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ANALYSIS OF THE SUBURBAN REAL ESTATE MARKET IN THE PERIOD BEFORE AND DURING THE COVID-19 PANDEMIC

ANALIZA RYNKU NIERUCHOMOŚCI PODMIEJSKICH W OKRESIE PRZED I W TRAKCIE PANDEMII COVID-19

ABSTRACT

The aim of this study was to analyse the real estate market in the Kraków County area during the pre-COVID-19 and COVID-19 pandemic periods. The study utilized a dataset from the state register of real estate prices covering the years 2017–2021 was used. In the introduction part, the authors analyse problems related to the real estate market during the pandemic, while the second chapter focuses on the real estate market in Krakow County. The dataset obtained from the local authority real estate transaction database consisted of 52,356 entries and after removing transactions with missing data, approximately half of this number remained. The analysis cover five different properties types: houses, apartments, parcels, commercial premisses and developed real estates. The highest number of transactions traded in the analysed area involved parcels, while houses had the lowest. On the other hand, commercial premisses had the highest prices in the market, while parcels were the cheapest. Since March 2020, when the first COVID-19 pandemic restrictions were implemented, only the number of transactions has decreased, but the pandemic has had no impact on property prices.

Keywords: agglomeration; real estate market; suburban; COVID-19; property; pandemic; Krakow, Poland, county, real estate

STRESZCZENIE

Celem niniejszego artykułu jest analiza rynku nieruchomości na terenie powiatu krakowskiego w okresie przed pandemią COVID-19 oraz w trakcie pandemii. W badaniu wykorzystano dane z państwowego rejestru cen nieruchomości obejmujące lata 2017–2021. W części wprowadzającej autorzy dokonali analizy problemów związanych z rynkiem nieruchomości w okresie pandemii, uwzględniając także rynek nieruchomości w powiecie krakowskim. Zbiór danych pozyskanych z urzędu obejmował 52 356 transakcji, a po usunięciu pozycji z brakującymi danymi, które analizowano, uzyskano około połowę tej liczby. Analiza obejmowała pięć różnych typów nieruchomości: domy, mieszkania, działki, lokale użytkowe oraz nieruchomości zabudowane. Największa liczba transakcji na analizowanym obszarze dotyczyła działek, natomiast najmniejsza domów. W przypadku cen lokale komercyjne miały najwyższe ceny za metr kwadratowy, podczas gdy działki były najtańsze. Od marca 2020 roku, kiedy wprowadzono pierwsze obostrzenia związane z pandemią COVID-19, spadła dynamika liczby transakcji, co było widoczne w roku 2021. Pandemia nie miała natomiast wpływu na ceny nieruchomości, których trend wzrostowy nie uległ zmianie.

Słowa kluczowe: aglomeracja, rynek nieruchomości, tereny podmiejskie, pandemia COVID-19, nieruchomości, Kraków, Polska, powiat

1. INTRODUCTION

The term 'real estate' (properties) has many interpretations, both legal and colloquial, between which no differences arise. According to the polish Civil Code real estate is defined as *immovable property is that part of the earth's surface which constitutes a separate object of property (land), as well as buildings permanently connected to the land or parts of such buildings, if by special law they constitute a separate object of property from the land* (Sejm, 1964). In scientific literature, real estate in legal terms is specified as land and that which is permanently connected to it, e.g., trees or buildings (Kisilowska 2007; Szopińska et al. 2022; Zhang and Yang, 2023). On the other hand, according to the literature, the real estate market can be defined as proceedings and contact between people who organize the purchase, exchange, sale, as well as use and development of real estate; entrepreneurship, which results in the exchange of an object of trade; transaction, as a result of which the seller and the buyer of a given real estate during a meeting determine the price (Kucharska-Stasiak, 2008). Influencing prices, and hence the good functioning of the market mechanism, are parallel relations exerting influence on exchange relations between demand and supply creating entities (Wrzosek, 2004; Kucharska-Stasiak, 2011). Parallel relations imply competitive activities in the sellers' environment, as well as negotiations between sellers and buyers (Kucharska-Stasiak 1998). The consequence of the booming real estate market is the development and expansion of cities and suburban zones, as well as adjacent rural areas. It plays an important role in the economy by contributing to the GDP or building new work centres (Zaremba, 2011; Sabyasachi, 2020). Real estate is valued among investors and ranks third after shares and bonds as most popular asset for investment (Jurek-Maciak, 2007). It is popular to own a residential property as an investment that generates income (Załęczna and Wolski, 2007). An important observation, however, is that people are more likely to swap flats in blocks of flats for detached houses, which is partly due to the need for comfort. Overall, residential property is a very important aspect of a person's life as it represents a certain barrier to security (Hoesli and Malle, 2022).

The real estate market is described as moderately clear, with weaker organization, as well as being more difficult to analyse and conduct research (Kucharska-Stasiak, 1998). Among the problems that researchers have to face we can mention the lack of authentic information and the difficulty in determining the value of the property, which is influenced by the local development plan or general lack/missed transaction data or geodata (Apollo, 2023). Planning documents, which determine how a property can be used, also have a significant impact on value, establishing investment capacity and market weight. However, they may also be the cause of decrease in such value (Cymerman et al., 2002). This is influenced by the use of the land, the neighbourhood, infrastructure, development and nearby guard areas (Hopfer, 2000). The principle of effective market prosperity is definitely its high transparency, which influences many values, analyses as well as investment decisions (Kuraś, 2013).

COVID-19 was the first phenomenon of its kind in recent years and has been studied by almost all fields of science, such as sociological aspects (Chornyi, 2020; Biase and Dougherty, 2021), health (Niala, 2021; Śleszyński et al., 2022a), supply chains (Lal, 2020) or virtual platforms (Bellone et al., 2021). Another important aspect during pandemic raised by scientists were e.g. problems of spatial planning policy (Mickiewicz and Nowak, 2020a, 2020b; Sharifi and Khavarian-Garmsir, 2020), economic problems of local spatial plans (Śleszyński et al., 2021), smart city (Sharifi et al., 2021), urban policy (Śleszyński et al., 2022b, 2023) or tourism (Feldman, 2022). In the case of the real estate market during the pandemic period, it has also already been the subject of analyses (De Marinis and Ottaviani, 2021). The COVID 19 pandemic has had a huge impact on the real estate market worldwide and local markets, changing both demand and supply in the market (Bentlin et al., 2021). In some regions, the pandemic caused a decline in real estate activity, due to concerns about economic stability and job losses (Pisano, 2020). However, the pandemic accelerated demand for real estate, especially for single-family homes, as many people began to prefer more space and the possibility of working remotely (Florida et al., 2021). It also affected location preferences, as many people began to look for property in smaller towns or suburbs, rather than in densely populated urban areas (Glinka, 2021). Property prices in some locations increased as a result of limited supply, particularly in the housing market, making housing more difficult to access for some people (Jach et al., 2023; Bas, 2022). The pandemic also affected customer preferences for property features such as access to green spaces, private gardens or proximity to recreational areas (Lal, 2020).

The development of the commercial property market, such as office buildings and shopping centres, was severely affected by the pandemic, as many businesses switched to remote working and retail sales declined (Szmytkowska, 2020; Fenu, 2021). The increased popularity of e-commerce as a result of the pandemic has resulted in an increased need for warehousing and logistics properties to handle growing online orders. The introduction of international travel restrictions constrained the market for tourist properties such as hotels and holiday flats, leading to a decline in demand and rentability (Gragera et al., 2021). In the case of the rental market, the pandemic significantly reduced prices, particularly in large conurbations where a large part of the rental market is taken up by students. Remote working, remote learning and the collapse in tourism have resulted in less demand for rentals, especially short-term rentals lowering prices (Tricarico and De Vidovich, 2021). Overall, the COVID-19 pandemic has impacted the property market, created new trends and changed customer preferences, as well as creating challenges and opportunities for investors and buyers (Bandarin et al., 2021).

2. REAL ESTATE MARKET

When analysing the real estate market, there are numerous aspects that can be examined. It involves breaking down, extracting specific features, and studying particular phenomena. In this analysis, we will focus on the Kraków County area from 2017 to 2020. The county is situated in the northern part of the Lesser Poland Voivodeship (Ill. 1) (Trembecka, 2017). Its covers an area of 1,231 km2, accounts for 8% of the province's total area.

The county of Kraków is situated adjacent to one of Poland's most important metropolises, Kraków. It encompasses 17 municipalities, including 5 urban-rural and 12 rural ones. Additionally, the Krakow agglomeration consists of an outer zone known as the 'commuter' zone, which comprises 29 municipalities, and an outer surrounding zone consisting of 37 municipalities. The largest counties within the Kraków agglomeration are the municipal Kraków and Wieliczka counties, and the Kraków land county. An urban agglomeration refers to an area with a spatial concentration of population (Czyż, 2009). Conversely, the concept of the Kraków agglomeration refers to a monocentric urban settlement located in southern Poland, encompassing the central city of Kraków and the surrounding urbanized municipalities.

When examining available rankings, the municipality of Zielonki holds the highest number of completed dwellings, amounting to 243. The second position is occupied by the municipality of Skawina with 235 completed dwellings, which represents the highest percentage among the municipalities relative to the county's population (16.1%). In 2020, a total of 1,379 dwellings were completed, with 916 registered market transactions of dwellings were registered in the Real Estate Prices and Values Register. The urbanization rate stands at 18.1%, indicating a higher percentage of the population residing in rural areas. According to data from Statistics Poland (GUS), the total number of dwellings sold through market transactions increased by 219% over the four-year period, while the average price per 1 m2 increased by 23%. Notably, the highest number of transactions was recorded for properties ranging from 60.1 m2 to 80 m2 (327 transactions). It is worth mentioning that since 2018, the primary market has consistently ranked high in terms of the number of units sold, indicating its popularity among buyers (Plebankiewicz and Biel, 2017). On the other hand, in 2020, the total area of land sold and transferred free of charge to project sponsors for residential construction amounted to 3 ha, with 2 ha allocated for a single-family house and another 2 ha for natural persons (GUS, 2021).

3. METHODS

This study focused on various aspects of the free real estate market in Kraków County area. To conduct this study, data from the state register of real estate transaction prices was used. The analysis covered the period from 2017 to 2021 and examined factors such as the total number of purchase-sale transactions, the number of transactions by type/category each year, the percentage ratio of average transaction prices for a given year by type/category, and the percentage ratio of average prices per 1 m2 of real estate by type/category. Five distinct property types were distinguished: houses, developed real estates (excluding houses and commercial properties, e.g., garages, farm buildings, etc), parcels, apartments and commercial properties.

The total number of free market transactions included in the compiled years was 52,356. After applying appropriate filters to remove transactions with incomplete data, the results were calculated based on 26,418 transactions, which represents 50% of the total. Filtration based on the deleting transactions with missed at least on data among attributes like date, location, real estate type, area, shares, parts of transactions or price. As practical verification shows half of transactions has lack of at least one of such data. To conduct the research, the data were further categorized by individual years. The subsequent step involved segregating the data into residential, non-residential, and mixed-use categories.

4. RESULTS

This study examined the number of purchase/sale transactions conducted within a five-year period in the Kraków County area (Ill. 2). Between 2017 and 2021, there was a remarkable increase of 161%. However, the most significant surge occurred between 2018 and 2019, with a staggering 45% rise. The period from 2020 to 2021 experienced a slowdown due to the escalating threats posed by the COVID-19 pandemic. The primary factor contributing to the limited growth in transactions numbers was the absence of face-to-face client meetings, which hindered proper properly presentations. The transition from regular office work to remote work became a major obstacle to the efficient functioning of the real estate market, significantly impacting the industry. The trend line displayed in the graph (4th order polynomial function) illustrates an initial sharp increase in transaction number, followed by a slower growth rate starting from 2020.

Another aspect examined in the analysis is the number of purchase/sale transactions for each type of real estate per year (Ill. 3). Parcels constitute 41% of the total value of real estate transactions, reflecting the market's characteristics. The category with the fewest transactions is houses, accounting for only 6% of the total. When evaluating individual categories, commercial premisses exhibit minimal differences in growth rates across the years. Houses, on the other hand, display the most significant difference in 2018, with subsequent years showing relatively small variations in growth. Parcels exhibit a more pronounced upward trend in growth from year to year. There was a noticeable surge in residential units transactions from 2018 to 2019. In contrast, both residential units and units with other uses experienced a decline in 2021.

The data was also analysed with regards to average transaction prices (Ill. 4). The year 2017 was chosen as the reference point, and the subsequent years from 2018 to 2021 depict the percentage increase or decrease. Among the different types of real estate, properties developed for residential purposes exhibit the highest annual percentage increase in prices compared to 2017. On the other hand, parcels experienced a decrease, with the most significant decline recorded in 2018 at 29%. However, a noteworthy increase can be observed in 2021, with a difference of 39% compared to 2020. Units with other uses demonstrate the smoothest price change between 2017 and 2021, displaying a gradual increase trend year after year. Commercial premisses show minor price differences between 2017 and 2020, while a substantial increase is observed in 2021, with a 29% difference compared to 2020. Dwellings experiences a price decrease of 4% in 2018, but subsequent years from 2019 to 2021 display a percentage increase. In 2021, property prices entered a phase of rapid growth influenced by the COVID-19 pandemic. Construction costs escalated, the availability of land for residential development diminished and there was an increased interest in purchasing flats.

The study also examined average prices per 1 m^2 (Ill. 5), displaying the percentage increase or decrease compared to 2017. With the exception of residential units, all the listed property types demonstrated a percentage increase in prices during the first year. Notably, properties developed for residential purposes exhibited the most significant increase in the 2017–2018 period, with a rise of 40% compared to other categories. It is evident that the prices for these properties continued to increase steadily from year to year, reaching a substantial 71% increase in 2021. Parcels claimed the second spot with price increase of 69%, showing the largest difference between 2018 and 2021 among the listed categories amounting to 64%.

Commercial premisses also experienced a slight reduction of -2% in 2019 but reached their highest value in 2021. On the other hand, premises with other uses other than residential consistently demonstrated an annual increase in prices. When comparing 2021 to 2018, there is an increase ranging from 11% for commercial premisses to a significant 41% for parcels.

5. CONCLUSIONS

The study conducted an analysis of the real estate market in the Kraków County, focusing on the number of transactions and the percentage change in average property prices, as well as changes in average prices per 1 m2. Transactions were categorized into five types: houses, developed properties, parcels, apartments and commercial premisses. The findings reveal clear changes in the market between 2017 and 2021, both in terms of transaction numbers and price levels. The number of transactions steadily increased each year, with the most significant growth occurring between 2018 and 2019, reaching 45%. However, prices experienced stabilization during the 2020–2021 period due to the impact of the coronavirus pandemic, which had a significant effect on the entire market. Notably, parcels emerged as the most popular category, accounting for 41% of all analysed transactions, while apartments and commercial premisses were the least popular, experiencing a decrease in 2021.

Analysing the trend of average transaction price changes by category, a comparison was made to the reference year of 2017. The most notable difference between 2017 and 2021 was observed in developed properties, with a substantial increase of 105%, indicating a heightened interest in such properties. Commercial premises exhibited a smoother price trajectory, displaying an upward trend year after year. However, all categories experienced an increase in prices in 2021. This growth can be attributed to the pandemic situation, which led to increased construction costs, a surge in demand for flats, and reduced availability of land for housing investments. Furthermore, average prices per 1 m^2 of real estate were analysed by category, with 2017 serving as the reference year. Apartments saw a slight drop in prices in 2018 (−1%), while houses experienced a decrease of −2%. Developed properties and parcels recorded the most substantial price increases in 2021 reaching 71% and 69%, respectively. This particular year stood out as a period of significant growth for all categories.

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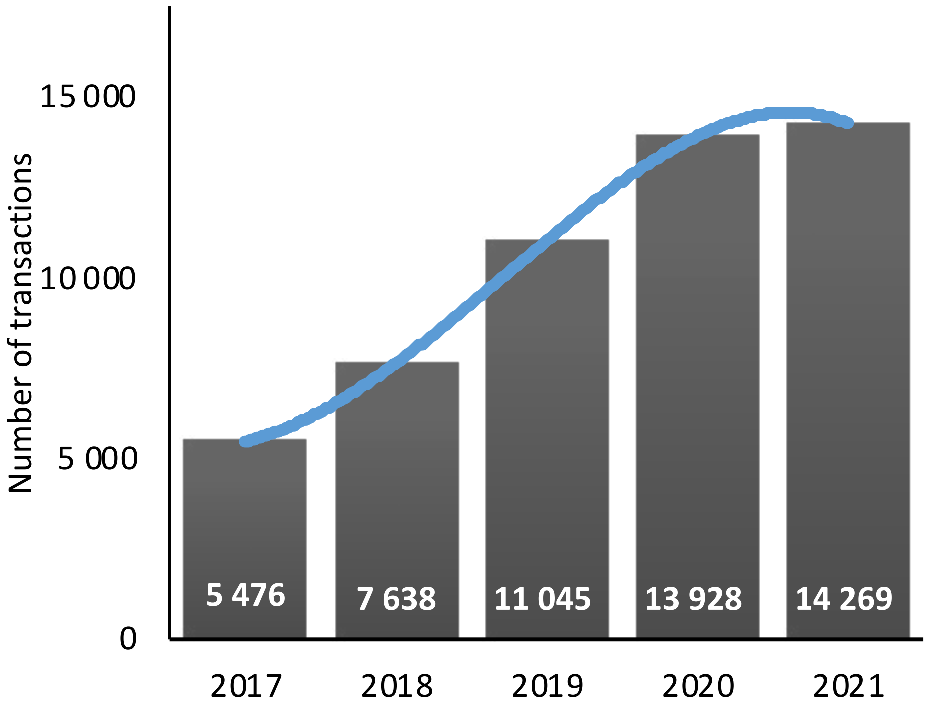
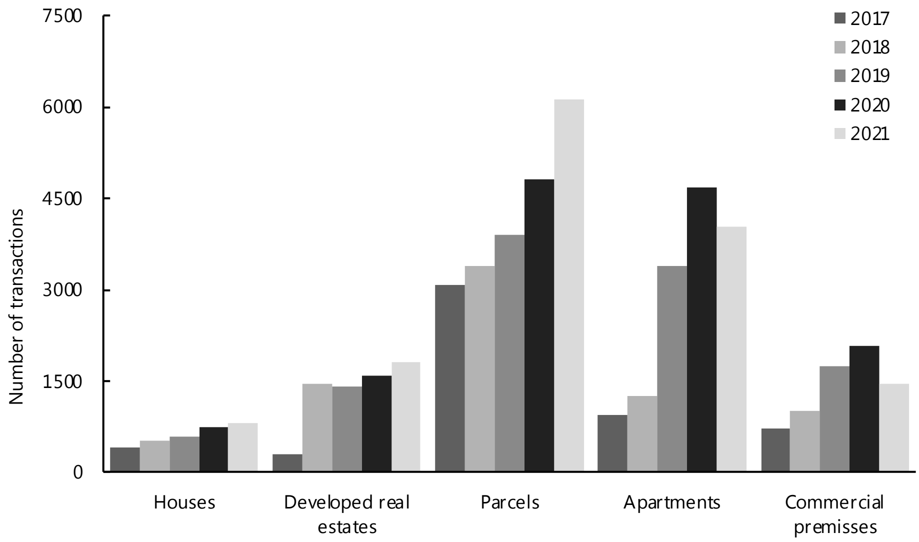
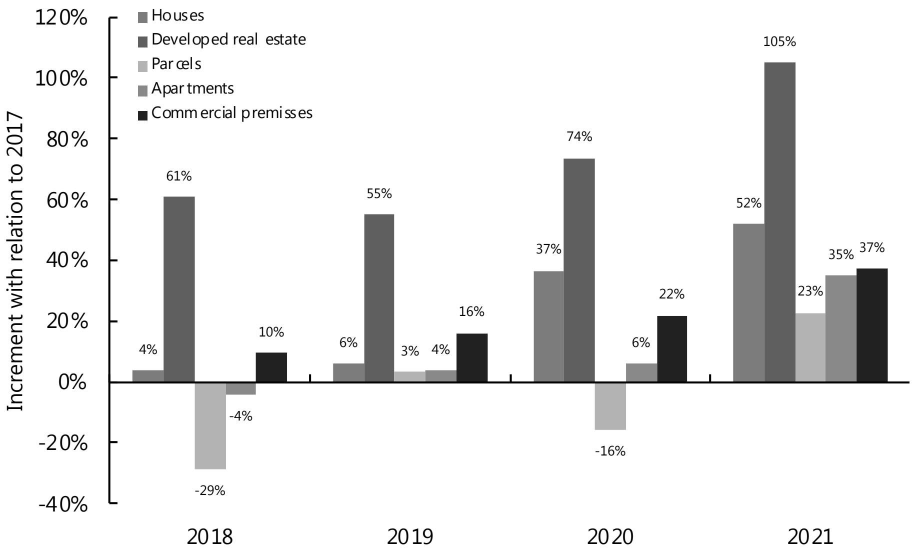
Ill. 1. Kraków County in comparison with Lesser Poland Voivodship (Podgórska et al., 2018).
Il. 1. Powiat krakowski na tle województwa małopolskiego. Źródło: Podgórska i in., 2018.



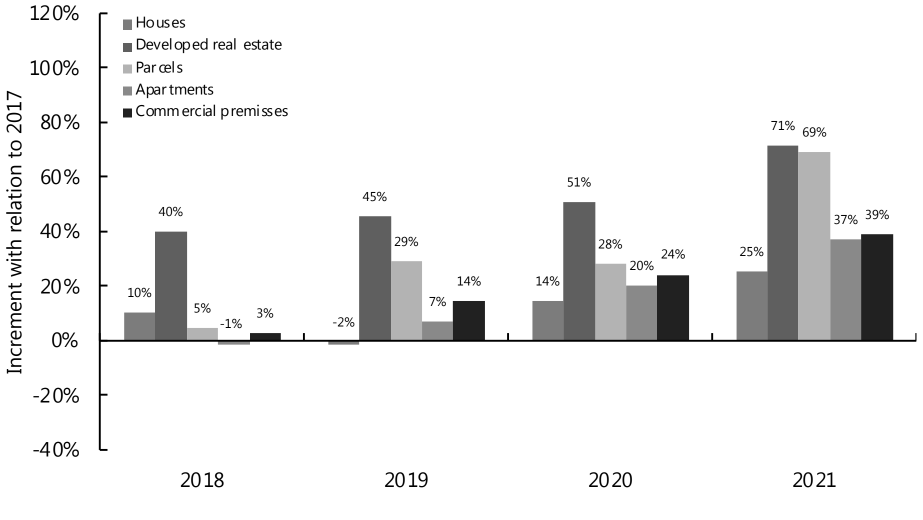
Ill. 2. Number of transactions during the analysed period. Source: original work.
Il. 2. Liczba transakcji w analizowanym okresie. Źródło: opracowanie własne autorów.



Ill. 3. Number of transactions by property type and year. Source: original work.
Il. 3. Liczba transakcji według typu nieruchomości z podziałem na lata. Źródło: opracowanie własne autorów.



Ill. 4. Percentage increment of average transaction prices in relation to 2017. Source: original work.
Il. 4. Procentowy przyrost średnich cen transakcyjnych w stosunku do 2017 roku. Źródło: opracowanie własne autorów.



Ill. 5. Percentage increment of average prices per square metre in relation to 2017. Source: original work.
Il. 5. Procentowy wzrost średnich cen za metr kwadratowy w stosunku do 2017 roku. Źródło: opracowanie własne autorów.

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