

Trends in primary apartments market during COVID-19 pandemic

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Abstract: The work includes an analysis of the primary real estate market in Cracow in 2017-2020. The above analysis was carried out on the basis of transactions obtained from the official register at the city hall. The results of the research made it possible to observe the changes taking place in the market: the prices grew moderately, and the number of transactions was between 8,000 and 11,000 each year. In 2020, due to the COVID-19 pandemic, the number of transactions conducted dropped sharply. Despite the reduced interest of potential buyers, prices per square meter of residential space increased significantly during the period under review. Thus, the pandemic only affected the number of transactions and not the average price per unit of space.

Keywords: real estate market; primary real estate market; property; COVID-19

1. Introduction

The real estate market in Poland is a young and dynamically developing market, because real estate as a commodity can perform many functions. Apart from its basic residential function, it may serve as a capital investment, loan collateral or a source of income [1]. However, the market should not be treated as a single mechanism, as there are interactions between individual local markets, and market differentiation is influenced by factors of a local nature [2]. The real estate market has its own peculiarities connected with its features, such as a close connection between a real estate and its location, physical features of the real estate (area, construction technique, finishing standard, etc.) or the lack of substitutes [3], [4]. In addition, the economic situation in the real estate market is closely related to the activity of the whole economy, so decisions made by investors based on historical market data may result in a mismatch between the offer and the customers' current needs [5].

Real estate market analysis and preference research is needed by many market participants. Not only investors and owners, but also managers (for proper property management), lenders (to develop a credit policy), brokers (to be able to advise clients in a beneficial way) or valuers for proper estimation of property values [6], [7]. It is also of particular importance to property developers - on its basis they prepare the project concept and determine the location of the property so as to meet the needs of the market [8]. The necessity of professional real estate market analysis also results from the fact that investments carried out by developers are burdened with a high risk, as they are addressed to a small group of recipients. In addition, they require a large financial outlay, the final product is not very mobile in terms of time and place [9] and the rate of return and the level of investment risk are the overriding criteria for investors [10].

During the pandemic and post-pandemic period, the real estate market was also examined for the impact of COVID-19. Pike (2020) deals with the personal viewpoint to encourage greater involvement of the real estate investment community in governmental and regulatory decision making [11]. Worzala (2021) works with the current uncertain times caused by the COVID-19 pandemic and its impact on real estate markets [12]. Scientists from Lithuania created predictive analyses of the Big Data for the real estate market during the pandemic. Basing on the different 15 models, authors proved that real estate market is quite resilient to the pandemic, as the price drops were not as dramatic as anticipated [13]. Özer et. al (2022) examine the nature of causal relations between COVID-19 related economic supports and real estate shocks in 58 countries [14]. For real estate firms, their findings show that companies can protect against negative stock market reactions caused by COVID-19 by diversifying their investments across different countries. Another important research around the real estate market proved that pandemic “accelerated the process of perception of digitalization in real estate websites“ [15]. Milcheva (2022) worked with the real estate sections affected by the COVID-19 and shows that the most affected sectors were retail, hotels and office [16]. Whereas Hoesli and Malle (2022) focused on the commercial real estate prices and show which sectors were affected most [17]. Ali et. al (2023) analysed real estate investment decisions in the pandemic crisis [18]. A number of research focused only on the local real estate markets during the pandemic, in e.g. Czech Republic [19], UK [20], Australia [21], Nigeria [22] Poland [23] or South Africa [24].

The possession of complete and reliable information by the real estate market participants allows for the proper use of methods and tools of economic analysis, which determines efficient and rational actions of investors. Making economically accurate decisions on the directions of real estate development, affects the formation of their market value while increasing their potential and attractiveness as investment instruments [25]. However, it should be remembered that obtaining information on future events on the market is a difficult task due to the complexity of the phenomenon (dependence on financial markets, political situation, the wealth of the population or demographic changes), so it is important to carefully observe changes to be able to partially predict them and react to them [26]. According to research in Poland, buildings and structures constitute as much as 70% of the gross value of fixed assets in the national economy [27]. It is therefore crucial to determine the specific features and characteristics of the real estate market with particular emphasis on the apartment (flat) market, which is a fundamental sector for the operation of development companies. The value of a property, in addition to the attributes defined for it, also depends on the purpose of the valuation [28]. In the valuation process, an appropriate approach and method for determining the value are defined for the property and the purpose of the valuation [29]. The use of valuation models other than the officially used ones has been studied in a very wide range [30]–[32].

Due to the wide application of market analysis, the aim of this article is to present the primary real estate market in Cracow. For this purpose, an analysis of the structure of apartments included in the transaction price register in the period from 2017 to the end of 2020 was carried out. Cracow was chosen because of its characteristics and the availability of high-quality data. It is a tourist and student city, meaning it has a high demand for real estate and a very developed, balanced market. In addition, the real estate data are accessible and of high quality with a large number of attributes. This paper briefly characterises the Cracow property market and the housing situation. Then, the obtained data and the methods by which they were compiled are described. The obtained results are presented in charts and provided with a commentary. The last stage was the formulation of conclusions and a summary of the paper.

2. Apartment market in Cracow

According to NBP data, the number of new flats completed in Cracow is falling. In 2019, just over 13,000 were completed and in 2020 already only 10,000 flats [33]. The number of apartments whose construction has started is also decreasing. A similar trend continues among building permits for flats issued to developers. In 2017, over 12,000 of them were issued, and in 2020 this number dropped to less than 9,000. This is due to the lack of plots of land allocated for development and the supply of new land in the city area. Undeveloped plots of land are also missing from the so-called land banks. These are plots of land purchased by an investor for further investments, also those not yet planned. In this way, the developer can reduce the cost of the investment, as land becomes more expensive every year, so by purchasing a plot a few years earlier, they can save money. Additionally, in case of financial problems, the developer can sell part of the land to complete other investments. The lack of plots in land banks is caused by the fact that all land reserves have been put up for sale, and acquiring and preparing new plots for investments takes a very long time. This results in new units being sold with longer and longer lead times [34]. The average construction time for residential buildings in the Lesser Poland Voivodship is one of the longest in Poland (next to the Świętokrzyskie and Podkarpackie Voivodships) and amounts to over 51 months. For comparison, in the Lower Silesian Voivodship it is less than 30 months. [35].

In 2020, of 10,158 apartments, 9,222 were from developers, accounting for 91% of the total number of apartments completed. The remaining 9% were individual, cooperative or municipal apartments. Of the housing permits issued, 95% were issued to developers. Therefore, it can be assumed that in the following years the share of housing units delivered by developers will remain high. Between 2017 and 2020, housing conditions improved steadily. The average usable area of a new unit increased by 2.3 m² and reached 58.4 m². The ratio of housing to population has improved year on year. It was estimated that in 2020 there would be 529 apartments per 1000 inhabitants, while in 2017 there were 495. It is also noteworthy that the usable area of apartments increased from 28.6 m²/person in 2017 to 30.5 m²/person in 2020 [33].

Fig. 1a shows the number of new apartments in the analysed period together with the mean price per 1 m². In 2019, a record number of new flats was launched on the market. The trend visible in the graph allows us to assume that this trend will not change in the following years. Fig. 1c shows the average transaction price per 1 m² together with the average gross salary in Cracow. Both values are growing at a similar rate. The situation looked best in 2018, when the difference between the transaction price and the average salary was the smallest.

As of 2019, the average transaction price was increasing at a slightly faster rate than the average salary.

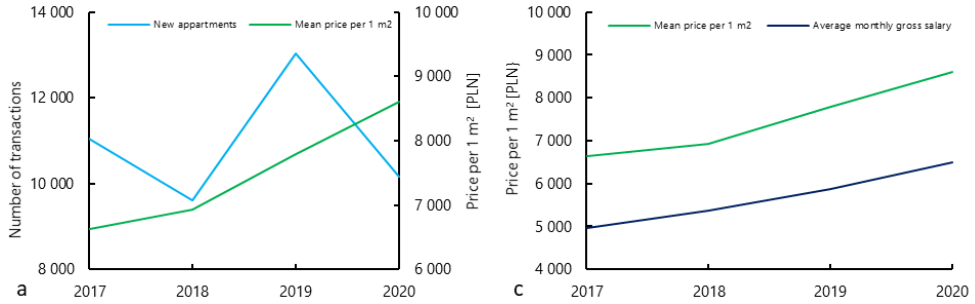


Fig. 1. Summary of selected information concerning Cracow property market [33], [36]

Fig. 2 shows that average offer (red) and transaction (green) prices per 1 m² of the apartment area were rising steadily. At the end of 2019, there was a sharp increase in offer prices, which continued until the end of the first quarter of the following year. Q4 brought a decrease in transaction prices with a simultaneous increase in offer prices. It is worth noting that in 2020 the difference between offer and transaction prices (navy blue colour) was the largest. This could have been caused by the mismatch between supply and demand. Overpriced flats appeared on the market, while buyers were interested in cheaper ones. The gradual increase in the difference between the offer price and the transaction price over the time analysed shows that sellers were willing to make greater concessions in the selling price during the pandemic, which may be due to the expected fall in prices and the desire to sell more quickly.

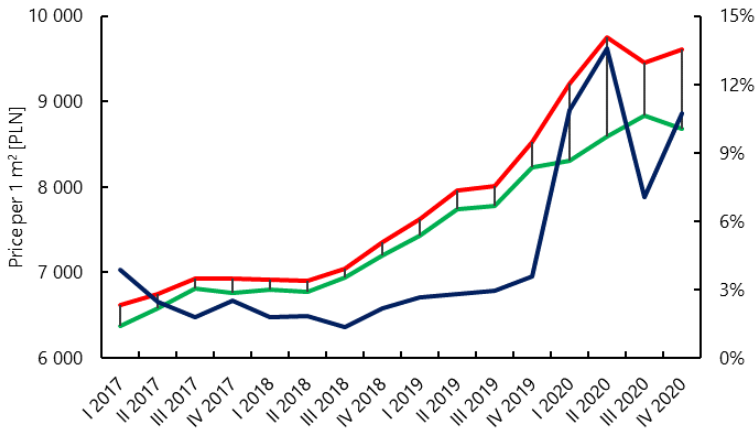


Fig. 2. Average offer price (red) and transaction price (black) of 1 m² of apartment area on the primary market in Cracow in 2017-2020 and the differences between these prices (dark blue) [37]

Another reason may have been the outbreak of the COVID-19 pandemic. Buyers in fear of losing their jobs or health cut back on spending and developers had to allow more discounts. Given the low interest rates on deposits and the steady rise in housing prices, buyers were keen to invest in property to secure assets. Rising wages and favourable lending

policies contributed to the availability of housing when financing the purchase with both cash and credit. Big changes came in October 2021, when interest rates began to rise in response to rising inflation, leading to a decline in creditworthiness. According to the Credit Information Bureau, the number of home loans granted in 2021 compared to 2020 fell by 39% [38]. The property market may also be affected by the government's "Housing without own contribution" programme, which was launched at the end of May 2022. The potential target group is as many as 2.6 million people aged between 25 and 34 who still live with their parents. Due to the war in Ukraine and the wave of migration, the activity of customers from Ukraine is forecast to increase in Poland. According to the city data, 177,500 refugees lived in Cracow on 1 April 2022 [39]. Some of them will probably stay in Cracow and look for a flat for themselves. Therefore, it is worth analysing the local market in terms of the structure and prices of flats on sale in order to adjust the offer to the clients' needs as much as possible.

3. Methodology

For the purposes of the research, data on transactions in Cracow's developer housing market were downloaded from the city hall. For the years 2017-2020, the database included 290,000 transactions. The data received from the office for 2021 were not up to date on their entire length. The received base was firstly filtered. Initially, transactions from the secondary market were removed, which reduced the number of transactions to less than 61,000 (21% of the base). In the next stage, records with incomplete information required for the analysis were found, these were 1802 transactions. Additionally, data reliability analysis was performed. Transactions whose features raised suspicion, e.g. too high/low price or area, were removed from the database. Filtering consisted in ordering the database in ascending order according to the selected feature, and then analysing the values. If the values of particular features were clearly erroneous (e.g. a flat of 1 m² area), the transaction was deleted. It was also assumed that free market transactions between a developer and an individual would be examined (5,327 transactions, 9%, were removed). Only apartments purchased with a 1/1 share, by means of the ownership right to the unit together with the right attached to the common property, were taken into consideration (22,990 transactions were removed, 38%). The above requirements were met by 30,634 apartments, which were used in further analysis. They accounted for 50% of units subjected to primary market transactions, while with respect to the initial base it was only 11%.

4. Results

Fig. 3 presents a breakdown of the number of transactions in the analysed years by months. In 2017, sales of new apartments were evenly distributed with a slight advantage of the period August-October over the others. Among the analysed years, 2018 was a record year in terms of transactions concluded. A particularly high number, 38%, of transactions were concluded in the last quarter (October-December). In 2019, a slight decline began. At the end of the year, the number of transactions was 1,500 lower than in 2017. In 2020, the fewest transactions were carried out. This was probably influenced by the outbreak of the COVID-19 pandemic.

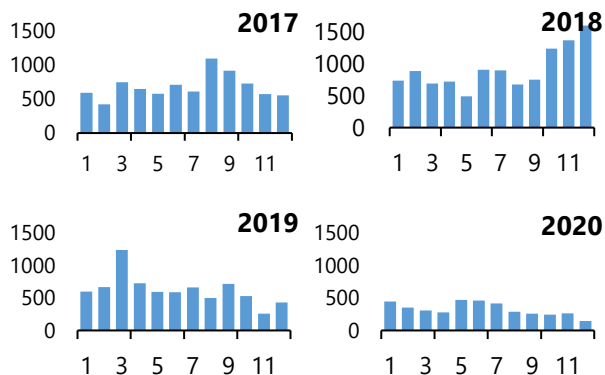


Fig. 3. Number of transactions (y-axis) by year and month (x-axis)

In a further step of the research, the percentages of apartment size were collated into 4 ranges: $<30\text{ m}^2$, $40\text{-}45\text{ m}^2$, $45\text{-}60\text{ m}^2$ and 60 m^2 (Fig. 4). The structure of the area of new apartments in Cracow is stable. Invariably, the two dominant groups on the market were units with areas between 30 and 45 m^2 and between 45 and 60 m^2 . A slight increase took place among the largest flats (by 2%). The smallest market share was held by flats with areas below 30 m^2 . This is only 7% of the transactions concluded.

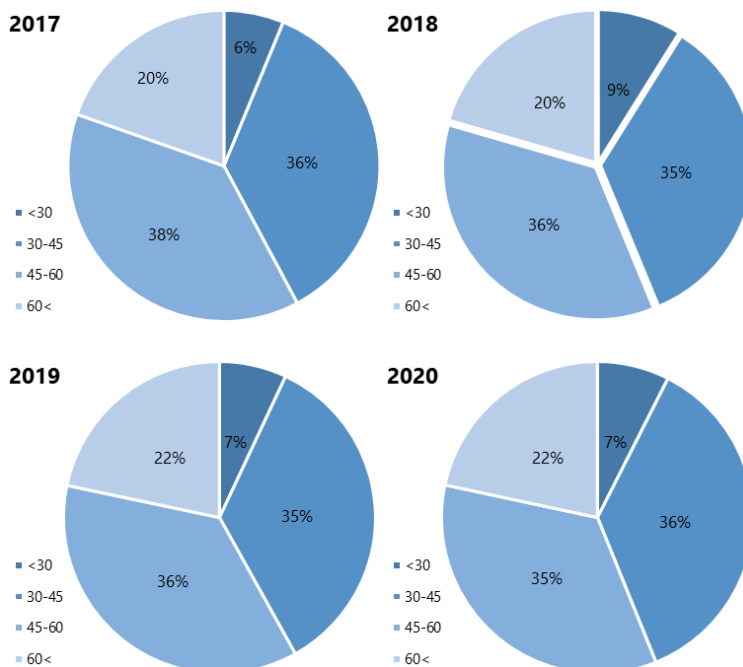


Fig. 4. Summary of apartments size in m2 divided by years

A chart was then made comparing average prices by property location over the following years (Fig. 5). In 2020, the most expensive flats per 1 m^2 area were located in Śródmieście district (9,169 PLN). Cheaper premises were located, in turn, in Krowodrza

district (8,603 PLN), Podgórze district (7,480 PLN) and Nowa Huta district (7,247 PLN). During the four years, the prices of flats located in Nowa Huta district increased the most (by 38%, i.e. by 2006 PLN), and the least in Podgórze (by 19%, i.e. by 1184 PLN).

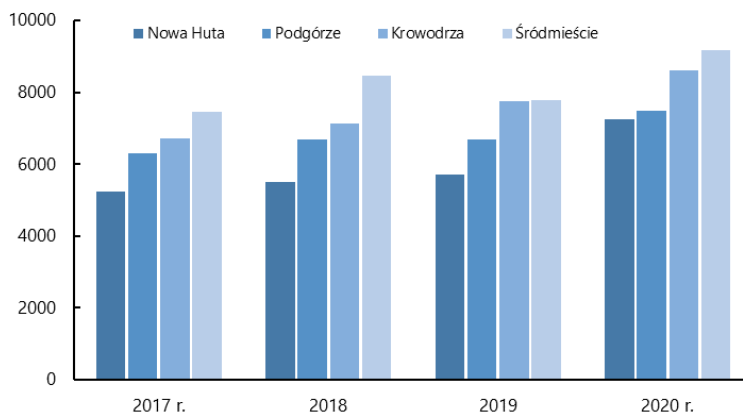


Fig. 5. Comparison of prices between 2017 and 2020 per 1 m² of apartment area in Krakow's districts

The last analysis that was performed was the distribution of transactions due to the price per 1 m² by year (Fig. 6). In 2017-2019, new apartments with a price per 1 m² above 10,000 PLN accounted for only 4% of transactions, while in 2020 their share increased to 18%. The importance of transactions with a price per 1 m² from 8,000 to 10,000 PLN increased from 7% to 27%. The market was invariably dominated by flats whose value per 1 m² ranged from 6,000 to 8,000 PLN. The share of the cheapest units per 1 m² fell from 40% to only 11%.

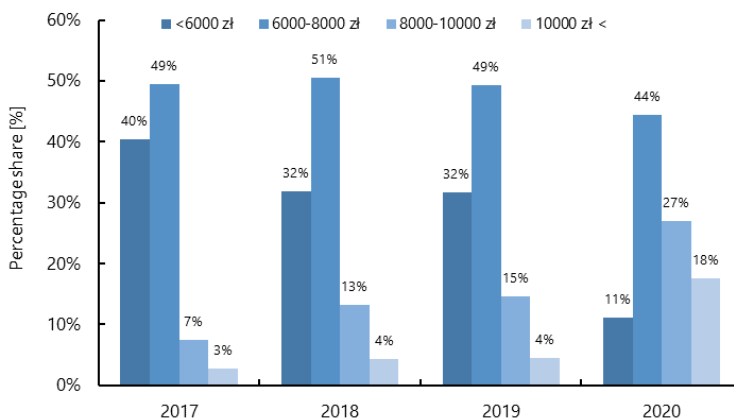


Fig. 6. Distribution of transactions by price per m²

The price structure of the offers had changed a lot. In 2017-2019, new apartments with a price per 1 m² above 10,000 PLN accounted for only 4% of transactions, while in 2020 their share increased to 18%. The importance of transactions with a price per 1 m² from 8,000 to 10,000 increased from 7% to 27%. The market was invariably dominated by flats whose value per 1 m² ranged from 6,000 to 8,000 PLN. The share of the cheapest units per 1 m² dropped from 40% to only 11%.

5. Conclusions

The study analysed key issues of the primary market, such as the number of transactions in the analysed period, the share of flats of a given size, average prices per 1 m² by location of the property and the distribution of transactions in terms of the price per 1 m². For this purpose data from the Real Estate Prices for Cracow were used. They covered transactions concluded in the period from 2017 to 2020. The data was filtered for completeness and reliability. The study included only transactions from the primary market, acquired with a 1/1 share by means of the ownership right to the premises together with the right related to the common property, concluded between an individual and a developer. The necessary requirements to perform the analysis were met by 50% of the transactions on the new apartments market.

Compared to previous years, the number of transactions carried out fell in 2020. This was likely due to the outbreak of the COVID-19 pandemic, with those interested in buying putting off their decision to acquire property. However, the lower interest in purchasing flats did not contribute to a drop in prices. On the contrary, in 2020, the prices of 1 m² apartment area increased sharply. This was due to more expensive land, building materials and rising wages for construction workers. The highest prices per 1 m² in 2020 were reached by flats in Śródmieście district (9,169 PLN) and the lowest in Nowa Huta district (7,247 PLN), while the largest price increase was in Nowa Huta district and the smallest in Podgórze district. Flats whose price per 1 m² ranged from 6,000 to 8000 PLN constituted the dominant group in the entire period under study. Year by year, the number of transactions whose price per 1 m² exceeded 8,000 PLN increased. In terms of area, the largest part of the market were medium-sized flats, with areas between 30 and 60 m². The share of large flats, with an area of more than 80 m², slowly increased, which indicates improving housing conditions and greater living comfort. The smallest flats, the so-called studios, accounted for 7% of the transactions on average. The average area of an apartment had not changed much over the four years and amounted to approximately 49 m².

Summarizing the results obtained, there are several key aspects to note:

1. Local and national restrictions put in place to contain the pandemic forced many construction companies to reduce their operations, resulting in delays in deliveries and increased production costs.
2. The pandemic also led to changes in the preferences of residents, who are increasingly drawn to space and open green spaces.
3. Many people who lost their jobs or chose to work remotely moved out of the cities to more rural areas, which affected demand for housing outside the big cities.
4. On the other hand, some buyers decided to postpone the purchase of an apartment, fearing the uncertain economic and financial situation associated with the pandemic.
5. Many regions saw a decline in the number of transactions in the primary housing market during the first few months of the pandemic.
6. Housing prices fell in some regions, but rose in other regions, depending on the local market situation.
7. The restrictions and security procedures put in place also caused delays in the housing sales process, as many customer meetings and site visits had to be cancelled or delayed.
8. Many development companies introduced new solutions, such as virtual presentations, to allow customers to view properties in a safe manner.

9. Despite the uncertainty brought on by the pandemic, the primary housing market is still active, and buyers remain interested in acquiring properties that meet their needs and expectations.
10. The rise of remote working has become one of the key post-pandemic trends. Many companies moved to flexible working models, allowing employees to live in locations other than close to the office. This can affect demand for property in areas that are not a business concentration.
11. In some countries, governments introduced programmes to support the real estate sector in response to the pandemic. Subsidies, tax exemptions or other forms of support can affect the real estate market.

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