NARODOWY
BANK POLSKI

March 2024

Information on home prices and the situation in the residential and commercial real estate market in Poland in 2023 Q4

Financial Stability Department

Approved by: Olga Szczepańska, Director of the Financial Stability Department

Team of authors:
Hanna Augustyniak, Financial Stability Department
Arkadiusz Derkacz, NBP Regional Branch in Łódź
Krystyna Gałaszewska, NBP Regional Branch in Gdańsk
Andrzej Jakubowski, NBP Regional Branch in Warsaw
Jacek Łaszek, Financial Stability Department
Krzysztof Olszewski, Financial Stability Department
Łukasz Mikołajczyk, NBP Regional Branch in Opole
Anna Stołecka, NBP Regional Branch in Rzeszów
Robert Tyszkiewicz, NBP Regional Branch in Łódź
Joanna Waszczuk, Financial Stability Department
Marzena Zaczek, Financial Stability Department

Analysis of the situation in the real estate market in Poland in 2023 Q4[1] leads to the following conclusions:

Housing sector

The year 2023 saw an increase in housing demand amid limited supply. The number of development contracts for the construction of dwellings sold in the largest markets gradually increased throughout 2023 to reach approx. 14.3 thousand in 2023 Q4[2] (see Table 1). In 2023, a total of approx. 57.6 thousand residential construction contracts were sold in Poland's largest primary markets, i.e. approx. 22.6 thousand more than in 2022 (+65% y/y). The number of dwellings available on the market dropped significantly in year-on-year terms, and the number of dwellings under construction continued to be low as real estate developers had limited the number of now projects in the years 2021 and 2022. Approximately 58% (compared to 76% in the previous quarter) home purchases were financed with buyers' own funds with a significant increase in the share of bank loan (see Table 2), including the share of government subsidies.

Table 1 Number of residential construction contracts put on the market, sold and remaining on offer in the six largest housing markets in Poland (quarterly data)

	Put on the market	Sold	Remaining on offer
2020 Q4	12,122	13,963	48,028
2021 Q1	13,851	19,482	42,129
2021 Q2	15,803	19,491	37,844
2021 Q3	13,770	14,994	36,624
2021 Q4	14,685	15,036	37,361
2022 Q1	13,498	10,410	40,457
2022 Q2	21,446	9,458	52,955
2022 Q3	7,290	,6,598	51,396
2022 Q4	6,782	,8,493	48,592
2023 Q1	6,852	11,421	43,752
2023 Q2	10,172	15,517	40,584
2023 Q3	9,979	16,388	34,294
2023 Q4	15,942	14,288	36,199

Note: see Figure 57. *Source: JLL*

- **In 2023 Q4, 59.1 thousand dwellings were completed and made ready for occupancy** (a rise of approx. 20% q/q and a fall of approx. approx. 18% y/y), reflecting the activity of developers in previous years. **Building permits were issued for 66.8 thousand dwellings**, a rise of approx. 7% q/q and approx. 11% y/y. **The construction of 50.2 thousand dwellings was started**, a fall of approx. 6% q/q and approx. 6% y/y. **The costs of residential construction,** i.e. materials, labour, equipment rental, **continued to rise** in quarter-on-quarter terms. **Interest in the purchase of buildable land recovered** and land prices went up. At the

[1] The analysis carried out in this issue of the Information is based on data available as at the end of 2023 Q4. Data collected in the NBP database relating to 2023 Q4 include offers valid as at 1 December 2023 and transactions concluded in the period from 1 September to 30 November 2023. Due to delays in availability of certain data, some charts include information until 2023 Q3 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. Historic data are subject to revision. In the housing price survey (BaRN database) concerning 2023 Q4, approx. 110.9 thousand records were collected, of which approx. 34% concerned transactions and 66% concerned offers. Altogether, approx. 5.3 million records have been collected in the BaRN database, of which 25.4% concern transactions and 74.6% concern offers.

[2] Based on NBP and JLL.

same time, **transactional rental rates per sq. m of housing increased** and increases in average nominal transaction prices per sq. m of housing in primary markets exceeded those recorded in previous quarters.

- **In primary markets, nominal average transaction prices per sq. m of new housing (primary market, transactions - PMT) increased both in quarter-on-quarter and year-on-year terms**, especially in Kraków, Wrocław and Gdańsk, but decreased only in Gdynia (see Table 2). Primary markets recorded **increases in real transaction prices relative to the CPI in quarter-on-quarter and year-on-year terms** (the rise in inflation was lower than the rise in house prices). **In 2023 Q4, real growth relative to wages was negative both in quarter-on-quarter and in year-on-year terms** (higher wage increases).

- **Secondary markets (existing stock) saw increases in nominal prices in quarter-on-quarter terms, which were especially strong in Kraków and Warsaw. The year-on-year growth in nominal prices in relation to both the CPI and wage growth continued to be negative in all the markets,** especially in Łódź, Gdynia and Warsaw. **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 and smaller dwellings, yet in better locations persisted, due to their lower total purchase cost.

Table 1 Transaction price growth per square meter of housing in the analysed cities in 2023 Q4

	Nominal price growth				Real price growth relative to CPI */				Price growth relative to wage growth */			
	q/q		y/y		q/q		y/y		q/q		y/y	
	RPT	RWT	RPT	RWT	RPT	RWT	RPT	RWT	RPT	RWT	RPT	RWT
Gdańsk	6.4%	-1.1%	15.9%	2.0%	5.9%	-1.6%	8.8%	-4.2%	2.2%	-5.0%	3.9%	-8.6%
Gdynia	-1.2%	1.2%	0.8%	4.5%	-1.7%	0.7%	-5.3%	-1.9%	-5.1%	-2.8%	-9.6%	-6.4%
Kraków	10.5%	4.1%	11.5%	10.9%	2.6%	3.6%	3.6%	4.2%	-1.0%	0.0%	-1.1%	-0.6%
Łódź	5.4%	3.2%	8.0%	9.4%	4.9%	2.7%	1.4%	2.8%	-1.2%	-0.8%	-3.2%	-1.9%
Poznań	3.9%	2.7%	14.3%	9.2%	3.4%	2.2%	7.3%	2.3%	-0.2%	-1.3%	2.5%	-2.1%
Wrocław	6.7%	3.8%	19.6%	9.9%	6.2%	3.2%	12.3%	3.2%	2.5%	-0.3%	7.2%	-1.5%
Warsaw	**6.2%**	**3.9%**	**15.7%**	**2.2%**	**6.8%**	**3.4%**	**8.6%**	**-4.0%**	**2.0%**	**-0.2%**	**3.7%**	**-8.3%**
6 cities	**6.7%**	**3.5%**	**9.8%**	**8.3%**	**5.0%**	**1.7%**	**4.9%**	**0.9%**	**1.3%**	**-1.8%**	**0.1%**	**-3.7%**
10 cities	**4.9%**	**2.9%**	**8.3%**	**8.6%**	**3.9%**	**2.8%**	**2.5%**	**2.1%**	**0.3%**	**-0.8%**	**-2.1%**	**-2.5%**

Note to Table 2: the growth rates of the average transaction price in the secondary market (SMT) are underestimated due to the limited number of transactions available in the Register of Real Estate Prices and Values (Rejestr Cen i Wartości Nieruchomości - RCiWN) (a smaller number of more expensive dwellings). Figures will be revised in the following quarters, as required data become available. */ The growth in real prices relative to the CPI and to the wage growth is calculated as a growth in the weighted average price in real terms per square metre of housing in the PM and SM. Prices for 2006 Q3 were adopted as fixed prices.

Source: NBP, Statistics Poland

- **In 2023, the number of dwellings offered for rent was on the rise**[3]. This was, among other things, a result of the completion of dwellings purchased in the boom period of 2020-2022, when many investors decided to purchase rental housing. **The average, transactional rental rates per sq. m of housing** (exclusive of service charges and utility fees) **increased in quarter-on-quarter terms, especially in the 6 large cities and,**

[3] Based on NBP's data, publications: Polityka Insight, Otodom, OLX „Kwartalnik mieszkaniowy" ["Quarterly Housing Report"], January 2024.

to a lesser extent, in the 10 cities (see Figures 14 and 15), which slightly boosted the profitability of rental in large cities. Given the level of interest rates and rental rates, in 2023 Q4 house rental was similar to house purchase as an alternative to housing consumption. The professional rental market should continue to grow in the coming years, due to the unstable situation in the real estate market, the attractiveness of housing market in Poland compared to other European countries and the persistently high nominal cost of mortgage loans.

- **Profitability of rental of housing purchased with cash[4] in seven large cities declined a little,** as the increase in the level of rents in the case of long-term rental observed in recent quarters did not compensate for the strongly rising nominal house prices (see Table 26). The return on equity (ROE) of an investment in rental housing purchased with cash improved slightly, yet with a 50% leverage and higher was negative. Investment in rental housing (excluding transaction costs, renovation costs and any changes in the value of housing) purchased with cash continued to be competitive compared with bank deposits. Profitability of investing in rental housing compared to investment in 10-year Treasury bonds is negative due to high interest on Treasury bonds (see Figure 25).

- **The estimated affordability of housing in the 7 large cities** (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 16). **The estimated maximum available residential mortgage loan[5]** increased slightly on the previous quarter, mainly as a result of a fall in interest rates on residential mortgage loans, while the estimated **affordability of loan-financed housing[6]** remained unchanged amid similar increases in wages and home prices and declining interest rates. The liberalisation of the supervisory approach to interest rate buffers in assessing creditworthiness was also a factor behind the change in the latter two indicators.

- **At the end of December 2023 sales of residential construction contracts** in the six largest primary markets in Poland[7] (see Table 1 and Figure 57) **stood at approx. 14.3 thousand dwellings**, i.e. approx. 13% less than in the previous quarter. In the last four quarters, a total of approx. 57.6 thousand residential construction contracts were sold in the largest markets, an increase of approx. 22.6 thousand (+65% y/y). In the last four quarters, **approx. 42.9 thousand residential construction contracts were put on sale in the largest markets,** down by approx. 6.1 thousand (-12% y/y). **The supply of unsold residential construction contracts in the six largest markets decreased** by approx. 1.9 thousand dwellings on the previous quarter **and amounted to approx. 36.2 thousand at the end of December 2023**. The number of offered contracts

[4] For more about the rental market, see Chapter 7 "Analysis of profitability of investment in rental housing in selected cities in Poland in 2023 Q4".

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

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

[7] Based on JLL data.

for so-called "turn-key" dwellings decreased on the previous quarter by approx. 330 dwellings and amounted to approx. 4.1 thousand.

- **The average time to sell contracts for the construction of dwellings in the primary market in the six largest markets, calculated on the basis of the time to sell in the last quarter, fell in the analysed period to 2.5 quarters from 2.5 in the previous quarter and 5.6 in 2022 Q4** (see Figure 64). At the end of 2023 Q4 the time to sell dwellings in the secondary markets, taking into account only finalized transactions, increased slightly in all groups of cities (see Figure 65).

- **The value of new housing loan disbursements in Poland in 2023 Q4 was higher than in the corresponding period of 2022**, due to an increase in household creditworthiness and government's programme of subsidising the purchase of the first house. According to NBP's data[8] in 2023 Q4, the value of new contracts for housing loans in PLN[9, 10] (excluding renegotiated contracts) amounted to PLN 25.0 billion, i.e. it was higher by approx. PLN 9.8 billion (+65%) than the previous quarter's value, by approx. PLN 18.7 billion, i.e. three times higher compared to 2022 Q4. Loan demand increased considerably in 2023 Q4 as a result of the "2% Safe Credit" scheme launched in July 2023[11]. The results of the NBP's survey of the situation in the credit market[12] point to the absence of any major changes in lending criteria and loan granting terms and conditions in in 2023 Q4. For 2024 Q1, the surveyed banks anticipate the existing lending policies to be continued and the demand for housing loans to decline considerably after four quarters of significant rises.

- **For another consecutive quarter, the number of housing loans at a temporarily fixed interest rate accounted for a considerable part of the lending volume**. According to the AMRON data, the share of new fixed rate loans in the total number of new residential mortgage loans amounted to approx. 81% in

[8] The data concerning interest rates and the value of new housing loans are based on the NBP data available in the „4 OPN2PLN" tab on NBP's website: https://nbp.pl/statystyka-i-sprawozdawczosc/statystyka-monetarna-i-finansowa/statystyka-stop-procentowych/. According to NBP data, at the end of December 2023, the volume of housing loans granted by the banks to households totalled PLN 479.6 billion, i.e., it was roughly PLN 3.4 billion lower than in the previous quarter and about PLN 17 billion lower than in December 2022 (y/y drop of 3.0%, vs. a 2.8% decrease in 2022 Q4.). In 2023 Q4, the stock of PLN-denominated housing loans increased (by PLN 8.8 billion on 2022 Q4), whereas the stock of foreign currency loans decreased (by PLN 25.8 bn on 2022 Q4).

[9] According to BIK data, in 2023 Q4, banks and credit unions granted retail customers approx. 69.2 thousand housing loans, totalling PLN 28.2 billion (42.5 thousand loans in 2023 Q3 and 19.6 thousand in 2022 Q4, in the amount of PLN 16,4 billion and PLN 6.3 billion, respectively). During the quarter, there were only positive y/y growth rates in housing loans issued in all amount brackets, whereas y/y growth rates were negative . In the whole of 2023, 166.9 thousand housing loans were taken out(approx. 25% up y/y), totalling PLN 64.0 billion (an increase of approx. 41% y/y).

[10] According to AMRON data, in 2023 Q4. the number of newly granted housing loans was 68.9 thousand (40.8 in 2023 Q3 and 18.9 thousand in 2022 Q4), whereas the value of the new mortgage loans was PLN 28.1 bn (PLN 15.8 billion in 2023 Q3 and PLN 6.2 billion in 2022 Q4 .). In 2023 Q4, most of the loans granted (in terms of value) were in the range of PLN 500 thousand-1 million (approx. 22.2%), the share of loans in the ranges above PLN 300 thousand increased, whereas the share loans below that amount decreased. In the structure of new loans in 2023 Q4, the share of loans with the LtV above 80% increased to approx. 33%, while the share of loans in the remaining LtV brackets decreased (50-80% to 47%, LtV below 30% to 10%, LtV 30-50% to 10%). The share of loans with a maturity of 25-35 years grew a little (57%), while the share of loans with other maturities decreased. At the end of 2023, the number of active loan agreements (loans under repayment) amounted to approx. 2.29 million (2.37 million at the end of 2022), and their value at the end of the period under review amounted to PLN 479 billion (496 million in 2022 Q4) (.

[11] Act of 1 October 2021 on family housing loan and 2% safe credit (Journal of Laws of 2023, items 859 and 1114). According to BIK data, in the "2% Safe Credit" programme, 56.4 thousand loans were granted in 2023 Q4 in the total amount of PLN 22.9 billion. This scheme accounted for 36% of the total value of lending in the housing loan segment in Poland in 2023, and about 51% in the second half of 2024.

[12] "Situation in the credit market - results of the senior loan officer opinion survey, 2024 Q1", NBP, January 2024 https://nbp.pl/system-finansowy/sytuacja-na-rynku-kredytowym/. .

2023 Q4, i.e. increased by approx. 5 percentage points in quarter-on-quarter terms and rose by 17 percentage points in year-on-year terms (see Figure 30).

- **The estimated return on equity (ROE)[13] on investment projects carried out by residential real estate developers was around 22%, showing a slight decline on the previous six quarters,** yet it remained at a relatively high level (see Figure 42). This level of ROE was affected by the increase in housing transaction prices, exceeding the increase in the cost of housing producers, as well as the high share of external financing. According to the Coface report[14], the number of insolvencies in the construction sector was estimated at 638 at the end of 2023 (compared to 280 at the end of 2022), and in real estate services sector rose to 87 from 68 (see Figure 39). At the same time, the stock market indices of construction and development companies had been rising since the beginning of 2023 (see Figure 38). According to the National Debt Register, the construction industry's debt at the end of 2023 Q4 amounted to PLN 1.5 billion, i.e. increased by PLN 176 million in year-on-year terms. The bulk of this amount is the debt of sole proprietors and enterprises involved in specialized construction works (approx. PLN 691 million) and erection of buildings (approx. PLN 635 million)[15].

- **In 2023 Q4, some 59.2 thousand dwellings were completed and made ready for occupancy[16] in Poland, 21% less than in the previous quarter 17% less than in 2022 Q4** (see Figure 53). Dwellings for sale and rent (approx. 67%) and dwellings built for owner occupancy (approx. 31%) accounted for the majority of completed dwellings. The share of dwellings completed in Warsaw and in 10 cities in the total number of completed dwellings increased slightly. **The construction of approx. 50.2 thousand dwellings began[17] i.e. 41% more than in 2022 Q4, yet 6% less than in the previous quarter** (see Figure 54)[18]**.** It should be

[13] Gross margin is not the same as developer's profit and depending in the organisation of the developer/developer holding, it may comprise different cost components.

[14] In the opinion of Coface experts (*Raport* Coface *– Niewypłacalności w Polsce w 2023 r.[Coface Report – Insolvencies in Poland in 2023]*), the macroeconomic environment in Poland and abroad was still disadvantageous to businesses and might lead to a growing number of insolvencies. The infrastructure construction segment, especially the road building part with the General Directorate of State Roads and Motorways has been allocated funds to finance projects (increased indexation), but has little time to complete them. On the other hand, the railway construction sector has a problem financing indexation of new tender procedures, which can be solved by bridge prefinancing. Investment in energy transformation in Poland are an opportunity in the long run. Residential construction experienced reduced demand, a significant increase in costs, but better access to financing (including the "2% Safe Credit" scheme), which slightly alleviated developers' uncertainty about starting new investment projects. The situation in the industry should improve once the EU Recovery and Resilience funds are disbursed. The authors of the report point out at the same time that numerous legislative developments and technical problems in the implementation of the National Debtor Register make it difficult to quantify the number of bankruptcies in the construction industry.

[15] According to the National Debtor Register.

[16] According to Statistics Poland data, in 2023 Q4, approx. 59.2 thousand dwellings were completed and made ready for occupancy in Poland, about 12.4 thousand less than in 2022 Q4, but approx. 10.3 thousand more than in 2023 Q3. In total, during the past four quarters (2023 Q1 – 2023 Q4) a record high of 220.4 thousand dwellings were put into use, i.e. approx. 18.2 thousand less than the year before (a drop of 7.4% y/y).

[17] According to Statistics Poland data, in 2023 Q4 the construction of approx. 50.2 thousand dwellings started in Poland, roughly 14.7 thousand more than in 2022 Q4, but 3.1 thousand less than in 2023 Q3. In total, during the past four quarters (2023 Q1 – 2023 Q4), the building of approx. 189.1 thousand dwellings commenced, which was about 11.2 thousand less than the year before (a decrease of 5.6% y/y).

[18] The number of dwellings started may increase in the coming months due to the entry into force as of April 2024 of the regulations amending the technical conditions of buildings (Regulation of the Minister of Development and Technology of 27 October 2023 amending the regulation on the technical conditions that should be met by buildings and their location) and the spatial planning reform (Regulation of the Minister of Development and Technology of October 24, 2023 amending the regulation on spatial data sets and metadata in the scope of spatial development (Journal of Laws item 2409), Regulation of the Minister of Development and Technology of 13 November 2023 on the model of the form of a paper regarding the territorial and urban 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

added that the number of house construction starts increased in both 6 and 10 cities and in the rest of Poland, with the exception of Warsaw where their number decreased. Also in this segment dwellings for sale and rent (approx. 68%) and dwellings built for owner occupancy (approx. 31%) accounted for the majority of construction starts.

- **High rates of return on housing projects, and growing housing demand and sales contributed to the launch of new projects and developers' applying for more building permits[19],** albeit at a significantly lower rate. The number of building permits issued in 2023 Q4 increased again in quarter-on-quarter terms by approx. 4.5 thousand and was 6.9 thousand higher than in 2022 Q4 (see Figure 55). Permits issued for the construction of dwellings for sale and rent accounted for approx. 70% of all permits and those for dwellings built for owner occupancy accounted for approx. 27%. The share of permits for the construction of cooperative and subsidized social housing and the number of newly started projects, despite higher y/y growth, were still insignificant in the analysed period.

Commercial real estate sector

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

- **In 2023 Q4, vacancy rates in the nine largest office real estate markets[20] declined slightly to approx. 14.1%** and the total office supply was around 12.9 million sq. m[21]. Differences across regions could be observed as regards changes in vacancy rates. In Warsaw, the vacancy rate declined slightly to 10.4%[22] (from 10.6% in Q3). The vacancy rate of office space depends on the age[23] and, above all, the location[24] of the office building. The spread of teleworking allows tenants to reduce the size of the leased space and replace it with space located in well-connected, energy-efficient office buildings.

- **The estimated return on equity (ROE) on investments in the construction and commercialization of Class A office buildings in Warsaw**, assuming a leverage of 80%, decreased from 7.7% in 2023 Q3 to 5.9% at the end of 2023, which was driven by rising construction costs amid unchanged rent level in EUR. A similar situation could be observed in other analysed office real estate markets, which confirms the generally reported significant decline in the number of office buildings under construction.

- **The estimated return on investment in an existing Class B office building in Warsaw remained relatively high in 2023 Q4;** with a high leverage at the level of 80%, ROE was approx. 9%. However, it

the municipality, documenting of planning work within the scope of this plan and issuing extracts and drawings from it (Journal of Laws, item 2758)).

[19] According to the Statistics Poland data, in Poland in 2023 Q4, approximately 66.8 thousand building permits were issued, i.e. approximately 6.9 thousand more than in 2022 Q4 and approximately 4.5 thousand more than in the previous quarter. In total, in the last four quarters (2023 Q1–Q4), approximately 241.1 thousand permits were issued, i.e. approximately 56.3 thousand less than in the same period last year (a y/y decrease of 18.9%).

[20] The nine office real estate markets comprise: Warsaw, Kraków, Wrocław, Trójmiasto, Katowice, Łódź, Poznań, Szczecin, Lublin.

[21] See Colliers Report: Market Insights, Annual Report 2024, Poland.

[22] See Colliers Report: Market Insights, Annual Report 2024, Poland.

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

[24] See Knight Frank, Report, Poland, Commercial Market, first half of 2018.

should be noted that older office buildings are exposed to two sources of risk. One is the competition from modern Class A office buildings, which may temporarily offer lower rents to attract tenants[25]. The other are rising operating expenses, which, according to the NBP data, are on the rise in Class A and B buildings with older buildings being less energy efficient. Growing energy costs may translate into even higher operating expenses of older buildings making them less competitive compared with modern Class A office buildings. Modernization that could increase competitiveness of older buildings is expensive and may turn out to be economically unjustified.

- **In 2023 Q4 no major changes were observed in the retail real estate sector**. The stock of modern retail space at the end of 2023 Q4 reached approx. 12.9 million sq. m, which means saturation of 337 sq. m/1000 residents[26]. Approx. 365 thousand sq. m[27] of modern retail space was under construction at the end of 2023 Q4. Investment projects are generally undertaken in smaller cities. Thus, it can be concluded that investors regard the traditional retail real estate market in the largest cities as saturated. The index[28] of average rents and hedonically adjusted rents for retail space for the three analysed cities, namely Warsaw, Poznan and Tri-City, continued at a heightened level in 2023 Q4, due to increased demand for retail space.

- **The market of modern warehouse space in Poland is still in its growth phase.** By the end of 2023 Q4, the total warehouse stock had increased to 31.3 million sq. m, with more than 2.8 million sq. m of modern warehouse space under construction.[29] The vacancy rate all over Poland increased to 7.3% compared to 7.7% in 2023 Q3.

- **The estimated value of transactions involving commercial real estate purchased as an investment[30], i.e. for rental, amounted to approximately EUR 2.0 billion at the end of 2023.** Approximately 33.2% of the value of transactions accounted for warehouse space, 33.1% for office space and 26.5% for retail space. Such a low volume of investment had last been seen in Poland in 2010. The situation in the investment market was similar across Europe[31], and stems from major problems seen in the euro area markets, caused by rising interest rates[32]. No significant tensions have been observed on the Polish commercial real estate market so far, but the negative attitude of global investors affects the perception of the Polish commercial real estate market, which can be seen in the reduced volume of sales transactions.

- **The exposure of the financial sector to corporate real estate (residential, office, retail, warehouse and other real estate) comes in two main forms. The first is related to the financing of real estate with a**

[25] See D. Trojanowski, K. Olszewski, J. Łaszek (2023) „Niskie stopy procentowe a misalokacja kapitału na rynku biurowym." ["Low Interest Rates and the Misallocation of Capital in the Office Market"], a study presented at the 30th Scientific Conference of Towarzystwo Naukowe Nieruchomości [The Real Estate Scientific Society].
[26] The value is estimated to be 15% lower than the average for the whole European Union.
[27] See Colliers International Report: Market Insights, 2024 Annual Report, Poland.
[28] The average rent index and the hedonic-adjusted rent index for commercial space was reworked for the whole analysed period. The new index is not calculated using the imputation method as before, but on the basis of hedonic regression with zero-one time variables. It is calculated on the basis of rents for retail premises quoted in four consecutive periods. The adjusted index is more resilient to the occasional changes in the number of analysed estates and the premises to let contained in them occurring between the quotations.
[29] See Colliers International Report: Market Insights, 2024 Annual Report, Poland.
[30] Based on data from Comparables.pl. The investments concern the sale of an entire operating company which leases a building and derives revenue from that. Such transactions occur between: 1/ a developer who has commercialised the building and an investor to whom the building is sold, or 2/ two investors.
[31] See MSCI Real Assets, Europe Capital Trends 2023.
[32] See ECB Financial Stability Review, November 2023.

loan. Usually, in this case, the loan is secured on real estate, but alternative forms of security are also possible. At the end of 2023 Q4, the value of such loans granted by banks in Poland[33] amounted to PLN 66.5 billion[34], of which 59% were denominated in EUR. The total value of residential and commercial real estate loans to businesses comprised the following categories:

- the value of corporate residential real estate debt (developer real estate loans for construction, cooperative real estate loans for renovation, etc.) amounted to PLN 5.3 billion, and was close to the one recorded in the previous quarter.
- the value of loans for the purchase of office real estate decreased on the previous quarter and amounted to PLN 16.3 billion (down from PLN 17.3 billion). Retail real estate loans decreased on the previous quarter to PLN 16.9 bn (down from PLN 17.4 billion), and warehouse and industrial real estate loans amounted to PLN 11.9 billion (down from PLN 12.1 billion).
- loans granted for other real estate declined slightly to PLN 16.2 billion compared to PLN 16.4 billion in 2023 Q3.

Another form of bank exposure is loans taken out by businesses for various purposes, which are secured on real estate. At the end of 2023 Q4, the value of loans to businesses secured by mortgage on commercial real estate decreased slightly to the level of approx. PLN 135 billion. 45% of those loans were denominated in EUR.

- **The quality of loans for corporate real estate did not change significantly compared to the previous quarter.** The non-performing loan (NPL, phase 3) ratio for office real estate loans improved to the level of 6.9% (from 7.8% in Q3) and for retail real estate loans amounted to 9.7% (11.6% in Q3). The NPL ratio for warehouse and industrial real estate loans also improved: it decreased to 2.5% from 2.7% in Q3 , while the NPL ratio for other real estate stood at 9.4% compared to 9.5% in Q3. The NPL ratio for corporate residential real estate loans stood at 8.9% compared to 8.7% in 2023 Q3, which are historically low levels.

- **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 Q3. In the case of office real estate, it amounted to 13.5% in 2023 Q4 compared to 12.7% in 2023 Q3. This ratio for retail real estate improved to 16.1% from 17.1% in 2023 Q3, and for warehouse real estate it deteriorated and amounted to 7,2% compared to 5.9% in 2023 Q3.

- **In the markets of small office and retail real estate, the median offer price in large cities remained at a high level.** The market of small commercial real estate shows similar price trends as the residential real

[33] According to our expert estimate, at the end of 2022, the amount of loans taken out abroad to finance commercial real estate (offices, retail, warehouse and other) was PLN 87 billion. The estimate is made in the following way: According to international experience, it can be assumed that the LTV in the whole stock is at 50%. However, from 2021, the amount of loans made by Polish banks to purchase commercial real estate had decreased, while the stock of office, commercial and warehouse real estate had continued to go up, so the ratio should be adjusted to 40%. Based on the estimate of the stock of office, commercial and warehouse real estate, which amounted to PLN 380 billion at the end of 2022, we may conclude that the total amount of loas purchase such property approximated PLN 152 billion. If we subtract the loans made for this purpose by the banks operating in Poland (PLN 65 billion, developer loans excluded), we get an estimate of loans made directly or indirectly by foreign-based banks, which is PLN 87 billion.

[34] FINREP data.

estate market, which suggests that this type of real estate is, for some investors, an alternative to investing in rental housing.

The following charts illustrate the key developments in the housing market in Poland's major cities in 2023 Q4. They show:

1) home prices (Figures 1–15),

2) affordability of loan-financed housing, loan availability, profitability of housing investment (Figures 16−25),

3) mortgage loan disbursements and interest rates (Figures 26−37),

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 38–51),

5) residential construction and the residential market in selected cities in Poland (Figures 52− 65),

6) offer prices of commercial real estate and the estimated rate of return (Figures 66–78),

7) results of the analysis of profitability of investment in housing for rent in selected cities in Poland in 2023 Q4 (Figures 79-91),

8) results of the analysis of the economic situation of real estate developers in developer surveys conducted by Narodowy Bank Polski (Figures 92-102), and the analysis of the economic situation of residential construction companies (Figures 103-110).

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 used[35].

[35] Based on data and studies prepared by Sekocenbud, Spectis, PAB, OLX Group, among others.

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]**
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 housing loan value to capital value**
LTV	**The relation of housing 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	**Warsaw Interbank Offered Rate; the reference interest rate on loans in the Polish interbank market**
WIG20	**Index including top 20 companies listed on the Warsaw Stock Exchange with the highest value of publicly traded shares**
ZBP	**Polish Bank Association**
ZKPK	**Accumulated index of changes in banks' credit policy criteria**

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

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

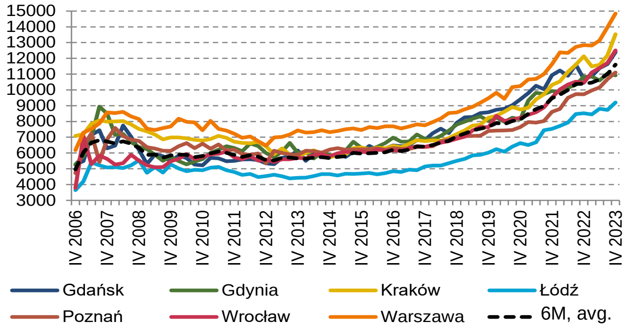
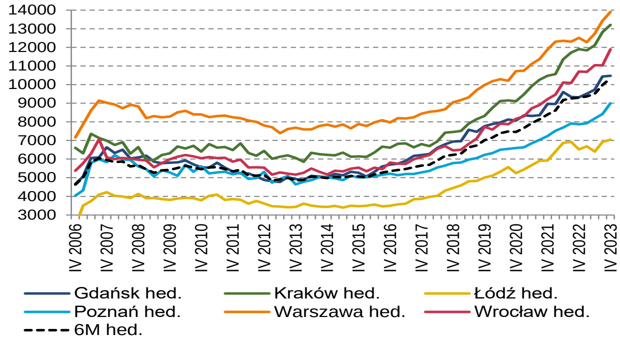


Figure 2 Transaction prices per sq. m of housing adjusted by the hedonic index (hed.)* in Warsaw and in 6 cities - SM, PLN



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

Source: NBP

Source: NBP

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

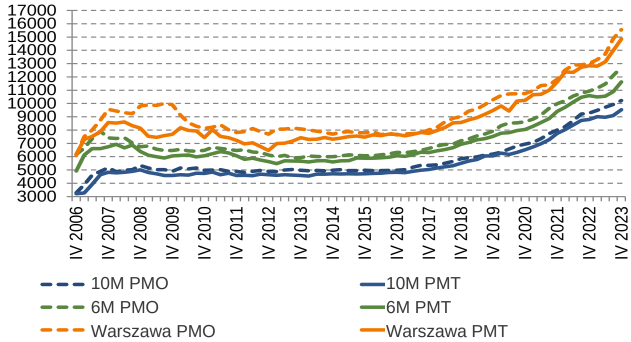
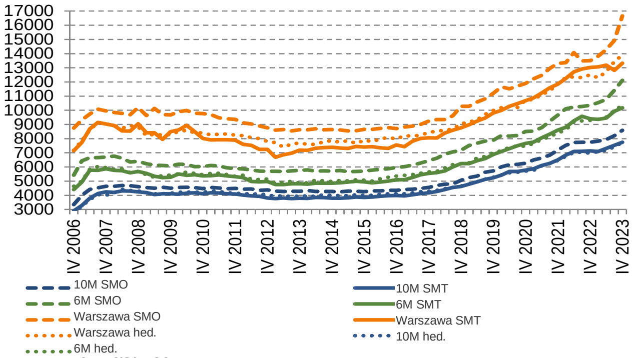


Figure 4 Weighted average price per sq. m of housing, offers (O) and transactions (T) - SM

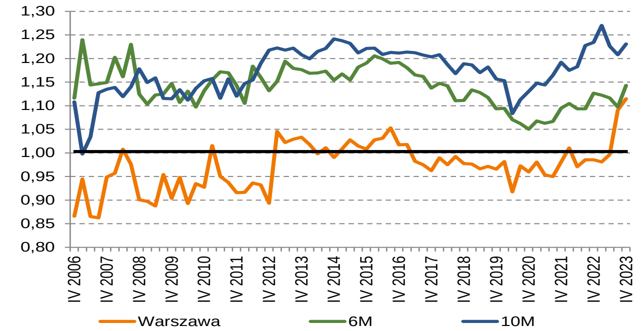


Notes to Figures 3–10 and 14-15: prices and rents in the 6 cities and in the 10 cities weighted with the share of the housing stock; the average price for Warsaw.

Source: NBP

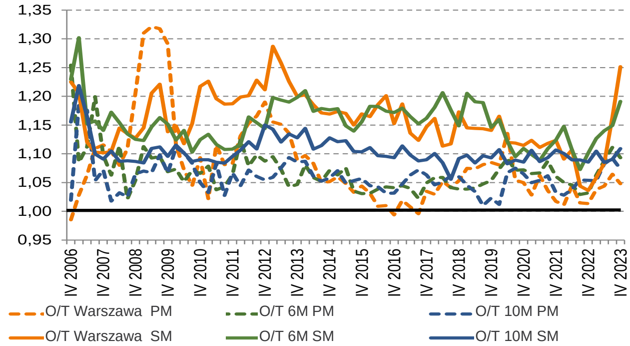
Source: NBP

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



Source: NBP

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



Source: NBP

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

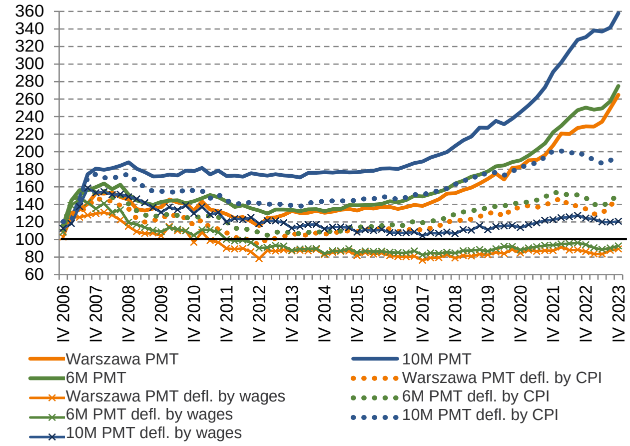


Figure 8 Index of the average weighted transaction price per sq. m of housing in SM, real to CPI deflated price and real to wage growth in the enterprise sector (2006 Q3 = 100)

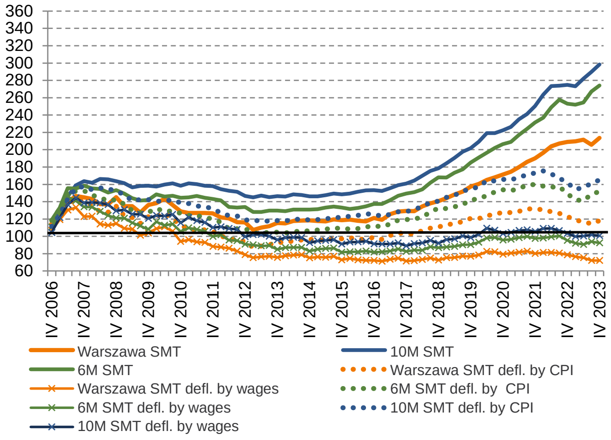
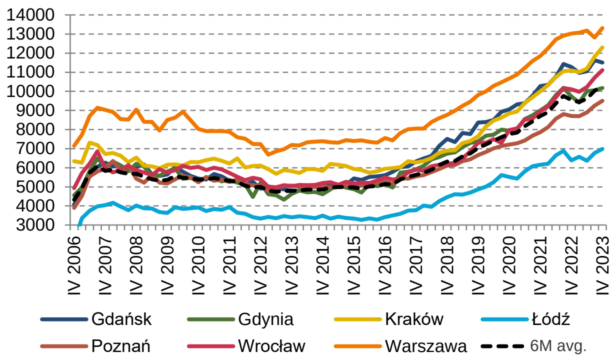
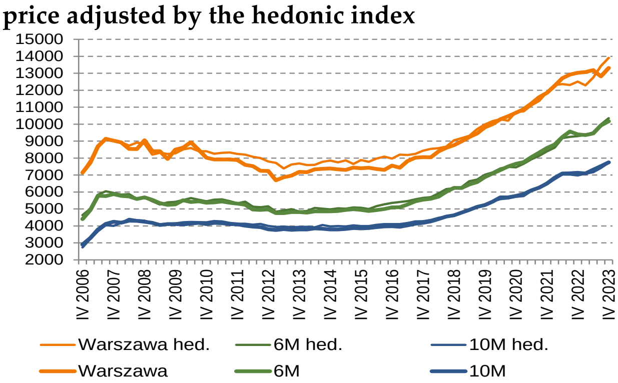


Figure 9 Transaction price per sq. m of housing in SM in Warsaw and in 6 cities



Source: NBP

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



Source: NBP

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

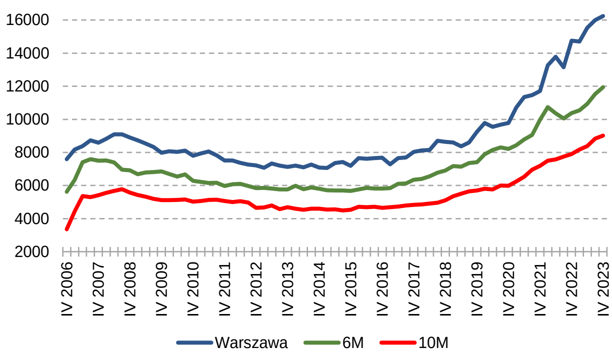
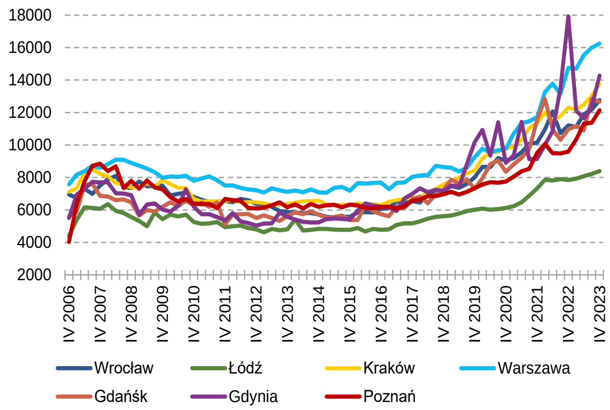


Figure 12 Average offer prices per sq.m. of housing in PM in Warsaw and 6 cities

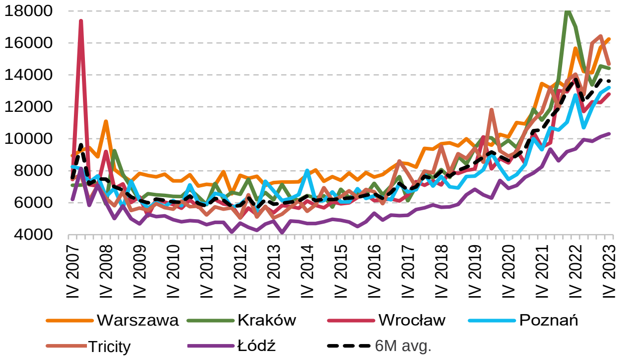


Note to Figures 11-12: prices collected from all available sources.

Source: PONT Info Nieruchomości

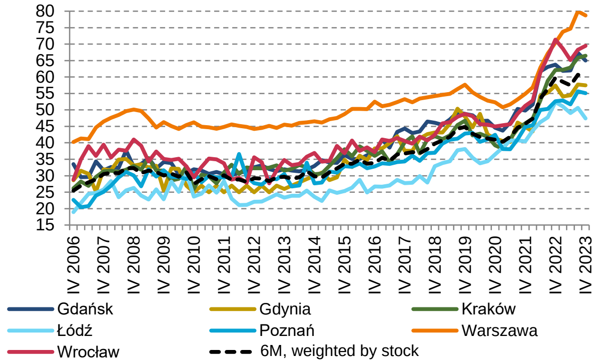
Source: PONT Info Nieruchomości

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



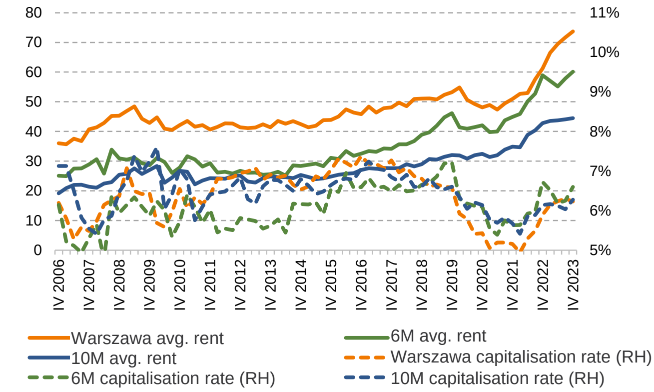
Note: prices refer only to new contracts put on the market for the first time.
Source: JLL

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



Note: a change in the sample occurred in 2020..
Source: NBP

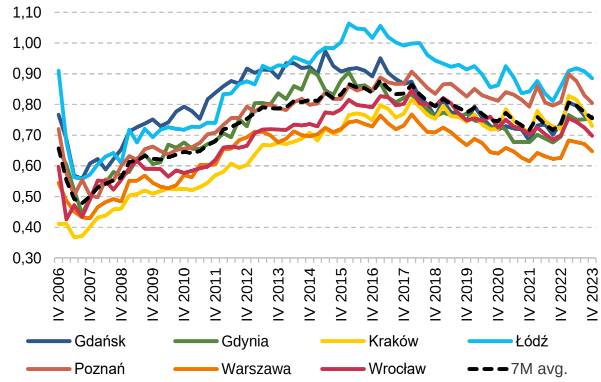
Figure 15 Average rent rates (transactions) in PLN per sq. m of housing in SM (LHS) and the estimated capitalisation rate of an investment in housing for rental (RHS) in selected groups of cities



Source: NBP

Note: the average transaction price per 1 sq. m of housing calculated as 50% of PM price and 50% of SM price; the price per square metre of housing in the PM was increased to include the average costs of home finishing; the analysis does not take into account the high transaction costs in the housing market and the potentially long period of divestment.

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

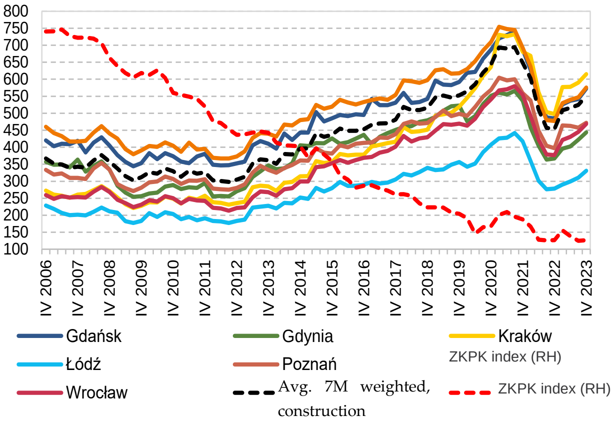


Source: NBP, Statistics Poland

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)

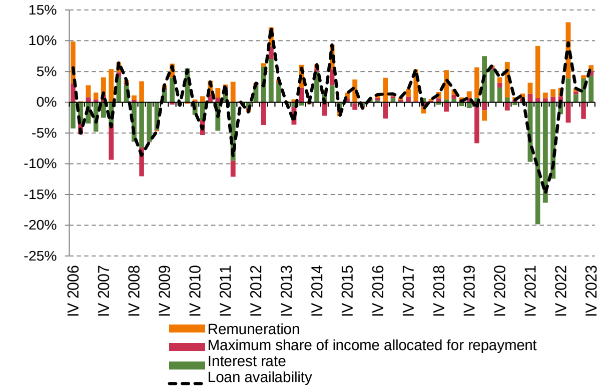
2. Affordability of loan-financed housing, loan availability, profitability of investment in housing

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



Source: NBP, Statistics Poland

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



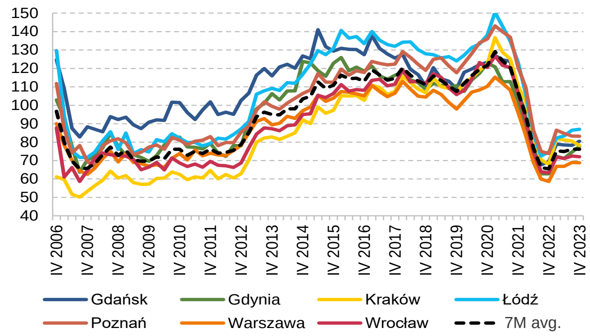
Source: NBP, Statistics Poland

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

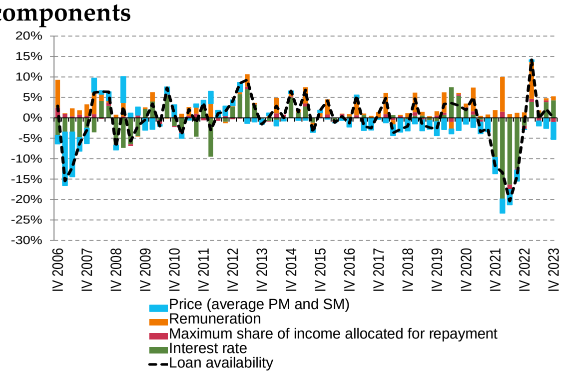
ZKPK Index – accumulated index of changes in banks' lending policy criteria; positive values mean easing, and negative values tightening of lending policy as compared to the initial period i.e. 2003 Q4. Positive values of ZKPK mean easing and negative values - tightening of the banks' lending policy in relation to the initial period, i.e. 2003 Q4. ZKPK 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 19 Estimated affordability of loan-financed housing in 7M



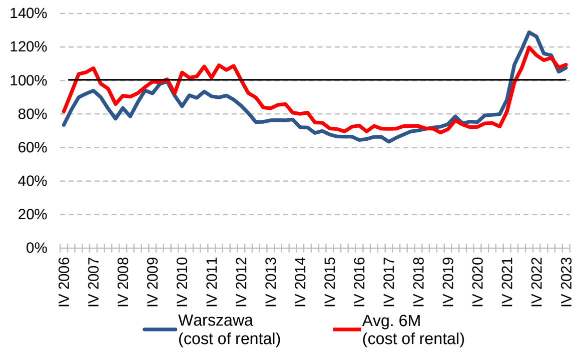
Source: NBP, Statistics Poland

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



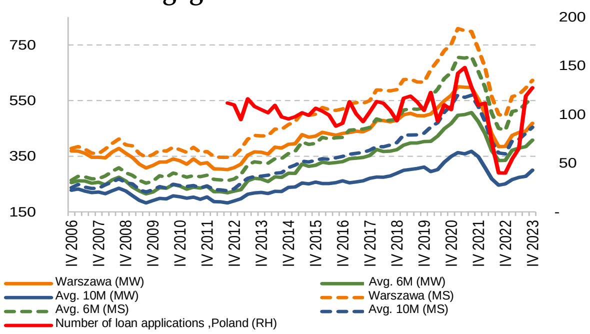
Source: NBP, Statistics Poland

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



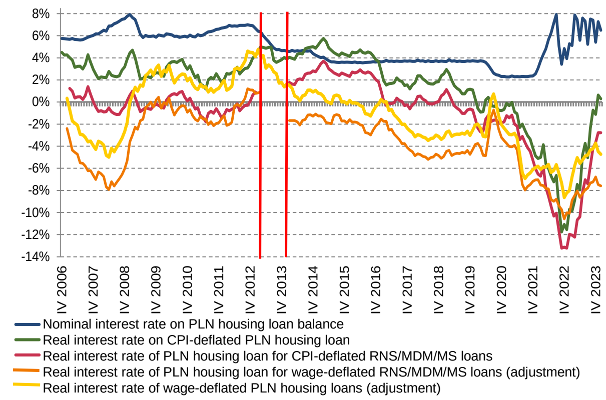
Note: the estimate concerns an average 50 sq. m of housing ; transaction price per 1 sq. m of housing in PM and SM; residential mortgage loan with a floating interest rate, LTV=80%; rent being the average of offer and transaction prices.
Source: NBP, Statistics Poland

Figure 22 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



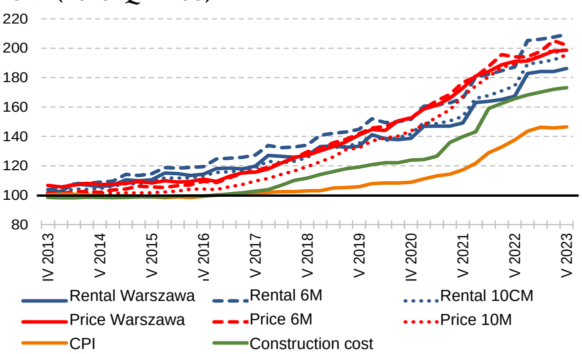
Note: values estimated with the criterion of minimum subsistence wage left (MSW) or average monthly wage in the enterprise sector (MW).
Source: NBP, Statistics Poland, BGK, BIK

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



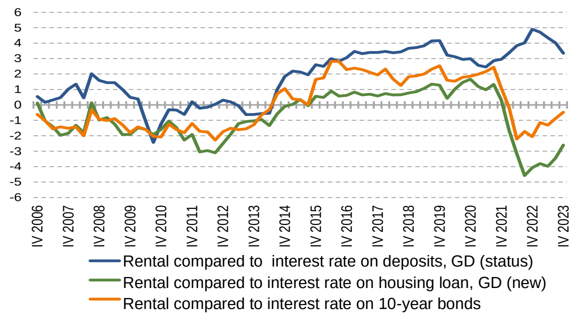
Note: values below 0 denote a negative real interest rate for the borrower; red lines separate the period of the absence of the government-subsidised housing scheme, i.e. the RNS scheme (2007-2012), the MDM scheme (2014-2018) and the Housing for the Start (MS) operating since 2019. *Source: NBP, Statistics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

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



Note: transaction price of 1 sq. m of a dwelling 50% SM and 50%PM. 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).
Source: NBP, Statistics Poland

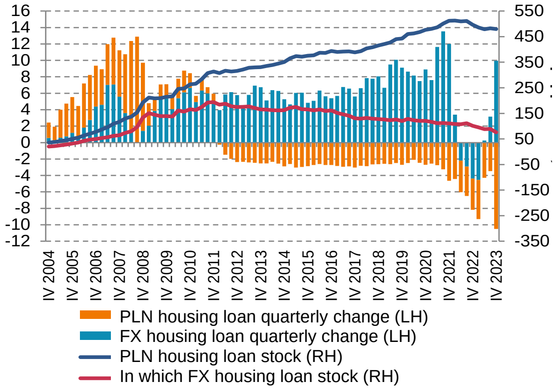
Figure 25 Profitability of home rental (average in Warsaw and 6M) compared to alternative household investments (differences in interest rates)



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

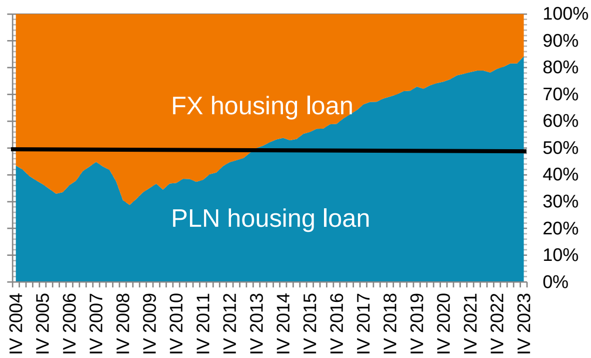
3. Disbursement of residential mortgage loans, interest rates

Figure 26 Stock of and changes in residential mortgage loans to households after adjustments, and the currency structure of quarter-on-quarter increments (PLN billion)



Source: NBP

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



Source: NBP

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

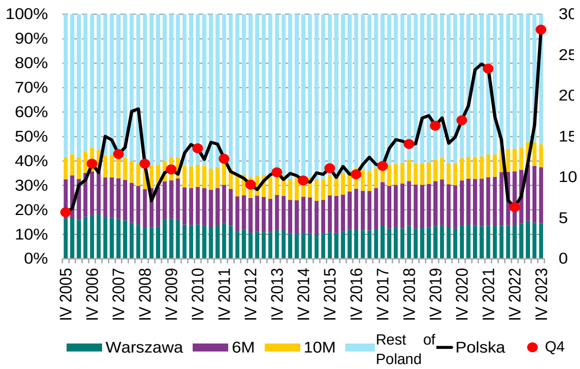
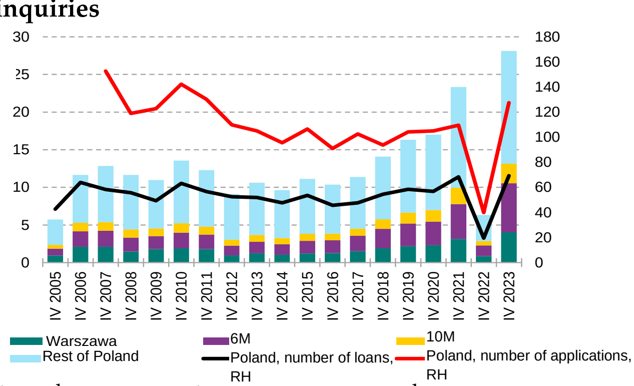


Figure 29 Value (PLN billion; LHS) and number (thousand, RHS) of new PLN-denominated residential mortgage loan agreements with households in Poland's selected cities in the second quarters of 2005-2023 and the number of loan inquiries

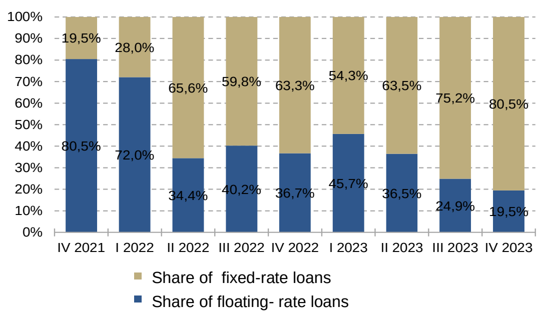


Note to Figures 28 and 29: the data indicate concluded residential mortgage loan agreements rather than the actual disbursement of loans. Only fourth quarters are marked by red dots in Figure 28.

Source: BIK

Source: BIK

Figure 30 New residential mortgage loans by type of interest rate



Source: ZBP (AMRON Report, 2023 Q4)

Figure 31 Interest rates on residential mortgage loans for households in Poland

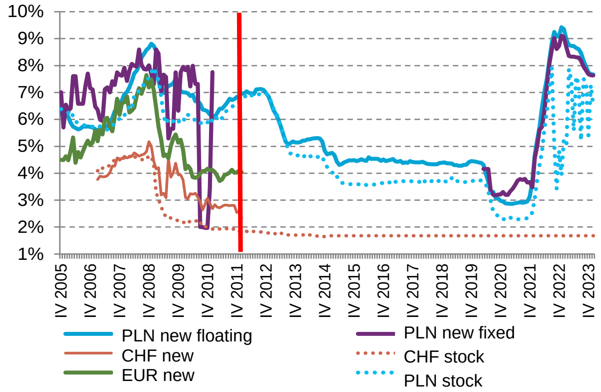
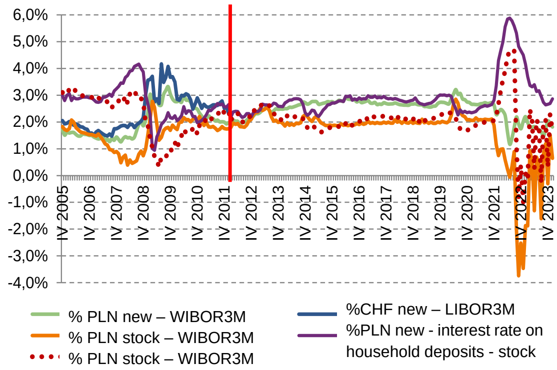


Figure 32 Bank margins on residential mortgage loans (relative to 3M WIBOR, LIBOR/SARON, EURIBOR)



Note to Figures 31 and 32: the red vertical line separates the period with no FX loans which practically ceased to be granted in 2012. The bank margin is the spread between the residential mortgage loan rate (according to NBP data) and WIBOR3M, EURIBOR3M or LIBORCHF3M/SARON3M (from2022). The interest rate on the stock of residential mortgage loans is the value showing 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 defined in *"Instrukcja dla użytkowników statystyki stóp procentowych"* [Instructions for the Users of Interest Rates Statistics] (https://www.nbp.pl/home.aspx?f=/statystyka/pieniezna_i_bankowa/oprocentowanie.html).
The clear decrease in the rates on the stock of loans in the individual months of the second half of 2022 resulted from the introduction of the so-called "mortgage payment holiday". It reduced the interest charged on the average monthly balance of all mortgage loan agreements.

Source: NBP

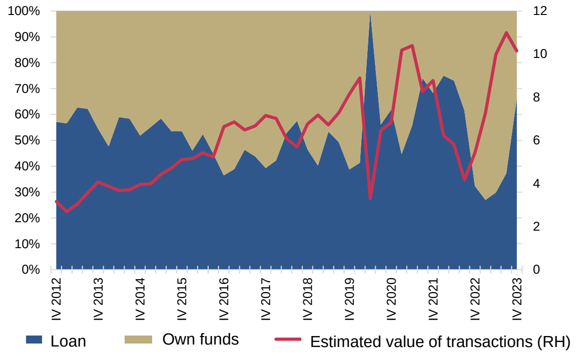
Source: NBP

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

Date	Disbursement of residential mortgage loans in Poland	Estimated value of housing transactions in the PM in 7M	Loan demand including client's down payment in the PM in 7M	Client's down payment to loans in the PM in 7M	Cash demand for housing (without down payment) in the PM in 7M	Estimated share of cash home purchases in the PM in 7M**/
2012 Q1	5,385	3,135	1,311	390	1,824	71%
2012 Q2	7,330	3,079	1,784	531	1,294	59%
2012 Q3	7,665	2,773	1,866	555	907	53%
2012 Q4	7,420	3,164	1,807	538	1,357	60%
2022 Q1	17,591	6,221	4,665	1,657	1,556	52%
2022 Q2	15,601	5,818	4,248	1,580	1,570	54%
2022 Q3	9,196	4,175	2,569	996	1,606	62%
2022 Q4	6,321	5,433	1,755	674	3,678	80%
2023 Q1	7,265	7,248	1,953	711	5,294	83%
2023 Q2	11,054	9,985	2,972	1,082	7,013	81%
2023 Q3	15,216	10,989	4,091	1,489	6,898	76%
2023 Q4	25,023	10,150	6,728	2,449	3,422	58%

Note to Table 3: 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 for down payment.
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 and areas have been updated for all the periods.
Source: NBP, JLL, ZBP, Statistics Poland

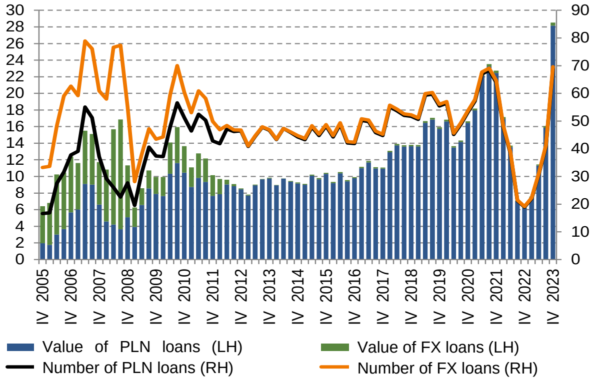
Figure 33 Estimated value of home purchases from developers in 7M (PLN million) and estimated breakdown for cash-financed demand and loan-financed demand (including down payment)



Note to Figure 33: a graphic representation of the full data from Table 3. The decrease in the estimated share of the value of developer-built housing purchased with cash in 7M, recorded 2020 Q2 is a result of very low sales during the period due to the pandemic containment measures restricting travel and disbursement under loan agreements signed in earlier periods, whereas the decrease in late 2022 was a result of low affordability of loan-financed housing r.

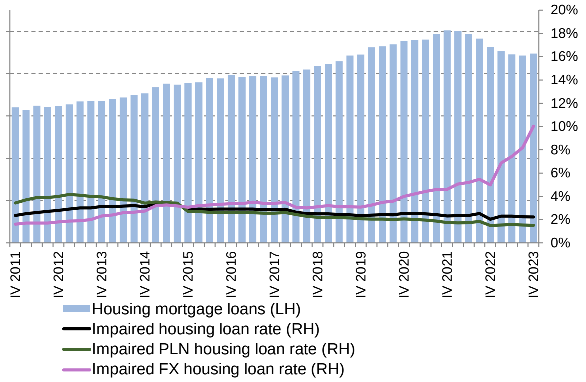
Source: NBP, JLL, ZBP, Statistics Poland

Figure 34 New residential mortgage loan agreements: value and number, aggregated quarterly data



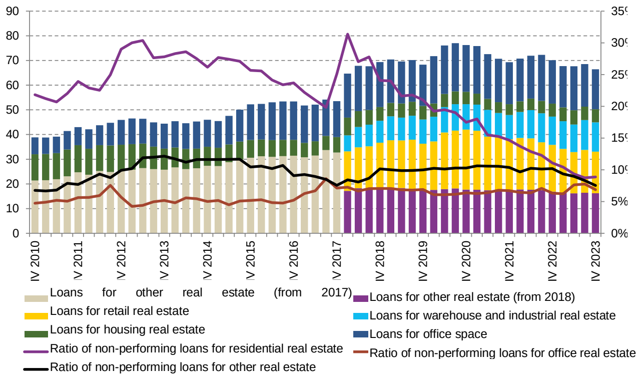
Source: ZBP (AMRON)

Figure 35 Household loans for residential real estate and the non-performing loan ratio (RHS, %)



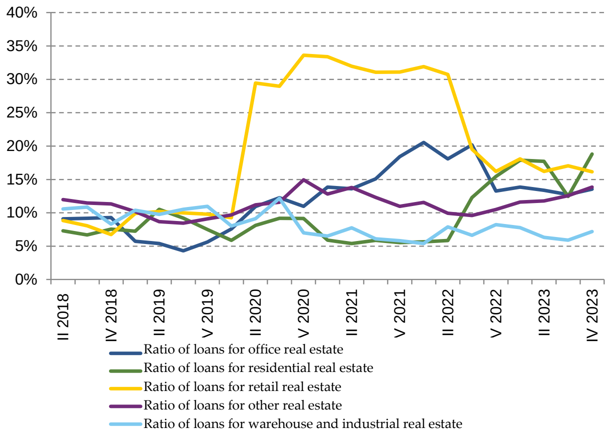
Note: impaired receivables (loans) – receivables in portfolio B in whose case the objective evidence of impairment and a decrease in the amount of expected future cash flows have been identified (in the banks applying the IFRSs) or which have been recognised as non-performing loan receivables in accordance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

Figure 36 Corporate real estate loans (PLN billion, LHS) and non-performing loan ratio (%, RHS)



Note: data excluding BGK.
New accounting standards have been in place since 2018.
Source: NBP

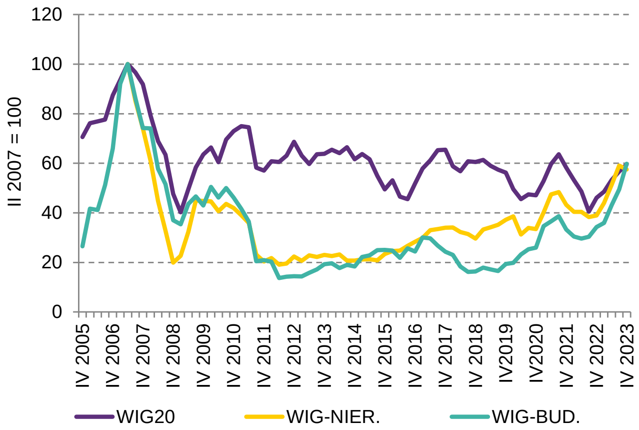
Figure 37 Corporate real estate loans at stage 2*.



Note: data excluding BGK. Stage 2 means loans with a recognised significant increase in credit risk since the date of initial recognition.
Source: NBP

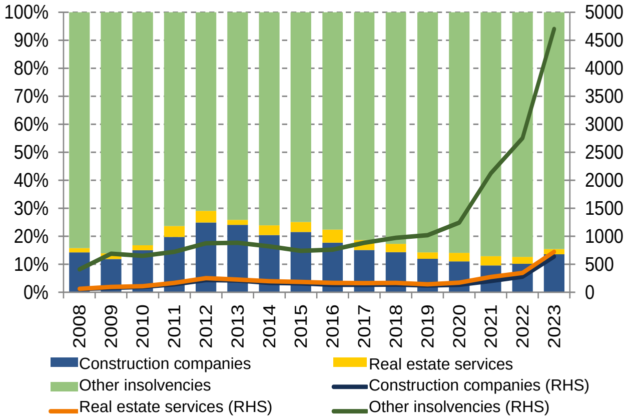
4. Operating ROE on housing and real estate development projects, costs of construction and assembly output and economic situation of real estate developers in Poland

Figure 38 Rescaled exchange indices: WIG20 and for real estate developers (WIG-NIER) and construction companies (WIG-BUD) (2007 Q2=100)



Note: data standardised, 2007 Q2 = 100 (developers' WIG has been listed since 2007 Q2); 2024 Q1, situation as at14 February 2024.
Source: Warsaw Stock Exchange

Figure 39 Structure (LHS) and number (RHS) of insolvencies of enterprises, including in the construction industry (end of year)



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

Figure 40 Estimated share of direct construction costs per square metre of usable floor area of a residential building (type 1122-302[36]) in net transaction price in PM in 6M

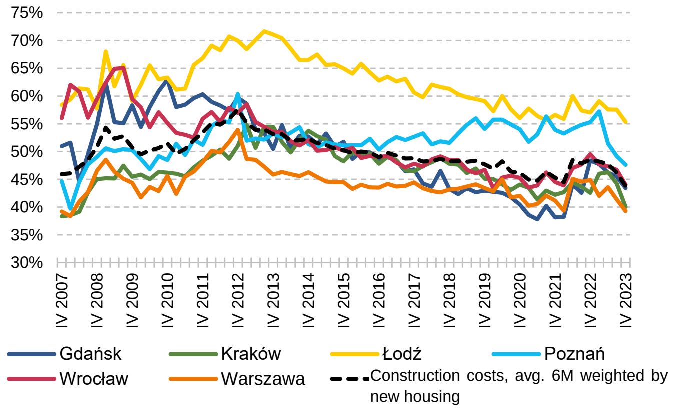
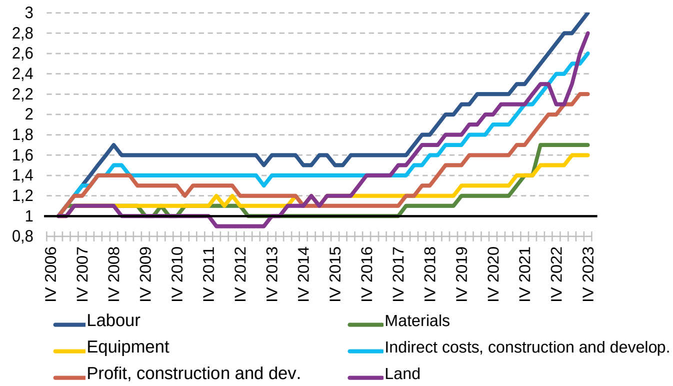


Figure 41 Change in the estimated share of construction costs per square metre of usable floor area of a residential building (type 1122-302[36]) in net transaction price in PM 6M (I 2007=1))



Note to Figures 41 and 42: Since 2014 NBP has used its own appraisal of land for residential multifamily construction.
Source: NBP, based on Sekocenbud
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 42 Estimated ROE on investment projects (type 1122-302[36]) in the largest cities

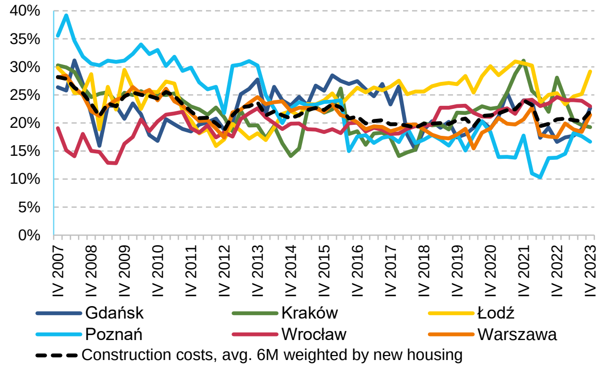
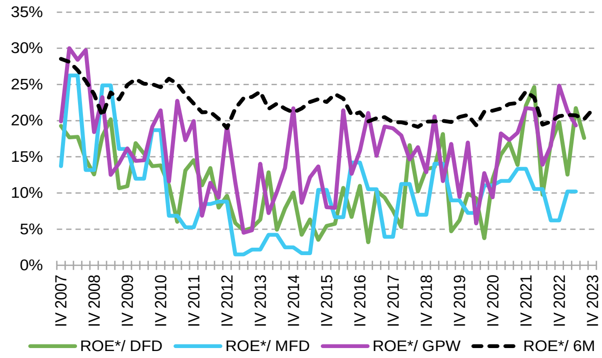


Figure 43 Estimated ROE achieved on development projects by developers listed on the Warsaw Stock Exchange*, big developers (DFD)/ and small developers (MFD)***/ as well as on investment projects in 6M**

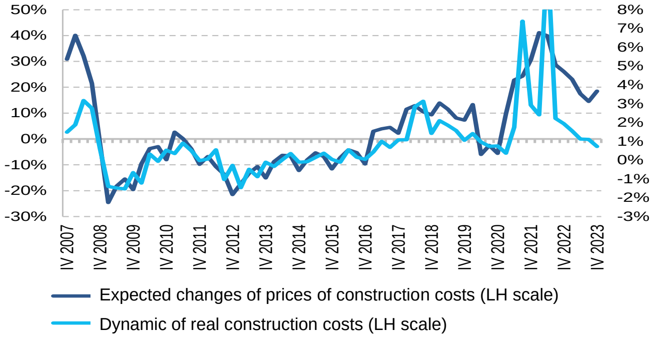


Note: */modified ROE = net financial result / (sales revenue – net sales revenue); **/ DFD – average Big Developer (with 50 and more employees, according to Statistics Poland), ***/ MFD – average Small Developer (with 9-49 employees).

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

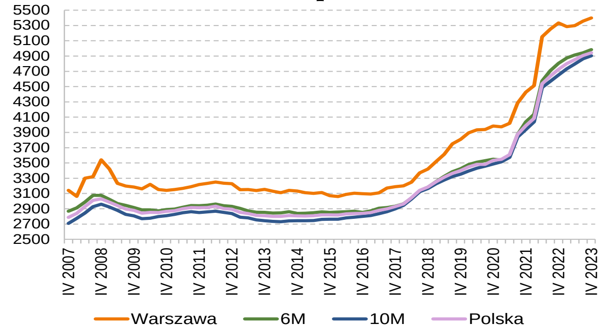
Source: NBP, based on Sekocenbud, financial statements, Statstics Poland, GUS (F01)

Figure 44 Expected changes in prices of construction (+3M) and growth in construction costs of usable floor area of a residential building (type 1122-302 [36])



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

Figure 45 Average cost of building 1 sq. m of usable floor area of a residential building (type 1122-302[36]) in selected markets (PLN/sq. m)



Source: NBP, based on Sekocenbud

Figure 46 Warsaw – 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. RHS)

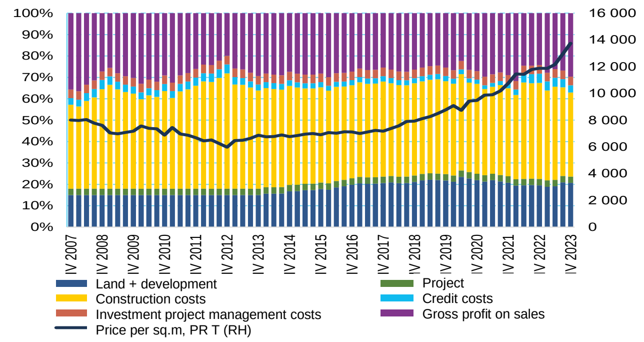
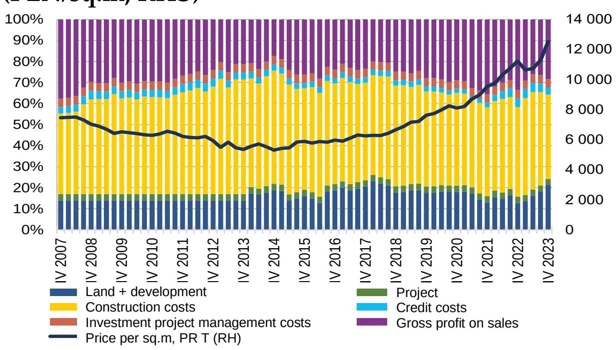


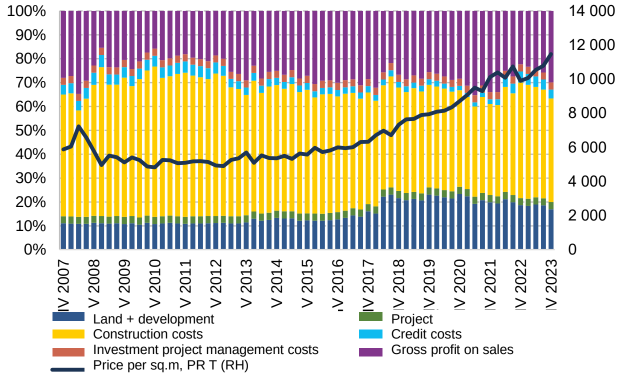
Figure 47 Kraków – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302 [36]) for the consumer and price level (PLN/sq.m, RHS)



Note to Figures 46-51: The calculation of "Gross profit on sales" does not take into account, among others, the developer's overheads and general financial costs. *Source: NBP, based on Sekocenbud, JLL*

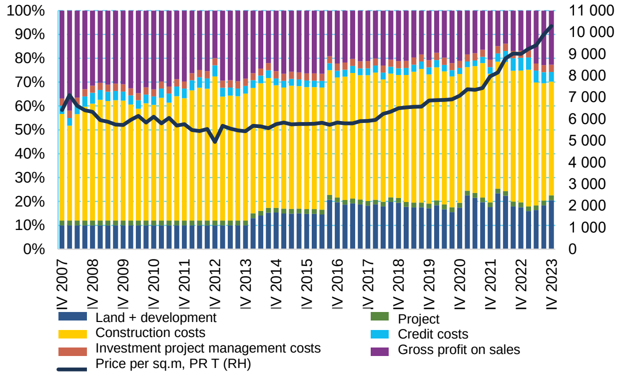
Source: NBP, based on Sekocenbud, JLL

Figure 48 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)



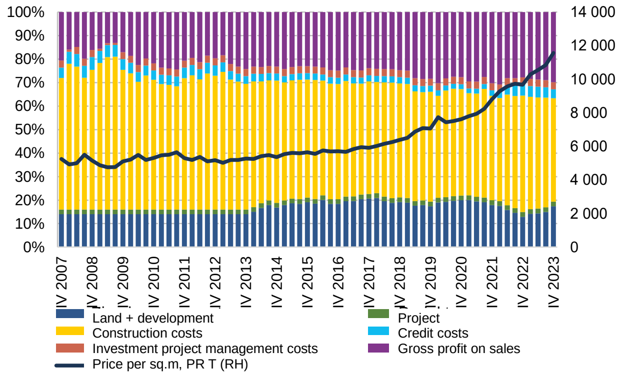
Source: NBP, based on Sekocenbud, JLL

Figure 49 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)



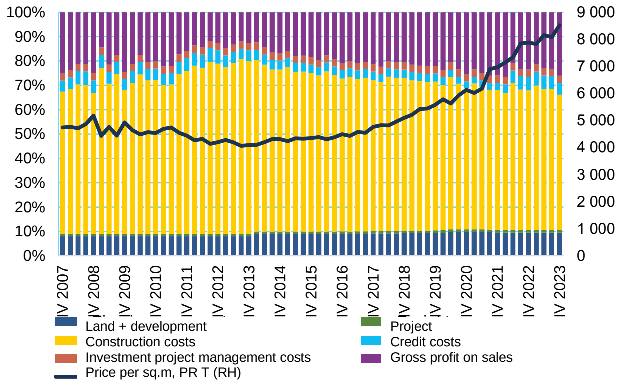
Source: NBP, based on Sekocenbud, JLL

Figure 50 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

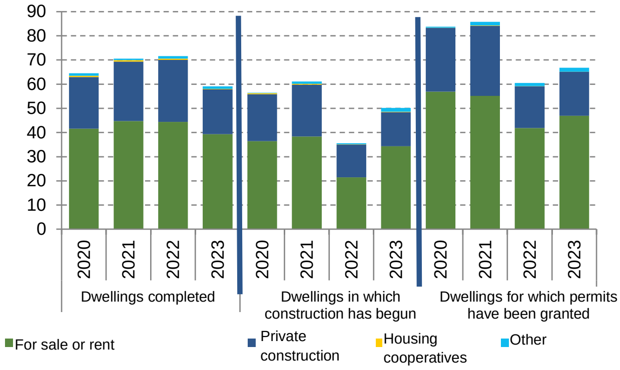
Figure 51 Łódź – estimated structure of price per sq. m of usable area of a dwelling in PMT (building type 1122-302 [36]) for the consumer and price level (PLN/sq.m. RH)



Source: NBP, based on Sekocenbud, JLL

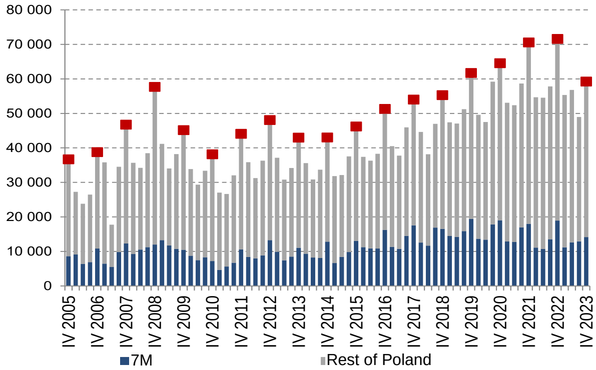
5. Residential construction industry and the housing market in selected cities in Poland

Figure 52 Structure of housing construction investors in Poland in the fourth quarters of 2021 –2023



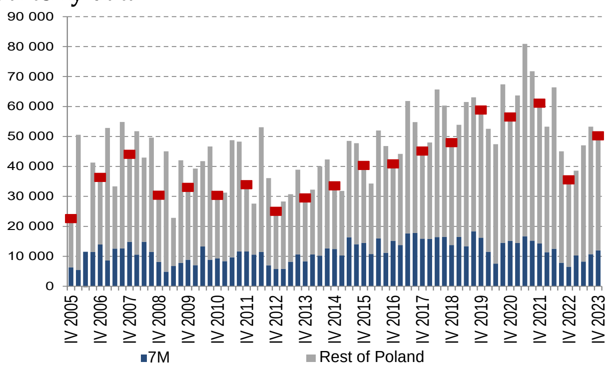
Source: Statistics Poland

Figure 53 Dwellings completed and made ready for occupancy in Poland, quarterly data



Note: the red squares indicate fourth quarters only. *Source: Statistics Poland*

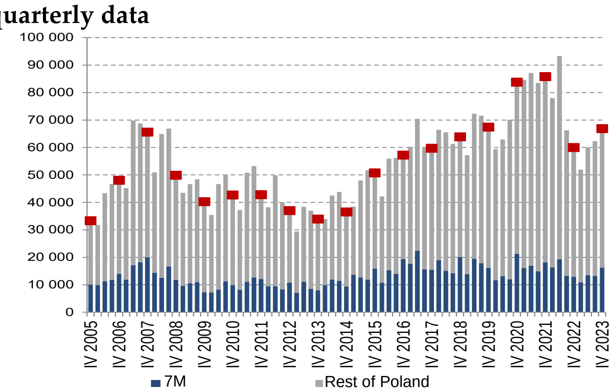
Figure 54 New home construction starts in Poland, quarterly data



Note: the red squares indicate fourth quarters only. *Source: Statistics Poland*

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

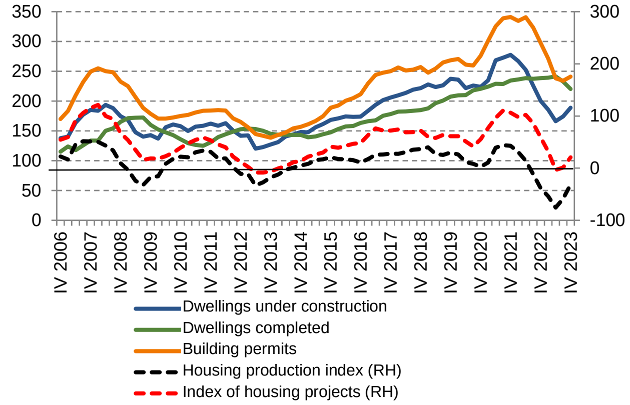
Figure 55 Home building permits issued in Poland, quarterly data



Note: the red squares indicate fourth quarters only. *Source: Statistics Poland*

Note: an estimate of the number of dwellings put on the market in actual rather than statistical terms; */Warsaw, Kraków, Tricity, Wrocław, Poznań, Łódź. *Source: JLL*

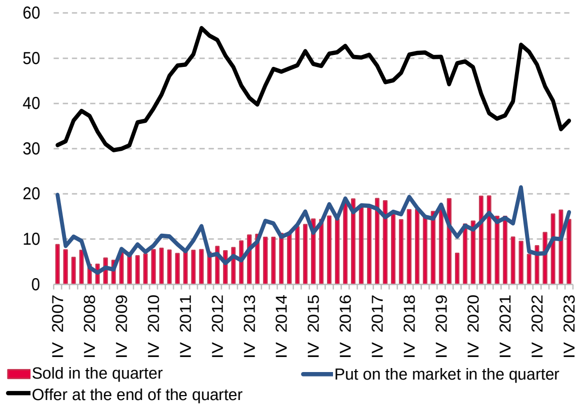
Figure 56 Housing construction in Poland (in thousands of dwellings), dwellings under construction (dwellings under construction minus completed dwellings) and investment projects in progress (home building permits minus completed dwellings)



Note: moving averages for the past four quarters.

Source: NBP, based on PABB and Statistics Poland

Figure 57 Number of contracts for the construction of dwellings put on the market, both sold and offered for sale in Poland's 6 largest markets.*/



Note: an estimate of the number of dwellings put on the market in actual rather than statistical terms; */Warsaw, Kraków, Tri-City,

Source: JLL

Figure 58 Supply of dwellings, costs and prices, and estimated return on housing investment in PM, on average in the 7 cities

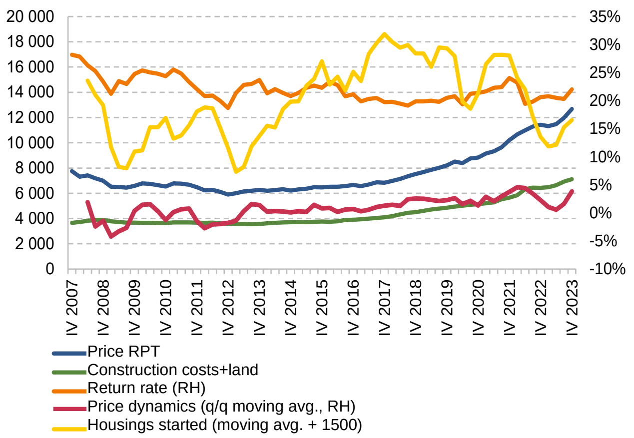
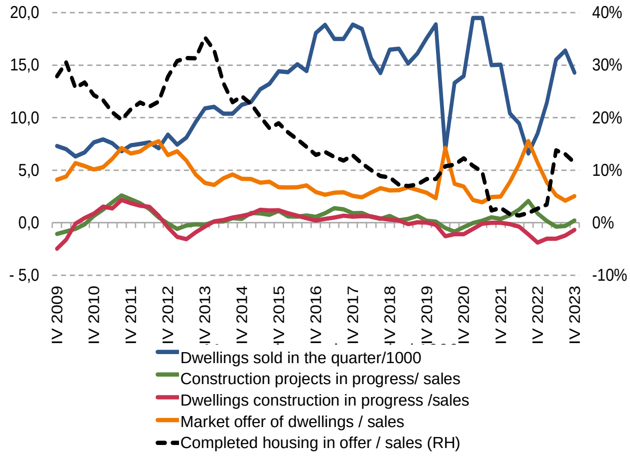


Figure 59 Residential construction projects, dwellings under construction, and ready dwellings put on the market, relative to sales in the 7 cities



Note to Figure 58: Residential construction projects in progress means building permits less completed dwellings. Dwellings under construction means dwellings whose construction started less completed dwellings. Data aggregated from 4 past quarters, divided by sales during the period.

Source: NBP, GUS, JLL, Sekocenbud

Source: NBP na podstawie GUS, JLL

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

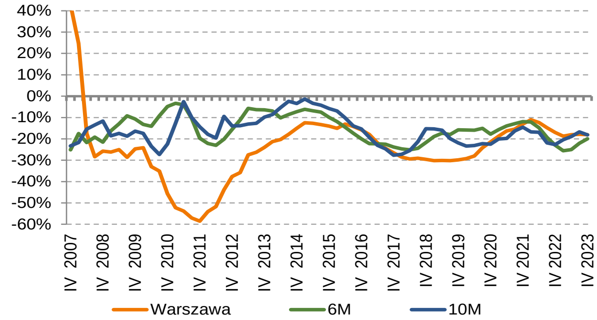
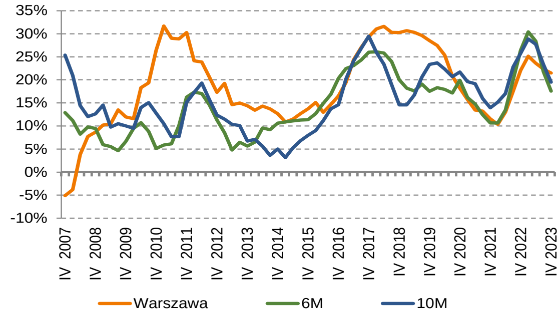


Figure 61 Measure of the match between dwellings offered vs. demand in terms of floor area >50 sq. m PM in selected cities of Poland

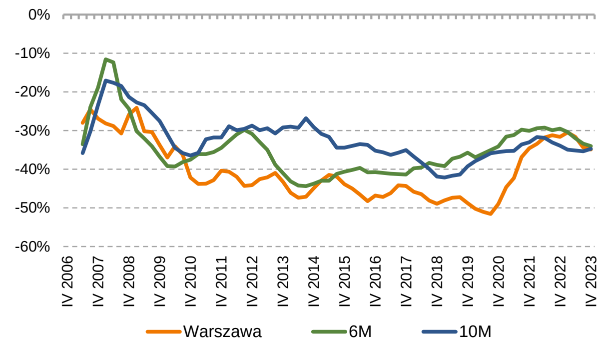


Note: Figure 60 presents, in percentage terms, a short-term mismatch in the primary market between supply (developers' housing offer) and the estimated demand (housing transactions) in terms of the dwelling's size, according to the data from the BaRN database. The mismatch is calculated as the ratio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

Source: NBP

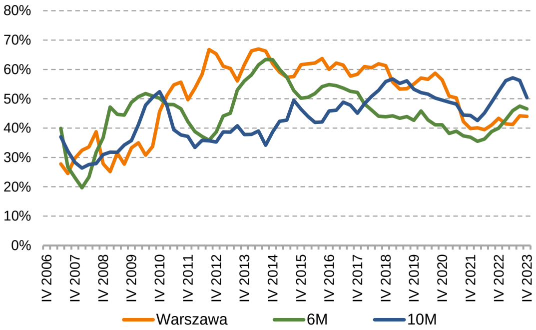
Source: NBP

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



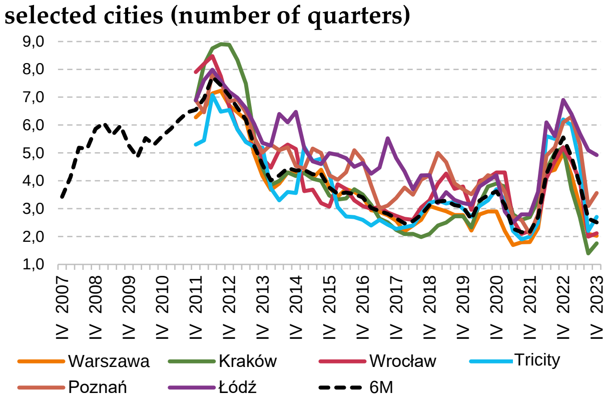
Source: NBP

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



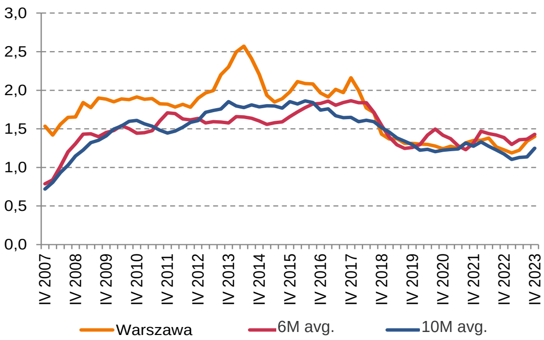
Source: NBP

Figure 64 Time to sell dwellings offered in PM in selected cities (number of quarters)



Note: Time to sell a 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. *Source: NBP, based on JLL*

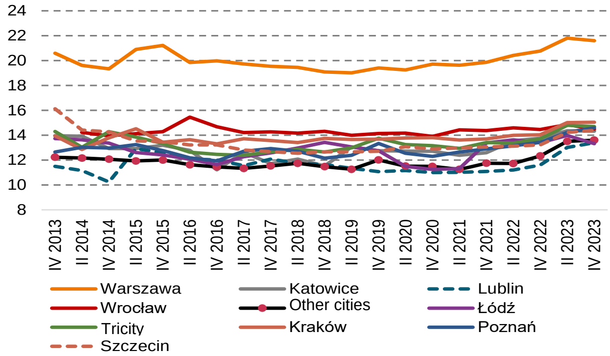
Figure 65 Time to sell dwellings offered in SM in selected cities (number of quarters)



Note: Real time to sell dwellings, averaged for the previous four quarters; the data are not comparable to Figure 64. 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. *Source: NBP*

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

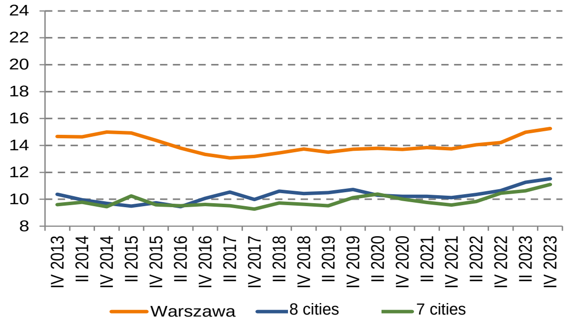
Figure 66 Transaction rents for A class office space (average prices in EUR/sq.m./month)



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

Source: NBP

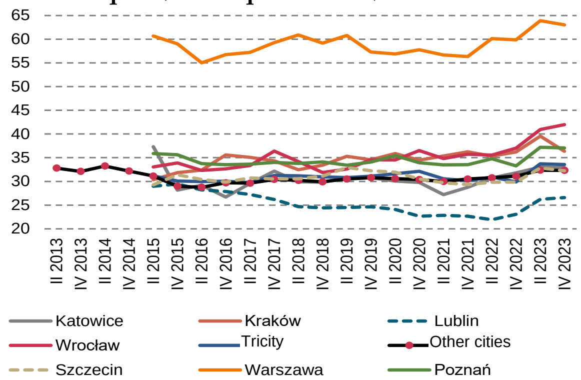
Figure 67 Transaction rents for B class office space (average prices in EUR/sq.m./month)



Note: the 8 cities are Katowice, Kraków, Lublin, Łódź, Poznań, Szczecin, Trójmiasto, Wrocław. 7 miast to Białystok, Bydgoszcz, Kielce, Olsztyn, Opole, Rzeszów, Zielona Góra.

Source: NBP

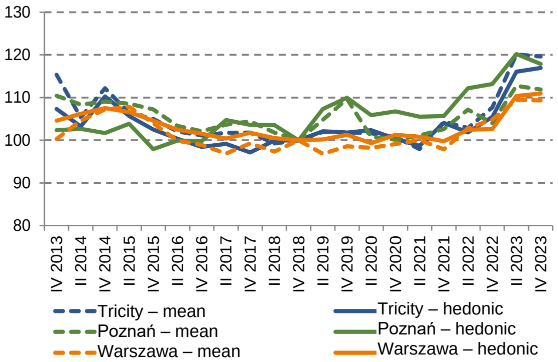
Figure 68 Transaction rents for retail space in shopping centres (shopping malls) with an area of 100-500 sq. m (EUR/sq.m./month)



Source: NBP

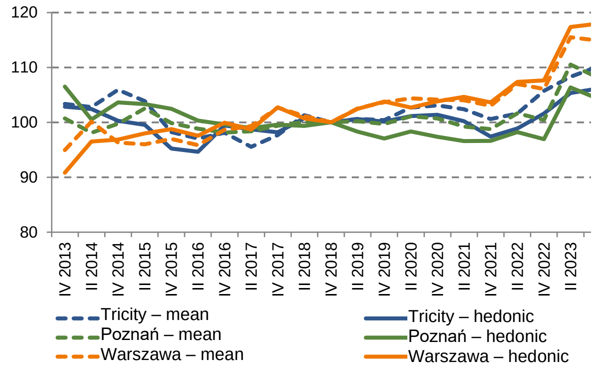
Note to Figure 68: as of the beginning of 2015 Q4, the number of records in the base, including respondents, has increased significantly, consequently changing the analysed sample.

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



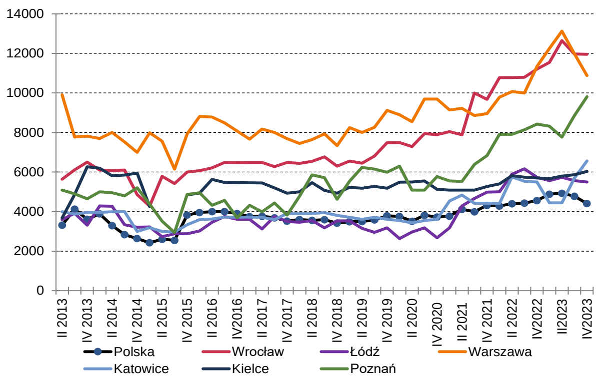
Source: NBP

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



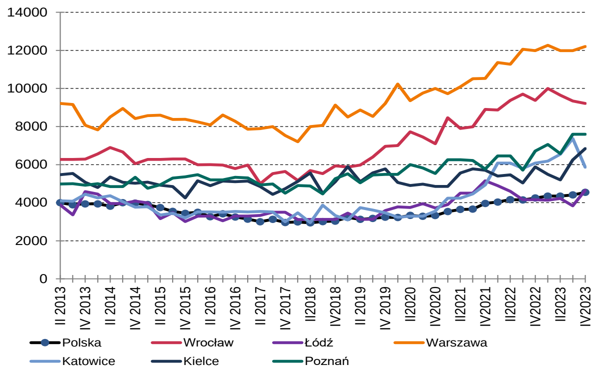
Source: NBP

Figure 71 Median of offer selling price of small office premises in SM (PLN/sq.m.)



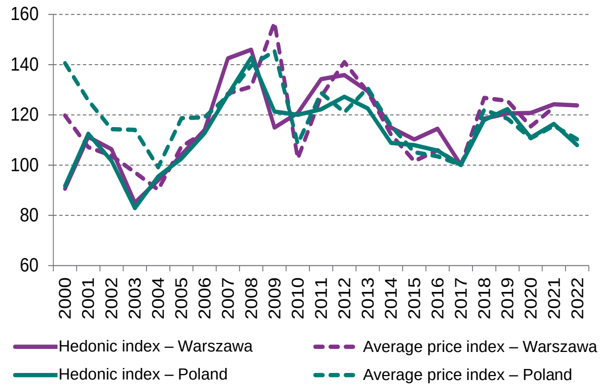
Source: PONT, NBP report

Figure 72 Median of offer selling price of small retail premises in SM (PLN/sq.m.)



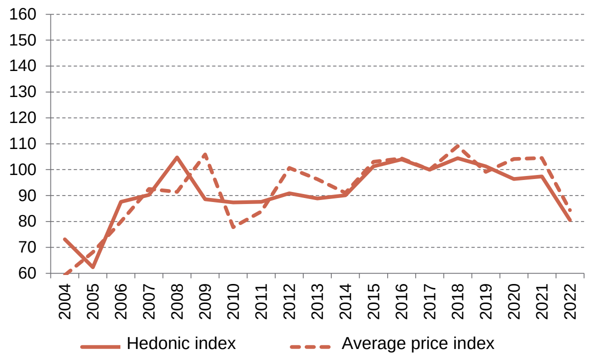
Source: PONT, NBP report

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



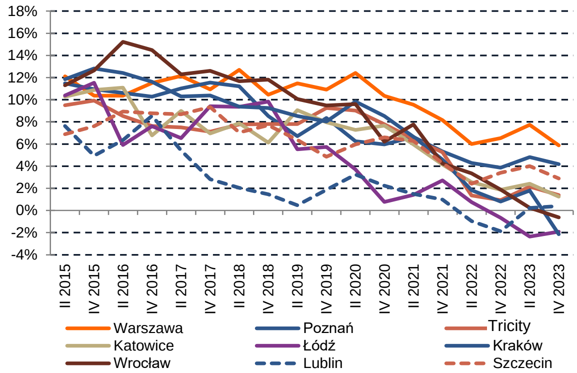
Note: The analysis involves transaction prices and bank arranged appraisals of commercial real estate.
Source: NBP, Comparables.pl, AMRON

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



Note: The analysis covers transaction prices and bank appraisals of commercial real estate.
Source: NBP, Comparables.pl, AMRON

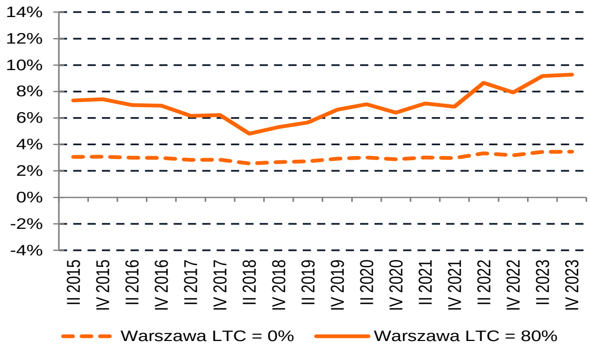
Figure 75 Estimated Return on Equity (ROE) on an investment in the construction and commercialisation of a class A office building, assuming financial of leverage LTC=80%



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.

Source: NBP, Sekocenbud, opracowanie NBP

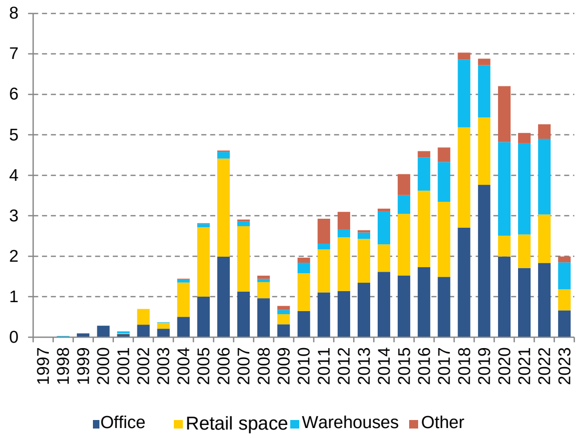
Figure 75 Estimated Return on Equity (ROE) on an investment concerning the purchase of an existing Class B office building in Warsaw



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

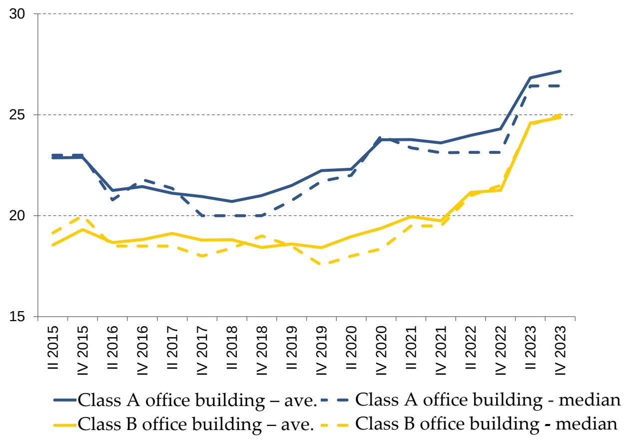
Source: NBP, Comparables.pl, AMRON, opracowanie NBP

Figure 76 Value of investment transactions in commercial real estate in individual years (EUR billion)



Source: Comparables.pl

Figure 77 Operating expenses of a class A and a class B office building in Warsaw (PLN/sq.m/month)



Source: NBP

Table 3 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%

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".

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].

Table 4 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 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	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%

Assumptions: see Table 4.

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.

Table 5 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%

Assumptions: see Table 4.

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.

Table 6 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 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	12.6	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%

Assumptions: see Table 4.

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.

Table 7 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 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	13.2	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%

Assumptions: see Table 4.

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.

Table 8 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 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	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%

Assumptions: see Table 4.

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.

Table 9 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 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	13.0	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%

Assumptions: see Table 4.

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.

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

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	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%

Assumptions: see Table 4.

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.

Table 11 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 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	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%

Assumptions: see Table 4.

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.

Table 12 Estimated rate of return on equity from investment in the purchase of B class office building from the existing stock in Warsaw

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%

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.

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

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

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 643	10 694	11 808	10 874	11 793	11 384	12 233	11 643	13 065	12 389
growth (q-o-q)	100,2	92,2	101,4	101,7	99,9	104,7	103,7	102,3	106,8	106,4
growth (y-o-y)	104,1	97,6	104,0	96,8	101,4	104,5	105,3	100,3	112,2	115,9
dwellings price range	6 330	679	5 725	763	4 970	1 415	4 503	1 374	4 297	1 658
<=8 000 PLN/sq.m	397	95	340	100	256	86	205	51	114	31
(8 001; 10 000] PLN/sq.m	2 482	312	1 998	329	1 736	563	1 017	550	802	420
(10 001; 12 000] PLN/sq.m	1 486	78	1 519	89	1 378	251	1 552	284	1 204	485
(12 001; 14 000] PLN/sq.m	663	99	588	121	592	253	687	182	734	246
>14 001 PLN/sq.m	1 302	95	1 280	124	1 008	262	1 042	307	1 443	476
dwellings space range	6 330	679	5 725	763	4 970	1 415	4 503	1 374	4 297	1 658
<= 40 sq.m	1069	173	939	186	833	294	687	281	773	328
(40,1; 60] sq.m	2749	344	2486	332	2132	694	1951	666	1754	823
(60,1; 80] sq.m	1864	132	1684	201	1481	331	1331	353	1290	393
> 80,1 sq.m	648	30	616	44	524	96	534	74	480	114
average price of 1 sq.m. of dwelling	11 643	10 694	11 808	10 874	11 793	11 384	12 233	11 643	13 065	12 389
<=40 sq.m	12138	10763	12343	11166	12215	11928	12313	12474	13391	13398
(40,1; 60] sq.m	11639	10478	11812	10750	11872	11306	12416	11681	13397	12272
(60,1; 80] sq.m	11097	10405	11291	10180	11339	10715	11797	10617	12461	11666
> 80,1 sq.m	12412	14038	12395	13744	12089	12590	12551	13034	12949	12827
average offer price deviation	8,9%	x	8,6%	x	3,6%	x	5,1%	x	5,4%	x
<= 40 sq.m	12,8%	x	10,5%	x	2,4%	x	-1,3%	x	-0,1%	x
(40,1; 60] sq.m	11,1%	x	9,9%	x	5,0%	x	6,3%	x	9,2%	x
(60,1; 80] sq.m	6,6%	x	10,9%	x	5,8%	x	11,1%	x	6,8%	x
> 80,1 sq.m	-11,6%	x	-9,8%	x	-4,0%	x	-3,7%	x	1,0%	x

Source: NBP

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

specification	IVQ 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 219	11 278	12 223	10 970	12 568	11 053	12 995	11 629	13 678	11 503
growth (q-o-q)	102,4	98,7	100,0	97,3	102,8	100,8	103,4	105,2	105,3	98,9
growth (y-o-y)	106,8	109,8	101,8	106,1	103,9	102,6	108,9	101,7	111,9	102,0
dwellings price range	2 508	881	2 394	762	2 047	1 102	2 229	1 086	1 631	604
<=8 000 PLN/sq.m	123	100	89	101	67	126	71	64	28	38
(8 001; 10 000] PLN/sq.m	579	248	548	220	432	307	384	276	186	139
(10 001; 12 000] PLN/sq.m	755	251	781	227	618	366	620	356	405	217
(12 001; 14 000] PLN/sq.m	459	135	427	99	394	149	454	214	370	124
>14 001 PLN/sq.m	592	147	549	115	536	154	700	176	642	86
dwellings space range	2 508	881	2 394	762	2 047	1 102	2 229	1 086	1 631	604
<= 40 sq.m	450	245	420	192	340	275	344	299	242	141
(40,1; 60] sq.m	1038	422	1030	375	835	558	889	531	644	270
(60,1; 80] sq.m	711	165	670	149	581	216	678	220	512	148
> 80,1 sq.m	309	49	274	46	291	53	318	36	233	45
average price of 1 sq.m. of dwelling	12 219	11 278	12 223	10 970	12 568	11 053	12 995	11 629	13 678	11 503
<=40 sq.m	13566	11937	13566	11620	13851	12044	14589	12405	15350	12856
(40,1; 60] sq.m	12176	11257	11996	10836	12488	10754	13069	11389	13978	11396
(60,1; 80] sq.m	11556	10784	11871	10566	12267	10546	12334	11262	12911	10307
> 80,1 sq.m	11924	9818	11879	10659	11902	11117	12472	10975	12799	11841
average offer price deviation	8,3%	x	11,4%	x	13,7%	x	11,7%	x	18,9%	x
<= 40 sq.m	13,6%	x	16,8%	x	15,0%	x	17,6%	x	19,4%	x
(40,1; 60] sq.m	8,2%	x	10,7%	x	16,1%	x	14,8%	x	22,7%	x
(60,1; 80] sq.m	7,2%	x	12,3%	x	16,3%	x	9,5%	x	25,3%	x
> 80,1 sq.m	21,5%	x	11,4%	x	7,1%	x	13,6%	x	8,1%	x

Source: NBP

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

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 965	12 131	12 143	11 492	13 049	11 589	14 175	12 192	14 565	13 530
growth (q-o-q)	102,0	104,6	101,5	94,7	107,5	100,8	108,6	105,2	102,8	111,0
growth (y-o-y)	108,7	117,7	108,9	109,1	114,6	104,0	120,8	105,1	121,7	111,5
dwellings price range	6 529	1 410	5 732	1 202	4 446	1 735	3 519	1 907	2 899	1 423
<=8 000 PLN/sq.m	79	48	42	34	9	31	2	6	1	
(8 001; 10 000] PLN/sq.m	1 435	351	1 168	332	586	377	296	320	209	151
(10 001; 12 000] PLN/sq.m	2 456	444	2 000	479	1 326	770	556	726	281	280
(12 001; 14 000] PLN/sq.m	1 256	144	1 241	154	1 150	315	1 092	526	864	457
>14 001 PLN/sq.m	1 303	423	1 281	203	1 375	242	1 573	329	1 544	535
dwellings space range	6 529	1 410	5 732	1 202	4 446	1 735	3 519	1 907	2 899	1 423
<= 40 sq.m	1022	420	925	310	819	337	588	346	444	345
(40,1; 60] sq.m	3258	703	2957	560	2283	877	1658	1006	1255	690
(60,1; 80] sq.m	1765	228	1446	264	991	428	934	441	900	290
> 80,1 sq.m	484	59	404	68	353	93	339	114	300	98
average price of 1 sq.m. of dwelling	11 965	12 131	12 143	11 492	13 049	11 589	14 175	12 192	14 565	13 530
<=40 sq.m	13549	12607	13923	12319	14778	12986	16050	13941	16030	14951
(40,1; 60] sq.m	11854	12155	12013	11396	12770	11418	14096	11955	14864	13000
(60,1; 80] sq.m	11279	11192	11462	10672	12464	10941	13231	11511	13437	13041
> 80,1 sq.m	11878	12089	11462	11686	12481	11113	13908	11607	14529	13711
average offer price deviation	-1,4%	x	5,7%	x	12,6%	x	16,3%	x	7,6%	x
<= 40 sq.m	7,5%	x	13,0%	x	13,8%	x	15,1%	x	7,2%	x
(40,1; 60] sq.m	-2,5%	x	5,4%	x	11,8%	x	17,9%	x	14,3%	x
(60,1; 80] sq.m	0,8%	x	7,4%	x	13,9%	x	14,9%	x	3,0%	x
> 80,1 sq.m	-1,7%	x	-1,9%	x	12,3%	x	19,8%	x	6,0%	x

Source: NBP

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

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	12 433	11 086	12 649	11 011	13 026	11 185	14 186	11 810	15 147	12 297
growth (q-o-q)	101,5	100,3	101,7	99,3	103,0	101,6	108,9	105,6	106,8	104,1
growth (y-o-y)	108,9	110,9	106,8	106,6	107,6	104,0	115,8	106,8	121,8	110,9
dwellings price range	1 274	1 308	1 228	1 018	1 162	1 347	911	1 189	1 003	1 388
<=8 000 PLN/sq.m	35	123	26	92	12	98	10	66	3	35
(8 001; 10 000] PLN/sq.m	288	365	253	309	187	392	83	247	44	243
(10 001; 12 000] PLN/sq.m	377	414	364	323	350	434	207	388	144	450
(12 001; 14 000] PLN/sq.m	284	237	277	171	278	250	226	274	266	343
>14 001 PLN/sq.m	290	169	308	123	335	173	385	214	546	317
dwellings space range	1 274	1 308	1 228	1 018	1 162	1 347	911	1 189	1 003	1 388
<= 40 sq.m	272	475	265	411	233	505	214	420	217	457
(40,1; 60] sq.m	559	588	550	438	515	623	357	551	418	659
(60,1; 80] sq.m	289	182	290	114	276	166	231	166	232	228
> 80,1 sq.m	154	63	123	55	138	53	109	52	136	44
average price of 1 sq.m. of dwelling	12 433	11 086	12 649	11 011	13 026	11 185	14 186	11 810	15 147	12 297
<=40 sq.m	13 361	11 643	13 878	11 421	14249	11758	15675	12455	16374	13322
(40,1; 60] sq.m	11 875	10 659	12 040	10 625	12565	10747	13663	11277	14988	11900
(60,1; 80] sq.m	12 289	10 884	12 442	10 891	12920	10844	13750	11619	14454	11633
> 80,1 sq.m	13 085	11 461	13 213	11 277	12896	11944	13899	12846	14861	11053
average offer price deviation	12,1%	x	14,9%	x	16,5%	x	20,1%	x	23,2%	x
<= 40 sq.m	14,8%	x	21,5%	x	21,2%	x	25,9%	x	22,9%	x
(40,1; 60] sq.m	11,4%	x	13,3%	x	16,9%	x	21,2%	x	25,9%	x
(60,1; 80] sq.m	12,9%	x	14,2%	x	19,1%	x	18,3%	x	24,2%	x
> 80,1 sq.m	14,2%	x	17,2%	x	8,0%	x	8,2%	x	34,5%	x

Source: NBP

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

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
			offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 152	8 520	9 391	8 451	9 465	8 810	9 594	8 731	10 197	9 202
growth (q-o-q)	102,0	100,5	102,6	99,2	100,8	104,2	101,4	99,1	106,3	105,4
growth (y-o-y)	112,7	113,2	115,3	109,5	111,6	111,1	106,9	103,0	111,4	108,0
dwellings price range	3 254	381	3 506	405	3 880	482	4 282	527	3 779	671
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	13	0	4	1	3	0	5	1	0	0
(6 001; 8 000] PLN/sq.m	681	150	617	164	798	138	687	149	154	93
(8 001; 10 000] PLN/sq.m	1 663	191	1 712	207	1 507	282	1 772	305	1 541	399
> 10 000 PLN/sq.m	897	40	1 173	33	1 572	62	1 818	72	2 084	179
dwellings space range	3 254	381	3 506	405	3 880	482	4 282	527	3 779	671
<= 40 sq.m	903	143	1049	120	1103	172	1335	132	1308	236
(40,1; 60] sq.m	1435	173	1560	179	1761	184	1911	265	1590	303
(60,1; 80] sq.m	764	49	752	90	784	101	804	103	712	115
> 80,1 sq.m	152	16	145	16	232	25	232	27	169	17
average price of 1 sq.m. of dwelling	9 152	8 520	9 391	8 451	9 465	8 810	9 594	8 731	10 197	9 202
<=40 sq.m	9 712	9 166	9 989	9 163	10 317	9 513	10380	9508	10740	9833
(40,1; 60] sq.m	9 049	8 170	9 265	8 320	9 278	8 609	9388	8665	10094	9030
(60,1; 80] sq.m	8 631	7 856	8 760	7 790	8 834	8 029	8958	8105	9427	8416
> 80,1 sq.m	9 422	8 575	9 684	8 286	8 971	8 606	8974	7970	10208	8796
average offer price deviation	7,4%	x	11,1%	x	7,4%	x	9,9%	x	10,8%	x
<= 40 sq.m	6,0%	x	9,0%	x	8,5%	x	9,2%	x	9,2%	x
(40,1; 60] sq.m	10,8%	x	11,4%	x	7,8%	x	8,3%	x	11,8%	x
(60,1; 80] sq.m	9,9%	x	12,5%	x	10,0%	x	10,5%	x	12,0%	x
> 80,1 sq.m	9,9%	x	16,9%	x	4,2%	x	12,6%	x	16,1%	x

Source: NBP

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

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	7 203	6 384	7 373	6 579	7 526	6 366	7 810	6 768	8 166	6 987
growth (q-o-q)	100,5	92,7	102,4	103,1	102,1	96,8	103,8	106,3	104,6	103,2
growth (y-o-y)	108,0	103,7	105,1	105,9	107,9	95,7	109,0	98,3	113,4	109,4
dwellings price range	1 133	157	1 167	125	1 361	178	1 095	254	1 051	333
<= 4 000 PLN/sq.m	7	13	5	1	6	6	4	7	4	4
(4 001; 6 000] PLN/sq.m	244	56	231	55	241	82	155	73	119	85
(6 001; 8 000] PLN/sq.m	596	64	602	50	703	66	510	132	430	169
(8 001; 10 000] PLN/sq.m	222	17	239	12	276	15	294	30	318	61
> 10 000 PLN/sq.m	64	7	90	7	135	9	132	12	180	14
dwellings space range	1 133	157	1 167	125	1 361	178	1 095	254	1 051	333
<= 40 sq.m	265	77	276	45	335	57	299	93	273	114
(40,1; 60] sq.m	553	61	557	56	605	92	423	117	410	165
(60,1; 80] sq.m	190	9	201	15	238	21	210	34	187	42
> 80,1 sq.m	125	10	133	9	183	8	163	10	181	12
average price of 1 sq.m. of dwelling	7 203	6 384	7 373	6 579	7 526	6 366	7 810	6 768	8 166	6 987
<=40 sq.m	7 544	6 835	7 693	6 832	7 983	7 043	8 045	6 962	8 387	7 004
(40,1; 60] sq.m	7 067	6 132	7 177	6 233	7 231	6 056	7 691	6 690	8 133	7 020
(60,1; 80] sq.m	7 157	5 712	7 523	6 699	7 705	6 165	7 997	6 727	8 301	7 241
> 80,1 sq.m	7 153	5 058	7 307	7 269	7 432	5 633	7 448	6 025	7 766	5 478
average offer price deviation	12,8%	x	12,1%	x	18,2%	x	15,4%	x	16,9%	x
<= 40 sq.m	10,4%	x	12,6%	x	13,4%	x	15,6%	x	19,7%	x
(40,1; 60] sq.m	15,3%	x	15,1%	x	19,4%	x	15,0%	x	15,9%	x
(60,1; 80] sq.m	25,3%	x	12,3%	x	25,0%	x	18,9%	x	14,6%	x
> 80,1 sq.m	41,4%	x	0,5%	x	31,9%	x	23,6%	x	41,8%	x

Source: NBP

Table 19 Average prices per sq. m of housing in the PM in Poznań

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 327	9 716	10 682	9 972	10 807	10 151	11 560	10 688	12 453	11 107
growth (q-o-q)	101,7	99,8	103,4	102,6	101,2	101,8	101,1	100,9	101,1	100,9
growth (y-o-y)	112,3	112,9	108,5	113,4	108,4	106,9	108,4	106,0	108,4	106,0
dwellings price range	4 927	861	4 698	759	5 080	1 189	4 860	1 107	4 644	1 355
<= 7 000 PLN/sq.m	35	4	37	3	3	5		6		2
(7 001; 9 000] PLN/sq.m	1 270	302	1 001	263	1 123	333	809	188	627	96
(9 001; 11 000] PLN/sq.m	2 104	428	2 024	312	2 168	551	1 576	529	990	686
(11 001; 13 000] PLN/sq.m	1 123	76	1 027	147	1 105	223	1 328	266	1 297	366
> 13 001 PLN/sq.m	395	51	609	34	681	77	1 147	118	1 730	205
dwellings space range	4 927	861	4 698	759	5 080	1 189	4 860	1 107	4 644	1 355
<= 40 sq.m	967	245	827	229	870	335	902	272	954	395
(40,1; 60] sq.m	2286	434	2209	348	2344	509	2138	546	2002	633
(60,1; 80] sq.m	1317	140	1301	148	1494	267	1413	249	1266	256
> 80,1 sq.m	357	42	361	34	372	78	407	40	422	71
average price of 1 sq.m. of dwelling	10 327	9 716	10 682	9 972	10 807	10 151	11 560	10 688	12 453	11 107
<= 40 sq.m	11 304	10 163	11 961	10 672	12 036	10 854	12 813	11 901	13 850	11 957
(40,1; 60] sq.m	10 251	9 627	10 504	9 844	10 654	10 007	11 339	10 540	12 246	10 880
(60,1; 80] sq.m	9 725	9 144	10 143	9 211	10 230	9 524	10 968	9 586	11 452	10 294
> 80,1 sq.m	10 385	9 937	10 794	9 893	11 207	10 218	12 007	11 327	13 277	11 339
average offer price deviation	6,3%	x	7,1%	x	6,5%	x	7,3%	x	7,3%	x
<= 40 sq.m	11,2%	x	12,1%	x	10,9%	x	12,2%	x	12,2%	x
(40,1; 60] sq.m	6,5%	x	6,7%	x	6,5%	x	6,8%	x	6,8%	x
(60,1; 80] sq.m	6,3%	x	10,1%	x	7,4%	x	8,6%	x	8,6%	x
> 80,1 sq.m	4,5%	x	9,1%	x	0	x	0	x	0	x

Source: NBP

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

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 543	8 709	9 914	8 696	9 956	8 902	10 667	9 255	11 409	9 506
growth (q-o-q)	101,1	98,9	103,9	99,9	100,4	102,4	107,1	104,0	107,0	102,7
growth (y-o-y)	106,6	110,7	105,4	107,0	104,6	103,9	113,0	105,1	119,6	109,2
dwellings price range	858	958	858	784	1 024	1 102	764	1 047	688	1 000
<=7 000 PLN/sq.m	73	192	67	153	62	198	30	124	10	78
(7 001; 9 000] PLN/sq.m	344	383	291	329	356	419	188	405	110	383
(9 001; 11 000] PLN/sq.m	262	254	268	213	334	327	268	330	226	321
(11 001; 13 000] PLN/sq.m	121	102	158	63	186	119	168	125	200	166
>13 001 PLN/sq.m	58	27	74	26	86	39	110	63	142	52
dwellings space range	858	958	858	784	1 024	1 102	764	1 047	688	1 000
<= 40 sq.m	175	292	174	281	218	363	136	320	104	245
(40,1; 60] sq.m	382	433	354	342	423	483	310	450	267	483
(60,1; 80] sq.m	212	168	242	121	278	189	207	214	214	208
> 80,1 sq.m	89	65	88	40	105	67	111	63	103	64
average price of 1 sq.m. of dwelling	9543	8709	9914	8696	9 956	8 902	10 667	9 255	11 409	9 506
<=40 sq.m	10411	9527	11029	9313	10 946	9 586	11 558	10 042	12 692	10 702
(40,1; 60] sq.m	9441	8485	9808	8492	9 776	8 785	10 799	9 072	11 629	9 381
(60,1; 80] sq.m	8999	8112	9333	7893	9 422	8 117	10 113	8 746	10 824	8 691
> 80,1 sq.m	9567	8064	9730	8521	10 040	8 254	10 238	8 293	10 759	8 531
average offer price deviation	9,6%	x	14,0%	x	11,8%	x	15,3%	x	20,0%	x
<= 40 sq.m	9,3%	x	18,4%	x	14,2%	x	15,1%	x	18,6%	x
(40,1; 60] sq.m	11,3%	x	15,5%	x	11,3%	x	19,0%	x	24,0%	x
(60,1; 80] sq.m	10,9%	x	18,2%	x	16,1%	x	15,6%	x	24,5%	x
> 80,1 sq.m	18,6%	x	14,2%	x	21,6%	x	23,5%	x	26,1%	x

Source: NBP

Table 21 Average prices per sq. m of housing in the PM in Warsaw

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	13 009	12 836	13 302	12 818	13 713	13 135	14 880	13 980	15 561	14 847
growth (q-o-q)	100,8	100,9	102,2	99,9	103,1	102,5	108,5	106,4	104,6	106,2
growth (y-o-y)	101,1	110,5	106,3	103,5	106,3	106,4	115,2	109,9	119,6	115,7
dwellings price range	12 833	1 849	12 256	2 348	10 057	3 549	9 691	3 596	8 687	3 479
<=9 500 PLN/sq.m	924	135	867	169	549	257	339	121	167	52
(9 501; 11 500] PLN/sq.m	2 695	476	2 245	588	1 647	732	1 150	576	564	448
(11 501; 13 500] PLN/sq.m	4 865	671	4 538	871	3 741	1 225	2 959	1 078	2 681	955
(13 501; 15 500] PLN/sq.m	2 635	316	2 734	407	2 054	768	1 998	970	1 753	833
>15 501 PLN/sq.m	1 714	251	1 872	313	2 066	567	3 245	851	3 522	1 191
dwellings space range	12 833	1 849	12 256	2 348	10 057	3 549	9 691	3 596	8 687	3 479
<= 40 sq.m	2 874	583	2 648	747	70	973	2 041	1 071	1 758	1 007
(40,1; 60] sq.m	5 469	771	5 214	942	4 340	1 499	4 117	1 495	3 695	1 443
(60,1; 80] sq.m	2 974	319	2 971	454	2 414	786	2 352	722	2 155	736
> 80,1 sq.m	1 516	176	1 423	205	1 233	291	1 181	308	1 079	293
average price of 1 sq.m. of dwelling	13 009	12 836	13 302	12 818	13 713	13 135	14 880	13 980	15 561	14 847
<=40 sq.m	14 023	13 517	14 344	13 341	14 654	14 247	15 761	14 824	16 593	15 717
(40,1; 60] sq.m	12 859	12 587	13 107	12 615	13 634	12 733	14 817	13 740	15 534	14 515
(60,1; 80] sq.m	12 133	11 975	12 484	12 137	12 935	12 440	14 218	13 007	14 816	14 096
> 80,1 sq.m	13 348	13 231	13 780	13 354	13 936	13 374	14 895	14 494	15 458	15 383
average offer price deviation	1,3%	x	5,8%	x	4,4%	x	6,4%	x	4,8%	x
<= 40 sq.m	3,7%	x	13,5%	x	2,9%	x	6,3%	x	5,6%	x
(40,1; 60] sq.m	2,2%	x	7,3%	x	7,1%	x	7,8%	x	7,0%	x
(60,1; 80] sq.m	1,3%	x	2,7%	x	4,0%	x	9,3%	x	5,1%	x
> 80,1 sq.m	0,9%	x	-3,9%	x	4,2%	x	2,8%	x	0,5%	x

Source: NBP

Table 22 Average prices per sq. m of housing in the SM in Warsaw

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	13 499	13 026	13 830	13 069	14 280	13 181	14 922	12 818	16 666	13 318
growth (q-o-q)	100,1	100,8	102,4	100,3	103,3	100,9	104,5	97,2	111,7	103,9
growth (y-o-y)	101,5	110,0	103,5	106,7	101,5	103,7	110,7	99,2	123,5	102,2
dwellings price range	1 374	2 921	1 162	2 576	1 078	3 418	1 041	1 346	892	1 440
<= 9 500 PLN/sq.m	87	268	61	286	58	323	36	124	14	96
(9 501; 11 500] PLN/sq.m	370	779	276	626	220	852	168	380	59	327
(11 501; 13 500] PLN/sq.m	332	769	299	635	258	853	245	371	127	405
(13 501; 15 500] PLN/sq.m	250	527	209	516	201	656	190	262	177	319
> 15 501 PLN/sq.m	335	578	317	513	341	734	402	209	515	293
dwellings space range	1 374	2 921	1 162	2 576	1 078	3 418	1 041	1 346	892	1 440
<= 40 sq.m	243	980	209	745	173	980	172	423	142	500
(40,1; 60] sq.m	589	1 253	508	1 148	431	1 523	423	595	381	646
(60,1; 80] sq.m	341	461	291	439	275	606	261	234	211	235
> 80,1 sq.m	201	227	154	244	199	309	185	94	158	59
average price of 1 sq.m. of dwelling	13 499	13 026	13 830	13 069	14 280	13 181	14 922	12 818	16 666	13 318
<=40 sq.m	15 050	13 196	15 228	13 418	15 577	13 758	16 565	13 682	18 254	14 681
(40,1; 60] sq.m	12 978	12 495	13 469	12 549	13 491	12 615	14 251	12 329	16 610	12 676
(60,1; 80] sq.m	12 887	13 112	13 398	13 042	13 500	13 002	14 453	11 853	15 853	11 857
> 80,1 sq.m	14 191	15 047	13 937	14 504	15 942	14 496	15 592	14 425	16 457	14 604
average offer price deviation	3,6%	x	5,8%	x	8,3%	x	16,4%	x	25,1%	x
<= 40 sq.m	14,0%	x	13,5%	x	13,2%	x	21,1%	x	24,3%	x
(40,1; 60] sq.m	3,9%	x	7,3%	x	6,9%	x	15,6%	x	31,0%	x
(60,1; 80] sq.m	-1,7%	x	2,7%	x	3,8%	x	21,9%	x	33,7%	x
> 80,1 sq.m	-5,7%	x	-3,9%	x	10,0%	x	8,1%	x	12,7%	x

Source: NBP

Table 23 Average prices per sq. m of housing in the PM in Wrocław

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 384	10 453	11 948	11 112	12 201	11 397	12 836	11 713	13 353	12 498
growth (q-o-q)	103,8	99,4	105,0	106,3	102,1	102,6	105,2	102,8	104,0	106,7
growth (y-o-y)	111,7	110,0	115,4	110,8	113,1	110,2	117,1	111,3	117,3	119,6
dwellings price range	4 720	742	4 248	954	3 909	1 350	2 918	1 506	2 435	1 162
<=7 000 PLN/sq.m	26	11	19	7	11	11	5	2	1	3
(7 001; 9 000] PLN/sq.m	793	212	603	202	287	203	128	172	50	72
(9 001; 11 000] PLN/sq.m	1 267	247	996	309	1 065	459	495	456	266	169
(11 001; 13 000] PLN/sq.m	1 625	180	1 470	237	1 421	386	1 252	472	1 090	539
>13 001 PLN/sq.m	1 009	92	1 160	199	1 125	291	1 038	404	1 028	379
dwellings space range	4 720	742	4 248	954	3 909	1 350	2 918	1 506	2 435	1 162
<= 40 sq.m	393	214	742	255	689	244	503	288	377	279
(40,1; 60] sq.m	1637	323	2011	442	1852	681	1278	821	1061	562
(60,1; 80] sq.m	1918	155	1074	203	1015	318	822	311	751	246
> 80,1 sq.m	772	50	421	54	353	107	315	86	246	75
average price of 1 sq.m. of dwelling	11 384	10 453	11 948	11 112	12 201	11 397	12 836	11 713	13 353	12 498
<=40 sq.m	14408	11667	14778	12913	14770	13456	15652	13516	16489	14205
(40,1; 60] sq.m	11562	10050	11589	10608	11840	11172	12594	11607	13115	12318
(60,1; 80] sq.m	10525	9801	10646	10153	11131	10153	11673	10466	12269	11222
> 80,1 sq.m	11604	9884	11999	10333	12159	11825	12351	11198	12877	11682
average offer price deviation	8,9%	x	7,5%	x	7,1%	x	9,6%	x	6,8%	x
<= 40 sq.m	23,5%	x	14,4%	x	9,8%	x	15,8%	x	16,1%	x
(40,1; 60] sq.m	15,0%	x	9,2%	x	6,0%	x	8,5%	x	6,5%	x
(60,1; 80] sq.m	7,4%	x	4,9%	x	9,6%	x	11,5%	x	9,3%	x
> 80,1 sq.m	17,4%	x	16,1%	x	2,8%	x	10,3%	x	10,2%	x

Source: NBP

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

specification	IV Q 2022		I Q 2023		IIQ 2023		III Q 2023		IV Q 2023	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 672	10 114	10 978	9 980	11 296	10 234	12 090	10 709	12 809	11 112
growth (q-o-q)	100,8	99,4	102,9	98,7	102,9	102,5	107,0	104,6	105,9	103,8
growth (y-o-y)	114,4	113,0	109,0	108,5	108,1	105,7	114,2	105,2	120,0	109,9
dwellings price range	2 504	760	2 440	742	2 281	967	1 949	1 019	1 811	1 269
<=7 000 PLN/sq.m	54	49	26	58	28	62	18	42	16	37
(7 001; 9 000] PLN/sq.m	542	193	475	197	398	250	242	206	128	177
(9 001; 11 000] PLN/sq.m	1 032	290	979	275	883	330	571	370	370	451
(11 001; 13 000] PLN/sq.m	520	159	555	139	540	216	576	239	589	371
>13 001 PLN/sq.m	356	69	405	73	432	109	542	162	708	233
dwellings space range	2 504	760	2 440	742	2 281	967	1 949	1 019	1 811	1 269
<= 40 sq.m	336	202	309	193	314	233	266	241	293	281
(40,1; 60] sq.m	1113	387	1103	351	961	480	754	512	677	661
(60,1; 80] sq.m	729	125	733	148	667	192	599	202	534	260
> 80,1 sq.m	326	46	295	50	339	62	330	64	307	67
average price of 1 sq.m. of dwelling	10 672	10 114	10 978	9 980	11 296	10 234	12 090	10 709	12 809	11 112
<=40 sq.m	12 449	10 960	12 821	11 248	13 080	11 199	14 009	11 913	14 788	12 426
(40,1; 60] sq.m	10 711	9 853	11 052	9 792	11 406	10 071	12 477	10 482	13 171	11 032
(60,1; 80] sq.m	10 095	9 673	10 498	8 959	10 618	9 622	11 176	10 330	12 102	10 308
> 80,1 sq.m	9 995	9 796	9 965	9 433	10 662	9 767	11 320	9 199	11 350	9 505
average offer price deviation	5,5%	x	10,0%	x	10,4%	x	12,9%	x	15,3%	x
<= 40 sq.m	13,6%	x	14,0%	x	16,8%	x	17,6%	x	19,0%	x
(40,1; 60] sq.m	8,7%	x	12,9%	x	13,3%	x	19,0%	x	19,4%	x
(60,1; 80] sq.m	4,4%	x	17,2%	x	10,4%	x	8,2%	x	17,4%	x
> 80,1 sq.m	2,0%	x	5,6%	x	9,2%	x	23,1%	x	19,4%	x

Source: NBP

7. Analysis of profitability of investment in rental housing in selected cities in Poland in 2023 Q4[37]

The analysis of profitability of investment in rental housing for 2023 Q4 pointed to slight declines in capitalization levels in the markets of Warsaw and the ten cities, showing, at the same time, no changes in the markets of the six cities. The reason for the decline were primarily more dynamic increases in the estimated house prices, both in the primary and secondary markets, compared to changes in rent levels.

At the end of 2023 capitalization rates (i.e. net operating income/real estate value) on investment in rental housing underwent a slight correction. In Warsaw, the capitalization rate amounted to 6.2%, which means a decrease of 0.1 percentage points compared to 2023 Q3. However, compared to 2022 Q4, the capitalization rate was revised upward by 0.3 percentage points. This suggests that the upward trend observed at the beginning of 2022 halted. This is the result of changes in rents and the estimated house prices in the primary and secondary markets. Compared to 2023 Q3, rents in Warsaw grew slower, as indicated by the price growth index of 103.5%. In turn, estimated prices changed at a pace of 104.9%. In year-to-year terms, rents grew much faster - the rent growth index was 114.6% - than the estimated house prices (108.7%).

A different situation was observed in the local markets of the six largest cities in Poland. The capitalization rate in 2023 Q4reached 6.3%. Compared to the corresponding quarter of 2022, this is a decrease of 0.5 percentage points, and compared to 2023 Q3, capitalization of residential investments remained at the same level, which is also the result of changes observed in rental rates and the estimated house prices. In 2023 Q4, rental rates increased by 4.0% and house prices by 3.8% compared to 2023 Q3. Compared to 2022 Q4, however, the estimated house prices in the primary and secondary markets grew faster (109.5% y/y) than rental rates (102.1% y/y). It should be emphasized that in 2022 Q4, a very strong short-term increase in capitalization level of the analyzed investments was observed. During this period, rental rates increased much more than the changes in estimated house prices. In this context, it should be noted that the level of capitalization of housing investments, observed in 2023 Q4 in the group of 6 cities, is in line with the upward trend observed in 2021. However, this trend was starting to slow down in the analyzed quarter.

[37] A simplified analysis of investment in housing for rent conducted by an individual, taxed on a flat-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 voivodship capitals (Opole, Kielce and Zielona Góra) were omitted due to the small sample size of recorded housing rental transactions. The Warsaw 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 analysed 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 (two major overhauls in the period of 100 years were assumed). 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.

Another situation was observed in the local markets of the other analyzed cities in 2023 Q4. The capitalization level reached 5.8%, which means a decrease of 0.2 percentage points compared to 2023 Q3 and at the same time a decrease of 0.3 percentage points in year-on-year terms. Again, this is the result of the relationship between changes in rental rates and the estimated house prices in the primary and secondary markets. The former grew at a rate of 100.8% q/q and 104.7% y/y, and the latter at a rate of 104.4% q/q and 109.7% y/y. Such changes allow us to conclude that the level of capitalization of housing investments in these local markets follows a marked downward trend. The observed changes in capitalization rates in the analyzed local markets in Poland were also reflected in changes in the investment payback period. In Q4 it amounted to 16 years and 1 month in Warsaw, 16 years in the group of 6 cities and 17 years and 4 months in the group of other Polish cities.

The analysis of profitability of housing investment in 2023 Q4, based on ROE, pointed to further increases, although not in all cases. These differences are conditional on the level of financial leverage (LTV). In Warsaw, ROE for investments financed entirely with cash fell by 0.1 pp. q/q to 3.7%. However, compared to 2022 Q4, this is an increase of 0.3 pp. This means that the upward trend that started in 2022 slowed down temporarily in the analyzed period. In the case of housing investments financed in half with external capital (LTV of 50%), the ROE indicator reached -0.2%. This means an increase of 0.4 pp. compared to 2023 Q3 and at the same time of 2.1 pp. on the 2022 Q4 level. In this situation, a continued strong positive trend is seen, which means that profitability is heading towards positive values. Similar trends were observed in housing investment in Warsaw with financial leverage of LTV=80%. In this case, however, the ROE indicator was -12.1%. This means an even faster rate of change. Compared to 2023 Q3, ROE increased by 1.7 pp. and compared to 2022 Q4 by 7.8 pp. The observed changes in profitability levels in Warsaw are the result of changes in the key determinants, which have had a positive impact on ROE levels for the past three months. In addition to changes in rental rates and the estimated house prices, the decline in credit costs had a significant impact. In 2023 Q4, the average interest rates on new mortgage loans dropped by 6.1% and on the existing stock of loans by 4.7%. This structure of changes additionally reveals that the conditions of financing housing investments are very important for their final profitability level. However, it should be emphasised that the internal rate of return for investments in rental housing financed with a loan, is lower than the cost of the loan and therefore such investments generate losses. These losses are decreasing, but they are still high.

Very similar changes in the profitability of housing investments were observed in other local markets in Poland. Housing investments fully financed with equity (LTV = 0%) reached the ROE level of 3.7% in the group of 6 cities and 3.3% in the group of other voivodeship capitals. Compared to the previous quarter, ROE remained unchanged in the first group, in the second group it dropped by 0.2 pp. In turn, compared to 2022 Q4, the ROE indicator decreased by 0.4 pp. and 0.2 pp., respectively. Similarly to Warsaw, ROE for leveraged investments increased in local markets of the other analyzed cities. For LTV = 50%, the profitability indicator reached -0.2% in the group of 6 cities and -1.1% in the group of other analyzed cities. Compared to 2023 Q3, this means an increase by 0.5 pp. and 0.1 pp., respectively. In turn, in relation to Q4 2022, this means an increase in the ROE indicator by 0.7 pp. and 1.1 pp., respectively. For housing investments with LTV = 80% profitability increased to -12.1% in the group of 6 cities and to -14.3% in other local markets. This means an increase of 2.0 pp. and 1.1 pp., respectively, compared to 2023 Q3 and by 4.2 pp. and 5.2 pp. y/y. Also in this case, a faster rate of growth in the profitability of rental housing investments was observed with a relatively higher level of financial leverage. Such changes were also driven by lower costs of external financing of investments. At the same time, it should be noted that in these markets the impact of financing costs turned out to be even stronger than in Warsaw. Positive impacts on changes in ROE indicators were primarily due to lower mortgage loan costs. In turn, the growth in estimated house prices in the primary and secondary markets had a negative impact on the ROE level.

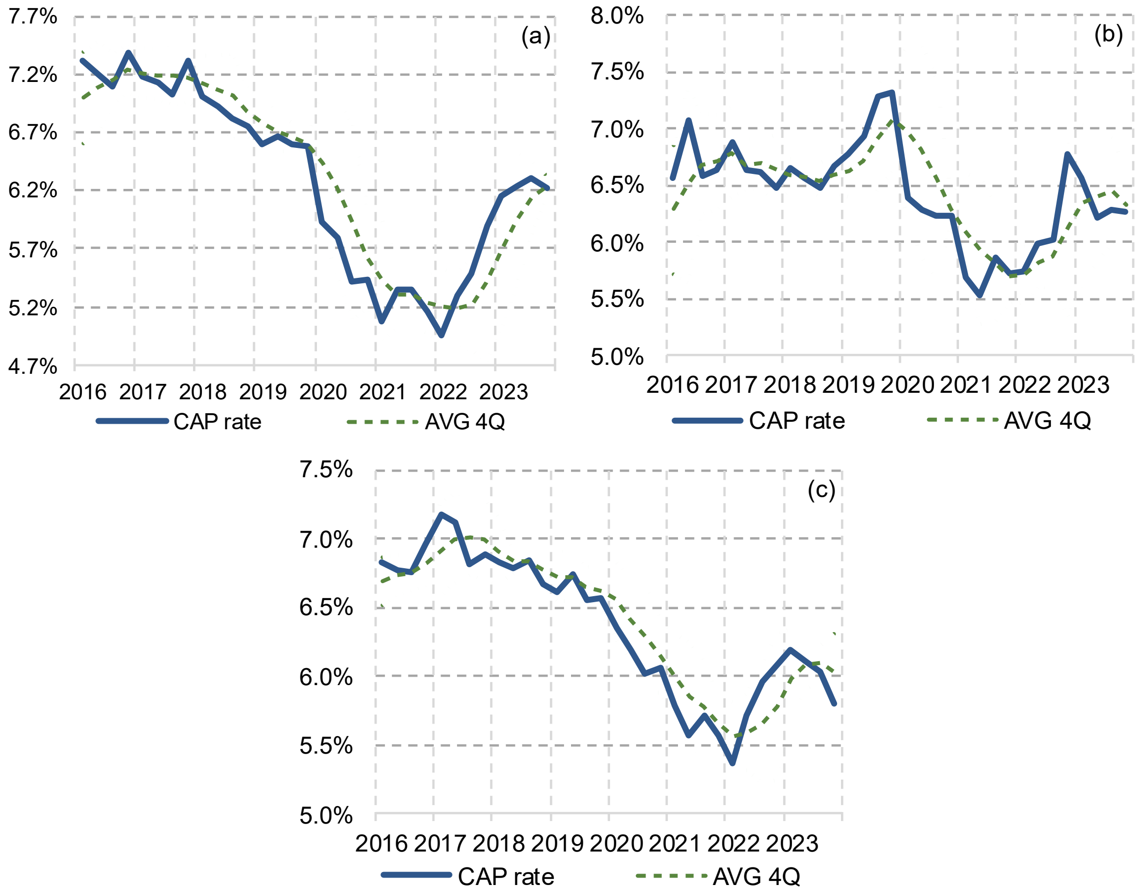
In this context, one should point to the observed changes in alternative forms of capital investment. In 2023 Q4, the average yield on 10-year bonds reached 5.6%. Compared to 2023 Q3, their profitability remained at the same level, but compared to 2022 Q4, it decreased by 1.7 percentage points. In turn, the average interest rate on new deposits in the analyzed quarter amounted to 4.5%. This means a decrease of 0.8 percentage points compared to 2023 Q3 and by 1.5 percentage points compared to 2022 Q4. This suggests that investments in rental dwellings are still an attractive alternative to investing one's capital only, without borrowing. As this is a long-term investment, it can be assumed that some investors will decide to rely on external financing, which may also prove attractive in the longer term, at least from the perspective of the capitalization rates achieved.

Table 25 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%	6.1%	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%	6.3%	6.3%	6.0%
2023 Q4	5.8%	6.1%	6.0%	6.1%	6.0%	5.9%	5.8%	6.4%	5.3%	6.1%	5.3%	6.4%	7.1%	6.2%	6.3%	5.8%

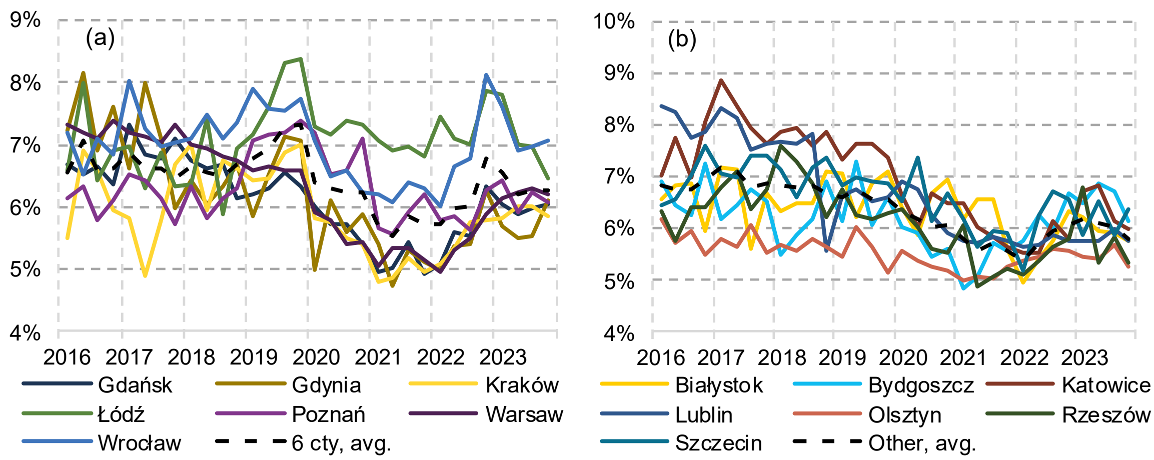
Source: NBP

Figure 78 Estimated capitalisation rate and its annual moving average for Warsaw (Panel a) and aggregated for the group of 6 cities (Panel b) and other Polish cities (Panel c)



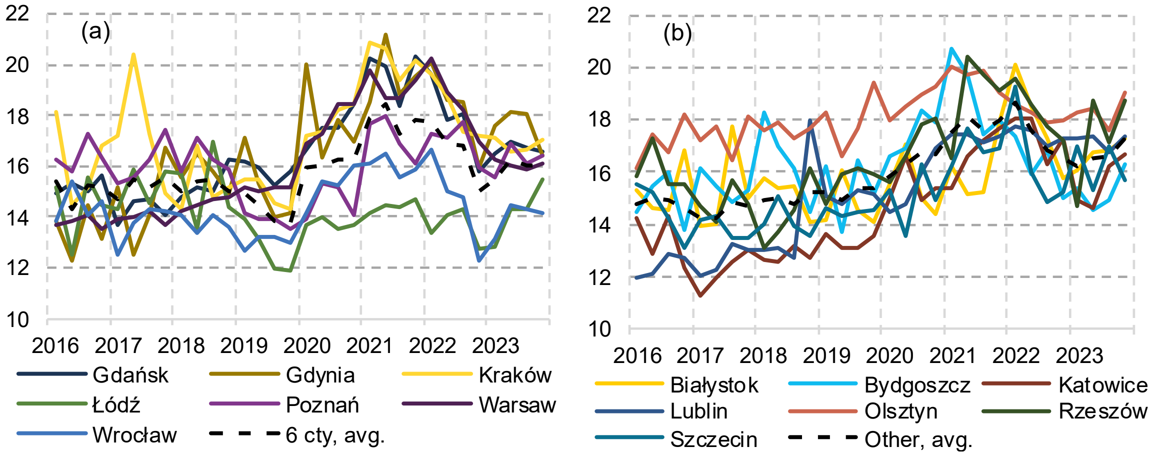
Source: NBP

Figure 79 Estimated capitalisation rate for the individual cities in the group of 6 cities and Warsaw (Panel a) and in the group of other cities (Panel b)



Source: NBP

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



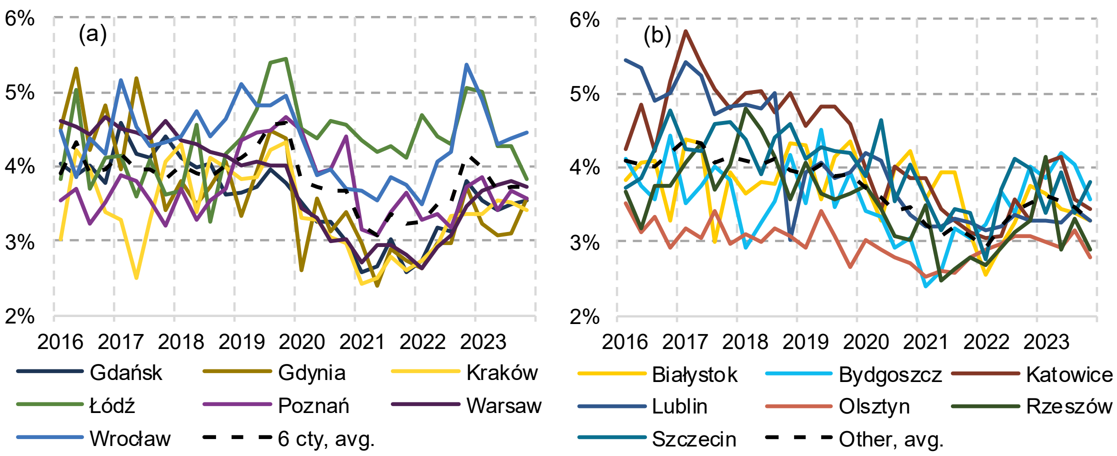
Source: NBP

Table 26 Return on equity (ROE, %) 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%	3.4%	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%	3.2%	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%	3.8%	3.7%	3.5%
2023 Q4	3.3%	3.6%	3.6%	3.6%	3.5%	3.4%	3.3%	3.8%	2.8%	3.6%	2.9%	3.8%	4.5%	3.7%	3.7%	3.3%

Source: NBP

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



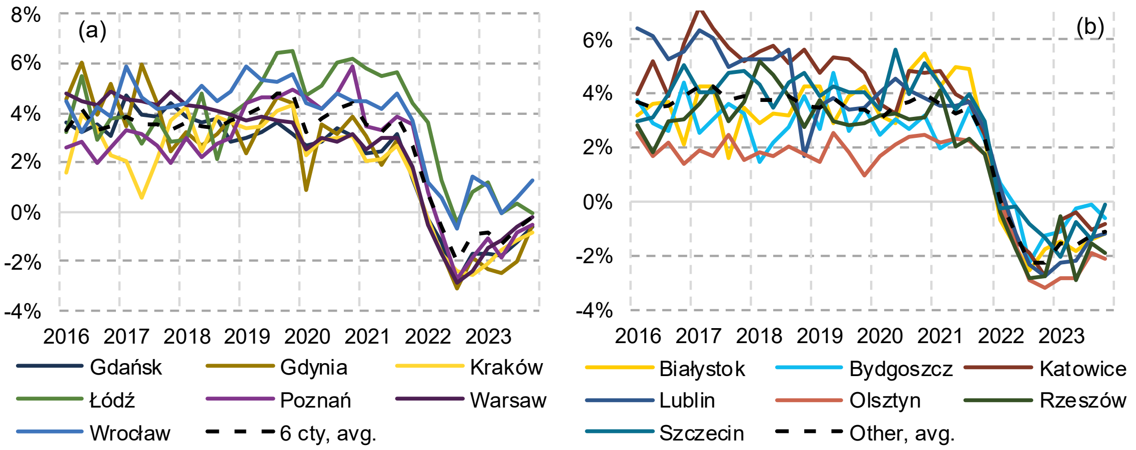
Source: NBP

Table 27 Return on Equity (ROE, %) on 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%	5.6%	2.2%	3.8%	2.4%	3.9%	4.8%	3.0%	3.8%	3.5%
2021 Q4	2.4%	2.3%	1.4%	1.7%	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%	-0.4%	-2.9%	-2.7%	-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%	-1.1%	-1.3%	0.3%	-1.9%	-0.8%	-1.6%	-1.4%	0.6%	-0.6%	-0.7%	-1.2%
2023 Q4	-1.1%	-0.6%	-0.6%	-0.5%	-0.8%	-0.9%	-1.2%	-0.1%	-2.1%	-0.6%	-1.9%	-0.1%	1.2%	-0.2%	-0.2%	-1.1%

Source: NBP

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



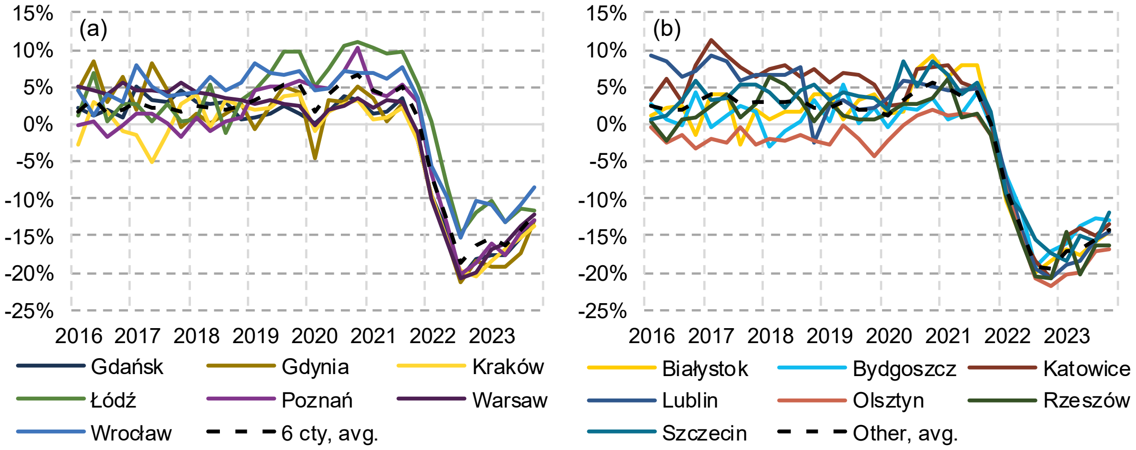
Source: NBP

Table 28 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%	9.7%	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%	-8.3%	-15.4%	-13.6%	-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%	-14.6%	-20.8%	-20.3%	-20.6%	-15.6%	-15.3%	-20.8%	-18.6%	-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%	-15.9%	-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%	-15.9%	-16.3%	-16.9%
2023 Q3	-15.8%	-12.6%	-15.3%	-17.3%	-14.9%	-15.2%	-15.6%	-11.5%	-17.0%	-14.4%	-16.2%	-15.8%	-10.9%	-13.8%	-14.1%	-15.4%
2023 Q4	-14.4%	-13.0%	-13.0%	-12.9%	-13.5%	-13.7%	-14.4%	-11.7%	-16.8%	-13.0%	-16.3%	-11.8%	-8.5%	-12.1%	-12.1%	-14.3%

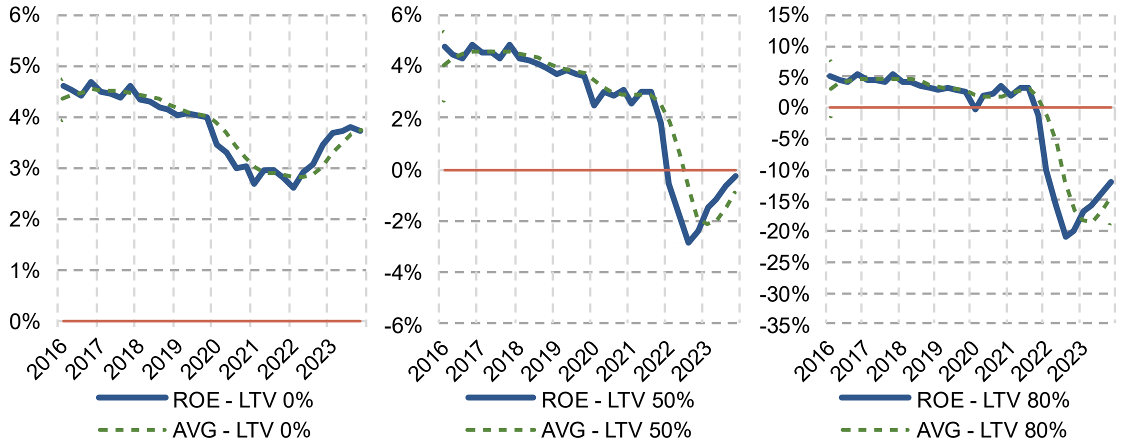
Source: NBP

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



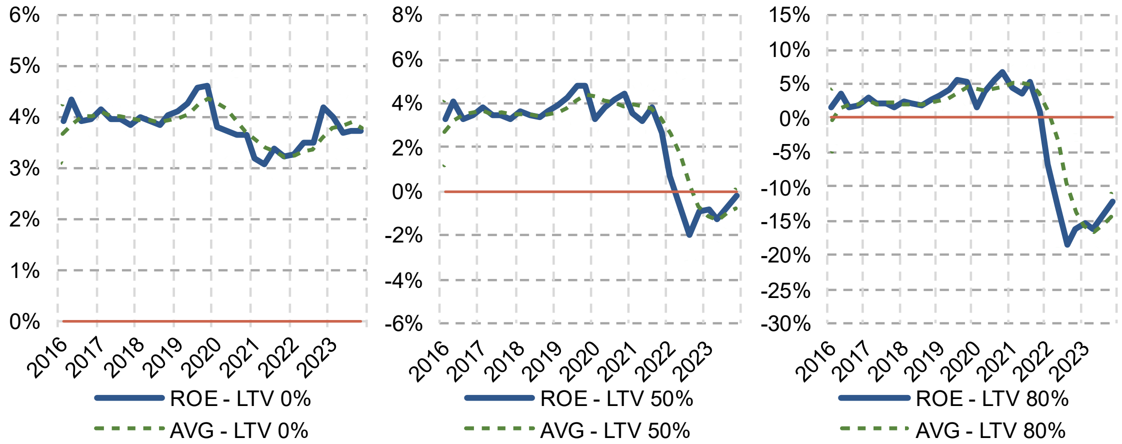
Source: NBP

Figure 84 Comparison of Return on Equity (ROE, %) on a housing investment at selected levels of LTV, Warsaw



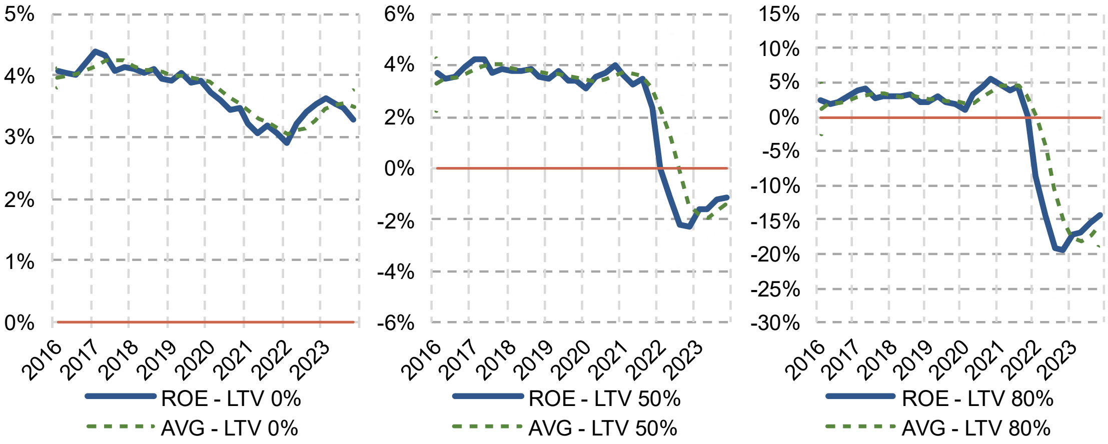
Source: NBP

Figure 85 Comparison of Return on Equity (ROE, in %) on a housing investment at selected levels of LTV, group of 6 cities



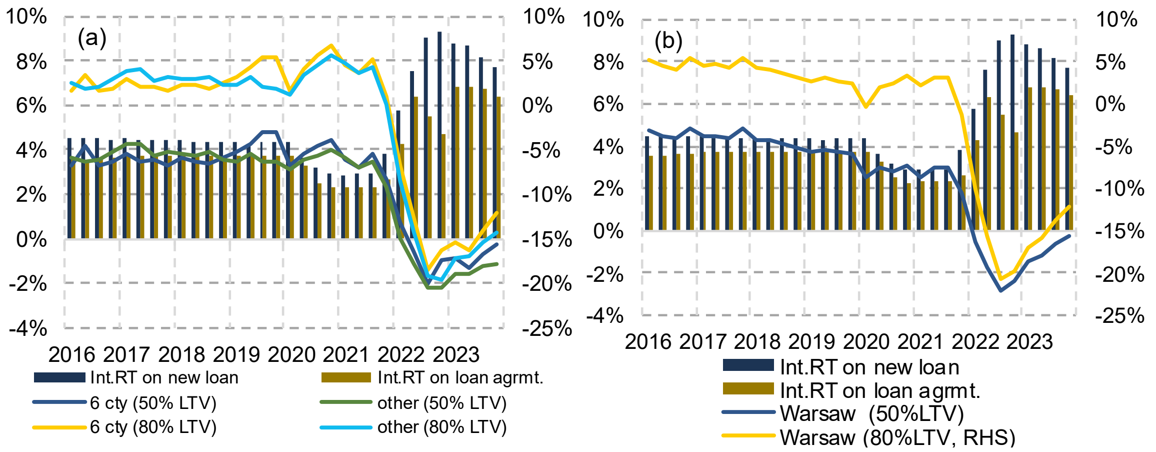
Source: NBP

Figure 86 Comparison Return on Equity (ROE, %) on a housing investment at selected levels of LTV, group of other cities



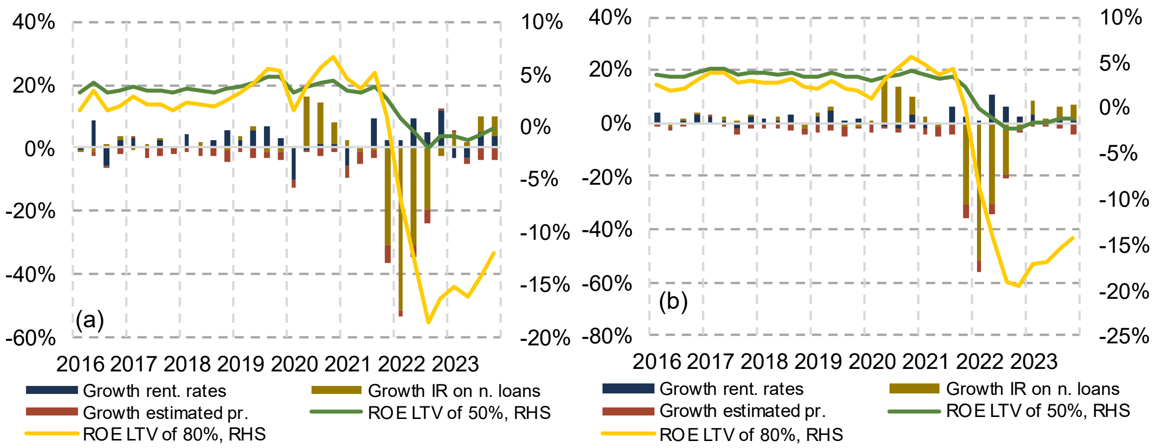
Source: NBP

Figure 87 Comparison of 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 – Warsaw)



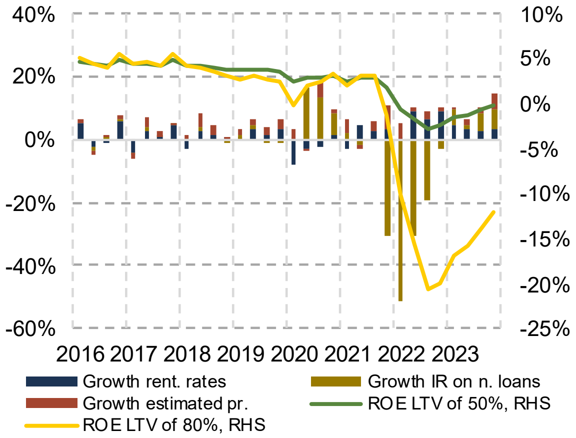
Source: NBP

Figure 88. Estimated ROE given LTV of 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 (Panel a) and the remaining cities analysed (Panel b)



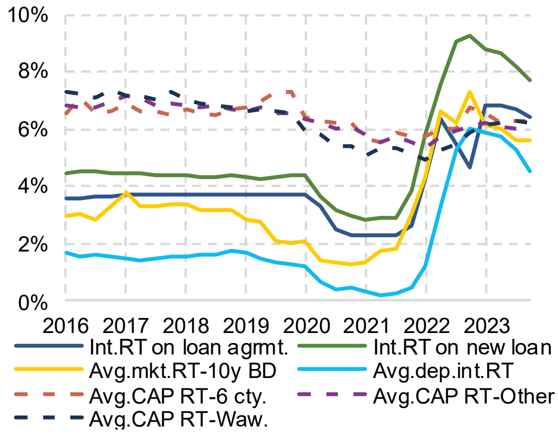
Source: NBP

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



Source: NBP

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



Source: NBP

8. Real estate development and construction sector and the primary market in real estate developers' surveys[38]

Economic situation of real estate developers in NBP's surveys of real estate developers

After the collapse of home sales in 2022 as a result of banks' tightening of lending conditions for home buyers and the reduction of the number of new projects by developers seeking to reduce costs, in 2023 demand exceeded supply, as indicated by a big percentage of developers (44%), mainly in the six largest markets. High construction and financing costs, time-consuming administrative procedures, shortage of buildable land and its rising prices made it difficult to efficiently increase housing investments. It was not until 2023 Q4 that investments reached the level typical of a good economic situation, with a simultaneous decline in the number of signed home construction contracts, mainly as a result of the limited supply in some markets. A significantly bigger number of dwellings planned to be constructed in 2024 (81% more than in 2023), despite the fact that for 5% of those dwellings no land had been secured, is indicative of a fairly good production capacity, under the assumption of a slight increase in housing demand. The economic situation of the vast majority of

[38] The developers who participated in the "Survey of Supply and Demand in the Primary Market for Multi-Family Residential Construction" by Narodowy Bank Polski in November and early December 2023 accounted for about 23% developer firms investing in multi-family residential construction projects in Poland. Among the construction companies which took part in the "Survey of the standing and production capacity of construction companies providing housing construction services" conducted at the same time, about 26% were micro-businesses, 45% were small entities, 24% medium-sized entities and 5% were large construction companies. Around 90% of the developers surveyed and over 80% construction companies surveyed had also participated in the prior editions of the respective surveys (2019, 2020, 2021 and 2022), which ensured high comparability of the results and conclusions drawn in the prior surveys. The analysis of data collected in questionnaire-based surveys was supplemented with interviews with representatives of selected developers and construction firms, as well as calculations and conclusions from F01 financial statements filed with Statistics Poland by two types of entities: small entities – with 9 to 49 employees (data available on a semi-annual basis until the first half of 2023) and larger entities, with more than 49 (data available on a quarterly basis until Q3), which perform construction works connected with the construction of residential and non-residential buildings (PKD 41.20), and data from the financial statements submitted by the dozen-or-so developers listed either on the Warsaw Stock Exchange or the CATALYST market.

residential real estate developers at the end of 2023 remained robust and stable, mainly in the group of developers with high production capacity, amid a marked trend of improvement among smaller companies.

Improved demand changed the structure of developers in terms of the number of signed home construction contracts. The dominant part of small developers, i.e. with annual sales of less than 100 dwellings, shrunk by 10 percentage points (to 73%). The share of medium-sized companies, i.e. with annual sales of 100 to 500 dwellings increased by 7 percentage points (to 21%), and large developers, i.e. with sales in excess of 500 dwellings increased by 3 percentage points (to 6%). The small group of large developers (6%) accounted for almost half (49%) of annual home sales in Poland’s primary market, and the largest percentage of small developers (73%) accounted for a mere 14% of the number of home construction contracts signed annually. The majority of surveyed developers at the end of 2023 were companies with capital or management links with other Polish companies (44% of respondents) and those in no way related to other companies (41%). 9% of all respondents said that they were related to both domestic and foreign companies, including 27% of large developers.

The improvement in demand and sales revenues, and the continuing increase in house prices made it possible to effectively pass on the rising costs to home buyers. According to the survey data, at the end of 2023 the economic situation of the vast majority of housing developers (89% of respondents) was good. The condition of 20% of entities also visibly improved. The share of companies reporting poor economic situation decreased to 9% at the end of 2023 compared to 27% at the end of 2022. The group comprised only small companies. The recovery in the home sales market reduced the diversity of the financial situation of developers, which is still visible mainly in the group of small companies. For the five years analysed, the share of companies in a bad situation, facing liquidation or bankruptcy, had continued at 1%. The majority of respondents (78%) expected their economic situation to be similar in 2024, and 19%, mainly small entities, saw a chance for improvement. 3% of respondents expected their condition to deteriorate, including large companies with high production capacity (9%), followed by 4% of small companies. The improvement in the situation of some developers in 2023 is reflected in a higher percentage of companies (an increase of 8 p.p.; to 87%) who did not experience financial liquidity problems and a lower percentage of companies struggling to maintain liquidity in 2023 (to 13%; a decrease of 8 p.p.).

In 2023, 80% of developers started selling new investments at the initial construction stage, which, in the context of improving demand for dwellings, improved the financing of projects from buyers' prepayments and does not generate the need to seek external financing, entailing additional costs. The percentage of companies with no loan application history is systematically increasing (65% in 2023 compared to 52% in 2019). At the end of 2023, 36% of the surveyed developers had no bank loan debt obligations, including 30% of small developers, a mere 5% of medium-sized companies and 1% of large entities. The improvement in the situation in the residential real estate market and the condition of developers resulted in a greater number of positive credit decisions. In 2023 bank loans were extended to 30% of respondents, compared to 25 % in 2022, 36% in 2021, 34% in 2020 and 43% in 2019. The situation of large and also medium-sized companies is better than that of small companies which is evidenced by the percentage of respondents who were granted a loan in 2023 (64%, 46% and 21%, respectively). The percentage of those who, despite their efforts, failed to receive a loan in 2023 was 6% and was half of that in 2022 (12%). Statistically, small developers (4%) were refused a loan less often than medium-sized (10%) and large (27%) ones. This was due to a significantly higher percentage of small companies that did not apply for a loan (75%) than in the case of medium-sized and large companies (44% and 9%, respectively). The main reason for being refused a bank loan in 2023 was the lack of appropriate security. Only 1% of developers, which included only small entrepreneurs, did not receive a loan due to a lack of creditworthiness. According to the survey data, in order to raise additional funds in 2024, a 7 p.p. higher percentage of developers (55%) intend to apply for a developer loan to finance an investment project, and by 2 p.p. (28%) for a loan from an entity belonging to the same capital group, and over 4 p.p. more respondents (13%) declared the issue of debt securities. Similarly to previous years, one in four developers intends to use a working capital loan. On the other hand, the percentage of those saying they will get a new shareholder in the near future from Poland (to 7% of respondents) or abroad (to 2%) in exchange for granting a loan decreased by 3 p.p. Fewer respondents (11%, down by 3 p.p.) declared they intended to take out a loan from another external entity (outside the capital group). Fewer developers said that banks had tightened the financing conditions for development projects (36% at the end of 2023 compared to 44% at the end of 2022), including 22% of respondents who said that banks required higher presale than last year, 7% said that they required a significantly higher own contribution, and 7% reported an increase in other requirements. Half of the surveyed developers (50%) assessed that their situation would not change in 2024 as regards loan servicing, 12% saw a possibility of improvement in this area, and 2% expected their situation to worsen. The forecasts for 2024 noted an increase (y/y) in developers' optimism as regards bank and non-bank debt servicing.

The number of dwellings sold by the survey respondents in 2023 was 32% higher than the number of contracts in 2022, following a significant drop in the comparative base in the previous year (by 43%). This confirms a significant improvement in demand, yet lower than the historically good results recorded in several previous years. In 2023, compared to 2022, sales increased more in the primary market of the 6 cities (by 37%) than of the 10 cities (by 20%) due to the better potential of investment buyers in the largest markets, including Warsaw. Data cyclically collected by NBP in the segment of popular dwellings confirmed a 24% y/y increase in sales in the primary market. A higher increase in sales was recorded in the 6 cities (by 27%), including 46% in Warsaw, than in the 10 cities (by 16%). Q/Q growth. sales in 2023 Q2 and Q3 (by 53% and 7%, respectively) was the result of the "2% Safe Credit" scheme operating from 1 July 2023, which enabled a wider group of buyers to finance the purchase of an dwelling for their own housing needs. In 2023 Q4, a slight decrease in the number of home sale contracts sold (by 1%) resulted from a limited offer in some markets. Similarly, the group of the fifteen largest developers (listed on the WSE and Catalyst markets) sold 24,436 dwellings in 2023, achieving a result that was 21% better than in 2022, with a 14% decrease in the number of home sale contracts sold in 2023 Q4.

The excess of demand over supply recorded at the end of 2023, mainly in the group of 6 cities (52% of indications) and to a lesser extent in the 10 cities (32% of indications), resulted from a decline in investment projects started in 2021 and 2022. As a consequence, the increase in demand in 2024 met with a low supply of newly built dwellings. However, in the opinion of 34% of developers, the supply of dwellings was close to demand (31% of indications in the 6 cities and 38% in the 10 cities). In the opinion of 62% of respondents, sales in 2024 will remain at a similar level. The moderate optimism resulted from the expectation of a new government program supporting the purchase of dwellings for buyers' own needs and the continued purchase for investment purposes.

Higher sales in 2023 were the result of improved bank lending, the continued high level of purchases of dwellings for rent, investing funds in residential real estate (67%, 61% and 58% of indications, respectively) and a low comparative base in 2022. In addition, developers mentioned the significant role of granted bank loans (36% of indications) among the factors boosting the number of home sale contracts sold, as well as increased, compared to 2022, affordability of dwellings measured by the ratio of the average salary in the corporate sector to the average transaction price. They also said that some buyers had finally decided to buy a house to improve their housing conditions, which they had postponed thus far. On the other hand, factors reducing sales included excessively high house prices, low creditworthiness and the poor financial situation of some households planning to buy a dwelling. At the same time, the rapid increase in house prices, rising inflation and the lack of other alternative forms of saving were conducive to investing own funds in residential real estate. Demand from investment funds and foreign individuals had little impact on sales.

The structure of home buyers in Poland has remained stable for six years. The majority of buyers are Polish individuals (91%). The share of foreign individuals increased by 2 percentage points (to 7% in 2023), including 5% from Ukraine and 2% from other countries. Ukrainian citizens were more likely to buy dwellings in the group of 6 cities (7% of sales) than in the group of 10 cities (4%). Only 2% of buyers were other entities, including investment funds. According to developers, transactions where two or more dwellings were sold to one entity accounted for only 0.7% of all transactions in the primary market in 2023.

The structure of transactions depending on the purpose of purchase returned to the levels of 2021, after a significant decline in 2022 in the percentage of individuals purchasing a house for their own housing needs. In 2023, the majority (65%) were buyers satisfying their own housing needs, and most of these were people buying their first dwelling for themselves or a family member (37%), followed by those buying one to improve their living conditions (28%). The remaining percentage (35%) purchased dwellings for investment purposes, including 31% mainly for rent, and 4% with the intention of reselling at a profit in a favourable period.

Taking into account the purpose for which the dwellings were purchased, developers indicated a change in the structure of financing sources in 2023 compared to 2022. When buyers purchased dwellings for their own needs, they financed that mostly with bank loans and the trend was on the rise (52% in 2023 compared to 40% in 2022 and 62% in 2021), while the share of own funds decreased (27% in 2023 compared to 35% in 2022 and 18% in 2021). Purchasing with mainly one's own funds remained at a level of over 20%. Among dwellings purchased for rent, fewer dwellings than in 2022 were financed exclusively with cash (59% compared to 68%), because the share of bank loans increased (to 16% compared to 10%). The share of dwellings purchased for rent with a predominance of own funds also increased to 25% from 22%. The percentage of dwellings purchased with the intention of their later resale in a favourable period (4%) was financed in as much as 91% with cash or with a significant predominance of cash, similarly to previous years, and the remaining, small part of the transactions (9%) was settled with bank loans. A significant increase in new loans granted for the purchase of dwellings in the second half of 2023, including mainly in Q4 2023, meant that their total number and value in the whole of 2023 were higher in year-on-year terms by 25% and 41%, respectively. The "2% Safe Credit" launched on 1 July 2023 accounted for 50% of the number and 51% of the value of housing loans in the country granted in the second half of 2023. In the opinion of the survey respondents, the share of "2% Safe Credit" in financing the purchase of dwellings in their investments was quite diverse. According to the responses of 24% of developers, their buyers did not use a loan under the government scheme at all. This group of companies included developers implementing projects in better, more expensive locations, where the price of the dwelling did not qualify for the government scheme. In the case of 30% of developers, up to 50% of their clients received a loan on preferential terms, and according to 47% of respondents, from 51% to 100% of buyers.

The increase in house prices in 2023, according to developers, amounted to 15%, driven by strong price-setting factors (continuing inflation, increasing purchasing power of households, improving house sales with limited supply of dwellings in the primary market and rising production costs). Almost unanimously, the respondents predict an average 11% increase in house prices in 2024.

According to data from Statistics Poland, in 2023, fewer (by 7.6%) dwellings were put into use in all forms of construction in the country than a year earlier. The number of dwellings for which construction permits were issued or a notification with a building design was made also decreased (by 19.1%), as did the number of dwellings whose construction began (by 5.6%). The smaller output by developers throughout the country in 2023 was the result of a slowdown in residential construction from the second half of 2021 on the back of a decline in demand caused by the collapse of bank lending. The lack of long-term prospects for stable and satisfactory demand for dwellings amid rising construction costs, the weak financial situation of some developers, the lack of land and building permits resulted in some developers being cautious about overinvesting or the lack of current opportunities to launch new investments.

The smaller number of permits issued in 2023 confirms the decrease in developers' production capacity, including the ability to quickly adjust supply to growing demand. According to the structure of dwellings for which permits were issued or a notification with a construction project was made, developers received the largest number of permits (161.8 thousand), with a decrease of 20.6% y/y in the country and 14% y/y in the voivodeship capitals. The decreases concerned all cities except Białystok, Łódź and Rzeszów. Łódź stood out significantly against the voivodeship capitals, where the number of dwellings for which a construction permit was obtained increased by 52% to 11,682 dwellings, which is the second biggest result after Warsaw (14,522 premises, a decrease of 27% y/y).

In 2023, developers started a total of 114.5 thousand dwellings in Poland (0.7% less). A greater increase in the number of dwellings whose construction was started by developers was observed in the voivodeship capitals (by 7%). Analyzing individual voivodeship capitals in 2023, developers started the most dwellings in Warsaw (14,178), followed by Wrocław (6,165), Kraków (5,288), Łódź (4,630) and Gdańsk (4,474).

In 2023, the effects of developers' residential construction in locations outside the voivodeship capitals fell to a greater extent than in the voivodeship capitals. Developers delivered a total of 136.5 thousand dwellings in the country (5.2% less than a year ago, including 4% less in the voivodeship capitals).

A 32% increase in sales and a 24% decrease in the number of offers actually put on the market resulted in a 16% decrease in the number of offers available on the market at the end of 2023 compared to the end of 2022. On the other hand, the analysis of the number of dwellings under construction revealed a 4% lower level y/y of dwellings under construction, which resulted from a 10% decrease in the number of dwellings started in 2023. Developers reported a significant revival in the start of new projects in Q4 2023 compared to the three previous quarters.

The respondents declared that they would increase their sales offer in 2024 and 2025 compared to 2023 by 71% and 42%, respectively. According to the surveyed companies, 45% of dwellings under construction at the end of 2023 had already been sold (43% at the end of 2022). Smaller pre-sales of dwellings at the initial construction stage were mostly observed among small developers, which resulted from the significant financing of investments with bank loans and the requirement of the lending banks to have closed escrow accounts. Large development companies are characterized by a better and more stable financial situation, which, in the opinion of the banks, allowed them to maintain open escrow accounts and sell at an early stage of construction. According to developers, they have building permits for 53% of dwellings planned for (an increase of 4 p.p. and 7 p.p. compared to the end of 2022 and 2021, respectively), and 47% of these dwellings at the end of 2023 were in projects ready to start. It is worth noting that at the end of 2023, there was a much higher percentage of dwellings planned for construction with a building permit in the 10 cities (66%) than in the group of 6 cities (44%), as well as the share of dwellings in projects ready to start construction (60% in the 10 cities and 37% in the 6 cities). The decrease in the share of dwellings planned for construction with a building permit in the six largest markets, including in projects ready to start, creates a risk of increasing problems with quick adjustment of supply to growing demand.

Confirmation of greater problems in the group of 6 cities than in the group of 10 cities in the area of production capabilities is the smaller percentage of developers in the six largest markets (35%) than in the ten cities (46%) who indicated an improvement in their production capacity in 2023 compared to 2022, i.e. land stock, obtained permits, etc. The remaining, major part of developers did not see an improvement in their production capacity. 44% of respondents from the 6 cities and 36% from the 10 cities reported a reduction in the start of new residential investments in 2023 . The reduction in new projects may result in a smaller number of orders and increased competition in residential construction, lower demand for workers and building materials, which will slow down price growth on the cost side. Reducing new investments while improving demand supported the growth in house prices and allowed for obtaining satisfactory financial results from sales. Despite the improvement in the financial condition, most developers are struggling to rebuild their ability to efficiently launch new projects, which, according to the respondents, is mainly due to the time-consuming administrative procedures that significantly delay the start of new investments. At the end of 2023, only 13% of developers were able to introduce new offers within three months, and another 24% within 6 months. Among both groups of companies, more than half were small developers, selling less than 100 dwellings per year, which means that larger development companies are largely unable to start new investments in the first half of 2024. Developers from the group of 10 cities more often declared their readiness to put new offers on the market by June 2024 than from the group of 6 cities. A long-term slowdown in new projects may result not only in a lack of orders for some construction companies, but also in their elimination from the market, and in the period of economic recovery, a lack of contractors and an increase in construction prices.

The majority of the developers surveyed in November 2023 (53%) reported that return on sales achieved in 2023 remained at a level similar to 2022. More developers (37%) than a year ago (16%) noted an improvement in ROS, mainly large companies (54% of respondents, an increase of 3.5 p.p.), followed by medium-sized (44% of respondents, an increase of 3.1 p.p.) and small (41% of companies, an increase of 3.4 p.p.), with the majority of respondents assessing these increases as minor. A much smaller percentage of developers noted a decrease in ROS (10% in 2023 compared to as much as 62% in 2022). The decrease in ROS reported by 10% of entities was minus 5.0 p.p., 4.3 p.p. and 2.5 p.p. in the group of small, medium-sized and large companies, respectively.

Along with the significant increase in the percentage of developers who showed an increase in return on sales (42% in 2023 compared to 16% in 2022), the share of entities with a satisfactory level of ROS also increased (61% in 2023 compared to 34% in 2022). The share of developers with an unsatisfactory but positive ROS decreased significantly (37% in 2023 compared to 58% in 2022). Among the surveyed companies, only small development companies reported losses (2% in 2023 compared to 10% in 2022).

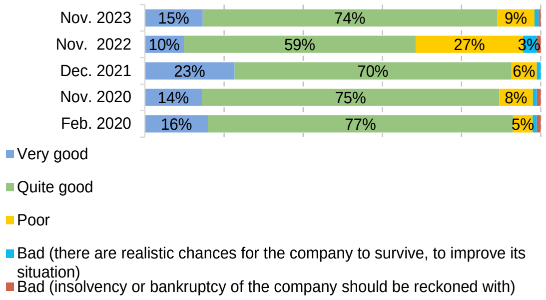
The majority of respondents (62%) indicated the time-consuming administrative procedures significantly delaying the start of new investment projects as the main risk that may significantly hinder development activity in 2024. Developers from the 6 cities (71% of responses) pointed to these difficulties more often than those from the 10 cities (48% of responses). In the opinion of developers, the prolonged administrative procedures of obtaining the necessary approvals (development conditions, environmental permits, preparation of all documentation required before the start of construction) had the most significant impact on the decrease in the number of dwellings put on the market in 2023. Some developers implementing small investment projects reported a deterioration in their economic situation as a result of blocked sales resulting from the long period of credit processing under the "2% Safe Credit" scheme (dwellings were reserved and excluded from sale for several months without a guarantee of their sale). In individual cases, prolonged official procedures (complaint handling) forced the termination of preliminary agreements for the purchase of land and the abandonment of a larger investment project and its replacement with a smaller one. Another significant difficulty affecting the scale of housing investments in 2024 was the continuing increase in project implementation costs (66% of respondents). The risk of rising costs was indicated as very significant despite the decrease in the rate of growth in construction costs, including the prices of building materials. The decrease in the number of new investment projects had a direct impact on the slowdown in the growth of construction material prices. Developers fear an increase in construction costs if the suppliers of steel, cement and blocks, who are mostly companies with foreign capital, can significantly increase the prices of their products when the reconstruction of Ukraine begins. In 2023, the growth rate of the average transaction price per square meter of a dwelling on the primary market was slightly higher than the construction costs, which translated into a slight improvement in the profitability of the projects implemented by some developers.

The third main risk in 2024 mentioned by developers was an increase in buyers' problems with raising financing. Low risk was assigned to the possibility of a significant decrease in the company's income, problems of project contractors or developers with raising financing, lack of employees, failure to start new investments due to lack of building land, withdrawal from the launch of new projects for reasons other than those indicated in the survey. There were no problems that would lead to the need to terminate development activities, takeover by another entity or bankruptcy, or failure to complete the ongoing investment projects.

According to the surveyed developers, the supply of plots in good locations decreased in 2023, and they remain "difficult", i.e. requiring higher costs and more time-consuming to prepare. Land for residential construction was purchased by a total of 51% of developers, fewer in the 6 cities (48%) than in the 10 cities (56%). Considering the size of the companies, significantly fewer small companies (44%) purchased land than medium-sized (63%) and large (91%) companies, which is mainly due to the weaker condition and diversified financial situation of these developers. 13% of developers, mainly small ones (11%), did not plan to purchase land in 2023, which confirms the poor financial condition of these companies.

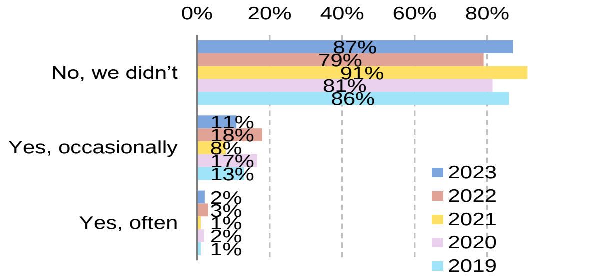
More and more developers are experiencing a significant increase in problems in purchasing land for multi-family construction (57% in 2023 compared to 34% in 2022), including more in the 6 cities (65% in 2023 compared to 47% in 2022) than in the 10 cities (47% in 2023 compared to 38% in 2022). Net land prices in very good locations increased on average by 32% in 2023 compared to 30% in 2022, and in average locations by 20% in 2023 compared to 17% in 2022. A higher price growth was reported in the 6 cities (in very good locations by 34%, in average locations by 22%) than in the group of 10 cities (in very good locations by 28%, in average locations by 17%). At the end of 2023, 8% of all respondents (21% at the end of 2022) did not have plots of land, which included only small entities, which may indicate that this is a group that is reckoning with going out of business and is struggling with financial problems and maintaining liquidity. In 2024,the surveyed developers are able to build 5% fewer dwellings on their land reserves than they plan to start in this period, which means that developers' production capacity in terms of land purchase is not satisfactory. At the end of 2024, smaller land reserves were observed among developers from the 6 cities (there was no buildable land for 10% of dwellings planned for construction) than in the group of 10 cities (it was possible to build 12% more dwellings than planned).

Figure 91 Developers' assessment of their current financial standing (%)



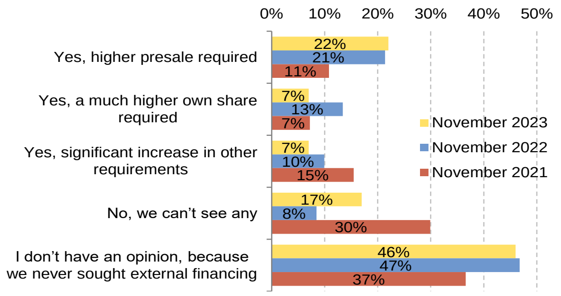
Source: NBP survey

Figure 92 Structure of responses to the question whether developers experienced liquidity problems (%)



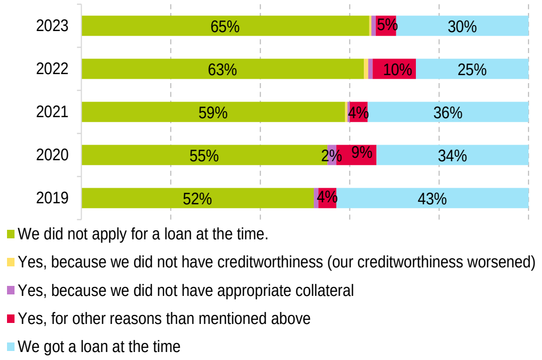
Source: NBP survey

Figure 93 Structure of responses to the question, whether the company can see any significant tightening of the financing conditions for development projects (%)



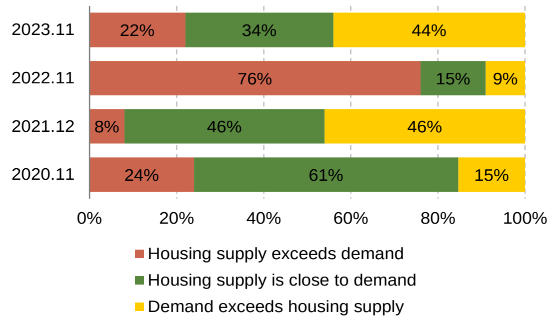
Source: NBP survey

Figure 94 Structure of responses to the question whether the company was refused a bank loan (%)



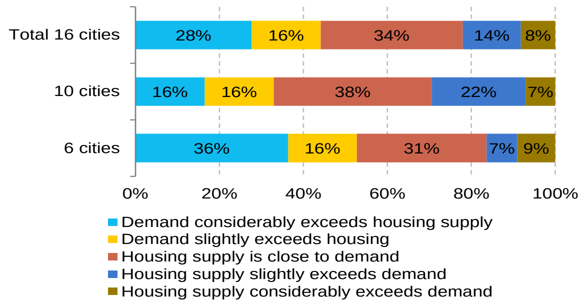
Source: NBP survey

Figure 95 Supply to demand ratio as assessed by surveyed developers (%)



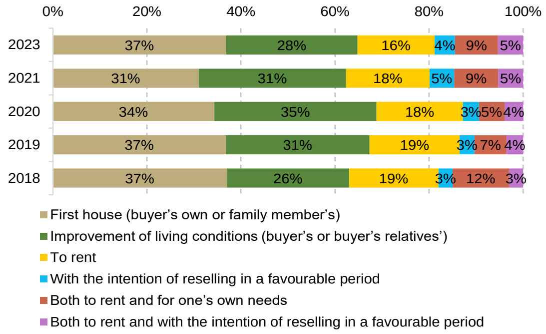
Source: NBP survey

Figure 96 Supply to demand ratio perceived by the surveyed developers at the end of 2023, broken down by markets (%)



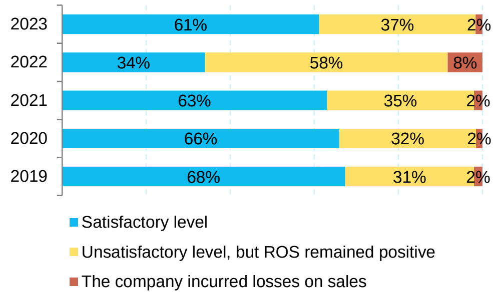
Source: NBP survey

Figure 97 Structure of dwellings purchased in the primary market by the purpose and year of purchase (%)



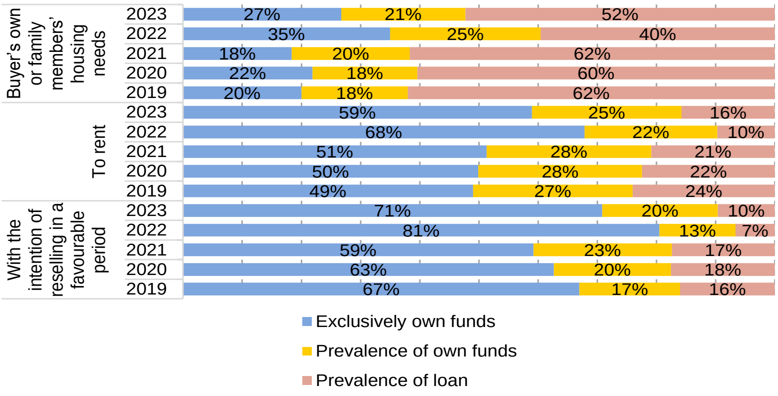
Source: NBP survey

Figure 98 Assessment of Return on Sales (net result) achieved by real estate developers in individual years (%)



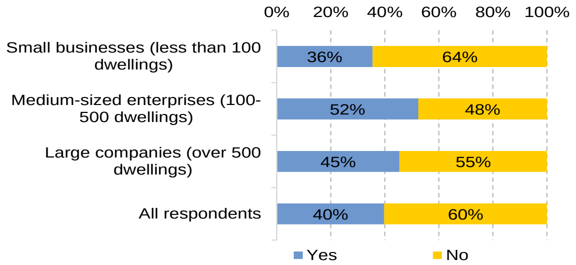
Source: NBP survey

Figure 99 Structure of developers' responses to the question about the share of different sources of financing for the purchase of dwellings depending on the purpose for which they were purchased (%)



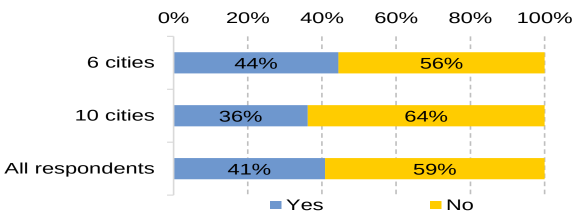
Source: NBP survey

Figure 100 Percentage of developers who reported an improvement (Yes/No) in their production capacity in 2023 compared to 2022 (%)



Source: NBP survey

Figure 101 Developers' responses (broken down by groups of cities) to the question whether they scaled down new investment projects in 2023 – Yes/Now (%)



Source: NBP survey

Table 29 The average of the responses by the surveyed developers to the question about the percentage change in the net price of land for multi-family residential construction projects in good locations (%)

Year	Total 16 cities	6 cities	10 cities
2019	25%	26%	25%
2020	22%	23%	22%
2021	42%	41%	42%
2022	30%	27%	33%
2023	32%	34%	28%

Source: NBP survey

Table 30 The average of the responses by the surveyed developers to the question about the percentage change in the net price of land for multi-family residential construction projects in average locations (%)

Year	Total 16 cities	6 cities	10 cities
2019	17%	19%	14%
2020	13%	16%	10%
2021	27%	29%	24%
2022	17%	15%	19%
2023	20%	22%	17%

Source: NBP survey

Economic situation of residential construction companies[39]

According to the survey data collected in November and December 2023, the percentage of positive self-assessments of construction companies describing the situation of enterprises was 69%, which was 10 percentage points higher than in the survey conducted in November 2022. The largest increase in such assessments was recorded among small companies, which, according to the survey, were the largest beneficiary of demand for construction services, measured by revenue growth in 2020-2023 compared to 2019. The share of companies that considered their situation to be bad was 5%, compared to 9% a year earlier. This result was largely determined by micro companies, among which this percentage was 10%.

The results of the respondents' self-assessments in the summary of assessments of the economic situation of companies seen through the prism of E. Mączyńska's[40] bankruptcy prediction model largely overlapped in terms of determining the percentage of companies in a bad situation. At the same time, in relation to 2022, changes in the values of the indicators determined by the model indicate a deterioration of the situation in approximately 75%-85% in each group of companies analysed according to the headcount.

[39] Among the construction companies which took part in the "Survey of the economic standing and production capacity of construction companies providing housing construction services" conducted by Narodowy Bank Polski in November and early December 2023, about 26% were micro-businesses, 45% were small companies, 24% medium-sized companies and 5% were large construction companies. Around 80% of the construction companies surveyed and over 80% construction companies surveyed had also participated in the prior editions of the respective surveys (2019, 2020, 2021 and 2022), which ensured high comparability of the results and conclusions drawn in the prior surveys. The analysis of the data collected in questionnaire surveys was supplemented with interviews with representatives of selected developers and construction firms, as well as calculations and conclusions from F01 financial statements filed with Statistics Poland by two types of companies: small companies – with 9 to 49 employees (data available on a semi-annual basis until the first half of 2023) and larger companies, with more than 49 (data available on a quarterly basis until Q3), (PKD 41.20).

[40] E. Mączyńska's model takes into account 5 financial indicators relating to the company's profitability X1 operating profitability of assets, X5 asset efficiency, financial liquidity X4 current liquidity, operating efficiency and capital structure X2 share of equity in financing assets and the company's ability to repay liabilities X3 coverage of liabilities with financial surplus. $Z(M)=9.478X1+3.613X2+3.246X3+0.455X4+0.802X5-2.478$ Interpretation of the value of the Z(M) model: $Z(M)=0$ critical value of the model (bankruptcy hazard for the function value below 0), $Z(M)\leq 0$ "bankrupts", $Z(M)>0$ "not bankrupts", model fit: 95% (percentage of correct model estimates).The higher the function value (0.1 and higher), the better the financial situation of the enterprise and the lower the bankruptcy hazard (in the next year).The increase in the function value over time (from period to period) means an improvement in the financial situation of the enterprise and a reduced bankruptcy hazard. Source: Mączyńska E., Zawadzki M. (2006). Discriminant models of predicting bankruptcy of enterprises. Ekonomista 2, 205-235.

Respondents' assessments of the broadly understood situation of residential construction differ (48% of respondents assessed it as poor, and among large companies such assessments were indicated by 67% of respondents). The discrepancy between the assessments can be related to the lack of certainty as to the direction in which the residential construction market may go, and especially the demand for dwellings, on which the decisions of clients of construction companies' services depend. In addition, inflation and rising interest rates on loans in 2022-2023 significantly limited the availability of bank financing for potential home buyers, and the short-term impulse related to the "2% Safe Credit" was not able to provide a stable foundation for the market to adopt the original operating strategies in the long term. Confirmation of the negative assessments of the mood on the housing market are the fluctuations of the Central Statistical Office's economic sentiment indicators in 2023.

According to the respondents, these were small and then medium-sized companies, with only a group of small companies expecting revenue growth in 2024, who benefited from the good economic situation for construction services over the last 4 years, measured by revenue growth compared to 2019.

In 2023, the vast majority of companies continued to experience an increase in basic cost components. Financial data from construction companies indicate that energy and material price growth slowed down significantly in 2023, and the increases in the costs of external services was balanced with increases in their own prices. Wage growth is increasing, which may translate into higher prices of services sold. The average increase in own prices in 2023 amounted to 13.7% year-on-year, compared to a 7% increase in the prices of works related to the construction of buildings according to the Central Statistical Office in November 2023.

Enterprises providing services in residential construction expect changes (year-on-year) in their own prices and cost components in 2024 at a level slightly lower than the 11.9% recorded in 2023.

The 2022-2023 period of dynamic changes in the construction market and the related changes in demand for construction services have highlighted the high elasticity of prices of material suppliers and subcontractors. The dominant prediction among respondents was the lack of change in demand for construction services in 2024 compared to 2023, in which a real, small decrease in production of construction companies was expected. At the same time, another predominant prediction expressed in the study was an increase in all cost components, which means that the price increase will not be solely the result of the demand and supply relationship for individual cost components and construction services, but also other macroeconomic factors in the business environment.

The synthetic indicators of the assessment of the condition of enterprises showed a deterioration in the ratio of changes in the capital structure to the structure of assets over the year, primarily among medium-sized companies, resulting from their weaker financial results. In the case of small companies, the synthetic indicator of the assessment of the condition of the enterprise in the first half of 2023 also showed a relatively deep deterioration of the described ratio. In the case of small companies this was caused by a significant increase in liabilities and a decrease in the share of equity in financing operations. Therefore, the financial data somewhat undermine the optimism of construction companies expressed in the survey, especially by small enterprises.

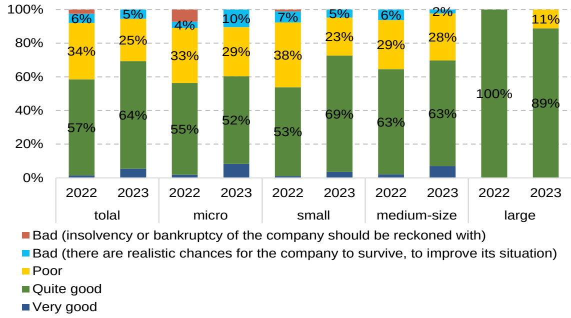
As a result of the decline in the level of work in progress in residential construction, new orders and revenues of construction companies, the quality of settlements with contractors deteriorated, which was particularly intensified in the opinion of 44% of large companies and 40% of small companies. In the case of a significant percentage of large companies (60%), this led to the problems with timely settlement of liabilities. The deterioration in liabilities settlements led to problems in maintaining financial liquidity in the case of 40% of large companies and 44% of small companies.

With the prevailing good assessments of the company's situation, the assessments of the change in return on sales (ROS) obtained in 2023 compared to 2022 varied significantly. The predominant percentage of the surveyed companies indicated a slight improvement in return on sales (33%), 7% noted a significant increase, and 16% registered a slight decrease, and 12% a significant deterioration, with the largest percentage of large companies (20% of respondents) indicating a significant decrease in ROS. In the group of 10 cities, the percentage of companies that achieved higher profitability was slightly higher, namely 41%, compared to 37% in the group of 6 cities. Only according to 20% of the surveyed companies, the level of ROS achieved was satisfactory, with significantly more such responses from large companies(44%). Dissatisfaction with the achieved ROS was expressed in the survey by 39% of respondents, on account of similar indications from groups of micro, small and medium-sized companies. The distribution of ROS in comparable periods of 2022 and 2023 is dominated by values from the range (0%-5%) for all groups of companies submitting F01 reports (52% and 44% of large companies, 46% and 38% of medium-sized companies and 23% and 22% of small companies, respectively). In 2023, compared to 2022, in each group of companies, the percentage of companies with ROS in the dominant range increased, which means a slight improvement in profitability in these group of construction companies. On the other hand, the higher differentiation in ROS in 2023 than in 2022 indicates an increase in the polarization of companies in terms of performance, which may to some extent justify the high percentage of companies dissatisfied which the achieved ROS.

E. Mączyńska's bankruptcy prediction index determined for the last reporting period indicated a decrease in the percentage of companies in an extremely bad situation, which according to the data at the end of 2023 Q3 amounted to 12% among large companies compared to 17% a year earlier, 14% among medium-sized companies compared to 17% and 28% of micro companies at the end of 2023 Q2compared to 33% at the end of 2022 Q2.

The averaged financial data of companies providing services in residential construction indicate a high share of liabilities (40%) in the structure of liabilities of small companies in the first half of 2023, which may point to some of these companies experiencing problems with maintaining financial liquidity and covering liabilities. The deterioration of the situation in the construction industry in terms of financial settlements is highlighted by Coface data, according to which the number of insolvencies of construction companies in the period of 2023 Q1- Q3 amounted to 483 and was 128% higher than in the same period of 2022, and 71% of these were micro and small enterprises. The positive image of construction companies revealed in the general questions of the survey deteriorates slightly with a deeper analysis of the answers and financial data, especially in the group of small companies and then in the group of medium-sized entities. Most predictions for 2024 regarding changes in demand for the services provided indicate that it will remain unchanged compared to 2023, with the most doubts as to the direction of changes expressed by representatives of medium-sized companies. The variability of assessments of the situation and sentiments seen in 2023 in the housing market expressed in the survey is confirmed by fluctuations in the economic situation in the Poland Statistics (GUS) survey.

Figure 102 Assessment of the current financial standing of construction companies in questionnaire surveys (%)

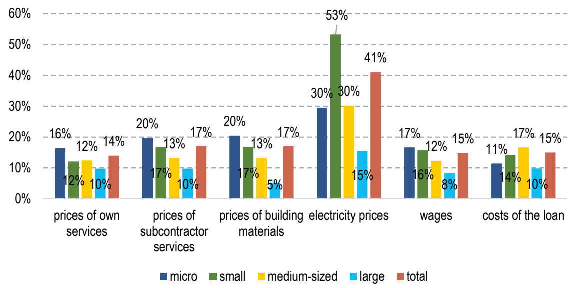


Source: NBP survey

Figure 103 Assessment of y/y change in the financial standing of construction companies in 2023 Q3 according to E. Mączyńska's model

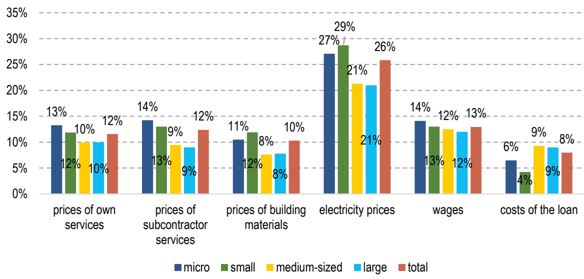
Source: NBP survey

Figure 104 Average reported changes in own prices and the basic cost components in 2023 compared to 2022, by company size



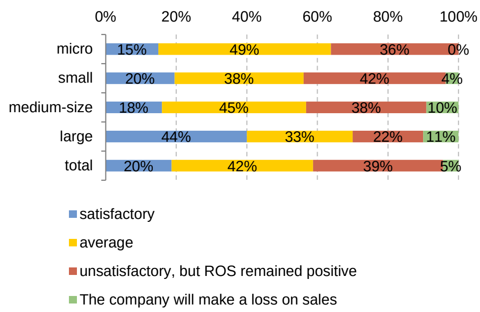
Source: NBP survey

Figure 105 Average expected changes in own prices and the basic cost components in 2024 compared to 2023, by company size



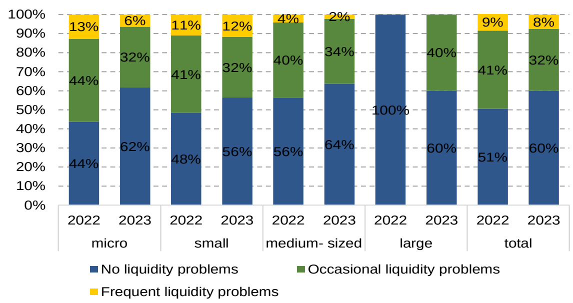
Source: NBP survey

Figure 106 Evaluation of the Return on Sales achieved in 2023



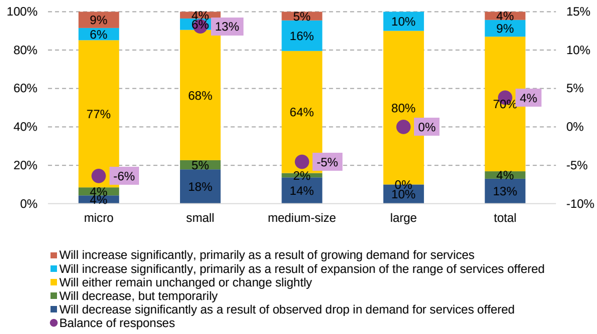
Source: NBP survey

Figure 107 Frequency of occurrence of liquidity problems in 2022-2023 by company size



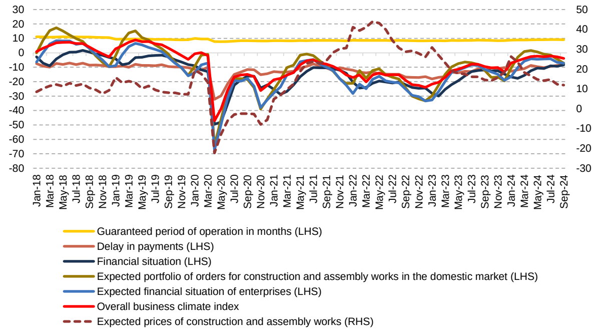
Source: NBP survey

Figure 108 Expected change in demand for services in 2024 compared to 2023.



Source: NBP survey

Figure 109 Business climate in construction - highlights



Source: NBP survey

www.nbp.pl