

Risk and Impact of the COVID-19 Crisis on Real Estate

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Abstract—In the present work, we make a study of the repercussions of the pandemic generated by COVID-19 in the real estate market, this disease has affected almost all sectors of the economy across different countries in the world, including the real estate markets. This documentary research, basically focused on the years 2021 and 2022, as we seek to focus on the strongest time of the pandemic. We carried out the study trying to take into account the repercussions throughout the world and that is why the data we analyze take into account information from all possible continents. Particularly in the US, Europe and China, where the COVID-19 impact has been of such proportions that it has fundamentally affected the housing market for middle-class housing. In addition, the pandemic has posed risks to investments in this market, due to the fact that companies in the sector have generated losses in certain cases; in the Chinese case, Evergrande, one of the largest companies in the sector, fell into default.

Keywords—COVID-19, real estate market, statistics of COVID-19, Evergrande Real Estate.

I. INTRODUCTION

RECENTLY, in December 2019, a novel coronavirus, SARS-CoV-2, appeared for the first time in Wuhan, China, and triggered a global outbreak of the COVID-19 pandemic. The rapid spread of the virus around the world led to very complex and challenging situation, mirroring the impact of mass gatherings in Italy. During the early stages of the pandemic, a mass gathering in the city of Bergamo facilitated the spread disease, resulting in a surge in cases. Similarly, the virus quickly escalated into a crisis in Spain and across the European continent. Subsequently, the pandemic spread to the American continent, Africa, Asia, Oceania, and the entire world. This pandemic generated a kind of paralysis of the movement of people around the world because many countries chose to close their borders, including the United States and Canada. This stoppage had repercussions even within each country. Many people voluntarily isolated themselves to avoid contagion (see Fig. 1 for the contagious worldwide). The educational system was paralyzed worldwide and so were many factories, shops, tourism, and other productive sectors.

The real estate sector has also been significantly affected by the crisis of the COVID-19 pandemic. While the crisis of 2008 had subsided, the new crisis began to be felt in this economic sector again, but this time the crisis was presented in a very different way. Fig. 1 shows that the pandemic maintains similar average values from 2020 to 2022, with a significant peak at the end of 2021 and the beginning of 2022. For this reason, it is

inferred that in 2020 and 2021, the main risks are generated as well, such as the impact of the pandemic on the real estate market.

Currently, the pandemic is beginning to subside, which, together with the implementation of high vaccination rates for the population, seems to have started the recovery of the real estate market, especially in the retail segment. But, with the sharp drop in prices at the start of the pandemic, the pace of recovery varies greatly between regions and countries.

II. THE SITUATION IN THE UNITED STATES

During the COVID-19 pandemic, housing costs generally increased dramatically all over the United States. In the majority of American counties, rising demand and falling supply were the main factors driving higher housing prices. Nonetheless, the boom was spatially uneven. When compared to other places, some observed a rise or fall in house prices of more than 30% [5]. The local environment heavily influences fluctuations in housing prices. This indicates that the COVID-19 effect on changes in property prices is not consistent across the US real estate market. This outcome is in line with findings from research on the regional effects of the global financial crisis on the property market. For instance, in [4], the authors discovered that changes in property prices following the global financial crisis varied spatially and were closely related to the geographical distribution of neighborhood characteristics and urban facilities. An interesting study that allows us to better understand the dynamics of this issue in the United States has been carried out by Winslow [7].

In this research [7], Winslow uses the multivariate regression method, which takes into account a set of monthly data at the state level from 2016 to 2020 containing the demand and prices of houses in the United States. The multivariate regression analysis on the collected data allowed the comparison of the coefficients, which were carried out both in the time of pre-COVID-19 and during COVID-19. The dependent variable is considered the median monthly rent in each state, and the explanatory variable took the cases of COVID-19 and the controls include demographic, social, and economic variables. In addition, Winslow divided the investigation into two cases, one where the states with a high rate of COVID-19 were taken into consideration, and the other hand, the states with a low rate of COVID-19. That is shown in Fig. 2.

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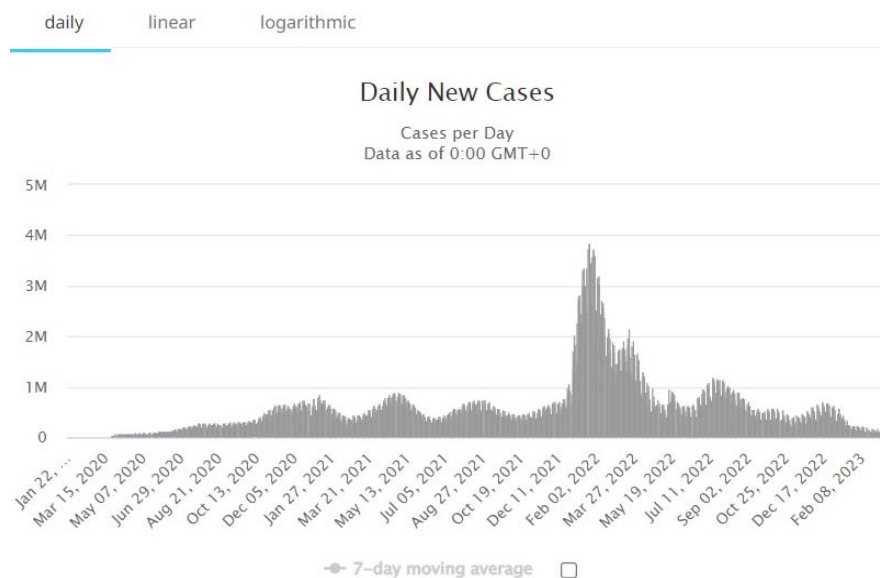


Fig. 1 Daily New Cases, this graphic (corresponding to March 18, 2023, was taken from [8])



Fig. 2 Higher Covid vs. Low Covid States [7]

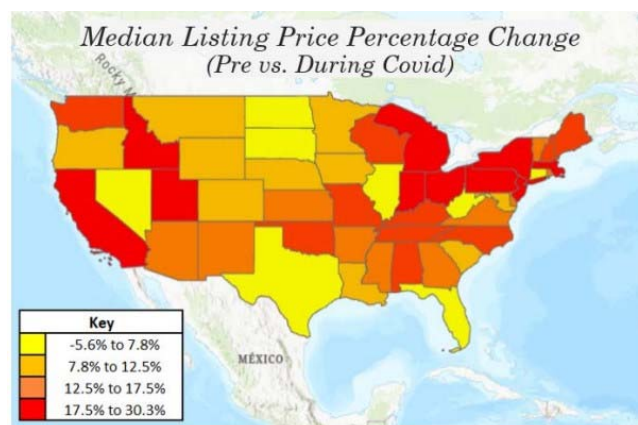


Fig. 3 Median List Price Percentage Change: Pre vs. During Covid [7]

Through the analysis, using multivariate regression, it was shown that the housing market had a statistically significant negative impact on home prices in 2020 in the United States, even in states that experienced low cases of COVID-19, in which there was an increase that could be more than 10% higher than in the states where there was a high rate of COVID-19 (see Fig. 3). This could imply that the economies of these states may be greatly impacted by this, both now and in the future, which is a risk introduced by COVID-19. In the regression, a state is deemed to have a high COVID-19 rate if its number of COVID-19 cases is lower is more than the median. By another hand, a state is said to have a low COVID-19 rate if its number of cases is lower than the median. The author in [7] was able to confirm that the previous factors to COVID-19 including median square footage, income, unemployment rates, and crime rates that previously affected property values, afterward COVID-19 have less impact than they did.

The following figures are table A (Fig. 4) and table B (Fig. 5) obtained from [7]. Table A shows that the study used eight variables and 2,700 observations. The explanatory variable, COVID-19 cases, had a mean of 17.74 per 100,000 individuals in 2020. The dependent variable, the median listing price, has a mean value of \$286,899 between 2016 and 2019. The median listing price grew to \$328,536 in 2020. Moreover, from before COVID-19 to COVID-19, the overall number of listings dropped from 34,176 to 29,305. Table A shows the variance between pre- and post-COVID-19 variable means. The average state COVID-19 case per 100,000 inhabitants is above the median in high COVID-19 states, and this has a statistically significant effect on the median house price at the 1% level (see table in Fig. 5). The model calculates that, in comparison to states with a low number of COVID-19 instances, a state being deemed a high COVID-19 state in 2020 will have a negative 14.69% impact on the median house price in that state. Throughout the pandemic, there has been a far broader spread in real estate market price fluctuations in the median listing

prices than in previous years. For instance, the average variance of changes in the values of the real estate market across cities has increased significantly during the pandemic compared to the pre-pandemic period (see table in Fig. 4).

Pre-Covid	Obs.	Mean	Std. Dev.	Min	Max
Median Listing Price	2,100	286,899	104,778	134,300	699,050
Total Listing Count	2,100	34,176	37,502	2,368	218,161
Median Square Footage	2,100	1,859	321	641	2,807
Median Days on Market	2,100	77	23	30	211
Consumer Income	2,100	350,106	432,216	31,459	2,673,410
Crime	2,100	374	150	112	892
Population Density	2,100	202	262	1	1,200
Unemployment	2,100	3.9	0.9	2.0	6.9

During Covid	Obs.	Mean	Std. Dev.	Min	Max
Median Listing Price	600	328,536	117,111	159,950	730,050
Total Listing Count	600	29,305	34,918	1,685	204,957
Median Square Footage	600	1,879	307	568	2,635
Median Days on Market	600	68	20	36	172
Consumer Income	600	393,088	488,398	35,134	2,872,481
Crime	600	384	153	109	838
Population Density	600	298	724	1	4,951
Unemployment	600	7.2	4.0	2.0	29.5
Covid	600	17	24	0	155

Fig. 4 Summary Statistics [7]

	Difference
Median Listing Price	41,638 ***
Total Listing Count	-4871 ***
Median Square Footage	19.4
Median Days on Market	-8.8 ***
Consumer Income	42,982 ***
Crime	10.4
Population Density	96.6 ***
Unemployment	3.3 ***

Note: (* 10% significance, ** 5% significance, *** 1% significance)

Fig. 5 Summary Statistics: Difference in Means for Pre vs. During COVID-19 [7]

III. THE EUROPEAN CASE

According to studies carried out by [1], the analysis reveals that the hotel sector and the real estate retail market have been greatly affected by the COVID-19 crisis observing that as a product of the crisis there is a structural change in the retail market, however the market related to offices remains with little affectation. The price of real estate is falling, which is likely to indicate that there will be changes in work patterns, creating expectations for an increase in work-from-home. In accordance with current economic forecasts, the prices of real estate assets are expected to increase in some segments of the market for the coming years, specifically, first-level offices. But, in relation to non-preferred assets, their value may decrease in the short and medium term. One can think of good prospects for the residential market outlook, however, overall, prospects are better for industrial and residential real estate, and to lesser

extent offices, than for commercial and hospitality properties. By another hand, in terms of economics, it has been thought that the United States is going through one of its most delicate periods. Numerous Americans have left the United States in search of a better life abroad due to factors including the rising cost of living, high housing prices, the value of the dollar, rising crime rates, and an unstable political environment. However, the issue of housing is what worries many Americans the most, and this is why many of its residents are moving to Europe. All these ingredients have provoked a good US mobilization towards Europe, with Italy, Portugal, Greece, and France being the most sought-after destinations, in particular, Spain arouses great interest. At present, Spain has the largest American population in Europe, the number of residents born in the US increased by 13% between 2019 and 2021 and has continued to increase in 2022, according to the indicators of the Spanish real estate market [8]. To attract new foreign home buyers, Portugal and Spain offer programs that grant residence rights based on an initial investment of 350,000 and 500,000 euros, respectively. As was indicated in [1], the price indices in Europe, mainly in France, Italy, and the United Kingdom, the capital return indices produced by Morgan Stanley Capital International (MSCI) are taken as reference of the mark. By property type, the correlation of returns on UK commercial property equity is in the range of 0.511 (hotels) and 0.883 (industrial). In France, there are figures ranging from 0.336 (office) to 0.575 (retail). In the case of Italy, the correlation is lower, from 0.544 (retail) and the highest correlation is 0.674 (industrial). According to the European Public Real State Association (EPRA, <http://www.epra.com>), in six sectors referenced by this price index, the indices were established at 100, on February 21, 2020, two days before the decision of the first closures of some municipalities in northern Italy. For the date, it was evident that the crisis approached Europe. By mid-June 2021, there has been a 30% value decrease when compared to the value on February 21, 2020. Pricing reflects the ambiguity surrounding the travel industry's future, particularly the question of whether corporate travel will ever return to its pre-crisis levels. The retail industry was not as seriously impacted as the hotel industry, but value declines persisted for several months, illustrating the fundamental changes the industry is undergoing. The good news surrounding the creation of vaccination resulted in large price increases in November, just like it does for hotels. The drop in values for the office sector was estimated at more than 40% at the beginning of the pandemic, which could be due to the belief that demand for office space would drop, even after the pandemic. Prices relative to health stores initially fell by 35% and then stabilized at 10%. This can be understood by the drop in the activity of the losses in value is probably a reflection of the classic activity of doctors. During the pandemic, the number of surgeries decreased, although mortality increased, especially in retirement homes, which also had less demand. In mid-2021, prices began to stabilize in almost all sectors. Fig. 6 shows the European situation during the pandemic.



Fig. 6 European price indices during COVID-19 [1]

IV. THE CHINESE CASE

The real estate market has an important role in the Chinese economy; [6] obtained solid findings, by statistical methods, which suggest that due to the impact of COVID-19, the authorities have to pay more attention to the impact that has occurred in the real estate market as a consequence of COVID-19 and implement adequate policies in relation to housing prices. The authorities, as suggested by the study in [6], should consider the heterogeneity of the regions and take into account, as a priority, the regions with the highest infection rate. The research in [6] shows that when confirmed cases of COVID-19 appear in a community, the price of homes decreases by 2.47%. This negative impact can persist for up to three months, but the magnitude of the impact can grow over time as the conditions of the infection are maintained. The consistency of the negative effect is similar to previous studies that were conducted for other infectious diseases such as Sars, plague, and cholera. The quality of heterogeneity considered in [6] establishes that the negative impact of COVID-19 on the price of housing is present only in regions with a higher rate of infection with poor conditions for medical treatment. Another interesting research that we discuss in the following was made in [3] where, through an improved event methodology, it is possible to quantify the impact of external shocks due to the COVID-19 outbreak towards the end of 2019 on systemic risk in the banking, securities, insurance and real estate sectors and in the real estate branches; there, in systemic risk, the level effects and the impact trend caused by COVID-19 are simultaneously described. The research in [3] provides a quantitative method that with some precision can also allow studying the impacts of external shocks similar in the similar systemic risks of the financial sector. Through an empirical analysis of relevance, the study provides the following conclusions: First, it is observed that the impact of COVID-19 exhibits both level and trend effects on the

systemic financial risks of the banking, insurance, securities and real estate sectors and their branch sectors. Comparatively, the banking and insurance sector exhibits a greater capacity to resist external shocks than the securities and real estate sectors. During COVID-19, systemic financial risks in the stock and real estate sectors increased significantly, with a tendency for the impact to last longer. Second, among the real estate branch sectors, the systemic risk of residential property and the comprehensive parks industry is exacerbated, those sectors exhibit the highest financial attributes, confirming the rationale idea of considering the real estate jointly with the financial sector. Third, the impact of COVID-19 on the risks of the sectors under consideration was reflected quickly after the event, registering a maximum in 2 to 3 days, with a turning point at 3 or 4 days, indicating an impact slowly. Subsequent COVID-19 events generated a general increase in systemic risk. Fourth, looking at this from the transmission mechanism, the increase in systemic risk in the real estate industry and the securities industry originated from market liquidity and financial liquidity channels. On the other hand, the impact on the insurance industry is reflected in the higher probability of default. In banks, systemic risk comes from liquidity funding, although it remains the most stable and least volatile sector of all sectors.

A. Evergrande Real Estate

It is important to mention, during the peak of the COVID-19 pandemic, the notorious case of the Evergrande Real Estate Case in 2021, when it fell into default, and was declared in default by the financial risk rating agency Fitch. This Chinese real estate giant, with the possession of more than 1,300 projects in more than 280 cities in China, became the most indebted company in the world and its situation worsened after missing a crucial payment term for the company of interest for 300,000

million dollars to international investors. This crisis caused great nervousness in the real estate and banking sectors. It was known that Evergrande had been selling assets in order to raise resources to meet its creditors until finally the company itself announced in a statement the impossibility of meeting its financial obligations, which immediately caused the price of its shares to plummet. Faced with the situation, the government implemented new measures to regulate the indebtedness of large companies, which led Evergrande to offer properties with deep discounts to guarantee the collection of resources that would allow it to keep the business afloat [2].

V. CONCLUSIONS

In this research, recent literature on the risks and impact of COVID-19 on the real estate market has been reviewed and the study indicates that the pandemic has affected the entire economic system to a greater or lesser extent worldwide. It is verified that the repercussions in the real estate market have been considerable, generating situations that coincide to a greater or lesser degree both in the United States and in Europe and China. The pandemic has affected the real estate market in the regions with the highest incidence of the virus, causing the population to seek residence in places with less contagion. At the time of the study, the risk and impact are still expected to continue in many countries of the world and the subject continues to be studied intensively. Most of these studies require sophisticated statistical methods.

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