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Information on home prices and the situation in the housing and commercial real estate market in Poland in 2021 Q1

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The analysis of the situation in the real estate market in Poland in 2021 Q1¹ leads to the following remarks:

- In 2021 Q1, high activity in the housing market rebounded, after a temporary slowdown in 2020 caused by the effects of the pandemic.** The number of housing contracts sold in the largest primary markets was significantly higher than in the previous quarter, but annual sales continued to be lower than the sales recorded in 2017-2019. Housing construction costs (materials and labour) grew at a slightly slower pace than in the previous quarters. Land prices continued to rise, which was related to the replenishment of "land banks" by real estate developers. In 2021 Q1, once again, a record number of dwellings were completed and put on the market, which was the result of developers' activity in the previous years. We observed a year-on-year growth of average transaction prices per square metre of dwellings in the primary and secondary markets of the analysed cities.
- In Q1 almost all groups of markets saw quarter-on-quarter increases in home prices (see Table 1). The growth rates of prices also increased. Transaction prices in the primary market (PMT) increased in all groups of cities due to a larger scale of sales of better-located and more expensive dwellings. Rising prices of housing in the primary markets (mainly in the developer's standard, i.e. to be finished by buyers on their own and purchased with delayed delivery) amid high demand boost buyers' interest in the cheaper secondary market, where dwellings are usually ready for occupancy. In the secondary market, an increase in offer prices (SMO) and transaction prices (SMT) was observed in all groups of cities.** Hedonic index-adjusted prices rose in all groups of cities, which means that similar dwellings were more expensive than in the previous quarter.

Table 1 Q/Q price growth of a square metre of housing in the analysed cities in 2021 Q1.

	PMO	PMT	SMO	SMT
Gdańsk	3.9%	12.0%	-0.4%	7.6%
Gdynia	5.9%	14.4%	5.2%	4.6%
Kraków	1.4%	6.9%	4.0%	7.7%
Łódź	1.4%	4.0%	8.0%	8.4%
Poznań	0.1%	7.4%	1.7%	-1.2%
Wrocław	5.0%	0.8%	6.8%	10.1%
Warsaw	2.0%	8.6%	4.8%	1.3%
6 cities	2.5%	7.1%	3.8%	6.9%
10 cities	2.0%	6.7%	8.0%	7.8%

Source: NBP

Note to Table 1: the growth rates resulting from the average transaction price are underestimated due to the limited number of transactions with RCiWN (smaller number of more expensive dwellings). The revision will take place in the next quarter.

¹ The analysis carried out in this issue of the *Information* is based on data available as at the end of 2021 Q1. Data collected in the NBP database during the quotation include offers valid as at 1 March 2021 and transactions concluded in the period from December 2020 - February 2021. Due to delays in access to some data, some charts include information until 2020 Q4 inclusive. 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 listings (BaRN basis) concerning 2021 Q1, approx. 112.6 thousand records were collected, including approx. 29.4% records concerning transactions and 70.6% records concerning offers. Altogether, over 4.0 million records were collected in the base, including 24.4% records concerning transactions and 75.6% records concerning offers.

- **The growth rate of the average transaction rental rates per sq.m. of dwellings** (excluding service charges and utility fees) **decreased in all groups of cities both in q/q and y/y terms.** (see Figure 15). Despite a considerable decline in rental income, the number of dwellings offered for sale was not very significant². Investors continued to look for safe investment in real estate rather than expect attractive rates of return. Large cities under analysis continue to see a high supply of housing offers on long-term rental markets, including those purchased as an investment. This may put an downward pressure on rent rates in the future.
- **Quarterly sales of residential construction contracts in the six largest primary markets in Poland**³ (see Figure 56) **increased by 19.5 thousand compared to the previous quarter. At the same time, approx. 13.9 thousand contracts for housing construction, i.e. approx. 14.3% more q/q, were concluded.** The supply of unsold contracts for the construction of dwellings put on the market decreased from the previous quarter by approx. 5.9 thousand and amounted to approx. 42.1 thousand at the end of the period. The number of contracts with dwellings commonly referred to as “completed dwellings” put on sale in 6 cities dropped in comparison with the previous quarter to 3.2 thousand while the home selling time in the primary market in the six largest markets decreased to 3.1 quarters from 3.6 quarters in the previous quarter (see Figure 62). These figures indicate that supply is getting less elastic against demand.
- **The index of the estimated availability of housing in large cities** (based on average wages in the enterprise sector) **increased slightly in the analysed quarter to the level of 0.79 square metres** and was 0.31 sq.m higher than the record low registered in 2007 Q3 (i.e. by approx. 64%). The estimated maximum available housing loan⁴ was the highest during the entire transition period and increased for the average household, similar to the estimated affordability of loan-financed housing⁵. Rising household wages and low interest rates were the main factors contributing to the ongoing increases in the last two availability indicators.
- **The current level of rental rates in long-term rental (average in the 7 largest cities – Warsaw and 6 cities) indicated lower profitability of housing rental** (see Figure 23). Still, housing investment (excluding transaction costs) was competitive compared with interest rates on bank deposits, yields on 10-year Treasury bonds or investment in commercial real estate.
- **In 2021 Q1, the value of new housing loan disbursements in Poland was higher than in the corresponding period of 2020.** The value of new PLN-denominated contracts for residential mortgage

² On the basis of the NBP survey "The analysis of demand and supply in the secondary residential market including the housing rental market", April 2021.

³ Based on JLL (former REAS) data.

⁴ The maximum housing 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 policy, including lending terms and criteria.

⁵ Affordability of loan-financed housing – a measure specifying how many square metres of housing may be purchased with a residential mortgage loan obtained with the average monthly wage in the enterprise sector in a particular market (Statistics Poland), in view of a given bank's lending requirements and loan parameters (interest rate, amortisation period, minimum subsistence level understood as the minimum income after payment of loan instalments) at an average transaction price of housing (40% in the PM and 60% in the SM) in a particular market (BaRN). The pace of changes of the index and differences between particular markets provide important information.

loans for households^{6,7} (excluding renegotiated contracts) according to NBP data⁸, amounted to PLN 17.4 bn in 2021 Q1, i.e. it was by approx. PLN 1.2 bn (7.5%) higher than in the previous quarter and by approx. PLN 2.5 bn (17.0%) higher than in 2020 Q1. The results of the NBP survey on the situation in the credit market in 2021 Q1⁹ indicate that banks substantially eased the standards of granting residential mortgage loans and simultaneously raised the margin for riskier loans. In 2021 Q2, banks anticipate further easing of lending policy criteria and the continuation of demand growth.

- **The estimated rate of return on equity (ROE) on development projects for housing developers amounted to approx. 23% and increased in relation to the previous quarter.** This was the result of a rise in transaction prices, which more than offset the increase in the costs of housing producers. According to the Coface report¹⁰, a significant increase in the number of bankruptcies was recorded in 2021 Q1 (mainly in transport, services, agriculture and trade). The number of bankruptcies in construction rose (from 30 in 2020 Q4 to 53 in 2021 Q1) and the number of real estate businesses increased (from 3 to 25, respectively). Yet, the share of construction in the total number of bankruptcy and restructuring proceedings decreased y/y by 3 p.p. i.e. to 10% (see Figure 35).

⁶ According to the BIK data, in 2021 Q1, banks and credit unions granted approximately 56.6 thousand residential mortgage loans to individual clients totalling approx. PLN 17.3 bn (in 2020 Q1, 59.5 thousand, PLN 17.2 bn, respectively). The negative y/y growth in sales of housing loans recorded in 2021 Q1 concerned almost all groups of loans, both in terms of number and value. Only the share of loans in excess of PLN 350,000 is constantly increasing, from 47.0% in 2020 Q1 to 52.4% in 2021 Q1 (in terms of their value) and from 27.6% to 31.6% (in terms of their number), respectively. As of 7 June 2021 mortgage loan repayment deferrals (bank moratoria) were reported to the BIK database in respect of 1614 housing loan accounts in PLN in the amount of PLN 366 million and approx. 587 thousand foreign currency loans in the amount of PLN 194 million.

⁷ According to the AMRON report, in 2021 Q4, the number of granted residential mortgage loans amounted to 57.2 thousand (compared to 53.8 thousand in the previous quarter), the value of newly granted mortgage loans amounted to PLN 17.9 billion (compared to 16.4 thousand in the previous quarter), and the average amount of a residential mortgage loan granted was approx. PLN 313.2 thousand (compared to 305.1 thousand in the previous quarter). The shares of loans with the LtV 50-80%, 30-50% and up to 30% increased (to approximately 45.2%, 6.6% and 17.1%, respectively), while the share of loans with the LtV above 80% decreased (to approximately 31.2%). In the structure of new loan agreements, compared to the previous quarter, the share of housing mortgage loans with a maturity of 25 to 35 years (67.3%) and above 35 years (1%) increased, while the share of loans with other maturities decreased. As at the end of 2021 Q1, the number of active loan agreements (during repayment) amounted to approx. 2.49 million (compared to 2.47 million in 2020 Q4), while their value at the end of the period under discussion amounted to PLN 480.2 billion (compared to 476.3 in the previous quarter).

⁸ Data concerning the interest rate and the value of new residential mortgage loans based on the NBP data available in the "4 OPN2PLN" tab, on the NBP site: https://www.nbp.pl/home.aspx?f=statystyka/pieniezna_i_bankowa/oprocentowanie.html. According to NBP data, at the end of March 2021 the value of residential mortgage loans stood at PLN 480.7 billion, i.e. PLN 4.1 billion higher than in the previous quarter and PLN 20.6 billion higher than the end of March 2019 figure (a 4.5% y/y increase, while in 2020 Q1 it increased by 9.4%).

⁹ "Situation in the credit market - results of the senior loan officer opinion survey, 2021 Q1" NBP, April 2021 https://www.nbp.pl/systemfinansowy/rynek_kredytowy_2021_2.pdf. According to the entities surveyed, the significant increase in demand resulted from, among others, the improvement in the situation in the economy and in the housing market and easing of the conditions and criteria for granting housing loans. Banks were easing lending criteria due to pressure from other institutions, including banks and mortgage banks.

¹⁰ According to the opinion of Coface experts (*Annual Bankruptcy Report COFACE – insolvency of enterprises in Poland in 2020 Q1*), in 2020 Q1 the number of bankruptcies significantly increased, which is also due to the simplified proceedings for approval of the arrangement introduced in June 2020 by the "COVID Act". The high increase in the number of proceedings, which would be adequate to the significant deterioration of economic activity recorded in Poland this year, is kept in check by various forms of support for enterprises and a moratorium on submitting bankruptcy petitions.

- **In 2021 Q1, a historically high number of dwellings were completed in Poland¹¹, i.e. 7.4% more y/y** (see Figure 51). Mainly housing units for sale and rental (57% share vs. 62% in 2020 Q1), houses (41% vs. 36%) were delivered, while cooperative and other dwellings constituted 1% each, i.e. remained unchanged on the 2020 Q1 figures. The share of completed dwellings increased slightly in Warsaw (9% vs. 8% in 2020 Q1), decreased in other cities (24% vs. 28% in 2020 Q1) and increased in the remaining part of Poland (66% vs. 64% in 2020 Q1). **The number of dwellings started¹² was also historically high, i.e. 21.2% higher than that recorded in 2020 Q1** (see Figure 52). Also in this case, homes for sale and rental (63% vs. 61% in 2020 Q1) and houses prevailed (35% vs. 37% in 2020 Q1). It should be added that home starts shifted from Warsaw (4% share of home starts vs. 8% in 2020 Q1) to other analysed cities (share of 31% vs. 25% in 2020 Q1), with a decrease in the share in the rest of Poland (65% share vs. 67% in 2020 Q1).
- **The estimated high rates of return on housing development projects and persistent consumer demand urged real estate developers to apply for new home building permits¹³**. Permits were granted mainly for the construction of housing for sale and rental (67% share in the total number of permits vs. 63% in 2020 Q1), and houses (32% vs. 37% in 2020 Q1). Despite the increase in the number of building permits granted for cooperative and other dwellings, their share was still insignificant (around 1%). The share of building permits for dwellings in 16 cities increased to approx. 39% (from 35% in 2020 Q1), fell in Warsaw to 5% (from 9%), and remained at 56% in the so-called "rest of Poland". It should be added that the big number of building permits was largely the result of delayed processing of permit applications submitted before the end of 2020, including those collected before the change in the regulations on energy efficiency requirements for buildings¹⁴.
- **The commercial real estate market has been severely affected by the Covid-19 pandemic, and the resulting limited trade and corporate activity will affect rents and real estate sale transactions, particularly in a longer perspective¹⁵**. The pandemic, including the massive shift to teleworking and the growth of e-commerce, have accelerated the changes in the commercial real estate market. Some tenants, especially high-profile tenants, seized the opportunity to negotiate rent rate reductions. On the other hand, real estate purchase and sale transactions are the result of a long negotiation process (including due diligence), therefore, on the investment market, the possible impact of the pandemic will be visible in the longer term.

¹¹ According to the Statistics Poland data, in 2020 Q1 approx. 53.3 thousand homes were completed and made ready for occupancy, which is approx. 3.8 thousand more compared to 2020 Q1, however, approx. 12.2 thousand less than in the previous quarter. A total of 225.8 thousand dwellings were completed and made ready for occupancy over the last 4 quarters, i.e. approx. 16.2 thousand more than in the corresponding period of last year (a rise of 7.0% y/y).

¹² According to the Statistics Poland data, in 2020 Q1 the construction of approx. 63.7 thousand homes was started, which is approx. 11.1 thousand more compared to 2020 Q1, and approx. 7.2 thousand more than in the previous quarter. Altogether, the last 4 quarters saw the launch of construction of approx. 235.0 thousand dwellings, i.e. approx. 1 thousand less than in the same period of last year (a decrease of 0.4% y/y).

¹³ According to the Statistics Poland data, in 2020 Q1 approx. 84.3 thousand home building permits were issued in Poland, i.e. approx. 25.2 thousand more than in 2020 Q1 and approx. 0.2 thousand more than in the previous quarter. In the last four quarters a total of approx. 301.2 thousand permits were issued, i.e. 30.8 thousand more than in the corresponding period of last year (a 11.4% y/y increase).

¹⁴ Regulation of the Minister of Infrastructure of 12 April 2002 concerning technical conditions to be met by buildings and their location, in Paragraph 329 indicates that as of 1 January 2021, a new energy standard applies and the value of primary energy (the so-called EP ratio) is decreased.

¹⁵ In the commercial market, data on rents is for 2020 Q4.

- **In 2021 Q1, in the office real estate market observed growing imbalances resulting from the oversupply of space for rent in relation to demand for it.** The supply of new space and space under construction remains high which is related to the launch of pre-pandemic construction projects that investors want to complete. According to consulting company data, at the end of the period under discussion, the total stock of office space in the nine largest office markets¹⁶ stood at approx. 11.9 million square metres; approx. 1.1 million square metres (i.e. approx. 9.3% of the existing stock) of office space was under construction. The total vacancy rate in these markets rose to 12.1% against 11.3%¹⁷ at the end of 2020 Q4, and in Warsaw it amounted to 11.4%¹⁸ against 9.9% in 2020 Q4. The vacancy rate of office space depends on the age¹⁹ and mainly on the location of the office building.²⁰ Construction of almost 10% of additional space does not mean an automatic increase in vacancy rates, however, it will generate significant competition for tenants, especially as regards older buildings or those in poorer locations. Consequently, in addition to an increase in vacancy rates, we will see the withdrawal of this space from the market or its conversion into modern and marketable space.
- **In 2021 Q1, the retail sector was still affected by the COVID-19 pandemic which overlapped with the market changes already under way, namely the growth of online trading.** The stock of modern retail space at the end of 2021 Q1 amounted to over 12.2 million sq m, which translates into a saturation of 318 sq m/1000 inhabitants.²¹ On the other hand, there were approximately 360,000 sq m²² of modern retail space under construction. This low growth of new space may mean that investors consider the market to be saturated. This is also confirmed by the emergence of projects transforming the existing shopping centres into shopping, retail and entertainment centres. The problem of this sector is, therefore, to retain the existing customers, and to a lesser extent to compete with new projects.
- **The modern warehouse space market in Poland was still in the expansion phase while the supply and demand remained high.** Unlike the retail market, the market of modern warehouse space benefits from changes in consumer habits observed previously and enhanced and accelerated by the pandemic. The segment of warehouses located in urban areas is also developing, including quite close locations, in order to shorten the product delivery time. As at the end of 2021 Q1, the total stock of the warehouse space market increased to 21.4 million sq. m, with over 2 million sq. m of modern warehouse space under construction. The vacancy rate across the country recorded a slight decline to 6.5%²³ compared to 6.6% in 2020 Q4.
- **In 2021 Q1, the estimated value of commercial real estate purchased for investment purposes²⁴, i.e. for rental, amounted to nearly EUR 1 billion.** Approximately 37% of the transaction value concerned warehouse space, 32% office space and only 8% retail space.

¹⁶ The nine office space markets include: Warsaw, Kraków, Wrocław, Tri City, Katowice, Łódź, Poznań, Szczecin, Lublin.

¹⁷ See: Colliers International Report: Market Insights, 2017 Q1, 2021 Q3, Poland.

¹⁸ See: Colliers International Report: Market Insights, 2017 Q1, 2021 Q3, Poland.

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

²⁰ See: Knight Frank, Report: Poland, Commercial Market, 1st half of 2018.

²¹ It is estimated that this value is 15% lower than the average for the entire European Union.

²² See: Colliers International Report: Market Insights, 2021 Q1, Poland.

²³ See: Colliers International Report: Market Insights, 2021 Q1, Poland.

²⁴ Based on Comparables. pl data. The above investments concern the sale of the entire operating company which rents the building and derives income from it. Such transactions are concluded between: 1/ the real estate developer who has commercialised the property and sells it to the investor, or 2 / two investors.

- **The exposure of the financial sector to commercial real estate (loans to housing developers, loans for office, retail, warehouse real estate and other loans) comes in two main forms. The first is financing a particular property with a loan granted for it.** Usually, in this case, the loan is secured on the particular property, but alternative forms of security are also possible. At the end of 2021 Q1, the value of those loans granted by banks in Poland²⁵ amounted to PLN 64.6 billion²⁶, including 58% of loans denominated in EUR. The value of corporate debt resulting from residential real estate at the end of 2021 Q1 decreased to PLN 4.2 billion against PLN 4.6 billion in 2020 Q4. The value of loans for office real estate fell slightly to PLN 17.0 billion compared to PLN 17.1 billion in 2020 Q4. The value of loans granted for retail real estate decreased to PLN 18.0 billion as against PLN 18.2 billion in 2020 Q4. The value of loans granted for warehouse and industrial real estate rose to PLN 9.9 billion. On the other hand, the value of loans granted for other real estate stood at PLN 15.6 billion.
- **The second form of banks' exposure are loans taken by enterprises for various purposes, but secured on real estate.** The value of corporate loans secured by mortgage on commercial real estate at the end of 2021 Q1 amounted to PLN 138 bn²⁷, i.e. increased by PLN 4 bn compared to the previous quarter.
- **The quality of loans granted to enterprises for real estate has not changed significantly in relation to the previous quarter.** The non-performing loan ratio among loans granted for office real estate decreased slightly to 6.3% from 6.4% in 2020 Q4; in the case of loans extended for retail space, it increased to 14.1% compared to 13.5% in 2020 Q4. This ratio in the case of warehouse and industrial space stood at 7.6% and in the case of other real estate it increased to 8.5% from 8.2%. The non-performing loan ratio among loans granted for housing developer real estate increased slightly to 18% against the level of 17.5% in 2020 Q4. The relatively high value of this ratio is mainly due to banks holding non-performing loans from previous years in their loan portfolio.²⁸
- **In the market of small office real estate, the median of the asking prices all over Poland and in the majority of the largest cities displayed a slight increase.** Only Warsaw and Poznań posted minor decreases. Also in the case of small retail premises, in the majority of large cities there was a slight increase in the median of offer prices. Warsaw and Kielce, on the other hand, posted a slight decrease in comparison with 2020 Q4.

²⁵ The value of loans intended for commercial real estate construction extended by foreign banks as at the end of 2020 is estimated by experts to have stood at PLN 97 bn. The estimate is calculated as follows: The value of the stock of commercial real estate in Poland (office, retail and warehouse property) as at the end of 2020 has been estimated at PLN 314 bn. This estimate has been calculated by multiplying the volume of stock in square metres (published by consulting companies) by the hedonic valuation of relevant properties estimated by the NBP. In line with international experience, it can be assumed that the LTV in the total stock is 50%, thus the total value of loans for real estate is estimated at PLN 157 bn. By deducting loans granted by banks operating in Poland, (PLN 60.4 bn), we obtain the estimated amount of loans granted by banks operating abroad (PLN 97 bn). These loans include loans granted by the financial sector and the non-financial sector (which in turn usually incurs debt in the financial sector). In line with S Recommendation, since June 2013, the maximum LTV for commercial real estate in Poland has been 75% or 80% if the part of the exposure exceeding 75% LTV is adequately hedged, or if the borrower has submitted additional collateral in the form of the freezing of funds in a bank account or in the form of a pledge on debt securities of the State Treasury or of NBP, denominated in PLN.

²⁶ FINREP data.

²⁷ The fall in debt by PLN 4.6 bn in comparison with Q3 was mainly due to the repayment of loans denominated in PLN.

²⁸ See: Financial Stability Report, NBP, December 2018.

- **A new hedonic index of prices and appraisals of office real estate²⁹ in Warsaw and all over Poland and retail properties all over Poland allows us to conclude that transaction prices and appraisals of such commercial real estate were stable in 2018-2020.**
- **The analysis of the estimated return on equity (ROE) on investment in the construction and commercialisation of A-class office buildings³⁰ in Warsaw, Poznań and the Tri-City shows that using only equity, such an investment does not generate a significantly higher ROE than 10-year Treasury bonds.** On the other hand, with a very high and risky leverage of 80%, this investment, with the support of the tax shield, generates a higher ROE. The analysis takes into account the effective rent, i.e. the average rent adjusted by the vacancy rate in a given market.
- **Also, the analysis of the estimated rate of return on equity (ROE) on investment involving the purchase of a B-class office building from the existing stock³¹ in Warsaw shows that the use of the high and risky financial leverage (80% LTV) allows, with the support of the tax shield, to increase the ROE.** However, if the investor used only equity, the estimated rate of return would not differ significantly from the yield on 10-year Treasury bonds. The estimated rate of return on an investment in a newly constructed office building and the estimated rate of return on the purchase of the existing one should not be compared, as in reality, on the cost side, one has to take into account the time of construction (which, for simplicity, has been reduced to 1 year) and the time necessary to commercialise the facility, which significantly affects the risk level of such an investment. The surplus over all these costs creates the developer's profit, which at the next stage (when the building is sold) is already included in the price of the facility and is usually called as the urban land rent.
- **Both the analysis of the estimated rate of return on the construction of a new office building and the purchase of an existing office building shows** that rates of return on investing in the office real estate market are not significantly higher than the yield on 10-year Treasury bonds. The above analysis does not take into account the risk posed by the COVID-19 epidemic, which may significantly reduce the demand for office space and therefore the flow of money generated from rent.

²⁹ The index was calculated on the basis of transaction prices (NBP and Comparables.pl data) and bank appraisals (AMRON data). As a result, a larger number of commercial facilities and their pricing attributes were taken into account. The regression method with zero-one time variables was applied, which, given the still relatively small number of observations in individual years, makes it possible to use as much information as possible from the rolling 10-year period.

³⁰ For the sake of simplicity, it was assumed that the whole process of construction and commercialisation of a building, i.e. gaining tenants, takes place in one calendar year. The Sekocenbud cost estimate was used in a simplified analysis of the process of a project development. For a more detailed description of the method of calculating the estimated ROE, see the material "Box C. Profitability analysis of investments in newly constructed office real estate and estimated rates of return at different leverage levels" in the Report on the situation in the housing and commercial real estate market in Poland in 2019, NBP.

³¹ A detailed description of the method of calculating the estimated ROE can be found in the material "Box D. Analysis of investment in office real estate and estimated rates of return at different LTV" in the Report on the situation in the housing and commercial real estate market in Poland in 2017, NBP.

The figures below describe the key developments in the housing market in Poland's major cities in 2021 Q1. The charts and figures present:

- 1) home prices (Figures 1– 15),
- 2) availability of loan-financed housing, loan availability, profitability of housing investment (Figures 16– 24),
- 3) mortgage loan disbursements and interest rates (Figures 25– 34),
- 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 35– 50),
- 5) housing construction and the residential market in selected cities in Poland (Figures 51– 64),
- 6) rents and transaction prices of commercial real estate and estimated rate of return (Figures 65– 75),
- 7) conclusions of the questionnaire survey on the demand and supply on the secondary residential market in the country, taking into account the housing rental market (Figures 76–90),
- 8) analysis of profitability of investment in housing in selected larger cities in the country (Figures 91– 102),
- 9) analysis of financial standing of development firms (Figures 103–134), construction companies implementing volume projects (Figures 135–154), companies dealing with sale of construction materials (Figures 155–175), companies manufacturing construction materials (Figures 176–193).

The analysis of housing prices (offer, transaction and hedonic) in the primary and secondary markets as well as housing rents relies on the data derived 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, data from PONT Info Nieruchomości, AMRON and SARFIN Polish Banks' Association and Comparables.pl were used in the analyses. The analyses and reports of JLL (former REAS), the Polish Financial Supervision Authority and the aggregate credit data from the Credit Information Bureau were also used. For the structural market analysis, data published by the Central Statistical Office and many studies containing sector data were used.

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, Warsaw, Wrocław
10M	10 biggest cities: Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin, Zielona Góra
BaNK	Commercial Real Estate Market Database
BaRN	Real Estate Market Database
BIK	Credit Information Bureau
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	Interbank Offered Rate
LTV	The relation of loan value to home value, i.e. Loan-to-Value
MDM	Government-subsidised housing scheme Mieszkanie dla Młodych (Housing for the Young)
NBP	Narodowy Bank Polski
PONT	PONT Info Nieruchomości
RNS	Government-subsidized housing scheme Rodzina na Swoim (Family on their Own)
PM	Primary housing market
SM	Secondary housing market (existing housing stock)
ROE	Return on Equity
WIBOR	Warsaw Interbank Offered Rate
WIG20	Index including top 20 companies listed on the Warsaw Stock Exchange with the highest value of publicly traded shares
ZBP	The Polish Bank Association
ZKPK	Accumulated index of changes in banks' credit policy criteria

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

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

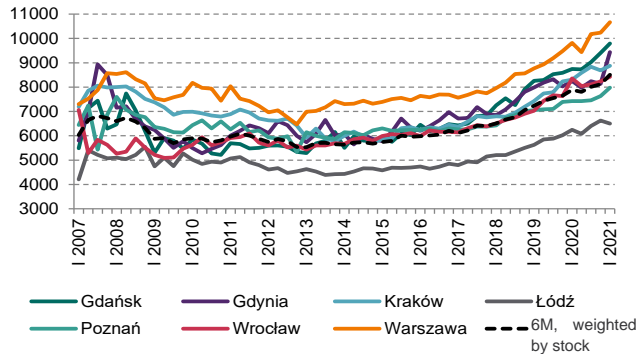
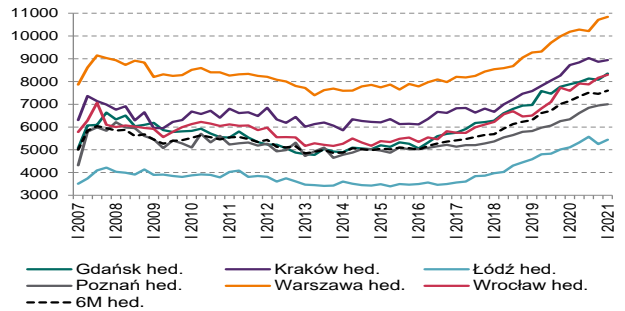


Figure 2 Transaction prices per square metre of housing adjusted by the hedonic index in Warsaw and in 6M



Note: the home price database of NBP (BaRN) has existed since 2006 Q3; description of the database may be found in the "Report on the situation in housing real estate market in Poland in 2019" available on the bank's website.

Source: NBP

Source: NBP

Figure 3 Weighted average price per square metre of housing, offers (O) and transactions (T) - PM

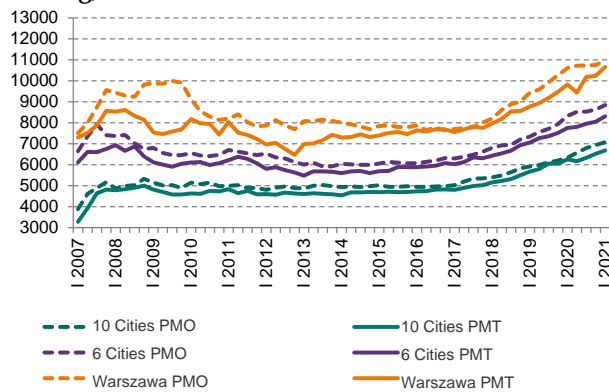
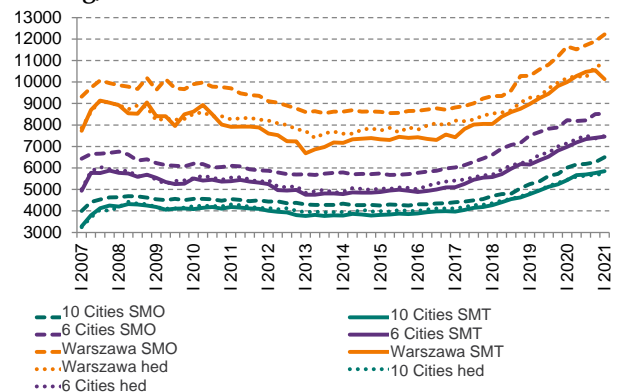


Figure 4 Weighted average price per square meter of housing, offers (O) and transactions (T) - SM



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

Source: NBP

Source: NBP

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

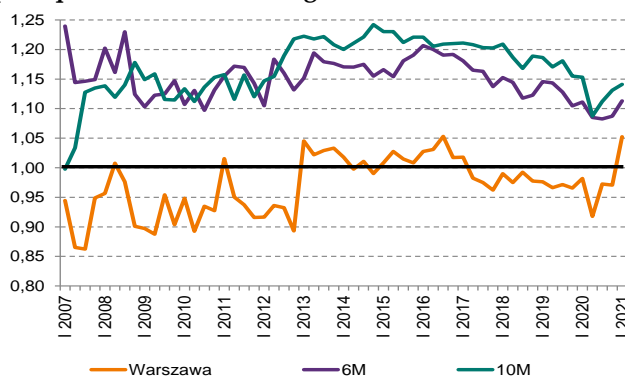
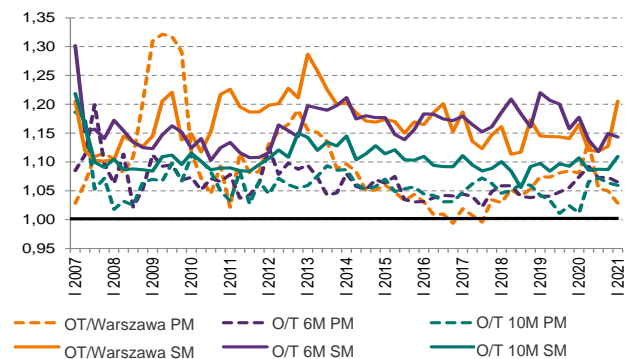


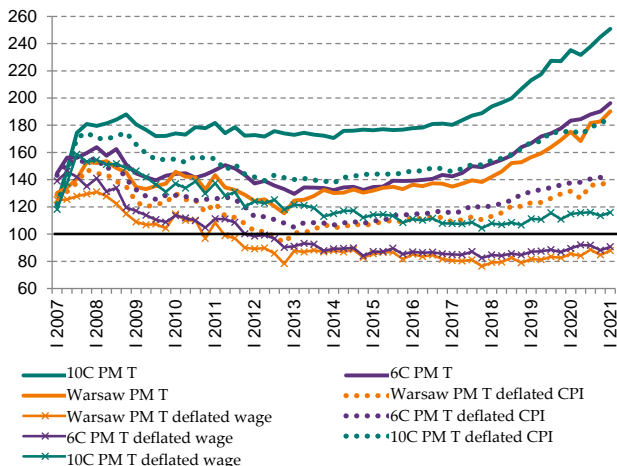
Figure 6 Ratio of the average weighted offer price (O) to transaction price (T) per square meter of housing – PM and SM



Source: NBP

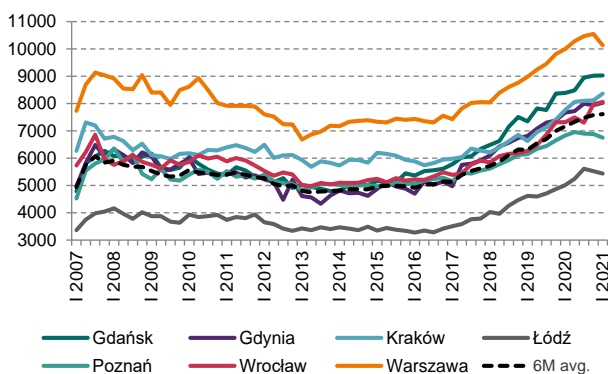
Source: NBP

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



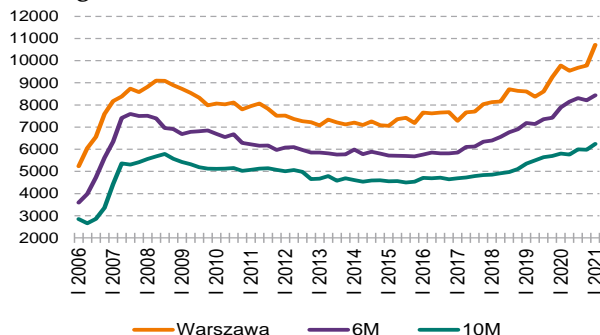
Source: NBP, ZBP (AMRON), Statistics Poland

Figure 9 Transaction price per square metre of housing in SM in Warsaw and in 6M



Source: NBP

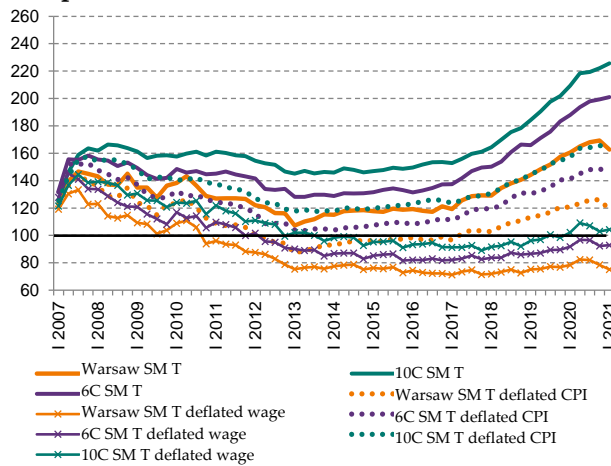
Figure 11 Average offer prices per square meter of housing in PM, selected markets



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

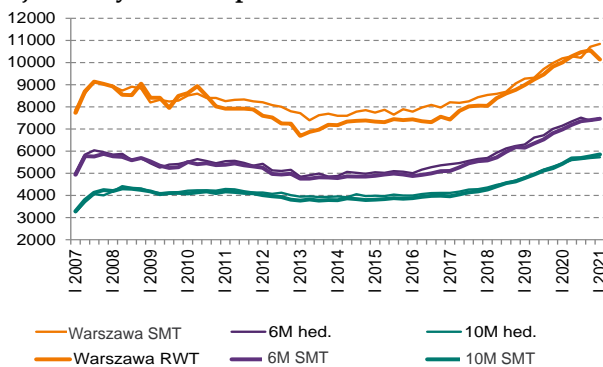
Source: PONT Info Nieruchomości

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



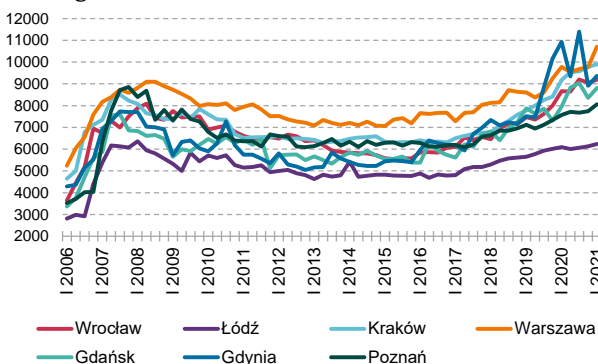
Source: NBP, ZBP (AMRON), Statistics Poland

Figure 10 Weighted average transaction price per square metre of housing in SM and average price adjusted by hedonic price index, in selected markets



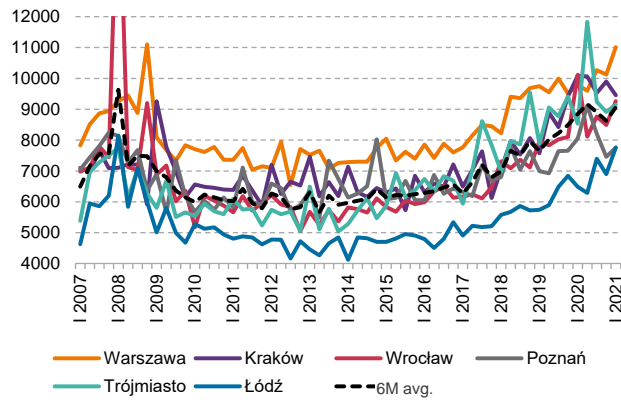
Source: NBP

Figure 12 Average offer prices per square meter of housing in PM (Warsaw and 6M)



Source: PONT Info Nieruchomości

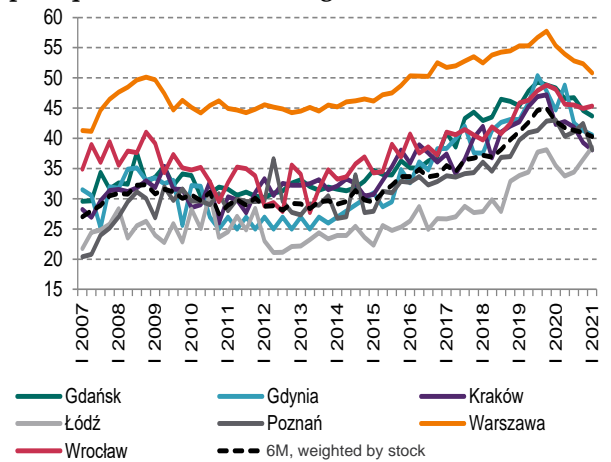
Figure 13 Average offer prices per square metre of housing, new home construction contracts – PM, selected markets



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

Source: JLL/d.REAS

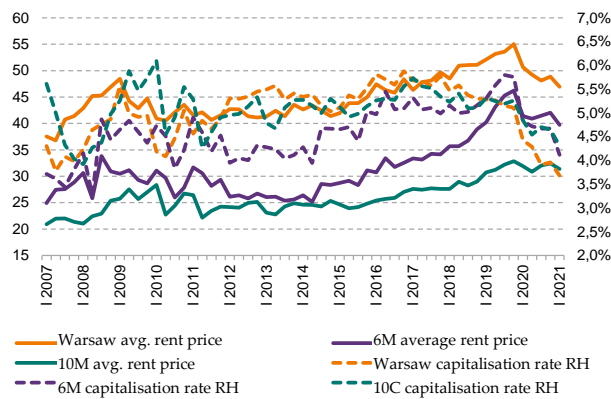
Figure 14 Average rent rates (offers and transactions) per square meter of housing - SM, selected cities



Note: in 2020 the change of sample was observed.

Source: NBP, OLX Group

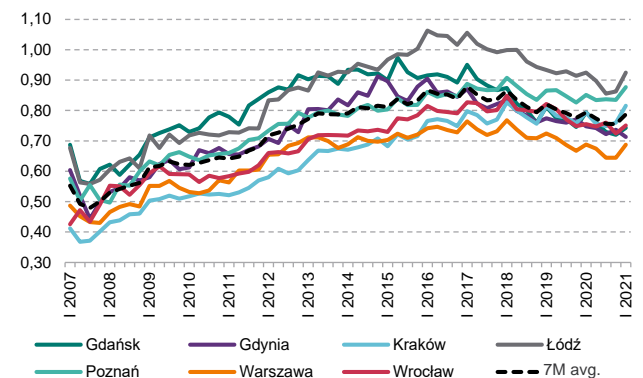
Figure 15 Average rent rates (transactions) per square metre of housing in the SM (left-hand scale) and the estimated profitability of housing rental (right-hand scale) in selected cities



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

Source: NBP, OLX Group

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

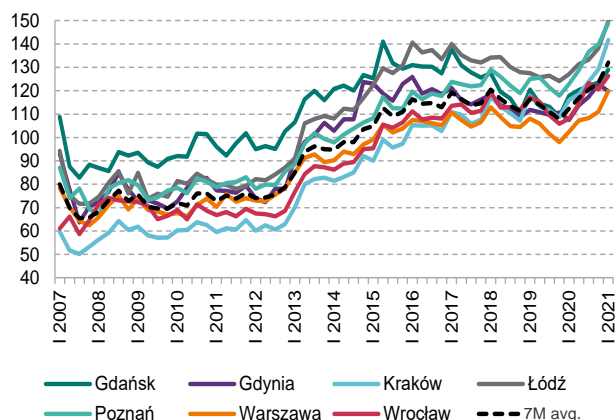


Housing availability – a measure of potential availability to purchase housing at the transaction price for an average wage in the enterprise sector in a particular city. It expresses the number of square meters of housing that can be purchased for an average wage in the enterprise sector in a particular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

Source: NBP, Statistics Poland

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

Figure 17 Estimated availability of loan-financed housing (average for 7M)



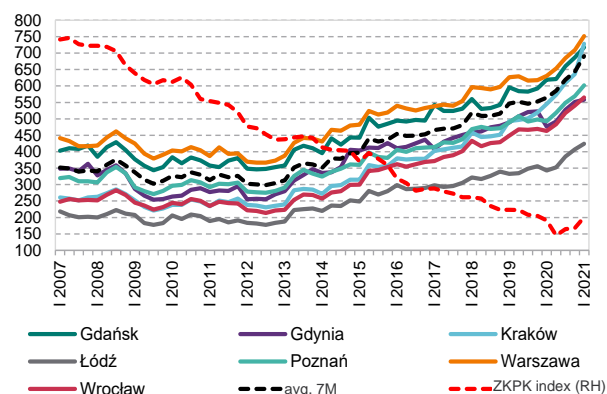
Source: NBP, Statistics Poland

Available 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).

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

ZKPK Index – accumulated index of changes in banks' lending policy criteria; positive values mean easing, and negative values tightening of lending policy as compared to the initial period i.e. 2003 Q4. Computing methods of the index are described in the *Financial Stability Report, December 2012*, NBP.

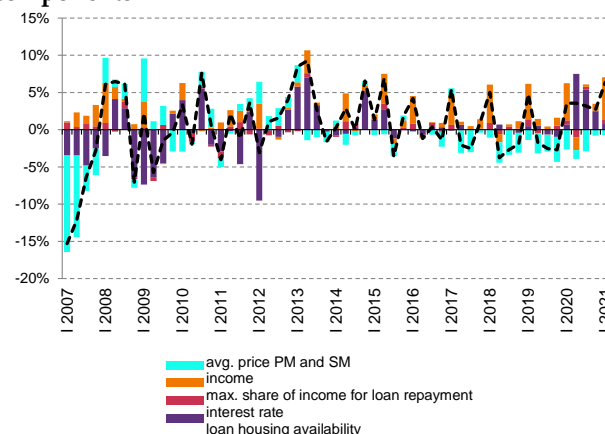
Figure 19 Estimated availability of residential mortgage loan and accumulated index of banks' mortgage lending policy (ZKPK, right-hand scale)



Note: 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.

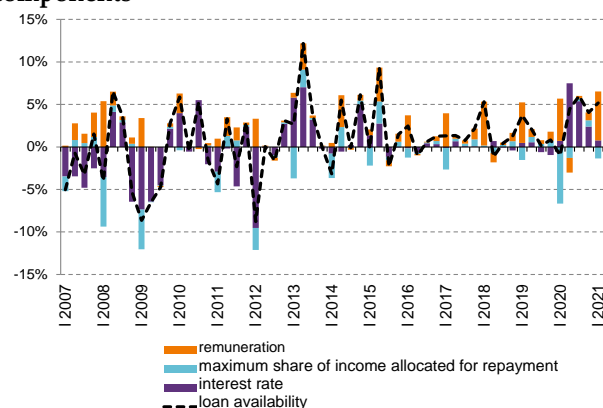
Source: NBP, Statistics Poland

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



Source: NBP, Statistics Poland

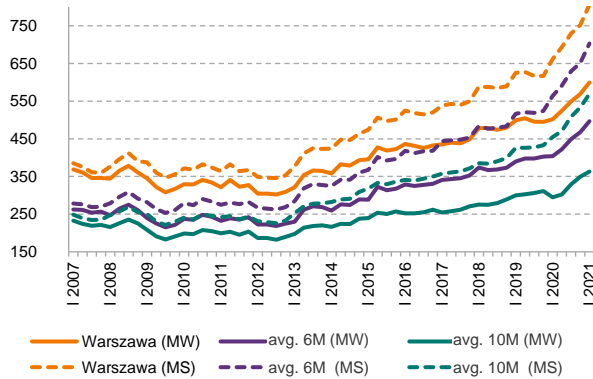
Figure 20 Quarterly changes in the estimated availability of loan-financed housing in 7M and the force and directions of the impact of individual components



Note: the interest on mortgage loan weighted with the share of PLN-denominated and FX loan.

Source: NBP, Statistics Poland

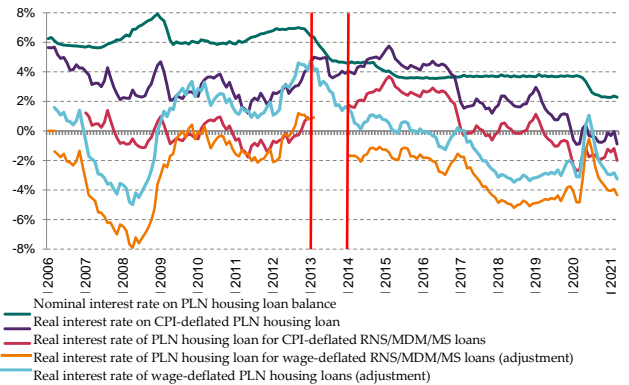
Figure 21 Estimated available mortgage loan for average gross wage in the enterprise sector in selected cities



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

Source: NBP, Statistics Poland, BGK

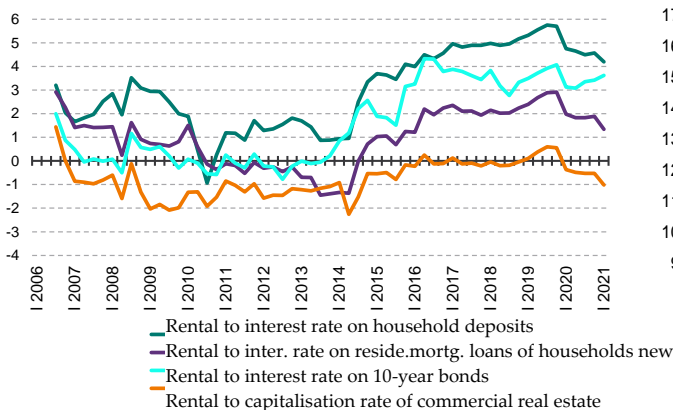
Figure 22 Residential mortgage loan burden for consumer deflated with CPI or wage growth in the enterprise sector



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

Source: NBP, Statistics Poland, BGK

Figure 23 Profitability of home rental (average in Warsaw and 6M) as compared with alternative household investments (differences in interest rates)

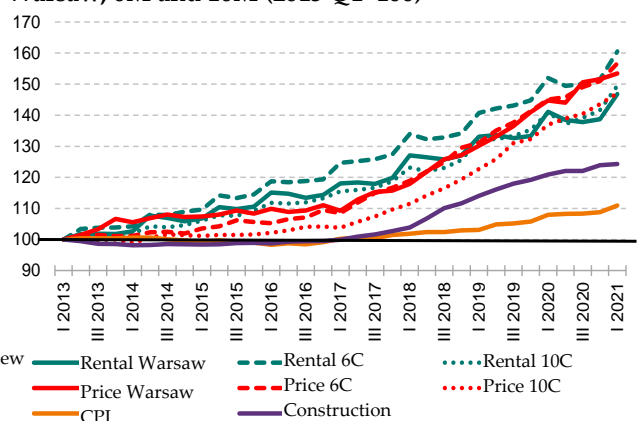


Note to Figure 23: values exceeding 0 denote higher profitability of purchasing property for rental to third persons than other GD investment. This analysis does not take into account high transaction costs in the housing market and potentially long payback periods.

Note to Figure 24: Transaction price of sq. m of a dwelling 50% SM and 50%PM (including costs of finishing; details in the description of Table 7). Cost of construction of half a 1121-302 building (details in footnote 31).

Source: NBP, Statistics Poland

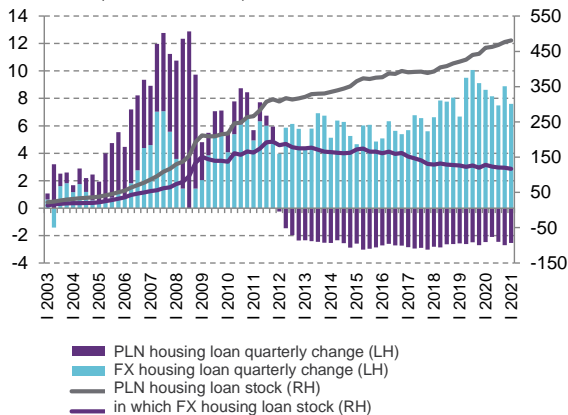
Figure 24 Growth rate of changes in the level of transaction priced (Price) and household income (Result), home construction costs and CPI, average in Warsaw, 6M and 10M (2013 Q1=100)



Source: NBP, Statistics Poland

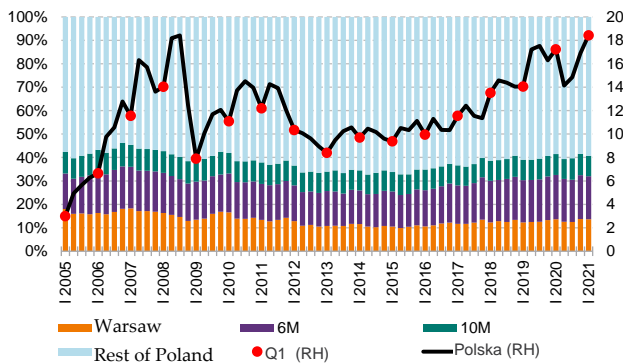
3. Disbursement of housing loans, interest rates

Figure 25 Balance and quarter-on-quarter changes in housing loan receivables from households after adjustments and the currency structure of quarter-on-quarter changes in residential mortgage loan receivables (PLN billion)



Source: NBP

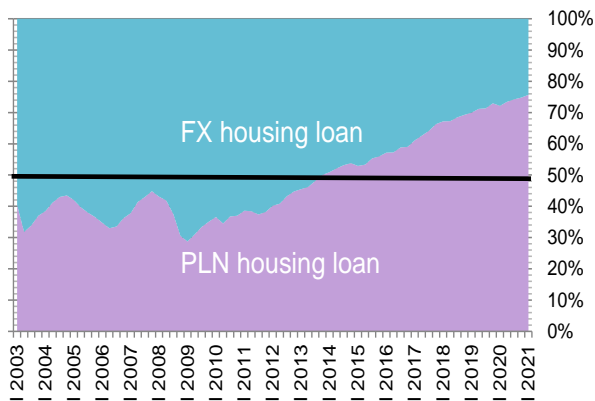
Figure 27 Geographical structure of the value of new residential mortgage loan contracts in Poland's selected cities, quarterly data



Note to Figures 27 and 28: the data inform about signed residential mortgage loan contracts and not the actual disbursement of residential mortgage loans. PP means “the rest of Poland”. Only first quarters are marked by red points in Figure 26.

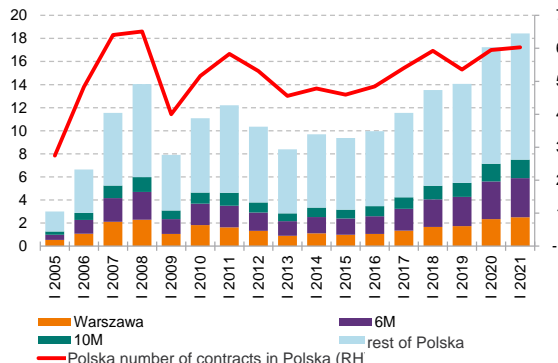
Source: BIK

Figure 26 Currency structure of housing loan receivables from households (%)



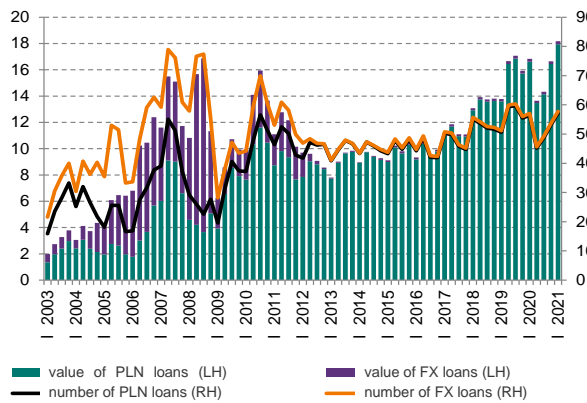
Source: NBP

Figure 28 Value in PLN bn (left-hand axis) and number (right-hand axis) of new residential mortgage loan contracts in Poland's selected cities in the third quarters of 2005-2021



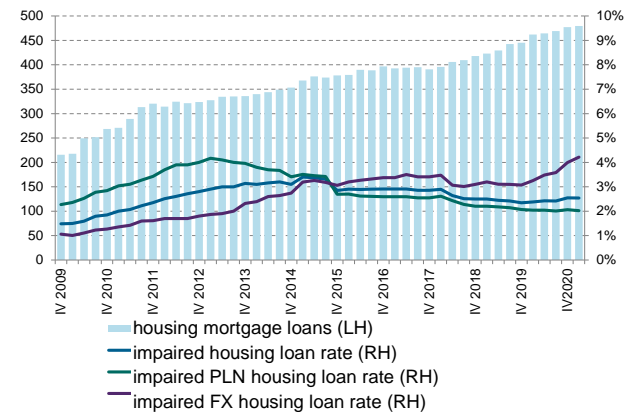
Source: BIK

Figure 29 New residential mortgage loan contracts: value and number, cumulated quarterly values



Source: ZBP (AMRON)

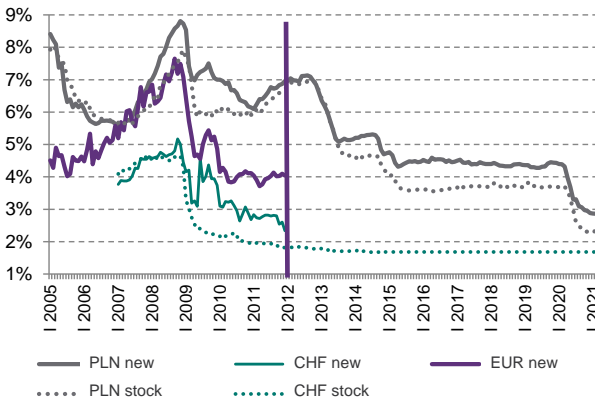
Figure 30 Household loans for housing real estate and loans recognised as non-performing loans



Note: receivables (loans) with determined loss of value – receivables from portfolio B, in relation to which objective premises of loss in value were observed and a decrease in the expected value of future cash flows (in banks using the IFRS) or which were recognized as non-performing receivables in accordance with the Ordinance of the Minister of Finance on establishing provisions against the risk associated with banking activities (in banks using the PAS).

Source: NBP

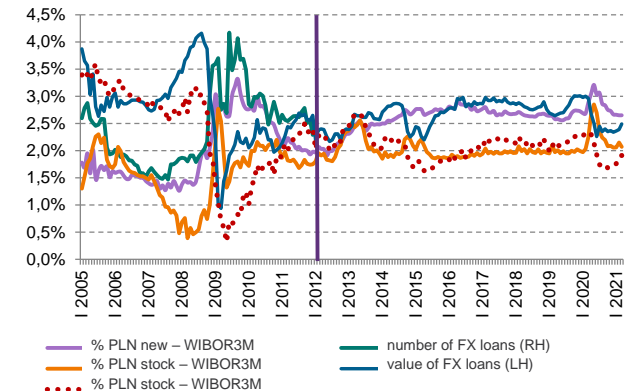
Figure 31 Interest rates on residential mortgage loans for households in Poland



Note to Figure 31 and 32: the violet vertical line separates a period with no FX loans which have not been practically granted since 2012. Note to Figure 31: bank margin is the difference between the housing loan rate (NBP data) and the WIBOR3M rate or the LIBORCHF3M rate.

Source: NBP

Figure 32 Bank margins (for WIBOR, LIBOR, EURIBOR 3M) in the case of residential mortgage loans



Source: NBP

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

Date	Estimated value of mortgage loans in Poland	Estimated value of housing transaction in the PM in 7M	Loan demand including client's down payment in the PM in 7M	Downpayment to loans in the PM in 7M	Cash home demand (no down payment) for the PM in 7M	Estimated share of cash home purchases in the RP in 7M **/
2017 Q1	10,945	6,851	2,495	624	4,356	73%
2017 Q2	12,139	6,480	2,768	692	3,712	68%
2017 Q3	11,794	6,676	2,689	672	3,987	70%
2017 Q4	10,652	7,152	2,429	607	4,724	75%
2018 Q1	11,914	7,015	2,716	679	4,299	71%
2018 Q2	12,807	6,072	2,920	730	3,152	64%
2018 Q3	13,024	5,697	2,969	742	2,727	61%
2018 Q4	12,584	6,759	2,869	717	3,890	68%
2019 Q1	11,865	7,156	2,705	676	4,450	72%
2019 Q2	14,653	6,713	3,341	835	3,372	63%
2019 Q3	14,554	7,282	3,318	830	3,964	66%
2019 Q4	12,770	8,147	2,912	728	5,235	73%
2020 Q1	14,871	9,059	3,391	848	5,669	72%
2020 Q2	13,009	3,260	2,966	742	294	32% ^{***/}
2020 Q3	13,859	6,565	3,160	790	3,405	64%
2020 Q4	16,185	6,834	3,690	923	3,144	60%
2021 Q1	17,392	9,878	3,965	991	5,913	70%

Note to Table 1: the estimates are based on the following assumptions:

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

*/ Loan-financed home purchases comprise purchases made based on 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 S Recommendation), whereas home cash purchases make a difference between the value of transactions and credit funds. In order to calculate the estimated value of PM transactions in 7M (Gdańsk, Gdynia, Kraków, Łódź, Poznań, Warszawa, Wrocław), the average home price 7M (NBP) was multiplied by the average home size in square metres (Statistics Poland data) and the number of housing units sold (JLL/former REAS). 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 7M amounts to approx. 57%. The estimated value of cash transactions was calculated as the difference between transactions in 7C and disbursements of loans requiring buyer's own contribution (down-payment). Data concerning prices for all the periods have been updated.

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

***/ The decline in estimated share of home purchases with down payment on the PM in 7M, recorded in 2020 Q2 is related to very low sale of dwellings in this period associated with the pandemic restrictions on movement.

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

Figure 33 Estimated ROE on residential mortgage loans denominated in PLN for banks in Poland, taking into account interest income and non-interest profit, as well as operating costs and bank tax

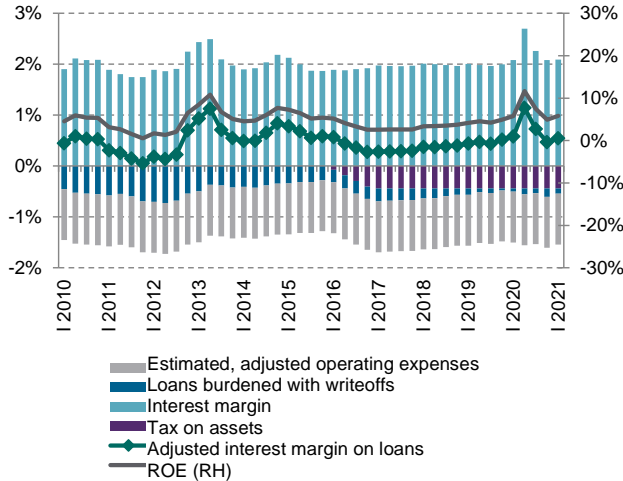
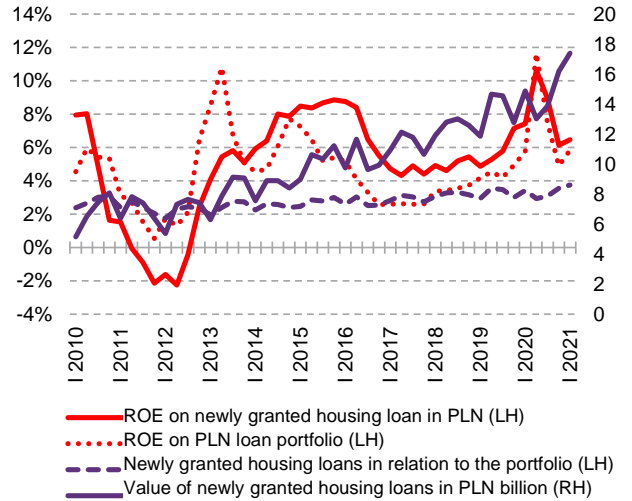


Figure 34 Estimated ROE on residential mortgage loans denominated in PLN for banks in Poland, taking into account interest income and non-interest profit and operating costs and bank tax



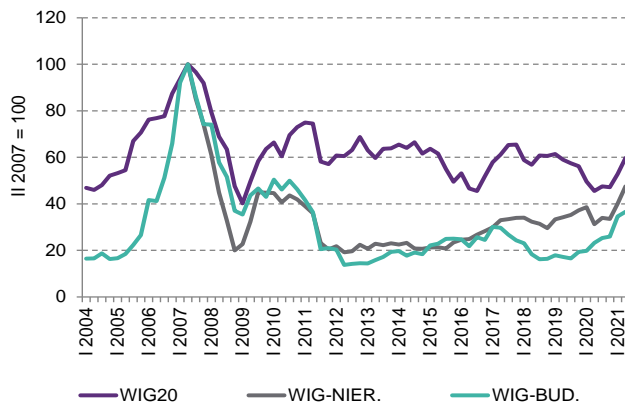
Note to Figures 33 and 34: for calculation, interest income, non-interest income and operating costs were taken into account. The estimated ROE (return on equity) is calculated as the adjusted interest margin in relation to equity. The adjusted interest margin is the interest margin less write-offs, less the estimated operating expenses (adjusted for the non-interest result on residential mortgage loans), less bank tax. Operating expenses less non-interest income were estimated at 1% of the value of the credit portfolio and at 1.5% of the value of new loans. Data concerning equity calculated on the basis of KNF publications. Interest margin based on NBP data.

Source: NBP, KNF

Source: NBP, KNF

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

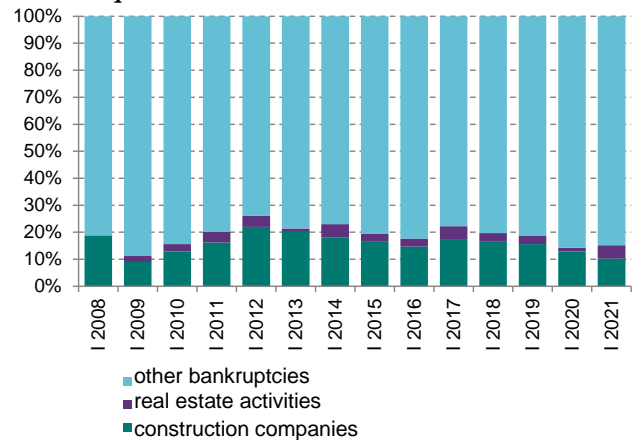
Figure 35 Rescaled exchange indices: WIG20 and for real estate developers (WIG-NIER) and construction companies (WIG-BUD) (2007 Q2=100)



Note: data standardised, 2007 Q2 = 100 (developers' WIG has been listed since 2007 Q2); 2021 Q2, status as at 2 June 2021.

Source: Warsaw Stock Exchange

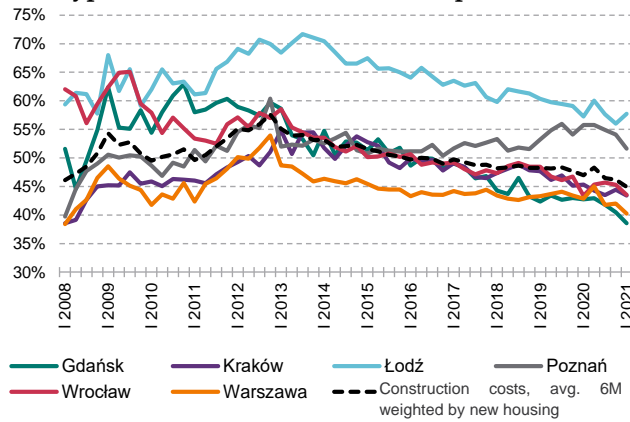
Figure 36 Structure of bankruptcies of enterprises, including the construction industry (as at the end of the first quarter)



Note: breakdown according to the first entry into the KRS.

Source: Coface Poland

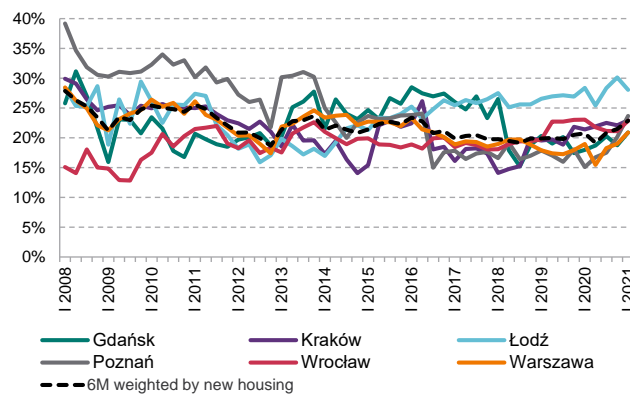
Figure 37 Estimated share of direct construction costs per square metre of the residential building's usable area (type 1122-302³²) in net transaction price in PM 6M



Note to Figure 37: Since 2014 NBP has used its own appraisal of land for residential multifamily construction.

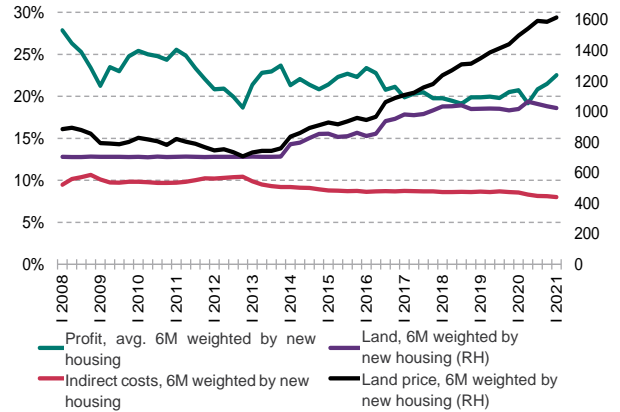
Source: NBP based on Sekocenbud

Figure 39 Estimated rate of return on equity in real estate development projects (type 1122-30233/) in the largest cities



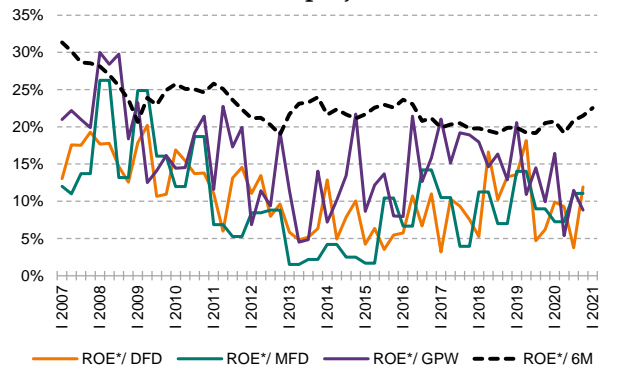
Source: NBP based on Sekocenbud, Statistics Poland (F01)

Figure 38 Estimated share of various construction costs per square metre of the residential building's usable area (type 1122-302³²) in net transaction price in PM of 6M



Source: NBP based on Sekocenbud

Figure 40 Estimated profitability indicators of development projects ROE* for real estate developers listed on the Stock Exchange, for large real estate developers (DFD), small real estate developers (MFD)*** and investment projects in 6 cities (6M)**



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

³² Half of the building (type 1122-302) monitored by NBP since 2016 Q2 based on Sekocenbud data.. An average residential multifamily 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. 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 41 Predicted changes in prices of construction and assembly works (+3C) and growth in construction costs of usable area of a residential building (type 1122-302^{32/})

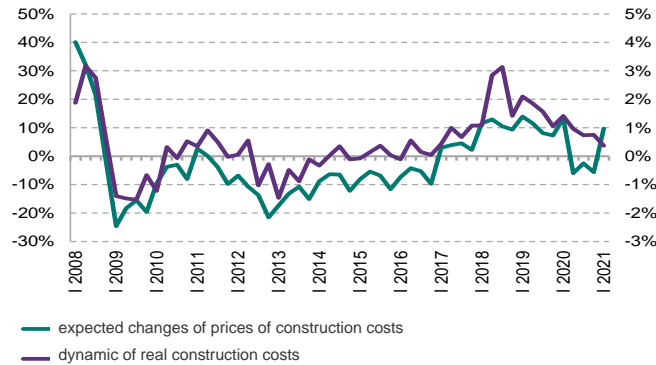


Figure 42 Average cost of construction of square metre of the residential building's usable area (type 1122-302^{33/}) in selected markets (PLN/sq.m.)

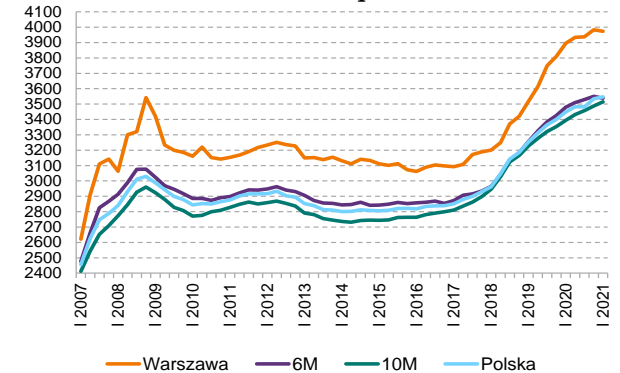
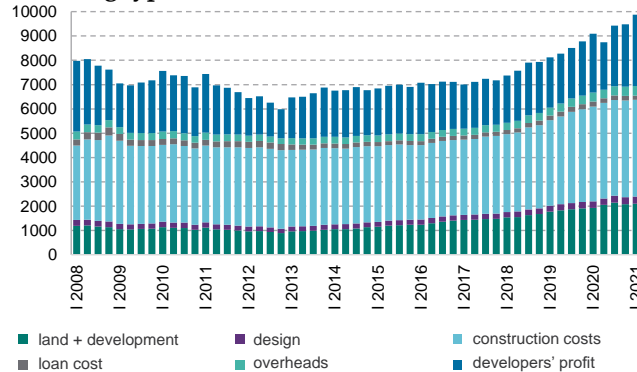
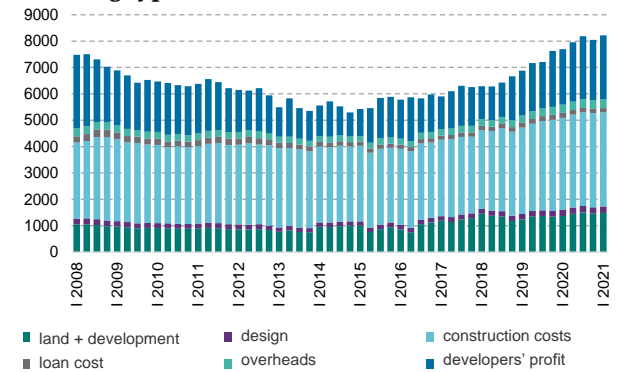


Figure 43 Warsaw – estimated structure of price per square meter of housing usable area in the PM (building type 1122-302^{32/}) for consumers



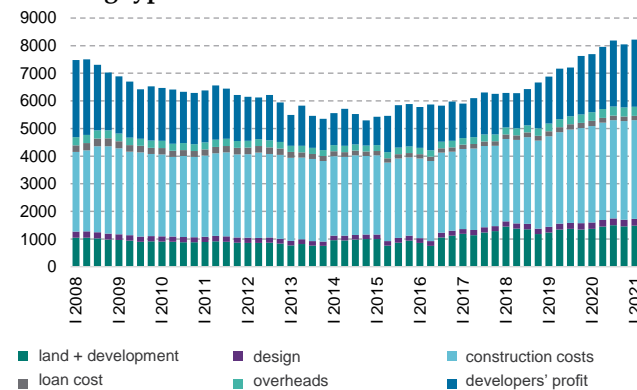
Source: NBP based on Sekocenbud, JLL (former REAS)

Figure 44 Kraków – estimated structure of price per square meter of housing usable area in the PM (building type 1122- 302^{32/}) for consumers



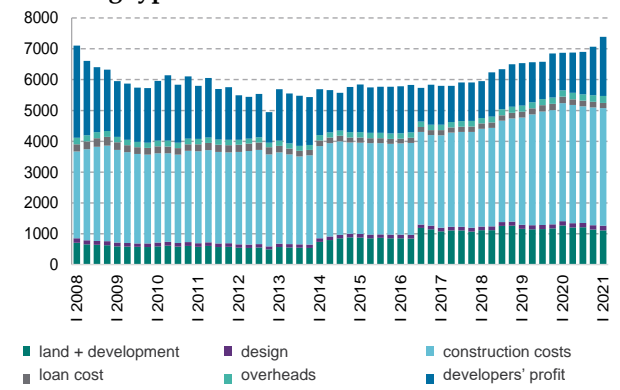
Source: NBP based on Sekocenbud, JLL (former REAS)

Figure 45 Gdańsk – estimated structure of price per square meter of housing usable area in the PM (building type 1122- 302^{32/}) for consumers



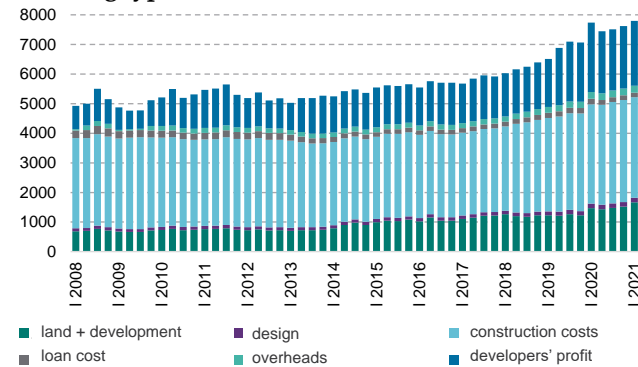
Source: NBP based on Sekocenbud, JLL (former REAS)

Figure 46 Poznań – estimated structure of price per square meter of housing usable area in the PM (building type 1122- 302^{32/}) for consumers



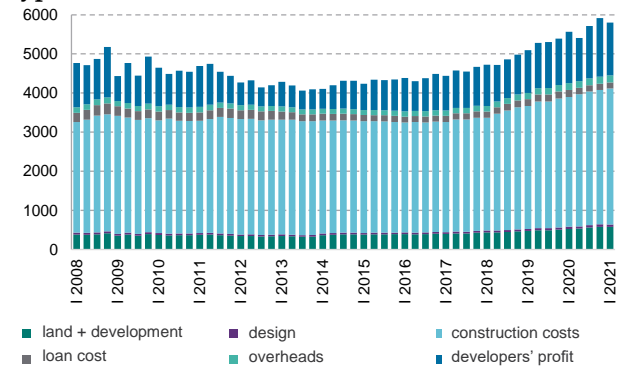
Source: NBP based on Sekocenbud, JLL (former REAS)

Figure 47 Wrocław – estimated structure of price per square meter of housing usable area in the PM (building type 1122- 302 ^{32/}) for consumers



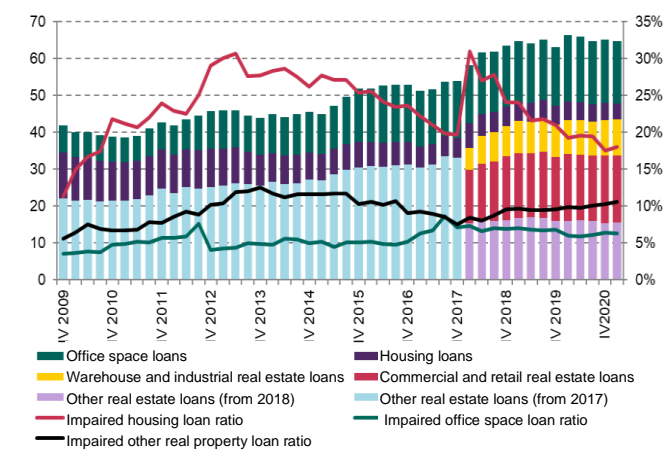
Source: NBP based on Sekocenbud, JLL (former REAS)

Figure 48 Łódź – estimated structure of net price per square metre of housing usable area in PM (building type 1122- 302 ^{32/}) for consumers



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

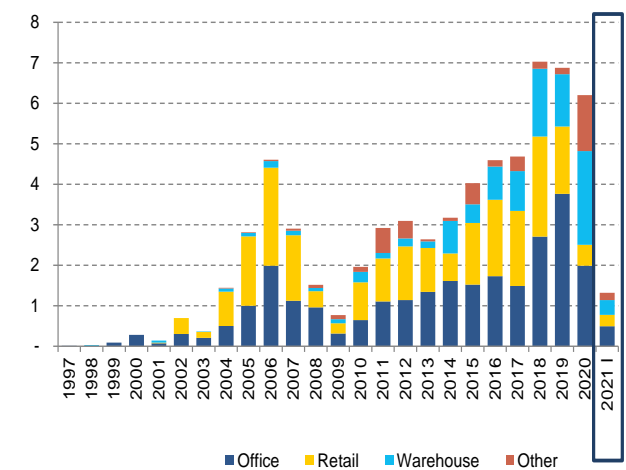
Figure 49 Loans to corporations for real estate purchases (in PLN billion, left-hand scale) and the share of loans recognised as non-performing loans (in %, right-hand scale)



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

Source: NBP

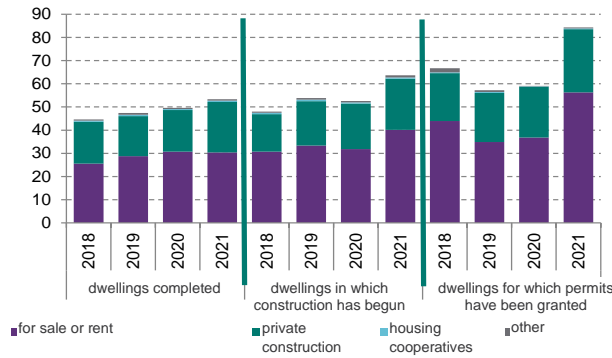
Figure 50 Value of investment transactions in the commercial real estate market (EUR billion)



Source: Comparables.pl

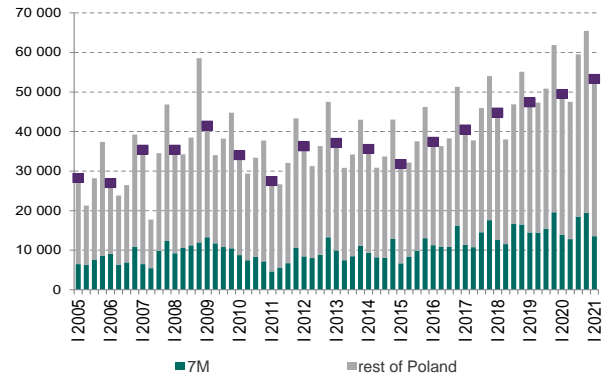
5. Residential construction and the housing market in Poland's selected cities

Figure 51 Structure of residential construction investors in Poland in the first quarter in the years 2018–2021



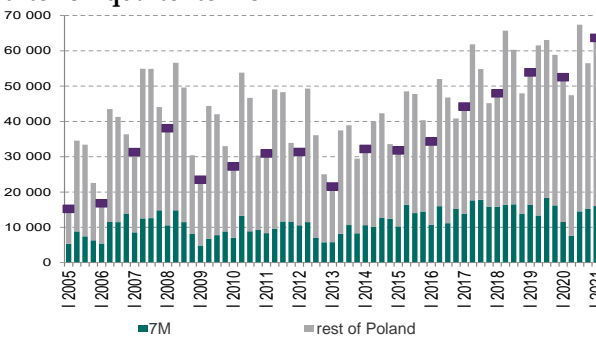
Source: Statistics Poland

Figure 52 Dwellings completed and made ready for occupancy in Poland, in quarter-on-quarter terms



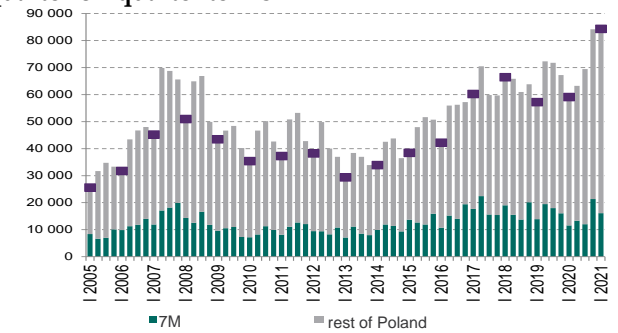
Note: only first quarters have been marked in violet. Source: Statistics Poland

Figure 53 Dwellings under construction in Poland, in quarter-on-quarter terms



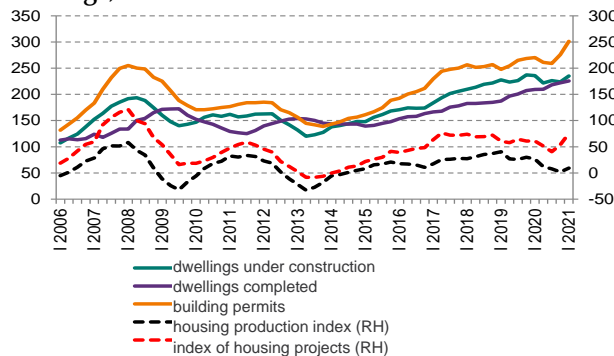
Note: only first quarters have been marked in violet. Source: Statistics Poland

Figure 54 Issued home building permits in Poland, in quarter-on-quarter terms



Note: only fourth quarters have been marked in violet. Source: Statistics Poland

Figure 55 Housing construction in Poland (in thousands of dwellings), home construction in progress (dwellings under construction minus completed dwellings) and investment projects in progress (home construction permits minus completed dwellings)



Note: rolling averages for four subsequent quarters. Source: NBP based on PABB and Statistics Poland

Figure 56 Number of contracts for the construction of dwellings put on the market, both sold and offered for sale in Poland's 6 largest markets.* /



*/Warsaw, Kraków, Tricity, Wrocław, Poznań, Łódź. Source: JLL/d.REAS

Figure 57 Housing supply and the estimated rate of return on housing development projects in PM in 7M

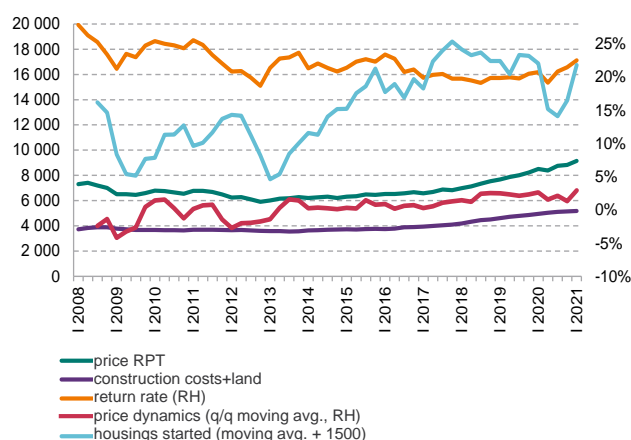
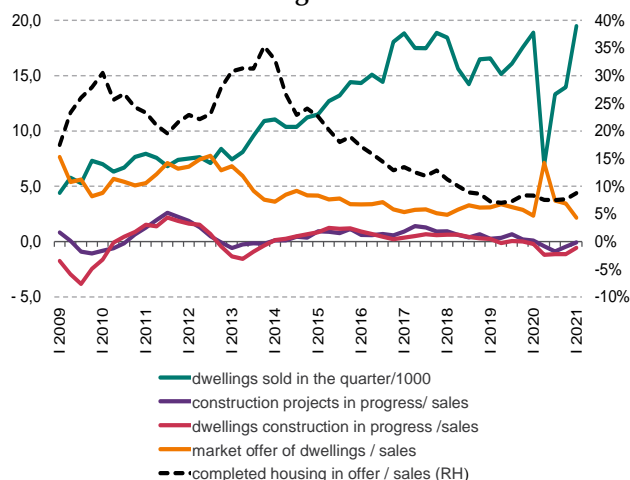


Figure 58 Housing projects, dwellings under construction and dwellings offered for sale in 7M



Note to Figure 58: Housing projects under construction=building permits for housing units minus completed housing units; housing units under construction=housing units whose construction has begun minus completed housing units; cumulative values of the last 4 quarters, divided by sales in the given period.

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

Source: NBP based on Statistics Poland

Figure 59 Measure of adjustment of housing units on offer to demand in terms of area ≤ 50 sq. m., PM in selected cities in Poland

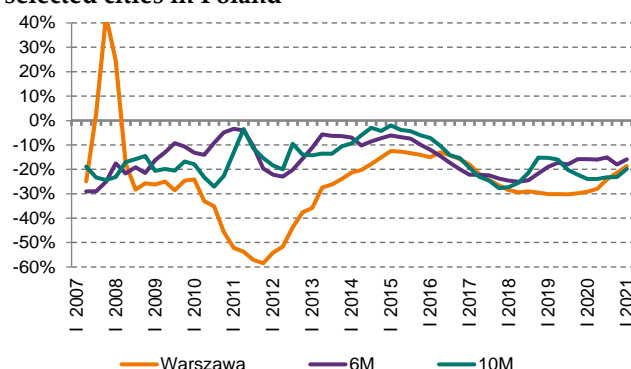
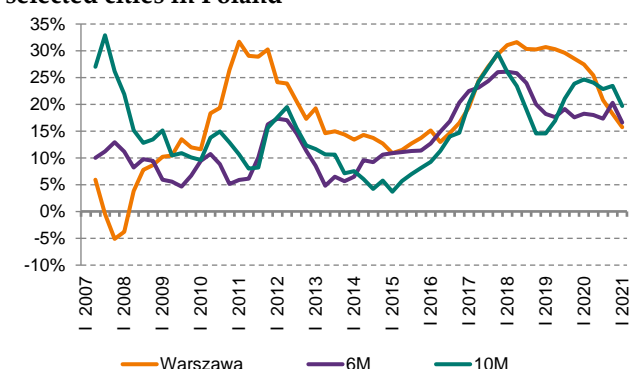


Figure 60 Measure of adjustment of housing units on offer to demand in terms of area > 50 sq. m., PM in selected cities in Poland

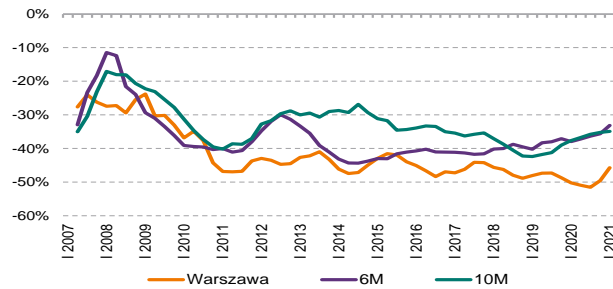


Note: Figure 59 presents, in percentage terms, a short-term mismatch in the primary market between supply (developers' housing offer) and the estimated demand (housing transactions) in terms of the dwelling's size, according to the data from the BaRN database. The mismatch is calculated as the ratio 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). The positive result (above the black line) indicates a surplus of housing of this particular size, whereas the negative result indicates a shortage thereof. Figure 60 is parallel for the space above 50 sq.m. Figures 61-62 are parallel, but they concern the SM only.

Source: NBP

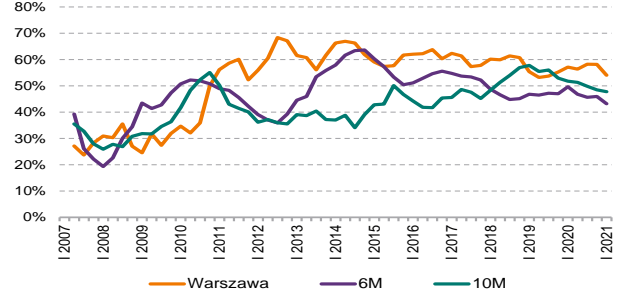
Source: NBP

Figure 61 Measure of adjustment of housing units on offer to demand in terms of area ≤ 50 sq. m, SM in selected cities of Poland



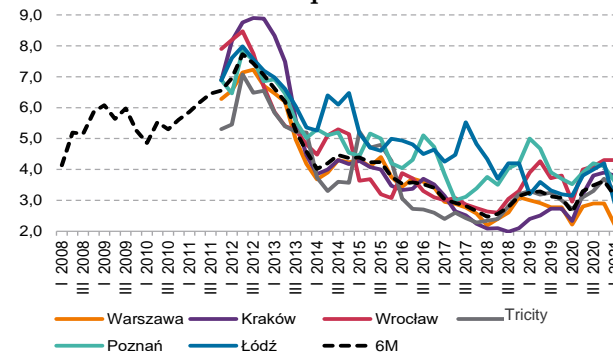
Source: NBP

Figure 62 Measure of adjustment of housing units on offer to demand in terms of area > 50 sq. m, SM in selected cities of Poland



Source: NBP

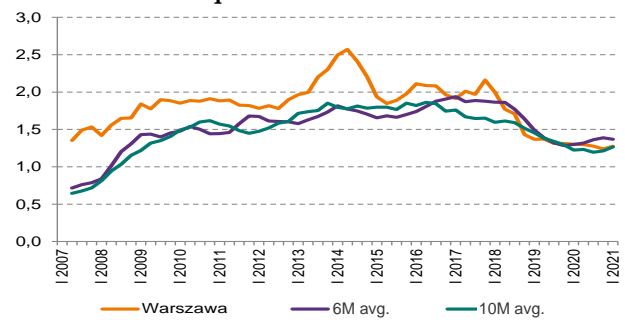
Figure 63 Selling time of dwellings on offer in PM in selected cities (number of quarters)



Note: selling time is the relation of the number of housing units on offer at the end of the current quarter in relation to the number of housing units sold in the last four quarters.

Source: NBP based on JLL (former REAS)

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

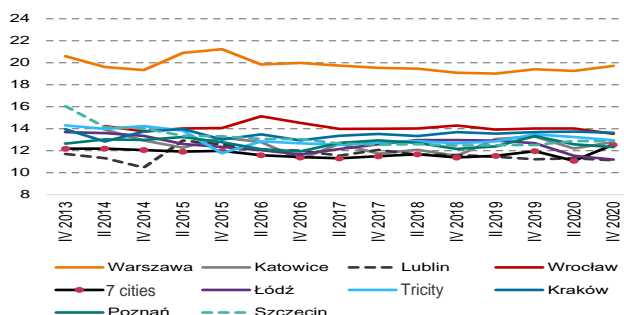


Note: real selling time, average of the last four quarters; data are not comparable with Figure 63. Selling time of housing in the secondary real estate market take into account only transactions concluded with sales. The data are underestimated since they do not contain offers entered but not sold yet.

Source: NBP

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

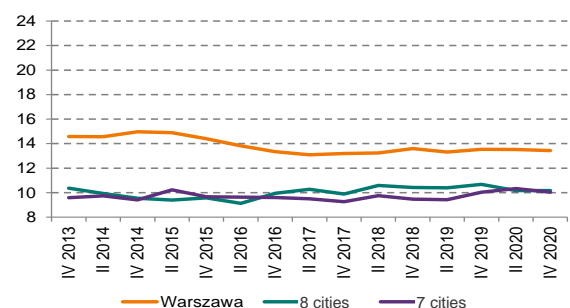
Figure 65 Transaction rents for A class office space (average prices in EUR/sq.m./month)



Note: 7 cities include: Białystok, Bydgoszcz, Kielce, Olsztyn, Opole, Rzeszów, Zielona Góra.

Source: NBP

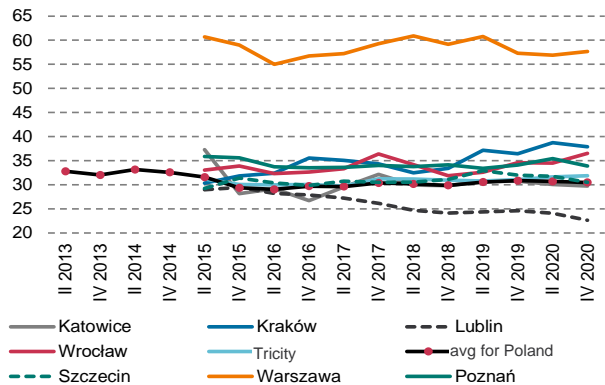
Figure 66 Transaction rents for B class office space (average prices in EUR/sq.m./month)



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

Source: NBP

Figure 67 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 67: 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 68 Index of rents for offices, average and hedonic (2017 Q4 = 100)

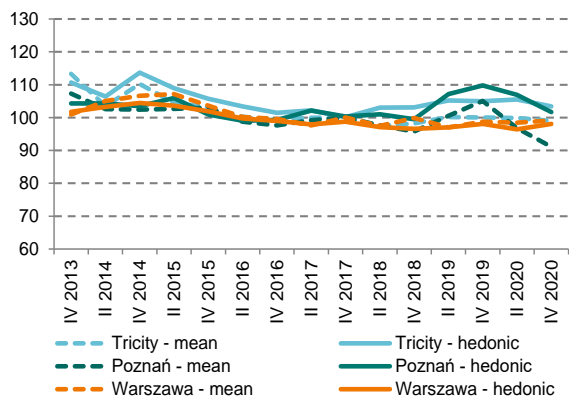


Figure 69 Index of rents for shopping centres, average and hedonic (2017 Q4 = 100)

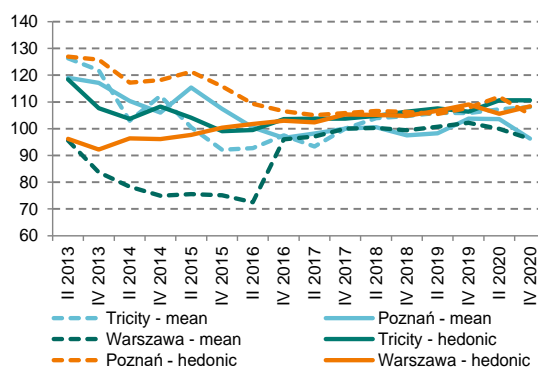
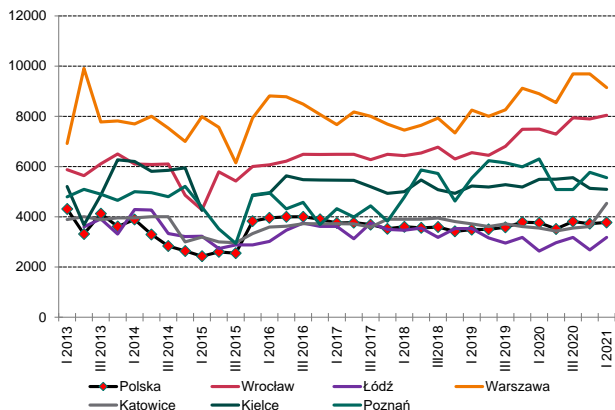
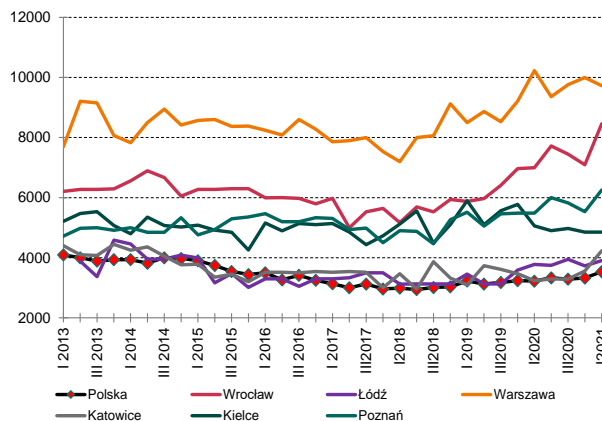


Figure 70 Median of offer selling price of small office premises in SM (PLN/sq.m.)



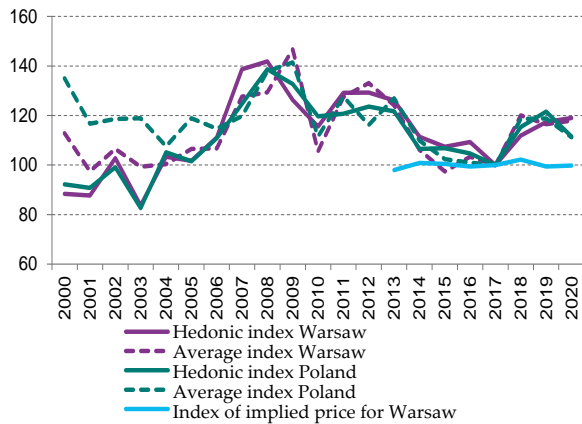
Source: PONT, NBP report

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



Source: PONT, NBP report

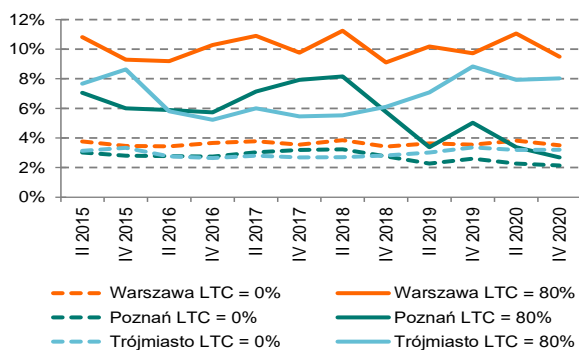
Figure 72 Growth of average and hedonic prices of office real estate in Warsaw and the whole of Poland (2017=100) and the index of implied price for Warsaw



Note: The analysis comprises transaction prices and bank valuations of commercial properties. The implied price was calculated by discounting the hedonic rent for Warsaw with a discount rate of 6%.

Source: NBP, Comparables.pl, AMRON

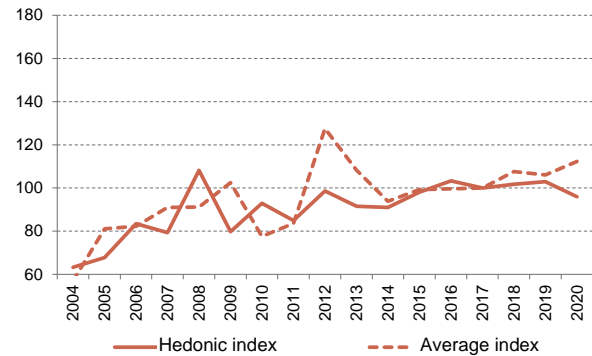
Figure 74 Estimated rate of return on equity (ROE) from investment in the building and putting to commercial use of A class office building



Note: A description of the ROE calculation method can be found in Tables 3 to 5. 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 given market.

Source: NBP, Sockenbud, NBP report

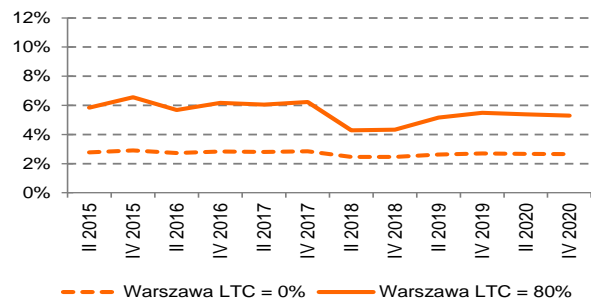
Figure 73 Growth of average and hedonic prices of retail real estate in the whole of Poland (2017=100)



Note: The analysis comprises transaction prices and bank valuations of commercial properties.

Source: NBP, Comparables.pl, AMRON

Figure 75 Estimated rate of return on equity (ROE) from investment in B class office space from the existing stock in Warsaw



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

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

Table 3 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 space in EUR - A class	Cost of constructed usable area of offices including land, per sq.m in EUR	ROE at LTC = 0%	ROE at LTC = 50%	ROE at LTC = 80%	Average market rates of 10-year Treasury bonds
2015 Q2	20.9	3159	3.8%	5.5%	10.8%	2.8%
2015 Q4	21.2	3026	3.5%	4.9%	9.3%	2.8%
2016 Q2	19.9	2960	3.4%	4.9%	9.2%	3.0%
2016 Q4	20.0	2960	3.7%	5.3%	10.3%	3.3%
2017 Q2	19.7	3091	3.8%	5.6%	10.9%	3.3%
2017 Q4	19.5	3103	3.6%	5.1%	9.8%	3.4%
2018 Q2	19.3	3125	3.9%	5.7%	11.2%	3.2%
2018 Q4	18.9	3210	3.4%	4.8%	9.1%	3.1%
2019 Q2	18.9	3307	3.6%	5.3%	10.2%	2.7%
2019 Q4	19.3	3394	3.5%	5.1%	9.7%	2.0%
2020 Q2	19.1	3289	3.8%	5.6%	11.1%	1.4%
2020 Q4	19.7	3314	3.5%	5.0%	9.5%	1.3%

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 capitalisation rate includes the depreciation cost of the building. CIT is included. ROE means net profit/equity contributed.

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

Table 4 Estimated rate of return on equity from investment in the building and putting to commercial use of A class office building in Poznań

Date	Average rent per sq.m of space in EUR - A class	construction price per sq.m including land of PUB area in EUR	ROE at LTC = 0%	ROE at LTC = 50%	ROE at LTC = 80%	Average market rates of 10-year Treasury bonds
2015 Q2	13.3	1969	3.0%	4.0%	7.1%	2.8%
2015 Q4	12.8	1890	2.8%	3.6%	6.0%	2.8%
2016 Q2	12.1	1922	2.8%	3.6%	5.9%	3.0%
2016 Q4	11.9	1900	2.8%	3.5%	5.7%	3.3%
2017 Q2	12.7	2033	3.0%	4.1%	7.1%	3.3%
2017 Q4	12.9	2052	3.2%	4.4%	7.9%	3.4%
2018 Q2	12.7	2056	3.2%	4.5%	8.2%	3.2%
2018 Q4	12.2	2134	2.8%	3.5%	5.8%	3.1%
2019 Q2	12.4	2231	2.3%	2.6%	3.4%	2.7%
2019 Q4	13.3	2288	2.6%	3.2%	5.0%	2.1%
2020 Q2	12.6	2200	2.3%	2.6%	3.4%	1.4%
2020 Q4	12.3	2212	2.1%	2.3%	2.7%	1.3%

Assumptions: cf. Table 3

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

Table 5 Estimated rate of return on equity from investment in the building and putting to commercial use of A class office building in the Tricity

Assumptions: The costs of construction of the office building (Sekocenbud data) were increased by 15% of the developer's costs related to the process of arranging the investment and commercialising the building, as well as the cost of land estimated by experts (based on public information).

Date	Average rent per sq.m of space in EUR - A class	Cost of constructed usable area of offices including land, per sq.m in EUR	ROE at LTC = 0%	ROE at LTC = 50%	ROE at LTC = 80%	Average market rates of 10-year Treasury bonds
2015 Q2	13.0	2034	3.1%	4.3%	7.7%	2.8%
2015 Q4	12.7	1980	3.3%	4.7%	8.6%	2.8%
2016 Q2	12.3	1901	2.8%	3.5%	5.8%	3.0%
2016 Q4	12.1	1948	2.6%	3.3%	5.2%	3.3%
2017 Q2	12.0	2014	2.8%	3.6%	6.0%	3.3%
2017 Q4	12.1	2044	2.7%	3.4%	5.5%	3.4%
2018 Q2	12.7	2082	2.7%	3.4%	5.5%	3.2%
2018 Q4	12.7	2109	2.8%	3.6%	6.1%	3.1%
2019 Q2	12.8	2228	3.0%	4.0%	7.1%	2.7%
2019 Q4	13.5	2275	3.4%	4.7%	8.8%	2.0%
2020 Q2	13.0	2201	3.2%	4.4%	7.9%	1.4%
2020 Q4	13.2	2213	3.2%	4.4%	8.0%	1.3%

Assumptions: cf. Table 3

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

Table 6 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 capitalisation rate (yield)	ROE at LTC = 0%	ROE at LTC = 50%	ROE at LTC = 80%	Average market rates of 10-year Treasury bonds	Date
2014 Q2	13.8	2312	7.2%	2.7%	3.4%	5.4%	3.4%	2014 Q2
2014 Q4	14.3	2289	7.5%	2.9%	3.8%	6.5%	2.6%	2014 Q4
2015 Q2	14.1	2319	7.3%	2.8%	3.5%	5.9%	2.8%	2015 Q2
2015 Q4	13.9	2222	7.5%	2.9%	3.8%	6.6%	2.8%	2015 Q4
2016 Q2	13.3	2196	7.3%	2.7%	3.5%	5.7%	3.0%	2016 Q2
2016 Q4	13.1	2114	7.5%	2.8%	3.7%	6.2%	3.3%	2016 Q4
2017 Q2	13.2	2139	7.4%	2.8%	3.6%	6.0%	3.3%	2017 Q2
2017 Q4	13.2	2119	7.5%	2.8%	3.7%	6.2%	3.4%	2017 Q4
2018 Q2	13.0	2272	6.8%	2.5%	2.9%	4.3%	3.2%	2018 Q2
2018 Q4	13.1	2286	6.9%	2.5%	2.9%	4.3%	3.1%	2018 Q4
2019 Q2	13.1	2199	7.1%	2.6%	3.3%	5.2%	2.7%	2019 Q2
2019 Q4	13.1	2181	7.2%	2.7%	3.4%	5.5%	2.0%	2019 Q4
2020 Q2	13.1	2186	7.2%	2.7%	3.4%	5.4%	1.4%	2020 Q2
2020 Q4	13.2	2210	7.2%	2.7%	3.3%	5.3%	1.3%	2020 Q4

Assumptions: The analysis takes into account contractual rents for B class office space, and transaction prices and valuations of B class office real estate. As there are relatively few transaction prices and valuations 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 capitalisation rate includes the depreciation cost of the building. CIT is included. ROE means net profit/equity contributed.

Source: NBP (data and calculations), MF (rates of return on 10-year bonds)

Table 7 Average prices of a square metre of housing in the PM in Gdańsk

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 904	8 741	9 803	8 733	9 641	9 024	9 689	9 401	10 068	9 794
growth (q-o-q)	101,0	101,8	99,0	99,9	98,3	103,3	100,5	104,2	103,9	104,2
growth (y-o-y)	119,9	105,8	108,5	105,4	101,8	105,7	98,8	109,5	101,7	112,0
dwelling price range	3 110	1 204	3 393	739	3 551	1 189	3 951	1 408	4 048	1 602
<=4 000 PLN/sq.m	4	1	4	3	13	0	7	1	3	4
(4 001; 6 000] PLN/sq.m	59	84	83	54	42	51	16	31	17	20
(6 001; 8 000] PLN/sq.m	1 000	478	1 046	310	1 064	498	1 283	501	872	436
(8 001; 10 000] PLN/sq.m	613	297	767	170	1 057	253	1 099	320	1 562	478
>10 001 PLN/sq.m	1 434	344	1 493	202	1 375	387	1 546	555	1 594	664
dwelling space range	3 110	1 204	3 393	739	3 551	1 189	3 951	1 408	4 048	1 602
<= 40 sq.m	416	290	520	169	506	263	515	304	475	334
(40,1; 60] sq.m	1430	548	1479	349	1566	600	1780	631	1862	730
(60,1; 80] sq.m	872	288	956	170	1010	243	1175	334	1222	373
> 80,1 sq.m	392	78	438	51	469	83	481	139	489	165
average price of 1 sq.m. of dwelling	9 904	8 741	9 803	8 733	9 641	9 024	9 689	9 401	10 068	9 794
<=4 000 sq.m	10456	9575	10440	8915	10156	8976	10361	9573	11168	10133
(40,1; 60] sq.m	9769	8536	9656	8914	9498	9072	9491	9284	9944	9856
(60,1; 80] sq.m	9257	8024	9237	7785	9239	8333	9246	9015	9555	9159
> 80,1 sq.m	11252	9731	10778	10051	10429	10862	10786	10484	10754	10264
average offer price deviation	13,3%	x	12,3%	x	6,8%	x	3,1%	x	2,8%	x
<= 40 sq.m	9,2%	x	17,1%	x	13,1%	x	8,2%	x	10,2%	x
(40,1; 60] sq.m	14,4%	x	8,3%	x	4,7%	x	2,2%	x	0,9%	x
(60,1; 80] sq.m	15,4%	x	18,7%	x	10,9%	x	2,6%	x	4,3%	x
> 80,1 sq.m	15,6%	x	7,2%	x	-4,0%	x	2,9%	x	4,8%	x

Source: NBP

Table 8 Average prices of a square metre of housing in the SM in Gdańsk

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 573	8 391	10 332	8 487	10 264	8 947	10 523	9 025	10 529	9 031
growth (q-o-q)	106,9	100,3	97,7	101,1	99,3	105,4	102,5	100,9	100,1	100,1
growth (y-o-y)	112,3	114,2	110,6	108,5	103,1	115,2	106,4	107,9	99,6	107,6
dwelling price range	886	1 378	1 057	1 004	1 052	1 067	825	928	574	281
<=4 000 PLN/sq.m	0	11	0	5	2	6	0	2	0	1
(4 001; 6 000] PLN/sq.m	27	114	31	78	45	64	26	34	11	13
(6 001; 8 000] PLN/sq.m	178	541	218	367	211	355	110	313	81	89
(8 001; 10 000] PLN/sq.m	259	479	325	370	324	364	298	332	217	104
>10 001 PLN/sq.m	422	233	483	184	470	278	391	247	265	74
dwelling space range	886	1 378	1 057	1 004	1 052	1 067	825	928	574	281
<= 40 sq.m	124	351	160	240	143	251	123	220	88	56
(40,1; 60] sq.m	337	664	422	465	398	506	328	435	214	135
(60,1; 80] sq.m	253	283	289	211	319	231	220	204	181	64
> 80,1 sq.m	172	80	186	88	192	79	154	69	91	26
average price of 1 sq.m. of dwelling	10 573	8 391	10 332	8 487	10 264	8 947	10 523	9 025	10 529	9 031
<=4 000 sq.m	11571	8991	11647	9143	12019	9736	11857	9961	11865	10050
(40,1; 60] sq.m	10978	8375	10308	8609	10530	8676	10819	8918	10797	9111
(60,1; 80] sq.m	9700	7752	9739	7685	9482	8600	9731	8306	9828	8274
> 80,1 sq.m	10342	8157	10177	7974	9706	9192	9957	8842	10001	8286
average offer price deviation	26,0%	x	21,7%	x	14,7%	x	16,6%	x	16,6%	x
<= 40 sq.m	28,7%	x	27,4%	x	23,4%	x	19,0%	x	18,1%	x
(40,1; 60] sq.m	31,1%	x	19,7%	x	21,4%	x	21,3%	x	18,5%	x
(60,1; 80] sq.m	25,1%	x	26,7%	x	10,3%	x	17,2%	x	18,8%	x
> 80,1 sq.m	26,8%	x	27,6%	x	5,6%	x	12,6%	x	20,7%	x

Source: NBP

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

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 212	8 306	9 758	8 598	9 466	8 866	9 615	8 704	9 756	8 878
growth (q-o-q)	108,0	100,8	105,9	103,5	97,0	103,1	101,6	98,2	101,5	102,0
growth (y-o-y)	120,9	111,9	122,6	111,1	118,1	113,9	112,7	105,7	105,9	106,9
dwelling price range	5 453	2 137	5 979	1 085	7 332	1 362	6 928	1 686	6 429	1 610
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	98	158	98	59	95	37	63	44	78	45
(6 001; 8 000] PLN/sq.m	1 455	826	1 285	401	1 659	437	1 436	542	1 188	466
(8 001; 10 000] PLN/sq.m	2 356	903	2 205	407	3 087	552	2 941	786	2 659	739
>10 001 PLN/sq.m	1 544	250	2 391	218	2 491	336	2 488	314	2 504	360
dwelling space range	5 453	2 137	5 979	1 085	7 332	1 362	6 928	1 686	6 429	1 610
<= 40 sq.m	1030	522	1194	234	1487	385	1478	366	1384	360
(40,1; 60] sq.m	2591	1112	2760	549	3335	653	3021	882	2788	729
(60,1; 80] sq.m	1468	392	1542	230	1946	259	1913	346	1725	441
> 80,1 sq.m	364	111	483	72	564	65	516	92	532	80
average price of 1 sq.m. of dwelling	9 212	8 306	9 758	8 598	9 466	8 866	9 615	8 704	9 756	8 878
<=4 000 sq.m	9927	8687	10983	9251	10549	9534	10703	9145	10961	9601
(40,1; 60] sq.m	9145	8357	9576	8507	9302	8616	9477	8671	9638	8786
(60,1; 80] sq.m	8851	7743	9079	8304	8873	8412	8963	8276	9034	8344
> 80,1 sq.m	9131	7992	9941	8111	9630	9228	9720	8878	9578	9404
average offer price deviation	10,9%	x	13,5%	x	6,8%	x	10,5%	x	9,9%	x
<= 40 sq.m	14,3%	x	18,7%	x	10,6%	x	17,0%	x	14,2%	x
(40,1; 60] sq.m	9,4%	x	12,6%	x	8,0%	x	9,3%	x	9,7%	x
(60,1; 80] sq.m	14,3%	x	9,3%	x	5,5%	x	8,3%	x	8,3%	x
> 80,1 sq.m	14,3%	x	22,6%	x	4,4%	x	9,5%	x	1,8%	x

Source: NBP

Table 10 Average prices of a square metre of housing in the secondary market in Kraków

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	9 518	7 766	9 672	8 061	9 542	8 100	9 820	8 118	9 899	8 366
growth (q-o-q)	104,5	104,8	101,6	103,8	98,7	100,5	102,9	100,2	100,8	103,1
growth (y-o-y)	109,4	117,2	108,7	115,9	107,1	113,5	107,8	109,5	104,0	107,7
dwelling price range	569	310	587	201	470	286	614	243	728	302
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	6	32	2	17	2	16	2	13	3	18
(6 001; 8 000] PLN/sq.m	138	147	132	83	109	130	130	109	128	107
(8 001; 10 000] PLN/sq.m	239	108	253	82	205	110	259	99	324	137
>10 001 PLN/sq.m	186	23	200	19	154	30	223	22	273	40
dwelling space range	569	310	587	201	470	286	614	243	728	302
<= 40 sq.m	145	128	161	69	124	126	164	103	186	126
(40,1; 60] sq.m	251	140	283	101	227	124	284	106	331	132
(60,1; 80] sq.m	121	39	109	22	91	31	117	31	149	40
> 80,1 sq.m	52	3	34	9	28	5	49	3	62	4
average price of 1 sq.m. of dwelling	9 518	7 766	9 672	8 061	9 542	8 100	9 820	8 118	9 899	8 366
<=4 000 sq.m	10512	8463	10614	8249	10359	8614	10939	8455	10606	8789
(40,1; 60] sq.m	9275	7442	9399	8153	9228	7884	9500	7973	9753	8210
(60,1; 80] sq.m	8875	6733	8928	7617	8858	7100	9080	7409	9274	7546
> 80,1 sq.m	9413	6618	9873	6671	10700	6668	9693	9017	10062	8405
average offer price deviation	22,6%	x	20,0%	x	17,8%	x	21,0%	x	18,3%	x
<= 40 sq.m	24,2%	x	28,7%	x	20,3%	x	29,4%	x	20,7%	x
(40,1; 60] sq.m	24,6%	x	15,3%	x	17,0%	x	19,2%	x	18,8%	x
(60,1; 80] sq.m	31,8%	x	17,2%	x	24,8%	x	22,6%	x	22,9%	x
> 80,1 sq.m	42,2%	x	48,0%	x	60,5%	x	7,5%	x	19,7%	x

Source: NBP

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

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	6 608	6 249	6 510	6 080	6 734	6 406	6 761	6 624	6 854	6 500
growth (q-o-q)	105,3	103,7	98,5	97,3	103,4	105,4	100,4	103,4	101,4	98,1
growth (y-o-y)	114,0	111,0	108,3	103,9	111,7	108,9	107,8	109,9	103,7	104,0
dwelling price range	1 049	323	1 218	171	1 390	287	1 431	437	1 463	501
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	1	0	0
(4 001; 5 000] PLN/sq.m	13	6	5	4	4	2	3	2	3	3
(5 001; 6 000] PLN/sq.m	326	117	399	85	247	91	281	94	209	123
(6 001; 7 000] PLN/sq.m	391	169	533	58	708	135	692	224	757	270
> 7 000 PLN/sq.m	319	31	281	24	431	59	455	116	494	105
dwelling space range	1 049	323	1 218	171	1 390	287	1 431	437	1 463	501
<= 40 sq.m	232	105	201	34	275	52	307	120	280	91
(40,1; 60] sq.m	529	174	557	83	655	145	646	221	724	267
(60,1; 80] sq.m	221	35	363	42	350	75	370	80	345	112
> 80,1 sq.m	67	9	97	12	110	15	108	16	114	31
average price of 1 sq.m. of dwelling	6 608	6 249	6 510	6 080	6 734	6 406	6 761	6 624	6 854	6 500
<=4 000 sq.m	7481	6692	7456	6911	7386	7327	7547	7220	7554	7223
(40,1; 60] sq.m	6542	6079	6464	6002	6701	6405	6691	6517	6835	6464
(60,1; 80] sq.m	5895	5781	6068	5520	6312	5782	6286	6073	6394	6027
> 80,1 sq.m	6467	6200	6463	6225	6637	6346	6566	6388	6648	6399
average offer price deviation	5,7%	x	7,1%	x	5,1%	x	2,1%	x	5,4%	x
<= 40 sq.m	11,8%	x	7,9%	x	0,8%	x	4,5%	x	4,6%	x
(40,1; 60] sq.m	7,6%	x	7,7%	x	4,6%	x	2,7%	x	5,7%	x
(60,1; 80] sq.m	2,0%	x	9,9%	x	9,2%	x	3,5%	x	6,1%	x
> 80,1 sq.m	4,3%	x	3,8%	x	4,6%	x	2,8%	x	3,9%	x

Source: NBP

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

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	5 465	5 011	5 432	5 245	5 464	5 613	5 721	5 522	5 905	5 433
growth (q-o-q)	101,3	102,9	99,4	104,7	100,6	107,0	104,7	98,4	103,2	98,4
growth (y-o-y)	108,1	108,6	106,2	114,1	105,0	119,2	106,1	113,4	108,1	108,4
dwelling price range	243	167	298	54	264	50	342	63	740	75
<= 3 000 PLN/sq.m	0	2	0	1	0	0	0	0	0	0
(3 001; 4 000] PLN/sq.m	27	19	29	4	24	2	25	4	43	7
(4 001; 5 000] PLN/sq.m	69	71	79	19	68	10	65	17	121	21
(5 001; 6 000] PLN/sq.m	84	49	122	22	103	21	126	21	279	28
(6 000; 7 000] PLN/sq.m.	33	22	40	6	49	13	89	16	179	10
> 7 001 PLN/sq.m	30	4	28	2	20	4	37	5	118	9
dwelling space range	243	167	298	54	264	50	342	63	740	75
<= 40 sq.m	25	57	40	14	44	15	73	24	148	22
(40,1; 60] sq.m	84	79	108	29	106	26	128	29	292	36
(60,1; 80] sq.m	57	23	68	10	54	5	81	5	167	9
> 80,1 sq.m	77	8	82	1	60	4	60	5	133	8
average price of 1 sq.m. of dwelling	5 465	5 011	5 432	5 245	5 464	5 613	5 721	5 522	5 905	5 433
<=4 000 sq.m	6 040	5 317	6 004	5 481	5 911	6 280	6 290	6 097	6 478	6 097
(40,1; 60] sq.m	5 660	4 887	5 473	5 340	5 644	5 402	5 804	5 366	5 903	5 357
(60,1; 80] sq.m	5 437	4 810	5 356	4 894	5 312	5 473	5 639	4 808	5 718	5 143
> 80,1 sq.m	5 085	4 631	5 160	2 710	4 953	4 658	4 962	4 378	5 504	4 278
average offer price deviation	9,1%	x	3,6%	x	-2,7%	x	3,6%	x	8,7%	x
<= 40 sq.m	13,6%	x	9,5%	x	-5,9%	x	3,2%	x	6,2%	x
(40,1; 60] sq.m	15,8%	x	2,5%	x	4,5%	x	8,2%	x	10,2%	x
(60,1; 80] sq.m	13,0%	x	9,4%	x	-2,9%	x	17,3%	x	11,2%	x
> 80,1 sq.m	9,8%	x	90,4%	x	6,3%	x	13,3%	x	28,7%	x

Source: NBP

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

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	7 541	7 423	7 764	7 429	7 922	7 455	7 979	7 632	7 988	7 976
growth (q-o-q)	102,0	100,4	103,0	100,1	102,0	100,4	100,7	102,4	100,1	104,5
growth (y-o-y)	102,6	105,2	107,3	104,8	107,2	105,0	107,9	103,2	105,9	107,4
dwelling price range	6 136	1 440	5 931	999	6 091	1 123	5 295	1 458	6 248	1 523
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	391	131	334	92	211	124	122	94	76	68
(6 001; 8 000] PLN/sq.m	3 904	984	3 504	696	3 501	716	3 175	891	3 707	834
(8 001; 10 000] PLN/sq.m	1 684	286	1 814	179	2 049	253	1 705	411	2 198	538
>10 001 PLN/sq.m	157	39	279	32	330	30	293	62	267	83
dwelling space range	6 136	1 440	5 931	999	6 091	1 123	5 295	1 458	6 248	1 523
<= 40 sq.m	1145	416	1044	231	1072	298	896	362	1190	363
(40,1; 60] sq.m	2705	688	2537	499	2551	563	2162	671	2519	691
(60,1; 80] sq.m	1838	286	1840	228	1934	203	1751	335	1999	346
> 80,1 sq.m	448	50	510	41	534	59	486	90	540	123
average price of 1 sq.m. of dwelling	7 541	7 423	7 764	7 429	7 922	7 455	7 979	7 632	7 988	7 976
<=4 000 sq.m	8 200	7 703	8 410	7 405	8 661	7 581	8 767	7 868	8 558	8 675
(40,1; 60] sq.m	7 518	7 472	7 729	7 326	7 901	7 334	7 935	7 612	8 061	7 861
(60,1; 80] sq.m	7 157	6 984	7 398	7 225	7 495	7 362	7 569	7 358	7 532	7 580
> 80,1 sq.m	7 577	6 952	7 938	9 941	8 088	8 300	8 203	7 850	8 077	7 676
average offer price deviation	1,6%	x	4,5%	x	6,3%	x	4,6%	x	0,1%	x
<= 40 sq.m	6,5%	x	13,6%	x	14,3%	x	11,4%	x	-1,4%	x
(40,1; 60] sq.m	0,6%	x	5,5%	x	7,7%	x	4,2%	x	2,5%	x
(60,1; 80] sq.m	2,5%	x	2,4%	x	1,8%	x	2,9%	x	-0,6%	x
> 80,1 sq.m	9,0%	x	-20,1%	x	-2,6%	x	4,5%	x	5,2%	x

Source: NBP

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

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	7 809	6 824	7 823	6 958	7 851	6 896	7 808	6 885	7 943	6 745
growth (q-o-q)	102,2	102,6	100,2	102,0	100,4	99,1	99,5	99,8	101,7	98,0
growth (y-o-y)	112,2	110,9	110,6	109,7	109,2	107,0	102,2	103,5	101,7	98,8
dwelling price range	1 192	1 032	975	690	1 312	466	860	475	923	302
<=4 000 PLN/sq.m	3	26	4	10	2	10	0	10	0	3
(4 001; 6 000] PLN/sq.m	156	279	99	144	115	93	80	87	81	74
(6 001; 8 000] PLN/sq.m	559	537	501	407	686	294	450	311	473	185
(8 001; 10 000] PLN/sq.m	355	154	285	113	397	55	256	58	275	38
>10 001 PLN/sq.m	119	36	86	16	112	14	74	9	94	2
dwelling space range	1 192	1 032	975	690	1 312	466	860	475	923	302
<= 40 sq.m	207	321	165	202	281	183	194	152	196	103
(40,1; 60] sq.m	469	449	440	310	598	194	372	226	373	136
(60,1; 80] sq.m	333	191	250	132	282	73	209	78	265	50
> 80,1 sq.m	183	71	120	46	151	16	85	19	89	13
average price of 1 sq.m. of dwelling	7 809	6 824	7 823	6 958	7 851	6 896	7 808	6 885	7 943	6 745
<=4 000 sq.m	8 895	7 617	8 656	7 599	8 721	7 576	8 736	7 460	8 901	7 484
(40,1; 60] sq.m	8 132	6 789	8 037	6 990	7 870	6 653	7 806	6 844	8 014	6 582
(60,1; 80] sq.m	7 115	5 949	7 192	6 401	7 235	5 968	7 258	6 099	7 369	6 071
> 80,1 sq.m	7 016	5 822	7 207	5 532	7 308	6 304	7 053	5 989	7 242	5 203
average offer price deviation	14,4%	x	12,4%	x	13,8%	x	13,4%	x	17,7%	x
<= 40 sq.m	16,8%	x	13,9%	x	15,1%	x	17,1%	x	18,9%	x
(40,1; 60] sq.m	19,8%	x	15,0%	x	18,3%	x	14,1%	x	21,8%	x
(60,1; 80] sq.m	19,6%	x	12,4%	x	21,2%	x	19,0%	x	21,4%	x
> 80,1 sq.m	20,5%	x	30,3%	x	15,9%	x	17,8%	x	39,2%	x

Source: NBP

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

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	10 610	9 819	10 717	9 438	10 735	10 183	10 750	10 240	10 969	10 666
growth (q-o-q)	103,2	103,6	101,0	96,1	100,2	107,9	100,1	100,6	102,0	104,2
growth (y-o-y)	121,0	102,4	120,0	95,0	108,1	110,8	104,6	97,5	103,4	100,5
dwelling price range	11 515	4 773	12 347	2 631	12 735	3 154	11 757	3 917	9 780	4 951
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	40	15	32	72	26	6	13	8	9	1
(6 001; 8 000] PLN/sq.m	2 089	1 117	2 006	679	1 889	609	1 608	609	889	514
(8 001; 10 000] PLN/sq.m	3 671	1 996	3 980	1 063	4 053	1 111	3 747	1 568	3 195	1 698
>10 001 PLN/sq.m	5 715	1 645	6 329	817	6 767	1 428	6 389	1 732	5 687	2 738
dwelling space range	11 515	4 773	12 347	2 631	12 735	3 154	11 757	3 917	9 780	4 951
<= 40 sq.m	1 576	1 048	1 784	533	2 084	636	1 801	864	1 524	1 154
(40,1; 60] sq.m	4 617	2 248	4 995	1 240	5 210	1 324	4 858	1 645	4 087	2 062
(60,1; 80] sq.m	3 863	1 129	4 011	647	3 840	855	3 588	1 001	2 864	1 286
> 80,1 sq.m	1 459	348	1 557	211	1 601	339	1 510	407	1 305	449
average price of 1 sq.m. of dwelling	10 610	9 819	10 717	9 438	10 735	10 183	10 750	10 240	10 969	10 666
<=4 000 sq.m	12 458	10 330	12 772	9 933	12 327	10 851	12 346	10 722	12 267	11 432
(40,1; 60] sq.m	10 460	9 826	10 600	9 315	10 635	10 097	10 603	10 099	10 845	10 623
(60,1; 80] sq.m	9 717	9 245	9 693	9 034	9 774	9 529	9 919	9 424	10 269	9 928
> 80,1 sq.m	11 456	10 088	11 378	10 155	11 297	10 912	11 299	11 789	11 380	11 010
average offer price deviation	8,1%	x	13,6%	x	5,4%	x	5,0%	x	2,8%	x
<= 40 sq.m	20,6%	x	28,6%	x	13,6%	x	15,1%	x	7,3%	x
(40,1; 60] sq.m	6,4%	x	13,8%	x	5,3%	x	5,0%	x	2,1%	x
(60,1; 80] sq.m	5,1%	x	7,3%	x	2,6%	x	5,3%	x	3,4%	x
> 80,1 sq.m	13,6%	x	12,0%	x	3,5%	x	-4,2%	x	3,4%	x

Source: NBP

Table 16 Average prices of a square metre of housing in the SM in Warsaw

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	11 656	9 997	11 522	10 281	11 713	10 297	11 893	10 072	12 217	10 135
growth (q-o-q)	104,1	101,9	98,9	102,8	101,7	100,2	101,5	97,8	102,7	96,1
growth (y-o-y)	113,3	111,3	109,0	111,3	108,3	108,8	106,3	102,7	104,8	101,3
dwelling price range	1 859	3 811	2 099	2 707	2 015	2 320	2 640	1 212	2 186	934
<=4 000 PLN/sq.m	0	0	0	0	0	0	0	0	0	0
(4 001; 6 000] PLN/sq.m	12	51	17	34	8	6	12	4	3	0
(6 001; 8 000] PLN/sq.m	186	714	200	408	169	305	172	172	115	128
(8 001; 10 000] PLN/sq.m	471	1 392	585	934	528	821	657	488	497	377
>10 001 PLN/sq.m	1 190	1 654	1 297	1 331	1 310	1 188	1 799	548	1 571	429
dwelling space range	1 859	3 811	2 099	2 707	2 015	2 320	2 640	1 212	2 186	934
<= 40 sq.m	209	1 074	268	712	262	739	425	435	357	291
(40,1; 60] sq.m	580	1 683	697	1 210	681	966	950	544	796	403
(60,1; 80] sq.m	456	645	539	485	514	385	651	171	538	165
> 80,1 sq.m	614	409	595	300	558	230	614	62	496	75
average price of 1 sq.m. of dwelling	11 656	9 997	11 522	10 281	11 713	10 297	11 893	10 072	12 217	10 135
<=4 000 sq.m	13 095	10 698	12 965	10 998	13 114	10 800	13 250	10 772	13 706	11 013
(40,1; 60] sq.m	11 677	9 639	11 299	9 958	11 529	9 967	11 610	9 659	11 857	9 790
(60,1; 80] sq.m	11 089	9 342	11 102	9 710	11 350	9 992	11 292	9 512	11 387	9 389
> 80,1 sq.m	11 566	10 666	11 513	10 802	11 614	10 579	12 028	10 325	12 622	10 219
average offer price deviation	16,6%	x	12,1%	x	13,8%	x	18,1%	x	20,5%	x
<= 40 sq.m	22,4%	x	17,9%	x	21,4%	x	23,0%	x	24,5%	x
(40,1; 60] sq.m	21,2%	x	13,5%	x	15,7%	x	20,2%	x	21,1%	x
(60,1; 80] sq.m	18,7%	x	14,3%	x	13,6%	x	18,7%	x	21,3%	x
> 80,1 sq.m	8,4%	x	6,6%	x	9,8%	x	16,5%	x	23,5%	x

Source: NBP

Table 17 Average prices of a square metre of housing in the PM in Wrocław

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	8 483	8 354	8 652	8 041	8 670	8 109	8 630	8 233	9 062	8 423
growth (q-o-q)	106,4	109,4	102,0	96,2	100,2	100,9	99,5	101,5	105,0	102,3
growth (y-o-y)	113,8	118,8	113,3	108,1	109,6	105,8	108,2	107,8	106,8	100,8
dwelling price range	6 491	2 157	6 792	786	6 092	1 487	6 411	1 362	5 936	1 690
<=4 000 PLN/sq.m	0	0	0	0	0	1	0	0	0	5
(4 001; 6 000] PLN/sq.m	531	138	325	91	375	106	267	80	143	106
(6 001; 8 000] PLN/sq.m	2 445	777	2 403	350	2 180	708	2 478	623	1 996	721
(8 001; 10 000] PLN/sq.m	2 120	957	2 502	249	2 282	470	2 343	437	2 236	528
>10 001 PLN/sq.m	1 395	285	1 562	96	1 255	202	1 323	222	1 561	330
dwelling space range	6 491	2 157	6 792	786	6 092	1 487	6 411	1 362	5 936	1 690
<= 40 sq.m	1292	559	1531	124	1333	380	1248	323	1155	362
(40,1; 60] sq.m	3133	1046	3185	440	2871	669	3085	648	2777	837
(60,1; 80] sq.m	1581	434	1592	179	1448	357	1630	295	1540	380
> 80,1 sq.m	485	118	484	43	440	81	448	96	464	111
average price of 1 sq.m. of dwelling	8 483	8 354	8 652	8 041	8 670	8 109	8 630	8 233	9 062	8 423
<=4 000 sq.m	9789	9077	9787	9135	9983	8952	9691	9389	10138	9748
(40,1; 60] sq.m	8316	8162	8433	7996	8496	7763	8562	7931	8926	8188
(60,1; 80] sq.m	7771	7816	7929	7448	7774	7748	7862	7626	8385	7651
> 80,1 sq.m	8402	8616	8884	7810	8781	8607	8946	8244	9446	8518
average offer price deviation	1,5%	x	7,6%	x	6,9%	x	4,8%	x	7,6%	x
<= 40 sq.m	7,8%	x	7,1%	x	11,5%	x	3,2%	x	4,0%	x
(40,1; 60] sq.m	1,9%	x	5,5%	x	9,4%	x	7,9%	x	9,0%	x
(60,1; 80] sq.m	-0,6%	x	6,5%	x	0,3%	x	3,1%	x	9,6%	x
> 80,1 sq.m	-2,5%	x	13,8%	x	2,0%	x	8,5%	x	10,9%	x

Source: NBP

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

specification	I Q 2020		II Q 2020		III Q 2020		IV Q 2020		I Q 2021	
	offer	trans.	offer	trans.	offer	trans.	offer	trans.	offer	trans.
average price (PLN/sq.m.)	8 158	7 315	8 024	7 496	8 303	7 301	8 597	7 973	8 715	8 057
growth (q-o-q)	105,7	100,0	98,4	102,5	103,5	97,4	103,5	109,2	101,4	101,0
growth (y-o-y)	111,2	116,7	107,8	115,6	109,7	106,5	111,4	109,0	106,8	110,1
dwelling price range	1 227	188	1 161	282	2 252	139	1 920	449	2 038	421
<=4 000 PLN/sq.m	2	0	2	1	0	3	1	2	1	4
(4 001; 6 000] PLN/sq.m	81	33	74	38	103	28	58	47	62	38
(6 001; 8 000] PLN/sq.m	554	97	552	155	964	63	754	191	755	190
(8 001; 10 000] PLN/sq.m	446	50	413	69	925	33	779	159	836	141
>10 001 PLN/sq.m	144	8	120	19	260	12	328	50	384	48
dwelling space range	1 227	188	1 161	282	2 252	139	1 920	449	2 038	421
<= 40 sq.m	137	34	150	48	293	29	285	124	308	94
(40,1; 60] sq.m	455	78	466	136	964	68	799	203	856	217
(60,1; 80] sq.m	394	50	340	75	656	30	559	95	578	82
> 80,1 sq.m	241	26	205	23	339	12	277	27	296	28
average price of 1 sq.m. of dwelling	8 158	7 315	8 024	7 496	8 303	7 301	8 597	7 973	8 715	8 057
<=4 000 sq.m	9 486	8 196	9 313	8 712	9 534	8 160	10 038	8 994	10 141	9 241
(40,1; 60] sq.m	8 366	7 330	8 126	7 489	8 395	7 240	8 610	7 886	8 747	7 746
(60,1; 80] sq.m	7 826	6 925	7 665	7 040	7 851	6 959	8 087	7 225	8 244	7 742
> 80,1 sq.m	7 555	6 872	7 445	6 488	7 854	6 422	8 104	6 577	8 062	7 420
average offer price deviation	11,5%	x	7,0%	x	13,7%	x	7,8%	x	8,2%	x
<= 40 sq.m	15,7%	x	6,9%	x	16,8%	x	11,6%	x	9,7%	x
(40,1; 60] sq.m	14,1%	x	8,5%	x	16,0%	x	9,2%	x	12,9%	x
(60,1; 80] sq.m	13,0%	x	8,9%	x	12,8%	x	11,9%	x	6,5%	x
> 80,1 sq.m	9,9%	x	14,7%	x	22,3%	x	23,2%	x	8,6%	x

Source: NBP

7. Conclusions of the questionnaire survey on demand and supply in the secondary residential market in Poland, taking into account the housing rental market³³

Housing sales market

In 2020, the residential real estate sector in the secondary market, as in the primary market, despite the turbulences associated with the pandemic, proved resilient to long-lasting economic changes and remained fairly stable in terms of the level of supply, demand and the scale of price increases. Ultimately, 2020 ended with a lower decline in sales than anticipated at the start of the pandemic, driven by a rapid recovery in housing demand in the second half of the year. Nevertheless, the introduction of restrictions and the sudden slowdown in sales triggered a drop in revenue for real estate agents, which resulted in long-term financial difficulties mainly for smaller businesses offering a narrower range of services, including those focused on home rental. A significant part of mainly larger intermediaries, with a broader business profile adapted quite smoothly to the imposed requirements and, with the easing of restrictions and improved household sentiment, saw a significant increase in transactions and sales revenues. In 2021 Q1 amid persisting restrictions, only more than a half of the companies surveyed (56%) assessed their economic situation as good. A smaller but significant proportion of companies (34%), mainly with a narrower profile of offered services, continued to record a significantly lower turnover and experienced problems in ensuring business continuity.

According to the majority of real estate agents, in 2020 Q1 the demand for secondary market housing slightly exceeded the supply, which supported further increases in home prices, albeit at a slower pace. In 2020, the secondary market, likewise the primary market, saw a similar although a slightly lower increase in average asking and transaction prices compared to 2019. A higher price growth tended to be reported by the group of ten smaller cities (by 10% of the asking price and by 10% of the transaction price) than of seven larger cities (by 7% of the asking price and by 6% of the transaction price), including Warsaw (by 6% of the asking price and by 3% of the transaction price). The growth in housing prices in all space ranges continued. An increase in price growth was also seen in the group of the largest dwellings (over 80 sq. m). This confirms increased popularity of large dwellings indicated by agents and the insufficient supply of such housing compared to demand. Due to the year of construction, the highest price increases were mainly observed in the group of older buildings in good location with full infrastructure, located in the vicinity to the city centre. Price increase was also generated by the new dwellings, which confirms that purchasing such housing for investment purposes, often with the intention of improving own housing conditions, is of increased interest. The real estate market, including the secondary housing market, is heterogeneous since the main price drivers, apart from characteristics related to the site, location and standard of the real estate, are the features characteristic for the participants in this market, i.e., among others, the ability to hold a job and accumulate own financial resources and the creditworthiness of buyers. The high demand and price growth in the secondary market are supported by the high share of investment demand and limited supply and price growth of housing in the primary market as well as the banks' favourable policy regarding new residential mortgage loans. According to respondents, in the short term, however significantly, the decline in housing prices may be influenced by another longer lockdown and, consequently, by the deteriorating situation on the labour market, especially in some sectors and a decline in the sentiment of potential buyers. The decline in demand and housing prices may also be affected by the

³³ In February 2021, the National Bank of Poland carried out a "Survey on the demand and supply on the secondary residential market including the rental market" in the form of a questionnaire. 296 sales agents participated in the national survey, including 274 residential rental agents. In the structure analysed, local entrepreneurs accounted for 96% and nationwide entities - for 4%.

weakening or lack of improvement in the purchasing capacity of households, which has been recorded for more than a year due to a faster increase in housing prices than in wages.

In 2020, despite a considerable decline in rental income, the number of dwellings offered for sale was not so significant. Investors were still looking for safe investment in real estate rather than expected attractive rates of return. A decline in interest in the secondary market in favour of the primary market was noted. The advantage of buying dwellings in the secondary market is the absence of developer's risk and the fact the dwelling can be occupied or rented almost immediately after the purchase, which enables to generate rental income in a short time.

The shift to on-line instruction at universities, which has eliminated the demand for student housing, had a significant impact on the real estate market in university cities. According to real estate agents, housing accounted for a significant part of the secondary market demand in academic locations before the pandemic, resulting in a very large flow of capital into the real estate, mainly achieved by small investors. The shortage of housing for own needs, rise in disposable income, low interest rates and relatively favourable rental yields on residential real estate supported sustained consumer and investment demand.

The group of six large cities continued to see an upward trend in new construction housing purchases, including housing with a relatively high price per square metre. Analysing the demand in terms of the age of the stock in Warsaw, older dwellings, built between 1945 and 1970, in very good locations, often situated in tenement buildings have had the largest share in the transaction structure (nearly 30%) for several years. In most cities, the demand for buildings constructed in 1971-1988, mainly made of large slabs, decreased. Taking into account the area of the purchased dwellings, the structure of sales transactions remained similar, with a slight upward trend in the demand for larger dwellings, which was visible in large cities, except for Warsaw. The slight increase in demand for small dwellings for rent continued.

In the opinion of the prevailing part of real estate agents and according to NBP data, the supply of dwellings for sale available at the end of 2020 was slightly smaller (by 1%) than the number of dwellings on offer at the end of 2019. A slightly larger year-on-year decrease in available offers was seen in Warsaw (by 3%) and six cities (by 4%). The pandemic-related turmoil has not affected the offer of a significant number of dwellings for resale. As a result of the continued rise in home prices, despite the decline in rental income, dwellings continued to be one of the more favourable, widely available, viable forms of investment.

The share of the newest dwellings (built within four years from the date of listing for resale) in the group of the six largest cities remained at a similar level in the structure of sales offers (13.2% of offers in 2020). On the other hand, their share was lower, although it had been increasing for several years in the Warsaw market (12.0% in the structure of offers in 2020) and in the group of ten other cities (9.0% in the structure of offers in 2020). The analysis of the supply of dwellings built in the period of four years from the date of their offering for resale is the source of two types of information. It shows the proportion of the secondary market offer consisting of virtually new, good quality dwellings. Prices of these dwellings are a good proxy for the prices of developer dwellings. These dwellings can also be regarded to some extent as purchased for speculative purposes and as an indicator of purchases of this type and the scale of the decision to resell in order to gain profit on the planned investment. The increasing share of such dwellings can also be treated as an indicator of declining rental profitability where some landlords decide on disinvestment due to falling rental income. The market of six large cities, excluding Warsaw, saw more offers of such dwellings than before the pandemic was

observed. In 2021 Q1 dwellings purchased in the primary market for rental purposes represented 21% in the structure of sales offers of the majority of the surveyed companies.

In 2020, the structure of home buyers in the secondary market slightly changed. Domestic individuals prevailed (82%), with a small percentage of foreigners from Eastern European countries (7%), individuals from other countries (4%), enterprises (4%) and 1% each for domestic and foreign investment funds. Foreigners from the East tended to purchase dwellings in the secondary market rather than in the primary market. 95% of them purchased housing to live with their families. In 2019, people of Ukrainian origin purchased more than 3.2 thousand dwellings in Poland. Among buyers, the number of Belarusians and Russians had increased, resulting in the total of nearly 4,000 dwelling sales transactions. Foreigners who are not citizens of EU Member States most frequently purchase cooperative dwellings with ownership rights, as such transactions do not require a permit from the Ministry of Internal Affairs and Administration. Citizens of Germany or Scandinavian countries purchase housing mainly for investment purposes. According to the data of the Office for Foreigners, in 2020, the number of foreigners settling in Poland increased (by 8%). They originate mainly from countries across the eastern border, which confirms a further increase in the sale of dwellings to these people.

According to the survey respondents, like a year ago, the majority of home buyers (68%) lived in the same locality as the housing purchased and much smaller part (22%) lived in a different locality in the country. Buyers who lived outside the country, including Poles living abroad and foreigners, accounted for 10%. For three years, the structure of purchasers of dwellings in terms of the purpose of the unit purchased has remained at a similar level, with a slight upward trend in the purchase of dwellings with the intention to resell them at a profit at a favourable time (11% in 2020 compared to 8% in 2019) and a slight increase in buyers both for rent and for resale at a profit in the favourable period (10% in 2020 compared to 6% in 2019).

Considering the motivations of resellers, the respondents noted an increase in transactions as a result of declining rental profitability or loss of tenants (14% of sellers in 2020 versus 4% in 2019). Such behaviour was most often observed in Warsaw (18% in 2020 against 6% in 2019) followed by a group of six cities (15% in 2020 against 4% in 2019) and a group of ten cities (12% in 2020 against 4% in 2019). A slight decrease was recorded in the share of those reselling housing with the aim of another planned investment (to 16%) and due to the fact that cost of maintaining their current home is too expensive compared to their current capacity (to 8%).

According to the companies surveyed, in financing the purchase of residential real estate for own needs, the share of bank credit has decreased by several percentage points while the share of own funds has increased. Nevertheless, bank credit remained the primary source of financing or significantly prevailed in home purchases for consumption purposes (53% of transactions in 2020 vs. 68% in 2019). Among home buyers for investment purposes, own funds remained the prevailing source of financing. The group of purchasers using both own funds and a bank loan has increased to more than twenty percent which confirms the favourable rate of return on cash actually invested by the investor when leveraging a low-interest bank loan.

Housing rental market

The mobility restrictions imposed in 2020 due to the COVID-19 pandemic triggered a rapid and significant downturn in the residential rental market, resulting in a sharp increase in vacancy rates, a decline in rental

income and increased competition among landlords and a downward adjustment of rent rates. University studies continued via on-line learning made it possible for students renting rooms or dwellings to give up their tenancy, which has “released” the supply of thousands of dwellings in university cities. The large-scale of on-line office work allowed workers renting dwellings to return to their permanent residence. The first months of the pandemic also saw the return to the home country of individuals from abroad, including those providing labour. Most of these people, mainly from across the eastern border, returned to work in Poland at the beginning of 2020 Q3, consequently reducing the resulting oversupply. According to agents, this group was the most important component generating demand for rental housing in 2020 after the spread of the pandemic. Employment growth, which had driven the rental market in earlier years, gave way to small declines recorded in most cities in 2020, additionally limiting the growth potential of “new demand” for home rental. The extent of job losses recorded in some cities, mainly in retail and services sectors, may have translated into increased vacancy rates. An additional important element of the increase in oversupply of dwellings for rent was the supply of more dwellings purchased on the primary market for investment purposes, scheduled to enter the rental market in 2020. An increase in the number of rental offers of new dwellings (built after 2014) during the pandemic period was noted by 67% of respondents from six large cities, more than half of respondents from Warsaw and the least (41%) from the group of ten other cities.

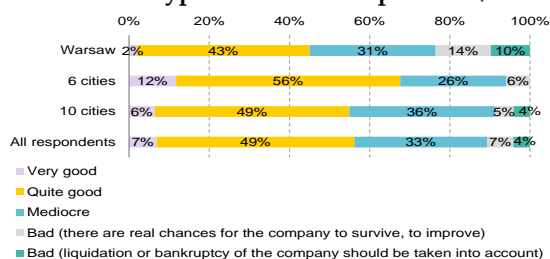
The uncertainty surrounding the pandemic, including concerns about the health of the relatives and the need to work and study at the place of residence, resulted in an increased interest in renting rooms and buying or renting houses. The unprecedented situation could have become an important rationale behind the decision to buy one's own home instead of continuing the rental, which could have added to the increase in the supply of rental housing. The impact of these factors has created a significant oversupply in the residential rental market. Continued oversupply was confirmed in February 2021 by the majority of respondents (73%). A significant decline in student demand affected as many as 90% of respondents. In September 2020, students entered into tenancy agreements for the 2020/2021 academic year through real estate agents, but the decision concerning on-line studies could have urged them to terminate contracts at short notice. According to the respondents, the decline in demand for domestic rentals in February 2021 reached an average of 21% in year-on-year terms. The deepest decline was recorded in the group of six cities (by 26%). The decrease in the demand generated by foreigners from Eastern Europe was estimated at 19%. Growing supply of housing for rent recorded since 2020 Q2 was confirmed by NBP data and monitoring of the number of offers on the websites. The number of dwelling rental offers in Warsaw rose by 84% y/y in 2020 Q3 and by 83% in 2020 Q4, compared to the corresponding periods in the previous year, in the group of six cities by - 91% and 78%, respectively and in the group of ten cities by 30% and 73%, respectively. The ratio of the number of home rental transactions concluded through real estate agents in a given quarter to the number of offers held at the beginning of the quarter is an indicator of the condition of the rental market. According to a simplified approach, this relationship indicates the percentage of dwellings that have found tenants. In 2020 Q4, in Warsaw, real estate agents rented 31% of dwellings on offer compared to 52% in 2019 Q4, which, amid growing offer, confirms that the demand is still too low. In the group of six cities the difference between the comparable periods was minus 15 percentage points and in the group of ten cities - minus 11 percentage points. Less favourable demand-to-supply ratio in 2020 Q4 than in 2020 Q3 indicated a downturn in the rental market over the final months of 2020.

The response of landlords to the increase in the vacancy rate and lack of demand during the pandemic were reductions of asking rents, which can hardly be considered an effective attempt to actively seek the equilibrium level. According to the NBP, data for Warsaw show declines in transaction rates in quarterly terms that continued throughout 2020. In 2020 Q4, In 2020 Q4, as compared to 2019 Q4, transaction rates in Warsaw were

11% lower and the average rent level was comparable to that recorded in 2017-2018. In the group of six large cities, after a very high increase in the average rental rate recorded in 2019 Q4, the deep correction in the average transaction rate recorded just before the pandemic (in 2020 Q1) has proved insufficient to reach the equilibrium level. The second half of 2020 saw a slowdown in the decline of rental rates in larger markets in the country. The situation was different in the markets of ten other cities, where rent rates fell much more slowly in 2020.

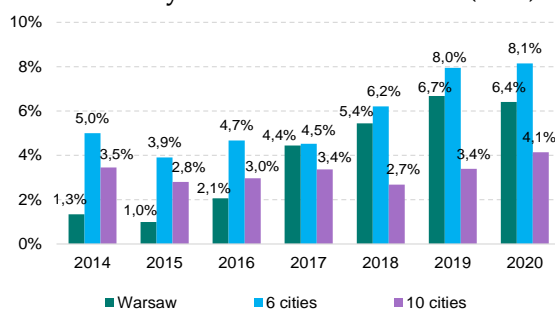
During the pandemic period, the rental market for new dwellings (built after 2014) performed relatively well. The decline in offer rates, accompanied by a significant increase in the number of rental offers, resulted in a surge in the number of rental transactions for such dwellings. The fall in transaction rates was lower than the fall in rates for the remaining (older) dwellings. In 2020 Q4, in Warsaw, transaction rates for new dwellings were 9% lower y/y, with a 13% decline in rates for older dwellings. In the group of six cities, they decreased by 7% with a 21% drop in rental rates for older housing units. Only in the group of ten cities, the average rental rate for new dwellings increased by 1% y/y. According to the majority of respondents, restrictions imposed to prevent the spread of the pandemic resulted in a much larger decline in short-term rentals than in long-term rentals in both Warsaw and the group of six larger cities, accompanied by much larger adjustments of rent rates. Assessments of respondents from the group of ten cities indicate that the short-term rental market performed better during the pandemic period than in larger markets.

Figure 76 Structure of respondents' answers concerning the assessment of their current economic situation, excluding seasonal fluctuations typical for this period (in %)



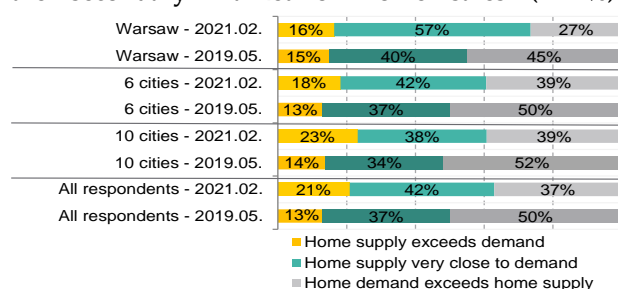
Source: NBP survey

Figure 78 Share of new dwellings in sales transactions in the secondary market - dwellings built within 4 years from the resale date (in %)



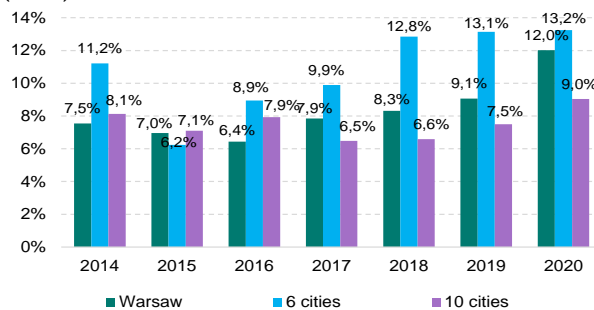
Source: NBP

Figure 77 Structure of respondents' answers concerning the proportion of supply and demand in the secondary market of home sales (in %)



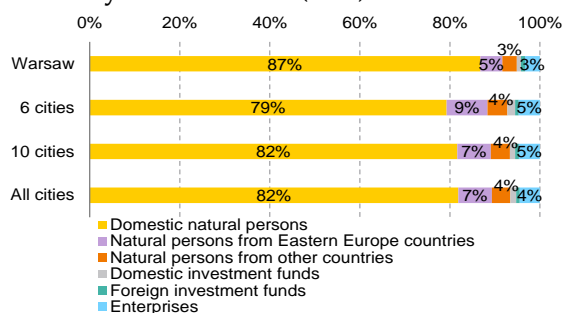
Source: NBP survey

Figure 79 Share of new dwellings (built within four years of the resale date) in secondary market offers (in %)



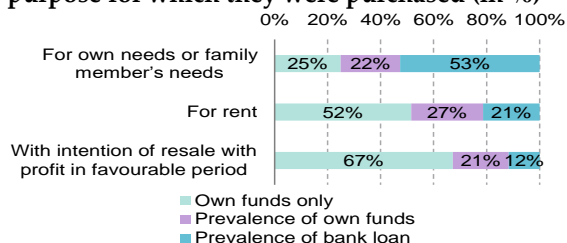
Source: NBP

Figure 80 Structure of buyers of dwellings in the secondary market in 2020 (w %)



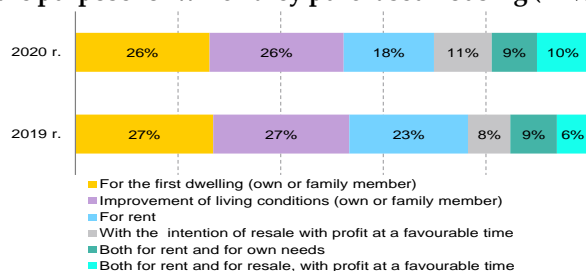
Source: NBP survey

Figure 82 Share of individual sources of financing in the purchase of dwellings on the secondary market in 2020 depending on the purpose for which they were purchased (in %)



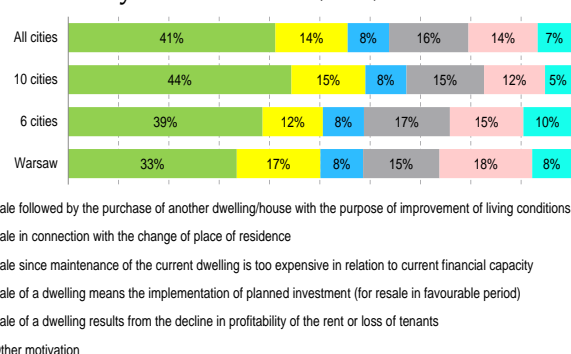
Source: NBP survey

Figure 81 Overall structure of buyers in the secondary market in 2020 and in 2019 according to the purpose for which they purchased housing (in %)



Source: NBP survey

Figure 83 Motivation of people selling dwellings in the secondary market in 2020 (w %)



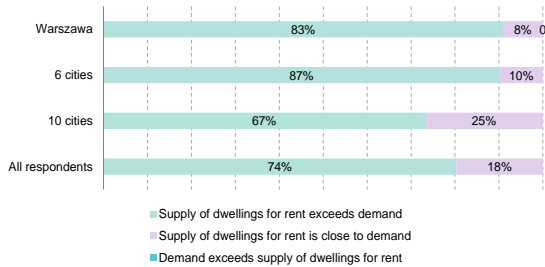
Source: NBP survey

Table 19 Asking (OFW) and transaction housing rent rates and their change in individual quarters of 2020.

cities	quarter	average rent (PLN/sq.m.)	asking rate		average transaction rent rate (PLN/sq.m.)	
			q/q	y/y	q/q	y/y
Warsaw	2020 Q1	60.0	-1%	3%	50.7	-8%
	2020 Q2	58.7	-2%	2%	49.3	-3%
	2020 Q3	57.5	-2%	-3%	48.1	-2%
	2020 Q4	55.8	-3%	-8%	48.9	2%
6 CITIES	2020 Q1	44.9	2%	7%	41.9	-8%
	2020 Q2	43.5	-3%	0%	39.1	-7%
	2020 Q3	43.5	0%	-6%	39.9	2%
	2020 Q4	42.6	-2%	-3%	38.8	-3%
10 cities	2020 Q1	33.8	1%	3%	32.9	0%
	2020 Q2	33.5	-1%	2%	32.2	-2%
	2020 Q3	33.4	0%	2%	33.2	3%
	2020 Q4	32.7	-2%	-3%	33.6	1%

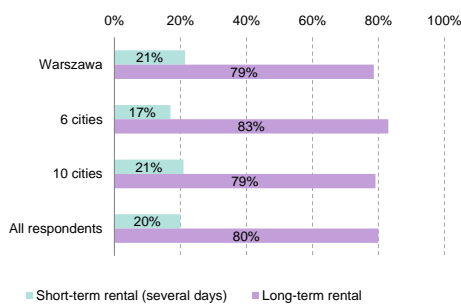
Source: NBP

Figure 84 Assessment of the current condition of the housing rental market according to respondents (in %)



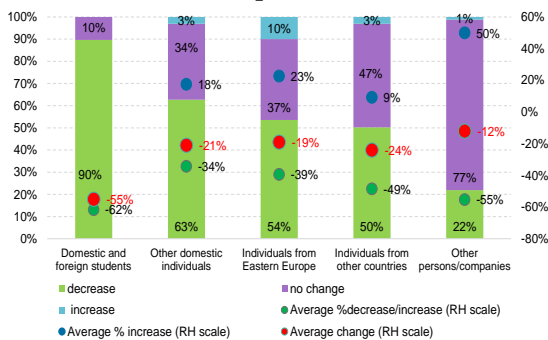
Source: NBP survey

Figure 86 Share of rental transactions of dwellings rented after the spread of the Covid-19 pandemic according to the duration of the rental contract by city group (in %)



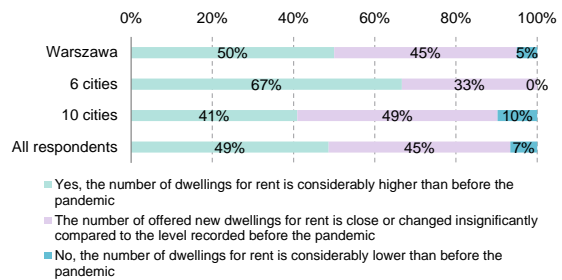
Source: NBP survey

Figure 88 Individuals' assessment of changes in housing rental levels compared to the period before the COVID-19 pandemic (in %)



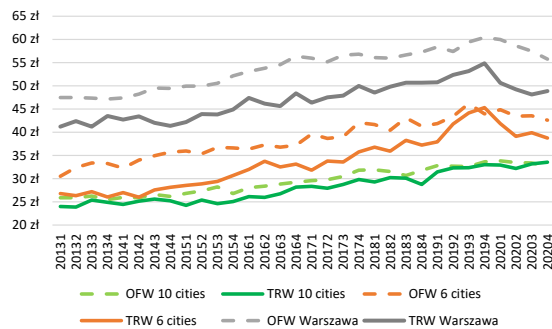
Source: NBP survey

Figure 85 Assessment of the change in the current number of rental offers for dwellings built after 2014 compared to the pre-pandemic period (%)



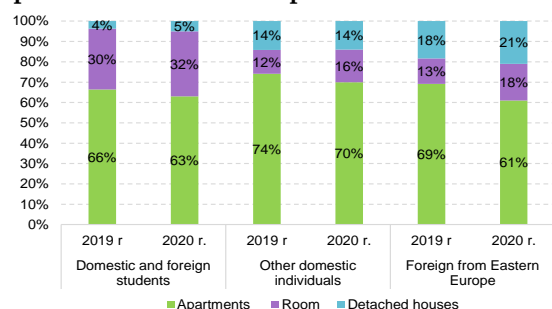
Source: NBP survey

Figure 87 Asking rates (OFW) and transaction rates (TRW) in the BARN survey (PLN/sq.m.)



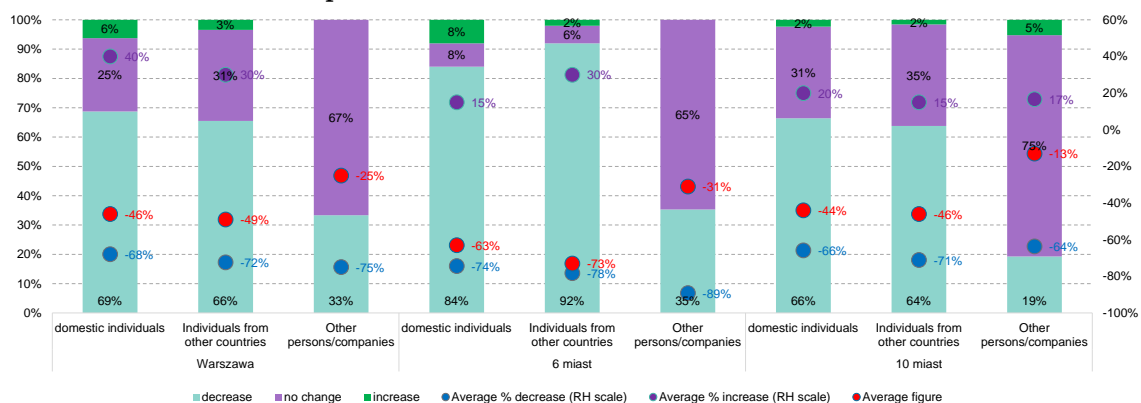
Source: NBP

Figure 89 Share of individual residential properties in the structure of long-term rental transactions concluded in 2018-2019 and after the spread of the COVID-19 pandemic (in %)



Source: NBP survey

Figure 90 Individuals' assessment of changes in short-term housing rental level compared to the period before the COVID-19 pandemic



Source: NBP survey

8. Analysis of profitability of investment in housing in selected larger cities in Poland in 2021 Q1³⁴

The last few years have seen the development of the commercial rental housing market. It is driven by a number of factors, including reduced tenant protection and favourable economic conditions such as structural demand from the labour market, rising income, low interest rates and the biased public belief in the security of housing investment. Under these circumstances, a question arises as to how the profitability of this type of investment is developing in Poland. The prevailing view in international literature is that this type of investment is not very profitable. A number of risk factors are also identified, such as cycle risk, liquidity risk, high entry and exit costs and regulatory risk (changes in tenant protection law). Therefore, dwellings of this type were built in the period of low interest rates (credit cycle) and usually subsidised (usually accelerated depreciation). It should also be added that in analysing the profitability of rental investments, it is customary to use the category of return (*yield*), which includes depreciation rather than pure profit. We should also bear in mind the fact that these analyses usually show flows from the investment highly leveraged by credit. In a low interest rate environment, it generates additional profits, however, once the phase of the financial cycle changes and interest rates rise, the windfall profits may decrease or turn into losses.

In order to show the real profitability of investment in housing for rent we usually operate with three categories, often illegitimately mixed and interchangeably used in the market, i.e.:

1. **Investment capitalisation rate**, defined as the net rent (i.e. excluding the cost of maintaining the real estate) to the price of a dwelling. It comprises taxes and the value of depreciation and, although it is often used, in fact, it is not a measure of investment profitability but rather of cash flow. However, it is the simplest measure and its growth rate is similar to the return on investment, i.e. ROE for LTV = 0%.
2. **Rate of return on equity when a loan is used**, defined as net rent less taxes and depreciation and referred only to the equity engaged. The denominator of this indicator therefore includes the return on investment, however, we refer it only to our equity. If we are supported by a loan and the internal rate of return on investment is higher than the rate on the loan or another form of foreign capital, leverage generates additional flows that increase the return on our capital, but at the same time obscures the picture of the real effectiveness of the investment. For our analyses, we show ROE with LTV of 50% and 80%, which takes into account the banking practice for this type of investment (50%) and the maximum leverage allowed (80%).

³⁴ We present a simplified analysis of investment in housing for rent conducted by an individual, taxed on a dwelling-rate basis. The analysis was conducted based on data from the voivodship capitals (Opole and Zielona Góra were omitted due to insufficient sample size of recorded rental transactions in these local markets). In addition, the survey covered the profitability of housing investment in Gdynia. The profitability of investing in rental was determined by calculating the capitalisation rate and the ROE (return on equity). The capitalisation rate is calculated as the annual rental income to the price of a dwelling with the area of 50 sq.m. Different possible levels of leverage (a fully cash-funded investment with LTV of 0%, an investment with LTV of 50% and a highly leveraged investment with LTV of 80%) were adopted to determine the ROE calculated as net profit relative to equity engaged. In order to calculate the financial profit, we took into account rental income and deducted a flat-rate tax of 8.5%, repayment of interest on the loan as well as depreciation of the building in the amount of 1.5% of its value was included (we assumed two general overhauls in the period of 100 years). The tax is paid on all rental income, before any cost deduction. The transaction price per sq.m of an average dwelling was determined by summing up 50% of the average transaction price in the primary and secondary markets. The price in the primary market was increased by the cost of finishing (in 2021 Q1 + 950 PLN/sqm in Warsaw, +850 in 6 cities and + 750 in the remaining 8 cities). The group of six cities comprised Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław. The group of 8 cities included Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Rzeszów and Szczecin. A PLN-denominated loan granted for 25 years, with equal instalments, payable four times a year was adopted. The occupancy rate of 95% was assumed.

- 3. Return on equity without loan engagement (LTV = 0%), i.e. the rate of return on investment.** The denominator of this indicator is the same as for the one discussed above, but the numerator includes the overall capital engaged in investment. It is therefore a real measure of investment effectiveness, often equated and comparable with a percentage. This measure shows how many groszy of profit generates each invested zloty for our dwelling each year and it is a universal indicator used in the calculation of the economic effectiveness of investment for the purpose of their cross-comparison.

The calculations presented should be regarded as estimates of rental profitability in the cities surveyed and should not be treated as business information. The availability of rental data from rental transactions is limited. Moreover, this market is not homogeneous and would require the application of econometric techniques to compare, often hardly comparable, dwellings.

Despite these reservations, the analysis of the profitability of residential investment in Poland confirms the general correlations discussed above. When taking into account depreciation, taxes and leverage effects, the real rates of return on an investment in rental housing, with LTV=0, range on average between 2.4% and 3.7% depending on the city. At present, the low level of interest rates means that financing of the investment with a loan generates additional, albeit small, returns, so that returns on equity are higher. Since the difference between the internal rate of return and the cost of borrowing is small, investments financed according to this model become very sensitive to changes in interest rates and to fluctuations in rental rates and vacancy risk and should not provide an incentive for highly leveraged investments. The main reason for demand for real estate rental is therefore the current phase of the financial cycle and the associated low returns on alternative financial investments available to households, rather than the implied high profitability of rental.

The profitability of investing in housing depends fundamentally on the purchase price and the rental rates. In 2021 Q1, in relation to the previous quarter, a further decline in average transaction rental rates was observed in the majority of local markets, while the prices of dwellings purchased increased. Consequently, rental profitability has dropped. However, the purchase of dwellings is still commonly regarded as a favourable form of savings investment due to the steady increase in home prices and therefore potential capital gains on resale. Investors do not take into account the fact that these increases are also cyclical as well as the fact that in the long term, the value of the plot does increase slowly, but the value of the building depreciates. The November 2020 primary market survey and the February 2021 secondary housing market survey confirmed a continued high share of investment demand, including mainly the purchase of housing for rent. The purchase of dwellings for investment purposes, despite the drop in their profitability, was still a beneficial investment in the opinion of respondents.

The estimated capitalisation rate in 2021 Q1 continued its downward trend in almost all local markets. Consequently, returns on equity and the profitability of housing investment have also decreased. This decline was deeper for the second consecutive quarter mainly in Kraków (to 4.8%), Gdańsk (to 5.0%), Lublin (to 5.8%), which was the result of the growing difference between the purchase price of dwellings which continued on an upward trend and the transaction housing rent, which showed a further decline. The period from January to March 2021, compared to the previous quarter, showed a slowdown in the decrease of the capitalisation rate, among others in Wrocław (6.2% in both quarters) due to a slight increase in rental rates, which after a major correction only in 2020 Q2, proved resilient to pandemic-induced turbulence in subsequent quarters of 2020. The downturn in the rental market also had a minor impact on the change in the capitalisation rate level in the Łódź market (7.1% in 2021 Q1 and in 2020 Q2 against 7.6% in 2019 Q2). A slight improvement in the

capitalisation rate in 2021 Q1 in relation to the previous quarter was recorded in Kielce and in Rzeszów, where further increase in sales prices was accompanied by a growth in rental rates.

In 2021 Q1, the return on investment in dwellings, despite the continued poor condition of the rental market, was only a few percentage points higher than the safe investment in 10-year government bonds or bank deposits in all the analysed markets. This difference should be seen as a liquidity premium, since the money invested in Treasury bonds can be withdrawn quickly, whereas selling real estate takes time, generates significant costs and even capital losses when the cycle in this market reverses.

The ROE indicator is measure of the return on cash actually invested. In the case of housing for rent in 2021 Q1 it was significantly lower than the calculated capitalisation rate in the cities analysed. The difference is due to the fact that when calculating the ROE, we deduct tax, depreciation cost and real estate management cost from net rents. However, the investor's estimated return on invested funds remained higher than the interest rate on bank deposits and the risk-free rate of return on Treasury bonds. When the entire investment was financed with cash, the highest ROE in the analysed period was recorded in Łódź (4.3%), Katowice (3.8%), Wrocław (3.7%) and Szczecin (3.6%). In the remaining local markets, the level of the index ranged between 3.5% and 2.4%, including 2.8% in the largest Warsaw market, compared to 3.0% in the previous quarter.

The use of leverage made it possible to purchase a slightly larger dwelling and generate a higher rate of return. The higher the share of the bank loan (LTV=50%, LTV=80%) in home purchase financing in 2021 Q1, the higher the estimated ROE, but also the higher the investor's risk. However, it should be noted that the increase in the rate of return as a result of leverage is insignificant and, at the same time, small changes in rent rates or interest rates result in converting the additional profit into a loss. As the leverage increases, the investor's risk grows and can be transferred to the banking sector. The ROE calculation does not take into account the fact that once the loan is repaid, the investor becomes owner of the property and can sell it. The ultimate profitability of housing investment depends not only on the rental income, but also on the resale price of the real estate. Experience to date shows that real estate maintains its real value in the long term but it applies to average values.

Pursuant to the revised S Recommendation, banks will introduce mortgage loans with fixed interest rates or periodically fixed interest rates into their offer. Purchasing a dwelling with the use of bank funds at a fixed interest rate, whether for own use or for rent, will become a more predictable and less risky investment than in the case of floating interest rates. However, since banks themselves will have to hedge against interest rate fluctuations, it can be expected that financing investments with it will be safer, but will limit profits.

Investing in housing for rent involves risks that are difficult to quantify. The period during which a dwelling is not rented does not generate rental income but generates fixed costs that have to be paid. The cost of maintaining the dwelling and its value can change over time. Rental income is significantly affected by the location of the dwelling, the age of the real estate, the standard of finishing and changing preferences of buyers. Dwellings in good locations, usually in the city centre, have a higher purchase price than those on the outskirts. However, investing in a property in the centre, or what is known as a business centre, has historically carried a relatively lower risk as it is easier to find tenants. On the other hand, dwellings located on the outskirts involve potentially higher growth in capitalisation rate under the urban development conditions (real estate purchase prices and maintenance costs are lower and rents can rise quickly). A higher risk associated with such

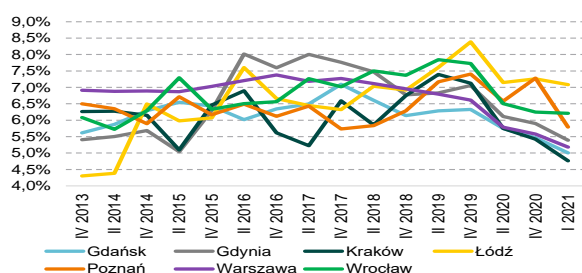
an investment results from potential problems in finding tenants. Also in the event of an economic downturn, such dwellings may lose tenants more quickly.

Table 20 Estimated capitalisation rate (return expected by a real estate buyer, expressed as a percentage of the purchase price of the real estate paid fully with cash) in selected cities (in %)

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kielce	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Warszawa	Wrocław
IV 2013	6,9%	4,5%	5,6%	5,4%	6,8%	5,0%	6,3%	6,3%	4,3%	4,8%	6,5%	5,6%	5,9%	6,9%	6,1%
II 2014	6,9%	4,8%	5,9%	5,5%	5,9%	4,5%	6,3%	6,4%	4,4%	5,1%	6,4%	5,5%	6,3%	6,9%	5,7%
IV 2014	6,9%	6,6%	6,3%	5,7%	6,5%	5,9%	6,2%	7,0%	6,5%	6,1%	5,9%	6,4%	7,0%	6,9%	6,3%
II 2015	6,9%	7,3%	6,5%	5,0%	7,7%	5,9%	5,1%	5,8%	6,0%	6,3%	6,7%	5,9%	7,0%	6,9%	7,3%
IV 2015	7,0%	6,5%	6,4%	6,3%	7,6%	6,0%	6,5%	7,0%	6,1%	6,0%	6,2%	7,1%	6,8%	7,0%	6,3%
II 2016	7,2%	6,5%	6,0%	8,0%	7,7%	5,7%	6,9%	8,3%	7,6%	5,8%	6,5%	6,8%	6,5%	7,2%	6,5%
IV 2016	7,4%	7,3%	6,3%	7,6%	8,1%	6,0%	5,6%	7,9%	6,7%	5,5%	6,1%	6,4%	7,6%	7,4%	6,6%
II 2017	7,2%	6,4%	6,5%	8,0%	8,4%	6,1%	5,2%	8,1%	6,4%	5,6%	6,4%	7,1%	6,9%	7,2%	7,3%
IV 2017	7,3%	6,6%	7,1%	7,8%	7,6%	5,8%	6,6%	7,7%	6,3%	5,5%	5,7%	6,8%	7,4%	7,3%	7,0%
II 2018	7,1%	5,9%	6,6%	7,5%	7,9%	5,7%	5,9%	7,6%	7,0%	5,6%	5,8%	7,3%	6,6%	7,1%	7,5%
IV 2018	7,0%	6,9%	6,1%	6,8%	7,6%	6,2%	6,8%	6,5%	6,9%	5,7%	6,3%	6,2%	7,3%	7,0%	7,4%
II 2019	6,8%	7,3%	6,3%	6,8%	7,7%	6,1%	7,4%	6,7%	7,6%	6,0%	7,2%	6,3%	7,0%	6,8%	7,8%
IV 2019	6,6%	6,6%	6,3%	7,1%	7,4%	6,6%	7,1%	6,6%	8,4%	5,1%	7,4%	6,3%	6,9%	6,6%	7,7%
II 2020	5,8%	5,9%	5,8%	6,1%	6,5%	5,7%	5,8%	6,6%	7,1%	5,4%	6,6%	6,0%	7,4%	5,8%	6,5%
IV 2020	5,6%	5,6%	5,5%	5,9%	6,8%	5,8%	5,4%	5,9%	7,3%	5,6%	7,3%	5,5%	6,7%	5,6%	6,2%
I 2021	5,2%	4,8%	5,0%	5,4%	6,5%	6,1%	4,8%	5,8%	7,1%	5,0%	5,8%	6,1%	6,2%	5,2%	6,2%

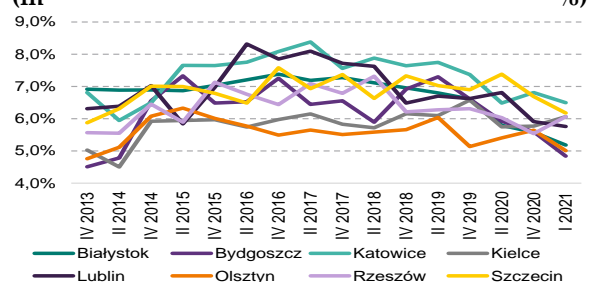
Source: NBP

Figure 91 Estimated capitalisation rate (return expected by a real estate buyer, expressed as a percentage of the purchase price of the real estate paid fully with cash) in seven large cities (in %)



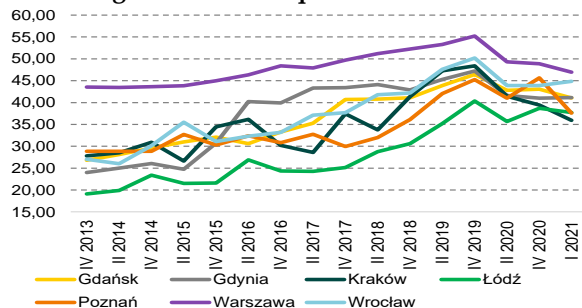
Source: NBP

Figure 92 Estimated capitalisation rate (return expected by a real estate buyer, expressed as a percentage of the purchase price of the real estate paid fully with cash) in eight other selected cities (in %)



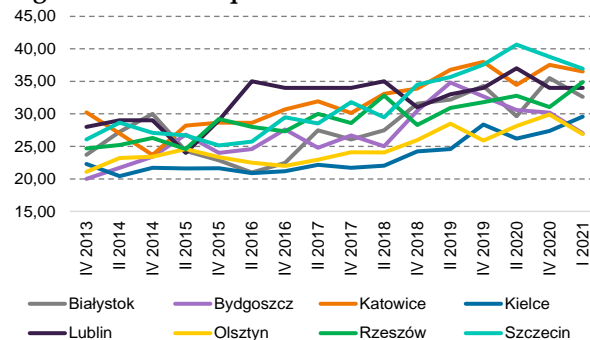
Source: NBP

Figure 93 Transaction rates of housing rental in seven large cities (PLN/sq.m.)



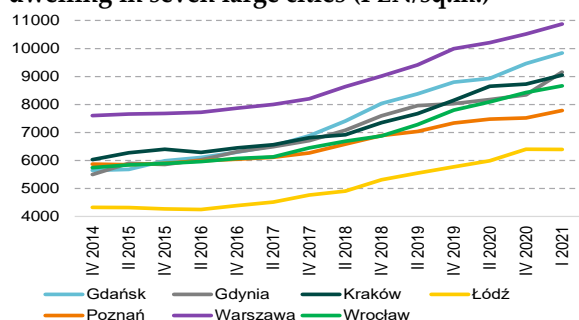
Source: NBP

Figure 94 Transaction rates of housing rental in eight cities (PLN/sq.m.)



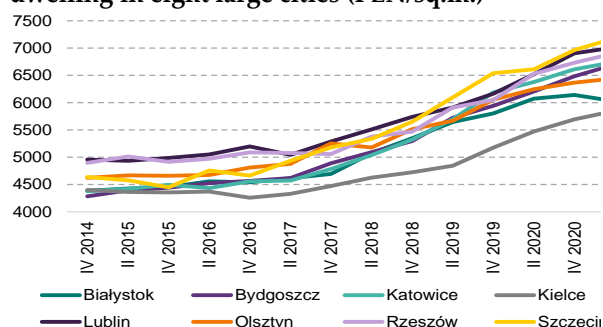
Source: NBP

Figure 95 Transaction prices of an average dwelling in seven large cities (PLN/sq.m.)



Source: NBP

Figure 96 Transaction prices of an average dwelling in eight large cities (PLN/sq.m.)



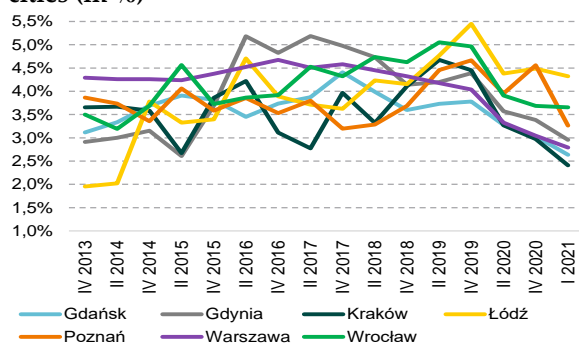
Source: NBP

Table 21 Return on equity (ROE) on a fully cash-funded housing investment (LTV=0% in selected cities (in %))

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kielce	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Warszawa	Wrocław
IV 2013	4,3%	2,1%	3,1%	2,9%	4,1%	2,6%	3,7%	3,7%	2,0%	2,4%	3,9%	3,1%	3,3%	4,3%	3,5%
II 2014	4,3%	2,4%	3,3%	3,0%	3,4%	2,1%	3,7%	3,8%	2,0%	2,7%	3,7%	3,0%	3,7%	4,3%	3,2%
IV 2014	4,3%	3,8%	3,7%	3,2%	3,8%	3,3%	3,6%	4,3%	3,8%	3,4%	3,4%	3,8%	4,3%	4,3%	3,7%
II 2015	4,2%	4,5%	3,9%	2,6%	4,8%	3,3%	2,7%	3,3%	3,3%	3,7%	4,1%	3,3%	4,2%	4,2%	4,6%
IV 2015	4,4%	3,8%	3,9%	3,7%	4,8%	3,3%	3,9%	4,2%	3,4%	3,4%	3,6%	4,4%	4,0%	4,4%	3,7%
II 2016	4,5%	3,8%	3,5%	5,2%	4,9%	3,1%	4,2%	5,4%	4,7%	3,2%	3,9%	4,0%	3,8%	4,5%	3,9%
IV 2016	4,7%	4,4%	3,7%	4,8%	5,2%	3,3%	3,1%	5,0%	3,9%	2,9%	3,5%	3,8%	4,7%	4,7%	3,9%
II 2017	4,5%	3,7%	3,9%	5,2%	5,4%	3,4%	2,8%	5,2%	3,7%	3,1%	3,8%	4,3%	4,2%	4,5%	4,5%
IV 2017	4,6%	3,8%	4,4%	5,0%	4,7%	3,2%	4,0%	4,9%	3,6%	3,0%	3,2%	4,1%	4,6%	4,6%	4,3%
II 2018	4,5%	3,3%	4,0%	4,7%	5,0%	3,1%	3,3%	4,8%	4,2%	3,0%	3,3%	4,5%	3,9%	4,5%	4,7%
IV 2018	4,3%	4,2%	3,6%	4,1%	4,8%	3,5%	4,1%	3,8%	4,2%	3,1%	3,7%	3,6%	4,5%	4,3%	4,6%
II 2019	4,2%	4,5%	3,7%	4,2%	4,9%	3,4%	4,7%	4,0%	4,8%	3,4%	4,5%	3,6%	4,3%	4,2%	5,1%
IV 2019	4,0%	3,9%	3,8%	4,4%	4,6%	3,8%	4,5%	3,9%	5,4%	2,6%	4,7%	3,7%	4,2%	4,0%	5,0%
II 2020	3,3%	3,3%	3,3%	3,6%	3,8%	3,1%	3,3%	4,1%	4,4%	2,9%	4,0%	3,4%	4,6%	3,3%	3,9%
IV 2020	3,0%	3,1%	3,0%	3,4%	4,1%	3,2%	3,0%	3,3%	4,5%	3,1%	4,6%	3,0%	4,0%	3,0%	3,7%
I 2021	2,8%	2,4%	2,6%	3,0%	3,8%	3,4%	2,4%	3,2%	4,3%	2,5%	3,3%	3,5%	3,6%	2,8%	3,7%

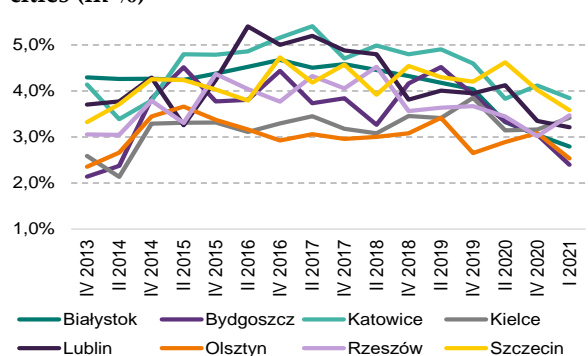
Source: NBP

Figure 97 Return on equity (ROE) on a fully cash-funded housing investment (LTV = 0%) in seven cities (in %)



Source: NBP

Figure 98 Return on equity (ROE) on a fully cash-funded housing investment (LTV = 0%) in eight cities (in %)

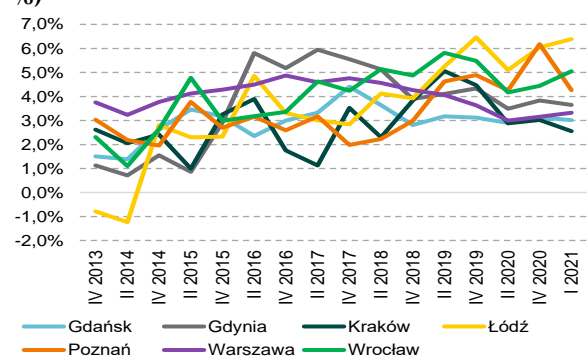


Source: NBP

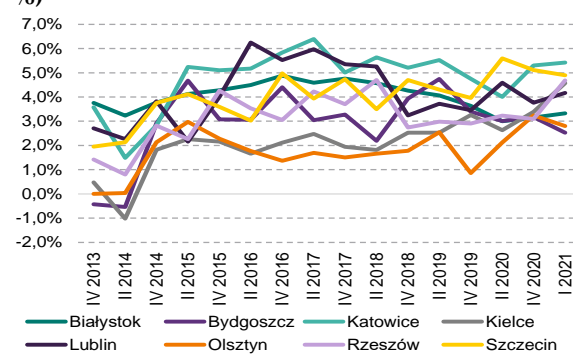
Figure 22 Return on equity (ROE) on a leveraged housing investment (LTV = 50%) in selected cities (in %)

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kielce	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Warszawa	Wrocław
IV 2013	3,8%	-0,4%	1,5%	1,1%	3,6%	0,5%	2,6%	2,7%	-0,8%	0,0%	3,0%	1,4%	2,0%	3,8%	2,3%
II 2014	3,2%	-0,5%	1,4%	0,7%	1,5%	-1,0%	2,1%	2,3%	-1,2%	0,0%	2,2%	0,8%	2,1%	3,2%	1,1%
IV 2014	3,8%	2,9%	2,6%	1,6%	2,8%	1,8%	2,4%	3,8%	2,8%	2,1%	2,0%	2,8%	3,8%	3,8%	2,6%
II 2015	4,1%	4,7%	3,5%	0,9%	5,2%	2,3%	1,0%	2,2%	2,3%	3,0%	3,8%	2,3%	4,1%	4,1%	4,8%
IV 2015	4,3%	3,1%	3,2%	2,9%	5,1%	2,2%	3,3%	4,0%	2,3%	2,3%	2,7%	4,3%	3,6%	4,3%	3,0%
II 2016	4,5%	3,1%	2,4%	5,8%	5,2%	1,7%	3,9%	6,2%	4,9%	1,8%	3,2%	3,5%	3,0%	4,5%	3,2%
IV 2016	4,9%	4,4%	3,0%	5,2%	5,8%	2,1%	1,8%	5,5%	3,3%	1,4%	2,6%	3,1%	5,0%	4,9%	3,4%
II 2017	4,6%	3,0%	3,3%	6,0%	6,4%	2,5%	1,1%	6,0%	3,0%	1,7%	3,2%	4,2%	3,9%	4,6%	4,6%
IV 2017	4,8%	3,3%	4,4%	5,6%	5,0%	1,9%	3,5%	5,4%	2,8%	1,5%	2,0%	3,7%	4,7%	4,8%	4,2%
II 2018	4,6%	2,2%	3,6%	5,1%	5,6%	1,8%	2,3%	5,3%	4,1%	1,7%	2,2%	4,7%	3,5%	4,6%	5,1%
IV 2018	4,3%	3,9%	2,8%	3,9%	5,2%	2,5%	3,8%	3,2%	3,9%	1,8%	3,0%	2,7%	4,7%	4,3%	4,9%
II 2019	4,1%	4,7%	3,2%	4,1%	5,5%	2,5%	5,1%	3,7%	5,2%	2,5%	4,6%	3,0%	4,3%	4,1%	5,8%
IV 2019	3,6%	3,4%	3,1%	4,3%	4,8%	3,3%	4,5%	6,5%	6,5%	0,9%	4,9%	2,9%	4,0%	3,6%	5,5%
II 2020	3,0%	3,0%	2,9%	3,5%	4,0%	2,6%	2,9%	4,6%	5,1%	2,1%	4,3%	3,2%	5,6%	3,0%	4,2%
IV 2020	3,2%	3,2%	3,1%	3,8%	5,3%	3,4%	3,0%	3,8%	6,0%	3,2%	6,2%	3,1%	5,1%	3,2%	4,4%
I 2021	3,3%	2,5%	3,0%	3,6%	5,4%	4,6%	2,6%	4,2%	6,4%	2,8%	4,3%	4,7%	4,9%	3,3%	5,0%

Source: NBP

Figure 99 Return on equity (ROE) on a leveraged housing investment (LTV = 50%) in seven cities (in %)


Source: NBP

Figure 100 Return on equity (ROE) on a leveraged housing investment (LTV = 50%) in eight cities (in %)


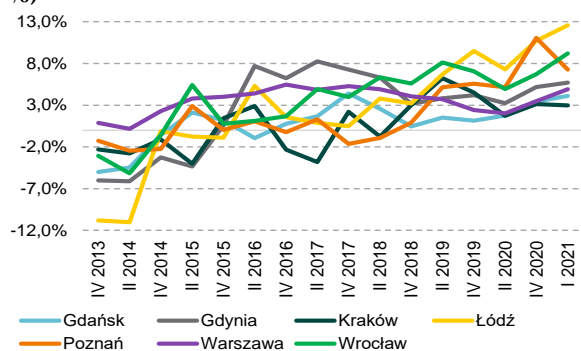
Source: NBP

Figure 23 Return on equity (ROE) on a leveraged housing investment (LTV = 80%) in selected cities (in %)

Quarter	Białystok	Bydgoszcz	Gdańsk	Gdynia	Katowice	Kielce	Kraków	Lublin	Łódź	Olsztyn	Poznań	Rzeszów	Szczecin	Warszawa	Wrocław
IV 2013	0,9%	-9,9%	-5,0%	-6,0%	0,1%	-7,7%	-2,3%	-2,1%	-10,8%	-8,8%	-1,3%	-5,3%	-4,0%	0,9%	-3,1%
II 2014	0,2%	-9,3%	-4,5%	-6,1%	-4,2%	-10,5%	-2,8%	-2,3%	-11,0%	-7,8%	-2,5%	-5,9%	-2,6%	0,2%	-5,2%
IV 2014	2,3%	0,2%	-0,6%	-3,3%	-0,1%	-2,6%	-1,1%	2,4%	-0,1%	-1,8%	-2,2%	-0,1%	2,3%	2,3%	-0,6%
II 2015	3,8%	5,2%	2,1%	-4,4%	6,6%	-0,9%	-4,0%	-1,1%	-0,8%	0,9%	2,9%	-0,9%	3,8%	3,8%	5,4%
IV 2015	4,0%	1,0%	1,2%	0,6%	6,0%	-1,3%	1,4%	3,3%	-0,9%	-1,0%	0,0%	3,9%	2,3%	4,0%	0,8%
II 2016	4,4%	0,8%	-1,0%	7,7%	6,1%	-2,7%	2,9%	8,8%	5,3%	-2,4%	1,1%	2,0%	0,7%	4,4%	1,1%
IV 2016	5,5%	4,3%	0,8%	6,2%	7,9%	-1,4%	-2,3%	7,1%	1,6%	-3,3%	-0,2%	0,9%	5,7%	5,5%	1,7%
II 2017	4,8%	1,0%	1,7%	8,2%	9,3%	-0,4%	-3,8%	8,3%	0,9%	-2,4%	1,3%	3,9%	3,2%	4,8%	4,9%
IV 2017	5,3%	1,6%	4,4%	7,3%	5,9%	-1,8%	2,2%	6,8%	0,5%	-2,8%	-1,6%	2,6%	5,2%	5,3%	4,0%
II 2018	4,9%	-1,0%	2,6%	6,3%	7,6%	-2,0%	-0,8%	6,6%	3,8%	-2,4%	-0,9%	5,2%	2,2%	4,9%	6,3%
IV 2018	4,1%	3,3%	0,5%	3,1%	6,4%	-0,3%	3,0%	1,5%	3,2%	-2,1%	0,9%	0,3%	5,2%	4,1%	5,6%
II 2019	3,7%	5,4%	1,5%	3,8%	7,4%	-0,1%	6,2%	2,9%	6,7%	-0,1%	5,1%	1,0%	4,3%	3,7%	8,1%
IV 2019	2,4%	1,8%	1,1%	4,2%	5,2%	1,5%	4,5%	2,0%	9,5%	-4,5%	5,6%	0,6%	3,3%	2,4%	7,1%
II 2020	2,0%	2,0%	1,8%	3,2%	4,5%	1,1%	1,7%	6,0%	7,3%	-0,2%	5,2%	2,6%	8,5%	2,0%	4,9%
IV 2020	3,5%	3,5%	3,4%	5,2%	8,9%	4,1%	3,1%	5,0%	10,7%	3,7%	11,1%	3,3%	8,4%	3,5%	6,7%
I 2021	4,9%	2,9%	4,1%	5,7%	10,2%	8,0%	3,0%	7,0%	12,6%	3,6%	7,3%	8,3%	8,8%	4,9%	9,2%

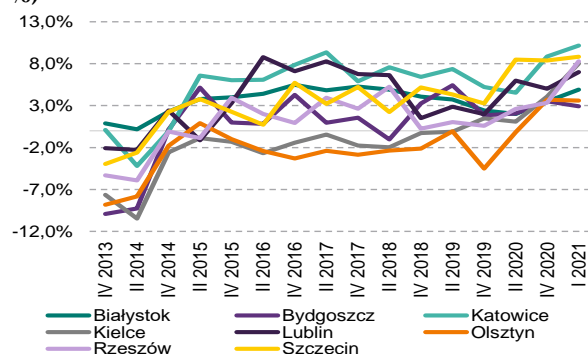
Source: NBP

Figure 101 Return on equity (ROE) on a leveraged housing investment (LTV = 80%) in seven cities (in %)



Source: NBP

Figure 102 Return on equity (ROE) on a leveraged housing investment (LTV = 80%) in eight cities (in %)



Source: NBP

9. Detailed analysis of the condition of real estate developers, non-residential construction companies and related entities

Analysis of the financial standing of real estate developer³⁵

Analysis of data available from various sources, including the NBP data for 2021 Q1 indicates a good financial standing of the vast majority of the analysed developers and groups of companies involved in housing production, including construction companies, wholesalers and producers of construction materials. Improved demand for housing was a driving force behind an increase in investor activity in the residential construction market.

According to the NBP data, in 2021 Q1 the number of dwellings sold in the primary market of the largest cities was significantly higher than the quarterly sales results recorded in 2019 and 2020. Results of developers listed on the Catalyst market for 2021 Q1 confirmed improved sales results (contracts for 5.9 thousand dwellings in this period were concluded compared to 4.9 thousand dwellings in the previous quarter and 4.6 thousand dwellings a year ago). The strong demand in the housing market is supported by a housing deficit, low interest rates, good access to bank financing and rising inflation levels as well as profitability of investing in residential real estate.

The need to match supply with growing demand stimulated the launch of subsequent projects. According to the Statistics Poland data, in 2021 Q1 the construction of 40,130 dwellings for sale or rent was started, a 10% growth compared to the previous quarter and a 26% growth compared to the corresponding period of 2020. The growth in production is also indicated by the financial data reported by WSE-listed real estate developers in 2021 Q1. According to these data, the value of development projects in progress increased significantly compared to the previous quarter. A slight decline in the value of development projects in progress during the first three months of 2021 (by 5%) compared to the previous quarter was indicated by the financial data resulting from the F01 reports of larger real estate developers, however, the average value of production in this group of companies in individual quarters of 2020 was significantly higher than that recorded in individual quarters of 2019. The value of development projects in progress at the end of March 2021 reached nearly 40% of the share in the asset structure, compared with over 45% in the corresponding period a year ago.

A decline in the housing production index (dwellings started minus dwellings made ready for occupancy) observed in a longer term (from mid-2019 to 2021 Q1), including its negative value in the last two quarters, with a significant increase in home sales, indicates a growing unfavourable supply to demand ratio and may foster a continued growth in housing prices.

³⁵ The calculations and conclusions in this issue of the Information are based on data resulting from F01 reports submitted to Statistics Poland, with the breakdown into two groups of companies: small companies - employing from 9 to 49 persons (data available until the second half of 2020 in semi-annual periods) and larger-sized companies employing above 49 persons (data available until 2021 Q1 in quarterly periods), engaged in the development of building projects (PKD 41.10). The analysis of accounting entries in the financial statements of real estate developers listed on the Warsaw Stock Exchange was based on the data covering the period up to 2020 Q4. The analysis of accounting entries was supplemented with information concerning over a dozen residential real estate developers from the Catalyst market (a report on "Situation of the largest residential real estate developers of the Catalyst market after 2021 Q1 (Sytuacja największych deweloperów mieszkaniowych z rynku Catalyst po Q1 2021)", Nawigator Brokerage House, Warsaw, May 2021).

In 2021 Q1, the share of finished dwellings in buildings made ready for occupancy decreased significantly to a record low (approx. 3%), confirming a major increase in demand for housing, including for finished housing. The stock of land for multi-family construction has declined to a very low level, indicating continued difficulties in replenishing the land bank. A record high number of permits issued for the construction of housing for sale or rent over the recent quarters, including 84,770 permits in 2021 Q1, compared to 59,406 in 2020 Q1, which required land ownership, points to continued considerable production capacity of real estate developers in the coming quarters. Statistically, with the number of dwellings to be started in the coming quarters at the level of 2021 Q1, permits issued only from October 2020 to March 2021 may be sufficient for new development projects in the period of over one year.

According to the Statistics Poland data for 2021 Q1, in relation to the corresponding quarter of 2020, the number of dwellings put into use decreased by more than 4%, following an increase of more than 35% in the previous quarter. The Statistics Poland data pointing to smaller number of dwellings completed and put into use in this period have been confirmed by the 9% lower value of the total average income in the group of large real estate developers reported in the F01 statements. The number of dwellings completed was a result of the number of dwellings started some two years earlier and this fact does not have a major impact on the market situation in the period analysed as these dwellings had also mostly been sold two years ago.

In the analysed group of large developers, a lower annual decrease in the average value of sales revenue (by 7%) than in operating expenses (by 14%) recorded in 2021 Q1 improved the financial situation of these companies and generated a 36% higher value of the average net financial result. The share of companies with a positive financial result amounted to 60%, including an increase during the year in the share of companies with both a high net financial result generated (in the range above PLN 2 million) and with its low level (in the range below PLN 2 million). In the period of good business conditions, losses reported by some companies may result from the high value of production in progress and the low level of dwellings delivered to purchasers.

Over a period of almost one year, lower profitability ratios of real estate development activities were observed. This was largely due to increasing construction costs and administrative delays in the transfer of ownership rights to buyers and thus in recognising the revenues and the financial result. A significant improvement mainly in the return on sales was recorded in 2020 Q4 and in 2021 Q1. In 2021 Q1, in the group analysed, the average return on sales reached 13.3%, return on equity - 6.2% and return on assets - 2.5%, compared to lower ratios recorded a year earlier (9.0% for ROS, 4.0% for ROE and 1.5% for ROA).

In the quarter under analysis, equity played a major role in financing the operations of larger real estate developers whose share in the liability structure increased significantly in year-on-year terms (to approx. 40% in 2021 Q1, against over 36% in 2020 Q2).

Among external sources of financing, down payments of home buyers have played an important role since 2017, with the share in the liability structure exceeding 20% on average at the end of the quarters, including over 20% at the end of 2021 Q1, confirming the high value of contract for housing construction concluded in these periods. On the other hand, the share of more costly sources of financing decreased, i.e. debt securities (over 7% in 2021 Q1 against over 10% in 2020 Q1) and bank loans (approx. 9% in 2021 Q1 against approx. 11% in 2020 Q1). The low share of developer loans, i.e. a sustainable source of development financing, constitutes one of the major problems faced by real estate developers. A decrease in the number of issuers of developer

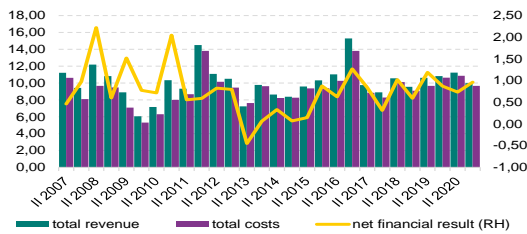
bonds on the Catalyst market has been observed for three quarters. Nevertheless, in 2021 Q1, the total value of bonds issued by real estate developers increased, with a slowdown in the decline in average bond coupon rates. Liabilities to development contractors represent a significant share, which increased to over 24% in 2021 Q1 against over 21% in the previous quarter and over 20% in 2020 Q1), despite the completion of works and delivery of a significant number of dwellings at the end of 2020 and the receipt of payment tranches for completed development projects.

In 2021 Q1, compared to the corresponding quarter in 2020, the average value of operating expenses decreased in the analysed group of larger developers, along with a slight reduction in the value of projects in progress. In this period, the share of third-party expenses in their structure increased by 8 percentage points (to over 62% share). The share of own costs increased, including costs of electricity consumed by more than 3 percentage points (to approx. 18% share) and wage expenses by 2 percentage points (to approx. 12% share), with a similar number of employees.

Liquidity, which had remained low but stable in previous quarters, improved slightly. For the second consecutive quarter, the slight improvement in the ratios of total debt and debt to equity and hedging of financial liabilities with equity, as well as the equity to assets ratio continued, improving the security of funds entrusted by creditors.

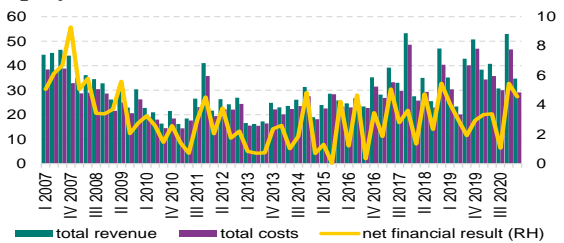
Financial data reported by the group of small real estate developers (employing from 9 to 49 persons) as well as by developers listed on the Warsaw Stock Exchange, available at the end of 2020, indicated an improvement of situation of these companies in the second half of the year. In both groups, the high share of equity in financing activities (between 42% and 47% in the structure of liabilities) and the safe level of equity to assets ratio, indebtedness and the liabilities hedging ratio were maintained. In the second half of 2020, in relation to the first half of the year, a small group of companies recorded an increase in the share of liabilities from bank loans, down payments from home buyers and the number of development projects in progress, with a slight decrease in liabilities to service contractors, indicating an improvement in liquidity and their financial condition. In the group of WSE-listed developers, the second half of 2020 saw an increase in production and down payments for dwellings, a slight decrease in the level of external liabilities to counterparties and bank borrowings and an increase in the value of debt securities issued. Both groups of developers recorded stable, favourable operating expenses and improved profitability ratios.

Figure 103 Economic indicators of real estate developers employing from 9 to 49 employees (in PLN M)



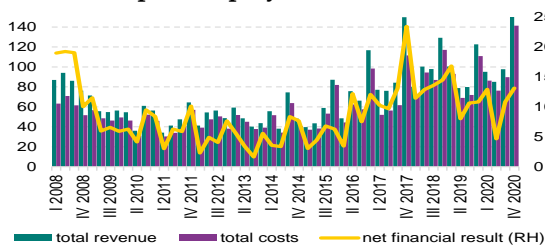
Source: NBP based on Statistics Poland (F01)

Figure 104 Economic indicators of real estate developers employing over 49 employees (in PLN M)



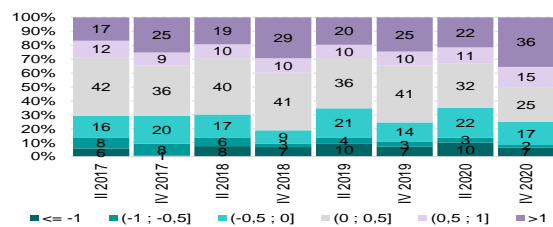
Source: NBP based on Statistics Poland (F01)

Figure 105 Economic indicators of WSE-listed real estate developers employees (in PLN M)



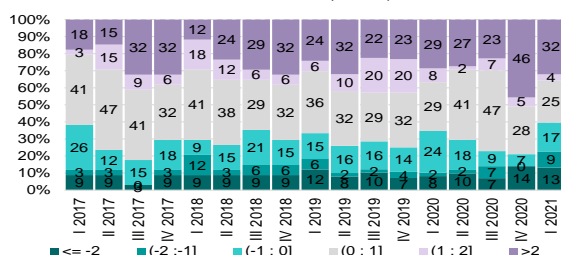
Source: NBP based on Quant Research sp. z o.o.

Figure 106 Structure of real estate developers employing from 9 to 49 employees, depending on the value of net financial result (in %)



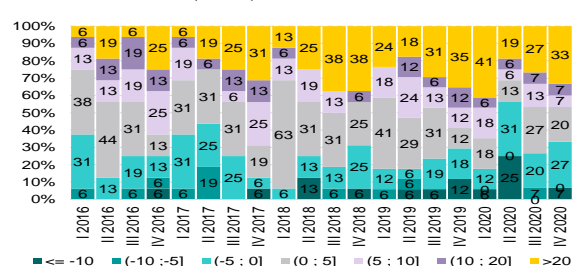
Source: NBP based on Statistics Poland (F01)

Figure 107 Structure of real estate developers employing over 49 employees, depending on the value of net financial result (in %)



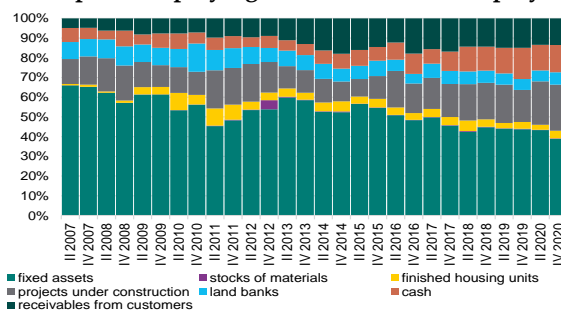
Source: NBP based on Statistics Poland (F01)

Figure 108 Structure of WSE-listed real estate developers, depending on the value of net financial result (in %)



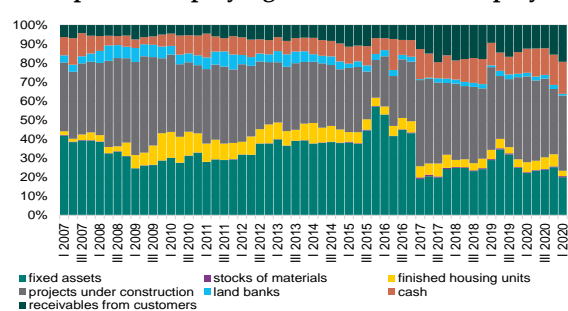
Source: NBP based on Quant Research sp. z o.o.

Figure 109 Structure of assets of real estate developers employing from 9 to 49 employees



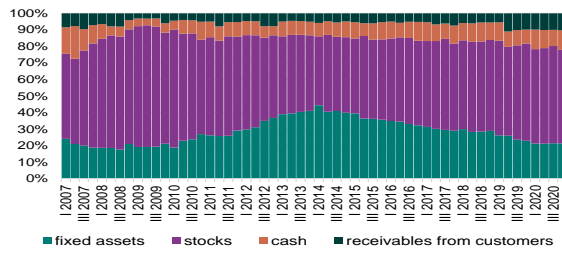
Source: NBP based on Statistics Poland (F01)

Figure 110 Structure of assets of real estate developers employing over 49 employees



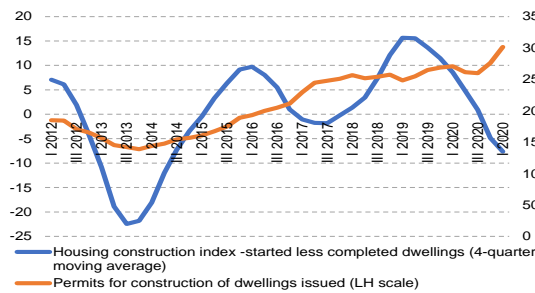
Source: NBP based on Statistics Poland (F01)

Figure 111 Structure of assets of WSE-listed real estate developers



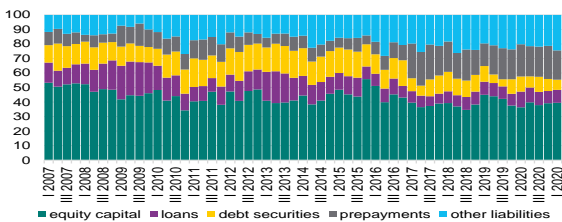
Source: NBP based on Quant Research sp. z o.o.

Figure 113 Housing production index and building permits issued in Poland (in PLN T)



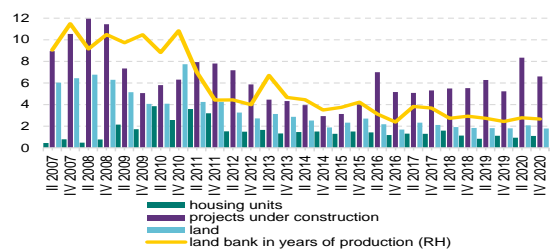
Source: NBP based on Statistics Poland

Figure 115 Structure of liabilities of real estate developers employing over 49 employees (in %)



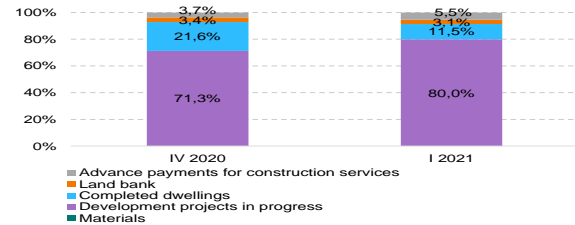
Source: NBP based on Statistics Poland (F01)

Figure 117 Situation of real estate developers employing from 9 to 49 employees



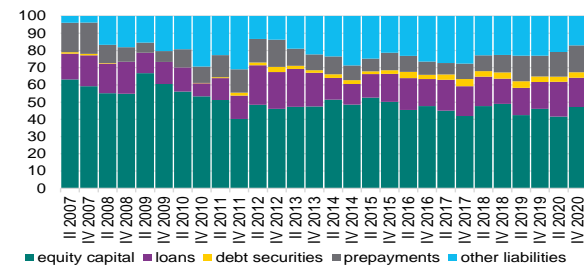
Source: NBP based on Statistics Poland (F01)

Figure 112 Stock structure (in current assets) of WSE listed developers - closing balance of quarters (%)



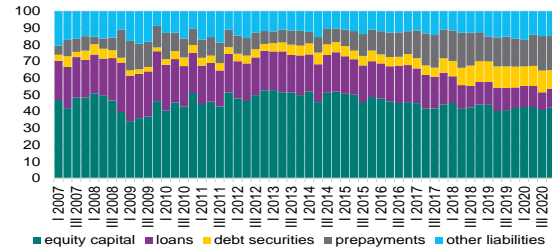
Source: NBP based on Quant Research sp. z o.o.

Figure 114 Structure of liabilities of real estate developers employing from 9 to 49 employees (in %)



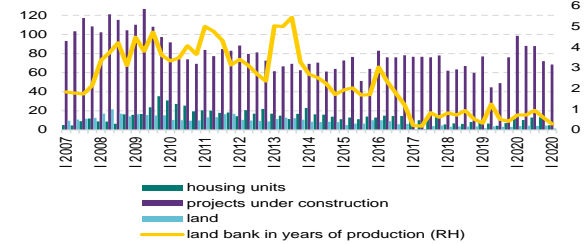
Source: NBP based on Statistics Poland (F01)

Figure 116 Structure of liabilities of WSE-listed real estate developers (in %)



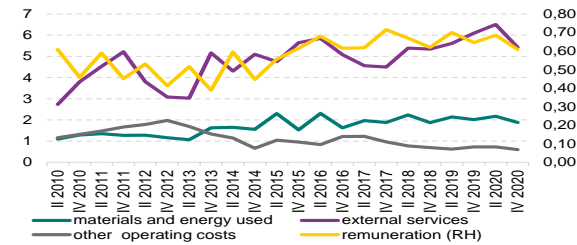
Source: NBP based on Quant Research sp. z o.o.

Figure 118 Situation of real estate developers employing over 49 employees



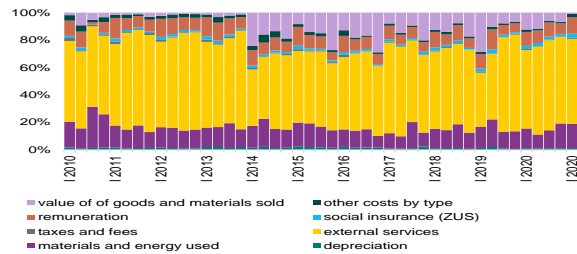
Source: NBP based on Statistics Poland (F01)

Figure 119 Operating expenses of real estate developers employing from 9 to 49 employees (in PLN M)



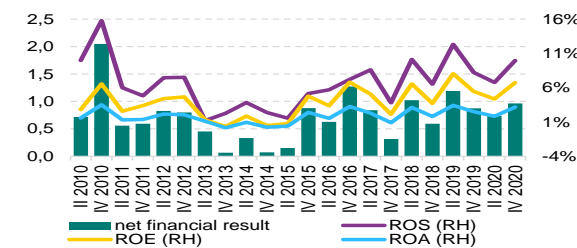
Source: NBP based on Statistics Poland (F01)

Figure 121 Structure of operating expenses of real estate developers employing from 9 to 49 employees (in %)



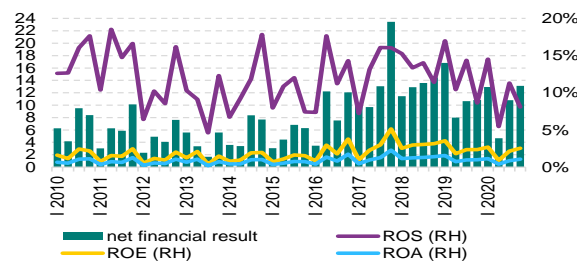
Source: NBP based on Statistics Poland (F01) and financial statements

Figure 123 Profitability of activities of real estate developers employing from 9 to 49 employees



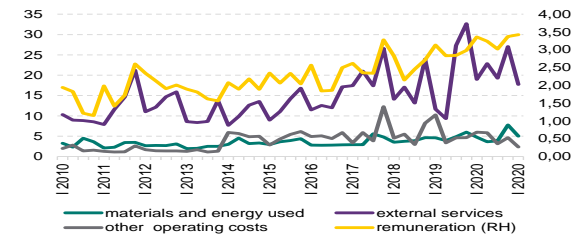
Source: NBP based on Statistics Poland (F01)

Figure 125 Profitability of activities of WSE-listed real estate developers



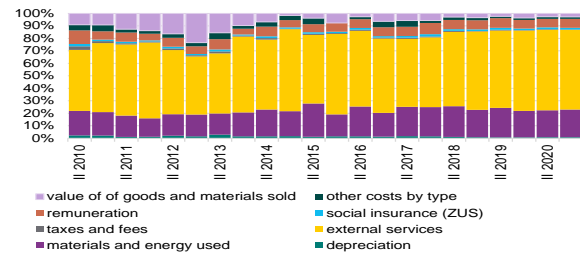
Source: NBP based on Quant Research sp. z o.o.

Figure 120 Operating expenses of real estate developers employing over 49 employees (in PLN M)



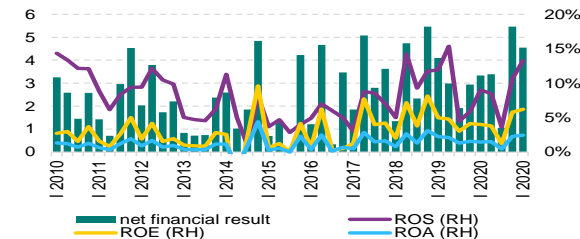
Source: NBP based on Statistics Poland (F01)

Figure 122 Structure of operating expenses of real estate developers employing over 49 employees (in %)



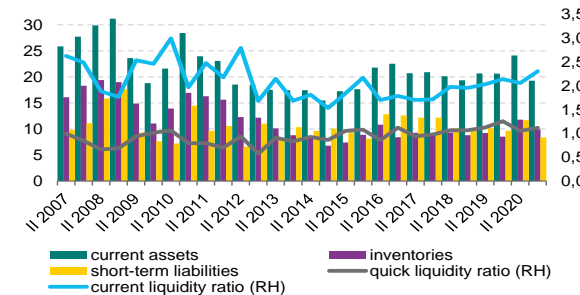
Source: NBP based on Statistics Poland (F01) and financial statements

Figure 124 Profitability of activities of real estate developers employing over 49 employees



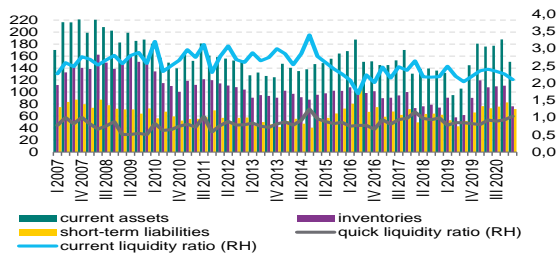
Source: NBP based on Statistics Poland (F01)

Figure 126 Liquidity ratios of real estate developers employing from 9 to 49 employees



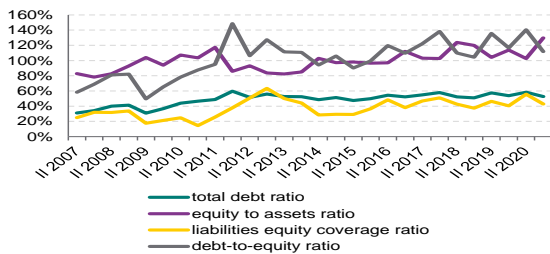
Source: NBP based on Statistics Poland (F01)

Figure 127 Liquidity ratios of real estate developers employing over 49 employees



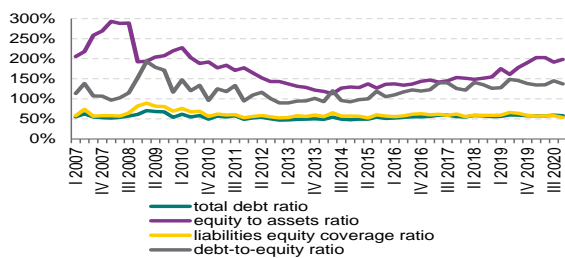
Source: NBP based on Statistics Poland (F01)

Figure 129 Debt ratios and indicators of securing liabilities of developers employing from 9 to 49 employees



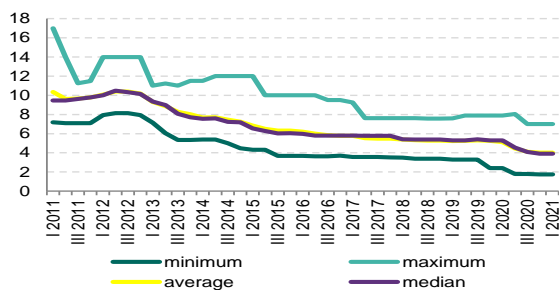
Source: NBP based on Statistics Poland (F01)

Figure 131 Debt ratios and indicators of securing liabilities of WSE-listed real estate developers



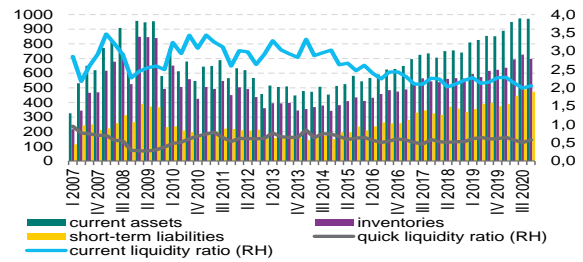
Source: NBP based on Quant Research sp. z o.o.

Figure 133 Interest on bond coupons of real estate developers listed on the Catalyst market



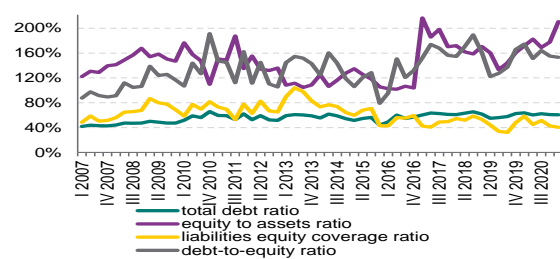
Source: NBP based on Catalyst data

Figure 128 Liquidity ratios of WSE-listed real estate developers



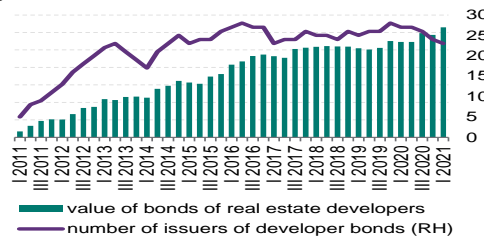
Source: NBP based on Quant Research sp. z o.o.

Figure 130 Debt ratios and indicators of securing liabilities of developers employing over 49 employees



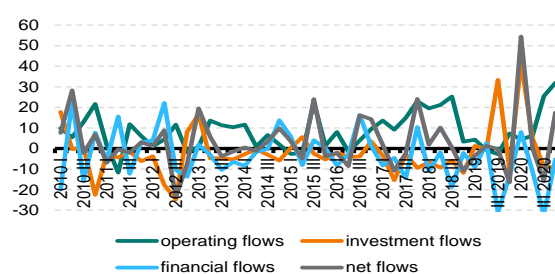
Source: NBP based on Statistics Poland (F01)

Figure 132 Value of bonds of real estate developers and the number of issuers of developer bonds in the Catalyst market



Source: NBP based on Catalyst data

Figure 134 Flows of real estate developers listed on the WSE



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

Analysis of financial standing of companies involved in the construction of residential and non-residential buildings³⁶

An analysis of the financial data of companies involved in residential and non-residential construction confirms that the period of freezing of the economy caused by the pandemic did not trigger significant adverse effects on the activity of this part of the construction industry.

Financial data for 2021 Q1 provided in the F01 reports by larger construction companies (employing more than 49 persons) carrying out construction works related to the erection of residential and non-residential buildings indicated a good and stable situation of companies in the group under analysis. In 2021 Q1 compared to the corresponding quarter of 2020, a 1% increase in total revenue with a 3.5% decrease in total expenses was recorded. The increase in revenue with a simultaneous adjustment of costs made it possible to generate one of more favourable operating cost ratios (0.91) and thus a high average value of the net financial result. Net result achieved in 2021 Q1 was higher than results recorded in individual quarters in 2017 - 2020, which allowed to generate profitability ratios at a level more favourable than recorded in the last four years (ROS - 7.8%, ROE - 5.2% and ROA - 2.0% in 2021 Q1 against ROS - 4.0%, ROE - 3.0% and ROA - 1.2% in 2020 Q1).

In the analysed group of larger construction companies, the average value of contracts under construction has/had been stable for over a year, at a level lower than observed in the earlier period (from 2018 Q3 to 2019 Q3), which may be due to the fear of executing large, long-term contracts with underestimated budgets.

The changes visible in 2021 Q1 in relation to the corresponding period in 2020 in the values of individual components of operating expenses indicate that the main source of the decline in costs were the third-party services, on which construction companies spent almost 8% less than a year earlier, while their share in operating costs decreased from over 61% to approx. 59%. The low level of third-party expenses is cyclical in the first quarters of the calendar year, which may partly result from the lower scope of earthworks and masonry and reinforcement works in the winter period. The lower value of third-party services may also be related to the poorer condition and market position of some of the companies providing this range of services, as indicated by the results of the November 2020 survey conducted among residential construction companies. More difficult economic situation in 2020 could have encouraged these companies to perform contracts at lower rates. Other changes in the components of operating expenses incurred in 2021 Q1 included an increase in wages, associated with the first marked increase in employment in a year.

The analysis of the structure of assets showed a persistently higher share of cash than in previous periods (approx. 21% share in the period from 2020 Q1 to 2021 Q1 against approx. 14% share in earlier periods), which improved the financial liquidity of the companies. The accumulation of cash and an increase in the share of accounts payable to counterparties in the liability structure (44% share in 2021 Q1 against approx. 41% in 2020 Q1 and 35% in 2019 Q1) with a stable, limited share of debt resulting from bank loans (10% share in both 2021

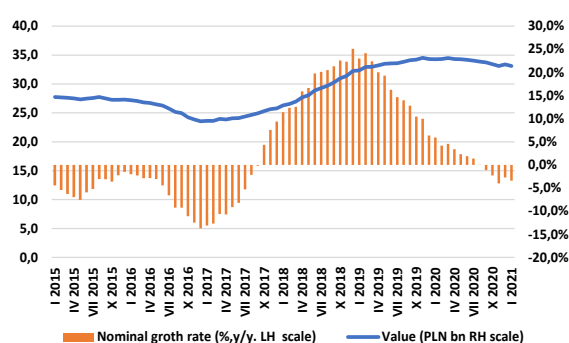
³⁶ The calculations and conclusions in this issue of the Information are based on data resulting from F01 reports submitted to Statistics Poland, with the breakdown into two groups of entities: small companies - employing from 9 to 49 employees (data available until the first half of 2020 in semi-annual periods) and larger-sized companies employing more than 49 employees (data available until 2020 Q3 in quarterly periods) performing works related to the construction of residential and non-residential buildings (PKD 41.20).

Q1 as well as in 2020 and 2019 Q1) indicates continued delays in payments to subcontractors and financing from outstanding liabilities despite improved financial performance.

Along the increase in the share of accounts payable to counterparties, the share of equity in the liability structure decreased to 44%, compared to 47% in 2020 Q1 and 52% in 2019 Q1, which slightly but systematically deteriorates the debt to equity ratio and the total debt ratio. In 2021 Q1, these indicators were maintained at a safe level, ensuring the coverage of funds entrusted by creditors.

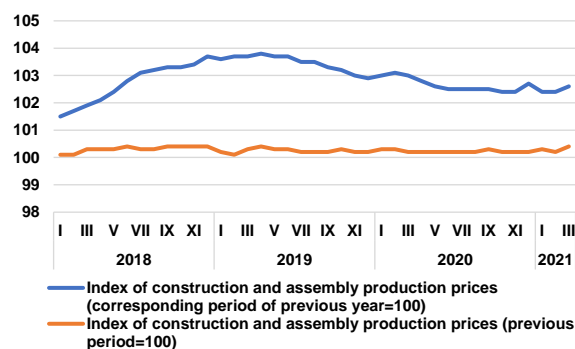
Small companies involved in the erection of residential and non-residential buildings (employing between 9 and 49 people), according to financial data available for the second half of 2020, also reported an improvement in their condition and a 4% y/y increase in total revenue amid lower increase in total costs (by 2%), which allowed them to generate a net financial result that was on average almost 50% higher than that achieved in the second half of 2019. The improvement in the result was achieved with a 13% y/y decrease in the cost of materials and energy consumed and a 1% decrease in third-party expenses. Yet, their change had no significant impact on the change in the structure of operating expenses. The profitability of operations in the group of small companies improved (ROS - 11.5%, ROE - 9.6% and ROA - 5.2 in the second half of 2020 compared to ROS - 7.9%, ROE - 7.6% and ROA - 3.7% in the second half of 2019) and remains at a higher level than in the group of larger entities. In the group of small construction companies, despite an increase in the work in progress, the share of receivables for services performed and liabilities to subcontractors decreased, with a slight increase in the share of bank financing and an increase in the share of equity. This confirms an improvement in the financial condition and reliability of those companies and better situation as regards payments. Liquidity, debt and collateral ratios improved, reaching a more favourable level than in the group of larger companies.

Figure 135 Construction works associated with the erection of buildings (PKD 41)



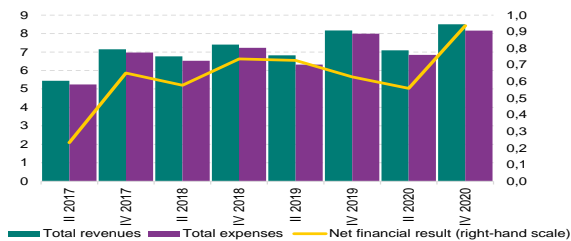
Source: Spectis Monthly Report 04/05/2021

Figure 136 Construction and assembly production prices



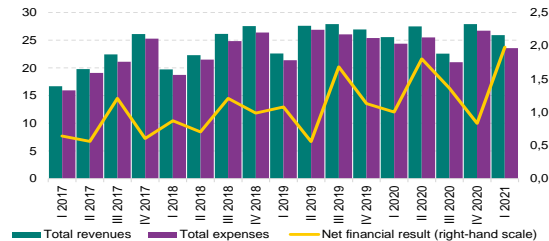
Source: NBP based on Statistics Poland

Figure 137 Economic indicators of construction companies employing from 9 to 49 employees



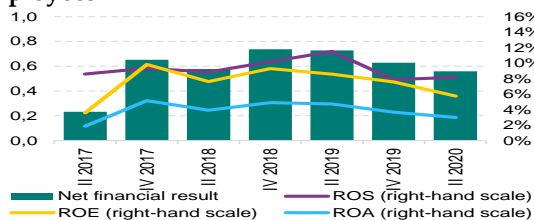
Source: NBP based on Statistics Poland

Figure 138 Economic indicators of construction companies employing more than 49 employees



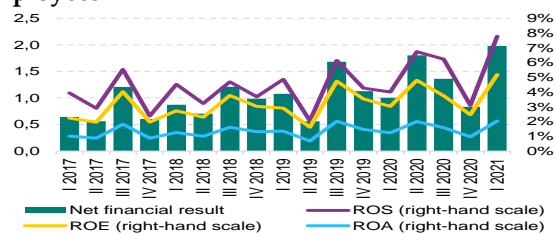
Source: NBP based on Statistics Poland

Figure 139 Profitability of operations of construction companies employing from 9 to 49 employees



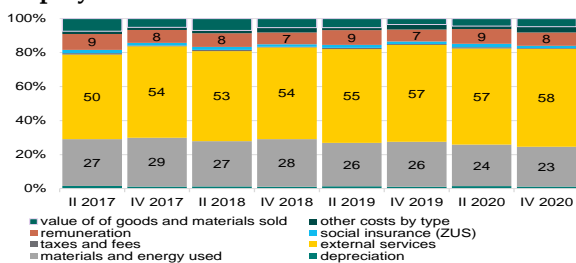
Source: NBP based on Statistics Poland

Figure 140 Profitability of operations of construction companies employing more than 49 employees



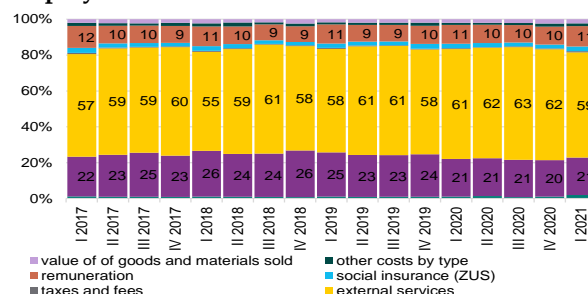
Source: NBP based on Statistics Poland

Figure 141 Structure of operating expenses of construction companies employing from 9 to 49 employees



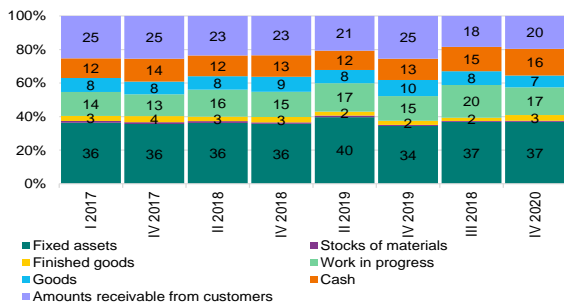
Source: NBP based on Statistics Poland

Figure 142 Structure of operating expenses of construction companies employing over 49 employees



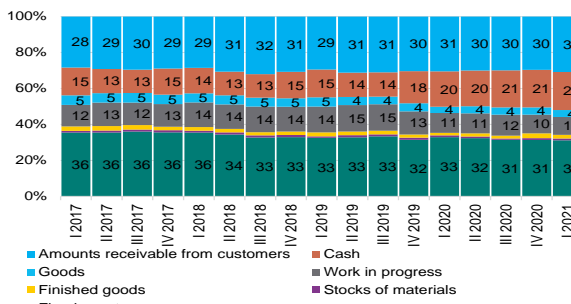
Source: NBP based on Statistics Poland

Figure 143 Structure of assets of construction companies employing from 9 to 49 employees



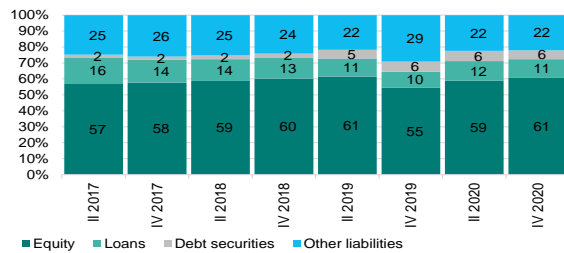
Source: NBP based on Statistics Poland

Figure 144 Structure of assets of construction companies employing more than 49 employees



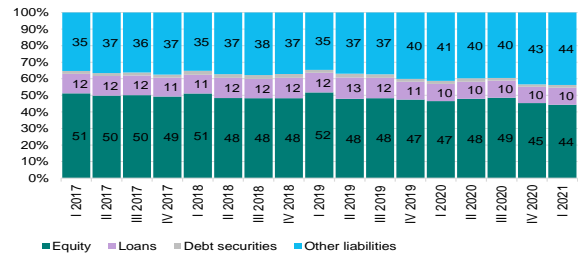
Source: NBP based on Statistics Poland

Figure 145 Structure of liabilities of construction companies employing from 9 to 49 employees



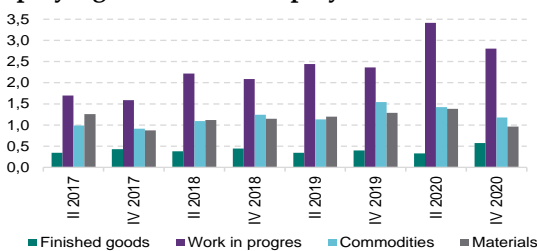
Source: NBP based on Statistics Poland

Figure 146 Structure of liabilities of construction companies employing more than 49 employees



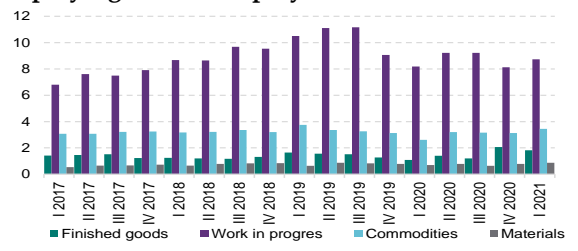
Source: NBP based on Statistics Poland

Figure 147 Situation of real estate developers employing from 9 to 49 employees



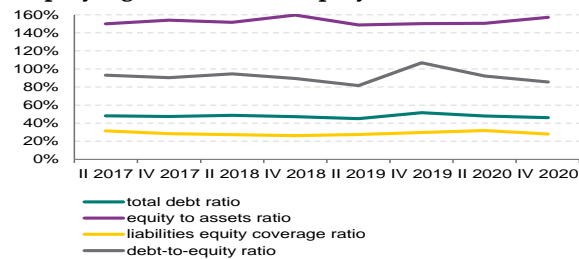
Source: NBP based on Statistics Poland

Figure 148 Situation of real estate developers employing over 49 employees



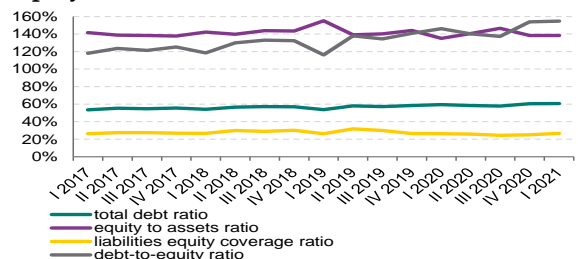
Source: NBP based on Statistics Poland

Figure 149 Debt ratios and indicators of liability hedging ratios of construction companies employing from 9 to 49 employees



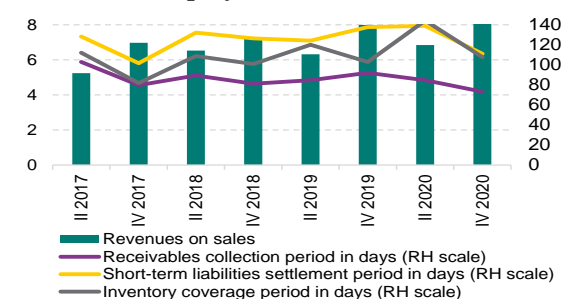
Source: NBP based on Statistics Poland

Figure 150 Debt ratios and liability hedging ratios of construction companies employing over 49 employees



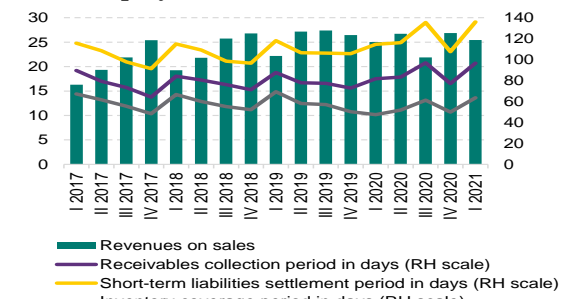
Source: NBP based on Statistics Poland

Figure 151 Turnover of inventory, receivables and liabilities of construction companies employing from 9 to 49 employees

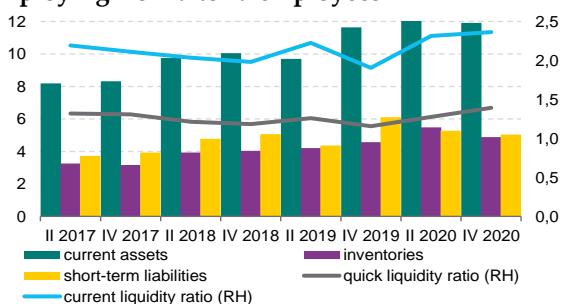


Source: NBP based on Statistics Poland

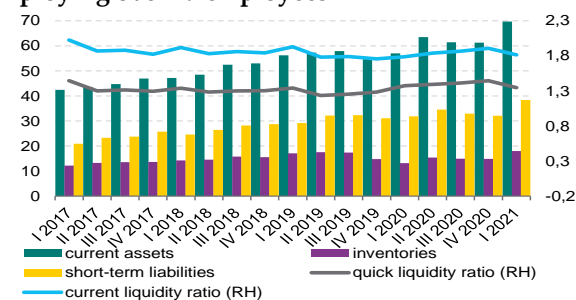
Figure 152 Turnover of inventory, receivables and liabilities of construction companies employing over 49 employees



Source: NBP based on Statistics Poland

Figure 153 Liquidity of construction companies employing from 9 to 49 employees

Source: NBP based on Statistics Poland

Figure 154 Liquidity of construction companies employing over 49 employees

Source: NBP based on Statistics Poland

Analysis of financial standing of companies dealing with sales of construction materials³⁷

The rising costs of development observed for several years, including an increase in prices of construction materials, have become one of the more significant factors affecting profitability of development projects and liquidity of companies. According to the data from the Polskie Składy Budowlane Group, prices of materials in the period from January to April 2021 compared to the corresponding period of 2020 increased by 4.2% on average in eighteen commodity groups, which indicates an acceleration of their annual growth rate (in the period from January to April 2020, compared to the corresponding period of 2019, the growth in prices of materials amounted to 1.5%). In the first four months of 2021, in relation to the corresponding period in 2020 the growth of prices was observed in the following groups of products: OSB (+20.7%), drywall (+12.1%), thermal insulation (+10.0%), lighting, electrical equipment (+5.8%), cement, lime (+5.4%), fixtures, heating (+5.4%), garden and hobbies (+5.3%), roofs, gutters (+4.7%), tools (+3.8%), furnishings, household appliances (+3.2%), joinery (+2.8%), finishing (+2.7%), automotive (+2.3%), construction chemicals (+2.2%), tiles, bathrooms, kitchens (+2.1%), paints, varnishes (+2.0%), decorations (+1.4%) and waterproofing (+0.9%). Prices fell in two groups: house surroundings (-0.1%) and walls and chimneys (-6.1%).

The analysis of the entries in the F01 reports sent to Statistics Poland indicates the continuation of the good overall standing of building material wholesalers and a slight improvement in the profitability of their performance.

Larger wholesalers (employing more than 49 employees), observed in 2021 Q1 against 2020 Q4 an increase in the averaged total revenue (by 3.6%) with a slightly smaller growth of total costs (by 3.3%). The favourable revenue-to-cost ratio enabled them to generate a significantly higher net financial result. The value of key economic indicators for 2021 Q1 has also improved on the previous year's figures. The high and growing turnover of building materials recorded by wholesalers amid rising prices of building materials confirms the recovery of the housing market, the growing demand for building materials and the execution of works in the construction industry. The analysis of the financial data of small wholesalers available up to the second half of 2020 also shows that the marked growth in revenues generated and costs incurred has been continuing since

³⁷ The calculations and conclusions in this issue of the Information are based on data resulting from F01 reports submitted to Statistics Poland, with the breakdown into two groups of companies: small companies - employing from 9 to 49 persons (data available until the second half of 2020 in semi-annual periods) and larger-sized companies employing above 49 persons (data available until 2021 Q1 in quarterly periods) acting as agents involved in the sale of wood and building materials (PKD 4613) and the wholesale of building materials and sanitary equipment (PKD 4673). The accounting records were supplemented with information on the change in prices of building materials ("Change in prices of materials for construction, home and garden - PSB analysis" in April 2020 and in April 2021, Grupa PSB Handel S.A., May 2020 and May 2021).

2017 and that the improvement in the ratio of revenues to costs has influenced the increase in the net financial result generated.

The share of profitable companies in the group of larger wholesalers increased (70% of entities with a positive net financial result in 2021 Q1 against 66% of entities in 2020 Q1) and in the group of small companies (nearly 90% of companies in the second half of 2020 versus 89% in the second half of 2019). Both groups of wholesalers saw their profitability improve, with better results generated by small companies. In the group of small companies, return on equity (ROE) and return on assets (ROA) are almost three times higher than in the group of larger companies, which means that smaller wholesalers use their capital more efficiently and have a better financial condition.

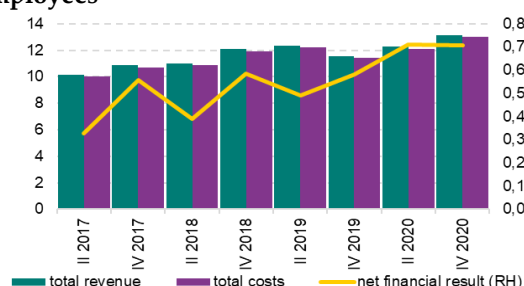
The main source of financing in enterprises involved in trade in construction materials is equity, whose share in the structure of liabilities has been relatively stable for three years (over 51% in the group of larger companies as at the end of 2021 Q1 and approx. 57% in the group of small business as at the end of 2020).

In the group of larger wholesalers, the share of receivables from the receipt of goods in the period from January to March 2021 decreased slightly to approx. 32% in the structure of assets in the period under review, compared to a 34% share a year ago. In this period, the share of accounts payable to material suppliers increased slightly to 38% in the structure of liabilities, compared to a 37% share in 2020 Q1.

In the group of larger companies, the share of bank debt decreased (a 11% share in the structure of liabilities in 2021 Q1 vs. a 13% share in 2020 Q1 and a 15% share in 2019 Q1). Debt securities constitute an insignificant source of financing. In four quarters of 2020 and in 2021 Q1, liquidity ratios remained at a similar favourable level. Debt ratios and equity to assets ratios deteriorated slightly, still remaining at a safe level, enabling companies to settle their liabilities on time and ensuring creditworthiness.

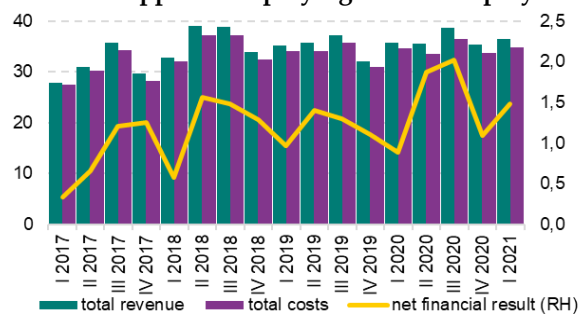
In the structure of operating costs in the group of larger wholesalers in 2021 Q1, compared to the corresponding quarter in 2020, with an insignificant change in costs from the sale of goods and materials and from third-party services (around 3%), a much higher increase in own costs from electricity (by 21%) and from wages and salaries (by 7%) was recorded, while average employment decreased.

Figure 155 Economic indicators of construction material suppliers employing from 9 to 49 employees



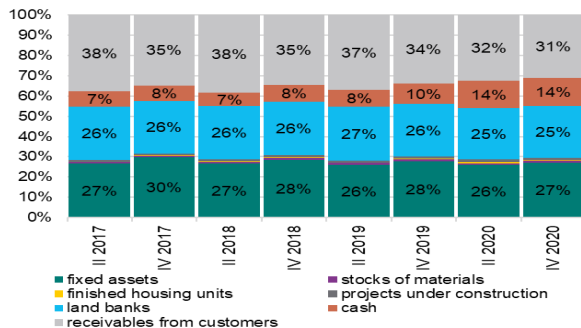
Source: NBP based on Statistics Poland (F01)

Figure 156 Economic indicators of construction material suppliers employing over 49 employees



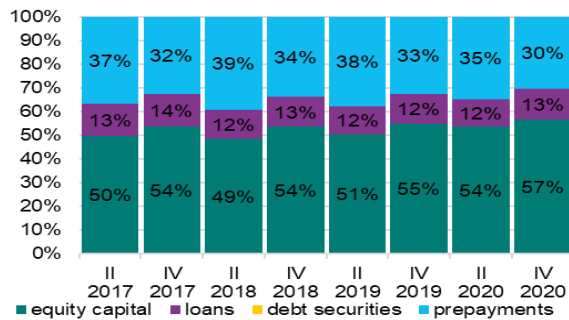
Source: NBP based on Statistics Poland (F01)

Figure 157 Structure of assets of construction material suppliers employing from 9 to 49 employees



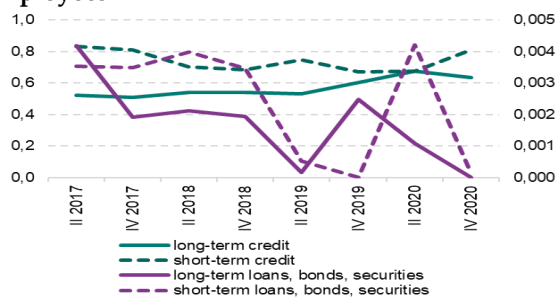
Source: NBP based on Statistics Poland (F01)

Figure 159 Structure of liabilities of construction material suppliers employing from 9 to 49 employees



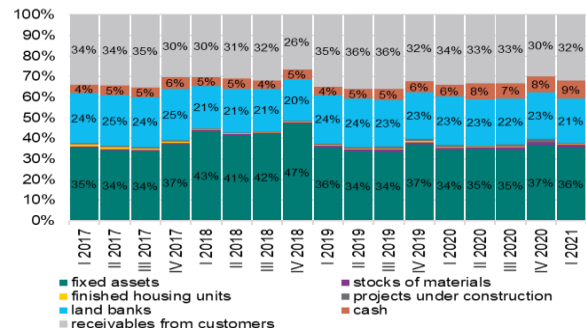
Source: NBP based on Statistics Poland (F01)

Figure 161 Sources of financing of construction material suppliers employing from 9 to 49 employees



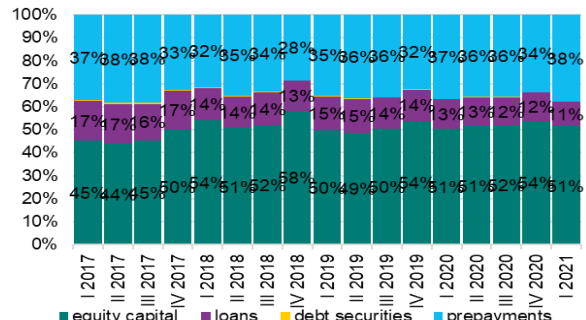
Source: NBP based on Statistics Poland (F01)

Figure 158 Structure of assets of construction material suppliers employing more than 49 employees



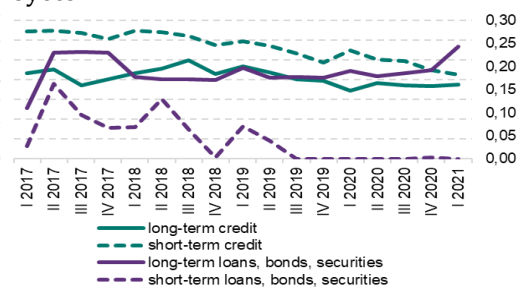
Source: NBP based on Statistics Poland (F01)

Figure 160 Structure of liabilities of construction material suppliers employing more than 49 employees



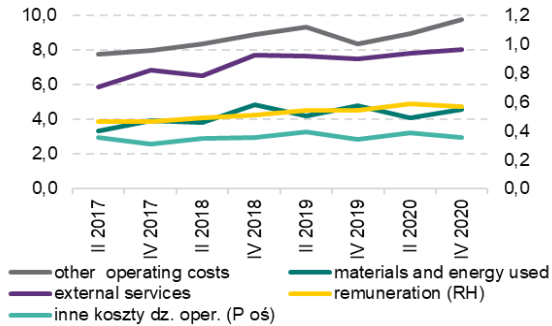
Source: NBP based on Statistics Poland (F01)

Figure 162 Sources of financing of construction material suppliers employing more than 49 employees



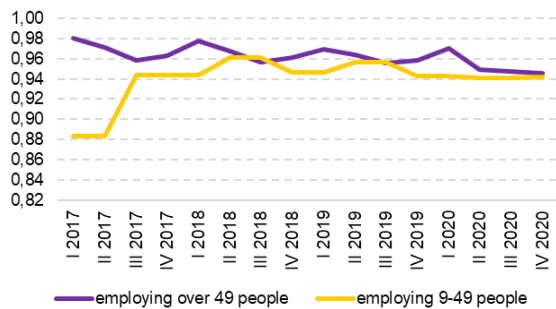
Source: NBP based on Statistics Poland (F01)

Figure 163 Costs of operating activity of construction material suppliers employing from 9 to 49 employees



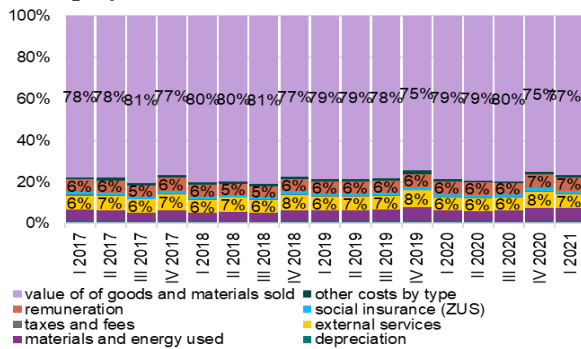
Source: NBP based on Statistics Poland (F01)

Figure 165 Indicators of level of operating costs according to groups of construction material suppliers



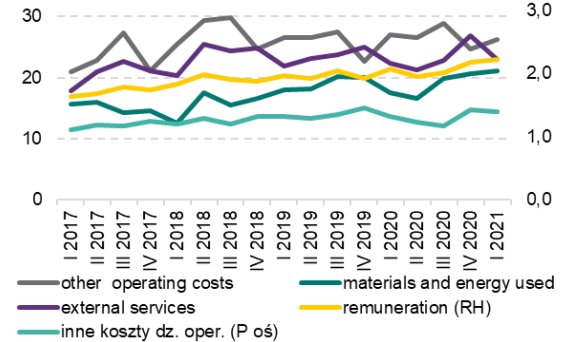
Source: NBP based on Statistics Poland (F01)

Figure 167 Structure of costs of operating activity of construction material suppliers employing over 49 employees



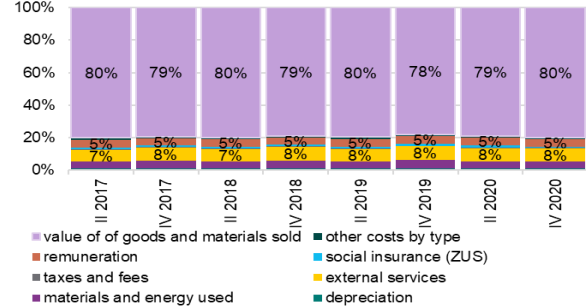
Source: NBP based on Statistics Poland (F01)

Figure 164 Costs of operating activity of construction material suppliers employing over 49 employees



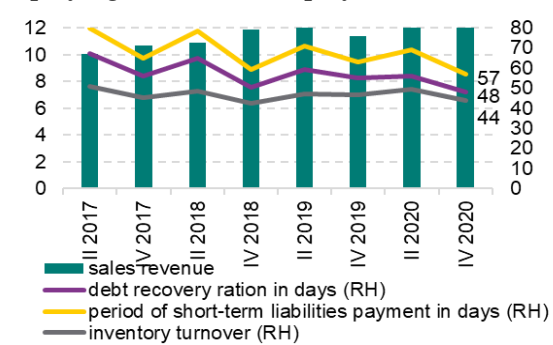
Source: NBP based on Statistics Poland (F01)

Figure 166 Structure of costs of operating activity of construction material suppliers employing from 9 to 49 employees



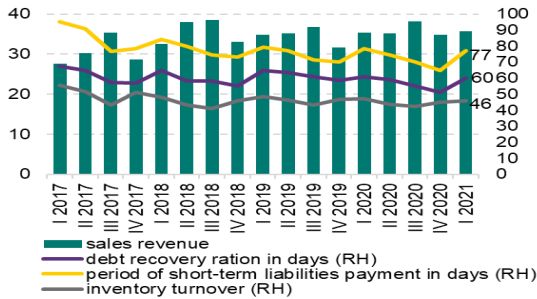
Source: NBP based on Statistics Poland (F01)

Figure 168 Turnover of inventory, receivables and liabilities of construction material suppliers employing from 9 to 49 employees



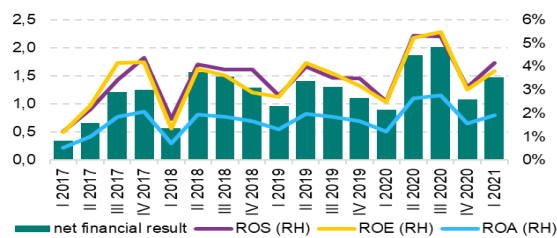
Source: NBP based on Statistics Poland (F01)

Figure 169 Turnover of inventory, receivables and liabilities of construction material suppliers employing over 49 employees



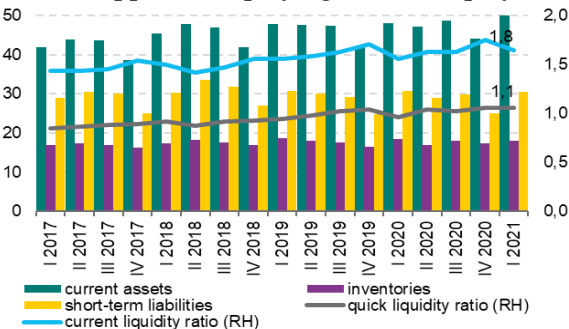
Source: NBP based on Statistics Poland (F01)

Figure 171 Profitability of activities of construction material suppliers employing over 49 employees



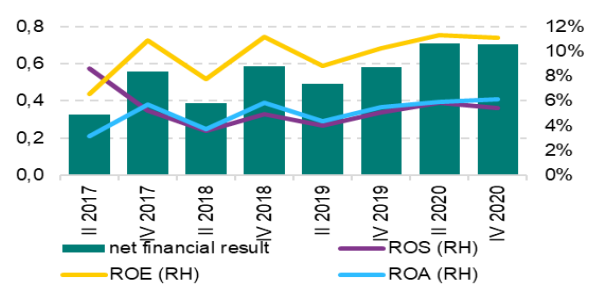
Source: NBP based on Statistics Poland (F01)

Figure 173 Liquidity ratios of construction material suppliers employing over 49 employees



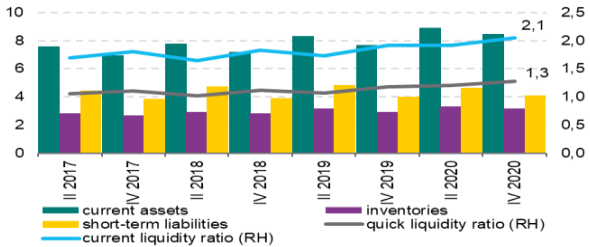
Source: NBP based on Statistics Poland (F01)

Figure 170 Profitability of activities of construction material suppliers employing from 9 to 49 employees



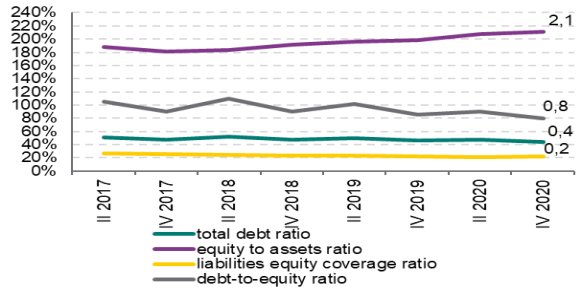
Source: NBP based on Statistics Poland (F01)

Figure 172 Liquidity ratios of construction material suppliers employing from 9 to 49 employees



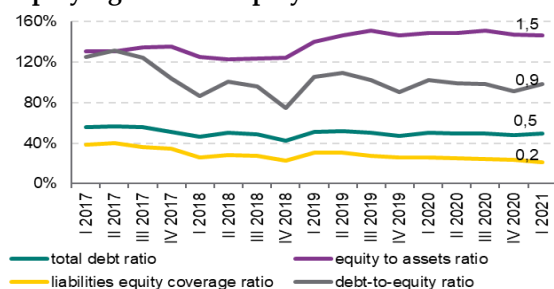
Source: NBP based on Statistics Poland (F01)

Figure 174 Debt ratios and indicators of securing liabilities of construction material suppliers employing from 9 to 49 employees



Source: NBP based on Statistics Poland (F01)

Figure 175 Debt ratios and indicators of securing liabilities of construction material suppliers employing over 49 employees



Source: NBP based on Statistics Poland (F01)

Analysis of financial standing of companies manufacturing construction materials³⁸

The increased demand for construction materials was confirmed by an increase in the level of basic economic indicators of construction material suppliers.

According to the financial data reported by the larger building material manufacturers (employing more than 49 people) in their F01 reports for 2021 Q1, total revenues increased by 9% in year-on-year terms, including sales revenues by 8% and total costs by 8%, which allowed to generate a 22% higher average net financial result, despite the decline in the number of profitable companies to 68% (72% of companies generated a positive financial result in 2020 Q1).

High equity value, good economic situation and profitability of operations are characteristic of building material producers. In the group of larger companies in 2021 Q1 the return on sales ratio was over 7% compared to over 6% in 2020 Q1. Small companies generated a slightly lower return on sales (approx. 7% in the second half of 2020 vs. 9% in the second half of 2020). On the contrary, larger producers perform worse in terms of return on equity and return on assets than small companies. In the group of larger companies, in 2021 Q1 the return on equity and return on assets stood at over 3% and approx. 2%, respectively, compared to higher ratios in the group of small producers in the second half of 2020 (approx. 9% and over 5%, respectively).

In the group of larger producers, in 2021 Q1, compared to the corresponding period in 2020, operating expenses increased by 15%. The value of all components of operating expenses increased including, to the greatest extent, costs of materials and energy consumed (by 15%), third party services (by 14%), wages (by 15%) and the value of materials and goods sold (by 29%). Despite the increase in the value of individual components of operating expenses, their structure remained similar, with costs of materials and energy consumed accounting for more than a half of the share (50%).

In 2021 Q1, the group of larger companies maintained a stable, favourable structure of liabilities, including a high share of equity (64%). The remaining part consisted of external liabilities, including liabilities to material suppliers and service contractors (23% share) and debt resulting from loans (13% share). For the past three

³⁸ The calculations and conclusions in this edition of the Information were based on data resulting from F01 reports submitted to Statistics Poland broken down into two groups of companies: those employing from 9 to 49 persons (data available until the second half of 2020, in half-year intervals) with staff exceeding 49 persons (data available until 2021 Q1, in quarterly intervals), being manufacturers of constructions materials (PKD 1623, 2223, 2320, 2332, 2351, 2352, 2361, 2362, 2363, 2364)

years, a slight decrease has been recorded in the share of bank funding exposure in the financing of activities of larger manufacturers of construction materials (a decrease of 5 percentage points in the share of liabilities structure over this period).

A relatively low and stable share of receivables from customers (16% share) was recorded in the structure of assets. As a result, the liabilities turnover ratio of 77 days and the debt collection ratio of 53 days were recorded. In 2021 Q1, financial liquidity, after its improvement in the second half of 2020, remained at a lower but safe level, ensuring the payment of current liabilities. The share of accumulated cash increased slightly (9% in the structure of assets in 2021 Q1 against 8% share in the corresponding period of 2020).

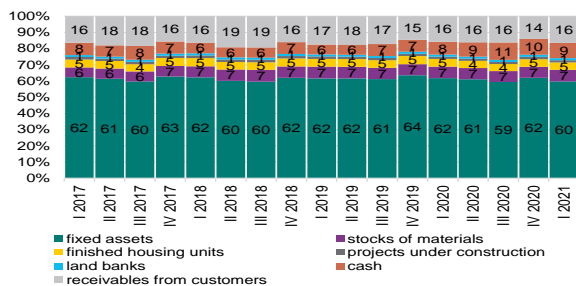
In the group of small companies, the share of payables to suppliers and service contractors decreased in the second half of 2020 to 24% in the liability structure and the balance of receivables from customers of construction materials decreased to 24% in the structure of assets. The average collection period of receivables in relation to the first half of 2020 decreased from 68 days to 55 days. The settlement of short-term liabilities ratio in the group of small producers (67 days) was lower than in the group of larger producers (77 days). In this group, financial liquidity improved to a small extent while the equity to assets ratio and the indebtedness of equity remained at a favourable level of the previous half-year.

Figure 176 Economic indicators of construction material producers employing more than 49 employees



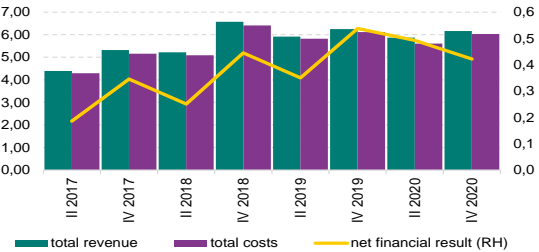
Source: NBP based on Statistics Poland (F01)

Figure 178 Structure of assets of construction material producers employing more than 49 employees



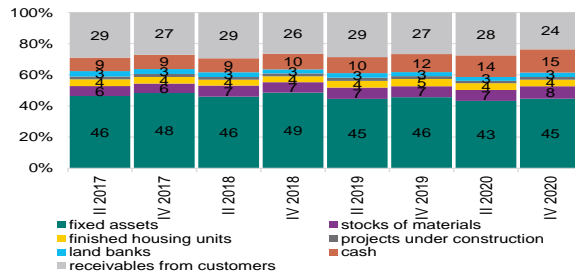
Source: NBP based on Statistics Poland (F01)

Figure 177 Economic indicators of construction material producers employing from 9 to 49 employees



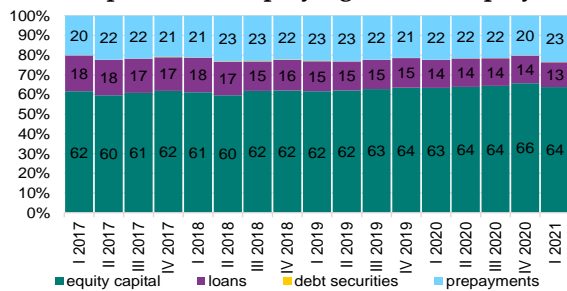
Source: NBP based on Statistics Poland (F01)

Figure 179 Structure of assets of construction materials producers employing from 9 to 49 employees



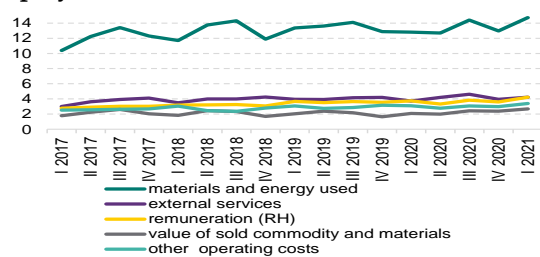
Source: NBP based on Statistics Poland (F01)

Figure 180 Structure of liabilities of construction material producers employing over 49 employees



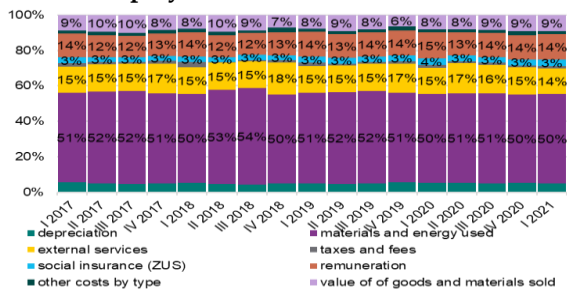
Source: NBP based on Statistics Poland (F01)

Figure 182 Operating expenses of construction material producers employing more than 49 employees



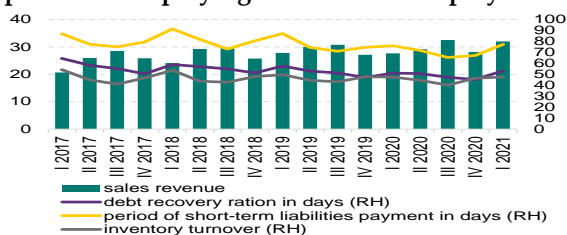
Source: NBP based on Statistics Poland (F01)

Figure 184 Structure of operating expenses of construction material producers employing more than 49 employees



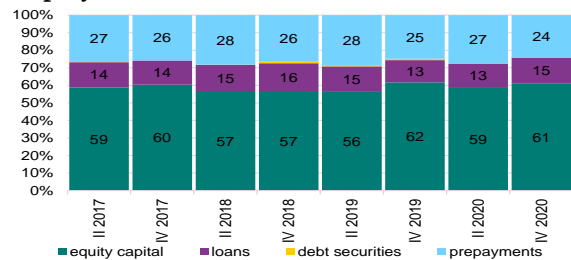
Source: NBP based on Statistics Poland (F01)

Figure 186 Turnover of inventory, receivables and liabilities of construction material producers employing more than 49 employees



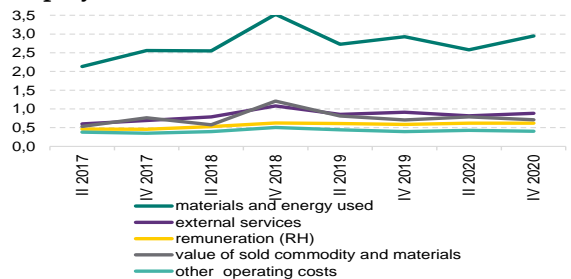
Source: NBP based on Statistics Poland (F01)

Figure 181 Structure of liabilities of construction material producers employing from 9 to 49 employees



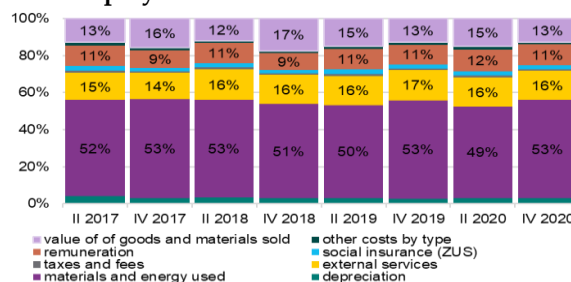
Source: NBP based on Statistics Poland (F01)

Figure 183 Operating expenses of construction material producers employing from 9 to 49 employees



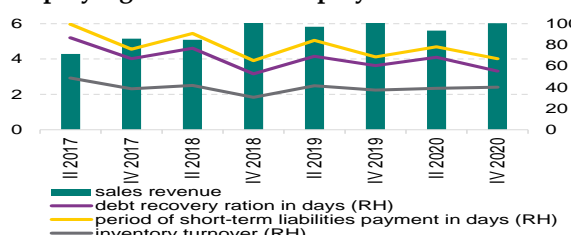
Source: NBP based on Statistics Poland (F01)

Figure 185 Structure of operating expenses of construction material producers employing from 9 to 49 employees



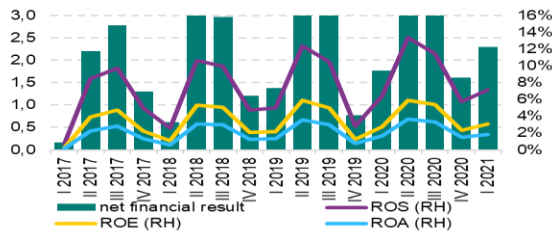
Source: NBP based on Statistics Poland (F01)

Figure 187 Turnover of inventory, receivables and liabilities of construction material producers employing from 9 to 49 employees



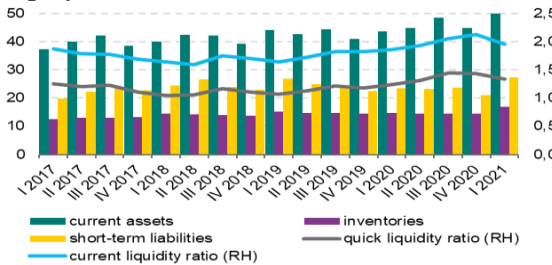
Source: NBP based on Statistics Poland (F01)

Figure 188 Profitability of activities of construction material producers employing more than 49 employees



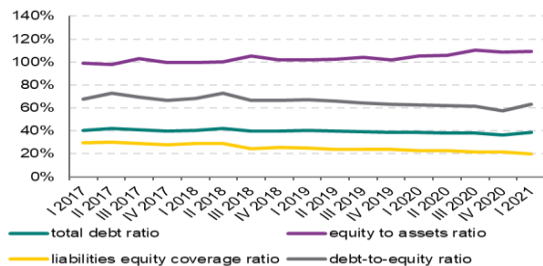
Source: NBP based on Statistics Poland (F01)

Figure 190 Liquidity ratios of construction material producers employing more than 49 employees



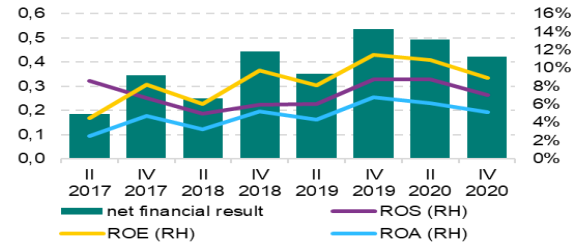
Source: NBP based on Statistics Poland (F01)

Figure 192 Debt ratios and indicators of securing liabilities of construction material producers employing more than 49 employees



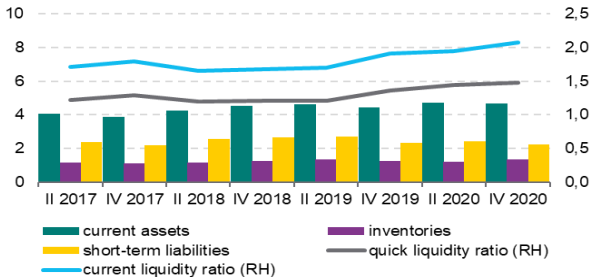
Source: NBP based on Statistics Poland (F01)

Figure 189 Profitability of activity of construction material producers employing from 9 to 49 employees



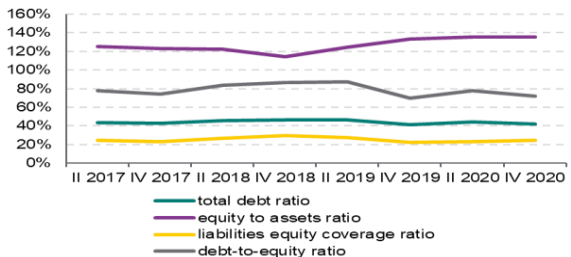
Source: NBP based on Statistics Poland (F01)

Figure 191 Liquidity ratios of construction material producers employing from 9 to 49 employees



Source: NBP based on Statistics Poland (F01)

Figure 193 Debt ratios and indicators of securing liabilities of construction material producers employing from 9 to 49 employees



Source: NBP based on Statistics Poland (F01)

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