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Information on home prices and the situation in the housing and commercial real estate market in Poland in 2024 Q1

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The analysis of the situation in the real estate market in Poland in 2024 Q1¹ leads to the following conclusions:

Housing sector

During the first three months of 2024, significant changes in demand and supply seen in previous years² began to stabilise slowly. On the supply side, the offer of housing construction contracts and the number of dwellings under construction increased. On the other hand, the number of sold developer contracts for the construction of dwellings in the largest markets decreased compared to the previous quarter and amounted to approx. 11 thousand³ (see: Table 1). In the period from 2023 Q2 to 2024 Q1, a total of 57.2 thousand developer contracts for the construction of dwellings were sold, i.e. approx. 21.2 thousand more than in the period from 2022 Q2 to 2023 Q1 (+59% y/y). Approximately 45% of housing purchases (compared to 58% in the previous quarter and 83% in 2023 Q1) were financed with own funds with a significant increase in the share of lending (see: Table 3), including with the government's "Bezpieczny Kredyt 2%" (hereinafter BK2%). The expiry of this subsidy programme at the end of 2023 dampened housing demand without any additional disturbances, as the demand was sustained, among others, by strong wage growth. However, the rate of housing price increases grew in the face of continued low supply.

Table 1 Number of contracts for the construction of dwellings put on the market, sold and offered for sale in Poland's 6 largest housing markets (quarterly data)

	Put on market	Sold	On offer
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
II 2022	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
2023 Q2	10,172	15,517	40,584
2023 Q3	9,979	16,388	34,294
2023 Q4	15,942	14,288	36,199
2024 Q1	16,694	11,026	42,429

Note: see Figure 57.

Source: JLL

¹ The analysis carried out in this issue of the *Information* is based on data available as at the end of 2024 Q1. Data collected in the NBP BaRN database for 2024 Q1 include offers valid as at 1 March 2024 and transactions concluded in the period from 1 December 2023 to 29 February 2024. Due to delays in the availability of certain data, some charts and tables include information until 2023 Q4 inclusive. 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 2024 Q1, approx. 118.7 thousand records were collected, of which approx. 32% concerned transactions and 68% concerned offers. Altogether, approx. 5.5 million records have been collected in the BaRN database, of which 25.5% concerned transactions and 74.5% concerned offers.

² This was due to overlapping factors, i.e. the suspension of sales at the outbreak of the covid pandemic, low interest rates, which significantly boosted demand, and reduced supply triggered, among others, by Russia's war with Ukraine. Another factor, this time inhibiting demand, was the increase in interest rates and the short-term rise in demand generated by the government's "Bezpieczny Kredyt 2%" scheme.

³ Based on NBP and JLL.

- **In 2024 Q1, 48.8 thousand dwellings were completed** (a decrease of approx. 18% q/q and decrease of approx. 12% y/y). The decline results from the decreasing volume of work in progress in previous years. **Building permits were issued for 69.0 thousand dwellings**, a rise of approx. 3% q/q and approx. 33% y/y. **The construction of 60.1 thousand dwellings was started**, i.e. approx. 20% more q/q and 56% y/y. This means that work in progress started to increase slowly. **Housing construction costs**, i.e. labour, equipment rental continued to rise while material prices stabilised. **Interest in buying land for development recovered while the level of land prices increased**. Stabilisation or a slight **decrease in the transaction rental rates per 1 sq. m of housing** was observed, as well as **higher increases in the average nominal transaction prices per 1 sq. m of dwellings** than in previous quarters.
- **In primary markets, nominal average transaction prices per sq. m of new dwellings (PMT) increased both in quarter-on-quarter and year-on-year terms**, especially in Kraków and Warszawa, while they decreased only in Gdańsk (see Table 2). In primary markets, **q/q and y/y increases in real transaction prices relative to CPI were recorded** (the rise in inflation was lower than the increase in housing prices). **In 2024 Q1, real prices started to increase in relation to wages** in Warszawa and 6 cities on average, but remained negative in 10 cities.
- **Secondary markets saw increases in nominal price growth q/q**, which were particularly high in Łódź and Kraków. **The y/y growth in real prices in relation to both the CPI and wage growth became positive in the markets**, especially in Łódź and Kraków. **Hedonically adjusted prices of dwellings increased in all groups of cities** (see Figures 2 and 10). This means that similar dwellings in the analysed cities were sold at higher prices than a quarter earlier. Demand for older dwellings in better locations, yet smaller persisted, due to their lower total purchase cost.

Table 2 Change in transaction prices per sq. m of dwelling in the analysed cities in 2024 Q1

	Change in nominal prices				Change in real prices to CPI */				Change in prices relative to WAGE */			
	q/q		y/y		q/q		y/y		q/q		y/y	
	PMT	SMT	PMT	SMT	PMT	SMT	PMT	SMT	PMT	SMT	PMT	SMT
Warszawa	6.4%	5.2%	24.1%	10.0%	5.4%	4.3%	20.5%	6.8%	2.3%	1.1%	10.2%	-2.3%
6 cities	5.9%	4.7%	9.8%	15.3%	4.0%	3.3%	13.1%	11.5%	0.9%	0.2%	3.4%	2.0%
10 cities	2.5%	4.6%	17.6%	14.3%	2.3%	3.3%	6.1%	10.9%	-0.8%	0.2%	-2.9%	1.4%

Source: NBP, Statistics Poland

Note to Table 2: the growth rates resulting from the average transaction price are underestimated due to the limited number of transactions available in the RCiWN register of real property prices (a smaller number of more expensive dwellings). Revisions will be made in the following quarters, as required data become available. */ The change in real prices relative to the CPI is calculated as a change in the weighted average transaction price in real terms per square metre of housing in the PM and SM. Prices for 2006 Q3 were adopted as fixed prices.

- **In 2024 Q1, the number of dwellings offered for rent continued to increase⁴**. This was, among other things, a result of the completion of dwellings purchased in the boom period of 2020-2023, when many investors decided to purchase rental housing. **The level of average, transactional rental rates per sq. m of housing** (exclusive of service charges and utility fees) **decreased (q/q) in all groups of cities** (see Figures 14 and 15), which reduced the profitability of rental in large cities. Rental of housing due to interest

⁴ Based on NBP data, the publication of Polityka Insight, Otodom, OLX "Housing Quarterly", April 2024 and the Morizon study "Report 1Q/2024 Real Estate Market".

rates and rental rates in 2024 Q1 was more cost-effective than the purchase of housing as an alternative to residential consumption. The professional rental market should continue to grow in the coming years due to the persistent limited share of purely market-rate rental housing.

- **The return on equity (ROE) of investment in a dwelling for rental, bought for cash, decreased slightly while remaining positive, whereas it was still negative with the adopted leverage of 50% and higher (80%).** The investment in rental housing (excluding transaction costs, refurbishment costs and potential changes in the value of housing) made for cash was still competitive compared to bank deposit rates. The profitability of investment in a dwelling for rental compared with the yields on 10-year Treasury bonds is negative (see Figure 28).
- **The estimated affordability of housing in the 7 large cities⁵** (based on average monthly wages in the corporate sector) **decreased slightly on the previous quarter** mainly as a result of faster home price growth than wage growth (see Figure 19). The estimated **maximum available mortgage⁶** increased slightly compared to the previous quarter, mainly as a result of rising wages, similar to the estimated **affordability of loan-financed housing⁷ in the face of** faster growth of wages than housing prices in the absence of interest rate changes.
- **The sales of housing construction contracts** in the 6 largest primary markets in Poland⁸ (see Table 1 and Figure 57) at the end of March 2024 **amounted to approx. 11 thousand dwellings, i.e. it was lower** by approx. 23% compared to the previous quarter. Despite lower sales in the quarter concerned, a total of approx. 57.2 thousand housing construction contracts were sold in the last four quarters, an increase of approx. 21.2 thousand (+59% y/y). In the last four quarters, **approx. 52.8 thousand contracts for housing construction were put on sale** in the largest markets, i.e. approx. 10.4 thousand more (+25% y/y). **The supply of unsold contracts for the construction of dwellings in the 6 largest markets increased by approx. 6.2 thousand units on the previous quarter and amounted to approx. 42.4 thousand at the end of March 2024.** The number of contracts for dwelling units contractually defined as “turn-key” in the sale offer decreased by approx. 109 thousand compared to the previous quarter and amounted to approx. 4 thousand.
- **The time to sell a contract for the construction of dwellings in the primary market in the 6 largest markets, calculated in quarters on the basis of the average sales in the last four quarters, increased in the analysed period to 3.0 quarters from 2.5 in 2023 Q4 and was lower compared to 4.9 in 2023 Q1** (see

⁵ For more information about the rental market, see Chapter 7 “Analysis of profitability of investment in housing in selected cities in Poland in 2024 Q1”.

⁶ The maximum value of residential loan available in a particular market is a measure expressed in PLN thousand, taking into account bank’s lending requirements and loan parameters (i.e. interest rate, amortisation period of 25 years, minimum wage understood as the minimum income after the repayment of loan instalments). The estimate does not take into consideration changes in banks’ lending policy, including lending terms and criteria and the change in interest rate buffer.

⁷ Affordability of loan-financed housing – a measure specifying how many square metres of housing may be purchased with a residential mortgage loan obtained with 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.

⁸ Based on the JLL data.

Figure 64). The time of selling apartments on secondary markets, taking into account only transactions completed with sales at the end of 2024 Q1 increased slightly in all groups of cities (see Figure 65).

- **In 2024 Q1, the value of new residential mortgage loans disbursed in Poland** was higher than the disbursements of loans in the corresponding period of 2023, which was associated with an increase in creditworthiness of households and an extended handling of loan applications associated with the BK2% programme. In 2024 Q1, the value of new residential mortgage loan agreements for PLN housing loans⁹ (excluding renegotiated contracts) according to NBP data¹¹ amounted to PLN 27.1 billion, i.e. it was by approx. PLN 2.1 billion (+8%) higher than in the previous quarter and by approx. PLN 19.9 billion (approx. 3 times) higher than in 2023 Q1. Demand for credit has increased significantly as a result of the “Bezpieczny Kredyt 2%” programme launched in July 2023¹². The results of the NBP survey on the situation in the credit market¹³ indicate no significant changes in lending criteria and terms in the majority of banks and a slight tightening of the lending in net terms in 2024 Q1. In 2024 Q2, the surveyed banks expect a continuation of the existing lending policy and another decline in demand for residential loans.
- **For another consecutive quarter, the number of housing loans at a temporary fixed interest rate accounted for a significant part of total loans.** According to AMRON's data, the share of new fixed rate loans in the total number of new residential loans in 2024 Q1 amounted to approx. 83%, i.e. it increased by approx. 2 pp q/q and by 28 pp y/y (see Figure 33).
- **The estimated return on equity (ROE)¹⁴ on development projects for housing developers amounted to approx. 23%, i.e. it increased slightly compared to the previous seven quarters** (see Figure 45). Such a

⁹ According to the BIK data, in 2024 Q1, banks and credit unions granted approx. 65 thousand residential loans to individual clients for the amount of approx. PLN 27.0 billion (compared to 69.3 thousand agreements in the previous quarter and 22.8 thousand in 2023 Q1, for the amount of PLN 28.2 billion and PLN 7.6 billion, respectively). The discussed quarter recorded only positive y/y growth in the sale of residential mortgage loan agreements in all value ranges compared to only negative growth rates in 2023 Q1. In the period from 2023 Q2 to 2024 Q1, approximately 209.1 thousand residential mortgage loans were taken out (a y/y rise of approx. 97%), totalling approx. PLN 83.4 billion (approx. 133% up y/y).

¹⁰ According to the data of AMRON, in 2024 Q1, 64.5 thousand new residential mortgage loans were granted (compared to 68.9 thousand in the previous quarter and 22 thousand in 2023 Q1), the value of newly granted mortgage loans amounted to PLN 26.9 billion (compared to 28.1 billion in the previous quarter and 7.5 billion in 2023 Q1). In 2024 Q1, loans (in terms of value) were most often granted in the range of PLN 500 thousand - 1 million (approx. 23.3%), while the share of loans in the ranges above 400 thousand increased, while the share of loans below this value decreased. In 2024 Q1, in the structure of new loans, the share of loans with LtV above 80% increased, reaching approx. 38%, and for LtV up to 30% - to 12%, while the share of loans with the remaining LtV decreased (50-80% amounting to 43%, LtV 30-50% to 7%). The share of residential loans with the maturity of 25 to 35 years increased (61%) while the share of loans in other maturity ranges decreased. At the end of March 2024, the number of active loan agreements (in repayment) was approx. 2.29 million (-0.06% in 2023 Q4), while their value at the end of the period concerned amounted to PLN 484 billion (+1% compared to 2023 Q4).

¹¹ Data concerning the interest rate 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/en/statistic-and-financial-reporting/monetary-and-financial-statistics/mir-statistics/>. According to NBP data, at the end of March 2024, the stock of residential mortgage loans granted by banks to households stood at PLN 484.6 billion, i.e. PLN 5 billion higher compared to December 2023 (+1%) and approx. PLN 1.3 billion lower than in March 2023 (a 0.3% y/y decrease, against a 5.2% decline in March 2022). In 2024 Q1, a year-on-year increase in PLN residential loans was recorded (PLN +25.4 billion compared to 2023 Q1), while the stock of FX loans decreased (PLN -26.7 billion, respectively).

¹² Act of 1 October 2021 on family housing loan and 2% safe loan (Journal of Laws of 2023, items 859 and 1114). According to BIK data, in the “Bezpieczny Kredyt 2%” programme, 30.8 thousand loans were granted in 2024 Q1 in the total amount of PLN 13.1 billion. In 2024 Q1, this programme accounted for 48% of the value of lending in the housing loan segment in Poland.

¹³ “Situation in the credit market - results of the senior loan officer opinion survey, 2024 Q1”, NBP, April 2024 <https://nbp.pl/en/financial-system/senior-loan-officer-opinion-survey/>.

¹⁴ Gross margin is not equivalent to developer's profit and, depending on the organisation of the developer/development holding, may include different cost elements.

level of ROE was affected by an increase in transaction prices exceeding the growth in costs incurred by home producers and by developers' using external financing. According to the Coface report¹⁵, in 2024 Q1, the estimated number of bankruptcies in the construction sector was 245 (compared to 162 at the end of 2023 Q1; see Figure 42). At the same time, the stock market indices of construction and development companies have been rising since mid-2022 (see Figure 41).

- **In 2024 Q1, approx. 48.8 thousand dwellings were completed and made ready for occupancy¹⁶ in Poland, i.e. approx. 18% less than in the previous quarter and approx. 12% less than in 2023 Q1** (see Figure 56). The dwellings completed were primarily intended for sale or rental (approx. 60%) as well as for owner occupancy (37%). The share of dwellings completed and made ready for occupancy in 6 cities and in 10 cities in the total number of completed dwellings increased slightly, it remained stable in Warszawa and decreased in the rest of Poland. **The number of approx. 60.1 thousand dwellings started¹⁷ was 56% higher than that recorded in 2023 Q1, and 20% higher than the previous quarter** (see Figure 57)¹⁸. It should be added that the number of housing development projects started increased y/y in the 6 and 10 cities, as well as in the rest of Poland, except Warszawa, where a decline was seen. Most construction projects launched in Poland concerned dwellings for sale or rental (approx. 72%) and for owner occupancy (25%).
- **High returns on housing projects and supply shortages accompanied by high demand and sales have contributed to the launch of new projects and an increase in the number of developers' applications for building permits for housing construction¹⁹.** The number of building permits in 2024 Q1 increased again by approx. 2.2 thousand q/q and was 17 thousand higher than 2023 Q1 (see Figure 58). The share of permits for the construction of dwellings for sale and rental accounted for approx. 70% of the total number of permits, while permits for individual construction accounted for approx. 28%. The share of permits for the construction of cooperative and subsidized social housing and the number of newly started projects, despite an increase in y/y growth, were still insignificant in the analysed period.

¹⁵ Coface Report – Insolvency of Businesses in Poland in 2024 Q1.

¹⁶ According to the Statistics Poland data, in 2024 Q1, approx. 48.8 thousand dwellings were completed and made ready for occupancy, i.e. approx. 6.6 thousand less compared to 2023 Q1, and approx. 10.5 thousand more than in the previous quarter. In total, in the last four quarters (2023 Q2 - 2024 Q1), approx. 213,8 thousand dwellings were completed, i.e. approx. 25.5 thousand less than a year ago (a y/y decline of 11%).

¹⁷ According to the Statistics Poland data, in 2024 Q1, the construction of approx. 60.1 thousand dwellings was launched, i.e. approx. 21.5 thousand more compared to 2023 Q1 and approx. 9.9 thousand more than in the previous quarter. In total, in the last four quarters (2023 Q2 - 2024 Q1), the construction of approx. 210.6 thousand dwellings was started, i.e. approx. 25 thousand more than a year before (a y/y rise of 14%).

¹⁸ The number of housing projects started may be higher in the following months in view of the entry into force of the provisions of the amendment to the technical conditions of buildings planned in April 2024 (Regulation of the Minister of Development and Technology of 27 October 2023 amending the Regulation on the technical conditions to be met by buildings and their location) and the spatial planning reform (Regulation of the Minister of Development and Technology of 24 October 2023 amending the Regulation on spatial data sets and metadata in the scope of spatial planning (Journal of Laws item 2409), Regulation of the Minister of Development and Technology of 13 November 2023 on the model form of the letter concerning the spatial planning act (Journal of Laws item 2509), Regulation of the Minister of Development and Technology of 8 December 2023 on the draft general plan of a municipality, documentation of planning works within the scope of this plan and issuing extracts and drawings thereof (Journal of Laws, item 2758)).

¹⁹ According to the Statistics Poland data, in 2024 Q1, approx. 69.0 thousand home building permits were issued, i.e. approx. 17.1 thousand more than in 2023 Q1 and approx. 2.2 thousand more than in the previous quarter. In total, in the last four quarters (2023 Q2 to 2024 Q1) approx. 258.2 thousand permits were issued, i.e. approx. 13.3 less than in the same period of the previous year (a 4.9% y/y decline).

Commercial real estate market

The situation in the commercial real estate market is stable, although in the two largest segments in terms of value, i.e. office and retail segment, it is still worse than before the outbreak of the COVID-19 pandemic.

- **In 2024 Q1, the vacancy rates in the 9 largest office real estate markets²⁰ increased slightly to approx. 14.5%. Vacancy rates are increasing in regional markets, in buildings older than 10 years.** The total supply of office space reached approx. 12.9 million sq. m²¹. Regional differences could be observed as regards changes in vacancy rates. In Warszawa, the rate increased slightly to 11%²² (from 10.4% in Q4). The vacancy rate of office space depends on the age²³ and mainly on the location of the office building²⁴. The spread of remote work allows tenants to reduce the size of rented space and replace it with space located in energy-efficient office buildings with good transport links.
- **In 2024 Q1, the retail sector operated without any major changes.** The stock of modern retail space at the end of 2024 Q1 was over 14.12 million sq. m, which meant a saturation of 337 sq. m/1,000 inhabitants.²⁵ As at the end of 2024 Q1, there were approximately 531 thousand sq. m²⁶ of modern retail space under construction. Investment projects are generally undertaken in smaller cities, therefore, it can be concluded that investors regard the traditional retail market in the largest cities as saturated. The index²⁷ of average rents and hedonically adjusted rents for retail space for the three analysed cities, namely Warszawa, Poznan and Tri-City, was maintained at an elevated level in 2023 Q4, which resulted from an increased demand for retail space.
- **The market for modern warehouse space in Poland is still subject to development and investor interest.** As at the end of 2024 Q1, the total stock of the warehouse space market increased to 32.1 million sq. m²⁸, with over 2.3 million sq. m of modern warehouse space under construction. The vacancy rate across the country increased to 8.1%, compared to 7.3% in 2023 Q4.
- **As at the end of 2024 Q1, the estimated value of transactions in commercial real estate purchased for investment purposes²⁹, i.e. for rental, amounted to nearly EUR 200 million.** Approximately 31.2% of the value of transactions concerned warehouse space, 37% office space. Such a low investment volume was last seen in Poland in 2010. The situation in the investment market was similar across Europe³⁰, where the

²⁰ The nine office space markets include: Warszawa, Kraków, Wrocław, Tri City, Katowice, Łódź, Poznań, Szczecin, Lublin.

²¹ See: Colliers International Report: Market Insights, Extended Annual Report, Office Market 2023/2024, Poland.

²² See: Colliers International Report: Market Insights, Extended Annual Report, Office Market 2023/2024, Poland.

²³ See: Cushman & Wakefield, 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: Market Insights, Retail market in Poland, 2024 Q1.

²⁷ The index of average and hedonically adjusted rents for commercial and retail space has been re-compiled for the entire period under analysis. The new index is calculated not by the imputation method as used to be done before, but on the basis of the hedonic regression with zero-one variables for time series. It is calculated on rents for retail space, which are quoted in four consecutive periods. The adjusted index is more resilient to changes in the number of retail space buildings analysed and individual rented premises which are located in such building, which are observed between listings.

²⁸ See: Colliers International Report: Market Insights, Warehouse market in Poland, 2024 Q1.

²⁹ Based on data published by Comparables.pl. The above investments concern the sale of the entire operating company which rents the building and derives income from it. Such transactions take place between: 1/ a real estate developer who has commercialised a property and sells it to an investor, or 2 / two investors.

³⁰ See: BNP Paribas Real Estate report: Europe - CRE 360 report - May 2024.

value of investment transactions in 2024 Q1 was the lowest since 2011 Q1. The slowdown in investment transactions in Europe results from significant problems recorded in the Euro area markets as a result of interest rate rises³¹. The Polish commercial real estate market has not seen significant tensions so far, however, the negative attitude of global investors translates into a reduced volume of transactions concluded by them.

- **The exposure of the Polish financial sector to commercial real estate loans³² slightly increased.** At the end of 2024 Q1, the value of loans granted by banks in Poland³³ amounted to PLN 66.8 billion³⁴, of which 60% were loans denominated in EUR. The value of these loans has changed as follows:
 - the value of corporate debt related to residential real estate (developers for construction, cooperatives for renovation, etc.) decreased slightly compared to the previous quarter and amounted to PLN 5.0 billion (against PLN 5.3 billion).
 - retail real estate loans decreased on the previous quarter to PLN 16.5 billion (from PLN 16.9 billion),
 - the value of loans granted for office real estate remained at a level similar to the previous quarter and amounted to PLN 16.3 billion (PLN 16.2 billion),
 - the value of loans granted for other real estate increased insignificantly to PLN 16.8 billion compared to PLN 16.2 billion in 2023 Q4,
 - for warehousing and industrial real estate, this value amounted to PLN 12.2 billion (up from PLN 11.9 billion).

The value of corporate loans secured by mortgage on commercial real estate at the end of 2024 Q1 increased to PLN 141 billion (vs. PLN 135 billion in 2023 Q4), of which 45% were denominated in EUR.

- **The quality of loans granted to enterprises for real estate, measured by the non-performing loan ratio (phase 3) did not change significantly compared to the previous quarter.** The ratio improved to 5.6% (from 6.9% in 2023 Q4) for office real estate while for loans extended for retail and commercial space, it amounted to 9.5% (9.7% in 2023 Q4). The ratio also improved in the case of loans for warehouse and industrial space, i.e. it decreased to 1.9% from 2.5% in 2023 Q4, while for loans for other real estate it amounted to 8.8% compared to 9.3% in 2023 Q4. The non-performing loan ratio for loans granted to enterprises for housing real estate stood at 7.0 % vs. 8.9 % in 2023 Q4, which is a historic low.
- **The share of loans with a significant increase in credit risk (phase 2), which reflects the level of risk observed in the commercial real estate market, did not change significantly compared to 2023 Q4.** For office properties in 2024 Q1 it rose to 14.9% from 13.5% in 2023 Q4. This ratio improved to 15.5%, from

³¹ See: ECB Financial Stability Review, November 2023.

³² This exposure consists of loans taken out by an enterprise to acquire commercial real estate or corporate loans secured with mortgages on commercial property (part of the loan fully secured with mortgages on real estate). See: definition from the European Systemic Risk Board Recommendation (ESRB/2019/3).

³³ According to our expert estimate, loans intended for the construction of commercial real estate (office, retail, warehouse and other) extended by foreign banks amounted to PLN 87 billion as at the end of 2022. The estimate has been arrived at as follows: In line with the international experience, it can be assumed that the LTV ratio in the total stock is 50%. However, since 2021 a decline in the amount of loans for commercial real estate extended by the Polish banks has been observed while the stock continues to grow, so the ratio should be adjusted 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 2022 amounted to PLN 380 billion, that the total amount of the loans financing such real estate was approx. PLN 152 billion at the end of 2022. By deducting the loans granted by banks operating in Poland to finance the aforementioned real estate (PLN 65 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.

³⁴ FINREP data.

16.1% in 2023 Q4, for retail real estate, deteriorating for warehouse real estate to 8.8% compared to 7.2 in 2023 Q4,

- **In the markets for small office and retail real estate, the median of offer prices in large cities remained high.** In the market for small commercial real estate, similar upward trends of offer prices can be observed as in the residential market. This may mean that, for some investors, this type of real estate represents an alternative to investing in rental housing.

The following figures illustrate the key developments in the housing market in Poland's major cities in 2024 Q1. They show:

- 1) home prices (Figures 1–18),
- 2) affordability of loan-financed housing, loan availability, profitability of housing investment (Figures 19–28),
- 3) mortgage loan disbursements and interest rates (Figures 29–40),
- 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 41–54),
- 5) housing construction and the residential market in selected cities in Poland (Figures 55–68),
- 6) prices and rents of commercial real estate, investment and financing, maintenance costs and the estimated rate of return (Figures 69-81),
- 7) results of the analysis of profitability of investment in rental housing in selected cities in Poland in 2024 Q1 (Figures 82-94),
- 8) conclusions of extended analysis of financial standing of development firms (Figures 95-108), construction companies implementing volume projects (Figures 109-123), companies dealing with wholesale of building materials (Figures 124-127) and companies manufacturing building materials (Figures 128-133).

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

In addition, the analyses relied on the data from PONT Info Nieruchomości, AMRON and SARFIN Polish Banks' Association 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 used³⁵.

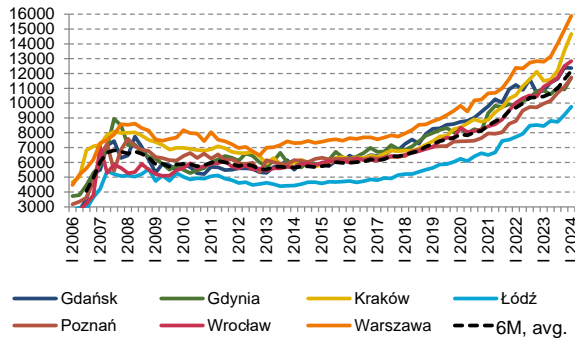
³⁵ The authors used data and studies by Sekocenbud, Spectis, PAB, OLX Group.

List of abbreviations:

5M	5 biggest cities: Gdańsk, Kraków, Łódź, Poznań, Wrocław
6M	6 biggest cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław
7M	7 biggest cities: Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warszawa, Wrocław
10M	10 biggest cities: Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin, Zielona Góra
BaNK	Commercial Real Estate Market Survey conducted by NBP
BaRN	Residential Real Estate Market Survey conducted by NBP
BIK	Biuro Informacji Kredytowej [Credit Information Bureau]
BK2%	Government loan support program for young people without housing
Class A office building	a modern building (less than 10 years since construction or major refurbishment) with high quality fittings, located in the city centre, well connected
Class B office building	a building built or upgraded more than 10 years ago with a lower standard than a Class A building located in the city centre and a building with Class A technical performance, located outside the city centre.
CPI	Consumer Price Index
DFD	Large real estate development company
GD	Households
Statistics Poland	Central Statistical Office
EURIBOR	Euro Interbank Offer Rate
KNF	Polish Financial Supervision Authority
LIBOR	London Interbank Offered Rate
LTC	Loan-to-Capital; the ratio of residential loan value to capital value
LTV	The relation of residential loan value to home value
MDM	Housing scheme "Mieszkanie dla Młodych" (Housing for the Young)
MnS	Housing scheme "Mieszkanie na start" (Housing for the start)
NBP	Narodowy Bank Polski
Facility 1220-102	Based on Sekocenbud - a 3/7 storey office building with a 3 storey garage, monitored by NBP.
Facility 1222-302	Based on Sekocenbud - an average residential multi-family five-storey building with underground garage, monitored by NBP.
PONT	PONT Info Nieruchomości
RP	Rest of Poland
RCiWN	Register of Property Prices and Values
RNS	Housing scheme "Rodzina na Swoim" (Family on their Own)
PM	Primary housing market
SM	Secondary housing market
ROE	Return on Equity
TS	Treasury Securities
WIBOR	Warszawa Interbank Offered Rate; the reference interest rate on loans in the Polish interbank market
WIG20	Index including top 20 companies listed on the Warszawa Stock Exchange with the highest value of publicly traded shares
ZBP	Polish Bank Association
ZKPK	Accumulated index of changes in banks' credit policy criteria

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

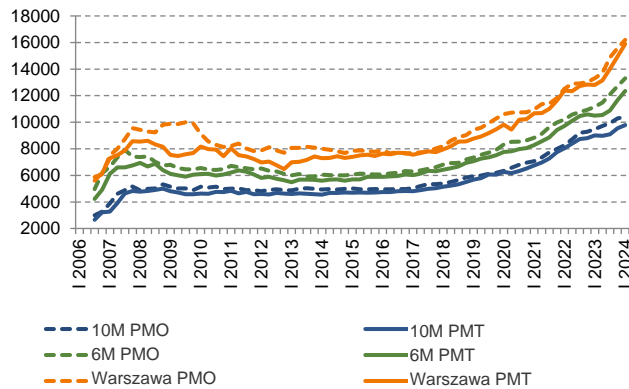
Figure 1 Transaction prices per square metre of housing in Warszawa and in 6M- PM, in PLN



Source: NBP

Note: the home price database of NBP (BaRN) has existed since 2006 Q3; description of the database is available on the bank's website: <https://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 pure price change, ignores differences in housing quality).

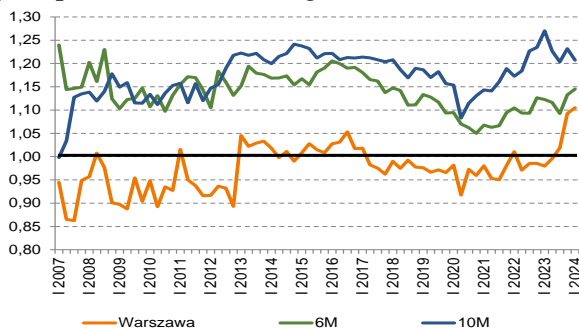
Figure 3 Weighted average price per sq. m of housing, offers (O) and transactions (T) - PM



Source: NBP

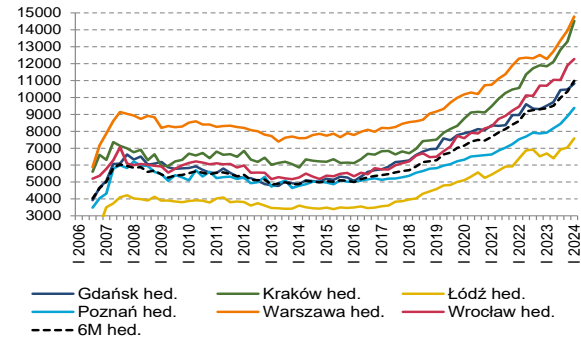
Note to Figures 3-10 and 14-18: prices and rents in 6M and 10M weighted with the share of housing stock, the average price for Warszawa.

Figure 5 Ratio of the average weighted transaction price per square metre of housing – PM to SM



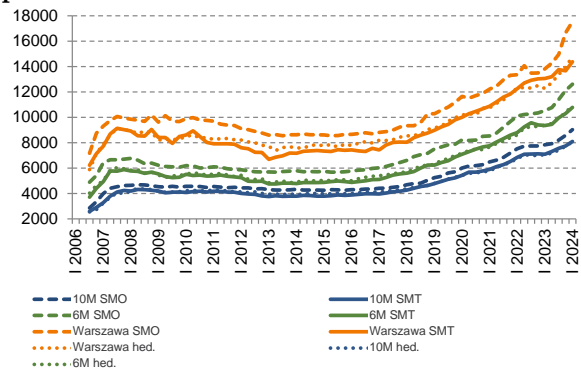
Source: NBP

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



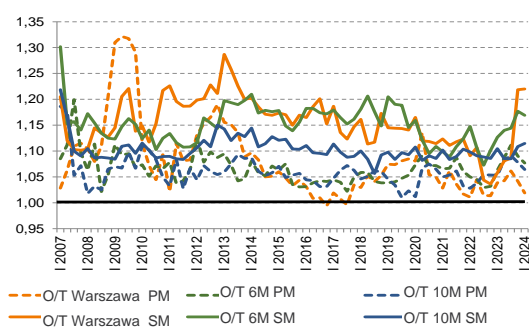
Source: NBP

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



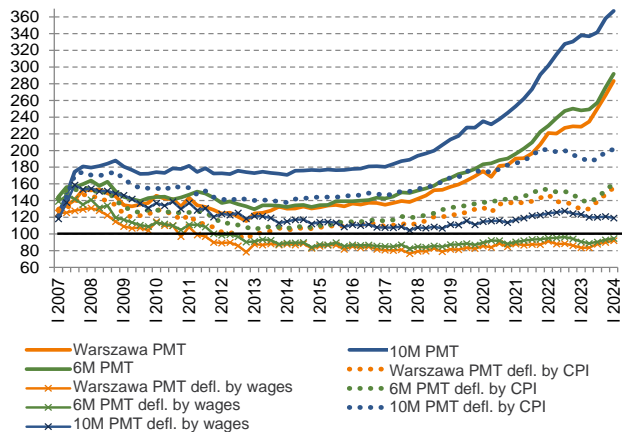
Source: NBP

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



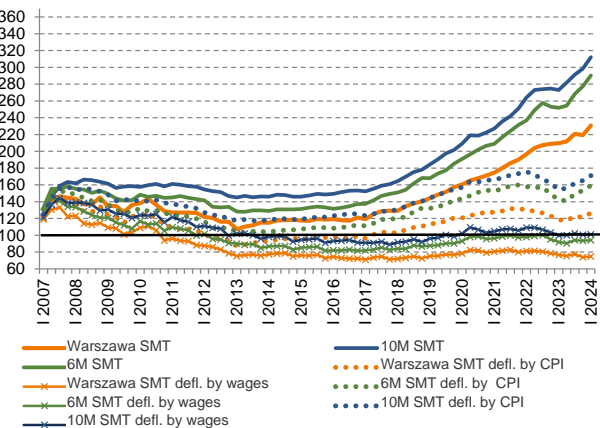
Source: NBP

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



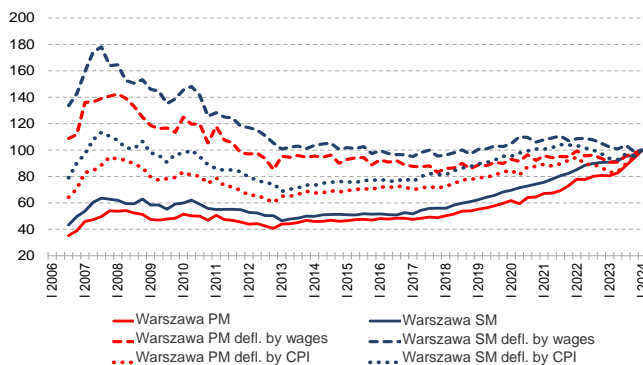
Source: NBP, ZBP (AMRON), Statistics Poland

Figure 8 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)



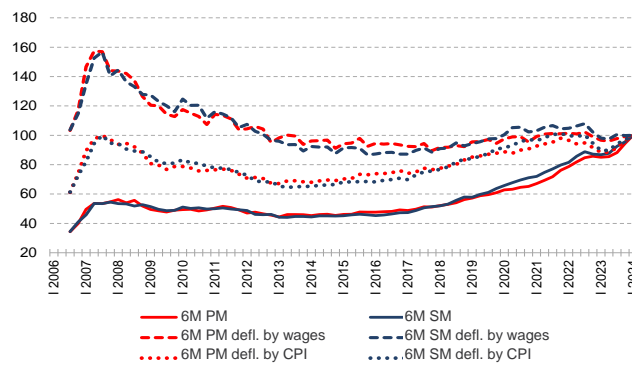
Source: NBP, ZBP (AMRON), Statistics Poland

Figure 9 Nominal and real (CPI) increases in the price of sq.m. of housing and related to the growth of wages in the enterprise sector in Warszawa (2024 Q1=100)



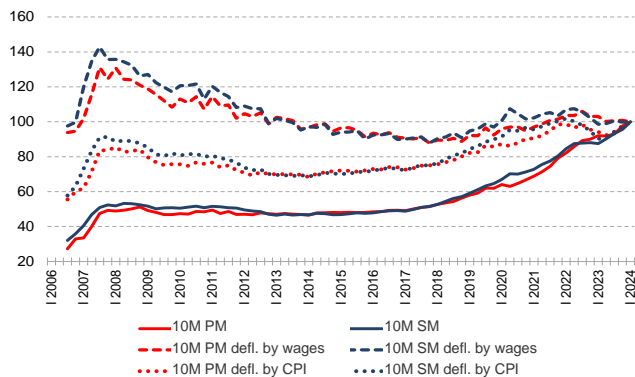
Source: NBP, Statistics Poland, JLL

Figure 10 Nominal and real (CPI) increases in the price of sq.m. of housing and related to the growth of wages in the enterprise sector in 6 cities (2024 Q1=100)



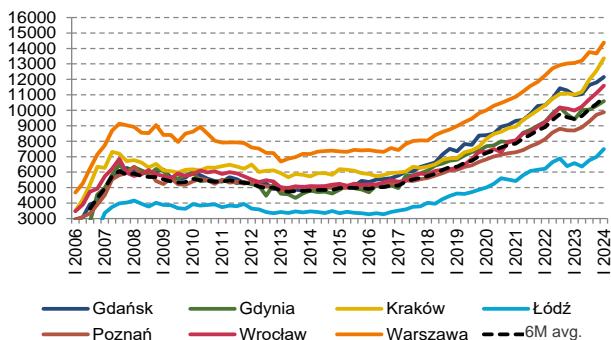
Source: NBP, Statistics Poland, JLL

Figure 11 Nominal and real (CPI) increases in the price of sq.m. of housing and related to the growth of wages in the enterprise sector in 10 cities (2024 Q1=100)



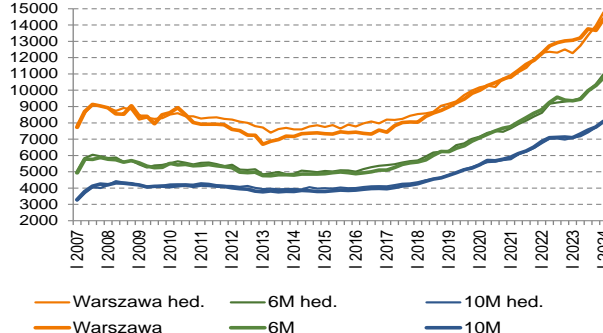
Source: NBP, Statistics Poland, JLL

Figure 12 Transaction price per square metre of housing in SM in Warszawa and in 6M



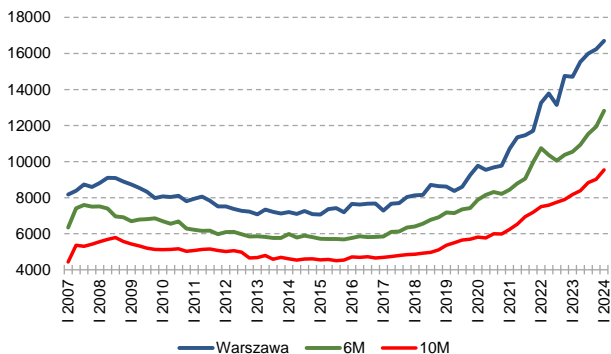
Source: NBP

Figure 13 Weighted average transaction price per square metre of housing in SM and average price adjusted by the hedonic price index, in selected markets



Source: NBP

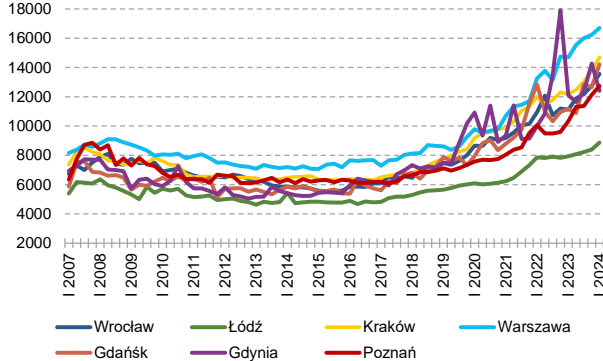
Figure 14 Average offer prices per sq. m of housing in PM in selected markets



Note to Figures 14-15: prices are collected from all available sources.

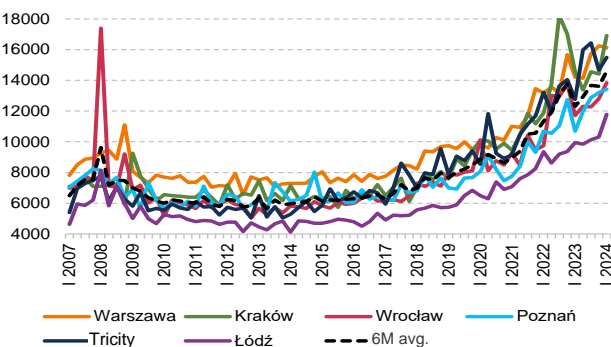
Source: PONT Info Nieruchomości

Figure 15 Average offer prices per sq. m of housing in PM in Warszawa and 6M



Source: PONT Info Nieruchomości

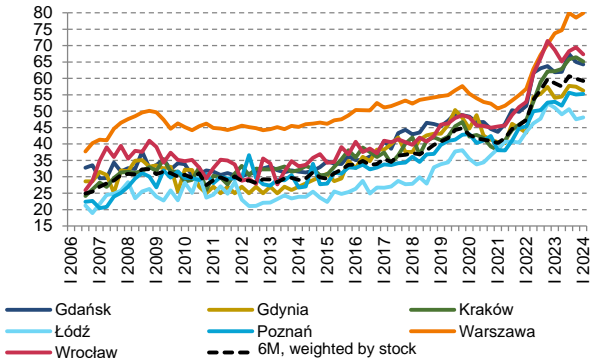
Figure 16 Average offer prices per sq. m of new home construction contracts in PM, selected markets



Source: JLL

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

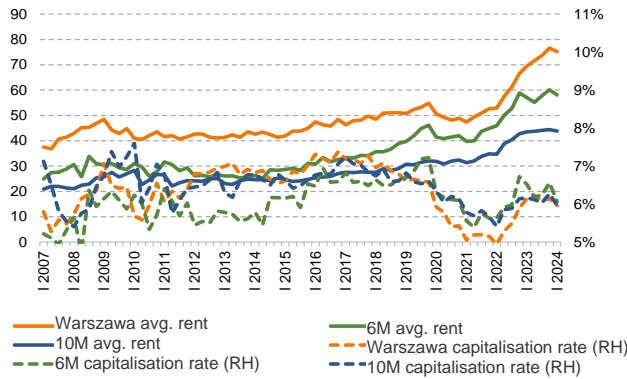
Figure 17 Average (offer and transaction) rental rates per sq. m of housing in SM, selected markets



Source: NBP

Note: in 2020 the change of sample was observed.

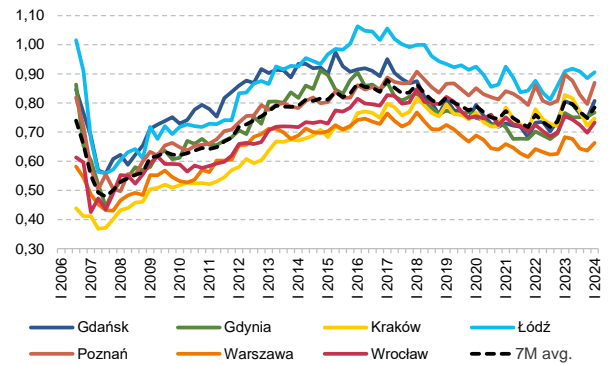
Figure 18 Average rent rates (transactions) in PLN per sq.m of housing in SM (LHS) and the estimated profitability of housing rental (RH) in selected groups of cities



Source: NBP

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

Figure 19 Estimated affordability of housing in 7M based on average wage in the enterprise sector (sq. m)

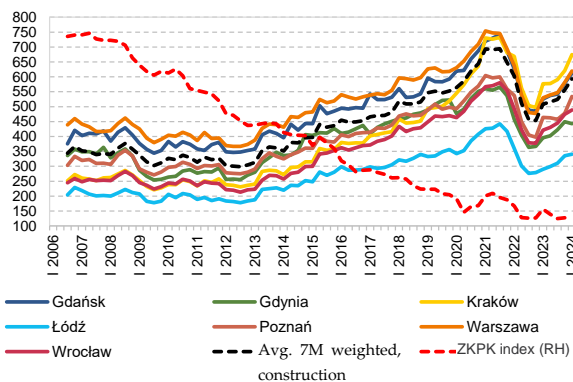


Source: NBP, Statistics Poland

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).

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

Figure 20 Estimated affordability of loan-financed housing and Accumulated Lending Policy Index of the banks concerning housing (ZKPK; RHS)

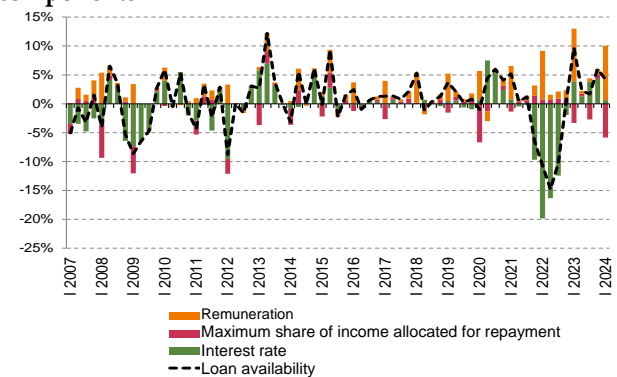


Source: NBP, Statistics Poland

Affordable residential mortgage loan – a 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). Average loan availability for 7 cities (average, 7M weighted, construction) is calculated on the basis of an estimate of the availability of each city, weighted by the housing construction in the city.

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

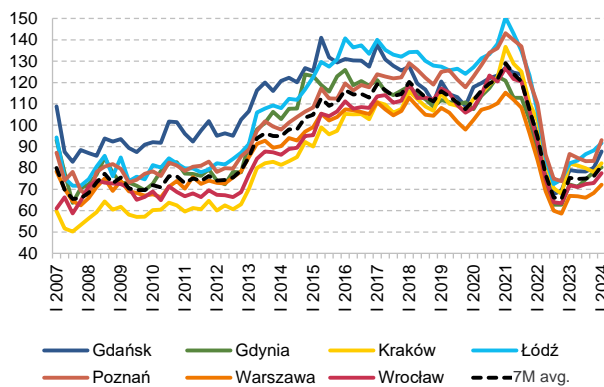
Figure 21 Quarterly changes in the estimated affordability of loan-financed housing in 7M and the force and directions of the impact of particular components



Source: NBP, Statistics Poland

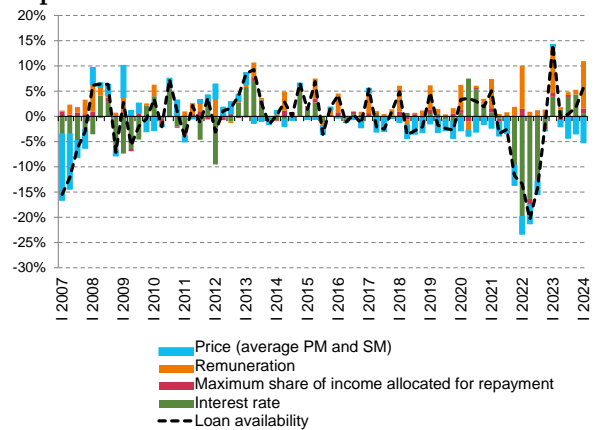
ZPKK Index – accumulated index of changes in banks’ lending policy criteria; positive values mean easing, and negative values tightening of lending policy as compared to the initial period i.e. 2003 Q4. Positive values of ZPKK mean easing and negative values - tightening of the banks’ lending policy in relation to the initial period, i.e. 2003 Q4. ZPKK data have been updated. Description of the index calculation method in *The situation in the credit market - results of senior loan officers survey*, October 2012, NBP. The interest on the residential mortgage loan weighted by the proportions of PLN- and foreign-currency denominated loans.

Figure 22 Estimated affordability of loan-financed housing in 7M



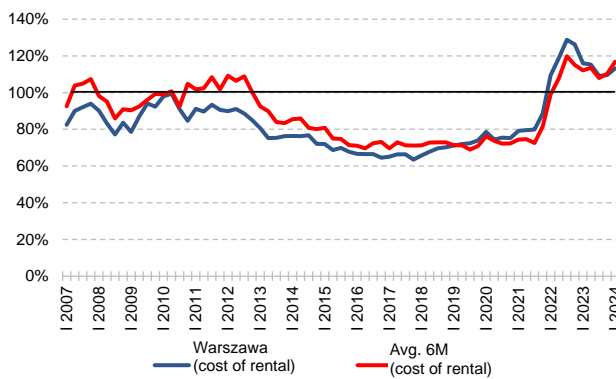
Source: NBP, Statistics Poland

Figure 23 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

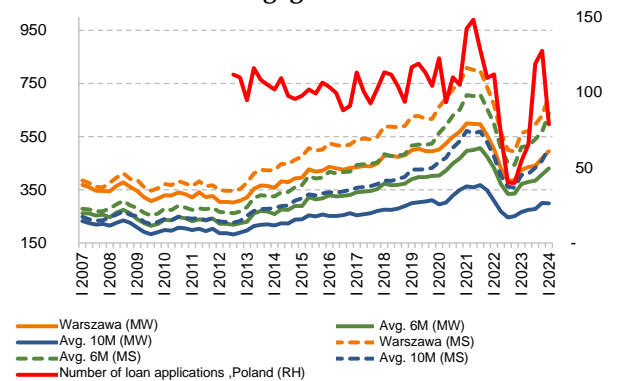
Figure 24 Estimated cost of servicing a residential mortgage loan in relation to the cost of home rental



Source: NBP, Statistics Poland

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

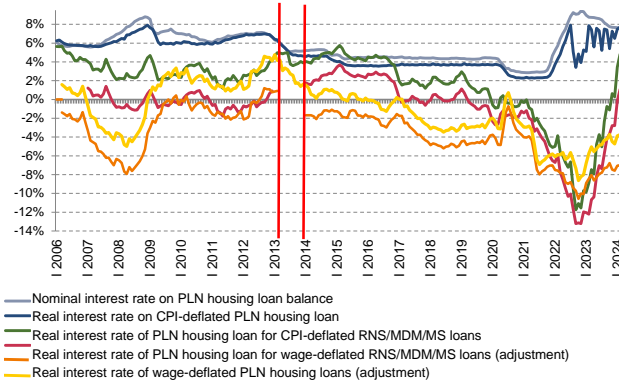
Figure 25 Estimated mortgage loan that can be afforded for an average gross wage in the enterprise sector in selected cities and the number of inquiries about a residential mortgage loan in Poland



Source: NBP, Statistics Poland, BGK, BIK

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

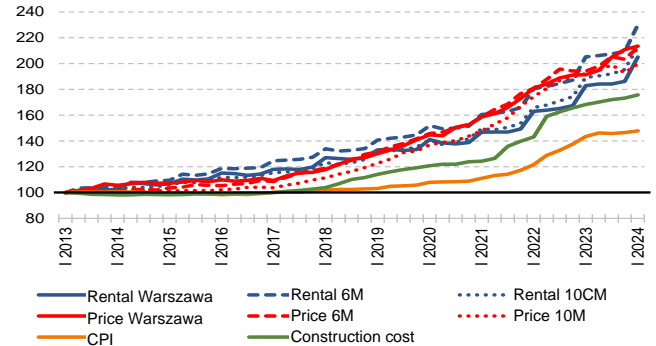
Figure 26 Residential mortgage loan burden for consumer deflated with CPI or wage growth in the enterprise sector



Source: Source: NBP, Statistics Poland, BGK

Note: values below 0 denote 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 (operating in the years 2007- 2012), the MDM scheme (operating in years 2014- 2018) and the Housing for the Start (MS) operating from 2019 to 2023.

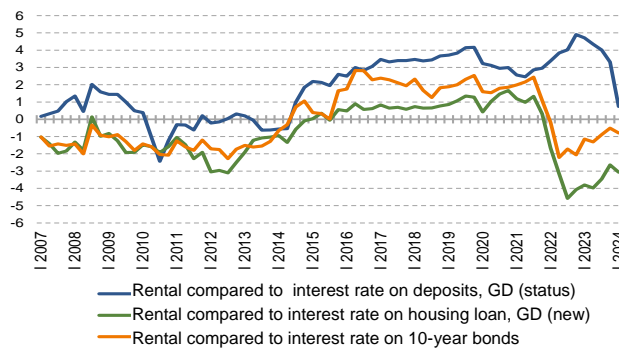
Figure 27 Growth rate of changes in the level of transaction prices (Price) and household income (Rental), home construction costs and CPI, average in Warszawa, 6M and 10M (2013 Q1=100)



Source: NBP, Statistics Poland

Note: transaction price of 1 sq. m of a dwelling 50% SM and 50%PM. 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 35 for details).

Figure 28 Profitability of home rental (average in Warszawa and 6M) compared to alternative household investments (differences in interest rates)

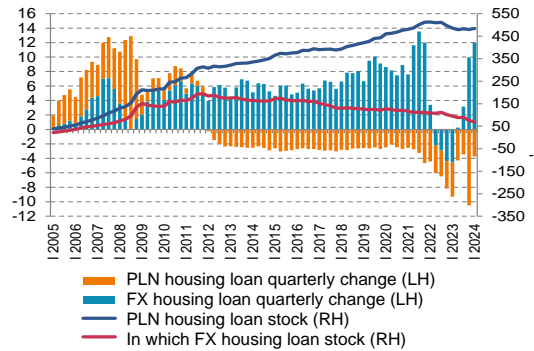


Source: NBP, Statistics Poland

Note: values exceeding 0 denote higher profitability of purchasing property for rental than other capital investment. This analysis does not take into account high transaction costs in the residential market and the potentially long time of divestment.

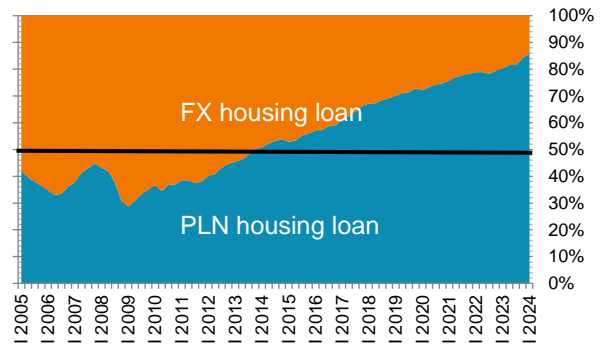
3. Disbursement of residential mortgage loans, interest rates

Figure 29 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)



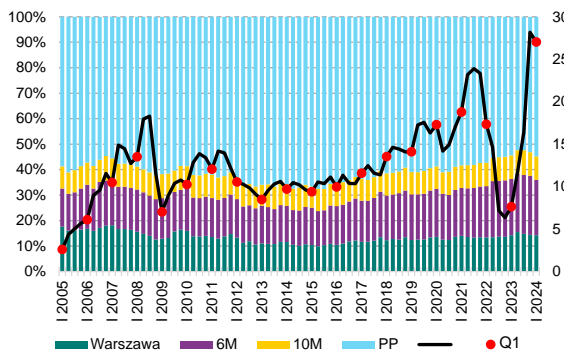
Source: NBP

Figure 30 Currency structure of housing loan receivables from households (%)



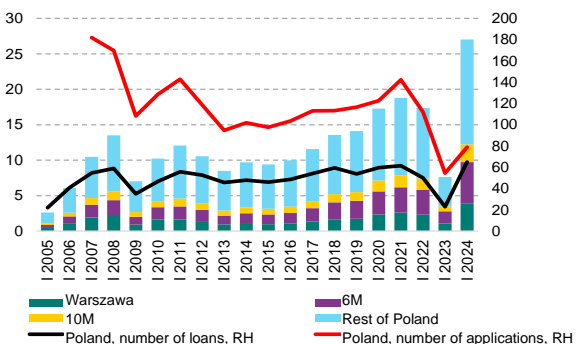
Source: NBP

Figure 31 Geographical structure of the value of new residential mortgage loan agreements in PLN in Poland's selected cities (LHS) and the value of loan agreements in Poland (RHS), quarterly data



Source: BIK

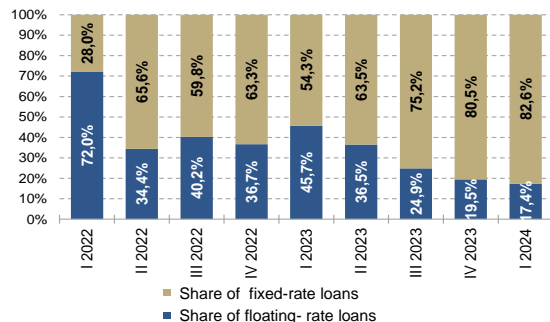
Figure 32 Value (in PLN billion; LHS) and number (RHS) of new PLN-denominated residential mortgage loan agreements in Poland's selected cities in the first quarters of 2005-2023 and the number of loan inquiries



Source: BIK

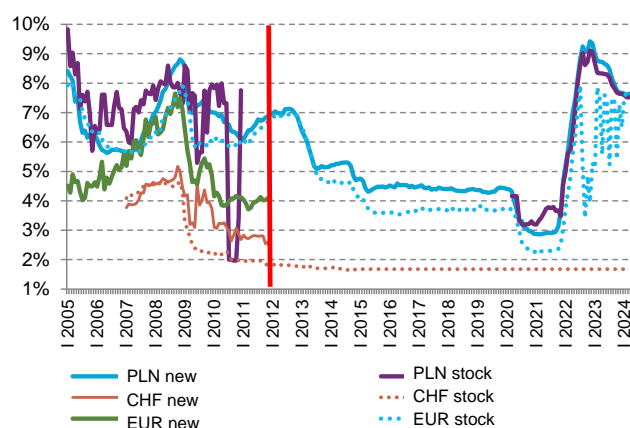
Note to Figures 31 and 32: the data indicate concluded residential mortgage loan agreements rather than the actual disbursement of loans. Only first quarters are marked by red dots in Figure 31.

Figure 33 New residential mortgage loans by type of interest rate



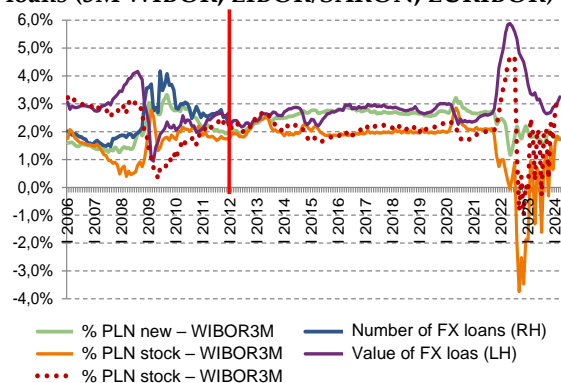
Source: ZBP (AMRON report, 2024 Q1)

Figure 34 Interest rates on residential mortgage loans for households in Poland



Source: NBP

Figure 35 Bank margins on residential mortgage loans (3M WIBOR, LIBOR/SARON, EURIBOR)



Source: NBP

Note to Figure 34 and 35: the red vertical line separates the period with no FX loans which practically ceased to be granted in 2012. 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 stop procentowych" [Instructions for the Users of Interest Rates Statistics]

https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/oprocentowanie.html).

The marked decrease in the level of interest rate on the stock of loans in particular months in 2022 H2 is due to the implementation of the so-called "loan payment holiday" programme. It resulted in a decrease in the value of interest accrued in relation to the average monthly balances of values of all residential mortgage loan agreements.

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 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 PM in 7M**/	Number of dwellings sold in 7M
2012 Q1	5,385	3,135	1,311	390	1,824	71%	7,507
2012 Q2	7,330	3,079	1,784	531	1,294	59%	7,641
2012 Q3	7,665	2,773	1,866	555	907	53%	7,096
2012 Q4	7,420	3,164	1,807	538	1,357	60%	8,379
2022 Q1	17,591	6,221	4,665	1,657	1,556	52%	10,410
2022 Q2	15,601	5,818	4,248	1,580	1,570	54%	9,458
2022 Q3	9,196	4,175	2,569	996	1,606	62%	6,598
2022 Q4	6,321	5,433	1,755	674	3,678	80%	8,493
2023 Q1	7,265	7,248	1,953	711	5,294	83%	11,421
2023 Q2	11,054	9,985	2,972	1,082	7,013	81%	15,517
2023 Q3	15,216	10,989	4,091	1,489	6,898	76%	16,380
2023 Q4	25,023	10,218	6,728	2,449	3,490	58%	14,288
2024 Q1	27,128	8,362	7,294	2,655	1,068	45%	11,026

Source: NBP, JLL, ZBP, Statistics Poland

Note: the estimates are based on the following assumptions:

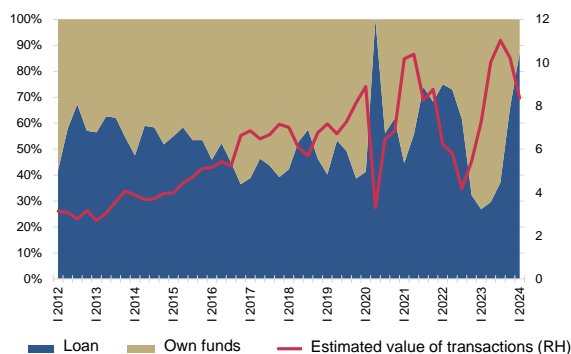
The value of loan disbursements is based on data collected from banks while the LTV level is based on data collected by the UKNF (updated data in the table).

*/ Loan-financed home purchases comprise purchases made with a loan and the minimum share of cash (a down payment of 25% was assumed; in big cities, down payment of 20% more prudently than the requirement of the amended Recommendation S), whereas home cash purchases make a difference between the value of transactions and credit funds.

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

In order to calculate the estimated value of PM transactions in 7 cities (Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warszawa, Wrocław), the average home price in 7 cities (NBP) was multiplied by the average home size in square metres (Statistics Poland data) and the number of housing units sold (based on JLL data). On the basis of ZBP data it was assumed that the value of newly granted loans for the purchase of housing in the primary markets of 7 cities amounts to approx. 57%. The estimated value of cash transactions was calculated as the difference between transactions in 7 cities and disbursements of loans requiring buyer's own contribution (down-payment). Data concerning prices for all the periods have been updated.

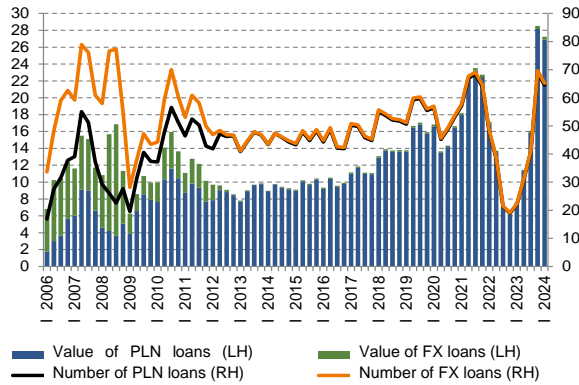
Figure 36 Estimated value of purchases of homes from developers in 7M (PLN million) for cash and using loans



Source: NBP, JLL, ZBP, Statistics Poland

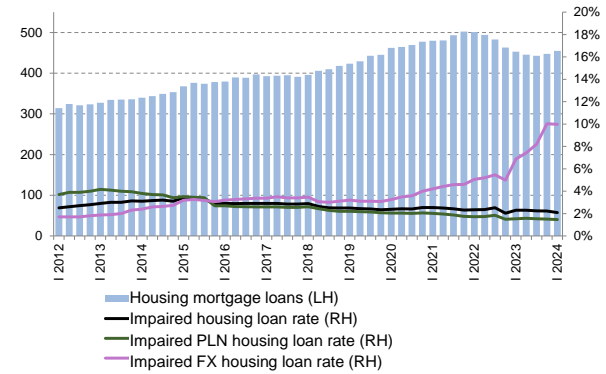
Note: a graphic representation of the full data from Table 3.

Figure 37 New residential mortgage loan agreements: value and number, aggregated quarterly data



Source: ZBP (AMRON)

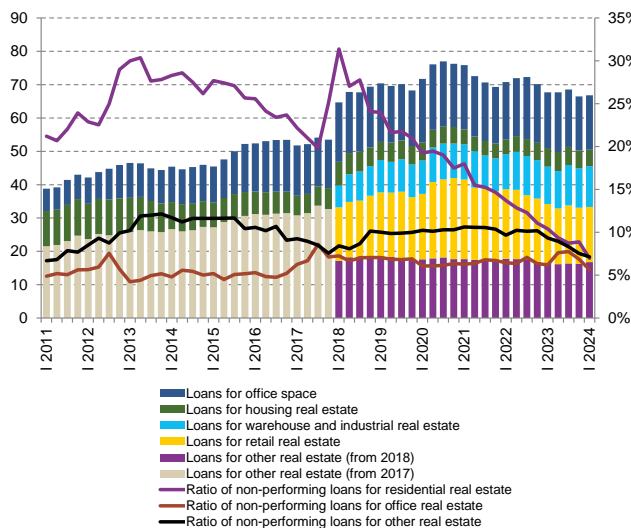
Figure 38 GD loans for residential real estate and the non-performing loans ratio



Source: NBP

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 recognised as non-performing loan receivables in accordance with the Regulation of the Minister of Finance on establishing provisions against the risk associated with banking activities (in banks applying the PASs).

Figure 39 Corporate real estate loans (PLN billion, LHS) and non-performing loans ratio (% , RHS)

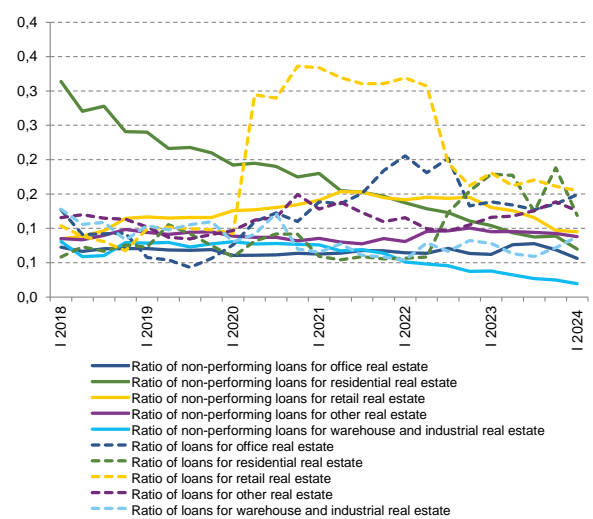


Source: NBP

Note: Data excluding BGK.

Since 2018, new accounting standards have been in place.

Figure 40 Corporate real estate loans in phase 2.



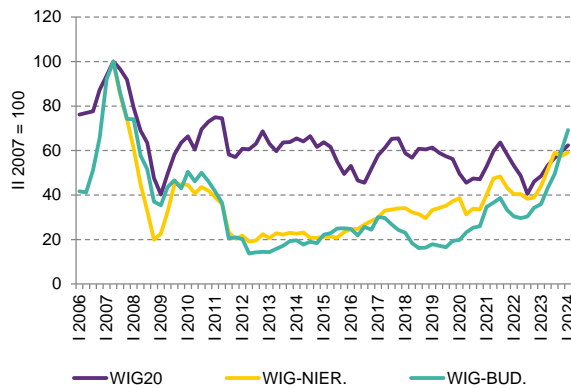
Source: NBP

Note: Data excluding BGK.

Phase 2 means loans with a recognised significant increase in credit risk from the date of initial recognition.

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

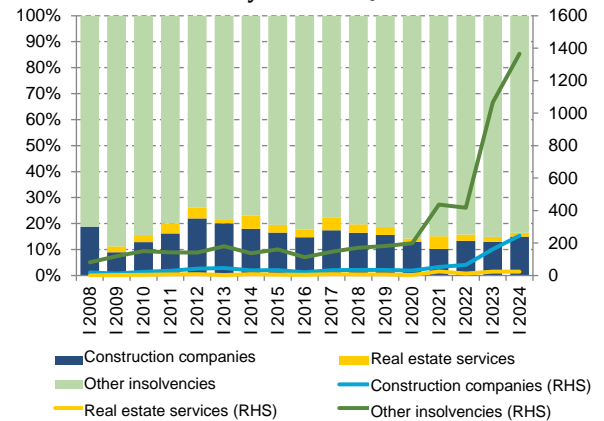
Figure 41 Rescaled exchange indices: WIG20 and for real estate developers (WIG-NIER) and construction companies (WIG-BUD) (2007 Q2=100)



Source: Warszawa Stock Exchange

Note: data standardised, 2007 Q2 = 100 (developers' WIG has been listed since 2007 Q2); 2024 Q1, status as at 14 May 2024.

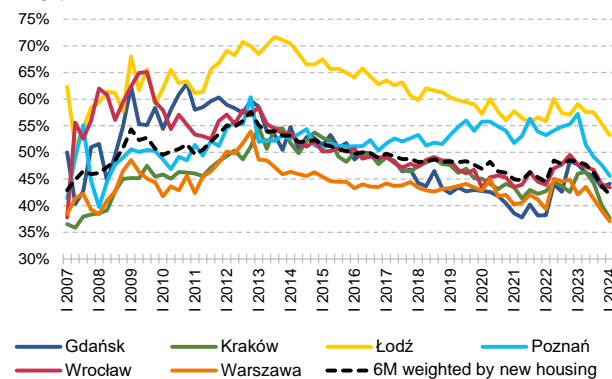
Figure 42 Structure (LHS) and number (RHS) of insolvencies of enterprises, including in the construction industry (end of Q1)



Source: Coface Poland

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

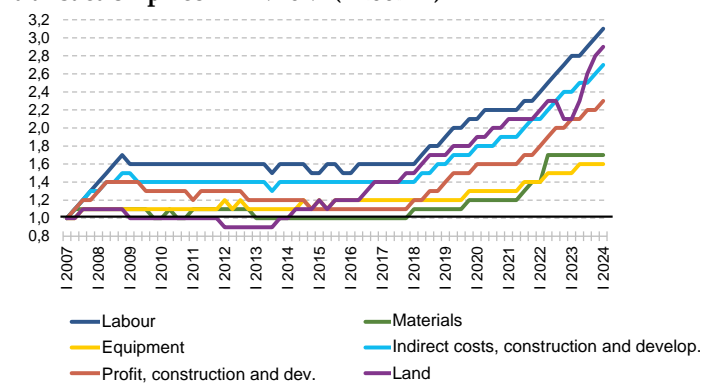
Figure 43 Estimated share of direct construction costs per square metre of usable floor area of a residential building (type 1122-302³⁶) in net transaction price in PM in 6M



Source: NBP based on Sekocenbud

Note to Figures 43 and 44: Since 2014 NBP has used its own appraisal of land for residential multifamily construction.

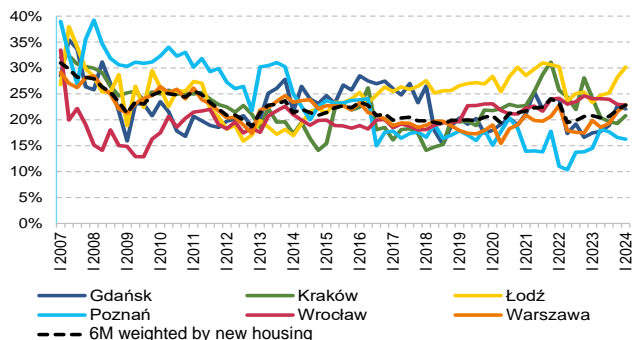
Figure 44 Change in the estimated share of construction costs per square metre of usable floor area of a residential building (type 1122-302³⁶) in net transaction price in PM 6M (I 2007=1)



Source: NBP based on Sekocenbud

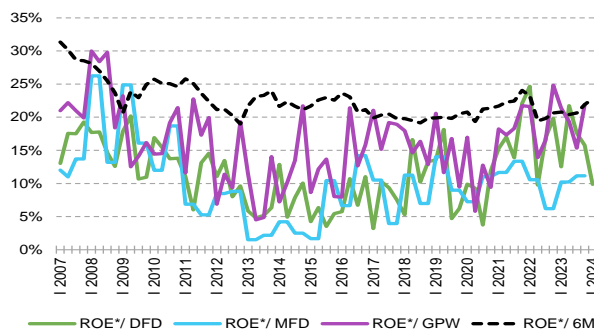
³⁶ **Building (type 1122-302)** - an average residential multi-family building, with an underground garage, constructed in the technology: foundation footings, construction walls and ceilings - monolithic reinforced concrete, curtain walling - bricked walls of hollow MAX blocks. Half of the building monitored by NBP since 2016 Q2 based on Sekocenbud data. Change of the type of the analysed building in 2017 is related to closing of the cost estimation of the building 1121. Analytical assumptions related to building 1121 have been maintained.

Figure 45 Estimated ROE on investment projects (type 1122-302³⁶) in the largest cities



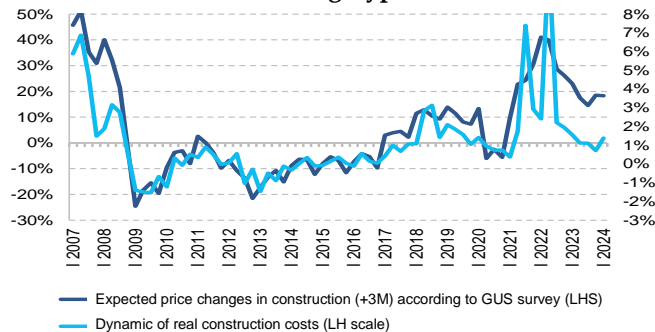
Source: NBP based on Sekocenbud, Statistics Poland (F01)

Figure 46 Estimated ROE achieved on development projects by developers listed on the Warszawa Stock Exchange*, big developers (DFD)/ and small developers (MFD)***/ as well as on investment projects in 6M**



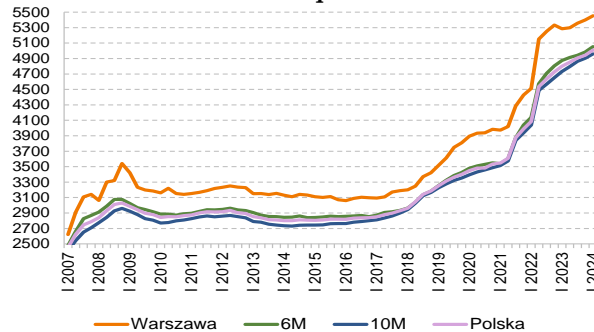
Source: NBP based on Sekocenbud, Financial Statements, Statistics Poland (F01)

Figure 47 Expected changes in prices of construction (+3M) and growth in construction costs of usable floor area of a residential building (type 1122- 302³⁶)



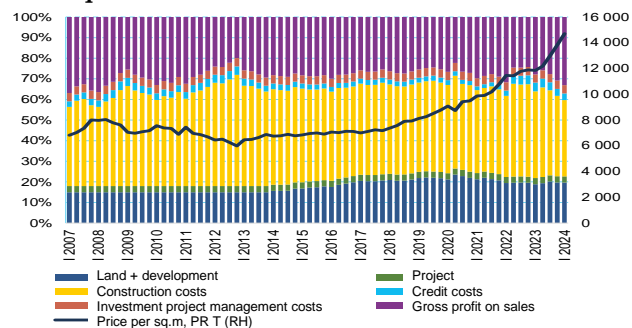
Source: NBP based on data published by Statistics Poland (business conditions survey), Sekocenbud

Figure 48 Average cost of building 1 sq. m of usable floor area of a residential building (type 1122-302³⁶) in selected markets (PLN/sq. m)



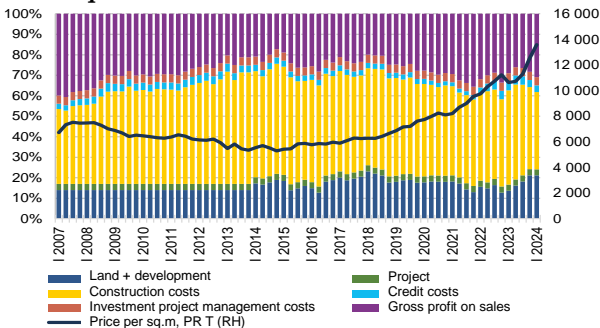
Source: NBP based on Sekocenbud

Figure 49 Warszawa – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302³⁶) for the consumer and price level (PLN/sq.m. RH)



Source: NBP based on Sekocenbud, JLL

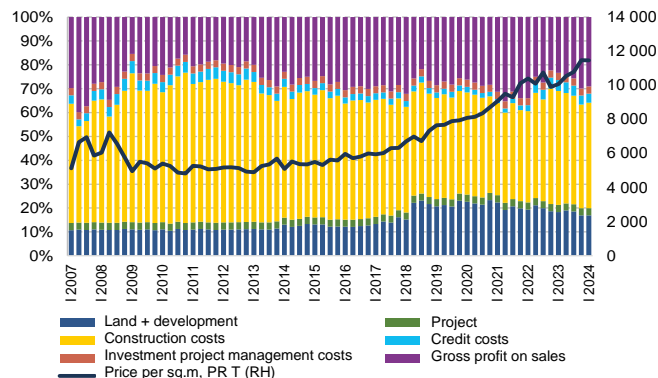
Figure 50 Kraków – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302³⁶) for the consumer and price level (PLN/sq.m., RH)



Source: NBP based on Sekocenbud, JLL

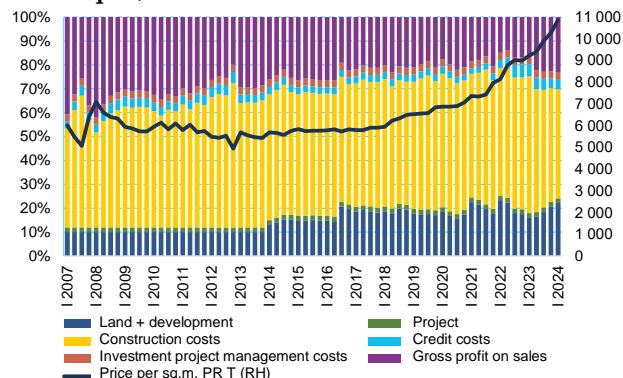
Note to Figures 49-54: The calculation of “Gross profit on sales” does not take into account, among others, the developer's overheads and general financial costs.

Figure 51 Gdańsk – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302 ³⁶) for the consumer and price level (PLN/sq.m., RH)



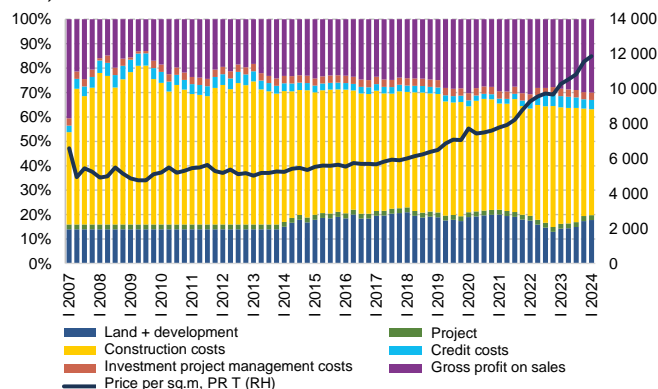
Source: NBP based on Sekocenbud, JLL

Figure 52 Poznań – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302 ³⁶) for the consumer and price level (PLN/sq.m., RH)



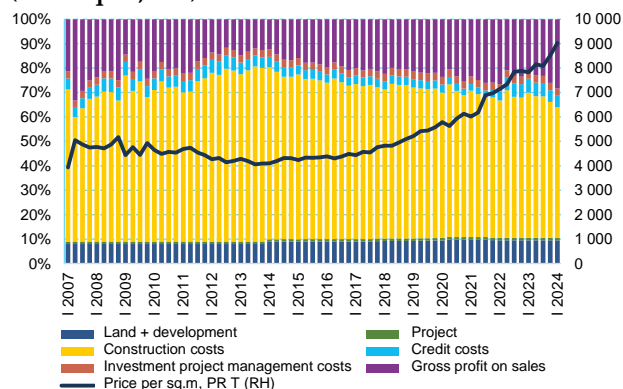
Source: NBP based on Sekocenbud, JLL

Figure 53 Wrocław – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302 ³⁶) for the consumer and price level (PLN/sq.m., RH)



Source: NBP based on Sekocenbud, JLL

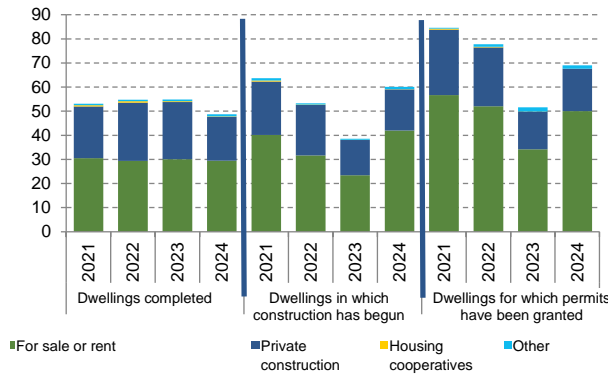
Figure 54 Łódź – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302 ³⁶) for the consumer and price level (PLN/sq.m., RH)



Source: NBP based on Sekocenbud, JLL

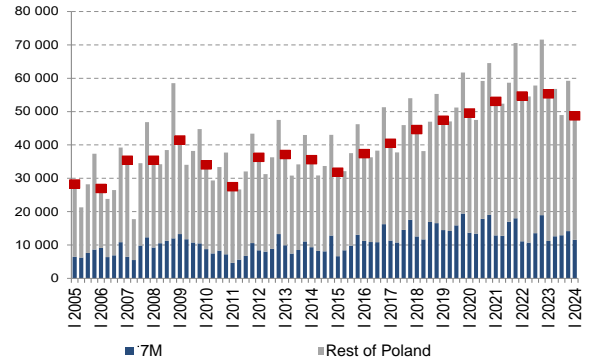
5. Residential construction industry and the housing market in selected cities in Poland

Figure 55 Structure of residential construction investors in Poland in the first quarters of 2021-2024



Source: Statistics Poland

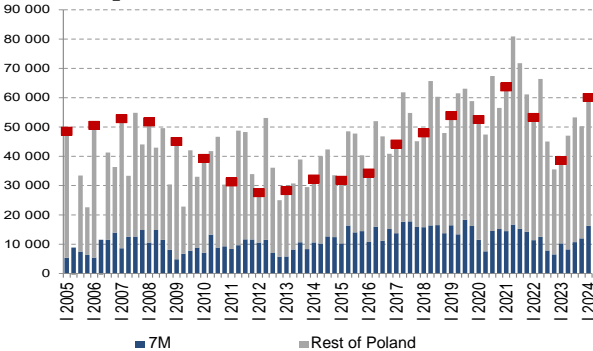
Figure 56 Dwellings completed and made ready for occupancy in Poland, in quarter-on-quarter terms



Source: Statistics Poland

Note: the red dots indicate first quarters only.

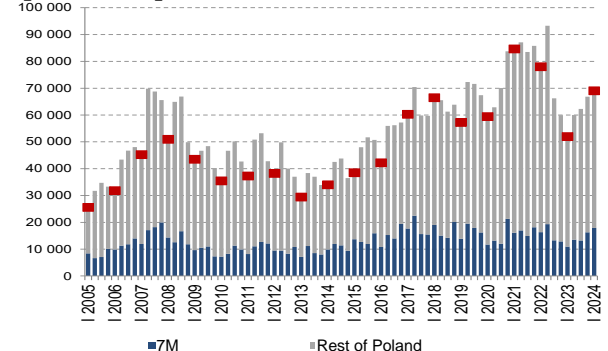
Figure 57 New home construction starts in Poland, in quarter-on-quarter terms



Source: Statistics Poland

Note: only first quarters have been marked in red.

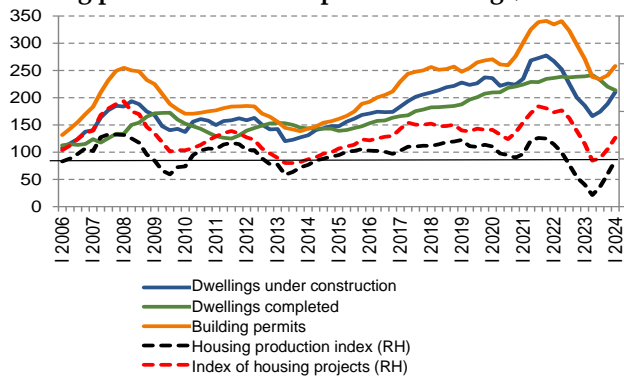
Figure 58 Home building permits issued in Poland, in quarter-on-quarter terms



Source: Statistics Poland

Note: only first quarters have been marked in red.

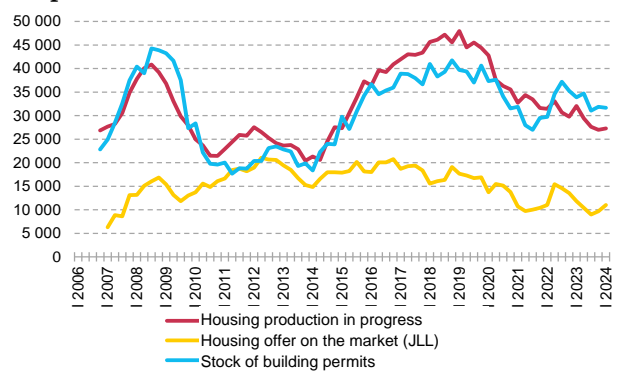
Figure 59 Housing construction in Poland (in thousands of dwellings), dwellings under construction (dwellings under construction minus completed dwellings) and investment projects in progress (home building permits minus completed dwellings)



Source: NBP based on PABB and Statistics Poland

Note: moving averages for the past four quarters.

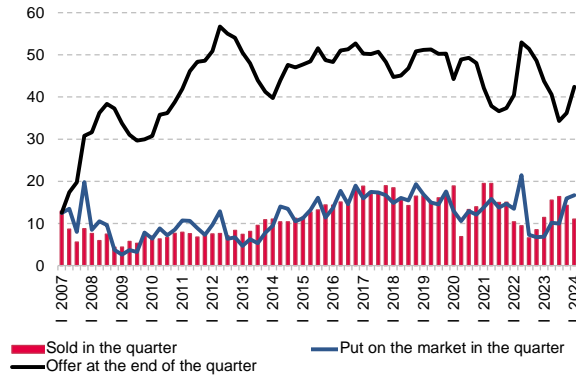
Figure 60 Estimate of the production of developer dwellings under construction in Warszawa (based on dwellings started, construction time and dwellings completed)



Source: NBP based on GUS and JLL

Note: Stock of permits = permits - launched - expired.

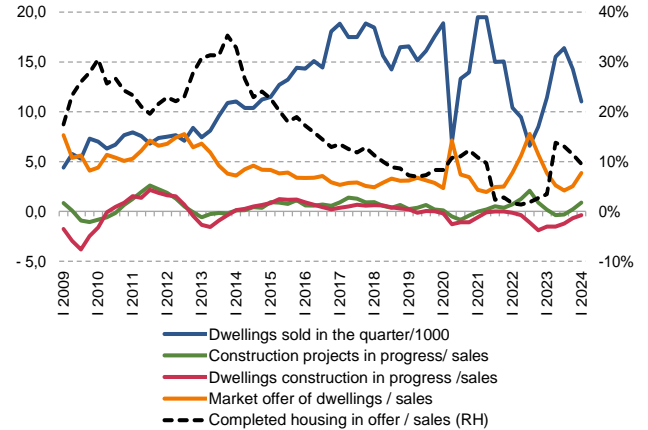
Figure 61 Number of contracts for the construction of dwellings put on the market, both sold and offered for sale in Poland's 6 largest markets.*/



Source: JLL

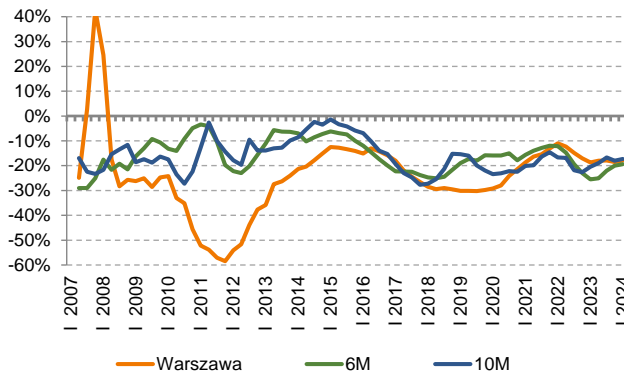
Note: an estimate of the number of dwellings put on the market in actual rather than statistical terms; */Warszawa, Kraków, Tricity,

Figure 62 Housing projects, dwellings under construction and finished dwellings offered relative to sales in 7M



Source: NBP based on Statistics Poland, JLL

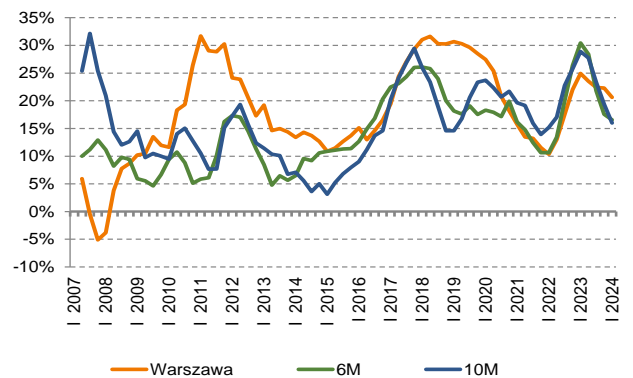
Figure 63 Measure of the match between dwellings offered vs. demand in terms of floor area ≤ 50 sq. m, PM in selected cities of Poland



Source: NBP

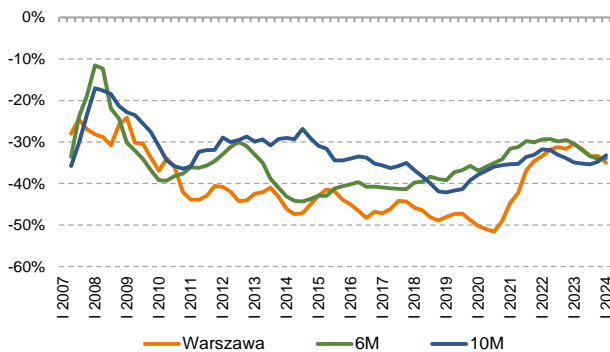
Note: Figure 60 presents, in percentage terms, a short-term mismatch in the primary market between supply (developers' housing offer) and the estimated demand (housing transactions) in terms of the dwelling's size, according to the data from the BaRN database. The mismatch is calculated as the ratio of the share of housing units with usable area of up to 50 square meters offered for sale to the number of transactions involving housing units with a total area of up to 50 square meters (the average figure for the last four quarters). A positive result (above the black line) indicates the surplus of dwellings of a particular size, a negative result – their deficit. Figure 61 is parallel for the area above 50 sq.m. Figures 62-63 are parallel, but they concern the SM only.

Figure 64 Measure of the match between dwellings offered vs. demand in terms of floorage >50 sq. m, PM in selected cities of Poland



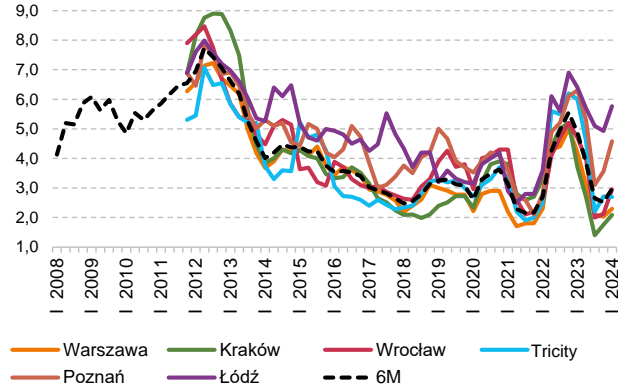
Source: NBP

Figure 65 Measure of adjustment of housing units on offer to demand in terms of area ≤ 50 sq. m, SM in selected cities of Poland



Source: NBP

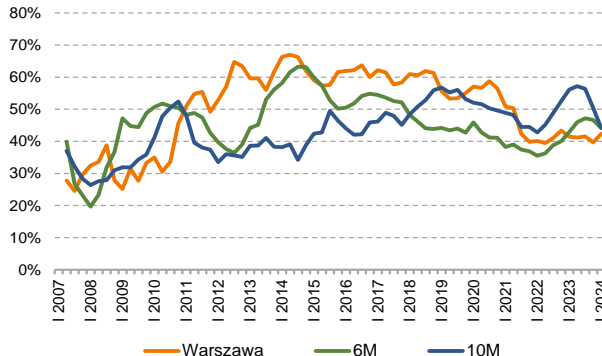
Figure 67 Time to sell dwellings offered in PM in selected cities (number of quarters)



Source: NBP based on JLL

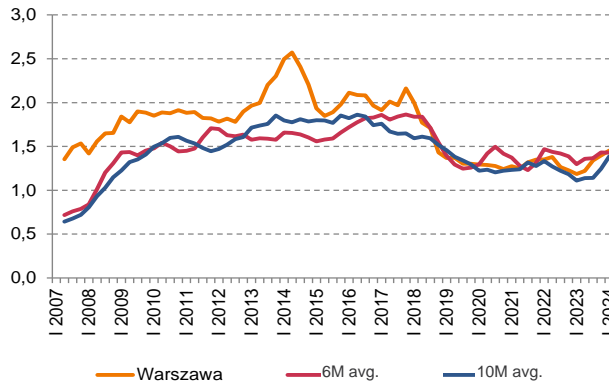
Note: The time to sell dwelling in a primary real estate market is the ratio of the number of dwellings on offer at the end of the current quarter to the number of contracts sold in the previous year.

Figure 66 Measure of adjustment of housing units on offer to demand in terms of area > 50 sq. m, SM in selected cities of Poland



Source: NBP

Figure 68 Time to sell dwellings offered in SM in selected cities (number of quarters)

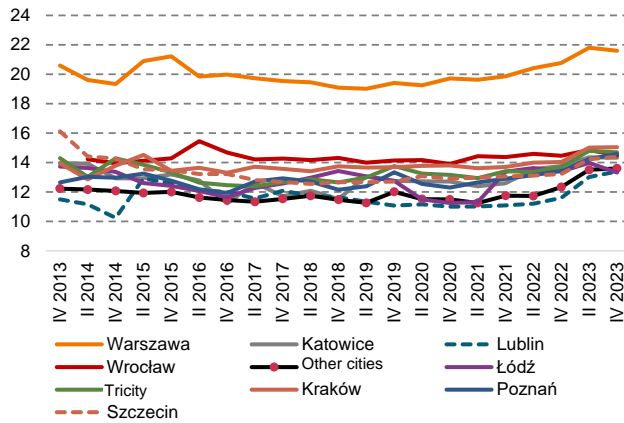


Source: NBP

Note: Real time to sell dwellings, averaged for the previous four quarters; the data are not comparable to Figure 67. Only closed sale transactions are included in the The time to sell dwellings in the secondary property markets. The data are understated since they do not contain offers listed but not yet sold.

6. Prices and rents of commercial real estate, investment and financing, operating expenses and the estimated rate of return

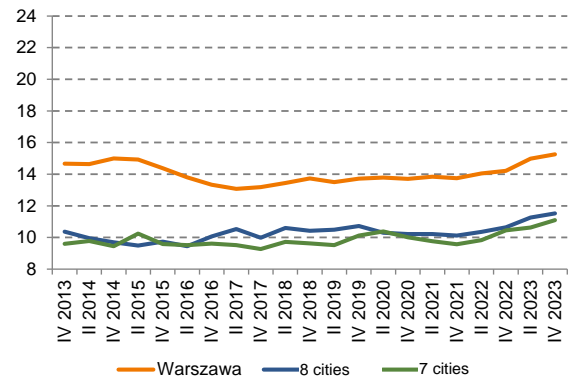
Figure 69 Transaction rents for A class office space (average prices in EUR/sq.m./month)



Source: NBP

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

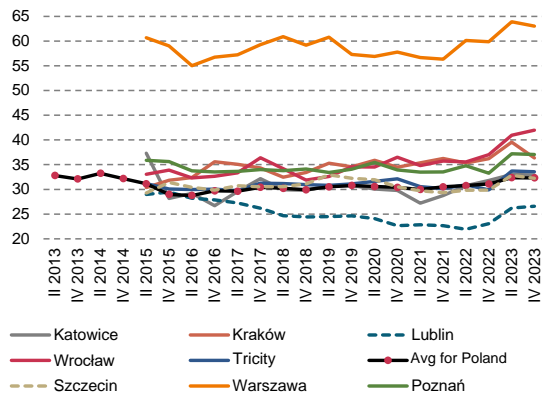
Figure 70 Transaction rents for B class office space (average prices in EUR/sq.m./month)



Source: NBP

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

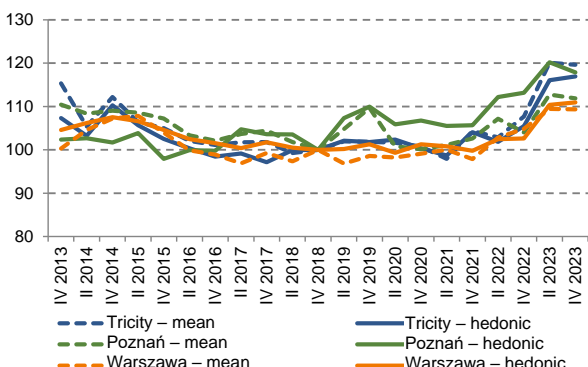
Figure 71 Transaction rents for retail space in shopping centres (shopping malls) with an area of 100-500 sq. m (EUR/sq.m./month)



Source: NBP

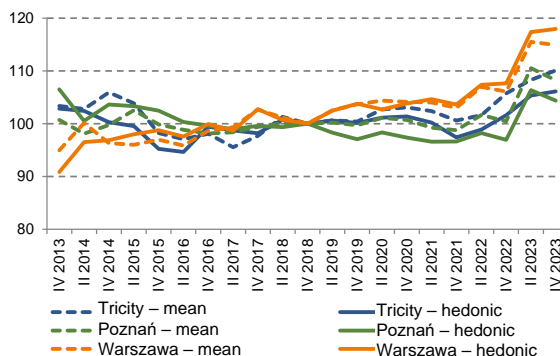
Note to Figure 71: as of the beginning of 2015 Q4, the number of records in the base, including respondents, has increased significantly, consequently changing the analysed sample.

Figure 72 Index of rents for offices, average and hedonic (2018 Q4 = 100)



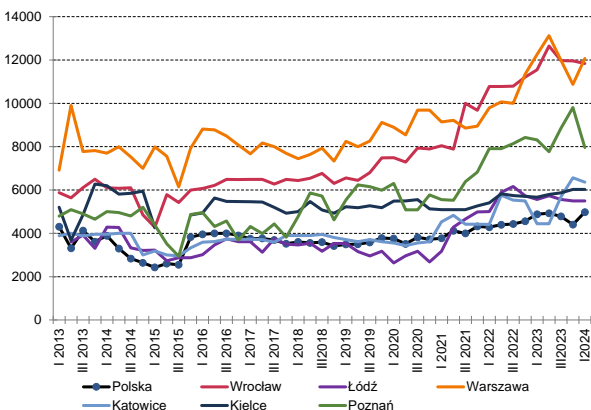
Source: NBP

Figure 73 Index of rents for shopping centres, average and hedonic (2018 Q4 = 100)



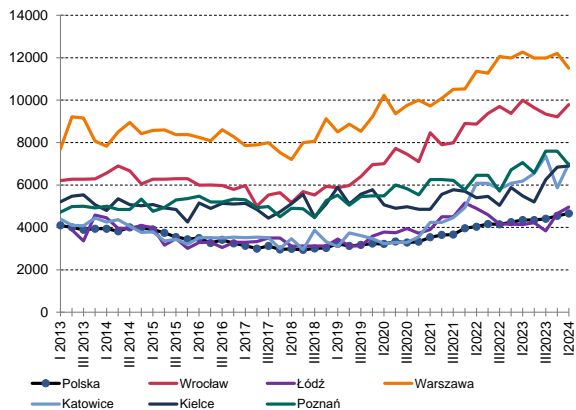
Source: NBP

Figure 74 Median of offer selling price of small office premises in SM (PLN/sq.m.)



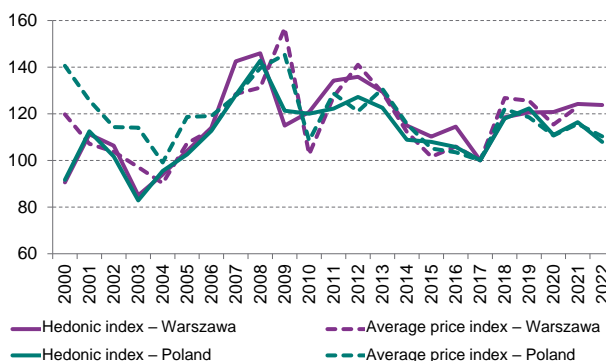
Source: PONT, NBP report

Figure 75 Median of offer selling price of small retail premises in SM (PLN/sq.m.)



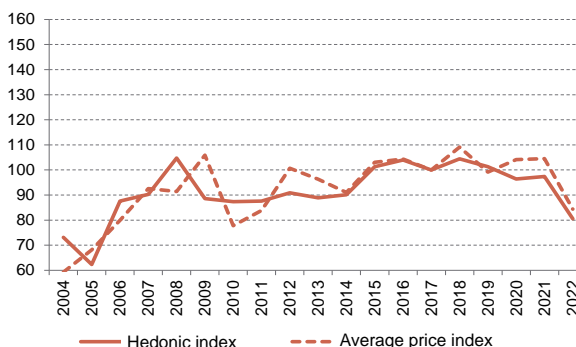
Source: PONT, NBP report

Figure 76 Change in average and hedonic prices of office real estate in Warszawa and the whole of Poland (2017=100) and the index of implied price for Warszawa



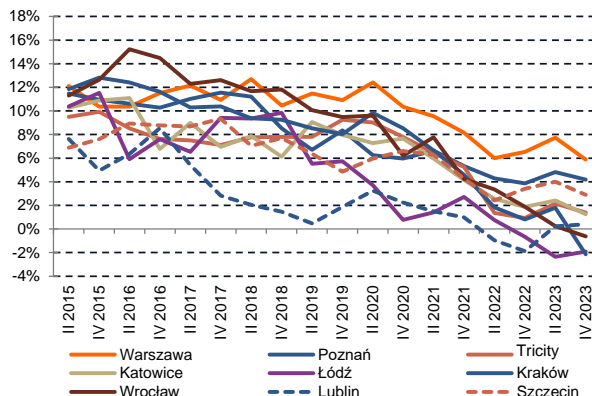
Source: NBP, Comparables.pl, AMRON

Figure 77 Change in average and hedonic prices of retail real estate in the whole of Poland (2017=100)



Source: NBP, Comparables.pl, AMRON

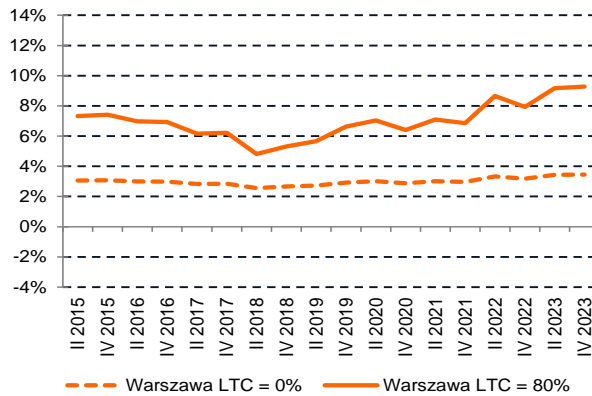
Figure 78 Estimated Return on Equity (ROE) on an investment in the construction and commercialisation of a class A office building, assuming financial of leverage LTC=80%



Source: NBP, Sockenbud, NBP report

Note: A description of the ROE calculation method can be found under Tables 4 to 13. Differences in ROE between cities result from different levels of construction costs and different levels of effective rents, i.e. rents adjusted by the vacancy rate in A class office buildings in a given market.

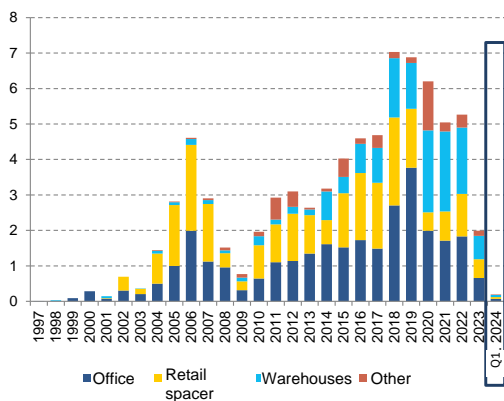
Figure 79 Estimated Return on Equity (ROE) on an investment concerning the purchase of an existing Class B office building in Warszawa



Source: NBP, Comparables.pl, AMRON, NBP report

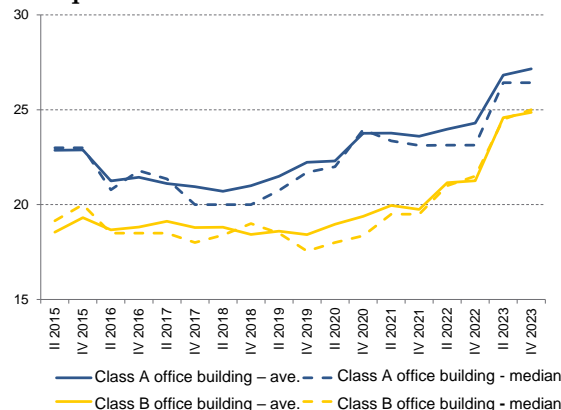
Note: A description of the ROE calculation method can be found under Table 6.

Figure 80 Value of investment transactions in commercial real estate in individual years (EUR billion)



Source: Comparables.pl

Figure 81 Operating expenses of a class A and a class B office building in Warszawa (PLN/sq.m/month)



Source: NBP

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

Date	Average rent per sq.m of area in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	12.9	1781	3.7%	5.3%	10.3%	2.8%
2015 Q4	13.2	1716	3.8%	5.6%	10.9%	2.8%
2016 Q2	12.8	1664	3.8%	5.6%	11.1%	3.0%
2016 Q4	11.2	1679	3.0%	3.9%	6.8%	3.3%
2017 Q2	12.6	1762	3.4%	4.8%	9.0%	3.3%
2017 Q4	11.7	1773	3.0%	4.0%	7.0%	3.4%
2018 Q2	12.1	1796	3.2%	4.3%	7.9%	3.2%
2018 Q4	11.5	1862	2.8%	3.7%	6.1%	3.1%
2019 Q2	13.1	1925	3.4%	4.8%	9.1%	2.7%
2019 Q4	12.8	1983	3.2%	4.4%	8.0%	2.0%
2020 Q2	12.2	1928	3.1%	4.1%	7.3%	1.4%
2020 Q4	12.8	1962	3.1%	4.3%	7.7%	1.3%
2021 Q2	12.3	1998	2.8%	3.6%	6.0%	1.5%
2021 Q4	12.7	2225	2.4%	2.9%	4.1%	2.4%
2022 Q2	13.6	2467	2.1%	2.2%	2.6%	5.5%
2022 Q4	13.8	2575	2.0%	1.9%	1.9%	6.7%
2023 Q2	14.4	2629	2.1%	2.2%	2.4%	6.1%
2023 Q4	14.3	2748	1.9%	1.7%	1.2%	5.6%

Source: NBP (rents and calculations), MF (yields on 10-year bonds), calculation of 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 I - non-residential buildings, facility 1220-102].

Assumptions: The costs of construction of the office building (Sekocenbud data) were increased by 15% of the developer's costs related to organisation of the investment and commercialisation of the building, as well as the cost of land estimated by experts (based on public information). Loan in euro for 25 years, equal instalments, payable four times a year. Building depreciation of 2.5%, standard for commercial real estate. On the income side, the effective rent has been taken into account, i.e. the average rent adjusted by the vacancy rate in a given market. The calculated payback from investment includes the depreciation cost of the building. CIT is included. ROE means net profit/equity contributed.

A detailed description of the method is presented in "Box C. Profitability analysis of investment in newly built office real estate and estimated rates of return at different leverage levels" in NBP (2020) "Report on the situation in the residential and commercial real estate market in Poland in 2019".

Table 5 Estimated Return on Equity on equity (ROE) on an investment in the construction and commercialisation of class A office building in Kraków

Date	Average rent per sq.m of space in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	14.5	1837	4.0%	5.9%	11.9%	2.8%
2015 Q4	13.4	1760	4.2%	6.3%	12.8%	2.8%
2016 Q2	13.6	1740	4.1%	6.2%	12.4%	3.0%
2016 Q4	13.3	1726	3.9%	5.8%	11.6%	3.3%
2017 Q2	13.7	1846	3.7%	5.3%	10.3%	3.3%
2017 Q4	13.6	1813	3.7%	5.4%	10.4%	3.4%
2018 Q2	13.4	1876	3.5%	4.9%	9.4%	3.2%
2018 Q4	13.7	1891	3.5%	4.9%	9.3%	3.1%
2019 Q2	13.7	1966	3.3%	4.6%	8.5%	2.7%
2019 Q4	13.7	2030	3.2%	4.4%	8.0%	2.0%
2020 Q2	13.8	1983	3.6%	5.1%	9.8%	1.4%
2020 Q4	13.8	2013	3.3%	4.6%	8.5%	1.3%
2021 Q2	13.6	2029	2.9%	3.9%	6.7%	1.5%
2021 Q4	13.7	2200	2.5%	3.0%	4.6%	2.4%
2022 Q2	14.0	2519	2.0%	1.9%	1.8%	5.5%
2022 Q4	14.0	2586	1.8%	1.5%	0.8%	6.7%
2023 Q2	15.0	2726	2.9%	3.8%	6.6%	6.1%
2023 Q4	15.0	2877	1.3%	0.5%	-2.1%	5.6%

Source: NBP (rents and calculations), MF (yields on 10-year bonds), calculation of 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 I - non-residential buildings, facility 1220-102].

Assumptions: see: Table 4

Table 6 Estimated Return on Equity on equity (ROE) on an investment in the construction and commercialisation of class A office building in Lublin

Date	Average rent per sq.m of area in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	13.5	1668	3.8%	5.5%	10.9%	2.8%
2015 Q4	13.0	1628	3.7%	5.3%	10.3%	2.8%
2016 Q2	12.6	1600	3.5%	5.1%	9.7%	3.0%
2016 Q4	12.5	1585	3.6%	5.1%	9.8%	3.3%
2017 Q2	12.1	1691	3.1%	4.2%	7.6%	3.3%
2017 Q4	11.7	1695	2.9%	3.8%	6.6%	3.4%
2018 Q2	11.9	1683	2.8%	3.5%	5.8%	3.2%
2018 Q4	11.8	1811	2.9%	3.8%	6.5%	3.1%
2019 Q2	11.4	1848	2.7%	3.5%	5.7%	2.7%
2019 Q4	11.5	1905	3.0%	4.1%	7.2%	2.0%
2020 Q2	11.5	1841	2.5%	3.0%	4.5%	1.4%
2020 Q4	11.1	1865	2.4%	2.8%	4.1%	1.3%
2021 Q2	11.1	1991	2.1%	2.2%	2.4%	1.5%
2021 Q4	11.4	2100	2.0%	1.9%	1.8%	2.4%
2022 Q2	11.6	2322	1.7%	1.4%	0.4%	5.5%
2022 Q4	11.6	2367	1.5%	1.1%	-0.4%	6.7%
2023 Q2	13.0	2619	1.7%	1.5%	0.6%	6.1%
2023 Q4	13.4	2706	1.7%	1.4%	0.4%	5.6%

Source: NBP (rents and calculations), MF (yields on 10-year bonds), calculation of 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 I - non-residential buildings, facility 1220-102].

Assumptions: see: Table 4

Table 7 Estimated Return on Equity on equity (ROE) on an investment in the construction and commercialisation of class A office building in Łódź

Date	Average rent per sq.m of space in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	12.6	1804	3.7%	5.4%	10.4%	2.8%
2015 Q4	12.3	1708	3.9%	5.8%	11.5%	2.8%
2016 Q2	12.0	1673	2.8%	3.6%	5.9%	3.0%
2016 Q4	11.7	1670	3.1%	4.2%	7.6%	3.3%
2017 Q2	12.2	1766	2.9%	3.8%	6.5%	3.3%
2017 Q4	12.6	1767	3.5%	5.0%	9.4%	3.4%
2018 Q2	13.0	1821	3.5%	4.9%	9.4%	3.2%
2018 Q4	13.0	1875	3.6%	5.1%	9.8%	3.1%
2019 Q2	12.9	1887	2.7%	3.4%	5.5%	2.7%
2019 Q4	12.7	1928	2.7%	3.5%	5.7%	2.0%
2020 Q2	11.6	1935	2.3%	2.7%	3.7%	1.4%
2020 Q4	11.3	1973	1.8%	1.5%	0.8%	1.3%
2021 Q2	11.5	2006	1.9%	1.8%	1.4%	1.5%
2021 Q4	13.4	2210	2.1%	2.3%	2.7%	2.4%
2022 Q2	13.6	2392	1.7%	1.5%	0.8%	5.5%
2022 Q4	13.5	2433	1.5%	1.0%	-0.7%	6.7%
2023 Q2	14.0	2573	1.2%	0.4%	-2.4%	6.1%
2023 Q4	14.7	2697	1.3%	0.6%	-1.9%	5.6%

Source: NBP (rents and calculations), MF (yields on 10-year bonds), calculation of 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 I - non-residential buildings, facility 1220-102].

Assumptions: see: Table 4

Table 8 Estimated rate of return on equity from investment in the building and putting to commercial use of A class office building in Poznań

Date	Average rent per sq.m of space in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	13.2	1753	3.9%	5.8%	11.5%	2.8%
2015 Q4	12.7	1682	3.8%	5.6%	11.0%	2.8%
2016 Q2	12.2	1665	3.7%	5.4%	10.6%	3.0%
2016 Q4	11.9	1644	3.7%	5.3%	10.3%	3.3%
2017 Q2	12.7	1765	3.8%	5.6%	11.0%	3.3%
2017 Q4	12.9	1784	3.9%	5.8%	11.6%	3.4%
2018 Q2	12.7	1798	3.8%	5.7%	11.2%	3.2%
2018 Q4	12.1	1874	3.3%	4.6%	8.5%	3.1%
2019 Q2	12.3	1975	2.9%	3.9%	6.7%	2.7%
2019 Q4	13.3	2031	3.3%	4.5%	8.3%	2.0%
2020 Q2	12.5	2019	2.9%	3.7%	6.2%	1.4%
2020 Q4	12.3	2004	2.8%	3.6%	6.0%	1.3%
2021 Q2	12.6	2009	2.9%	3.9%	6.6%	1.5%
2021 Q4	12.9	2181	2.7%	3.3%	5.3%	2.4%
2022 Q2	13.6	2430	2.5%	2.9%	4.3%	5.5%
2022 Q4	13.4	2469	2.4%	2.7%	3.9%	6.7%
2023 Q2	14.2	2496	2.6%	3.1%	4.8%	6.1%
2023 Q4	14.6	2601	2.4%	2.9%	4.2%	5.6%

Source: NBP (rents and calculations), MF (yields on 10-year bonds), estimation of construction costs based on Sekocenbud data, BCO Bulletin of prices of construction facilities, part I - non-residential buildings, facility 1220-102.

Assumptions: see: Table 4

Table 9 Estimated Return on Equity on equity (ROE) on an investment in the construction and commercialisation of class A office building in Szczecin

Date	Average rent per sq.m of space in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	13.5	1837	3.0%	4.0%	6.9%	2.8%
2015 Q4	13.4	1779	3.1%	4.2%	7.6%	2.8%
2016 Q2	13.2	1707	3.4%	4.8%	8.9%	3.0%
2016 Q4	13.2	1742	3.4%	4.7%	8.8%	3.3%
2017 Q2	12.8	1831	3.3%	4.7%	8.7%	3.3%
2017 Q4	12.6	1890	3.5%	4.9%	9.3%	3.4%
2018 Q2	12.5	1981	3.0%	4.0%	7.0%	3.2%
2018 Q4	12.6	2001	3.1%	4.3%	7.7%	3.1%
2019 Q2	12.6	2137	2.9%	3.7%	6.4%	2.7%
2019 Q4	12.7	2179	2.6%	3.1%	4.9%	2.0%
2020 Q2	13.0	2116	2.8%	3.6%	6.0%	1.4%
2020 Q4	12.9	2155	2.9%	3.8%	6.6%	1.3%
2021 Q2	12.9	2232	2.9%	3.7%	6.3%	1.5%
2021 Q4	13.0	2387	2.5%	2.9%	4.3%	2.4%
2022 Q2	13.3	2686	2.1%	2.2%	2.4%	5.5%
2022 Q4	13.5	2678	2.3%	2.6%	3.4%	6.7%
2023 Q2	14.4	2783	2.4%	2.8%	4.0%	6.1%
2023 Q4	14.5	2966	2.2%	2.4%	2.9%	5.6%

Source: NBP (rents and calculations), MF (yields on 10-year bonds), calculation of 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 I - non-residential buildings, facility 1220-102].

Assumptions: see: Table 4

Table 10 Estimated rate of return on equity from investment in the building and putting to commercial use of A class office building in the Tricity

Date	Average rent per sq.m of space in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	13.0	1858	3.5%	5.0%	9.5%	2.8%
2015 Q4	12.7	1817	3.6%	5.2%	9.9%	2.8%
2016 Q2	12.3	1736	3.3%	4.6%	8.5%	3.0%
2016 Q4	12.1	1783	3.1%	4.2%	7.6%	3.3%
2017 Q2	12.0	1842	3.1%	4.2%	7.5%	3.3%
2017 Q4	12.1	1872	3.0%	4.0%	7.1%	3.4%
2018 Q2	12.7	1897	3.2%	4.3%	7.8%	3.2%
2018 Q4	12.7	1927	3.2%	4.3%	7.8%	3.1%
2019 Q2	12.8	2028	3.2%	4.3%	7.8%	2.7%
2019 Q4	13.5	2078	3.5%	4.9%	9.3%	2.0%
2020 Q2	13.3	2013	3.4%	4.8%	9.0%	1.4%
2020 Q4	13.2	2040	3.2%	4.3%	7.8%	1.3%
2021 Q2	12.9	2106	2.9%	3.8%	6.5%	1.5%
2021 Q4	13.4	2215	2.7%	3.3%	5.3%	2.4%
2022 Q2	13.4	2549	1.9%	1.7%	1.3%	5.5%
2022 Q4	13.7	2632	1.8%	1.6%	1.0%	6.7%
2023 Q2	14.8	2740	2.0%	2.1%	2.1%	6.1%
2023 Q4	14.7	2839	1.9%	1.8%	1.4%	5.6%

Source: NBP (rents and calculations), MF (rates of return on 10-year bonds), estimation of construction costs based on Sekocenbud data, BCO Bulletin of prices of construction facilities, part I - non-residential buildings, facility 1220-102].

Assumptions: see: Table 4

Table 11 Estimated rate of return on equity from investment in the building and putting to commercial use of A class office building in Warszawa

Date	Average rent per sq.m of space in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	21.0	2897	4.0%	6.0%	12.1%	2.8%
2015 Q4	21.3	2774	3.7%	5.3%	10.4%	2.8%
2016 Q2	19.9	2714	3.7%	5.3%	10.4%	3.0%
2016 Q4	20.1	2714	3.9%	5.8%	11.5%	3.3%
2017 Q2	19.8	2835	4.0%	6.1%	12.2%	3.3%
2017 Q4	19.6	2846	3.8%	5.6%	10.9%	3.4%
2018 Q2	19.5	2868	4.1%	6.3%	12.7%	3.2%
2018 Q4	19.2	2949	3.7%	5.4%	10.4%	3.1%
2019 Q2	19.1	3041	3.9%	5.8%	11.5%	2.7%
2019 Q4	19.5	3123	3.8%	5.6%	10.9%	2.0%
2020 Q2	19.3	3028	4.1%	6.2%	12.4%	1.4%
2020 Q4	19.7	3052	3.7%	5.3%	10.3%	1.3%
2021 Q2	19.7	3065	3.5%	5.0%	9.5%	1.5%
2021 Q4	19.9	3252	3.2%	4.5%	8.1%	2.4%
2022 Q2	20.4	3615	2.8%	3.6%	6.0%	5.5%
2022 Q4	20.8	3606	2.9%	3.8%	6.5%	6.7%
2023 Q2	21.8	3692	3.1%	4.3%	7.7%	6.1%
2023 Q4	21.6	4098	2.8%	3.6%	5.9%	5.6%

Source: NBP (rents and calculations), MF (rates of return on 10-year bonds), estimation of construction costs based on Sekocenbud data, BCO Bulletin of prices of construction facilities, part I - non-residential buildings, facility 1220-102].

Assumptions: see: Table 4

Table 12 Estimated Return on Equity on equity (ROE) on an investment in the construction and commercialisation of class A office building in Wrocław

Date	Average rent per sq.m of space in EUR - A class	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 rates of 10-year Treasury bonds
2015 Q2	14.1	1774	3.9%	5.7%	11.3%	2.8%
2015 Q4	14.2	1716	4.1%	6.3%	12.6%	2.8%
2016 Q2	15.3	1652	4.6%	7.3%	15.2%	3.0%
2016 Q4	14.6	1644	4.5%	7.0%	14.5%	3.3%
2017 Q2	14.1	1717	4.1%	6.1%	12.3%	3.3%
2017 Q4	14.2	1700	4.2%	6.2%	12.6%	3.4%
2018 Q2	14.1	1768	3.9%	5.9%	11.7%	3.2%
2018 Q4	14.4	1798	4.0%	5.9%	11.8%	3.1%
2019 Q2	14.0	1866	3.6%	5.2%	10.1%	2.7%
2019 Q4	14.1	1920	3.5%	5.0%	9.5%	2.0%
2020 Q2	14.1	1860	3.5%	5.0%	9.6%	1.4%
2020 Q4	13.7	1901	2.8%	3.7%	6.2%	1.3%
2021 Q2	14.4	1925	3.2%	4.3%	7.8%	1.5%
2021 Q4	14.2	2106	2.5%	2.9%	4.2%	2.4%
2022 Q2	14.7	2402	2.3%	2.5%	3.3%	5.5%
2022 Q4	14.6	2493	2.0%	2.0%	1.9%	6.7%
2023 Q2	14.9	2650	1.8%	1.3%	0.2%	6.1%
2023 Q4	14.5	2786	1.5%	1.0%	-0.6%	5.6%

Source: NBP (rents and calculations), MF (rates of return on 10-year bonds), estimation of construction costs based on Sekocenbud data, BCO Bulletin of prices of construction facilities, part I - non-residential buildings, facility 1220-102].

Assumptions: see: Table 4

Table 13 Estimated rate of return on equity from investment in the purchase of B class office building from the existing stock in Warszawa

Date	Average rent per sq.m of space in EUR	Smoothed price per sq.m of space in EUR	Calculated payback from investment (yield)	ROE at LTC = 0%	ROE at LTC = 50%	ROE at LTC = 80%	Average market rates of 10-year Treasury bonds
2014 Q2	14.6	2312	7.6%	3.0%	3.9%	6.8%	3.4%
2014 Q4	15.0	2289	7.8%	3.1%	4.3%	7.8%	2.6%
2015 Q2	14.9	2319	7.7%	3.1%	4.1%	7.3%	2.8%
2015 Q4	14.4	2222	7.8%	3.1%	4.2%	7.4%	2.8%
2016 Q2	13.8	2162	7.7%	3.0%	4.0%	7.0%	3.0%
2016 Q4	13.3	2080	7.7%	3.0%	4.0%	6.9%	3.3%
2017 Q2	13.1	2104	7.5%	2.8%	3.7%	6.2%	3.3%
2017 Q4	13.2	2117	7.5%	2.8%	3.7%	6.2%	3.4%
2018 Q2	13.2	2268	7.0%	2.6%	3.1%	4.8%	3.2%
2018 Q4	13.6	2284	7.1%	2.7%	3.3%	5.3%	3.1%
2019 Q2	13.3	2194	7.3%	2.7%	3.5%	5.7%	2.7%
2019 Q4	13.5	2144	7.6%	2.9%	3.8%	6.6%	2.0%
2020 Q2	13.5	2102	7.7%	3.0%	4.0%	7.0%	1.4%
2020 Q4	13.4	2143	7.5%	2.9%	3.8%	6.4%	1.3%
2021 Q2	13.5	2085	7.8%	3.0%	4.0%	7.1%	1.5%
2022 Q2	14.0	2147	7.8%	3.3%	4.6%	8.6%	5.5%
2022 Q4	14.2	2155	7.9%	3.3%	4.5%	8.3%	6.7%
2023 Q2	14.9	2200	8.1%	3.1%	4.2%	7.5%	6.1%
2023 Q4	15.3	2206	8.3%	3.5%	4.9%	9.3%	5.6%

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

Assumptions: The analysis takes into account contractual rents for B class office space, and transaction prices and appraisals of B class office real estate. As there are relatively few transaction prices and appraisals of class B office real estate in a given six-month period, a moving average has been applied, calculated on the basis of the price in a given six-month period and the previous and the next half-year period, with equal weights.

Loan in euro for 25 years has been assumed, equal instalments, payable four times a year. Building depreciation of 2.5%, standard for commercial real estate. It was assumed that the cost of land in the cost of investment is 20%. The calculated payback from investment includes the depreciation cost of the building. CIT is included. ROE means net profit/equity contributed.

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2024		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 808	10 874	11 793	11 384	12 233	11 643	13 065	12 389	13 827	12 370
growth (q-o-q)	101,4	101,7	99,9	104,7	103,7	102,3	106,8	106,4	105,8	99,8
growth (y-o-y)	104,0	96,8	101,4	104,5	105,3	100,3	112,2	115,9	117,1	113,8
dwelling price range	5 725	763	4 970	1 415	4 503	1 374	4 297	1 658	3 388	1 241
<=8 000 PLN/sq.m	340	100	256	86	205	51	114	31	82	24
(8 001; 10 000] PLN/sq.m	1 998	329	1 736		1 017	550	802	420	364	221
(10 001; 12 000] PLN/sq.m	1 519	89	1 378	251	1 552	284	1 204	485	1 050	523
(12 001; 14 000] PLN/sq.m	588	121	592	253	687	182	734	246	498	155
>14 001 PLN/sq.m	1 280	124	1 008	262	1 042	307	1 443	476	1 394	318
dwelling space range	5 725	763	4 970	1 415	4 503	1 374	4 297	1 658	3 388	1 241
<= 40 sq.m	939	186	833	294	687	281	773	328	487	311
(40,1; 60] sq.m	2486	332	2132	694	1951	666	1754	823	1396	532
(60,1; 80] sq.m	1684	201	1481	331	1331	353	1290	393	1102	288
> 80,1 sq.m	616	44	524	96	534	74	480	114	403	110
average price of 1 sq.m. of dwelling	11 808	10 874	11 793	11 384	12 233	11 643	13 065	12 389	13 827	12 370
<=40 sq.m	12343	11166	12215	11928	12313	12474	13391	13398	14155	12666
(40,1; 60] sq.m	11812	10750	11872	11306	12416	11681	13397	12272	14546	12377
(60,1; 80] sq.m	11291	10180	11339	10715	11797	10617	12461	11666	13054	12068
> 80,1 sq.m	12395	13744	12089	12590	12551	13034	12949	12827	13049	12295
average offer price deviation	8,6%	x	3,6%	x	5,1%	x	5,4%	x	11,8%	x
<= 40 sq.m	10,5%	x	2,4%	x	-1,3%	x	-0,1%	x	11,8%	x
(40,1; 60] sq.m	9,9%	x	5,0%	x	6,3%	x	9,2%	x	17,5%	x
(60,1; 80] sq.m	10,9%	x	5,8%	x	11,1%	x	6,8%	x	8,2%	x
> 80,1 sq.m	-9,8%	x	-4,0%	x	-3,7%	x	1,0%	x	6,1%	x

Source: NBP

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 223	10 970	12 568	11 053	12 995	11 629	13 678	11 801	14 064	12 148
growth (q-o-q)	100,0	97,3	102,8	100,8	103,4	105,2	105,3	101,5	102,8	102,9
growth (y-o-y)	101,8	106,1	103,9	102,6	108,9	101,7	111,9	104,6	115,1	110,7
dwelling price range	2 394	762	2 047	1 102	2 229	1 086	1 631	1 653	1 859	317
<=8 000 PLN/sq.m	87	100	66	125	70	64	26	82	11	7
(8 001; 10 000] PLN/sq.m	538	218	422	300	374	276	186	376	147	53
(10 001; 12 000] PLN/sq.m	787	230	626	372	628	356	405	540	426	114
(12 001; 14 000] PLN/sq.m	430	98	397	150	455	214	370	339	471	78
>14 001 PLN/sq.m	552	116	536	155	702	176	642	303	803	63
dwelling space range	2 394	762	2 047	1 102	2 229	1 086	1 631	1 653	1 859	317
<= 40 sq.m	420	192	340	275	344	299	242	379	265	85
(40,1; 60] sq.m	1030	375	835	558	889	531	644	770	768	147
(60,1; 80] sq.m	670	149	581	216	678	220	512	392	595	73
> 80,1 sq.m	274	46	291	53	318	36	233	112	231	12
average price of 1 sq.m. of dwelling	12 223	10 970	12 568	11 053	12 995	11 629	13 678	11 801	14 064	12 148
<=40 sq.m	13566	11620	13851	12044	14589	12405	15350	13324	15422	13660
(40,1; 60] sq.m	11996	10836	12488	10754	13069	11389	13978	11652	14366	11946
(60,1; 80] sq.m	11871	10566	12267	10546	12334	11262	12911	10784	13456	11004
> 80,1 sq.m	11879	10659	11902	11117	12472	10975	12799	11241	13068	10891
average offer price deviation	11,4%	x	13,7%	x	11,7%	x	15,9%	x	15,8%	x
<= 40 sq.m	16,8%	x	15,0%	x	17,6%	x	15,2%	x	12,9%	x
(40,1; 60] sq.m	10,7%	x	16,1%	x	14,8%	x	20,0%	x	20,3%	x
(60,1; 80] sq.m	12,3%	x	16,3%	x	9,5%	x	19,7%	x	22,3%	x
> 80,1 sq.m	11,4%	x	7,1%	x	13,6%	x	13,9%	x	20,0%	x

Source: NBP

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 143	11 492	13 049	11 589	14 175	12 192	14 565	13 530	15 630	14 676
growth (q-o-q)	101,5	94,7	107,5	100,8	108,6	105,2	102,8	111,0	107,3	108,5
growth (y-o-y)	108,9	109,1	114,6	104,0	120,8	105,1	121,7	111,5	128,7	127,7
dwelling price range	5 732	1 202	4 446	1 735	3 519	1 907	2 899	1 423	3 658	1 114
<=8 000 PLN/sq.m	42	34	9	31	2	6	1	0	1	0
(8 001; 10 000] PLN/sq.m	1 168	332	586	377	296	320	209	151	46	54
(10 001; 12 000] PLN/sq.m	2 000	479	1 326	770	556	726	281	280	248	155
(12 001; 14 000] PLN/sq.m	1 241	154	1 150	315	1 092	526	864	457	1 034	276
>14 001 PLN/sq.m	1 281	203	1 375	242	1 573	329	1 544	535	2 329	629
dwelling space range	5 732	1 202	4 446	1 735	3 519	1 907	2 899	1 423	3 658	1 114
<= 40 sq.m	925	310	819	337	588	346	444	345	561	296
(40,1; 60] sq.m	2957	560	2283	877	1658	1006	1255	690	1643	517
(60,1; 80] sq.m	1446	264	991	428	934	441	900	290	1130	208
> 80,1 sq.m	404	68	353	93	339	114	300	98	324	93
average price of 1 sq.m. of dwelling	12 143	11 492	13 049	11 589	14 175	12 192	14 565	13 530	15 630	14 676
<=40 sq.m	13923	12319	14778	12986	16050	13941	16030	14951	17772	15885
(40,1; 60] sq.m	12013	11396	12770	11418	14096	11955	14864	13000	16125	14435
(60,1; 80] sq.m	11462	10672	12464	10941	13231	11511	13437	13041	13976	13639
> 80,1 sq.m	11462	11686	12481	11113	13908	11607	14529	13711	15182	14496
average offer price deviation	5,7%	x	12,6%	x	16,3%	x	7,6%	x	6,5%	x
<= 40 sq.m	13,0%	x	13,8%	x	15,1%	x	7,2%	x	11,9%	x
(40,1; 60] sq.m	5,4%	x	11,8%	x	17,9%	x	14,3%	x	11,7%	x
(60,1; 80] sq.m	7,4%	x	13,9%	x	14,9%	x	3,0%	x	2,5%	x
> 80,1 sq.m	-1,9%	x	12,3%	x	19,8%	x	6,0%	x	4,7%	x

Source: NBP

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 649	11 011	13 026	11 185	14 186	11 989	15 147	12 558	16 417	13 358
growth (q-o-q)	101,7	99,3	103,0	101,6	108,9	107,2	106,8	104,7	108,4	106,4
growth (y-o-y)	106,8	106,6	107,6	104,0	115,8	108,4	121,8	113,3	129,8	121,3
dwelling price range	1 228	1 018	1 162	1 347	911	1 529	1 003	1 971	975	1 300
<=8 000 PLN/sq.m	26	92	12	98	10	79	3	62	2	22
(8 001; 10 000] PLN/sq.m	253	309	187	392	83	294	44	307	17	111
(10 001; 12 000] PLN/sq.m	364	323	350	434	207	496	144	596	81	297
(12 001; 14 000] PLN/sq.m	277	171	278	250	226	354	266	514	198	417
>14 001 PLN/sq.m	308	123	335	173	385	306	546	492	677	453
dwelling space range	1 228	1 018	1 162	1 347	911	1 529	1 003	1 971	975	1 300
<= 40 sq.m	265	411	233	505	214	517	217	625	236	443
(40,1; 60] sq.m	550	438	515	623	357	712	418	946	399	629
(60,1; 80] sq.m	290	114	276	166	231	227	232	321	206	183
> 80,1 sq.m	123	55	138	53	109	73	136	79	134	45
average price of 1 sq.m. of dwelling	12 649	11 011	13 026	11 185	14 186	11 989	15 147	12 558	16 417	13 358
<=40 sq.m	13878	11421	14 249	11 758	15 675	12 670	16 374	13 587	17 678	14 391
(40,1; 60] sq.m	12040	10625	12 565	10 747	13 663	11 518	14 988	12 122	15 934	12 963
(60,1; 80] sq.m	12442	10891	12 920	10 844	13 750	11 736	14 454	11 952	15 563	12 382
> 80,1 sq.m	13213	11277	12 896	11 944	13 899	12 544	14 861	12 106	16 945	12 680
average offer price deviation	14,9%	x	16,5%	x	18,3%	x	20,6%	x	22,9%	x
<= 40 sq.m	21,5%	x	21,2%	x	23,7%	x	20,5%	x	22,8%	x
(40,1; 60] sq.m	13,3%	x	16,9%	x	18,6%	x	23,6%	x	22,9%	x
(60,1; 80] sq.m	14,2%	x	19,1%	x	17,2%	x	20,9%	x	25,7%	x
> 80,1 sq.m	17,2%	x	8,0%	x	10,8%	x	22,8%	x	33,6%	x

Source: NBP

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 391	8 451	9 465	8 810	9 594	8 731	10 197	9 202	10 708	9 755
growth (q-o-q)	102,6	99,2	100,8	104,2	101,4	99,1	106,3	105,4	105,0	106,0
growth (y-o-y)	115,3	109,5	111,6	111,1	106,9	103,0	111,4	108,0	114,0	115,4
dwelling price range	3 506	405	3 880	482	4 282	527	3 779	671	4 782	881
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	4	1	3	0	5	1	0	0	0	0
(6 001; 8 000] PLN/sq.m	617	164	798	138	687	149	154	93	360	58
(8 001; 10 000] PLN/sq.m	1 712	207	1 507	282	1 772	305	1 541	399	1 641	470
> 10 000 PLN/sq.m	1 173	33	1 572	62	1 818	72	2 084	179	2 781	353
dwelling space range	3 506	405	3 880	482	4 282	527	3 779	671	4 782	881
<= 40 sq.m	1049	120	1103	172	1335	132	1308	236	1624	369
(40,1; 60] sq.m	1560	179	1761	184	1911	265	1590	303	2007	373
(60,1; 80] sq.m	752	90	784	101	804	103	712	115	951	116
> 80,1 sq.m	145	16	232	25	232	27	169	17	200	23
average price of 1 sq.m. of dwelling	9 391	8 451	9 465	8 810	9 594	8 731	10 197	9 202	10 708	9 755
<=40 sq.m	9989	9163	10317	9513	10380	9508	10740	9833	11658	10504
(40,1; 60] sq.m	9265	8320	9278	8609	9388	8665	10094	9030	10480	9320
(60,1; 80] sq.m	8760	7790	8834	8029	8958	8105	9427	8416	9747	8960
> 80,1 sq.m	9684	8286	8971	8606	8974	7970	10208	8796	9862	8805
average offer price deviation	11,1%	x	7,4%	x	9,9%	x	10,8%	x	9,8%	x
<= 40 sq.m	9,0%	x	8,5%	x	9,2%	x	9,2%	x	11,0%	x
(40,1; 60] sq.m	11,4%	x	7,8%	x	8,3%	x	11,8%	x	12,4%	x
(60,1; 80] sq.m	12,5%	x	10,0%	x	10,5%	x	12,0%	x	8,8%	x
> 80,1 sq.m	16,9%	x	4,2%	x	12,6%	x	16,1%	x	12,0%	x

Source: NBP

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	7 373	6 579	7 526	6 366	7 810	6 768	8 166	6 987	8 555	7 496
growth (q-o-q)	102,4	103,1	102,1	96,8	103,8	106,3	104,6	103,2	104,8	107,3
growth (y-o-y)	105,1	105,9	107,9	95,7	109,0	98,3	113,4	109,4	116,0	113,9
dwelling price range	1 167	125	1 361	178	1 095	254	1 051	333	1 162	399
<= 4 000 PLN/sq.m	5	1	6	6	4	7	4	4	4	10
(4 001; 6 000] PLN/sq.m	231	55	241	82	155	73	119	85	102	63
(6 001; 8 000] PLN/sq.m	602	50	703	66	510	132	430	169	411	198
(8 001; 10 000] PLN/sq.m	239	12	276	15	294	30	318	61	398	88
> 10 001 PLN/sq.m	90	7	135	9	132	12	180	14	247	40
dwelling space range	1 167	125	1 361	178	1 095	254	1 051	333	1 162	399
<= 40 sq.m	276	45	335	57	299	93	273	114	272	121
(40,1; 60] sq.m	557	56	605	92	423	117	410	165	499	198
(60,1; 80] sq.m	201	15	238	21	210	34	187	42	224	59
> 80,1 sq.m	133	9	183	8	163	10	181	12	167	21
average price of 1 sq.m. of dwelling	7 373	6 579	7 526	6 366	7 810	6 768	8 166	6 987	8 555	7 496
<= 40 sq.m	7 693	6 832	7 983	7 043	8 045	6 962	8 387	7 004	8 956	7 530
(40,1; 60] sq.m	7 177	6 233	7 231	6 056	7 691	6 690	8 133	7 020	8 524	7 499
(60,1; 80] sq.m	7 523	6 699	7 705	6 165	7 997	6 727	8 301	7 241	8 519	7 692
> 80,1 sq.m	7 307	7 269	7 432	5 633	7 448	6 025	7 766	5 478	8 047	6 714
average offer price deviation	12,1%	x	18,2%	x	15,4%	x	16,9%	x	14,1%	x
<= 40 sq.m	12,6%	x	13,4%	x	15,6%	x	19,7%	x	18,9%	x
(40,1; 60] sq.m	15,1%	x	19,4%	x	15,0%	x	15,9%	x	13,7%	x
(60,1; 80] sq.m	12,3%	x	25,0%	x	18,9%	x	14,6%	x	10,7%	x
> 80,1 sq.m	0,5%	x	31,9%	x	23,6%	x	41,8%	x	19,8%	x

Source: NBP

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 682	9 972	10 807	10 151	11 561	10 690	12 435	11 093	12 803	11 731
growth (q-o-q)	103,4	102,6	101,2	101,8	101,1	100,9	101,1	100,9	101,1	100,9
growth (y-o-y)	108,5	113,4	108,4	106,9	108,4	106,0	108,4	106,0	108,4	106,0
dwellings price range	4 698	759	5 080	1 189	4 859	1 111	4 667	1 412	5 815	1 116
<= 7 000 PLN/sq.m	37	3	3	5	0	6	0	3	0	0
(7 001; 9 000] PLN/sq.m	1 001	263	1 123	333	809	189	630	105	554	37
(9 001; 11 000] PLN/sq.m	2 024	312	2 168	551	1 576	531	1 016	706	931	455
(11 001; 13 000] PLN/sq.m	1 027	147	1 105	223	1 327	266	1 292	390	1 847	380
>13 001 PLN/sq.m	609	34	681	77	1 147	119	1 729	208	2 483	244
dwellings space range	4 698	759	5 080	1 189	4 859	1 111	4 667	1 412	5 815	1 116
<= 40 sq.m	827	229	870	335	901	274	952	400	1151	286
(40,1; 60] sq.m	2209	348	2344	509	2138	548	2025	670	2624	512
(60,1; 80] sq.m	1301	148	1494	267	1413	249	1267	263	1502	250
> 80,1 sq.m	361	34	372	78	407	40	423	79	538	68
average price of 1 sq.m. of dwelling	10 682	9 972	10 807	10 151	11 561	10 690	12 435	11 093	12 803	11 731
<= 40 sq.m	11 961	10 672	12 036	10 854	12 815	11 907	13 856	11 946	14 313	12 514
(40,1; 60] sq.m	10 504	9 844	10 654	10 007	11 339	10 536	12 213	10 860	12 568	11 698
(60,1; 80] sq.m	10 143	9 211	10 230	9 524	10 968	9 586	11 444	10 326	11 814	10 913
> 80,1 sq.m	10 794	9 893	11 207	10 218	12 007	11 327	13 267	11 308	13 475	11 687
average offer price deviation	7,1%	x	6,5%	x	7,3%	x	7,3%	x	7,3%	x
<= 40 sq.m	12,1%	x	10,9%	x	12,2%	x	12,2%	x	12,2%	x
(40,1; 60] sq.m	6,7%	x	6,5%	x	6,8%	x	6,8%	x	6,8%	x
(60,1; 80] sq.m	10,1%	x	7,4%	x	8,6%	x	8,6%	x	8,6%	x
> 80,1 sq.m	9,1%	x	9,7%	x	10,1%	x	10,1%	x	10,1%	x

Source: NBP

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

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 914	8 688	9 956	8 904	10 667	9 281	11 409	9 702	11 719	9 877
growth (q-o-q)	103,9	99,7	100,4	102,5	107,1	104,2	107,0	104,5	102,7	101,8
growth (y-o-y)	105,4	106,9	104,6	104,0	113,0	105,4	119,6	111,4	118,2	113,7
dwellings price range	858	786	1024	1104	764	1 061	688	1 492	794	774
<= 7 000 PLN/sq.m	67	154	62	198	30	128	10	128	8	59
(7 001; 9 000] PLN/sq.m	291	330	356	419	188	405	110	497	85	216
(9 001; 11 000] PLN/sq.m	268	213	334	329	268	333	226	490	286	290
(11 001; 13 000] PLN/sq.m	158	63	186	119	168	128	200	263	221	149
>13 001 PLN/sq.m	74	26	86	39	110	67	142	114	194	60
dwellings space range	858	786	1024	1104	764	1 061	688	1 492	794	774
<= 40 sq.m	174	282	218	363	136	325	104	377	107	198
(40,1; 60] sq.m	354	343	423	485	310	454	267	714	385	376
(60,1; 80] sq.m	242	121	278	189	207	216	214	298	218	165
> 80,1 sq.m	88	40	105	67	111	66	103	103	84	35
average price of 1 sq.m. of dwelling	9 914	8 688	9956	8904	10 667	9 281	11 409	9 702	11 719	9 877
<= 40 sq.m	11 029	9 307	10946	9586	11 558	10 074	12 692	10 618	12 819	11 277
(40,1; 60] sq.m	9 808	8 479	9776	8789	10 799	9 084	11 629	9 700	11 985	9 791
(60,1; 80] sq.m	9 333	7 893	9422	8117	10 113	8 739	10 824	8 918	10 949	8 759
> 80,1 sq.m	9 730	8 521	10040	8254	10 238	8 501	10 759	8 634	11 099	8 162
average offer price deviation	14,1%	x	11,8%	x	14,9%	x	17,6%	x	18,6%	x
<= 40 sq.m	18,5%	x	14,2%	x	14,7%	x	19,5%	x	13,7%	x
(40,1; 60] sq.m	15,7%	x	11,2%	x	18,9%	x	19,9%	x	22,4%	x
(60,1; 80] sq.m	18,2%	x	16,1%	x	15,7%	x	21,4%	x	25,0%	x
> 80,1 sq.m	14,2%	x	21,6%	x	20,4%	x	24,6%	x	36,0%	x

Source: NBP

Table22 Average prices per sq. m of housing in the PM in Warszawa

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	13 302	12 803	13 713	13 152	14 880	14 017	15 561	14 936	16 191	15 888
growth (q-o-q)	102,2	99,7	103,1	102,7	108,5	106,6	104,6	106,6	104,0	106,4
growth (y-o-y)	106,3	103,4	106,3	106,6	115,2	110,1	119,6	116,4	121,7	124,1
dwelling price range	12 256	2 334	10 057	3 561	9 691	3 665	8 687	3 649	10 949	3 607
<= 9 500 PLN/sq.m	867	169	549	257	339	121	167	52	88	27
(9 501; 11 500] PLN/sq.m	2 245	587	1 647	732	1 150	576	564	448	555	260
(11 501; 13 500] PLN/sq.m	4 538	871	3 741	1 225	2 959	1 091	2 681	980	2 592	647
(13 501; 15 500] PLN/sq.m	2 734	402	2 054	768	1 998	990	1 753	876	2 438	898
>15 501 PLN/sq.m	1 872	305	2 066	579	3 245	887	3 522	1 293	5 276	1 775
dwelling space range	12 256	2 334	10 057	3 561	9 691	3 665	8 687	3 649	10 949	3 607
<= 40 sq.m	2 648	739	2 070	979	2 041	1 091	1 758	1 078	2 249	1 141
(40,1; 60] sq.m	5 214	936	4 340	1 504	4 117	1 530	3 695	1 521	4 662	1 432
(60,1; 80] sq.m	2 971	454	2 414	787	2 352	734	2 155	748	2 813	693
> 80,1 sq.m	1 423	205	1 233	291	1 181	310	1 079	302	1 225	341
average price of 1 sq.m. of dwelling	13 302	12 803	13 713	13 152	14 880	14 017	15 561	14 936	16 191	15 888
<= 40 sq.m	14 344	13 323	14 654	14 269	15 761	14 870	16 593	15 845	17 324	16 874
(40,1; 60] sq.m	13 107	12 595	13 634	12 750	14 817	13 779	15 534	14 580	16 124	15 401
(60,1; 80] sq.m	12 484	12 137	12 935	12 448	14 218	13 039	14 816	14 109	15 394	15 050
> 80,1 sq.m	13 780	13 354	13 936	13 374	14 895	14 507	15 458	15 529	16 194	16 338
average offer price deviation	3,9%	x	4,3%	x	6,2%	x	4,2%	x	1,9%	x
<= 40 sq.m	7,7%	x	2,7%	x	6,0%	x	4,7%	x	2,7%	x
(40,1; 60] sq.m	4,1%	x	6,9%	x	7,5%	x	6,5%	x	4,7%	x
(60,1; 80] sq.m	2,9%	x	3,9%	x	9,0%	x	5,0%	x	2,3%	x
> 80,1 sq.m	3,2%	x	4,2%	x	2,7%	x	-0,5%	x	-0,9%	x

Source: NBP

Table23 Average prices per sq. m of housing in the SM in Warszawa

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	13 830	13 069	14 277	13 205	14 953	13 763	16 660	13 670	17 546	14 380
growth (q-o-q)	102,4	100,3	103,2	101,0	104,7	104,2	111,4	99,3	105,3	105,2
growth (y-o-y)	103,5	106,7	101,4	103,9	110,9	106,6	123,4	104,9	126,9	110,0
dwelling price range	1 162	2 576	1 074	3 541	1 027	3 652	886	2 240	990	1 403
<= 9 500 PLN/sq.m	61	286	58	330	35	229	14	126	11	36
(9 501; 11 500] PLN/sq.m	276	626	220	874	162	788	58	475	42	214
(11 501; 13 500] PLN/sq.m	299	635	257	887	242	924	127	609	119	372
(13 501; 15 500] PLN/sq.m	209	516	200	683	189	769	176	484	175	341
>15 501 PLN/sq.m	317	513	339	767	399	942	511	546	643	440
dwelling space range	1 162	2 576	1 074	3 541	1 027	3 652	886	2 240	990	1 403
<= 40 sq.m	209	745	173	1 012	168	994	139	700	179	479
(40,1; 60] sq.m	508	1 148	429	1 582	417	1 681	378	1 016	428	599
(60,1; 80] sq.m	291	439	275	634	259	638	211	387	209	239
> 80,1 sq.m	154	244	197	313	183	339	158	137	174	86
average price of 1 sq.m. of dwelling	13 830	13 069	14 277	13 205	14 953	13 763	16 660	13 670	17 546	14 380
<=40 sq.m	15 228	13 418	15 577	13 798	16 629	14 201	18 270	14 953	19 701	15 783
(40,1; 60] sq.m	13 469	12 549	13 486	12 654	14 303	13 302	16 603	12 992	17 127	13 749
(60,1; 80] sq.m	13 398	13 042	13 500	13 004	14 474	13 372	15 853	12 540	16 902	13 046
> 80,1 sq.m	13 937	14 504	15 940	14 484	15 570	15 500	16 457	15 339	17 132	14 669
average offer price deviation	5,8%	x	8,1%	x	8,6%	x	21,9%	x	22,0%	x
<= 40 sq.m	13,5%	x	12,9%	x	17,1%	x	22,2%	x	24,8%	x
(40,1; 60] sq.m	7,3%	x	6,6%	x	7,5%	x	27,8%	x	24,6%	x
(60,1; 80] sq.m	2,7%	x	3,8%	x	8,2%	x	26,4%	x	29,6%	x
> 80,1 sq.m	-3,9%	x	10,1%	x	0,5%	x	7,3%	x	16,8%	x

Source: NBP

Table 24 Average prices per sq. m of housing in the PM in Wrocław

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 948	11 112	12 201	11 397	12 836	11 713	13 353	12 498	13 531	12 838
growth (q-o-q)	105,0	106,3	102,1	102,6	105,2	102,8	104,0	106,7	101,3	102,7
growth (y-o-y)	115,4	110,8	113,1	110,2	117,1	111,3	117,3	119,6	113,2	115,5
dwelling price range	4 248	954	3 909	1 350	2 918	1 506	2 435	1 162	3 272	922
<=7 000 PLN/sq.m	19	7	11	11	5	2	1	3	0	1
(7 001; 9 000] PLN/sq.m	603	202	287	203	128	172	50	72	42	18
(9 001; 11 000] PLN/sq.m	996	309	1 065	459	495	456	266	169	285	131
(11 001; 13 000] PLN/sq.m	1 470	237	1 421	386	1 252	472	1 090	539	1 415	421
>13 001 PLN/sq.m	1 160	199	1 125	291	1 038	404	1 028	379	1 530	351
dwelling space range	4 248	954	3 909	1 350	2 918	1 506	2 435	1 162	3 272	922
<= 40 sq.m	742	255	689	244	503	288	377	279	438	169
(40,1; 60] sq.m	2011	442	1852	681	1278	821	1061	562	1442	463
(60,1; 80] sq.m	1074	203	1015	318	822	311	751	246	961	193
> 80,1 sq.m	421	54	353	107	315	86	246	75	431	97
average price of 1 sq.m. of dwelling	11 948	11 112	12 201	11 397	12 836	11 713	13 353	12 498	13 531	12 838
<=40 sq.m	14778	12913	14770	13456	15652	13516	16489	14205	15348	15162
(40,1; 60] sq.m	11589	10608	11840	11172	12594	11607	13115	12318	13487	12666
(60,1; 80] sq.m	10646	10153	11131	10153	11673	10466	12269	11222	12538	11682
> 80,1 sq.m	11999	10333	12159	11825	12351	11198	12877	11682	14046	11903
average offer price deviation	7,5%	x	7,1%	x	9,6%	x	6,8%	x	5,4%	x
<= 40 sq.m	14,4%	x	9,8%	x	15,8%	x	16,1%	x	1,2%	x
(40,1; 60] sq.m	9,2%	x	6,0%	x	8,5%	x	6,5%	x	6,5%	x
(60,1; 80] sq.m	4,9%	x	9,6%	x	11,5%	x	9,3%	x	7,3%	x
> 80,1 sq.m	16,1%	x	2,8%	x	10,3%	x	10,2%	x	18,0%	x

Source: NBP

Table 25 Average prices per sq. m of housing in the PM in Wrocław

specification	I Q 2023		II Q 2023		III Q 2023		IV Q 2023		I Q 2024	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 978	9 980	11 296	10 234	12 090	10 709	12 809	11 112	13 226	11 594
growth (q-o-q)	102,9	98,7	102,9	102,5	107,0	104,6	105,9	103,8	103,3	104,3
growth (y-o-y)	109,0	108,5	108,1	105,7	114,2	105,2	120,0	109,9	120,5	116,2
dwelling price range	2 440	742	2 281	967	1 949	1 019	1 811	1 269	2 777	1 223
<=7 000 PLN/sq.m	26	58	28	62	18	42	16	37	87	39
(7 001; 9 000] PLN/sq.m	475	197	398	250	242	206	128	177	190	141
(9 001; 11 000] PLN/sq.m	979	275	883	330	571	370	370	451	472	348
(11 001; 13 000] PLN/sq.m	555	139	540	216	576	239	589	371	745	377
>13 001 PLN/sq.m	405	73	432	109	542	162	708	233	1 283	318
dwelling space range	2 440	742	2 281	967	1 949	1 019	1 811	1 269	2 777	1 223
<= 40 sq.m	309	193	314	233	266	241	293	281	341	275
(40,1; 60] sq.m	1103	351	961	480	754	512	677	661	1234	600
(60,1; 80] sq.m	733	148	667	192	599	202	534	260	812	264
> 80,1 sq.m	295	50	339	62	330	64	307	67	390	84
average price of 1 sq.m. of dwelling	10 978	9 980	11 296	10 234	12 090	10 709	12 809	11 112	13 226	11 594
<=40 sq.m	12 821	11 248	13 080	11 199	14 009	11 913	14 788	12 426	16 314	13 171
(40,1; 60] sq.m	11 052	9 792	11 406	10 071	12 477	10 482	13 171	11 032	13 954	11 537
(60,1; 80] sq.m	10 498	8 959	10 618	9 622	11 176	10 330	12 102	10 308	12 076	10 530
> 80,1 sq.m	9 965	9 433	10 662	9 767	11 320	9 199	11 350	9 505	10 621	10 186
average offer price deviation	10,0%	x	10,4%	x	12,9%	x	15,3%	x	14,1%	x
<= 40 sq.m	14,0%	x	16,8%	x	17,6%	x	19,0%	x	23,9%	x
(40,1; 60] sq.m	12,9%	x	13,3%	x	19,0%	x	19,4%	x	20,9%	x
(60,1; 80] sq.m	17,2%	x	10,4%	x	8,2%	x	17,4%	x	14,7%	x
> 80,1 sq.m	5,6%	x	9,2%	x	23,1%	x	19,4%	x	4,3%	x

Source: NBP

7. Analysis of profitability of investment in housing in selected cities in Poland in 2024 Q1³⁷

Profitability of investment in rental housing clearly decreased in 2024 Q1. In the Warszawa market, the capitalisation rate reached 5.7%, which means a decrease of 0.4 percentage points compared to both the first quarter of the previous year and to the previous quarter. Much stronger declines were seen in the local markets of the 6 cities analysed. The average capitalisation rate in this case was 5.8%, representing a decrease of 0.8 pp y/y and 0.5 pp q/q. On the other hand, the average level of capitalisation in the remaining cities fell by 0.6 pp y/y and 0.2 pp q/q to 5.6%. It should be emphasised that in the group of 6 cities and other cities analysed these levels were only 0.3 pp and 0.2 pp higher, respectively, than their low levels recorded from 2015. It should be highlighted that the analysis refers to the profitability of the investment depending on the moment of commencement. The capitalisation rate is mainly determined by the transaction rent and the purchase cost of the dwelling in the quarter analysed. The period of return for new investments in the first quarter this year was 17.5 years in Warszawa, 17 years and 5 months in the group of six cities and 18 years in the remaining voivodeship capitals analysed. This means an increase in estimated time of return by 14, 23 and 24 months, respectively compared to 2023 Q1.

The return on equity for fully equity-financed rental housing investment (LTV=0%) amounted to 3.3% in Warszawa and in the group of 6 cities and 3.1% in other voivodeship capitals analysed. Compared to the same quarter of the previous year, this means a decline of 0.4 pp in Warszawa, 0.7 pp in the group of 6 cities and 0.5 pp in other cities. On the other hand, in relation to 2023 Q4, the results are worse by 0.4 pp for the market of Warszawa and the 6 cities and by 0.2 pp for the other voivodeship capitals analysed. The observed changes in return on equity for residential projects with LTV=0% appear very similar to those observed for the capitalisation rate. Also in this context, quite a strong correction of the earlier upward trend should be mentioned.

A correction in the profitability of housing investment in Q1 this year also occurred in the case of projects financed in 50% with external capital (LTV=50%). In this case, ROE fell to -1.0% in Warszawa and in the group of 6 cities and to -1.4% in the remaining voivodeship capitals. Compared to the previous quarter, it means a decline of 0.7 pp and 0.3 pp, respectively. However, compared to the corresponding quarter of the previous year, ROE fell by 0.1 pp. only in the group of 6 cities. The result obtained represents an increase in ROE of 0.5

³⁷ A simplified analysis of investment in housing for rent conducted by an individual, taxed on a dwelling-rate basis, is presented. The profitability of this type of investment was analysed in a group of 6 cities (Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław) and in a group of other cities (Białystok, Bydgoszcz, Katowice, Lublin, Olsztyn, Rzeszów and Szczecin). Three voivodeship capitals (Opole, Kielce and Zielona Góra) were omitted due to the small sample size of recorded housing rental transactions. The Warszawa property market is analysed separately due to its specific characteristics. The profitability of investing in housing for rental was determined by calculating the capitalisation rate and the ROE (return on equity). The capitalization rate was calculated as the ratio of the annual rental income (based on weighted average rates in PLN/square meter according to BARN surveys for an average dwelling) to the price of a dwelling per square meter (BARN survey data). On the other hand, the ROE was calculated as net profit relative to equity engaged. At the same time, the estimated net operating income was reduced by the estimated total operating expenses (estimated separately for each of the analyzed cities on the basis of OLX Group data verified by expert opinions). Such estimated net operating income provides the basis for calculating EBITDA. In this case, different possible levels of leverage were adopted: a fully cash-funded investment (with LTV of 0%) and a loan-financed investment with LTV of 50% as well as a highly leveraged investment with LTV of 80%. In order to calculate financial profits, rental income was taken into account, a flat-rate tax of 8.5%, repayment of interest on mortgage loan, as well as depreciation of the building in the amount of 1.5% of its value was deducted. The tax is paid on all rental income, before any cost deduction. The transaction price per square meter of an average dwelling was determined by summing 50% of the average transaction price in the primary and secondary markets based on transaction-weighted average prices according to the BARN survey. The price in the primary market was increased by the cost of finishing according to the Sekocenbud data. 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.

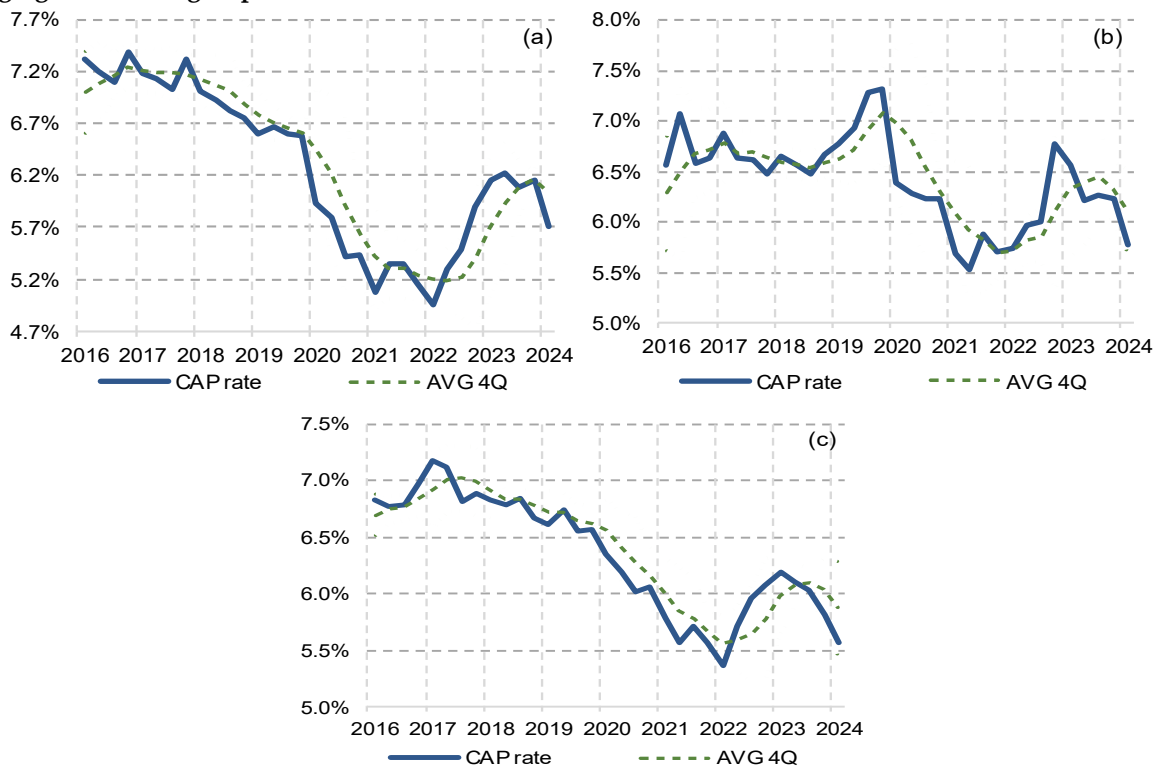
pp in Warszawa and 0.1 pp in the group of other cities. Similar directions of ROE correction were seen in the case of housing projects financed with external capital at a level of 80%. However, in this case, the profitability was significantly lower. It reached a level of -14.0% in Warszawa, -13.9% in the group of 6 cities and -15.0% in the remaining voivodship capitals analysed. This means that the profitability deteriorated compared to the previous quarter by 1.6 pp, 1.7 pp and 0.7 pp, respectively. However, in relation to the corresponding quarter of the previous year, the estimated profitability levels were 2.9 pp, 1.4 pp and 2.1 pp higher.

Table 26 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%	5.1%	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%	5.0%	5.5%	5.1%	5.6%	7.5%	5.4%	5.8%	5.1%	5.2%	6.0%	4.9%	5.7%	5.4%
2022 Q2	5.4%	6.3%	5.6%	5.4%	5.5%	5.3%	5.7%	7.1%	5.5%	5.8%	5.4%	6.2%	6.7%	5.3%	6.0%	5.7%
2022 Q3	5.8%	6.0%	5.5%	5.4%	6.1%	5.8%	5.9%	7.0%	5.6%	5.6%	5.6%	6.7%	6.8%	5.5%	6.0%	6.0%
2022 Q4	6.3%	6.7%	6.3%	6.3%	5.8%	5.8%	5.8%	7.9%	5.6%	6.3%	5.8%	6.6%	8.1%	5.9%	6.8%	6.1%
2023 Q1	6.2%	6.5%	6.0%	5.7%	6.7%	5.8%	5.8%	7.8%	5.5%	6.4%	6.8%	5.9%	7.6%	6.2%	6.6%	6.2%
2023 Q2	6.0%	6.9%	5.9%	5.5%	6.8%	6.0%	5.8%	7.0%	5.4%	5.9%	5.3%	6.5%	6.9%	6.2%	6.2%	6.1%
2023 Q3	5.9%	6.7%	6.0%	5.5%	6.2%	6.0%	6.0%	7.0%	5.7%	6.2%	5.8%	5.9%	7.0%	6.1%	6.3%	6.0%
2023 Q4	5.8%	6.1%	6.0%	6.1%	6.0%	5.8%	5.8%	6.5%	5.3%	6.0%	5.3%	6.4%	7.1%	6.1%	6.2%	5.8%
2024 Q1	5.7%	5.7%	5.7%	5.6%	5.5%	5.2%	6.0%	6.0%	5.1%	5.7%	5.2%	5.8%	6.5%	5.7%	5.8%	5.6%

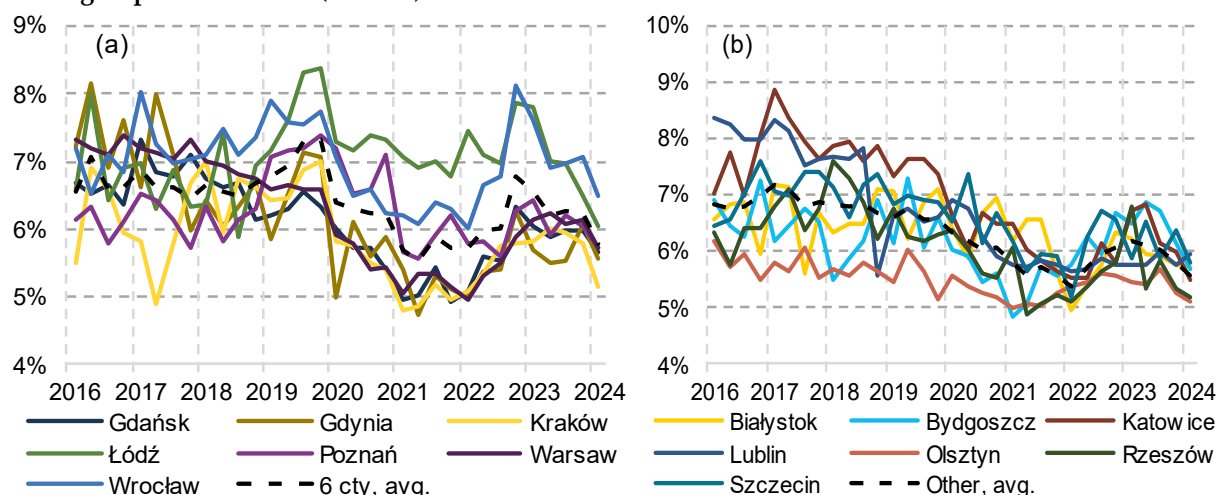
Source: NBP

Figure 82 Estimated capitalisation rate and its annual moving average for Warszawa (Panel a) and aggregated for the group of 6 cities (Panel b) and other Polish cities (Panel c)



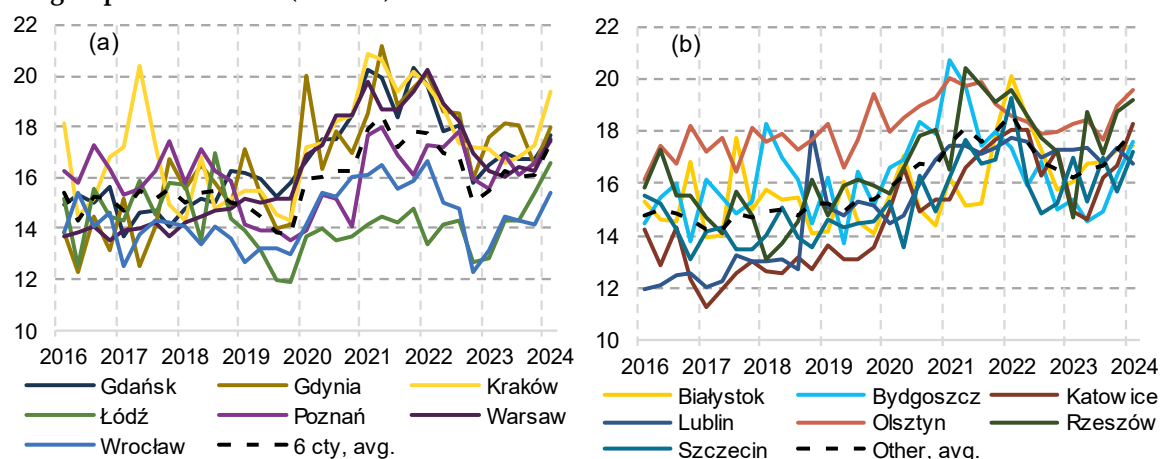
Source: NBP

Figure 83 Estimated capitalisation rate for the individual cities in the 6 cities and in Warszawa (Panel a) and in the group of other cities (Panel b)



Source: NBP

Figure 84 Estimated timing return on investment in the group of 6 cities and in Warszawa (Panel a) and in the group of other cities (Panel b)



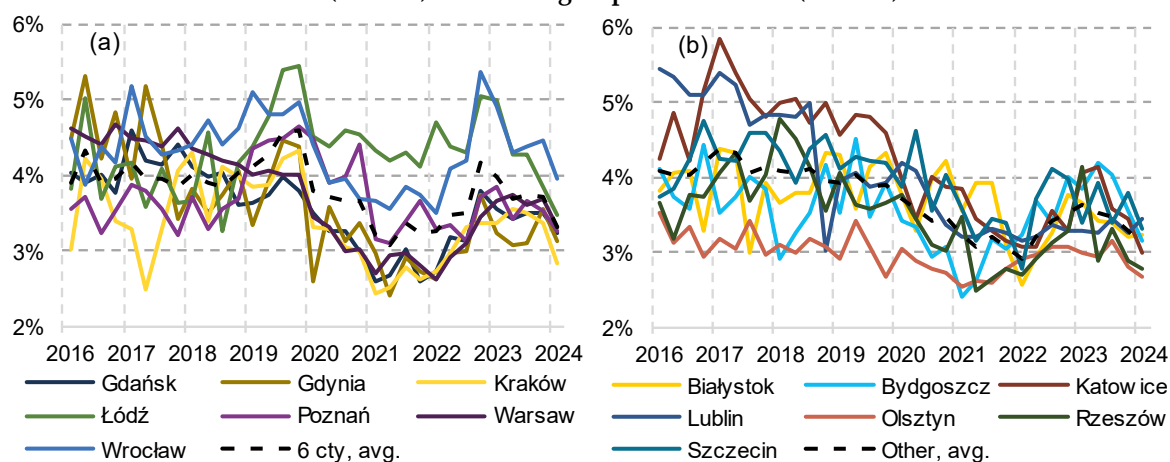
Source: NBP

Table 27 Return on equity (ROE, in %) on a 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%	2.7%	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%	2.6%	3.1%	2.7%	3.2%	4.7%	2.9%	3.3%	2.7%	2.8%	3.5%	2.6%	3.3%	2.9%
2022 Q2	2.9%	3.7%	3.2%	3.0%	3.1%	3.0%	3.2%	4.4%	3.0%	3.3%	2.9%	3.7%	4.1%	2.9%	3.5%	3.2%
2022 Q3	3.3%	3.4%	3.1%	3.0%	3.6%	3.3%	3.4%	4.3%	3.1%	3.1%	3.1%	4.1%	4.2%	3.1%	3.5%	3.4%
2022 Q4	3.8%	4.0%	3.8%	3.7%	3.3%	3.4%	3.3%	5.1%	3.1%	3.7%	3.3%	4.0%	5.4%	3.5%	4.2%	3.5%
2023 Q1	3.7%	3.9%	3.6%	3.2%	4.1%	3.4%	3.3%	5.0%	3.0%	3.9%	4.2%	3.4%	4.9%	3.7%	4.0%	3.6%
2023 Q2	3.4%	4.2%	3.4%	3.1%	4.2%	3.5%	3.3%	4.3%	2.9%	3.4%	2.9%	3.9%	4.3%	3.7%	3.7%	3.5%
2023 Q3	3.4%	4.0%	3.5%	3.1%	3.6%	3.5%	3.4%	4.3%	3.2%	3.7%	3.3%	3.4%	4.4%	3.6%	3.7%	3.5%
2023 Q4	3.2%	3.6%	3.5%	3.6%	3.5%	3.4%	3.3%	3.9%	2.8%	3.5%	2.9%	3.8%	4.5%	3.7%	3.7%	3.3%
2024 Q1	3.2%	3.2%	3.2%	3.1%	3.0%	2.8%	3.4%	3.5%	2.7%	3.3%	2.8%	3.3%	4.0%	3.3%	3.3%	3.1%

Source: NBP

Figure 85 Return on Equity (ROE, %) on a fully cash-funded housing investment (LTV = 0%) in the group of 6 cities and in Warszawa (Panel a) and in the group of other cities (Panel b)



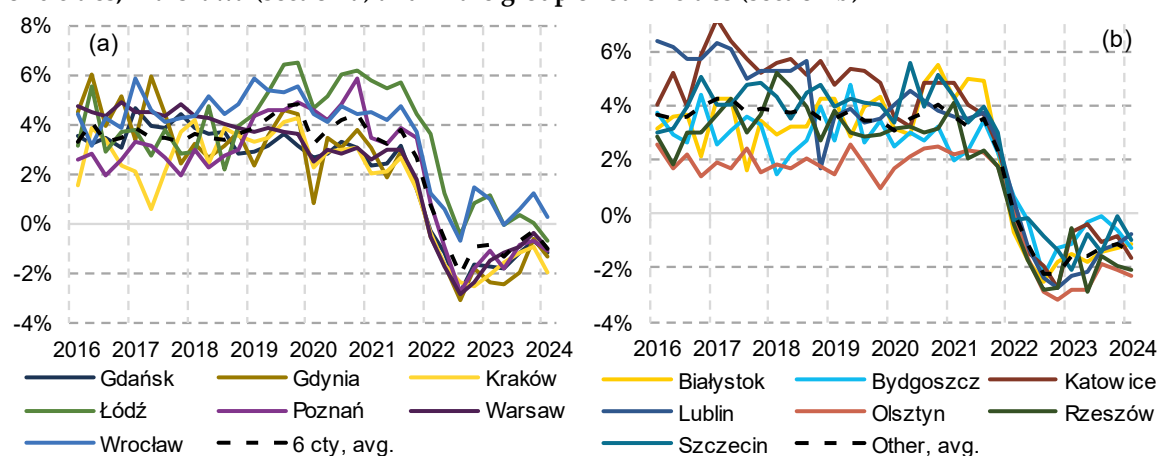
Source: NBP

Table 28 Return on Equity (ROE, %) in the case of a 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%	5.7%	2.2%	3.8%	2.4%	3.9%	4.8%	3.0%	3.8%	3.5%
2021 Q4	2.4%	2.3%	1.4%	1.7%	2.5%	1.4%	2.7%	4.4%	1.7%	3.5%	1.8%	3.0%	3.7%	1.8%	2.7%	2.3%
2022 Q1	-0.7%	0.7%	-0.3%	-0.6%	0.3%	-0.3%	0.5%	3.6%	0.0%	0.8%	-0.4%	-0.3%	1.2%	-0.6%	0.7%	0.0%
2022 Q2	-1.7%	-0.2%	-1.2%	-1.7%	-1.4%	-1.7%	-1.2%	1.2%	-1.6%	-0.9%	-1.7%	-0.2%	0.6%	-1.7%	-0.6%	-1.1%
2022 Q3	-2.5%	-2.3%	-2.8%	-3.1%	-1.9%	-2.4%	-2.3%	-0.5%	-2.9%	-2.8%	-2.8%	-0.8%	-0.7%	-2.9%	-2.0%	-2.2%
2022 Q4	-1.8%	-1.3%	-1.7%	-1.8%	-2.7%	-2.6%	-2.7%	0.8%	-3.2%	-1.8%	-2.7%	-1.3%	1.4%	-2.4%	-0.9%	-2.2%
2023 Q1	-1.5%	-1.1%	-1.7%	-2.4%	-0.7%	-2.1%	-2.3%	1.2%	-2.8%	-1.1%	-0.5%	-2.0%	1.0%	-1.5%	-0.8%	-1.6%
2023 Q2	-1.8%	-0.3%	-1.8%	-2.5%	-0.4%	-1.6%	-2.2%	-0.1%	-2.8%	-1.8%	-2.9%	-0.8%	0.0%	-1.2%	-1.3%	-1.6%
2023 Q3	-1.4%	-0.1%	-1.2%	-2.0%	-1.0%	-1.2%	-1.3%	0.4%	-1.9%	-0.9%	-1.6%	-1.4%	0.6%	-1.0%	-0.7%	-1.2%
2023 Q4	-1.3%	-0.6%	-0.7%	-0.6%	-0.8%	-1.0%	-1.2%	0.0%	-2.1%	-0.7%	-1.9%	-0.1%	1.2%	-0.3%	-0.3%	-1.1%
2024 Q1	-1.1%	-1.3%	-1.1%	-1.4%	-1.6%	-2.0%	-0.7%	-0.7%	-2.3%	-1.1%	-2.1%	-1.0%	0.3%	-1.0%	-1.0%	-1.4%

Source: NBP

Figure 86 Return on Equity (ROE, %) in the case of a leveraged housing investment (LTV = 50%) in the group of 6 cities, Warszawa (section a) and in the group of other cities (section b)



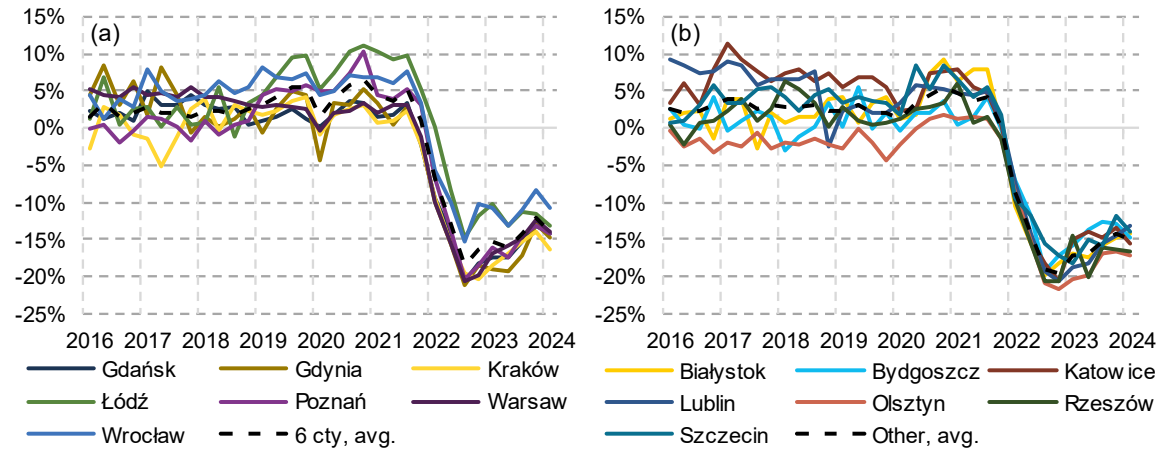
Source: NBP

Figure 29 Return on equity (ROE, in %) on a 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%	9.9%	1.2%	5.2%	1.5%	5.5%	7.6%	3.1%	5.2%	4.3%
2021 Q4	0.2%	0.0%	-2.3%	-1.6%	0.4%	-2.2%	1.0%	5.3%	-1.4%	3.0%	-1.4%	1.7%	3.5%	-1.3%	0.9%	0.1%
2022 Q1	-10.4%	-7.0%	-9.5%	-10.1%	-7.9%	-9.5%	-7.4%	0.3%	-8.7%	-6.7%	-9.7%	-9.3%	-5.7%	-10.1%	-6.9%	-8.6%
2022 Q2	-15.6%	-11.9%	-14.4%	-15.5%	-15.0%	-15.5%	-14.3%	-8.4%	-15.4%	-13.7%	-15.7%	-11.8%	-9.9%	-15.7%	-12.9%	-14.2%
2022 Q3	-19.9%	-19.2%	-20.6%	-21.3%	-18.4%	-19.6%	-19.4%	-14.7%	-20.8%	-20.5%	-20.6%	-15.6%	-15.3%	-20.8%	-18.7%	-19.1%
2022 Q4	-18.4%	-17.1%	-18.1%	-18.5%	-20.8%	-20.3%	-20.8%	-11.9%	-21.8%	-18.5%	-20.7%	-17.3%	-10.3%	-19.9%	-16.3%	-19.6%
2023 Q1	-16.9%	-16.0%	-17.5%	-19.1%	-15.0%	-18.4%	-18.9%	-10.3%	-20.3%	-16.0%	-14.5%	-18.3%	-10.7%	-16.9%	-15.3%	-17.1%
2023 Q2	-17.5%	-13.7%	-17.5%	-19.2%	-13.9%	-16.9%	-18.4%	-13.2%	-20.0%	-17.6%	-20.2%	-14.9%	-13.1%	-16.0%	-16.3%	-16.9%
2023 Q3	-15.8%	-12.6%	-15.3%	-17.3%	-14.9%	-15.3%	-15.6%	-11.4%	-17.0%	-14.4%	-16.2%	-15.8%	-10.9%	-14.7%	-14.1%	-15.4%
2023 Q4	-14.7%	-13.0%	-13.3%	-13.0%	-13.5%	-14.0%	-14.4%	-11.5%	-16.7%	-13.2%	-16.3%	-11.8%	-8.5%	-12.4%	-12.2%	-14.4%
2024 Q1	-14.3%	-14.7%	-14.3%	-14.8%	-15.5%	-16.4%	-13.3%	-13.1%	-17.1%	-14.1%	-16.6%	-13.9%	-10.7%	-14.0%	-13.9%	-15.0%

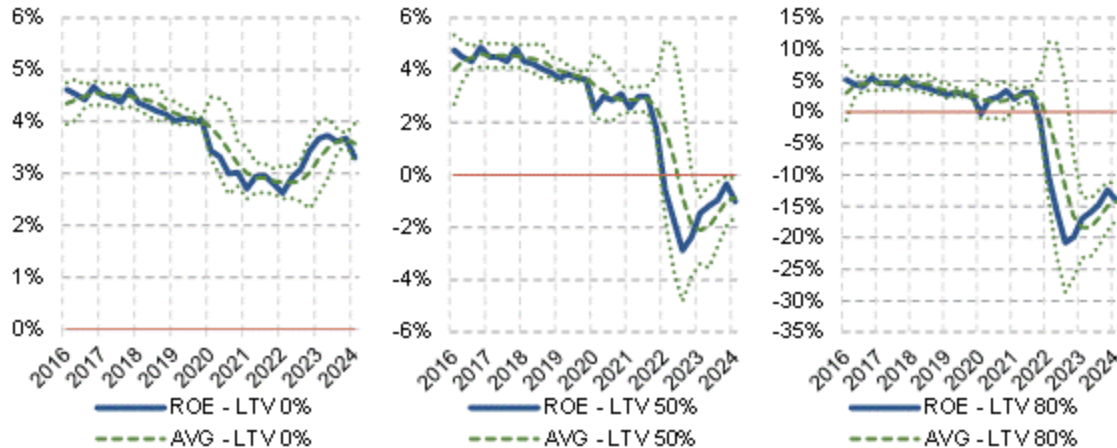
Source: NBP

Figure 87 Return on Equity (ROE, %) in the case of a leveraged housing investment (LTV = 80%) in the group of 6 cities, Warszawa (Panel a) and in the group of other cities (Panel b)



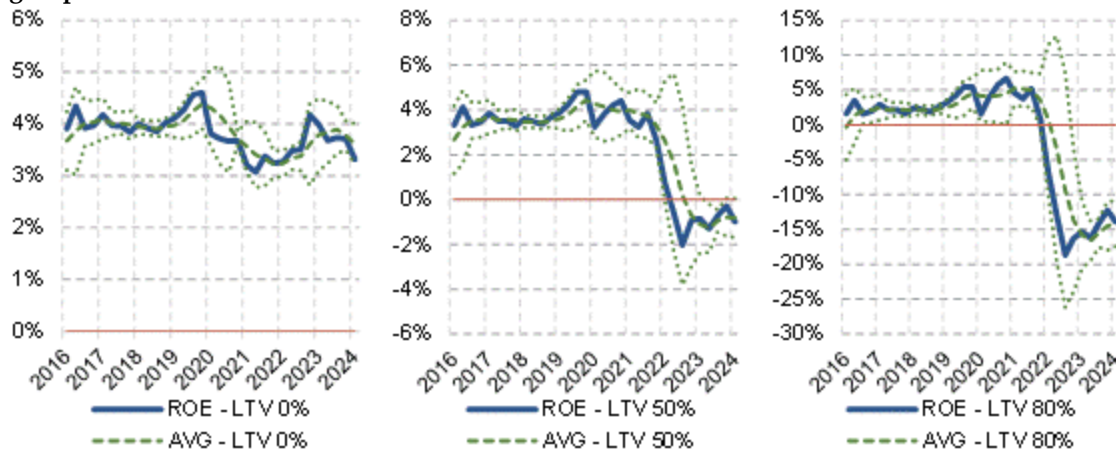
Source: NBP

Figure 88 Comparison of Return on Equity (ROE, in %) on a housing investment at selected levels of LTV, Warszawa



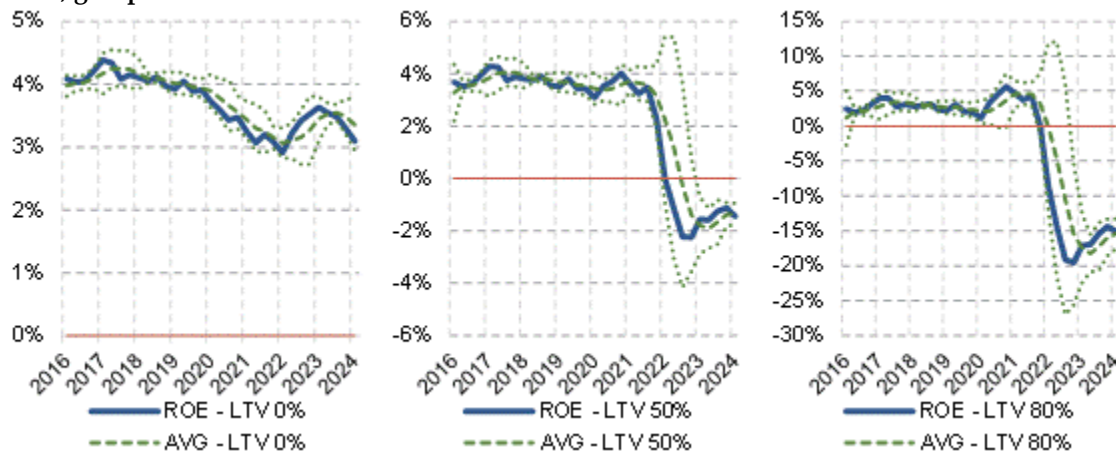
Source: NBP

Figure 89 Comparison of Return on Equity (ROE, in %) on a housing investment at selected levels of LTV, group of 6 cities



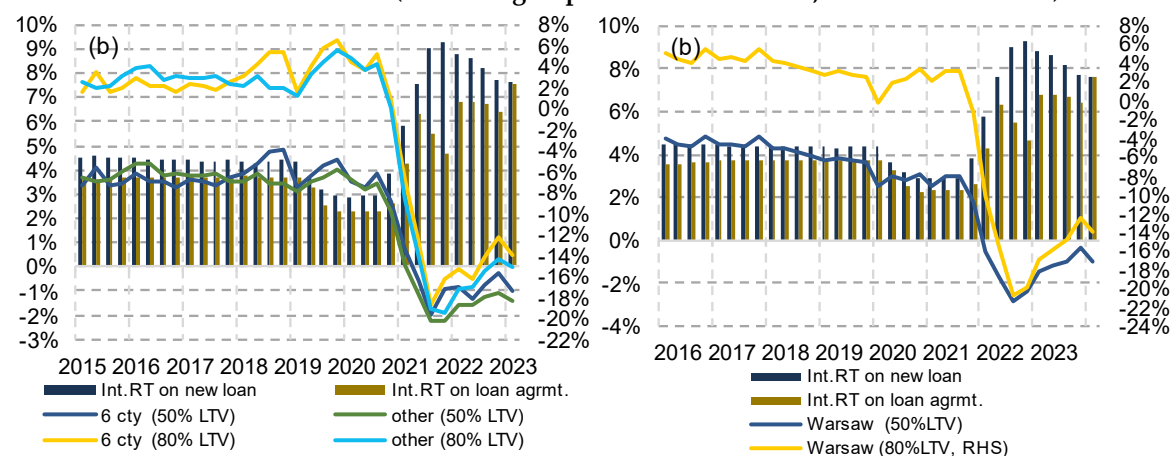
Source: NBP

Figure 90 Comparison of the return on equity (ROE, in %) on a housing investment at selected levels of LTV, group of other cities



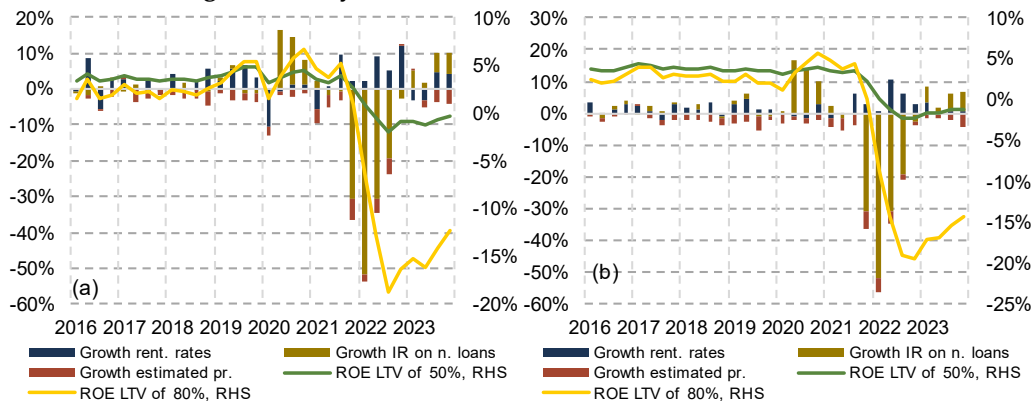
Source: NBP

Figure 91 Comparison of the return on equity (ROE, in %) on a housing investment at selected levels of the LTV ratio with loan interest rate (Panel a – group of 6 and other cities, Panel b – Warszawa)



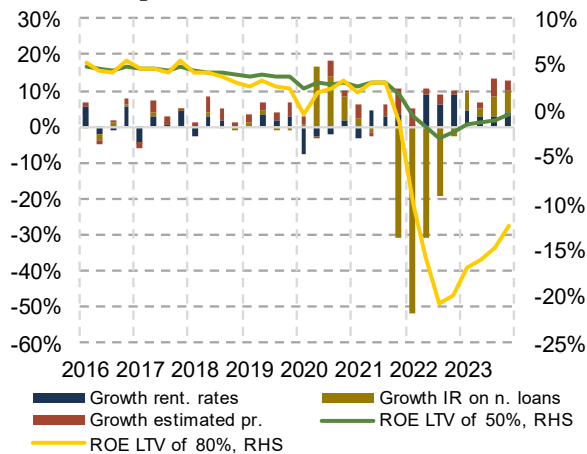
Source: NBP

Figure 92. Estimated ROE for LTV 50% and 80% and the impact of quarterly changes in interest rates on new housing loans, estimated housing transaction prices and rental rates in the group of 6 cities (section a) and the remaining cities analysed (section b)



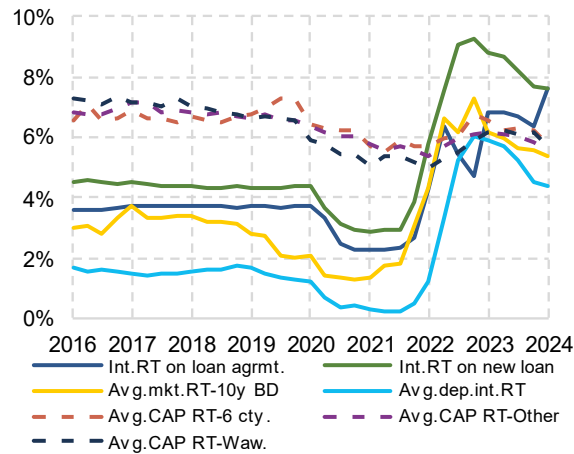
Source: NBP

Figure 93. Estimated ROE for LTV 50% and 80% and the impact of quarterly changes in interest rates on new housing loans, estimated housing transaction prices and rental rates in Warszawa



Source: NBP

Figure 94. Comparison of interest rates on bonds, deposits and 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 non-residential construction industry and related entities

Analysis of the financial standing of developers³⁸

In the residential real estate market 2023 was a year of growing demand for housing and a delayed increase in the supply of offers and developers' activity in new projects, mainly in 2023 Q4 and in 2024 Q1. The improvement in the financial standing of developers in this period resulted from an increase in orders for housing and sales revenues, which improved the liquidity of developers, increased the share of profitable entities and reduced the diversity in the economic position in the development sector. Wage costs increased, accompanied by a decline in the number of employees. In 2023, several developers listed on Warszawa Stock Exchange reached 20% higher y/y sales of dwellings. In 2024 Q1, the contracting results of this group of entities increased by 17% y/y, showing a slight q/q decline (by 4%).

Sales data of developers for 2024 Q1 show a stabilisation of demand and sales at a slightly lower level than in the second half of the previous year. The financial results reported by larger developers (with more than 49 employees) in their F01 reports for the period from January to March 2024 showed a decrease in return on sales. The recovery in residential construction in this period, i.e. an increase in new work in progress, rose the current overhead listings, which had a downward effect on the reported financial results. These are positive developments as the level of residential construction has increased, which will increase the number of dwellings built.

According to the financial data of the larger developers for the period from January 2023 to March 2024, the rise in the key economic ratios (total income and expenses and financial result) occurred mainly in 2023 Q4. The significantly higher values of the ratios at the end of the year resulted from the completion of construction projects and handovers of more dwellings than in the remaining quarters. This is confirmed by the data supplied by Statistics Poland, according to which the number of dwellings completed and put on the market for sale or rental in 2023 Q4 increased by 12% q/q and decreased by 4% y/y in the whole of 2023. Taking into account the average two-year' period of housing production, the number of dwellings completed and put into use depends on the number of dwellings started in earlier periods. The significant deceleration of new production in 2022 will have an impact over the coming year resulting in a decline in the statistics of the number of dwellings completed. However, the dwellings built in 2023 were mainly sold before their completion (sales of housing construction contracts) and had a minor impact on changes in the level of offers on the market.

As a consequence of the continuing rise in construction costs, including the prices of building materials and the growth in new production, a slight weakening of the return on sales became apparent among the larger developers in the last quarter of 2023. At the end of 2023, a 13.6% return on sales (ROS), a 4.3% return on equity (ROE) and a 2.3% return on assets (ROA) ratios were registered, compared to better results at the end of 2022 (16.5% ROS, 4.0% ROE and 2.4% ROA). Despite the deterioration in average profitability within the group, the share of entities with a positive net income increased insignificantly (87% of companies at the end of 2023, 1 pp up). In 2024 Q1, the continuing decline in profitability ratios, mainly return on sales, both q/q and y/y, resulted from the decrease in the net profit reported in line with the Polish accounting standards. In view of the increase in work in progress and the simultaneously low number of dwellings completed, the final level of the financial

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 employees (data available on a semi-annual basis until 2023 Q4) and bigger companies with over 49 employees (data available on a quarterly basis until 2024 Q1), whose business is the development of building projects (PKD 41.10). The review of the financial statements of the developers listed on the Warszawa Stock Exchange is based on data for the period until 2023 Q4.

result is strongly affected by the current construction overheads. In 2024 Q1, 9.0% ROS, 2.0% ROE and 1.1% ROA were recorded, the lowest ratios since 2022 Q3.

The period of the first three months of 2024 was another quarter of improvement in investment activity by developers after a long-lasting decline in the value of projects under development from 2022 Q2 to 2023 Q3. The value of projects in progress increased in 2023 Q4 and 2024 Q1 by 16% and 12%, respectively in relation to the previous quarters and by 8% and 24%, respectively, in y/y terms. The improvement in activity is confirmed by the Statistics Poland data on the number of dwellings started by developers (q/q rise of 9%, 5%, 31%, 6% and 22% in 2023 Q1, Q2, Q3 and Q4, respectively and in 2024 Q1). The gradual recovery of developers' capacities was also indicated by the number of permits issued for the construction of dwellings for sale or rental, which increased q/q (up by 13%, 5%, 15% and 6% q/q in 2023 Q2, Q3 and Q4, respectively and in 2024 Q1). However, the number of permits issued in the entire 2023 was 20% lower than in 2022.

Larger developers reported land reserves growth by 7% in 2023 Q4 and by 7% in 2024 Q1, after the decline in the first three quarters of 2023, which confirms developers' problems in increasing the supply of new offers due to their insufficient capacity. The reported value of land reserves at the end of March 2024 was higher than the balances reported at the end of individual quarters of 2023, but still below the balances at the end of individual quarters of 2022.

The share of completed dwellings in total assets has remained at a low, similar level for several years (4%, 3%, 4% and 2% at the end of 2021, 2022, 2023 and 2024 Q1, respectively). Significant sales of completed dwellings and high pre-sales of dwellings under development confirm the demand and efficiency of housing produced by developers.

In the second half of 2023, the rise in housing contracting and sales revenue resulted in a decrease in receivables with a reduction in their collection period from 87 days in 2023 H1 to 61 days in 2023 H2 and 72 days in 2024 Q1. For more than a year, the share of short-term liabilities has remained at a slightly lower level than in previous years, which is partly due to the more limited scope of the work in progress. The average time of settlement of liabilities has improved (from 174 days in 2023 H1 decreased to 154 days in 2023 H2 and 155 days in 2024 Q1, respectively).

In 2024 Q1, bank loan debt decreased to only 6% of total liabilities after their visible increase in 2023 Q2 and Q3. The change mainly concerned short-term loans. In mid-2023, as demand improved and sales of dwellings picked up, with smaller prepayment receipts from purchasers than in previous years, the demand for additional sources of funding, such as bank loans enabling the companies to increase their capacity and to acquire land for development.

The share of prepayments from purchasers in total liabilities of larger real estate developers increased to over 16% at the end of 2024 Q1, from approx. 12% in 2023 Q2 and Q3, as a result of increased pre-sale of housing under development. Prepayments from purchasers, an important source of funding for development activities, showed a downward trend starting from 2021, in proportion to the decline in housing contracting and, despite an increase in the last two quarters, they remained at a lower level than in 2017-2020.

Indebtedness due to debt securities, despite a minor increase, still remained at a low level. Larger developers searching for additional sources of funding increased the issuance of debt securities to 5% of total liabilities in 2023 Q4 and in 2024 Q1, compared to approx. 3% in four earlier quarters. The value of bonds of development companies listed on the Catalyst market has also increased (up by 12% q/q in 2023 Q3 and by 6% in 2023 Q4, following several per cent declines in the previous five quarters), with a slight decrease in average coupon rates in the last three periods.

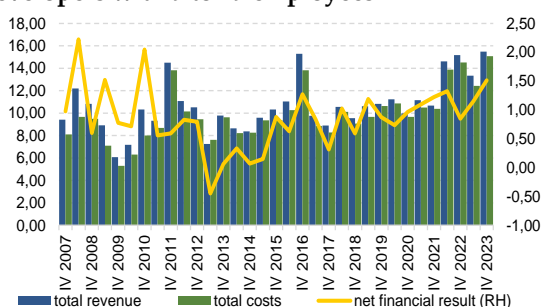
For the past three years, equity has remained the predominant source of financing for larger development companies (on average, 54% of total liabilities), providing secure asset coverage and favourable security for financial liabilities and equity debt for creditors. The total debt ratio improved a little in 2023 compared to 2022. Financial liquidity in 2023 Q4 and in 2024 Q1 also improved as a result of a decrease in the outstanding balance of short-term liabilities and a simultaneous increase in current assets, mainly projects under development where contracts for most dwellings had been signed. On the other hand, the operating expense ratio of deteriorated in the last two quarters (to 0.88 in 2023 Q4 and 0.91 in 2024 Q1), which was due to a higher growth rate of individual cost components compared to net sales revenue. An increase in new work in progress, recorded mainly in 2023 Q4, was accompanied by a q/q growth in all components of operating expenses, with the highest rise in costs of wages and the consumption of building materials and electricity. In 2024 Q1, a minor change in the share of third-party services accompanied by an increase in own operating expenses means general contracting of some new projects in-house.

According to financial data available up to December 2023, several developers listed on the WSE reported a short-term increase in the value of inventories in Q3, the majority of which represent work in progress, followed by a decline in Q4, which may confirm a smooth adjustment of production levels to the growing demand by only some of these entities and the limited production capacity of the remaining entities or a prudent approach to over-investment and a likely strive to maintain a "seller's market" status. The most favourable operating expense ratio among three analysed entity groups remained at a level of 0.73, despite its deterioration in the second half of 2023 and a favourable collection period (average of 42 days in 2023). In 2023 Q4, compared to the previous three quarters, total income and total expenses increased significantly as a result of the completion of construction projects and putting of dwellings into use. Return on sales on completed projects decreased by 2 pp y/y, to 18% in 2023 Q4, compared to approx. 20% in 2022 Q4, 2022 as a result of continued price increases on the contractor side. On the other hand, return on assets and return on equity improved y/y. The financial liquidity and overall debt and equity collateral ratios remained at a stable and favourable level. The structure of liabilities is dominated by equity, with the share of 41% at the end of 2023, 2 pp lower than at the end of 2022. Among external sources of financing, prepayments from purchasers play an important role, which increased to 25% of total liabilities at the end of 2023, in line with the increase in housing contracting. A slight y/y increase was recorded in debt due to bank loans (to 10% of total liabilities) as well as due to debt securities (to 8% of total liabilities) while debt due to liabilities to counterparties decreased slightly (to a 16% share). Positive net and operating cash flows at the end of 2023 and their higher y/y balances indicate an improvement in the financial position of these entities and the correct trend of their operation. At the same time, negative flows from financing and investing activities confirm the maturity of these companies, their satisfactory profitability and financing of their activities and settlement of their liabilities from the financial surpluses they generate.

In the group of small developers (with 9 to 49 employees), as the housing market condition improved in 2023, the financial standing of companies became less diverse, the share of profitable ones increased (from 78% at the end of 2022 to 81% at the end of 2023), the return on sales improved significantly (from 5.8% in 2022 H2 to 10.0% in 2023 H2), although it remained lower than in the other two groups of developers analysed. In the financial data at the end of 2023 H1 and H2, compared to the corresponding periods in 2022, small developers reported a higher level of work in progress, however, a lower value of work in progress at the end of June 2023 compared to 2023, which, given a slight decrease in the land reserves in the six-month period, may also indicate that this group of companies has a limited production capacity and difficulties in increasing it. A low stock of completed dwellings was recorded, despite a slight increase compared to the previous year's stock. The periods of receivables collection (28 days), liabilities settlement (77 days) and inventory turnover (127 days) were shorter than in the other developer groups. In the group of small developers, the share of equity has been

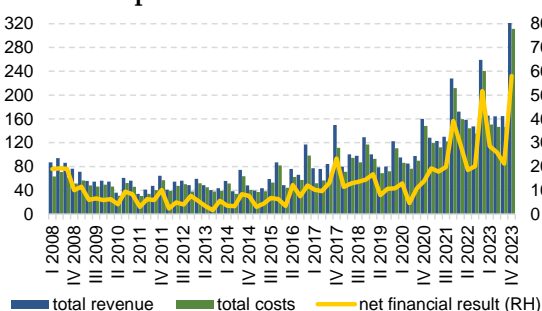
decreasing steadily for several years, although it remains the prevailing source of financing (down from 47% at the end of 2020 to a 36% share at the end of 2023). Significant fluctuations in sales and revenues over the past five years have prevented small entities from generating financial surpluses which could be used to supplement equity. For the past two years, the stable share of prepayments from purchasers has confirmed that projects previously started are implemented according to their schedules. In the opinion of lending banks, the high share of bank loans in total liabilities and higher share at the end of June and December 2023 (23% and 21%, respectively) compared to the balances in the corresponding periods of 2022 (21% and 19%, respectively) indicate good liquidity and creditworthiness of small developers.

Figure 95 Economic indicators of real estate developers with 9 to 49 employees



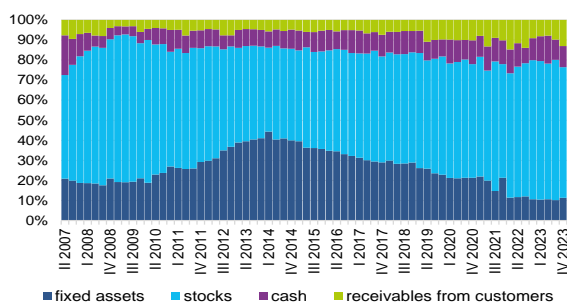
Source: NBP based on Statistics Poland (F01)

Figure 97 Economic indicators of WSE-listed real estate developers



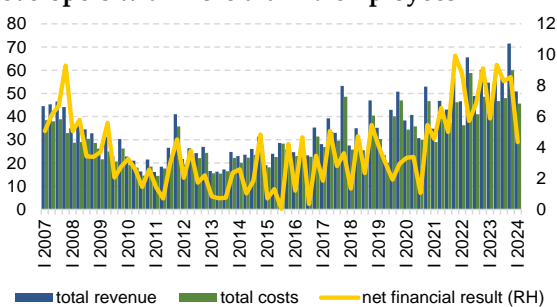
Source: NBP based on Quant Research sp. z o.o.

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



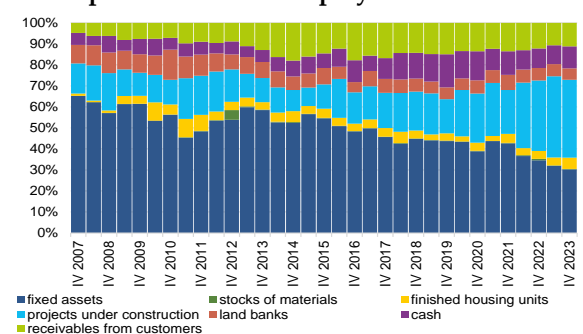
Source: NBP based on Quant Research sp. z o.o.

Figure 96 Economic indicators of real estate developers with more than 49 employees



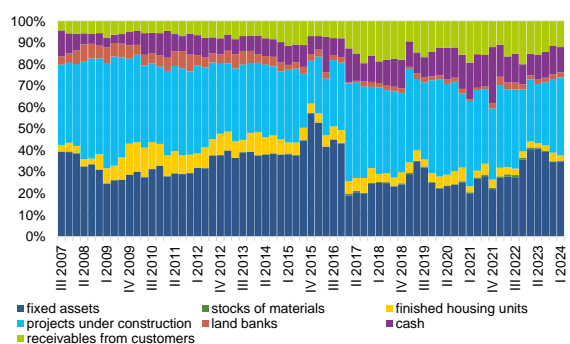
Source: NBP based on Statistics Poland (F01)

Figure 98 Structure of assets of real estate developers with 9 to 49 employees



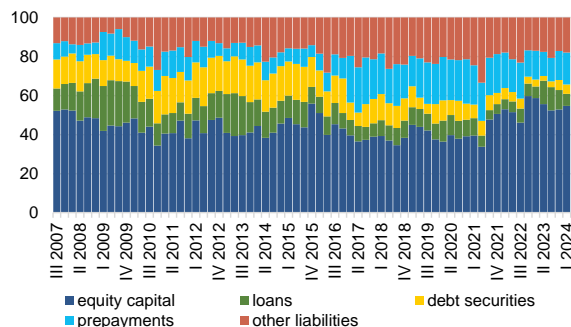
Source: NBP based on Statistics Poland (F01)

Figure 100 Structure of assets of the developers with more than 49 employees



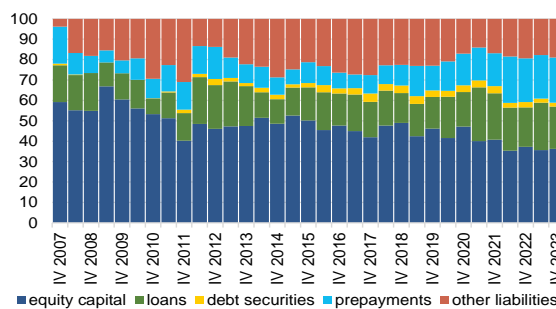
Source: NBP based on Statistics Poland (F01)

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



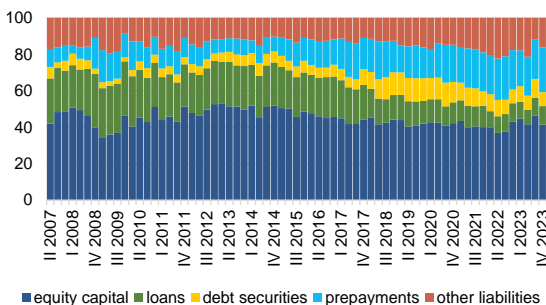
Source: NBP based on Statistics Poland (F01)

Figure 102 Structure of liabilities of developers with 9 to 49 employees



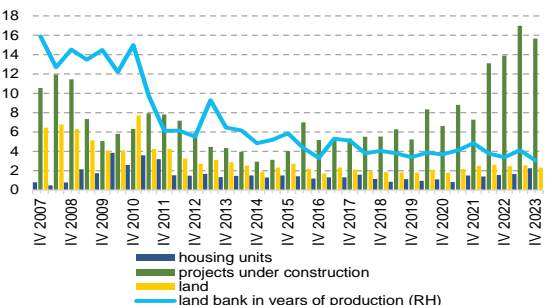
Source: NBP based on Statistics Poland (F01)

Figure 103 Structure of liabilities of WSE-listed real estate developers



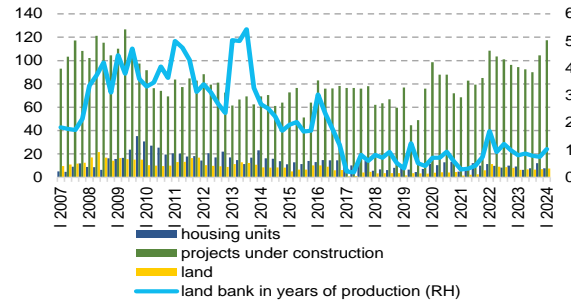
Source: NBP based on Quant Research sp. z o.o.

Figure 104 Situation of real estate developers with 9 to 49 employees



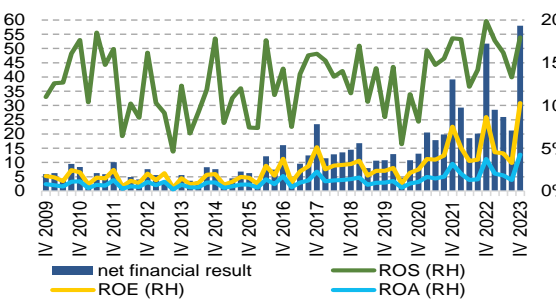
Source: NBP based on Statistics Poland (F01)

Figure 105 Situation of the developers with more than 49 employees

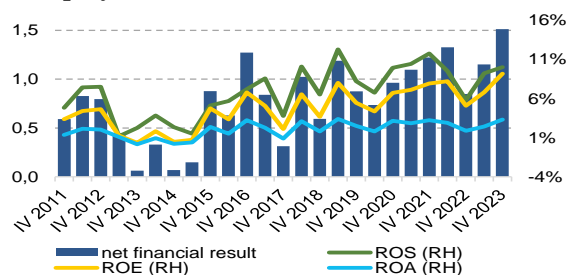


Source: NBP based on Statistics Poland (F01)

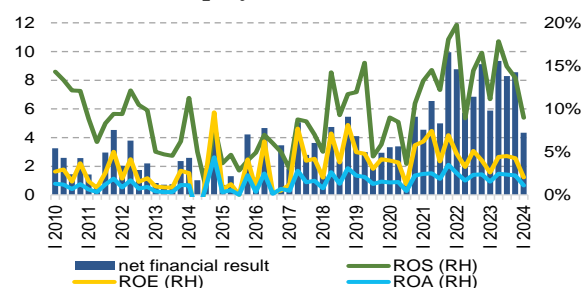
Figure 106 Profitability of the developers listed on the WSE



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

Figure 107 Profitability of the developers with 9 to 49 employees

Source: NBP based on Statistics Poland (F01)

Figure 108 Profitability of the developers with more than 49 employees

Source: NBP based on Statistics Poland (F01)

Analysis of financial standing of residential and non-residential construction companies³⁹

The volatility in demand and financing conditions in the housing market from January 2023 to March 2024 translated into high volatility in developers' decisions to plan and undertake new projects, coinciding with the settlement of construction contracts of dwellings completed and put into use. In an environment of fading momentum fostering increases in operating and financing costs, the larger residential and non-residential construction companies (with more than 49 employees) reported 11% higher y/y revenues in 2023, with a 5% decline in net financial result, eventually achieving a sales margin of 7.2% compared to the previous year's high of 8.3%. The distribution of return on sales values for larger companies that filed an F01 report for 2023 showed that the highest percentage of entities (43%) achieved returns in the range of 0%-5%. In 2024 Q1, the liquidity, debt and profitability ratios deteriorated slightly in y/y terms, as did the efficiency of collection of receivables and settlement of liabilities, with the same share of work in progress as in the previous year. The results of residential and non-residential construction companies were achieved against a backdrop of a significant deceleration in the construction production prices.

Within the group of larger residential and non-residential construction companies, the coincidence of a low level of housing pre-sales in 2023 H1 and the completion of a significant number of dwellings translated into an increase in the share of receivables in total assets to an unprecedented level of 37%, while the collection period remained unchanged. In the second half of 2023, the settlement of construction contracts was accompanied by higher revenues of developers, which fostered payment settlement and resulted in a decrease in the share of receivables to 31% at the end of 2023, i.e. to the average value of previous years. The result of the inflation premium and a certain "leeway" in the settlement of liabilities to contractors was the above-average level of cash in assets of residential and non-residential construction companies (17.2% at the end of 2023 compared with 16.4% at the end of 2022) as well as the high level of liquidity in individual quarters of 2023 which were in line with the increase in the price of own services evident since 2021 Q3.

The pressure of the rising costs of doing business in 2022 resulted in the need for a higher involvement of external capital in the financing of operations. The continued volatility in the housing market in 2023 and the halting of upward trends in certain cost elements allowed construction companies to achieve results that translated into a 29% increase in the value of equity and an increase in its share in financing business to 53% at

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 employees (data available on a semi-annual basis until the end of the second half of 2023) and companies with more than 49 employees (data available on a quarterly basis until 2024 Q1) which perform construction works connected with the construction of residential and non-residential buildings (PKD 41.20).

the end of 2023, from 46% at the end of 2022. The collection problems seen especially in the first three quarters resulted in an increase in working capital requirements, volatility in liquidity ratios and a decrease in the share of working capital in the financing of current assets. The solution to these problems was late payment of liabilities (133 days in 2023 Q2 and 127 days in 2023 Q3, compared to an average of 117 days in 2023) and taking out short-term loans (y/y growth of 6.3%). Dynamic changes in assets and their sources of financing in the subsequent quarters of 2023 resulted in significant declines in the return on assets and equity. At the end of 2023, return on assets amounted to 8.9%, compared to 11.0% a year earlier, while return on equity fell from 25.6% in 2022 to 11%. The adopted management approach with the dynamic changes in the environment of construction companies resulted in a slight deterioration in debt ratios, which remained at safe levels throughout the period under review.

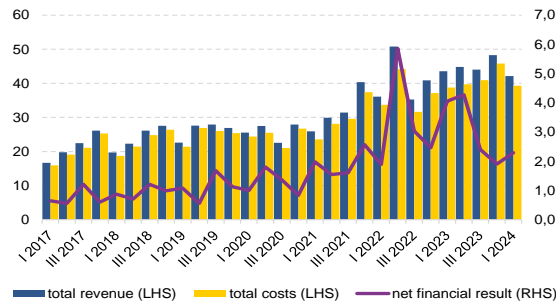
Data for 2024 Q1 concerning larger non-residential construction companies showed a slight decline in revenue (down 3% y/y) and a significant decrease in the net financial result (down 44% y/y). The main dimension of the deterioration in the quality of assets was the increase in the share of receivables at the end of 2024 Q1 to 39%, compared to 34% in 2023 Q1, with the collection period of receivables extended to 117 days from 83 days presented a year ago, with the same share of finished production (2.1%) and work in progress (10%) as in the previous year. Return on assets decreased to 1.4% compared to 2.9% a year earlier. The increase in receivables resulted in the need to search for sources of funding by increasing the share of third-party capital compared to 2023 Q1, mainly due to a 23% y/y increase in liabilities to suppliers, resulting in an increase in the share of this component in total liabilities from 41% to 44% y/y. The increase in working capital requirements extended the period of settlement of short-term liabilities to 145 days, with a reduction in the share of debt due to loans. This resulted in a slight deterioration of the liquidity and debt ratios. Return on equity in 2023 Q1 decreased to 3.4% compared to 6.5% a year earlier.

The negative level of new housing production allowed small residential and non-residential construction companies (with 9 to 49 employees) to earn revenues in 2023 that were only 2% higher than in 2022, mainly due to revenues generated in 2023 H1. On the other hand, the smaller scope of works in 2023 H2 resulted in a change in cost management by smaller construction companies through significant limitation of the use of subcontractors, which reduced the cost of third-party services whose share of operating expenses reached a record low (42% in 2023 vs. an average of 56% in 2017-2022). Reducing these expenses was a critical element in achieving a favourable low operating expense ratio of s and translated into a record level of return on sales in 2023 H2 (12.3%). Financial data of small companies for the entire 2023 showed a 12% increase in the financial result with a return on sales of 9.6%, which was achieved with a decreasing upward pressure on wages and third-party services. The distribution of return on sales values showed that it was most often contained in the 0%-5% range (25% of entities) and less often in the higher 5%-10% range (18% of companies).

A slight increase in sales revenue generated by small residential and non-residential construction companies in 2023, with significant changes in the operating expenses structure, allowed them to reduce the pressure of third-party service costs and wages and thereby achieve high margins. This allowed them to once again finance their operations with mostly equity after a short period of less favourable proportions. In 2023, the share of equity in total liabilities was 54% compared to 50% in 2022. Small residential and non-residential construction companies, after a more difficult situation in the first half of 2023, also saw an improvement in the second half of the year. The negative picture of the primary market in 2023 H1 caused a deterioration of the structure of assets over the period. The share of receivables in total assets decreased from 27% in 2023 H1 to 15% at the end of the year. The collection period also shortened from a record long period in 2023 H1 (112 days) to 89 days in 2023 H2. The effect of the shorter collection period was to increase cash reserves from 10% to 12% y/y. However, the positive changes in assets did not preclude the need for an increase in the exposure to third-party capital to finance day-to-day operations. The value of short-term loans increased by 38% and long-term loans by 63%

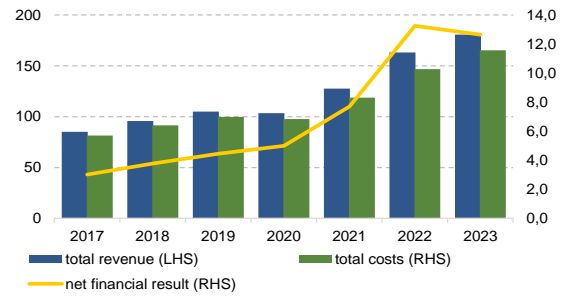
increase. Liabilities represented an important element of funding, with the maturity extended to 150 days against 104 days in 2022. Such management of settlements allowed the companies to maintain a high level of liquidity, which, combined with a significant increase in the operating cycle, resulted in a low level of asset utilisation (31% per quarter against an average of 35% in the years 2017-2022). Small companies' return on assets improved slightly to 9.0% in 2023 compared to 8.9% in 2022, while return on equity improved to 19.1% from 17.7%.

Figure 109 Economic indicators of construction companies with more than 49 employees



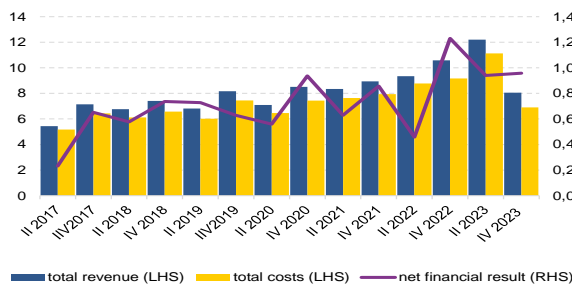
Source: NBP based on Statistics Poland (F01)

Figure 110 Economic indicators of construction companies with more than 49 employees



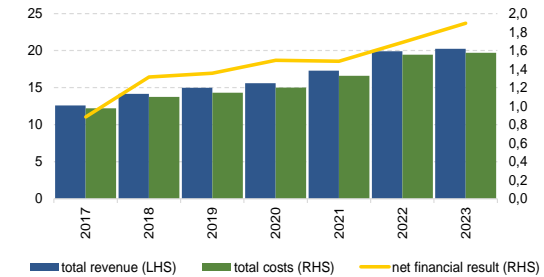
Source: NBP based on Statistics Poland (F01)

Figure 111 Economic indicators of construction companies with 9 to 49 employees



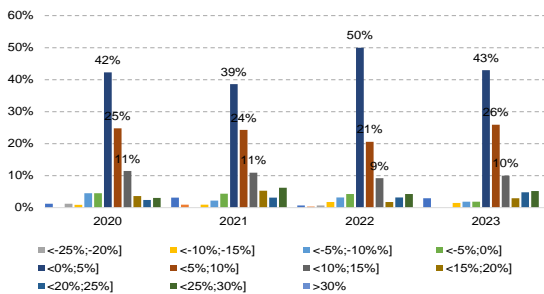
Source: NBP based on Statistics Poland (F01)

Figure 112 Economic indicators of construction companies with 9 to 49 employees



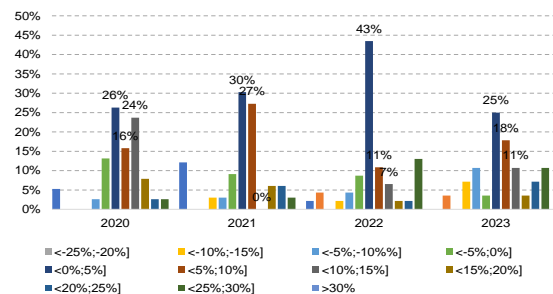
Source: NBP based on Statistics Poland (F01)

Figure 113 Distribution of Return on Sales of construction companies with more than 49 employees



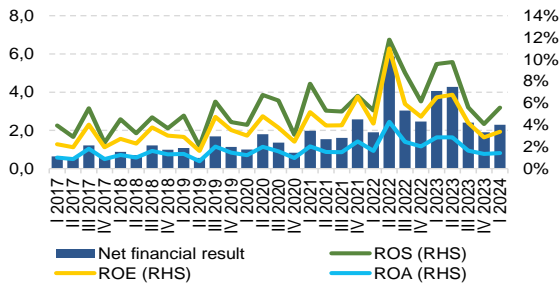
Source: NBP based on Statistics Poland (F01)

Figure 114 Distribution of Return on Sales of construction companies with 9 to 49 employees



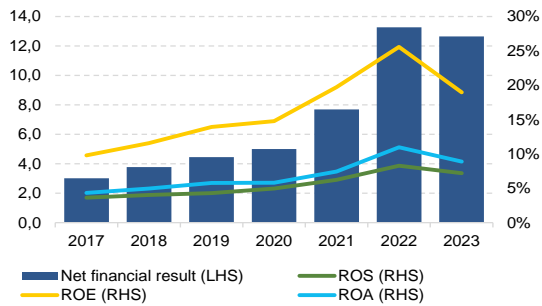
Source: NBP based on Statistics Poland (F01)

Figure 115 Profitability of operations of construction companies with more than 49 employees



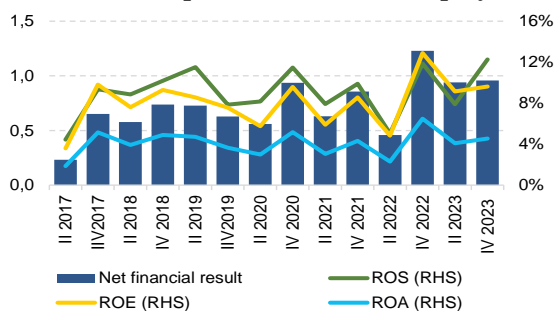
Source: NBP based on Statistics Poland (F01)

Figure 116 Profitability of operations of construction companies with more than 49 employees



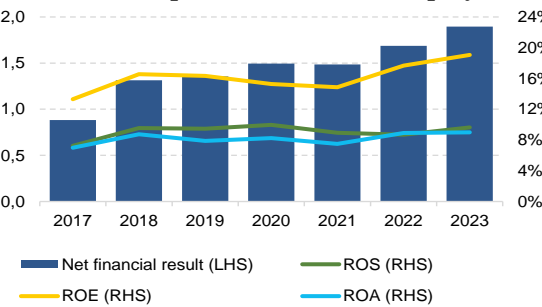
Source: NBP based on Statistics Poland (F01)

Figure 117 Profitability of operations of construction companies with 9 to 49 employees



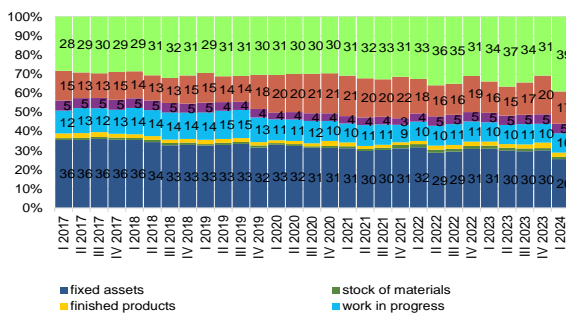
Source: NBP based on Statistics Poland (F01)

Figure 118 Profitability of operations of construction companies with 9 to 49 employees



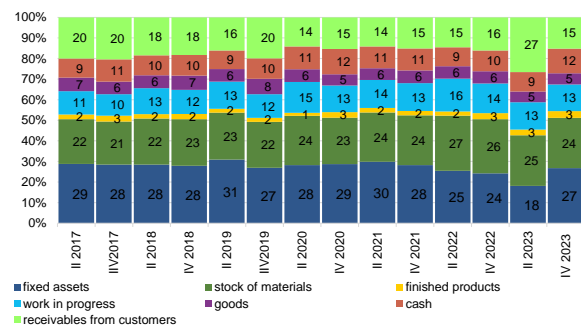
Source: NBP based on Statistics Poland (F01)

Figure 119 Structure of assets of construction companies with more than 49 employees



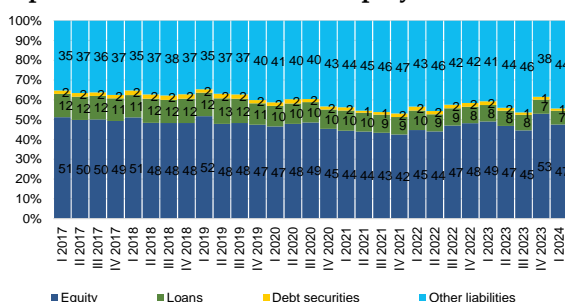
Source: NBP based on Statistics Poland (F01)

Figure 120 Structure of assets of construction companies with 9 to 49 employees



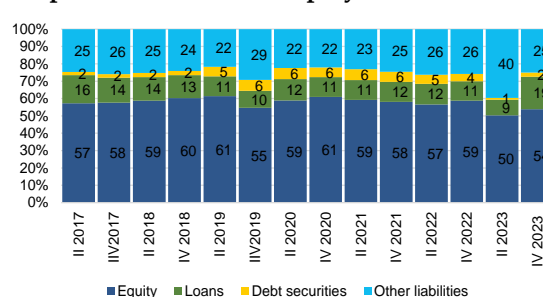
Source: NBP based on Statistics Poland (F01)

Figure 121 Structure of liabilities of construction companies with more than 49 employees



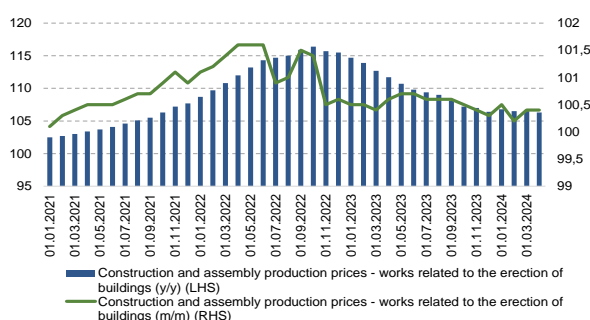
Source: NBP based on Statistics Poland (F01)

Figure 122 Structure of liabilities of construction companies with 9 to 49 employees



Source: NBP based on Statistics Poland (F01)

Figure 123 Price changes of construction and assembly production - works related to the erection of buildings



Source: NBP based on Statistics Poland

Analysis of the financial situation of the wholesalers of building materials⁴⁰

A smaller scope of works in the residential and non-residential construction industry in 2023, compared to 2022, resulted in the lower demand for building materials, leading to slower growth in their prices. According to the data supplied by Grupa Polskie Składy Budowlane, prices of building materials in the period from January to December 2023, compared to the corresponding period in 2022, increased on average by 4% in almost all categories of goods under analysis, compared to a 25% increase in 2022 for 2021. The increase in the prices of building material in 2023 reached the highest level in the January-March period (14%), before slowing down to 9% in the January-June period and to 6% in the January-September period of 2023, after which the growth rate continued to decline in subsequent quarters. However, analysing the data on a year-to-date basis (for the period January-March 2024 to 2023), their growth rate was minus 3%. Despite the drop in the prices of

⁴⁰ 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 employees (data available on a semi-annual basis until the end of the second half of 2022) and bigger companies with more than 49 employees (data available on a quarterly basis until 2024 Q1) which pursue the activity of agents involved in the sale of timber and building materials (PKD 4613) and wholesale of wood, building 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 i ogrodu – analiza PSB” [Changes in the prices of materials for construction and for home and garden] in March 2024, and in March, June, September and December 2023, Grupa PSB Handel S.A., January and April 2024, and April, July and October 2023).

building materials, the cost of residential building construction (type 1122-302) increased by 4% in 2024 Q1, compared to 2023 Q1.⁴¹

Analysis of the data of the larger building material wholesalers (with more than 49 employees) reported in the F01 reports up to December 2023 showed a slight deterioration in their overall financial condition in 2023 Q4, in relation to the previous quarter, including profitability, despite average liquidity remaining at similar and favourable levels. A higher increase in total costs compared to total revenues resulted in a decrease in net financial result (by 11.8% y/y). The first quarter of 2024 saw a slight improvement. An increase in total revenue growth was recorded, which is marginally higher than the increase in total cost growth (y/y). Despite the slight difference in changes of the two categories analysed, a clear increase in the growth of the net financial result was noted (by 26.6% y/y).

At the end of 2023, a higher share of entities with a positive net financial result was recorded than in the previous quarter, but it was significantly lower y/y (78.0% in 2023 Q4 against approx. 72.9% in 2023 Q3 and 97.1% in 2022 Q4), indicating a large diversification in their economic situation. A decrease in net financial result and the persistently low percentage of wholesalers with a positive financial result at the end of 2023 means that most companies generate less satisfactory profit margins on building materials sold than in previous periods. The beginning of the current year suggests that the situation of larger entities may improve. However, one should wait until the publication of data for the following quarters of 2024 before drawing any conclusions. In the group of larger wholesalers, profitability ratios improved at the end of last year compared to the previous quarter, but also remained below the values recorded in the corresponding quarter of 2022 (3.0% ROS, 3.0% ROE and 1.6% ROA in 2023 Q4 vs. 1.9% ROS, 2.0% ROE and 1.0% ROA in 2023 Q3 and 4.0% ROS, 3.6% ROE and 1.9% ROA in 2022 Q4). In 2024 Q1, the ratios deteriorated against the previous quarter, but when comparing them to the corresponding period of 2023, they were slightly better. Average liquidity in the group of large wholesalers remained at a favourable level at the end of 2023, comparable to the previous quarter. A safe, similar level of liquidity was maintained in 2024 Q1.

At the end of 2023 Q4, inventories of goods reduced slightly, which may be due to an increase in new residential investment projects. The first quarter of the current year showed a slight increase in inventories in larger building material wholesalers. An increase in developer activity and demand for building materials reduced the inventory turnover period, collection of receivables and settlement of liabilities to contractors in 2023 Q4. Performance in this area deteriorated slightly in 2024 Q1.

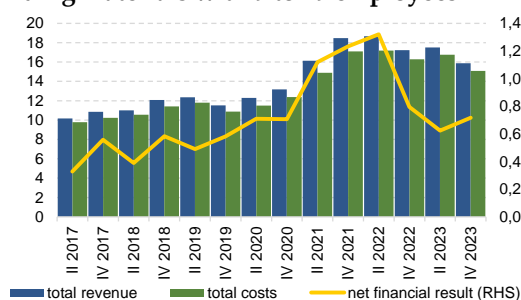
Equity remains a stable and dominant source of financing (54% of total liabilities at the end of December 2023). The total debt, assets-to-equity and debt-to-equity ratios, both at the end of 2023 and in 2024 Q1 remained at a good and safe level. The analysis of external sources of financing showed a slight decrease in the share of debt due to bank loans in 2023 (11.6%), which was slightly higher in the previous two years (12%-13% in the structure of liabilities).

In case of small building material wholesalers (with 9 to 49 employees), the situation looked more favourable. The rate of decline in total revenue in 2023 H2 was slightly lower than the rate of decline in total costs, which translated into an increase in net financial result at a level of 14.8% y/y. The overall condition, including liquidity and profitability of small building material wholesalers is slightly better than that of large companies. The percentage of smaller wholesalers with a positive financial result increased to 85.4% at the end of 2023 compared to 73.7% at the end of 2023 H1, with a much more favourable proportion at the end of 2022 (92.2%). According to the financial data for 2023 H2, the period of inventory turnover, collection of receivables and

⁴¹ The change in the construction cost prices was determined 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"]. Sekocenbud notebook 13/2023, 2023 Q1, Sekocenbud notebook 13/2024, 2024 Q1,

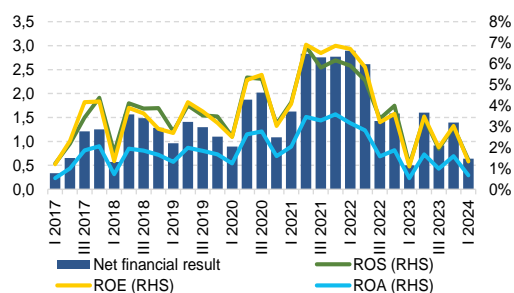
settlement of liabilities to counterparties has decreased. The share of receivables in total assets and the level of liabilities to counterparties in total liabilities increased. The total debt, assets-to-equity and debt-to-equity ratios remained at a good and safe level. Profitability ratios improved in relation to the previous six months, but compared to the corresponding period of 2022, the ratios remain at a lower level, while still being more satisfactory than in the group of larger wholesalers.

Figure 124 Economic indicators of wholesalers of building materials with 9 to 49 employees



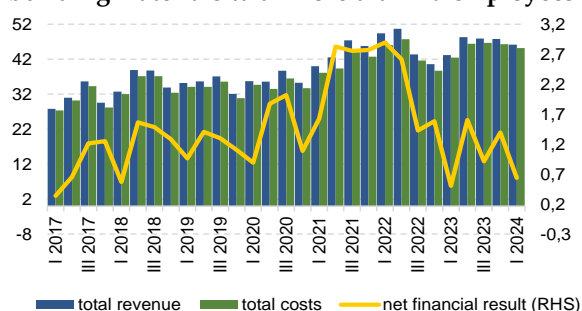
Source: NBP based on Statistics Poland (F01)

Figure 126 Profitability of the wholesalers of building with more than 49 employees



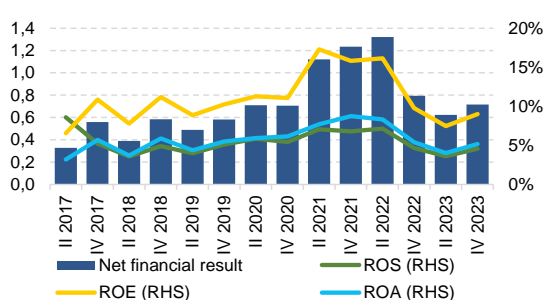
Source: NBP based on Statistics Poland (F01)

Figure 125 Economic indicators of wholesalers of building materials with more than 49 employees



Source: NBP based on Statistics Poland (F01)

Figure 127 Profitability of wholesalers of building materials with 9 to 49 employees



Source: NBP based on Statistics Poland (F01)

Analysis of financial standing of manufacturers of building materials⁴²

In 2023 and in 2024 Q1, the economic condition of building material manufacturers was affected by high commodity prices and a decline in demand for materials. Despite the improvement in investment activity by developers in the 2023 H2 and in 2024 Q1, a large part of construction companies held significant stocks of building materials accumulated in earlier periods, when they invested surplus funds in cheaper materials in the period of decelerating investment.

The financial data of larger manufacturers for 2023 Q4 showed a decline in total revenue (by 3%) and total costs (by 4%) and an increase in net financial result (by 29%) compared to the corresponding period of 2022. The share of profitable larger companies at the end of 2023 Q4 amounted to 80%. In 2023 Q4, they achieved a slightly better return on sales in y/y terms (5.8% vs. 4.3%), insignificantly better for ROE (2.6% vs. 2.2%) and ROA (1.6% vs. 1.3%). Good efficiency (receivables collection period of 40 days and liabilities settlement period of 79 days)

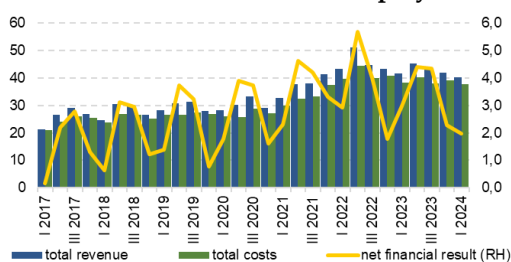
⁴² The calculations and the conclusions presented in this edition of *Information* are primarily based on data stated in F01 reports submitted to Statistics Poland by two groups of companies: small companies with 9-49 employees (data available on a semi-annual basis until the end of the second half of 2023) and companies with more than 49 employees (data available on a quarterly basis until 2024 Q1) which deal in the production of building materials (PKD 1623, 2223, 2320, 2332, 2351, 2352, 2361, 2362, 2363, 2364).

and a short inventory turnover period (54 days) continued. At the end of December 2023, operations were largely financed with equity (63% of total liabilities). Debt resulting from bank loans remained at the previous quarter's level, i.e. approx. 14% of total liabilities (an increase of 2 pp. compared to the levels recorded in 2021-2022).

The financial data of larger manufacturers for 2024 Q1, compared to the corresponding period of 2023, showed a decrease in both total revenue (by 4%) and total expenses (by 1%). These developments were accompanied by a significant decline in net financial result (by 34%). The share of profitable larger companies at the end of 2024 Q1 amounted to 56% compared to 70% and 78%, respectively, at the end of the first quarters of 2023 and 2022. It means an increase in unprofitable building material manufacturers over the period. Higher than before inventories of unsold building materials at building material manufacturers continuing from 2022 Q2 confirm the decline in projects in under construction.

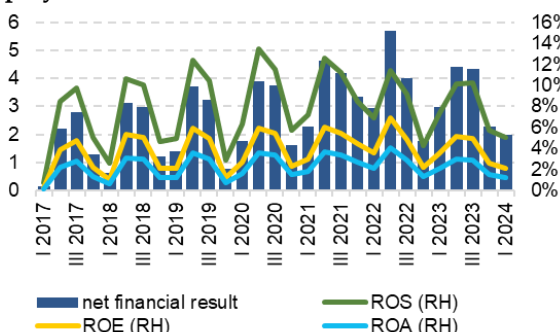
In case of small building material manufacturers, the financial data for 2023 H2 showed a decrease in total revenues and total costs by 16% and 11% y/y, respectively, with a deeper decline in the net financial result (by 46%). Small manufacturers demonstrated a slightly worse financial situation than larger entities, however, with a more favourable level of Return on Sales in 2023 H2 (6.3%). On the other hand, Return on Equity (7.0%) and Return on Assets (4.0%) were more favourable than in the group of larger manufacturers. The favourable operating expense ratio of 0.94 and the low share of profitable entities (76%) continued, showing the diversification of the financial standing in the group of small building material manufacturers.

Figure 128 Economic indicators of building material manufacturers with more than 49 employees



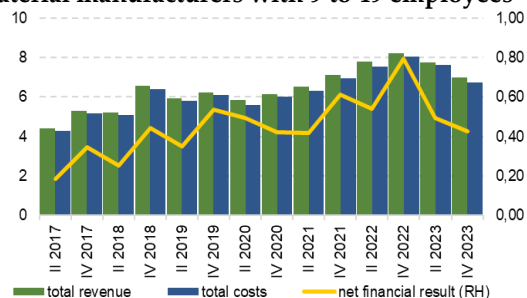
Source: NBP based on Statistics Poland (F01)

Figure 130 Profitability of activities of building material manufacturers with more than 49 employees



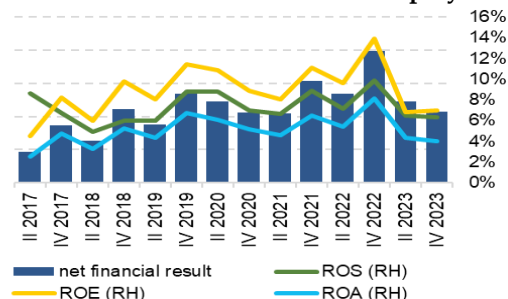
Source: NBP based on Statistics Poland (F01)

Figure 129 Economic indicators of building material manufacturers with 9 to 49 employees



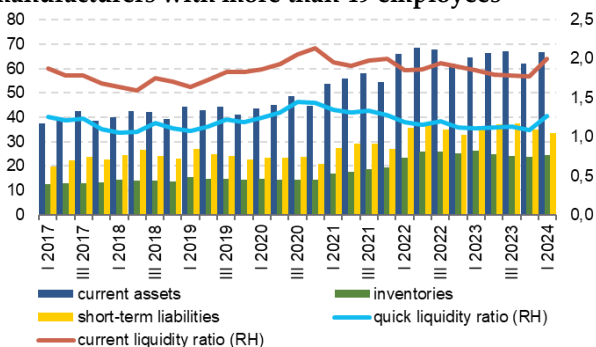
Source: NBP based on Statistics Poland (F01)

Figure 131 Profitability of activity of building material manufacturers with 9 to 49 employees



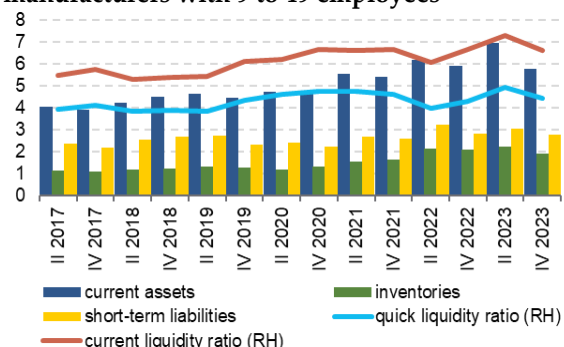
Source: NBP based on Statistics Poland (F01)

Figure 132 Liquidity ratios of building material manufacturers with more than 49 employees



Source: NBP based on Statistics Poland (F01)

Figure 133 Liquidity ratios of building material manufacturers with 9 to 49 employees



Source: NBP based on Statistics Poland (F01)

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