

## The impact of the COVID-19 pandemic on the activity of residential real estate market in small cities – case study of Nowy Targ, Poland

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### Summary

The economic problems caused by the Covid-19 pandemic have not spared the real estate sector. It seemed that the bear market on the residential premises rental market would bring a decline in transaction prices. Meanwhile, the opposite trend was taking place on the real estate market. This situation has strengthened the perception of investing in real estate as a stable and, above all, safe source of investment compared to other forms of capital investment. Therefore, the aim of this research is to attempt to assess the impact of the pandemic on the residential real estate market in the city of Nowy Targ in 2017–2022. The research period was designed to test the market behaviour in connection with the pandemic. By analysing the distribution of prices and the number of transactions in the period before and during the pandemic, one can assess whether the pandemic had an impact on the local market. The research showed that the pandemic did not have a significant influence on the level of prices or the number of transactions, but it did lead to huge fluctuations in unit prices caused by uncertainty in all sectors of the economy. The obtained results provide valuable information to investors operating in the real estate market on changes in price levels in unusual market conditions, and thus enable making informed decisions regarding investments in residential real estate.

### Keywords

real estate market • residential premises • transaction price • local market

## 1. Introduction

The SARS-CoV-2 virus has brought great changes to global economic markets, which, with the current globalisation, have been felt by almost everyone in the world. Sanitary regimes, the mandatory wearing of masks, and COVID passports have become part of our daily lives. However, the impact of the pandemic was not limited to health-related issues. Entire sectors of the economy have been transformed. The suspension of work in many factories across China had a particularly damaging impact on supply chains which negatively affected manufacturing industries in many countries [Akbulaev 2020, Araújo et al. 2020, Baker 2022, DeVito and Gomez 2020, Isa et al. 2024, Marona and Tomal 2020, Saha 2020]. The pandemic was officially declared on 11 March 2020 by the World Health Organization (WHO). In Poland, a state of epidemic emergency was imposed on 20 March 2020. This resulted in the introduction of a number of bans and restrictions, which had a significant impact on many aspects of life and forced the necessity to adapt to new reality. Major changes could be observed in the property market. The lockdown policy adopted in Poland, the transition of many companies to remote work, the so-called home office, and the introduction of remote learning resulted in a significant decrease in the number of rented flats and, consequently, a decrease in rental rates [Żróbek-Róžańska 2022]. The short-term rental market was also affected by the COVID-19 pandemic. Due to the prevailing restrictions and the general crisis in the tourism industry, a significant decrease in interest in short-term rentals was noticeable [Adamiak 2022, Solski 2022, Guzowski 2021].

As reported by some real estate analysts, a pandemic can be a great opportunity for long-term investment in real estate [Minh et al. 2020, Hoesli and Malle 2022, Miessner 2021, Minh et al. 2020, Trojanek 2021, Wolski 2023]. This is also demonstrated by property price reports indicating that only property prices related to the tourism industry are declining. In contrast, prices of other types of real estate are trending upwards. The reasons for this are not so much an increase in household income, but behavioural factors [Akinsomi 2020, Hoesli and Malle 2022, Wolski 2023]. As far as property rental is concerned, retail and hotel service facilities have been the most affected by the crisis. This is closely linked to the isolation policy implemented by a number of countries. The decline in retail rentals has been exacerbated by the increased popularity of online shopping, which has led many companies to close their stationary shops. Besides residential rental, office rental has also been affected by the crisis, which is caused by the spread of the 'home office' model [Aucejo et al. 2020, Hoesli and Malle 2022, Żróbek-Róžańska 2022]. The Polish economy has witnessed rising average prices, resulting in a downward trend in the purchasing power of the Polish zloty [Solski 2022]. Attention was drawn to real estate as a form of capital investment. According to a report compiled by the Department of Financial Stability [2022], returns on investments in rental flats ranged from 5% to 6%, and were higher than returns on bank deposits and government bonds. Such a trend, with the existing undersupply of housing needs, could lead to further increasing prices [Zelazowski 2010, Wolski 2023, Siejka et al. 2022, Minh 2020]. Year-on-year rising

inflation, the persistent lockdown, the crisis in the tourism industry, and a significant decline in interest in rental housing are all factors that seem likely to affect the residential property market. Therefore, the aim of the study is to try to verify the correlation between the change in real estate market activity and the COVID-19 pandemic. Its scope includes an analysis of the residential real estate market in Nowy Targ. The research period covers the years 2017–2022, and concerns the number of concluded transactions and the level of transaction prices.

As the features describing the real estate market indicate [Radzewicz and Wisniewski 2012, Bitner 2017, Brzezicka et al. 2018, Siejka and Relidzyński 2019], both the market situation and the price level depend on a number of factors, among which the following can be mentioned:

- economic factors such as inflation, mortgage availability and interest rates, business cycles, rental prices,
- sociological factors, which include the wish to own property and the associated feeling of security,
- social factors, such as demographics,
- legal factors, such as the introduction of new regulations or restrictions,
- random factors, to which the COVID 19 pandemic can be counted.

## 2. Study area and method

Nowy Targ is a city located in the southern part of Małopolska (Fig. 1). It is the largest city of the Podhale region and its historical capital. At the same time it is the seat of Nowy Targ district.

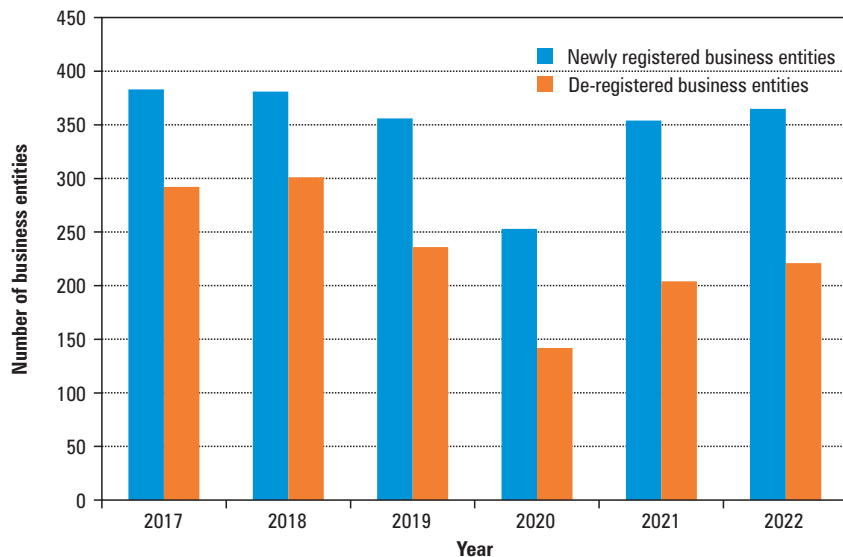
The city is currently undergoing rapid development. Modernisation of national road no. 47, between Nowy Targ and Rdzawka, will significantly improve transport links in the region. There are also plans to build a city bypass as a further part of national road no. 47, which will reduce traffic congestion in the city centre. A number of businesses operate in the city area providing jobs for the local community. Between 2017 and 2022, there were 2,092 newly registered businesses in Nowy Targ, while 1,396 companies were de-registered in the same period. This demonstrates a considerable dynamism in the economy, with an upward trend continuing (Fig. 2).

The research was carried out using an Excel spreadsheet and QGIS software (GrupStats plug-in). Geocoding was performed in the CAPAP application (Centre for Spatial Analysis of Public Administration). Both measurable characteristics (transaction price, unit price, date of transaction, usable area of the premises) and non-measurable characteristics (location of the property) were used in the statistical research. Data for the analyses were obtained from notarial deeds for the purchase – sale of residential real estate in the city of Nowy Targ in the period 2017–2022. The analysis focused only on transactions recorded on the secondary real estate market, between natural persons. This study aims to show the trends in this real estate market due to the unusual socio-economic situation caused by the pandemic.



Source: Authors' own study

Fig. 1. Location of Nowy Targ in the Małopolska voivodship



Source: Authors' own study based on BDL data, 2022

Fig. 2. Newly registered and de-registered business entities in 2017–2022 in Nowy Targ

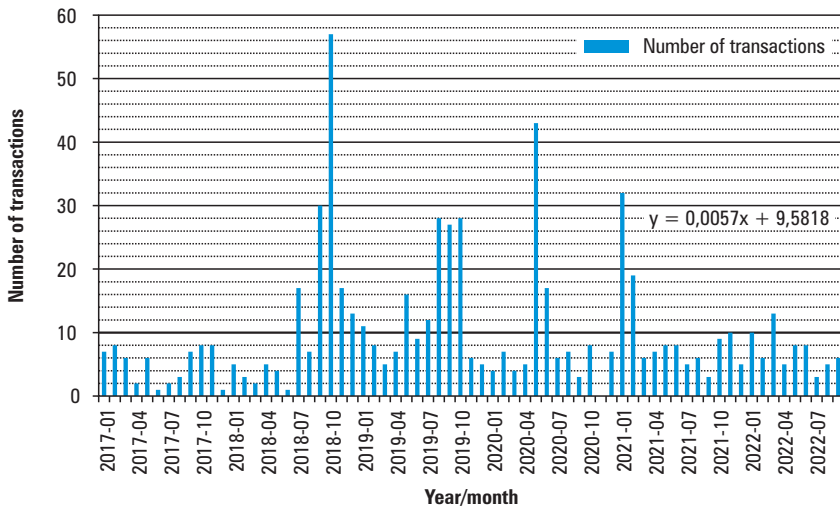
### 3. Characteristics of research material

In the study area, between 2017 and 2022, 675 purchase – sale transactions of residential real estate were recorded, in which the parties were natural persons. Table 1 summarises the basic statistical parameters of the data collected.

Table 1. Basic statistical parameters of the collected research material

Area [m <sup>2</sup> ]		Transaction price [PLN]		Unit price [PLN/m <sup>2</sup> ]	
Min	Max	Min	Max	Min	Max
16.00	184.56	50,000	745,935	1,192	12,383
Average	Standard deviation	Average	Standard deviation	Average	Standard deviation
52.13	21.16	258,509	104,561	5,110	1,474
Kurtosis	Skewness	Kurtosis	Skewness	Kurtosis	Skewness
10.87	2.53	2.63	1.24	2.15	0.87
Quartiles [Q]					
Q1	39.01	Q1	185,000	Q1	4,379
Q2	48.33	Q2	236,309	Q2	4,968
Q3	59.70	Q3	315,000	Q3	5,668

The number of transactions concluded in each month is shown in Figure 3.



Source: Authors' own study

Fig. 3. Number of transactions during the period under review

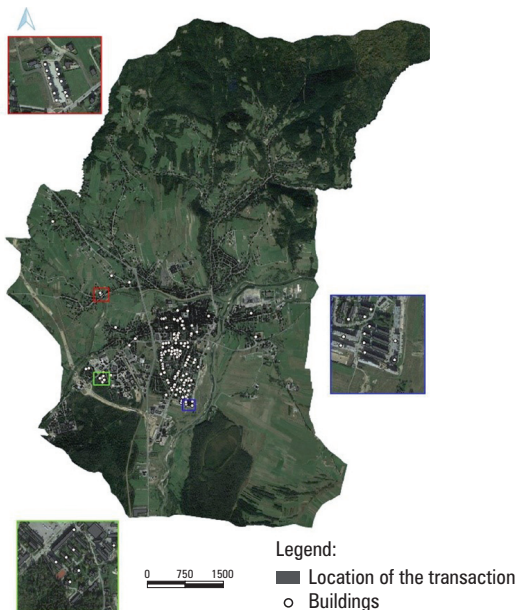
The largest number of transactions (57) were concluded in October 2018. The only month in the analysed period in which no transaction was concluded is November 2020. For the entire period, the average monthly number of transactions is 10. For the analysed six-year period, the trend line is described by the equation  $y = 0.0057x + 9.5818$ , so we are dealing with a horizontal trend, which may prove that both demand and supply balance out during the period.

If we consider the locations of the most frequently purchased flats, it becomes apparent that the largest number of transactions took place in the southern part of the city. This is mainly due to the fact that it is the area with the highest density of housing estates. The housing estate where most transactions were recorded is the new, still developing Polana Szaflarska housing estate. This phenomenon can be observed in Q3 and Q4 2018. Figure 4 shows the distribution of the collected data, while Figure 5 contains a map showing the degree of concentration of transactions.

In Figure 5, areas with a high concentration of transactions are marked in dark colours. Whereas light colours have been used to mark areas with sporadic residential sales transactions. The analysis was performed in QGIS software, using the Kernel Density Estimation algorithm, which allows the density of the phenomenon under study to be estimated in space.

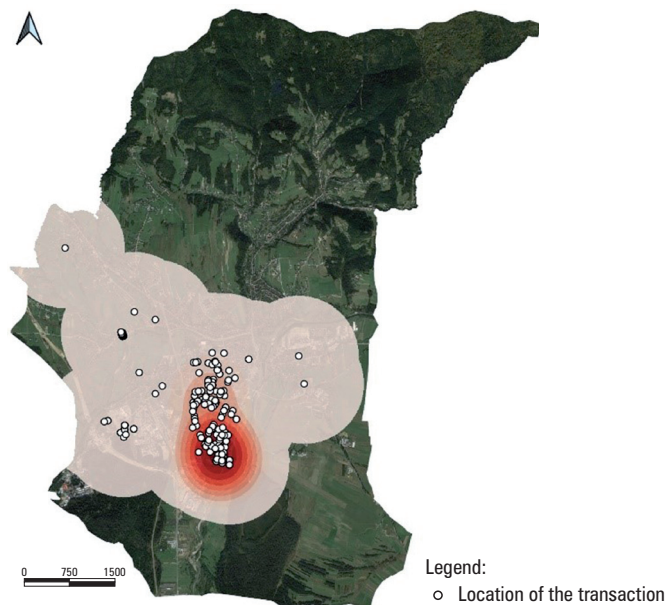
The analysis also included a set of transaction prices for which an average transaction price was calculated in a monthly time unit (Table 2).

The data in Table 2 show that the percentage of the directional factor in the median is very small and does not exceed 4%. This is due to the characteristics of the real estate



Source: Authors' own study

Fig. 4. Distribution of transactions recorded in Nowy Targ between 2017 and 2022



Source: Authors' own study

Fig. 5. Concentration of transactions between 2017 and 2022

market, namely its low elasticity, which causes prices to change to a small extent in the short term.

**Table 2.** Average monthly transaction prices

Year	Mediana	Directional factor	Share of directional coefficient in the median [%]
2017	206,995.00	-372.64	0.18
2018	236,425.79	4,277.9	1.81
2019	236,386.12	3,692.2	1.56
2020	258,092.65	-7,889.1	3.06
2021	281,263.89	2,462.3	0.88
2022	314,800.00	-5,696.5	1.81

For further research, the set of transaction prices was divided into five ranges. The result of the analysis is shown in Table 3 and Figure 6.

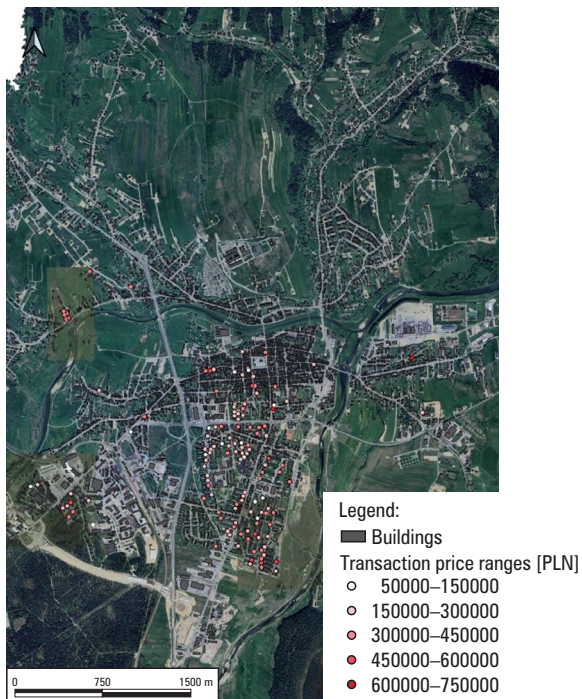
**Table 3.** Number of transactions for a given price range

Transaction price ranges [PLN]	Number of transactions
50,000–149,999	78
150,000–299,999	393
300,000–449,999	175
450,000–599,999	19
600,000–749,999	10
<b>Total</b>	<b>675</b>

The largest number of transactions (393) falls within the price range of PLN 155,000–PLN 299,999. The second most numerous group (175 transactions) is in the price range of PLN 300,000–PLN 449,999. In the range of PLN 50 000–PLN 149,999 78 transactions were recorded. The lowest prices are for properties located in unattractive parts of the city in 1980s housing estates. Transactions above PLN 450,000 are sporadic, with only 29 such transactions recorded for the period under study. The distribution of these data on the map of Nowy Targ, is shown in Figure 6.

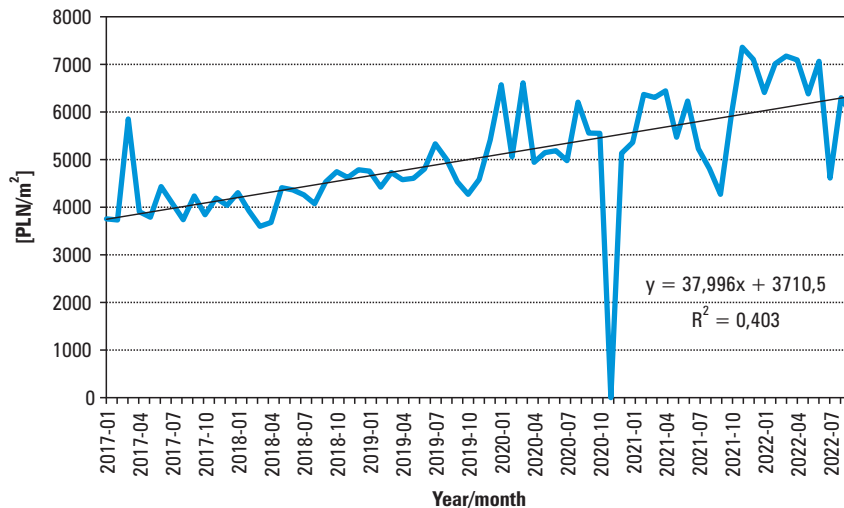
One of the more important elements of the property market analysis is the distribution of unit prices. There is clearly an upward trend throughout the studied period (Fig. 7). In the first two years, it is actually a systematic increase in prices. In contrast, from 2019 onwards, fluctuations in unit prices can be seen, intensifying significantly in 2020 and weakening in 2022.





Source: Authors' own study

Fig. 6. Distribution of transactions by transaction price range



Source: Authors' own study

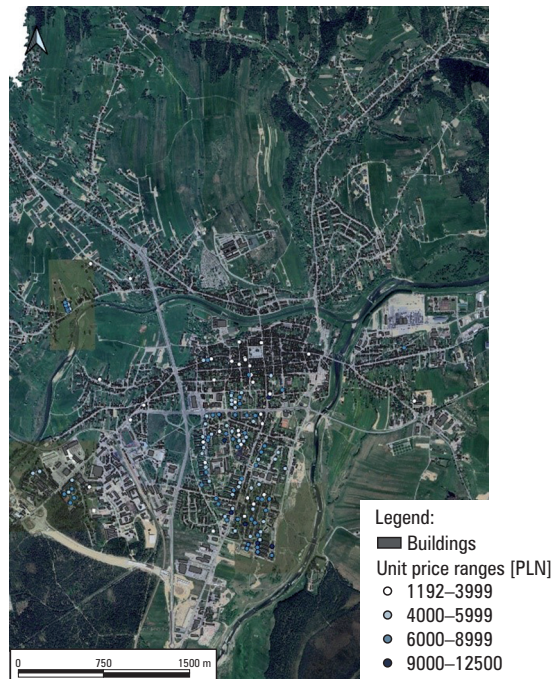
Fig. 7. Average monthly unit prices from 2017 to 2022

The analysed set of unit prices was divided into twelve ranges indicating the distribution of the number of transactions in a given unit price range (Table 4).

**Table 4.** Number of transactions for a given unit price range

Unit price ranges [PLN/m <sup>2</sup> ]	Number of transactions
1,192–3,999	121
4,000–5,999	420
6,000–7,999	121
9,000–12,500	13
<b>Total</b>	<b>675</b>

More than 60% of transactions are in the price range of PLN 4,000/m<sup>2</sup> – PLN 5,999/m<sup>2</sup>. The remaining unit prices are distributed almost evenly and account for nearly 20% each. The distribution of these data on the map of Nowy Targ (Fig. 8) reveals that transactions located in the southern part of the city feature a higher unit price. This is due to the fact that a new housing estate with high standard buildings is being developed there.



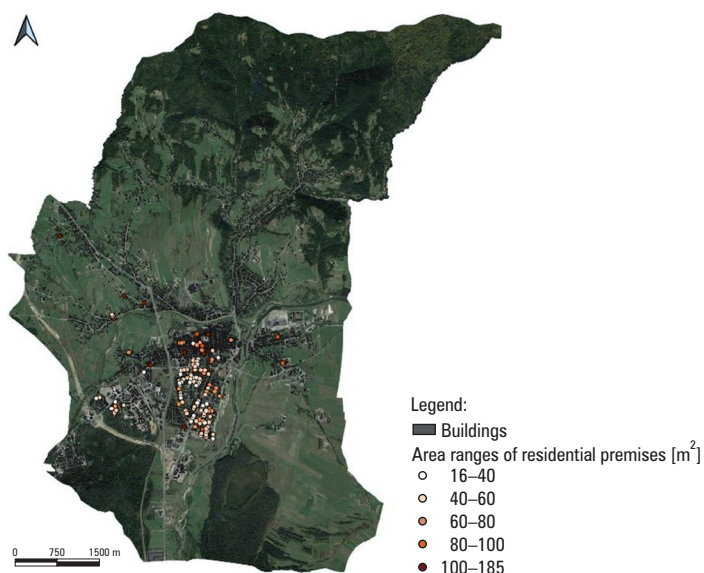
Source: Authors' own study

**Fig. 8.** Distribution of transactions by unit price range

An analysis of the area ranges of flats showed that flats between 40 m<sup>2</sup> and 60 m<sup>2</sup> are the most popular (Table 5). They account for almost 50% of all concluded transactions. The number of transactions involving smaller and larger flats is almost evenly distributed. It should be mentioned that flats below 20 m<sup>2</sup> and above 100 m<sup>2</sup> are purchased sporadically, and the number of such transactions does not exceed 3%.

**Table 5.** Number of transactions for a given unit area range

Area ranges [m <sup>2</sup> ]	Number of transactions
16.00–19.99	5
20.00–39.99	176
40.00–59.99	328
60.00–79.99	126
80.00–99.99	21
100.00–119.99	7
120.00–139.99	3
140.00–159.99	5
160.00–179.99	1
180.00–185.00	3
<b>Total</b>	<b>675</b>



Source: Authors' own study

**Fig. 9.** Distribution of transactions by unit area range

The distribution of these data on the map of Nowy Targ (Fig. 9) indicates that the largest flats are mainly located in the centre and the north-western part of the town.

#### **4. Discussion of results**

The property market is a dynamic and volatile structure, which in the era of globalisation will be continuously intensifying. There are many factors contributing to market activity, among which the COVID-19 pandemic is the most common in recent times. The initial lockdown period in Poland, i.e. 2020, saw huge price fluctuations and a slight decrease in prices and number of transactions compared to previous years. After the decreases in 2020, there was a sharp increase in prices in 2021. This is due to the decline in the purchasing power of money and, in particular, the perception of real estate as a safe investment of capital. In addition, the rate of return on property investments was higher than on bank deposits and government bonds. Also of significance is the fact that the price of construction materials has risen and the labour-hour rate has increased. The construction industry was one of the few for which the lockdown did not cause such large losses as in the case of gastronomy or tourism. The confidence in the safety of investing in real estate created a demand, so that the effects of the 'corona-crisis' were not as felt as in other industries. The increase in residential property prices in the Nowy Targ in 2021 coincides with the upward trend in housing prices in voivodeship cities [Departament Stabilizacji Finansowej 2022]. The trend created in 2021 also continues in the later period covered by the analysis. The reasons for this are mainly attributable to the increase in inflation, (which amounted to 14.4 per cent according to data made available by the Central Statistical Office) and to the uncertainty in the market due to the armed conflict between the Russian Federation and Ukraine.

#### **5. Summary and conclusions**

The study attempted to examine the dynamics of the residential real estate market and the changes it has undergone following the COVID-19 pandemic. The study used data from notarial deeds, which include purchase and sale transactions recorded on the secondary real estate market. The analysis covered the area of the city of Nowy Targ, from 2017 to 2022. There were 675 transactions recorded during the study period. The conducted research allowed the following conclusions to be drawn.

For the entire period, the trend line of the average unit price maintains an upward trend. However, from Q2 2019 onwards, despite the still upward trend of the average unit price, huge price fluctuations can be observed due to global economic instability.

The average monthly number of transactions is 10. The highest number of transactions (57) took place in October 2018. Meanwhile, no transaction was recorded in November 2020. This is the only such month in the entire period under review. We can observe an increasing demand for residential units from Q2 2018 up to Q3 2019. After this period, a saturation of the market and a decrease in the number of transactions is evident. Another increase in the number of transactions, this time punctuated,

took place in May and June 2020 and in January and February 2021, followed again by a decline. This is related to the pandemic, which first halted investments and then delayed the construction of new buildings.

The largest number of transactions are for typical two- and three-room flats with areas between 40 and 60 m<sup>2</sup>. The second most common group are one-room flats and studio flats, i.e. with areas in the 20–40 m<sup>2</sup> range. Transactions with flats larger than 80 m<sup>2</sup> are rare. The area where transactions most often occur is the southern part of the city. This is due to the urban characteristics of Nowy Targ, as most multi-family buildings are located in this part of the city. Moreover, a new housing estate is under construction there. The highest average unit price of PLN 7,363 was recorded in November 2021 and the lowest of PLN 3,596 in March 2018. The largest fluctuations in unit prices took place between January 2020 and July 2022.

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