

A Study on the Financial Situation Changes of Major A-share Real Estate Companies Since the Adjustment of Purchase Restriction Policies

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Abstract: To prevent over expansion of property bubbles in China, housing purchase restriction policies were put into effect in 2010. Nevertheless, to be adaptable to economic conditions at that time, there was firstly a relaxation of housing purchase restriction policies in 2014 and after that, several more adjustments were made. By analyzing the financial indicators of the main real estate enterprises in A-share market, this paper wants to find the general trends and common features of those corporations under policy adjustments and changeable market environment. The analysis results show that the majority of firms kept high levels of debt and inventory all the time and from 2014 to 2019, most companies' net income margins, net income and operation revenue generally kept increasing. However, as the Coronavirus pandemic broke out at the end of 2019, those profitability measures started to decrease widely and sequentially, even with a new round of policy easing. Facing with this situation, it is suggested that to prevent debt risks, property enterprises could take deleveraging and destocking into consideration and to achieve a soft landing of the housing market, new ways of policy adjustment could be implemented by the government.

Keywords: Real estate firms, Financial indicator, Purchase restriction policies, COVID-19

1. Introduction

Since the Reform and Opening up, as an important part of the vigorous Chinese economy, the real estate market has boomed for a long time, which has also driven the rapid development of the upstream and downstream related industries. While such a development is gratifying, at the same time, the appearance of property bubbles is worrisome, as there are cautionary tales of Japan and the USA. To prevent the tragedy of history from recurring, in 2010, the housing purchase restriction order for domestic investors was first carried out in Beijing. The other main cities' municipal administrations successively implemented the order under which the investors' registered residence, length of tax and social security payment duration in local areas, total number of family-owned houses and other conditions are taken as the purchase threshold.

As Derong Zhang and Xiaoting Zheng's research shows, to some degree, the policies inhibited the increase of housing prices from 2010 to 2012 and the most obvious effect was on non-registered residence buyers [1]. Yi Wu & Yunong Li also finds that substantial effects were in first-tier and

second-tier cities and other highly urbanized areas, especially in the places with high initial housing prices and high proportion of commercial housing investment to total fixed assets investment in 2010 [2]. In macroscopic level, the national real estate transaction volume and area both fell down in 2014. Last time the situation appeared was in 2008, with the outbreak of subprime lending crisis. For the stability and destocking of the real estate industry, there was a round of relaxation of the purchase restriction policy in 2014, mainly in second-tier cities. Later, in 2017, a tightened policy appeared again. However, in and after 2019, the theme of policy overall transformed back to ease purchase restrictions in most main cities, except several megalopolis.

Min Zhang, Shuying Wu and Haili Kong see 2014 as a demarcation line after which the rising trend of the real estate industry is reaching its ceiling and entering a period of stability [3]. Through analyzing the financial indicators of some main real estate agencies, the paper aims to see how those companies' operations actually responded to the changing policy and market environment in and after 2014 and to reveal the common trends and financial features at a corporate level. Except for providing intuitive references for researchers in the real estate area, based on the conclusion and the current situation, this paper also gives advice for enterprises and government to adjust strategies in the post-pandemic era.

2. Analysis of the Financial Indicators

The companies in this article are the top 10 highest A-share market value real estate enterprises in China, including Vanke, Poly, Merchants Shekou(MS), Seazen, Gemdale, Overseas Chinese Town(OCT), Greenland, Lujiazui, Lingang and Binjiang. Their stock market value totaled about 765.49 billion Yuan, over half of the whole value of the firms belonging to property sector of A-share market. The data are collected from the website east-money and the annual reports of those enterprises.

2.1. Financial Risk Indicators

To measure financial risks, liabilities to assets ratios and quick ratios are used in this paper.

Table 1: The Liabilities to Assets Ratios (%)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	76.92	79.74	81.28	84.36	84.59	83.98	80.54	77.70	77.20	80.70
Poly	78.11	78.36	78.69	77.79	77.97	77.33	74.76	75.95	77.89	77.43
MS	67.91	67.68	65.63	63.19	74.28	71.80	69.52	70.52	73.02	69.28
Seazen	80.46	81.82	84.73	86.60	84.57	85.84	84.14	79.54	76.03	82.64
Gemdale	72.27	76.19	76.59	75.40	76.12	72.13	65.43	65.83	67.50	71.94
OCT	74.39	74.84	76.08	74.98	73.88	69.97	67.12	63.41	66.01	71.19
Greenland	87.97	88.84	88.89	88.53	89.49	88.99	89.43	88.04	87.97	88.68
Lujiazui	65.51	68.22	66.67	68.22	70.82	75.11	74.59	64.96	66.59	68.97
Lingang	58.67	54.09	57.83	56.89	58.80	43.01	51.03	53.17	58.25	54.64
Binjiang	80.92	82.34	83.70	82.71	77.94	72.84	68.25	74.11	75.92	77.64

Table 2: Quick Ratio

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	0.472	0.400	0.414	0.426	0.486	0.495	0.438	0.426	0.426	0.443
Poly	0.502	0.535	0.525	0.588	0.656	0.570	0.526	0.435	0.447	0.532
MS	0.575	0.550	0.574	0.559	0.623	0.735	0.745	0.634	0.495	0.610
Seazen	0.314	0.382	0.390	0.388	0.526	0.500	0.572	0.445	0.357	0.430
Gemdale	0.737	0.683	0.589	0.696	0.822	0.821	0.772	0.606	0.550	0.697
OCT	0.543	0.573	0.529	0.563	0.506	0.595	0.532	0.706	0.499	0.561
Greenland	0.447	0.448	0.491	0.414	0.444	0.431	0.403	0.413	0.385	0.431
Lujiazui	0.381	0.451	0.304	0.316	0.431	0.402	0.566	0.498	0.163	0.390
Lingang	0.277	0.278	0.258	0.640	0.433	0.647	0.566	0.744	0.576	0.491
Binjiang	0.359	0.335	0.362	0.413	0.578	0.809	0.654	0.333	0.128	0.441

As shown in Table 1, during the period from 2014 to 2022, the debt ratios for the ten companies generally stayed at high levels. For most companies, the average values of the ratios were above 70%, some were even over 80%, such as Vanke, Seazen and Greenland. The lowest ratios were of Lingang, which were still higher than average 50%.

At the same time, as shown in Table 2, the quick ratios of those companies were all less than 1, many of which were even below 0.5. Gemdale had the highest quick ratio of which the average value was about 0.7. While Lujiazui had the lowest average quick ratio of 0.39, it is noticeable that its quick ratio in 2014 was only 0.163, similar to that of Binjiang. The tightening and loosening of policies seem not to affect those companies' characteristics of debt obviously, as they just fluctuated at high levels without obvious common patterns.

2.2. Profitability and Growth Indicators

To measure the profitability and earning growth ability of the enterprises, the total operation revenue and its year-to-year growth rates, net income and its ratios to total operation revenue, return on equity(ROE) and return on assets(ROA) are adopted in this paper. In this paper, ROE and ROA are weighted.

Table 3: Total Operating Revenue (100 million Yuan)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	5038	4528	4191	3679	2977	2429	2405	1955	1464	3185
Poly	2811	2850	2432	2360	1946	1467	1548	1234	1091	1971
MS	1830	1606	1296	977	883	759	636	492	455	993
Seazen	1155	1682	1455	859	541	405	280	236	207	758
Gemdale	1202	992	840	634	507	377	555	328	456	655
OCT	768	1026	819	600	482	423	355	322	307	567
Greenland	4359	5448	4561	4281	3487	2904	2474	2075	2620	3579
Lujiazui	118	139	145	148	126	93	128	76	51	114
Lingang	60	63	39	40	48	21	18	16	8	35
Binjiang	415	380	286	250	211	138	195	126	118	235

Table 4: Year to Year Growth Rate of Total Operating Revenue (%)

* about 292.53 times

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014
Vanke	11.27	8.04	13.92	23.59	22.55	1.01	22.98	33.58	8.10
Poly	-1.37	17.19	3.07	21.29	32.66	-5.24	25.39	13.18	18.08
MS	13.92	23.93	32.71	10.64	16.25	19.45	29.16	8.21	30.77
Seazen	-31.37	15.64	69.46	58.58	33.58	44.89	18.67	14.00	-0.30
Gemdale	21.14	18.16	32.42	25.09	34.62	-32.15	69.43	-28.21	31.00
OCT	-25.17	25.25	36.45	24.65	13.73	19.33	10.07	4.94	9.10
Greenland	-19.98	19.45	6.54	22.75	20.08	17.39	19.21	-20.78	*
Lujiazui	-15.21	-4.16	-2.02	16.89	35.54	-27.19	69.29	47.85	13.46
Lingang	-4.63	59.76	-0.31	-17.70	131.59	15.19	12.10	91.26	-22.26
Binjiang	9.28	32.80	14.60	18.18	53.30	-29.19	54.17	7.31	13.26

As Tables 3 and 4 show, the companies' operating revenue increased in most years. However, in 2017, four companies experienced a decline in operation revenue and Vanke had only 1.01% growth, which can be a result of stricter policies, but the decline was only in one year and the overall growing trend was not changed. There are some explanations of this phenomenon. As Ke Zhou's research indicates, compared with the first round of policies in 2010, the second round of policies in 2017 had a better restrictive effect on the housing prices and transaction volume in first-tier cities than other cities [4]. At that time, many second-tier cities implemented talent introduction policies which actually loosened the requirement of household registration in disguised form. As Siyu Liu found, in second-tier and third-tier cities, the talent introduction policies could effectively promote the prices of both newly-built and second-hand residential properties [5]. Xiangxiang Wang and Shuyun Chen also confirmed that the implementation of talent settlement policies could hedge against real estate regulation policies in the short term, especially in developed districts [6].

In 2022, as the total transaction amount, total trading area and average price of commercial housing in China fell down together, six of the ten enterprises' revenue decreased. Merchants Shekou and Binjing had positive but lower growth rates compared to those of 2021. Only Vanke and Gemdale had slightly higher growth rates.

Table 5: Net Income (100 million Yuan)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	375.5	380.7	593.0	551.3	492.7	372.1	283.5	259.5	192.9	389.0
Poly	270.1	371.9	400.5	375.5	261.5	196.9	170.7	168.3	142.3	262.0
MS	91.0	152.0	169.1	188.6	194.6	154.4	121.5	80.5	65.9	135.3
Seazen	15.9	137.6	164.7	133.3	122.1	60.6	31.6	24.0	17.9	78.6
Gemdale	91.7	129.5	152.4	154.7	121.0	94.8	85.8	48.4	49.6	103.1
OCT	-127.7	71.5	157.2	143.4	112.7	93.2	73.1	52.4	55.9	70.2
Greenland	46.0	94.4	211.4	209.5	160.2	135.7	94.0	73.9	54.0	119.9
Lujiazui	14.6	50.2	50.1	49.7	41.1	36.8	32.7	26.5	17.5	35.5
Lingang	13.5	18.3	16.3	14.8	13.7	4.1	3.9	3.4	1.2	9.9
Binjiang	39.0	49.2	35.5	39.7	31.5	23.1	19.7	15.0	8.1	29.0

Table 6: Net Income Margin (%)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	7.45	8.41	14.15	14.99	16.55	15.32	11.79	13.27	13.18	12.79
Poly	9.61	13.05	16.47	15.92	13.44	13.43	11.03	13.63	13.05	13.29
MS	4.97	9.46	13.05	19.31	22.04	20.33	19.11	16.35	14.48	15.46
Seazen	1.37	8.18	11.32	15.53	22.55	15.45	11.28	10.18	8.67	11.61
Gemdale	7.64	13.09	18.22	24.51	24.06	25.39	15.50	14.80	10.88	17.12
OCT	-16.63	6.97	19.20	23.89	23.40	22.01	20.61	16.27	18.20	14.88
Greenland	1.06	1.73	4.64	4.90	4.60	4.68	3.80	3.56	2.06	3.45
Lujiazui	12.42	36.16	34.64	33.63	32.48	39.42	25.53	35.07	34.15	31.50
Lingang	22.45	29.02	41.33	37.50	28.46	19.83	21.60	21.16	13.87	26.14
Binjiang	9.41	12.96	12.41	15.92	14.93	16.77	10.13	11.92	6.85	12.37

In terms of net income, it can be discerned from Table 5 that the companies' net income increased in several earlier years, but decreased later. The peak values of most firms appeared around 2020, and then immediately decreased dramatically. The most striking slump was of OCT which gained 15.72 billion in 2020 but lost 12.77 billion in 2022. Although other firms did not have a negative net income, their amount fell down a lot, too. For example, in 2020, the net income of Vanke was 59.3 billion, but in 2021, the amount shrank to 38.07 billion, a 21.23 billion decline.

As to net income margins, as shown in Table 6, the overall changing trend was similar to that of net income, but the peak values were generally around 2019, which means that the great slump overall came a little earlier. For most companies, their average net income margins were around 15%. Lujiazui had the largest average net income margin, 31.5%, while in 2022, its value was just 12.42%. Greenland had the lowest average net income margin which was only 3.45%. In 2022, the value was only 1.06% which was similar to Seazen's 1.37%. In fact, few companies had a net income margin higher than 10% in that year.

Table 7: Return on Equity (weighted, %)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	9.48	9.78	20.13	22.47	23.24	22.80	19.68	19.14	19.17	18.43
Poly	9.18	14.39	17.08	21.01	16.63	16.34	15.53	18.63	21.65	16.72
MS	3.76	10.83	14.40	21.38	22.22	20.15	18.74	27.96	20.73	17.80
Seazen	2.34	22.73	33.89	36.86	41.91	34.18	22.44	22.53	17.55	26.05
Gemdale	9.56	15.69	18.55	20.14	18.66	17.62	17.84	9.86	13.23	15.68
OCT	-14.54	4.73	17.47	19.33	18.98	18.05	16.84	15.35	18.40	12.73
Greenland	1.12	7.07	18.57	19.89	17.14	15.21	13.01	14.12	12.62	13.19
Lujiazui	4.92	20.45	21.24	21.66	22.03	22.19	12.13	12.36	12.26	16.58
Lingang	5.49	8.77	9.07	13.71	11.95	11.43	9.13	10.63	7.99	9.80
Binjiang	16.94	15.52	13.32	10.22	8.26	12.64	12.21	12.02	10.91	12.45

Table 8: Return on Asserts (weighted, %)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	2.03	2.00	3.30	3.38	3.66	3.73	3.93	4.64	3.91	3.40
Poly	1.88	2.81	3.51	4.00	3.39	3.38	3.92	4.37	4.19	3.49
MS	1.04	1.91	2.50	3.62	5.11	5.19	5.21	4.24	4.11	3.66
Seazen	0.32	2.57	3.29	3.36	4.75	4.37	3.69	4.04	3.72	3.35
Gemdale	2.08	3.00	4.14	5.04	4.98	5.24	5.85	3.67	3.99	4.22
OCT	-2.92	1.52	3.74	4.25	4.39	5.11	5.59	4.99	6.12	3.64
Greenland	0.32	0.66	1.66	1.92	1.70	1.72	1.41	1.33	2.10	1.42
Lujiazui	1.07	4.51	5.20	5.86	5.15	4.57	4.21	4.38	4.21	4.35
Lingang	2.16	3.64	4.08	4.48	6.59	3.45	3.79	4.49	3.26	3.99
Binjiang	1.60	2.56	2.35	3.66	4.27	4.21	4.30	3.74	2.07	3.20

Apart from net income margin, ROE and ROA are also important financial profitability indicators. As shown in Table 7, from 2014 to 2019, there was no common changing pattern of those companies' ROE. However, in and after 2020, almost every company had a continuous reduction in ROE, which matched with the decreases in net income margins. The majority of enterprises' average ROE were around 15%, but in 2022, except for Binjiang, others' ROE were below 10%. Seazen had the largest average ROE, about 26.05%. In 2022, the value was just 2.34%. The lowest average ROE was of Lingang, which was about 9.80%. Nevertheless, in 2022, its ROE was 5.49%, higher than that of Seazen.

The situation of ROA resembled that of ROE, while the overall values were relatively lower, as the denominators were larger (see Table 8). Most firms' average ROA were between 3% to 4%. Gamdale and Lujiazui's average ROA were over 4%, but in 2022, their values were just 2.08% and 1.07%. Greenland had the lowest average ROA which was 1.42%. The firm's ROA in 2022 was 0.32%, close to 0, the same as that of Seazen. In that year, most firm' ROA were not above 2%.

Overall, as Wei Deng found, the cancellation of housing purchase restrictions could promote an increase in urban housing transaction volume, but its effect is time-bound [7]. Just like Suodi Zhang pointed out, canceling purchase restrictions is essentially an act of transferring decision-making power to the market [8]. In 2019 and 2022, although the government successively delivered policies which relaxed housing purchase restrictions in type II big cities and the conditions for household registration in type I big cities, the firms' profitability and growth indicators fell down irrepressibly. As Xiaoling Chu, Chiuling Lu and Desmond Tsang's analysis shows, the epidemic occurring at the end of 2019 significantly and negatively affected the housing sale returns [9]. Sa Zhou's research focusing on Henan Province also indicates a negative influence of the pandemic on commercial housing market and the differences of influences on cities of various scales [10].

2.3. Operation Indicators

To reflect the operation situation of the enterprises, the average turnover period of average accounts receivable, and inventory are valued in this paper.

Table 9: Average Receivable Turnover Period(days)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	4.4	3.1	2.2	1.8	1.8	2.6	3.4	4.1	6.1	3.3
Poly	4.6	3.6	3.2	3.0	3.6	4.4	5.7	9.6	9.4	5.2
MS	7.1	6.8	6.4	5.6	3.2	1.4	1.0	0.8	0.8	3.7
Seazen	1.8	0.9	1.1	1.7	1.3	0.5	0.4	0.5	0.4	1.0
Gemdale	3.5	2.3	1.6	1.1	0.6	0.6	0.4	0.5	0.1	1.2
OCT	9.6	7.8	3.4	2.1	4.0	4.9	5.4	6.6	6.7	5.6
Greenland	96.5	74.6	77.1	65.1	53.5	41.6	29.9	30.2	14.2	53.6
Lujiazui	28.1	21.0	14.5	12.6	11.7	7.5	2.0	1.7	2.5	11.3
Lingang	12.7	12.0	16.8	31.2	28.2	38.1	45.7	48.5	156.8	43.3
Binjiang	4.0	4.5	5.8	5.5	4.5	4.6	1.9	2.3	2.0	3.9

Table 10: Average Inventory Turnover Period(days)

Companies	2022	2021	2020	2019	2018	2017	2016	2015	2014	AVG
Vanke	890	1065	1159	1268	1305	1198	886	894	1139	1089
Poly	1386	1340	1457	1242	1253	1322	969	1213	1231	1268
MS	1010	1170	1311	1475	1275	1107	1057	1303	1193	1211
Seazen	887	701	812	1173	1166	799	644	653	690	836
Gemdale	642	869	1049	1208	1225	1144	687	1193	854	986
OCT	1349	1184	1910	2396	2521	1484	1293	1145	1237	1613
Greenland	818	657	695	630	678	724	756	747	267	663
Lujiazui	2271	2692	2336	1370	1318	1179	512	1145	2858	1742
Lingang	4033	3408	3731	4467	1998	2422	2578	1959	1515	2901
Binjiang	1718	1631	1732	1534	1030	947	701	1339	1247	1320

In the aspect of average receivable turnover period, it can be found in Table 9 that before 2020, different companies had different changing modes. Before 2020, Vanke and OCT's average receivable turnover period gradually decreased year by year, while Merchants Shekou and Greenland's waiting time for payment continuously lengthened. In and after 2020, the majority of the companies had to wait for longer days, which could be a signal of worse operation performances and market statse. However, for the bulk of enterprises, the average time was less than 6 days. Even in 2022, with the influence of the ongoing epidemic, less than 10 days were needed for the majority of firms to collect their average receivables, except for Greenland, Lujiazui and Lingang.

For real estate firms, inventory takes a large amount of their total assets. Through Table 10, it can be seen the turnover periods of average inventory were generally very long, few data were less than 1000 days. Only Greenland maintained all its yearly turnover periods less than 1000 days and the average speed was about 663.49 days for one time turnover. Seazen and Gemdale had average speeds less but close to 1000 days one time. A collective decline was in 2021, which could be caused by the decrease in average inventory, as the progress of the new housing projects was slowed down or even stopped during the pandemic. Except for that, the values varied over time without a common pattern, but kept at high levels, similar to the changing process of the liabilities to assets ratio.

3. Conclusion

Through analyzing the financial indicators, the paper finds that under the first round of liberalization of housing purchase restriction in 2014, the operation revenue and other profit indexes had a wide and sustained increase among those main real estate companies. The tightened policies in 2017 did not stop the overall increasing trend. In and after 2019, the main keynote of housing market regulation returned to relax restrictions. However, with the outbreak of the coronavirus pandemic at the end of 2019, a large proportion of the companies' net income margins, ROE and ROA started to fall down in 2020. Then in the next year, the amount of net income also started to decrease widely. Finally, in 2022, the operation revenue growth trend ended. More than half of the firms experienced a decline in revenue and a majority of them had a much lower amount of net income. Some companies had a nearly 1% or even minus net income margin.

In 2023, the decrease in total market trading volumes and areas continued. It is hard to judge whether the pandemic is the last straw to end the long-lasting flourishing period of real estate in China, or if it just causes a temporary economic downturn in the housing market. However, now, facing the lack of market confidence and the less obvious effect of the policy relaxation, the high debt ratios and huge amount of inventory, which was perceived as common practices, can be a great threat to most real estate enterprises. In this case, it is considerable to take moderate destocking and deleveraging into enterprises' development strategy. Actually, some big businesses, like Evergrande and Sunac, have fallen into a serious debt crisis and are just on thin ice of bankruptcy. Their revenues were halved and market values wiped off a hundred billion Yuan, which is a warning to other firms.

The attitude of the government is also to control the scale of debts in the real estate industry and stabilize property prices. With the less effective purchase restriction relaxation in many cities, new ways of policy adjustment are needed. However, too straight intervention to market, like price limit orders, is not advocated. Other softer policy adjustments, like lowering mortgage rates, tax reduction, purchase subsidies and other kinds of incentives, could be implemented to lead to the real estate bubbles' soft landing. Besides, the disbursement amount of pledged supplementary lending, to carry out the reconstruction of urban villages and the development of affordable housing, is increasing now, which can help to create demand and reduce housing inventory.

Because of data availability, some important large companies' data are not included in, which can be the deficiency of this study. The future research directions can be focused on the content and the influences of real estate policies in the post-pandemic era. The changes in housing rigid demand and investment demands should be analyzed separately.

References

- [1] Derong Zhang, Xiaoting Zheng. *Is the "purchase restriction order" an effective policy tool to curb the rise of housing prices? --Empirical study based on 70 large and medium-sized cities.* *Quantitative Economic and Technological Economic Research*, 2013,30 (11): 56-72. DOI: 10.13653/j.cnki. jqte. 2013.11.014
- [2] Yi Wu & Yunong Li. *Impact of government intervention in the housing market: evidence from the housing purchase restriction policy in China.* *Applied Economics*, 2018,50:6, 691-705, DOI: 10.1080/00036846.2017.1340569
- [3] Min Zhang, Shuying Wu, Haili Kong, etc. *Revaluation of real estate.* *21st Century Business Herald*, 2021-10-21 (012) DOI: 10.28723/n.cnki.nsjbd.2021.004350
- [4] Ke Zhou. *A Study on the House Price Effect of China's Real Estate Purchase Restrictions Policy.* *Shanghai University of Finance and Economics*, 2023. DOI: 10.27296/d.cnki. gshcu. 2021-000075
- [5] Liu Siyu. *The Impact of Talent Introduction Policies on Housing Prices.* *Jiangxi University of Finance and Economics*,2022.DOI: 10.27175/d.cnki.gjxcu.2021.001682
- [6] Shuyun Chen, Xiangxiang Wang. *"Does the Battle for Human Resources Hedge Real Estate Regulation Policies: Evidence Based on Talent Settlement Policies?".* *Journal of Central China Normal University (Humanities and Social Sciences Edition)*, 2020,59 (02): 48-59

- [7] *Wei Deng, An Empirical Study on the Impact of the Cancellation of Purchase Restrictions on the Quantity and Price of Housing. Central China Normal University, 2018*
- [8] *Suodi Zhang. A Study on the Price Quantity Effect of Purchase Restrictions on the Housing Market and the Differences between Cities. Tsinghua University, 2018*
- [9] *Xiaoling Chu, Chiuling Lu, and Desmond Tsang. Geographic Scope and Real Estate Firm Performance during the COVID-19 Pandemic. Journal of Risk and Financial Management, 2021.14: 309. <https://doi.org/10.3390/jrfm14070309>*
- [10] *Sa Zhou. A study on the heterogeneity of the impact of the first round of COVID-19 on housing prices in different cities. Henan University of Economics and Law, 2023. DOI: 10.27113/d.cnki.ghncc.2023.000616*