two years when the average interest on coupons of developer bonds had decreased slightly on the preceding quarter (to 10.18%). In 2023 Q1, investment outlays by larger developers were slightly higher than in 2022 Q1 and 2021 Q1.

As the scale of contracting for housing decreased in 2022, prepayments by home buyers dropped quarter-on-quarter by several percent, especially from 2022 Q2 to 2022 Q4. The decrease in prepayments was not as dramatic as the drop in new contracts, because the home buyers had no problem paying instalments, which ensured requisite funding for the timely continuation of construction works. With a slight improvement in contracting for housing in 2023 Q1, the balance of prepayments received grew by 9% on the end of December 2022, but still it was 10% lower than at the end of 2022 Q1. At the end of March 2023, prepayments constituted 15% of total liabilities, vs. 14% as at 31.12.2022 and over 18% as at 31.03.2022. What suggests that developers pursued a more prudent financial management policy in 2023 Q1 than in 2022 Q4 is a smaller increase in liabilities to contractors (1% up) than in prepayments by home buyers (9% up) and a 8% drop in the average debt arising from bank loans. There was a slight improvement in the developers' performance with regard to the payment of short-term liabilities in year-on-year terms (from 182 days to 160 days), but the receivables collection period became longer (from 63 days to 84 days).

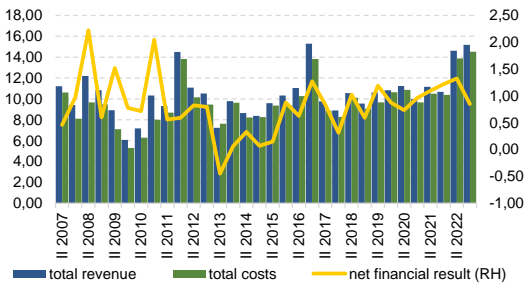
In spite of the pressure from increasing home construction costs, the operating expense ratio remained positive and virtually unchanged (0.86 in 2023 Q1 vs. 0.84 on average throughout 2022 and 0.84 in 2021). The smaller number of commenced projects led to stabilisation of the construction costs. The values of particular components of operating expenses dipped slightly while payroll expenses decreased more in 2023 Q1, compared to 2022 Q4. The structure of operating expenses did not change much (63% of those were third party services, the remainder being own costs, 21% of which were materials and energy consumed and 10% wages).

While the level of contracting for housing was low, the consistently high level of construction in progress remains a problem, which coupled with limited income and high construction costs may lead to the worsening of the financial standing of less experienced developers and diversification of the situation in the sector. On average, the financial liquidity of the bigger developers remained at a safe and satisfactory level in 2023 Q1.

According to the financial accounts available until December 2022, the dozen-or-so WSE-listed developers reported an increase in the share of inventories in total assets, which means first of all an increase in work in progress, in spite of the large number of dwellings handed over to the buyers in 2022 Q4. This group of development firms report the best operating expense ratio of the three categories of entities analysed, robust liquidity, a short receivable collection period and solid debt and security ratios. They reported a rather long payables payment period (192 days), while the share of liabilities to contractors decreased to 18% of total liabilities. Equity (43% of total liabilities) and prepayments from home buyers (22% of total liabilities) remained the main stable source of financing. The improvement in the profitability ratios, including the sales margin in 2022 Q4 was a consequence of the handing over of finished dwellings in the period. In 2022 Q4, the WSE-listed developers achieved on average the following ratios: 19.9% ROS, 8.6% ROE and 3.7% ROA. They had been worse in 2022 Q3: 14.2% ROS, 3.7% ROE and 1.4% ROA and a year before, i.e. in 2021 Q4 (17.9% ROS, 7.5% ROE and 3.2% ROA). The highest levels of total revenues, total expenses and net profit since 2008 were reported in 2022 Q4, which confirms the large volume of housing production. Positive cash flows in operating activities and negative ones in financing activities mean that the WSE-listed developers generated high profits, which they used for investments and the repayment of financial liabilities.

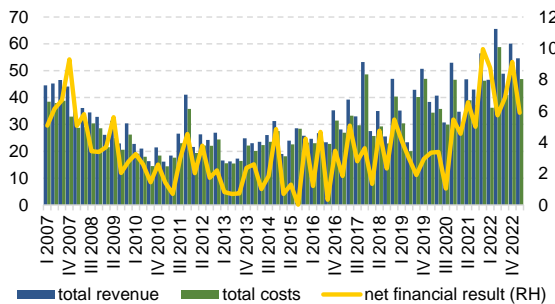
In their financial accounts for the second half of 2022, small businesses (with 9-49 staff) reported very high levels of work in progress, a low level of finished dwellings, a stable structure of liabilities and a slight improvement in performance (receivables collection within 31 days, payables payment in 75 days on average). A less satisfactory operating expense ratio (0.91) as well as lower and less satisfying profitability ratios (5.8% ROS, 5.1% ROE and 1.9% ROA in the second half of 2022 vs. 9.5% ROS, 8.2% ROE and 2.9% ROA in the first half of 2022; and 11.8% ROS, 7.9% ROE and 3.2% ROA in the second half of 2022) suggest a more difficult situation of smaller businesses than that of major developers. The percentage of profitable small developers decreased a little in the second half of 2022 (to 79%) compared to the second half of 2021 (81%). Although the share of equity decreased and the external debt increased in 2022, the liquidity and the liabilities to equity ratio remained at a safe and satisfactory level. The significant increase in the average materials and energy consumed with a drop in third party services mean that the companies increasingly used their own resources in conducting construction works.

Figure 91 Economic indicators of developers with 9–49 staff



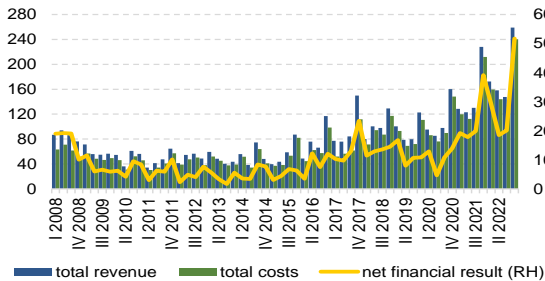
Source: NBP, based on Statistics Poland (F01)

Figure 92 Economic indicators of developers with more than 49 staff



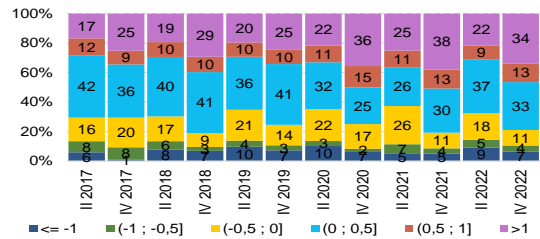
Source: NBP, based on Statistics Poland (F01)

Figure 93 Economic indicators of the developers listed on the WSE



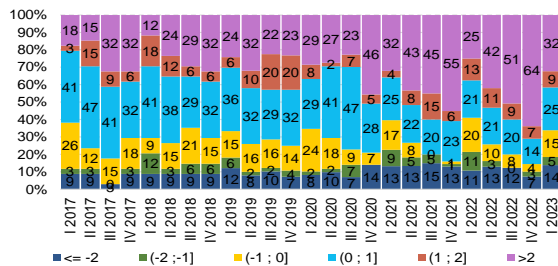
Source: NBP, based on Quant Research sp. z o.o.

Figure 94 Developers with 9–49 staff broken down by net financial result (in %)



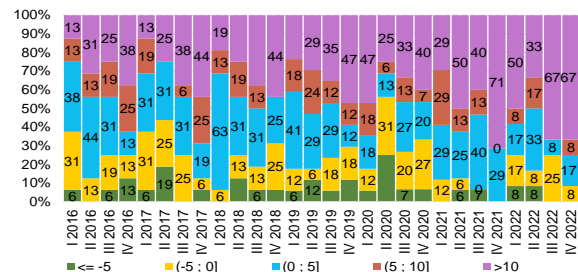
Source: NBP, based on Statistics Poland (F01)

Figure 95 Developers with more than 49 staff broken down by net financial result (in %)



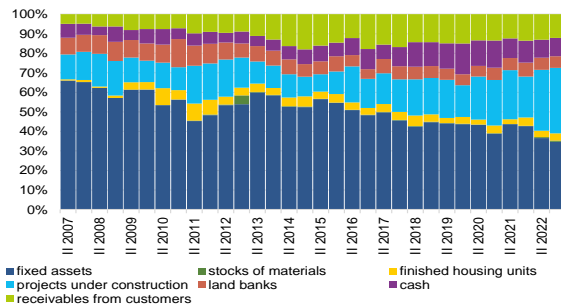
Source: NBP, based on Statistics Poland (F01)

Figure 96 Developers listed on the WSE broken down by net financial result (in %)



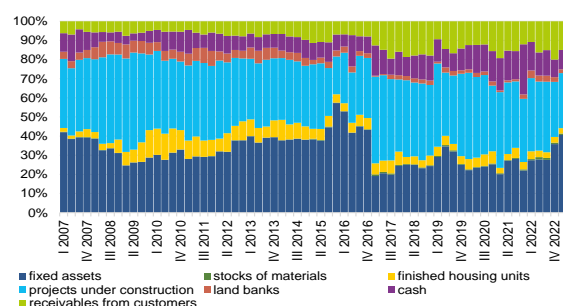
Source: NBP based on Quant Research sp. z o.o.

Figure 97 Structure of assets of developers with 9–49 staff



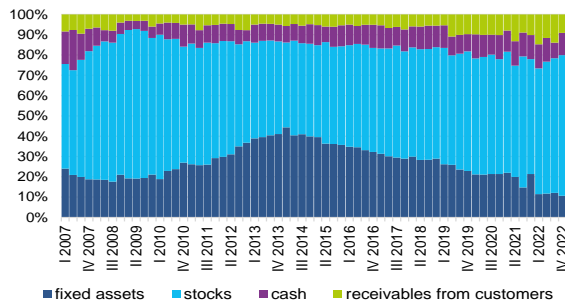
Source: NBP, based on Statistics Poland (F01)

Figure 98 Structure of assets of developers with more than 49 staff



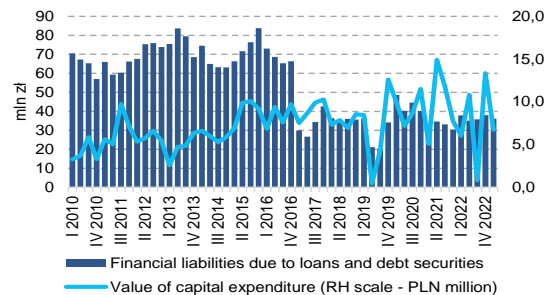
Source: NBP, based on Statistics Poland (F01)

Figure 99 Structure of assets of the developers listed on the WSE



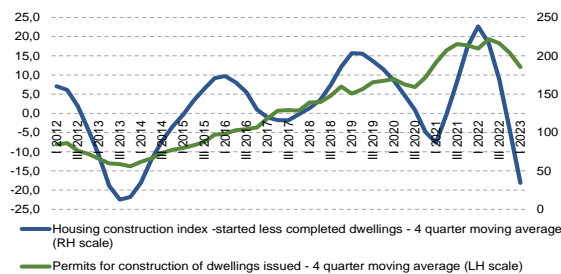
Source: NBP based on Quant Research sp. z o.o.

Figure 100 Investment activity of developers with more than 49 staff



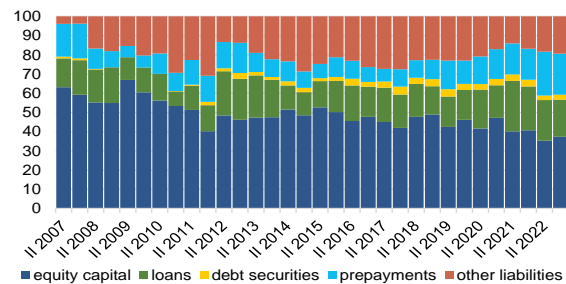
Source: NBP, based on Statistics Poland (F01)

Figure 101 Housing construction indicator and building permits issued for dwellings for sale or rental



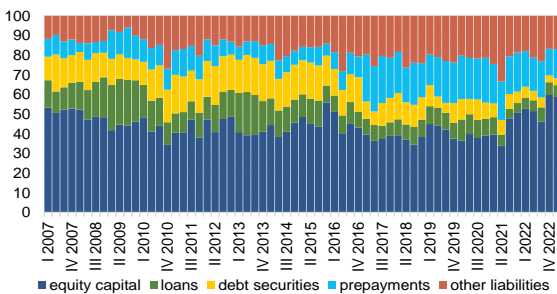
Source: NBP, based on Statistics Poland

Figure 102 Structure of liabilities of developers with 9–49 staff



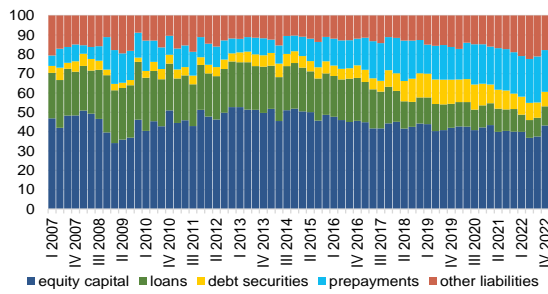
Source: NBP, based on Statistics Poland (F01)

Figure 103 Structure of liabilities of developers with more than 49 staff



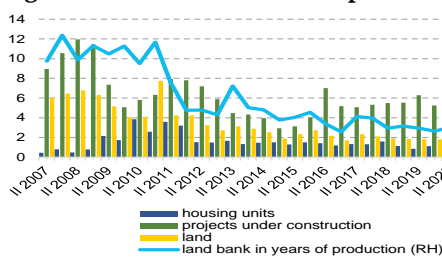
Source: NBP, based on Statistics Poland (F01)

Figure 104 Structure of liabilities of the developers listed on the WSE



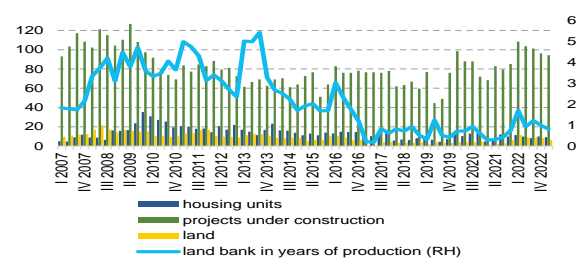
Source: NBP based on Quant Research sp. z o.o.

Figure 105 Situation of developers with 9–49 staff



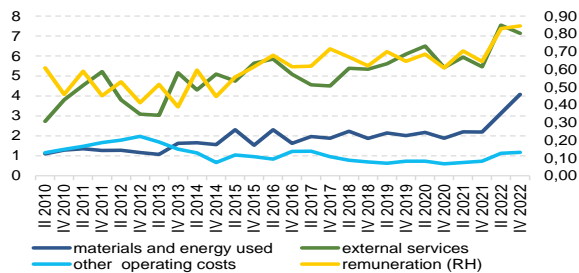
Source: NBP, based on Statistics Poland (F01)

Figure 106 Situation of developers with more than 49 staff



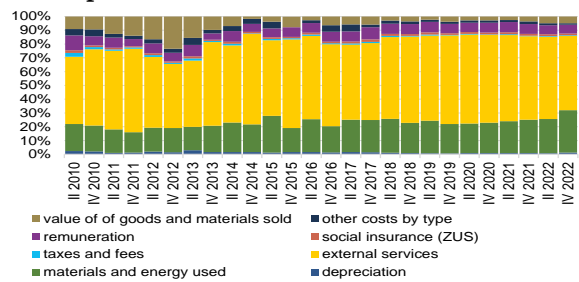
Source: NBP, based on Statistics Poland (F01)

Figure 107 Operating expenses of developers with 9–49 staff



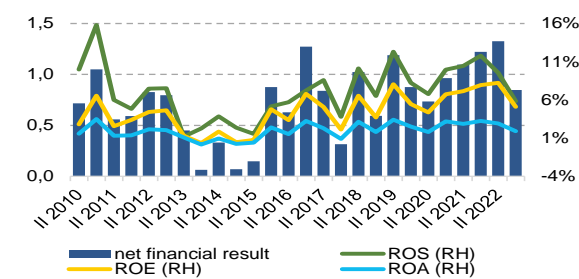
Source: NBP, based on Statistics Poland (F01)

Figure 109 Structure of operating expenses of developers with 9–49 staff



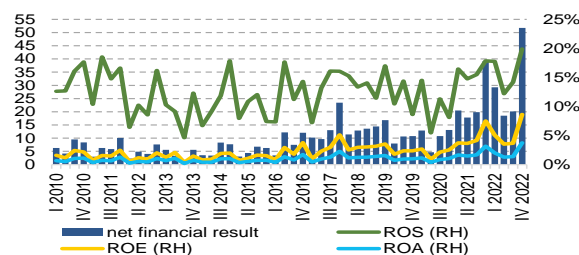
Source: NBP, based on Statistics Poland (F01) and financial statements

Figure 111 Profitability of developers with 9–49 staff



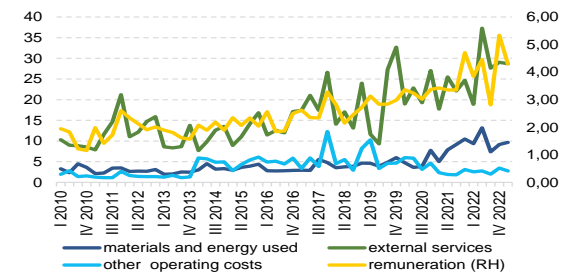
Source: NBP, based on Statistics Poland (F01)

Figure 113 Profitability of the developers listed on the WSE



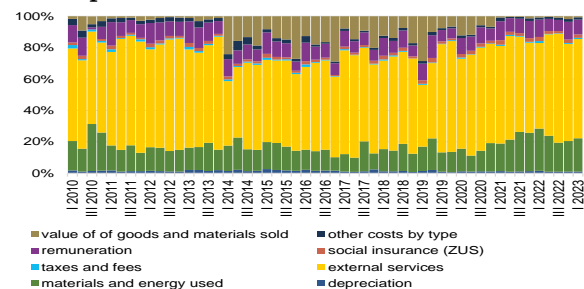
Source: NBP, based on Quant Research sp. z o.o.

Figure 108 Operating expenses of developers with more than 49 staff



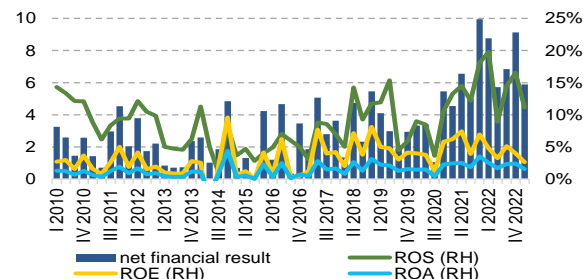
Source: NBP, based on Statistics Poland (F01)

Figure 110 Structure of operating expenses of developers with more than 49 staff



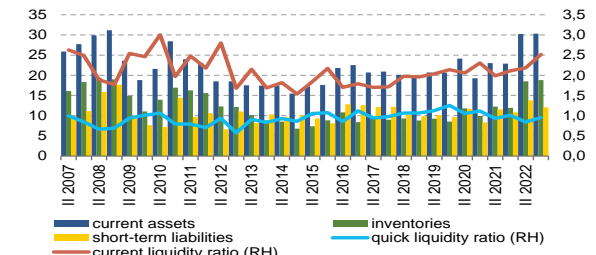
Source: NBP, based on Statistics Poland (F01) and financial statements

Figure 112 Profitability of developers with more than 49 staff



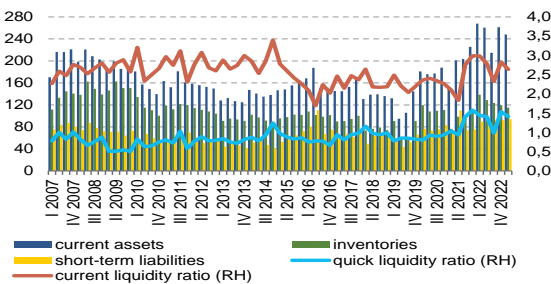
Source: NBP, based on Statistics Poland (F01)

Figure 114 Liquidity ratios of developers with 9–49 staff



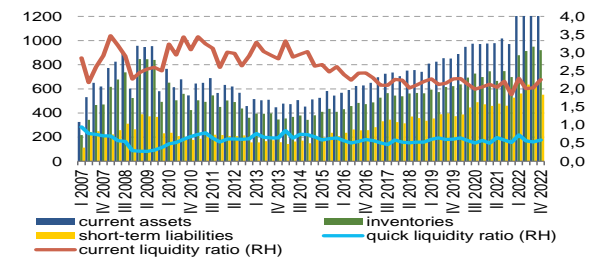
Source: NBP, based on Statistics Poland (F01)

Figure 115 Liquidity ratios of developers with more than 49 staff



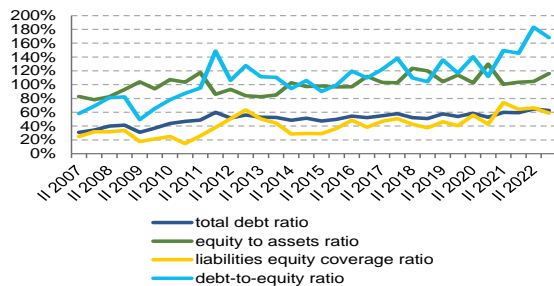
Source: NBP, based on Statistics Poland (F01)

Figure 116 Liquidity ratios of the developers listed on the WSE



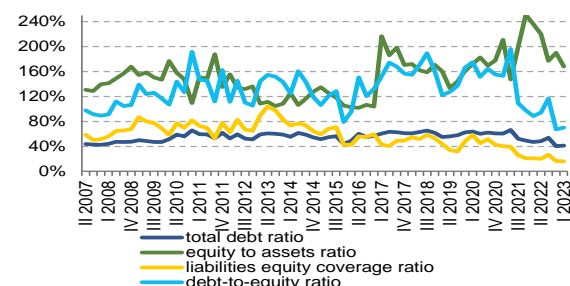
Source: NBP, based on Quant Research sp. z o.o.

Figure 117 Debt and equity ratios of developers with 9-49 staff



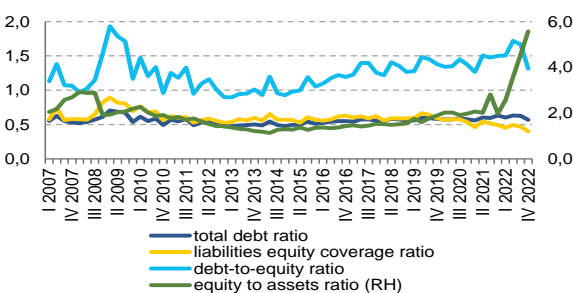
Source: NBP, based on Statistics Poland (F01)

Figure 118 Debt and equity ratios of developers with more than 49 staff



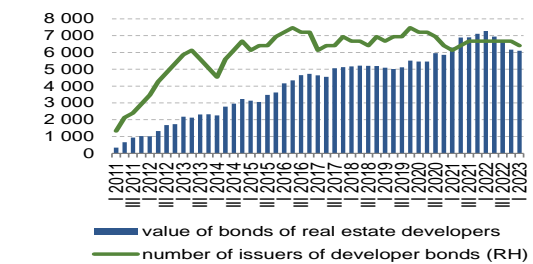
Source: NBP, based on Statistics Poland (F01)

Figure 119 Debt and equity ratios of the developers listed on the WSE



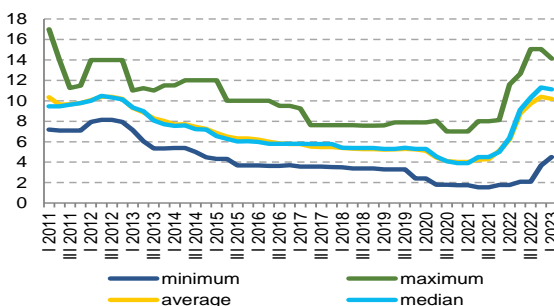
Source: NBP, based on Quant Research sp. z o.o.

Figure 120 Value of developer bonds and the number of issuers of developer bonds in the Catalyst market



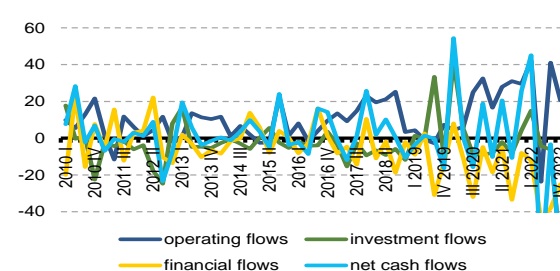
Source: NBP, based on Catalyst data

Figure 121 Coupon rates on bonds issued by the developers listed on the Catalyst market



Source: NBP based on danych Catalyst

Figure 122 Cash flows of the WSE-listed developers



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

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

37

A nearly one year of a dramatic decline in the sales of dwellings in the primary markets of all the voivodeship capitals followed by a slight recovery in demand in 2023 Q1 and the announcement of the launch of a government's programme supporting home purchases (the so called "Secure loan 2+") created the conditions for improvement in the orders portfolio of the residential and non-residential construction industry. According to Statistics Poland, sentiments in the construction sector improved in 2023 Q1 as did the financial performance of bigger residential and non-residential construction companies. In year-on-year terms, such companies (with over 49 staff) reported a 21% increase in total revenues, which, given a smaller increase in total expenses (15%) pushed the net financial result up by 114% on average. An improvement in the sales margin to 10.7% from 6.5% in 2022 Q1 and a decrease in the operating expense ratio to 0.89 from 0.93 in 2022 Q1 may be the result of bigger price hikes than the growth in the main components of operating expenses. In 2023 Q1, the differences in the pace of changes in the individual components of operating expenses pointed to a slower growth in the prices of building materials but faster growth in wages. The changes in the relationships between the individual cost components led to an improvement in the profitability ratios.

The dynamic growth in revenues led to an increase in total assets (17% y/y), mainly due to higher receivables from home buyers (21% up y/y) and a protraction of the receivables collection period. The changes in assets improved their productivity. Return on Assets (ROA) went up to 2.9% in 2023 Q1 from 2.0% in 2022 Q4 and 1.6% in 2022 Q1. The relationship between the inventories and work in progress in 2023 Q1 was greater than the average from the prior periods, which may either be a burden on income or serve as an extra premium in deferred income.

The improvement in net profit enabled the construction companies to increase the share of equity in total liabilities, which – given nominal increases – made it possible for them to reduce the share of payables to contractors from 43% to 41% y/y and a small share of loans. As a result, Return on Equity (ROE) improved, growing to 6.5% in 2023 Q1 from 6.2% in 2022 Q4 and 4.1% in 2022 Q1. The good financial performance contributed to an improvement in the debt and equity ratios.

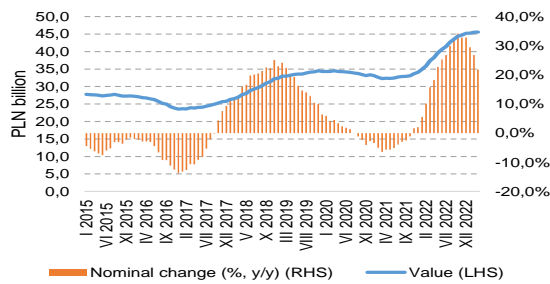
In 2023 Q1, bigger construction companies enjoyed a good financial standing in spite of the continuing growth in the prices of goods and services. The average balances of current assets at the end of 2023 Q1 show that a typical company with more than 49 staff will continue as a going concern for several months to follow, without any major concern about a loss of liquidity. The liquidity ratios improved in 2023 Q1 on the earlier periods and were relatively high and safe.

According to the financial accounts available until the second half of 2022, smaller construction companies (with 9-49 staff) saw their financial standing improve. The contracts they performed were usually for shorter terms than those of larger companies, which enables them to budget for increased costs and prices of services

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 the second half of 2022) and companies with more than 49 staff (data available on a quarterly basis until 2023 Q1) which perform construction works connected with the construction of residential and non-residential buildings (PKD 41.20).

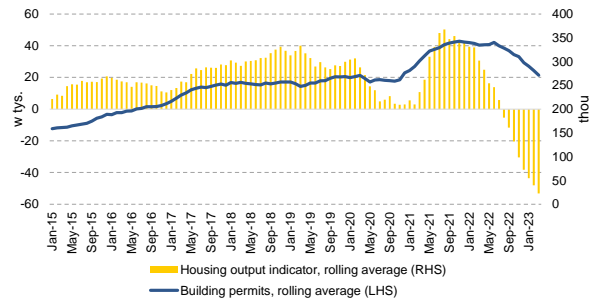
more realistically. The good standing of investors, including mainly developers, and the completion of works in building projects on schedule translated into an improved financial standing in the second half of 2022 and resulted in an improvement in the profitability ratios, liquidity, debt and liabilities to equity ratios. The higher increase in revenues than in income ensured a better net profit, which enabled the companies to increase their equity.

Figure 123 Construction and assembly output – construction of buildings (PKD 41), 12-month moving sum.



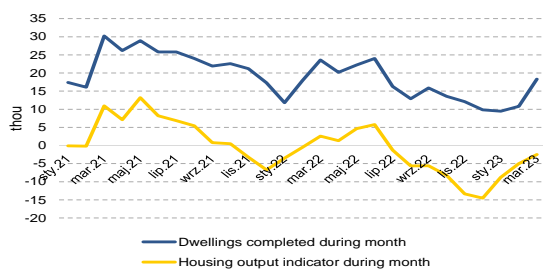
Source: NBP, based on Statistics Poland

Figure 124 Total housing construction output per month, 12-month moving average.



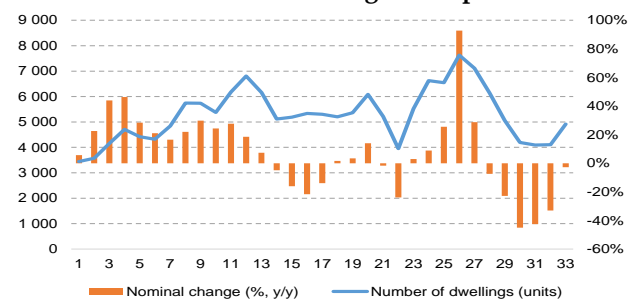
Source: NBP, based on Statistics Poland

Figure 125 Total housing construction output per month



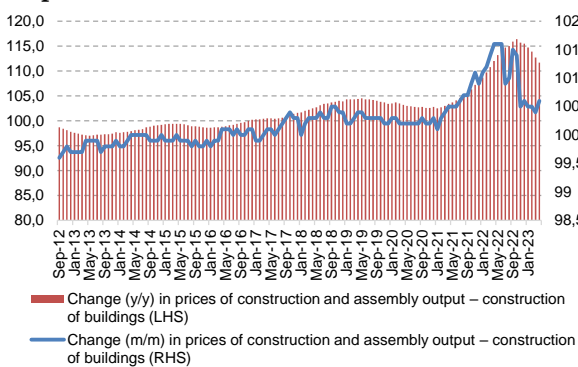
Source: NBP, based on Statistics Poland

Figure 126 Aggregate number of contracts for housing construction awarded to leading developers



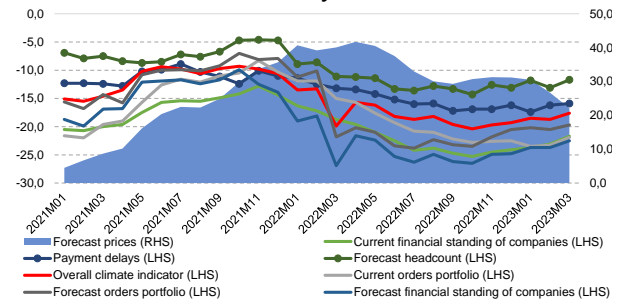
Source: NBP, based on Spectis – Monthly Report, May 2023

Figure 127 Prices of construction and assembly output



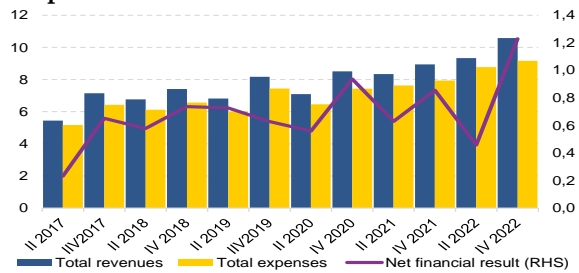
Source: NBP, based on Statistics Poland

Figure 128 Selected indicators of business climate in the construction industry



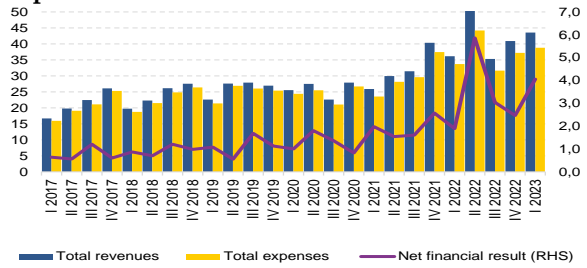
Source: NBP, based on Statistics Poland

Figure 129 Economic indicators of construction companies with 9-49 staff



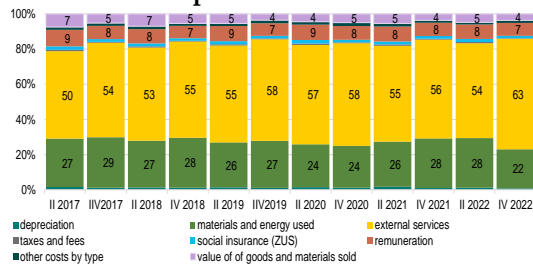
Source: NBP, based on Statistics Poland

Figure 130 Economic indicators of construction companies with more than 49 staff



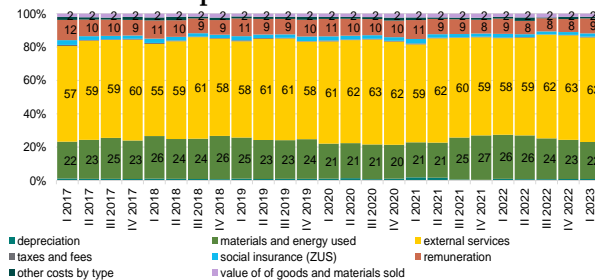
Source: NBP, based on Statistics Poland

Figure 131 Structure of operating expenses of construction companies with 9-49 staff



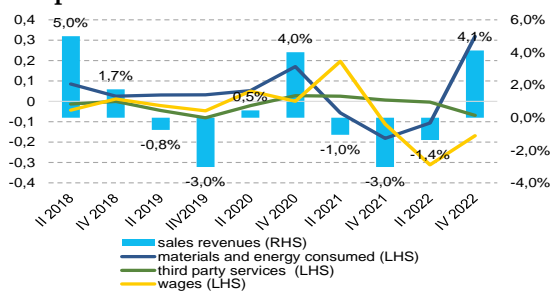
Source: NBP, based on Statistics Poland

Figure 132 Structure of operating expenses of construction companies with more than 49 staff



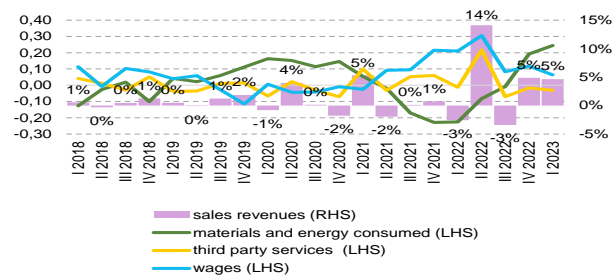
Source: NBP, based on Statistics Poland

Figure 133 Relationship between y/y change in sales revenues and operating expenses, as well as main components thereof in construction companies with 9-49 staff



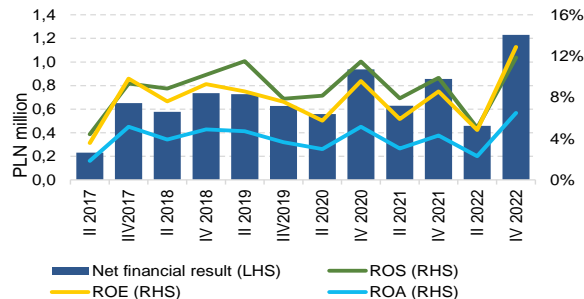
Source: NBP, based on Statistics Poland

Figure 134 Relationship between y/y change in sales revenues and operating expenses, as well as main components thereof in construction companies with more than 49 staff



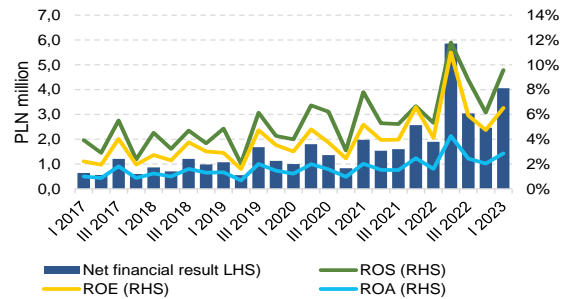
Source: NBP, based on Statistics Poland

Figure 135 Profitability of construction companies with 9-49 staff



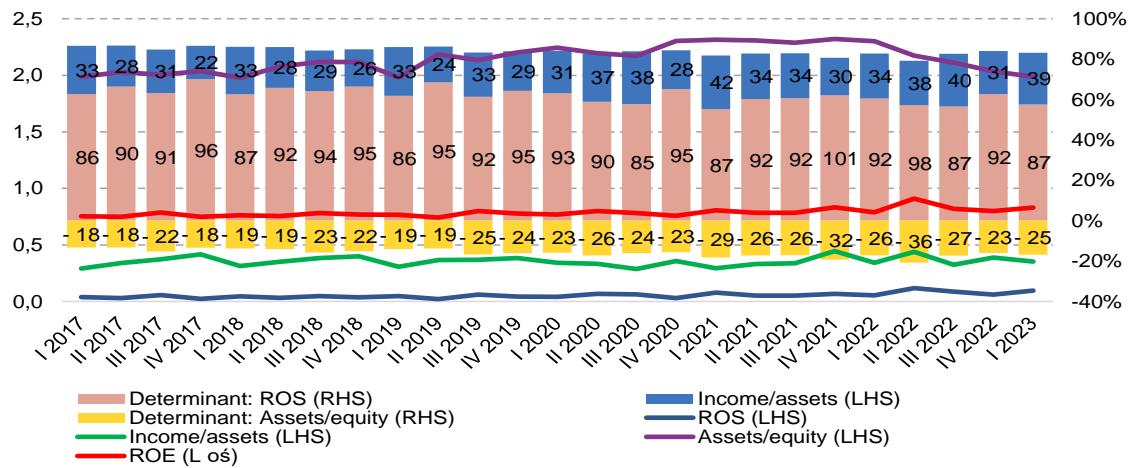
Source: NBP, based on Statistics Poland

Figure 136 Profitability of construction companies with more than 49 staff



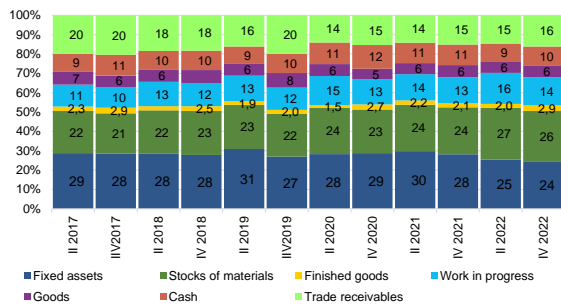
Source: NBP, based on Statistics Poland

Figure 137 Return on Equity and its determinants (Du Pont method) of construction companies with more than 49 staff



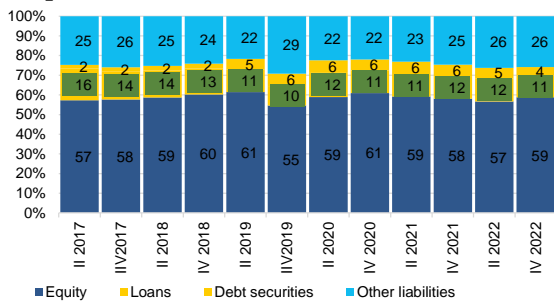
Source: NBP, based on Statistics Poland

Figure 138 Structure of assets of construction companies with 9-49 staff



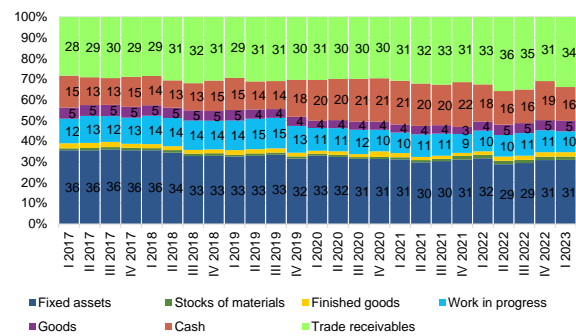
Source: NBP, based on Statistics Poland

Figure 140 Structure of liabilities of construction companies with 9-49 staff



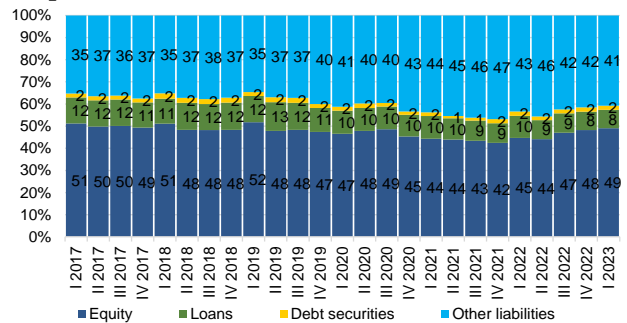
Source: NBP, based on Statistics Poland

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



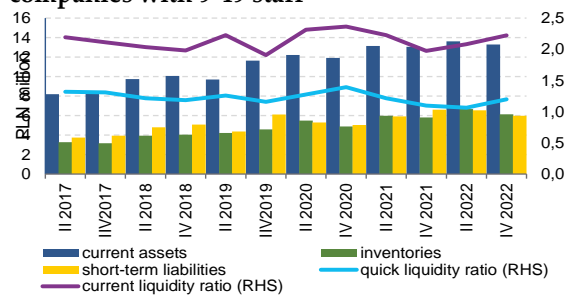
Source: NBP, based on Statistics Poland

Figure 141 Structure of liabilities of construction companies with more than 49 staff



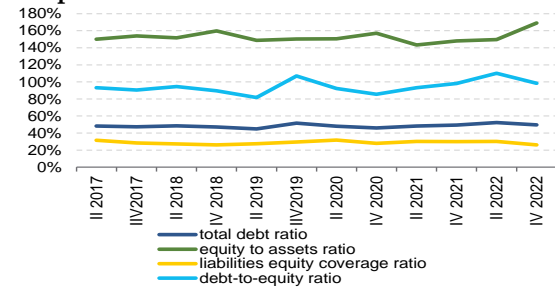
Source: NBP, based on Statistics Poland

Figure 142 Liquidity ratios of construction companies with 9-49 staff



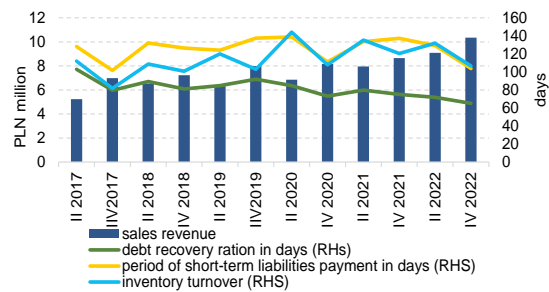
Source: NBP, based on Statistics Poland

Figure 144 Debt and equity ratios of construction companies with 9-49 staff



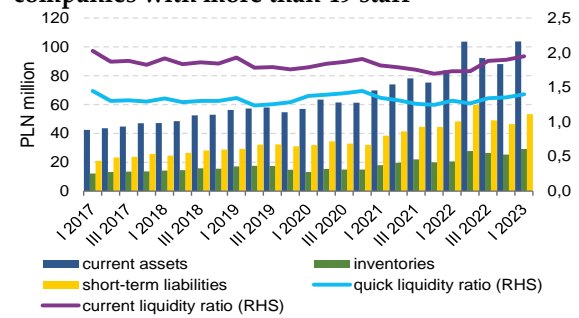
Source: NBP, based on Statistics Poland

Figure 146 Inventory turnover cycle, receivables collection and payables payment periods of construction companies with 9-49 staff



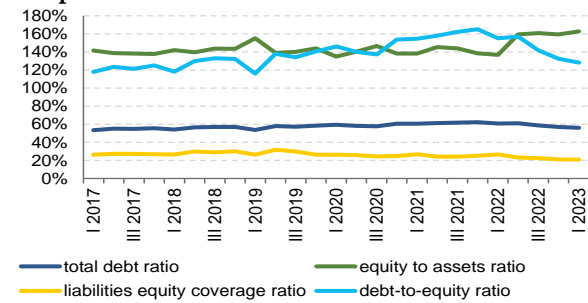
Source: NBP, based on Statistics Poland

Figure 143 Liquidity ratios of construction companies with more than 49 staff



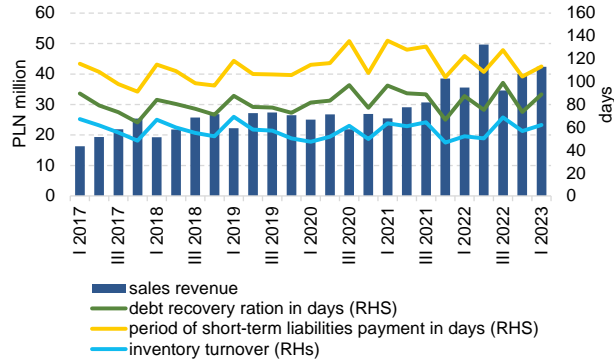
Source: NBP, based on Statistics Poland

Figure 145 Debt and equity ratios of construction companies with more than 49 staff



Source: NBP, based on Statistics Poland

Figure 147 Inventory turnover cycle, receivables collection and payables payment periods of construction companies with more than 49 staff



Source: NBP, based on Statistics Poland

Analysis of the financial standing of the wholesalers of building materials³⁸

A smaller increase in construction costs than in the earlier periods was one of the major factors determining the profitability of projects and the liquidity of companies during 2023 Q3. According to the data supplied by Grupa Polskie Składy Budowlane, from January to March 2023, the prices of building materials grew on average by 14.0% on the corresponding period of 2022 in almost all categories of goods under analysis, which means that their growth slowed down a little at the beginning of the year (25% up during the period from January to December 2022 and 27% up in January-September 2022). In the period from January to March 2023, the prices increased in 19 of the analysed categories, as follows: cement, lime (+44%), automotive (+23%), waterproofing membranes (+22%), drywall partitioning (+21%), finishing (+19%), tiles, bathrooms, kitchens (+18%), walls, chimneys (+17%), paints and varnishes (+16%), construction chemicals (+16%), garden and hobby (+15%), installations, heating (+14%), joinery (+13%), tools (+11%), fittings, household appliances (+11%), thermal insulation (+7%), surroundings of the house (+7%), decorations (+7%), roofs, gutters (+6%) and lighting, electricity (+6%). Prices decreased only in the OSB and wood category (-6%). A year ago, i.e. from January to March 2022, the prices of materials grew much more (29.0%).

The analysis of the data reported by larger wholesalers (with more than 49 staff) in the F01 reports available for periods until March 2023 showed a slight weakening of their general financial standing in 2023 Q1. The average liquidity decreased below the satisfactory level, which – coupled with a continued decline in demand for building materials and rising competition – might lead to the worsening of the financial standing of the wholesalers of building materials and the growing of payment bottlenecks. Such entities reported decreasing profitability ratios, while the ratios reported by smaller entities (with 9-49 staff) were better. According to the available financial accounts, smaller companies fared visibly better and had a better financial liquidity than bigger entities.

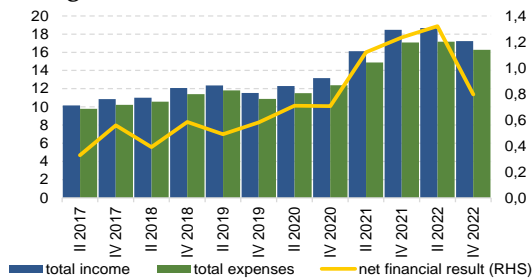
In 2023 Q1, the group of larger wholesalers experienced a bigger drop in the averaged total revenues than in total expenses compared to the corresponding period of 2022. When compared to 2022 Q4, revenues and expenses increased, though the latter grew a little more. As a result, the net financial result visibly shrank when compared to 2022 Q4 (by 68%), and to 2022 Q1 (by 83%). In the analysed 2023 Q1, the percentage of entities reporting a net profit clearly decreased (to 54% from 97% in 2022 Q4 and 80% in 2022 Q1), which shows that the financial standing of the companies in this category is highly diversified. The decrease in the net financial result and in the percentage of wholesalers reporting profit means that most companies achieved less satisfactory margins on the building materials sold than in the previous periods. The average liquidity in the group of larger wholesalers went slightly below the satisfactory level, which was due to the high share of payables to contractors (38% of total liabilities in 2023 Q1). The small dip in inventories might be a result of the adjustment of the wholesalers to the situation in the housing market (a smaller number of projects started and a drop in demand), though the share of inventories in total assets remained high (26% in 2023 Q1), in fact higher than before 2021 Q3 (23% on average). The periods of inventory turnover cycle, receivables collection and payment to suppliers became longer. The share of receivables in total assets grew and so did the share of

³⁸ 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 the second half of 2022) and bigger companies with more than 49 staff (data available on a quarterly basis until 2023 Q1) 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 March 2023, December, September and March 2022, Grupa PSB Handel S.A., January and April 2023, October and April 2022).

payables to suppliers in relation to the preceding quarter. Equity remained the stable and dominant source of financing and its share in total liabilities approximated 50% at the end of March 2023. Total debt, the assets to equity ratio, the liabilities to equity ratio and the debt to equity ratio remained at a good and safe level. The analysis of the external sources of funding found a stable share of bank loan financing (12%-13% of total liabilities for more than two years).

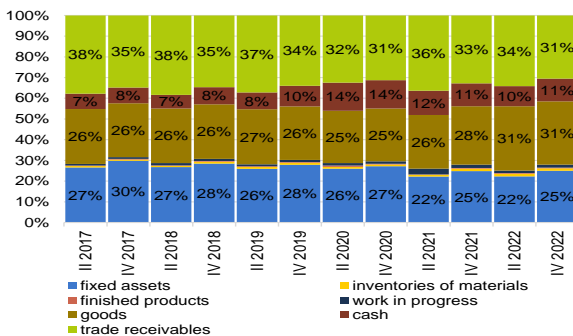
Based on data available until December 2022, it was established that the profitability ratios in the group of small wholesalers (with 9-49 staff) decreased in comparison to the preceding quarter (4.7% ROS, 9.8% ROE and 5.4% ROA in the second half of 2022 vs. 7.2% ROS, 16.1% ROE and 8.3% ROA in the first half of 2022), although they were more satisfactory than in the group of larger wholesalers. A slight weakening of the financial standing of small wholesalers is also illustrated by the less satisfactory operating expense ratio (0.94 in the second half of 2022 and 0.93 on average in the whole 2022). The ratio was much worse in the group of larger wholesalers (0.99 in 2023 Q1 and 0.95 on average in the whole 2022). Smaller wholesalers reported a decrease in total revenues as well as total expenses in the second half of 2022 in relation to the corresponding period of 2021 (by 7% and 5%, respectively), which resulted in a 36% decrease in net profit. The percentage of profitable wholesalers in this category decreased to 92% in the second half of 2022 from 95% in the second half of 2021, which means that the percentage of profitable small wholesalers of building materials is much higher than that of developers (79% smaller companies in the second half of 2022 r. and 66% larger entities in 2023 Q1). The situation of smaller developers is less diversified than that of larger ones and of developers. A major percentage of smaller wholesalers reported profits, though at low sales margins.

Figure 148 Economic indicators of wholesalers of building materials with 9-49 staff



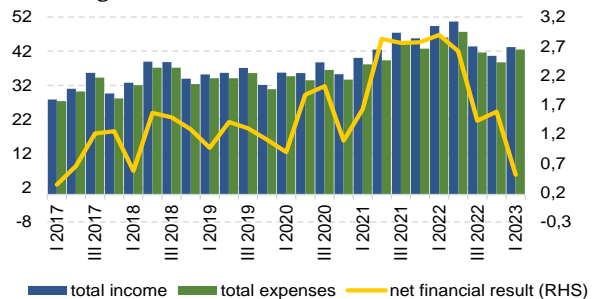
Source: NBP, based on Statistics Poland (F01)

Figure 150 Structure of assets of wholesalers of building materials with 9-49 staff



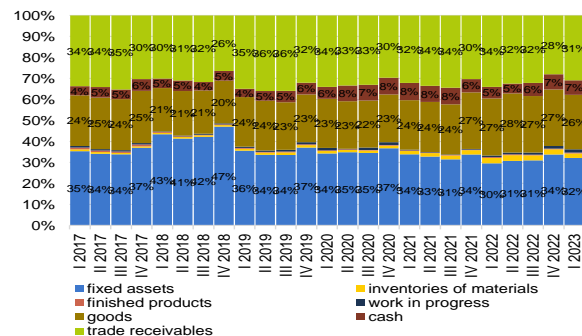
Source: NBP, based on Statistics Poland (F01)

Figure 149 Economic indicators of wholesalers of building materials with more than 49 staff



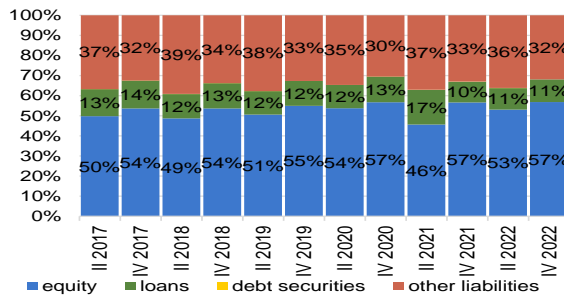
Source: NBP, based on Statistics Poland (F01)

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



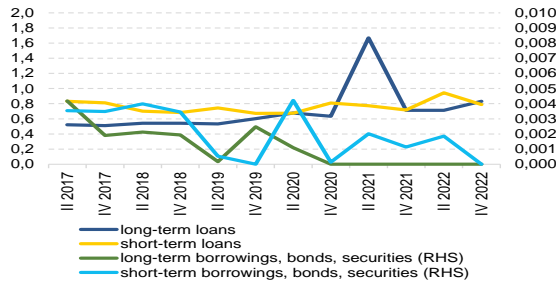
Source: NBP, based on Statistics Poland (F01)

Figure 152 Structure of liabilities of wholesalers of building materials with 9-49 staff



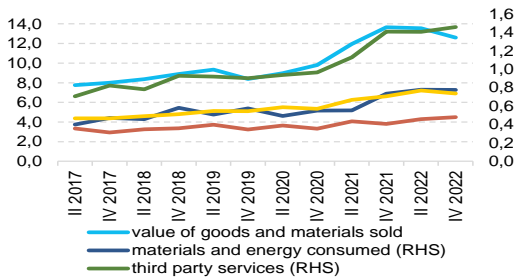
Source: NBP, based on Statistics Poland (F01)

Figure 154 Sources of financing of wholesalers of building materials with 9-49 staff



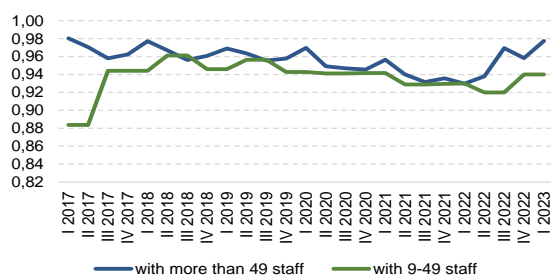
Source: NBP, based on Statistics Poland (F01)

Figure 156 Operating expenses of wholesalers of building materials with 9-49 staff



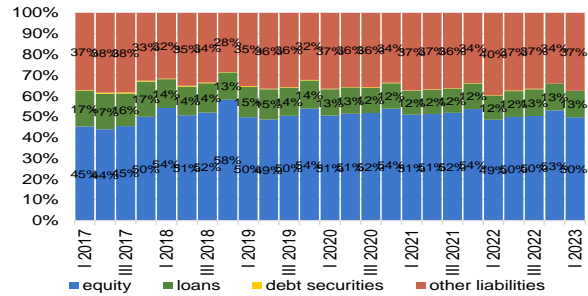
Source: NBP, based on Statistics Poland (F01)

Figure 158 Operating expense ratio by type of wholesalers of building materials



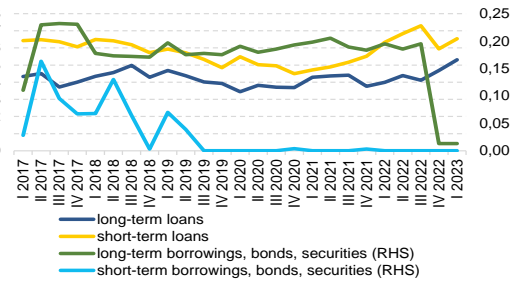
Source: NBP, based on Statistics Poland (F01)

Figure 153 Structure of liabilities of wholesalers of building materials with more than 49 staff



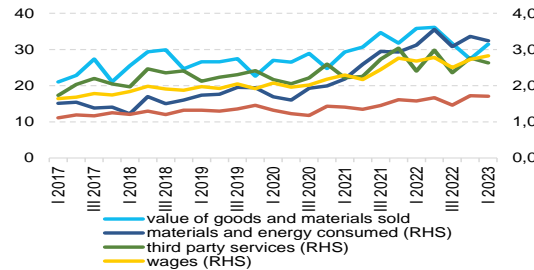
Source: NBP, based on Statistics Poland (F01)

Figure 155 Sources of financing of wholesalers of building materials with more than 49 staff



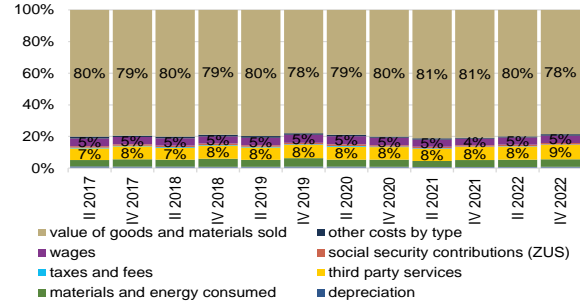
Source: NBP, based on Statistics Poland (F01)

Figure 157 Operating expenses of wholesalers of building materials with more than 49 staff



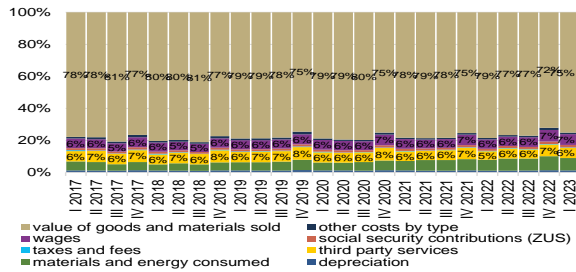
Source: NBP, based on Statistics Poland (F01)

Figure 159 Structure of operating expenses of wholesalers of building materials with 9-49 staff



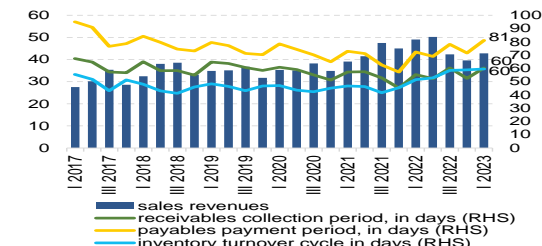
Source: NBP, based on Statistics Poland (F01)

Figure 160 Structure of operating expenses of wholesalers of building materials with more than 49 staff



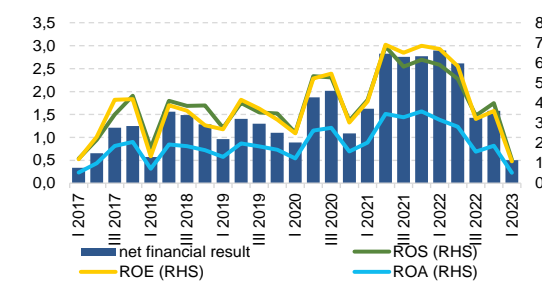
Source: NBP, based on Statistics Poland (F01)

Figure 162 Inventory turnover cycle, receivables collection and payables payment periods of wholesalers of building materials with more than 49 staff



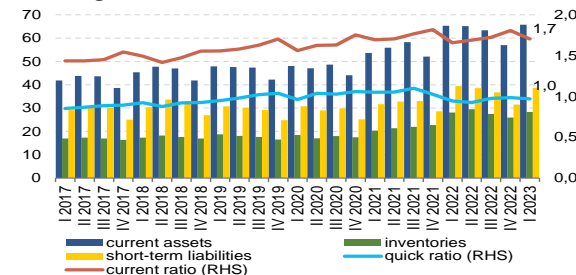
Source: NBP, based on Statistics Poland (F01)

Figure 164 Profitability of wholesalers of building materials with more than 49 staff



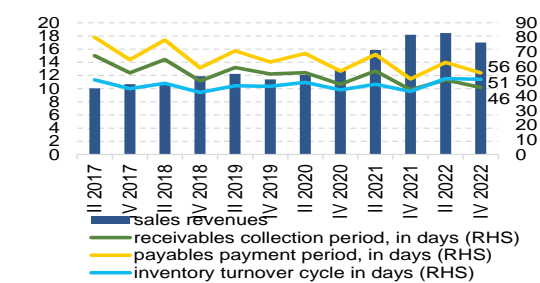
Source: NBP, based on Statistics Poland (F01)

Figure 166 Liquidity ratios of wholesalers of building materials with more than 49 staff



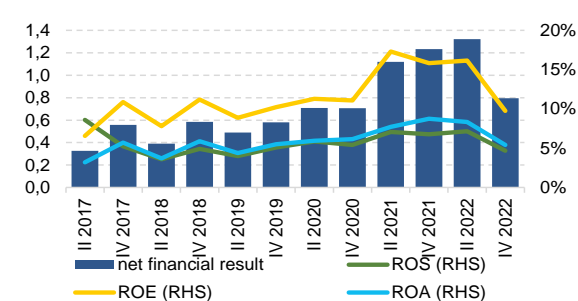
Source: NBP, based on Statistics Poland (F01)

Figure 161 Inventory turnover cycle, receivables collection and payables payment periods of wholesalers of building materials with 9-49 staff



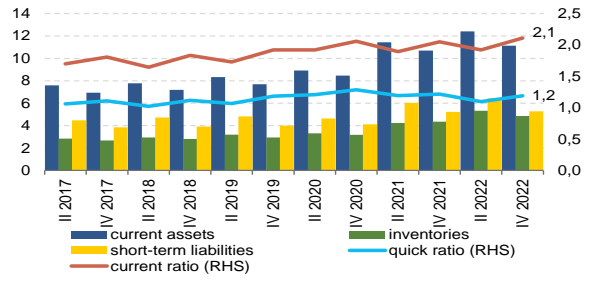
Source: NBP, based on Statistics Poland (F01)

Figure 163 Profitability of wholesalers of building materials with 9-49 staff



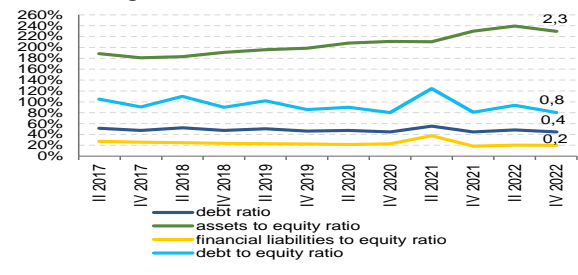
Source: NBP, based on Statistics Poland (F01)

Figure 165 Liquidity ratios of wholesalers of building materials with 9-49 staff



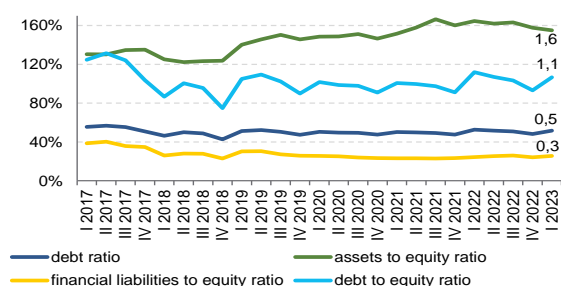
Source: NBP, based on Statistics Poland (F01)

Figure 167 Debt and equity ratios of wholesalers of building materials with 9-49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 168 Debt and equity ratios of wholesalers of building materials with more than 49 staff



Source: NBP, based on Statistics Poland (F01)

Analysis of the financial standing of producers of building materials³⁹

Several factors determined the financial standing and profitability of producers of building materials, as was the case of the other analysed groups of companies. They included high prices of commodities, a drop in demand for building materials while activity in the construction sector subsided, as well as general social and economic uncertainty. According to the financial data stated in F01 reports, the financial standing of larger producers of building materials (with more than 49 staff) remained stable and good in 2023 Q1, although they achieved worse profitability and liquidity ratios than smaller companies (with 9-49 staff).

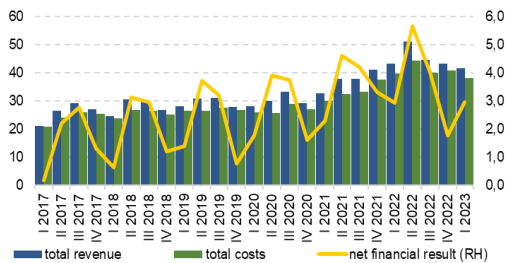
The financial accounts of bigger producers for 2023 Q1 showed a small decline in total revenues and total expenses, by about 4% in each case compared to 2022 Q1. Their 2023 Q1 financial result was 2% higher than the result for 2022 Q1. The percentage of profitable larger producers reached 70% at the end of 2023 Q1, which means that a significant percentage of them reported net losses (30%) and that the economic situation in the industry is diversified. In 2023 Q1, bigger producers achieved a Return on Sales of 7.4%, which was a little higher than in 2022 Q1 (6.9%). ROE and ROA remained virtually unchanged (3.6% and 2.1%, respectively). They maintained good efficiency of operations (receivables collection period of 47 days, payables period of 78 days). The inventory turnover cycle period was short (58 days) in spite of the higher level of inventory of materials, goods and finished products continuing since 2022 Q4. Operations were financed predominately with equity (61% of total liabilities at the end of 2023 Q1 and in the respective quarters of 2022, whereas the share was slightly higher in 2020 and 2021, i.e. approx. 64%). In the analysed 2023 Q1, their debt arising from bank loans increased to 14% of total liabilities (by 2 p.p.) compared to the amounts reported in 2021-2022. In the last two quarters, the operating expense ratio was less good (0.93 in 2023 Q1, 0.95 in 2022 Q4 vs. 0.88 – 0.90 in earlier periods).

Smaller producers enjoyed a better financial standing and a slight improvement in Return on Sales (9.9% in the second half of 2022 vs. 8.9% in the second half of 2021) and the operating expense ratio (0.89% in the second half of 2022 vs. 0.93% in the second half of 2021). The percentage of profitable small producers of building materials shrank to 76% at the end of the second half of 2022 vs. 82% at the end of 2021, which means an increase in the number of unprofitable producers and the diversification of the financial standing of the producers.

³⁹ 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 the second half of 2022) and companies with more than 49 staff (data available on a quarterly basis until 2023 Q1) which deal in the production of building materials (PKD 1623, 2223, 2320, 2332, 2351, 2352, 2361, 2362, 2363, 2364).

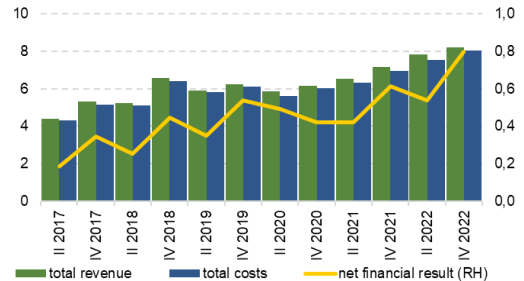
Unlike bigger producers, smaller ones achieved better ROE (13.9%) and ROA (8.2%), but their receivables collection periods were longer (57 days on average in 2022).

Figure 169 Economic indicators of producers of building materials with more than 49 staff



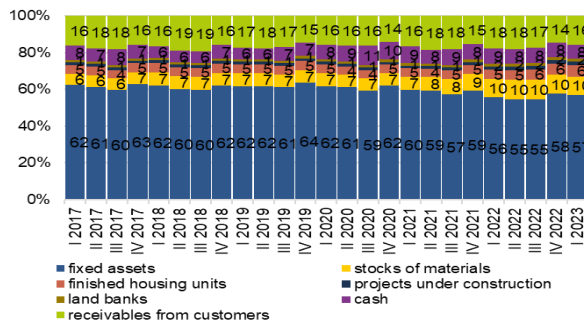
Source: NBP, based on Statistics Poland (F01)

Figure 170 Economic indicators of producers of building materials with 9-49 staff



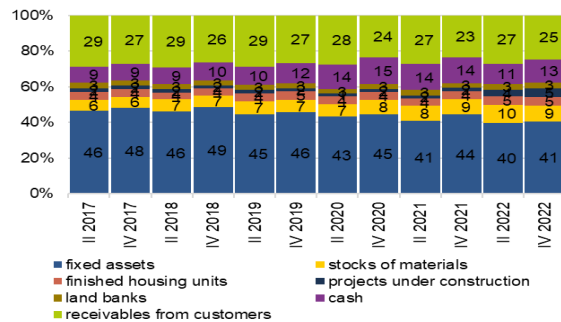
Source: NBP, based on Statistics Poland (F01)

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



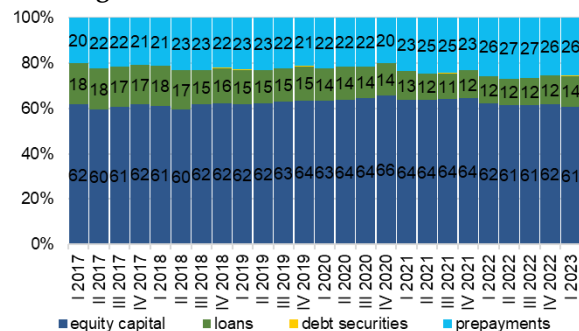
Source: NBP, based on Statistics Poland (F01)

Figure 172 Structure of assets of producers of building materials with 9-49 staff



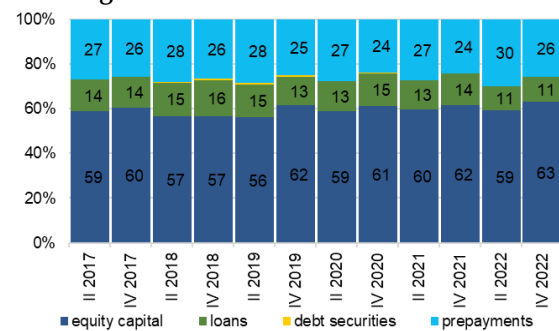
Source: NBP, based on Statistics Poland (F01)

Figure 173 Structure of liabilities of producers of building materials with more than 49 staff



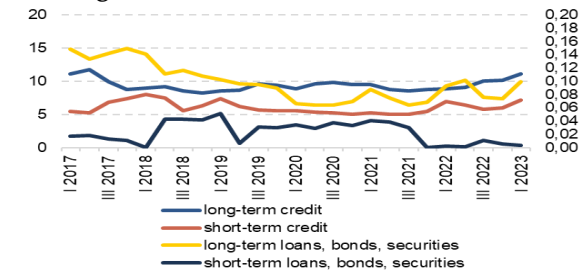
Source: NBP, based on Statistics Poland (F01)

Figure 174 Structure of liabilities of producers of building materials with 9-49 staff



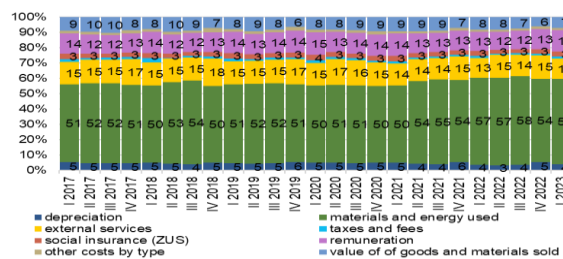
Source: NBP, based on Statistics Poland (F01)

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



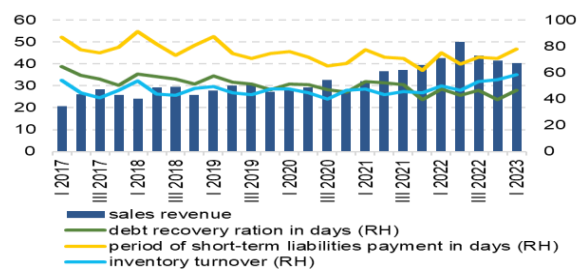
Source: NBP, based on Statistics Poland (F01)

Figure 177 Structure of operating expenses of producers of building materials with more than 49 staff



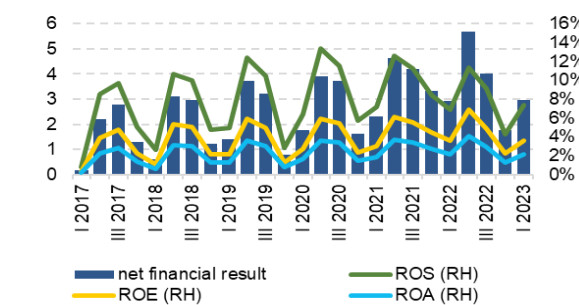
Source: NBP, based on Statistics Poland (F01)

Figure 179 Inventory turnover cycle, receivables collection and payables payment periods of producers of building materials with more than 49 staff



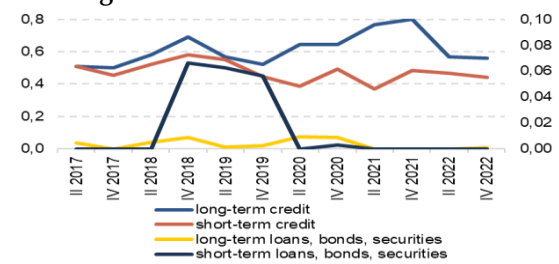
Source: NBP, based on Statistics Poland (F01)

Figure 181 Profitability of producers of building materials with more than 49 staff



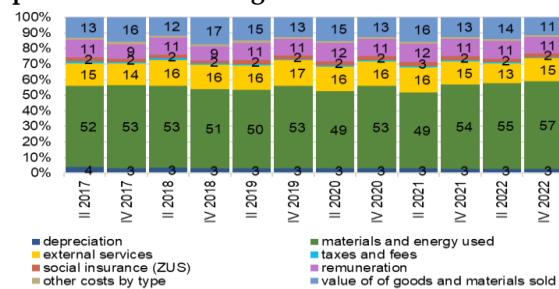
Source: NBP, based on Statistics Poland (F01)

Figure 176 Operating expenses of producers of building materials with 9-49 staff



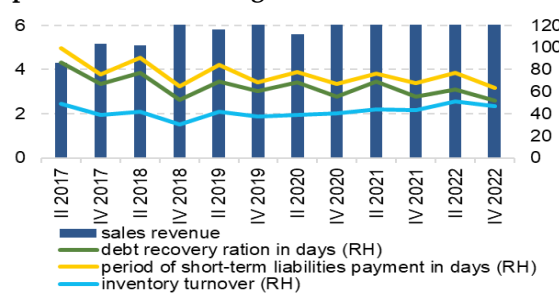
Source: NBP, based on Statistics Poland (F01)

Figure 178 Structure of operating expenses of producers of building materials with 9-49 staff



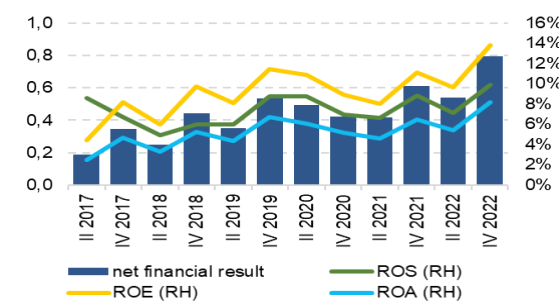
Source: NBP, based on Statistics Poland (F01)

Figure 180 Inventory turnover cycle, receivables collection and payables payment periods of producers of building materials with 9-49 staff



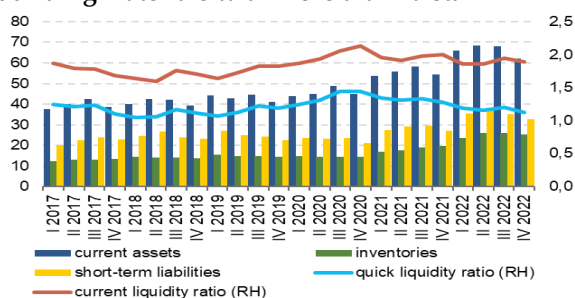
Source: NBP, based on Statistics Poland (F01)

Figure 182 Profitability of producers of building materials with 9-49 staff



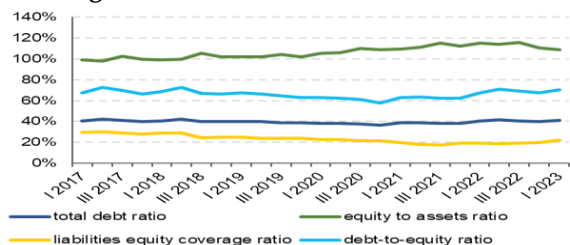
Source: NBP, based on Statistics Poland (F01)

Figure 183 Liquidity ratios of producers of building materials with more than 49 staff



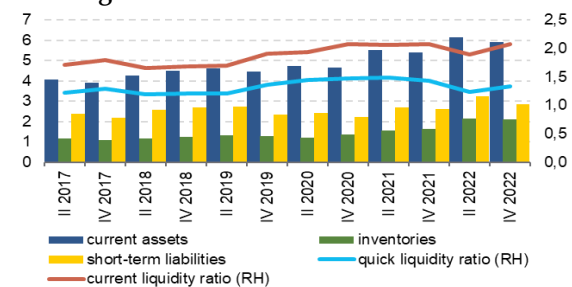
Source: NBP, based on Statistics Poland (F01)

Figure 185 Debt and equity ratios of producers of building materials with more than 49 staff



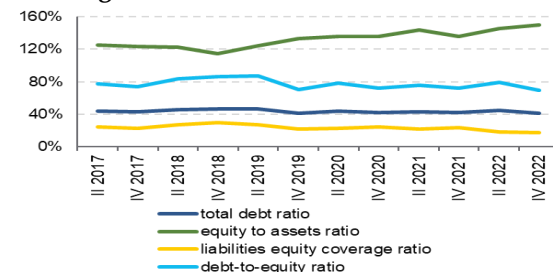
Source: NBP, based on Statistics Poland (F01)

Figure 184 Liquidity ratios of producers of building materials with 9-49 staff



Source: NBP, based on Statistics Poland (F01)

Figure 186 Debt and equity ratios of producers of building materials with 9-49 staff



Source: NBP, based on Statistics Poland (F01)

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