Financial Risk Analysis of Chinese Real Estate Enterprises-A Case Study of China Evergrande Co., LTD

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***Abstract*—This paper takes Evergrande Group as the representative to study the financial risks in the strategic transformation of diversified enterprises, analyzes and identifies financial risks based on the key financial data indicators of Evergrande Group in the past ten years, and thoroughly studies the financial risks and internal and external causes of Evergrande Group in the process of diversification strategy transformation. First of all, it introduces Evergrande Group and sorts out the implementation process of its strategic transformation. Secondly, the comprehensive financial index analysis method is used to identify the financing risks, operating risks, investment risks and overall liquidity risks faced by Evergrande Group in the process of diversification strategy transformation, and analyze the degree of its diversification strategy and its impact on the overall financial risks of the enterprise. Thirdly, this paper uses Z-score model analysis to identify the company's financial risks, and learns that the financial risks of Evergrande Group are very high in recent years. With the development of Evergrande's diversification strategy transformation, Evergrande Group has experienced increasing financial risks and serious financial crisis since the implementation of the diversification strategy transformation.**

***Keywords*—real estate enterprises, Evergrande group, financial risk, risk assessment**

I. Introduction

Since the establishment of China's commercial housing system in 1998, the real estate industry has developed rapidly and become an important industrial pillar in China, which is closely related to the happiness and security of people's lives. As one of the means to stimulate economic development, real estate has stimulated the consumer demand on the one hand, and caused the violent rise of housing prices on the other hand. With the development of economy, the disadvantages of the sustainable development of the real estate industry have gradually emerged. Due to the characteristics of its own industry operation and financing, the ratio of the balance of real estate loans to the balance of financial institutions has been greater than 25% in recent years, and diversified management has generally become an important strategy for the real estate industry. At the same time, the leverage ratio of China's resident sector remains high, and the business model of housing enterprises seeking development through leverage has also gradually accumulated financial risks in the entire industry.

In this context, in order to prevent real estate risks from spreading to the financial system, China began to control the financing channels of real estate enterprises, and the real estate regulation and control policies have become stricter since 2020, such as the introduction of the three red lines, which has led to the continuous rise of financial pressure on real estate enterprises. At the same time as the financing difficulty increases, the sales growth rate is also affected, which further aggravates the difficulty of the operation of the capital chain of housing enterprises. The promotion of this deleveraging policy has brought huge challenges to the real estate industry, which is dominated by high leverage, and some large real estate enterprises have fallen into debt crisis. In 2020, more than 20 large housing companies have fallen into the mine dilemma, but Evergrande's debt crisis is the most serious. In 2020, Evergrande's sales are as high as 703.5 billion yuan, but its debt scale is very large, and the liabilities of the on-balance-sheet business are as high as 1.97 trillion yuan. The concentrated explosion of housing enterprises has led financial institutions to further tighten the financing of private housing enterprises, and Xinli Holdings, Contemporary Real Estate, and China Aoyuan have appeared in financial difficulties.

To analyze the root cause of the debt crisis and find out the way to prevent and resolve the debt crisis has become an urgent problem for real estate. This paper takes Evergrande Group, the leader in the real estate industry, as the research object. After studying its expansion financing path, this paper studies the main reasons for its debt crisis based on macro and micro perspectives, and provides certain reference significance for similar enterprises.

From the perspective of theoretical significance: Firstly, this paper has enriched the theoretical research on the causes of corporate debt crisis. This paper discusses the causes of debt crisis from the perspectives of macro, industry and enterprises themselves, which further supports the theoretical basis of the causes of debt crisis. Secondly, this paper expands the theoretical relationship between debt financing and enterprise overinvestment. According to the theory of corporate finance, debt financing can play a leverage role in controlling the excessive investment behavior of enterprises. However, this effect is not valid for Chinese enterprises, especially in the real estate industry. Due to the support of national policies and the characteristics of the industry, the financing amount of real estate enterprises is large and unrestricted, so the governance effect of debt financing is ineffective in China's real estate industry, and may even lead to over-investment. Thirdly, this paper expands the theoretical relationship between the over-investment and diversification strategy. At present, there are few studies on the relationship between diversification strategy and over-investment and debt crisis. This paper promotes the theoretical development of the relationship between diversification strategy and over-investment by combing relevant domestic empirical studies.

From the practical point of view, firstly, this paper provides development suggestions for real estate enterprises;

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Secondly, it provides decision-making reference for the financing support of government departments. It is necessary to help Chinese enterprises shift from the indirect financing model of debt to the direct financing model of power as soon as possible, so as to substantially reduce the risk of corporate debt and the risk of systemic financial crisis. The third is to provide operational suggestions for regulatory bodies to play their supervisory role. When certain financial metrics of a bond issue hit a trigger point at a certain level, immediate action is required to adjust the relevant rating.

II. Comprehensive Review of Existing Relevalent Research

A. Research on Debt Crisis

For the study on the possibility of default caused by the debt crisis, Altman (1968) constructed a Z-score value model with multiple discriminant method, and found that the profitability index, liquidity index, financial index, reproduction and resale status of enterprises can well predict the above problems. Giesecke, Longstaff, Schaefer and Strebulaev (2011) selected a large number of data samples to study the possibility of corporate bond default according to the characteristics of the US bond market. Through analysis, it was found that the impact of the default wave on the bond market was greater than that in the depression period. We tested the degree of financial and macroeconomic variables to predict default rate, and obtained strong predictors including GDP changes, stock returns and so on.

B. Research on Diversification Strategy and Corporate Performance

Villalonga (2004) study shows that, compared with companies that do not diversify their business, even if they belong to the same industry, diversified companies will pay a higher premium. On this basis, Yiannis (2004) took manufacturing companies as samples and adopted the OLS regression analysis method, and found that the premium of diversified enterprises is indeed higher in the manufacturing industry. Globerman, Peng and Shapiro (2011) took hundreds of multinational corporations as samples, selected representative data related to diversification, and applied multivariate discrimination to find that corporate performance has a positive response to diversification.

C. Research on Debt Financing and Overinvestment

Jensen & Meckling (1976) and Myers (1977) believe that the introduction of debt financing will inevitably lead to an increase in agency costs. More importantly, enterprises' debt will be restricted by regular debt repayment, bankruptcy threat, signal transmission, creditor supervision and other constraints, thus restricting their excessive investment behavior (Jensen,1986; Stulz, 1990; Harries & Raviv, 1990). The correctness of the theory of debt financing leverage governance mechanism has been reasoned and judged by many researchers.

Under the conditions of market economy, debt financing is not only a financing method, but also can reflect the corporate governance structure, reduce agency conflicts between managers and shareholders to a certain extent, and have a certain governance effect on inefficient investment behaviors (Williamson, 1988). Jensen (1986) pointed out that enterprise managers may abuse excessive free cash flow, and the advantage of debt management lies in the fact that enterprises must repay capital and interest in a certain period in the future, which reduces free cash flow and restrains managers' excessive investment behavior, thus improving the effectiveness of enterprise investment. This study has inspired researchers to study the role of debt financing in corporate governance. In addition, Stulz (1990), Ahn *et al.* (2006) and other researchers proposed that debtors could use the restrictive clauses in contracts to increase the management intensity of the borrowing company. Although he believes that debt financing can inhibit excessive investment behavior, Jensen also points out that this governance mechanism mainly applies to companies with relatively mature development and relatively abundant free cash flow, while for companies still in the growth stage with great potential, free cash flow is not sufficient, and borrowing will bring operating pressure. Debt financing also has a signaling function. Ross (1977) believes that managers are very clear about the internal operation and profitability of enterprises, but external investors do not know the situation of enterprises due to information asymmetry, and the asset-liability ratio can convey these signals to external investors, and the higher the ratio, the better the operation of enterprises. Low-quality smes dare not issue large-scale securities in order to avoid bankruptcy.

Some scholars point out that debt financing may lead to financial crisis and drive managers to work effectively under the pressure of bankruptcy. Grossman & Hart's (1982) model shows that the governance mechanism of debt financing for managers lies in the fact that bankruptcy crisis will damage managers' professional reputation and other private interests, thus constrains managers' behaviors. Aghion & Bolton (1992) believes that if the control of shareholders and managers is not highly efficient, then the control of the company with the "camera transfer of control" mechanism will soon be transferred to the debtor, and the debtor will often take liquidation or reorganization and other methods to recover the debt. But either liquidation or restructuring would result in managers losing private gains.

D. Financial Risk Control of Real Estate Enterprises

Matysiak and Brown (2000) analyzed the cash flow of real estate enterprises from the perspective of investment, and proposed relevant research results on optimizing the real estate portfolio and reasonably quantifying the return and risk of the real estate industry. Zhou (2012) studied and found the main influencing factors for housing enterprises to measure financial risk in the production and operation process through factor analysis method, including operation, risk control related capabilities such as cash flow, profit, operation, risk assessment and capital growth potential, etc. In addition, it also involved the ability to pay debts. Then we can establish the corresponding financial risk early warning index system according to the above related indicators to monitor the financial risk. Xiang (2014) believes that different targeted financial control countermeasures should be implemented according to different situations of enterprises. Strong enterprises should improve the core competitiveness of their products and strengthen cost management, while weak enterprises should enhance asset quality and solvency. Gao

(2020) proposed a more complete real estate financial work system. Specifically, measures such as financial audit and the establishment of an internal supervision mechanism for real estate financial work can be adopted to make the structure of financial funds more reasonable and avoid heavy debts.

III. In-depth Analysis of the Financial Position of Evergrande Group

A. Enterprise Basic Information Introduction

Founded in 1996 in Guangzhou by Xu Jiayin and with headquarters in Shenzhen, China, Evergrande Group (stock code: hk03333) is a sizable, multifaceted enterprise group with real estate as its primary industry. Its other businesses include tourism, sports, finance, healthcare, etc. Evergrande Group was placed 152nd on the 2020 Fortune 500 list in 2016. In order to create a sensation, Evergrande Real Estate constructed the first “Infinity Garden” project in Guangzhou in 1996. The property was sold for a loss of 2,800 RMB per square meters and generated sales of 80 million yuan in just two hours. After that, it joined the Guangzhou province’s top 10 real estate firms in 1999 and expanded business to all of China in 2006. Evergrande Real Estate went public in Hong Kong with an IPO price of HK$3.5 per share on November 5 of 2009.

Evergrande Real Estate Group officially changed its name to China Evergrande Group in June 2016, indicating the company’s expansion from real estate to other industries. The same year, the company was listed among the world’s top 500 enterprises and surpassed rivals to claim the title of largest real estate enterprise worldwide based on sales volume.

A broken capital chain risk happened within the corporate firstly in 2020 since Evergrande Real Estate failed to use a back door listing. The issue of past-due commercial paper first exposed to public in November of that year, and the annual report revealed that Evergrande had a commercial paper balance of RMB 205.266 billion that was still owing. Evergrande’s long-term foreign currency issuer default rating was reduced by Fitch International from “B+” to “B”, with a “negative” outlook, and it was revealed that the rating change was done in response to the immense pressure on Evergrande to reduce its debt. The rating was revised after Evergrande’s intense effort to reduce its debt, and a caution on liquidity problems was added. Evergrande stated in December 2021 that it was in a serious financial problem and would not be able to fulfill its guarantee commitments on a debt for US$260 million that had previously been kept secret. After Evergrande went into default, China’s central bank reduced the reserve requirement ratio, freeing approximately $200 billion in liquidity to lessen the market effect of Evergrande’s issue. Evergrande announced the sale of its properties and the suspension of business in January 2022 in order to pay off its debts. Evergrande filed for bankruptcy on August 17 in the Manhattan Bankruptcy Court in New York, in accordance with Chapter 15 of the U.S. Bankruptcy Code, to shield the Company’s assets in the United States from being sued or seized by creditors during the debt restructuring period.

B. Analysis of Major Financial Risks of Evergrande Group

By analyzing the changes of economic indicators, the financial risks of enterprises can be identified. According to the financial statement data published by Evergrande Group from 2011 to 2022, the key financial indicators are calculated. The paper also makes a horizontal and vertical comparative analysis on the impact of Evergrande Group’s diversification strategy transformation on its debt repayment risk, operational risk, investment risk and liquidity risk, so as to achieve the purpose of comprehensively and deeply exploring the financial risk of Evergrande Group. Explore the implementation effect of diversified transformation strategy, including its positive and negative impact on financial performance and financial risk, and timely adjust the transformation plan to control financial risk.

1) Overview of key financial indicators

The main economic indicators of Evergrande Group from 2013 to 2022 are analyzed, as shown in the following table. As can be seen from the table below, the total assets of Evergrande Group in 2013 were 348.1 billion yuan, and in 2022, the total assets reached 1,838.3 billion yuan, which increased by about 4.28 times in the past ten years. In addition, Evergrande Group’s total debt in 2013 was 268.8 billion yuan, but by 2022, the total debt became 2,437.4 billion yuan, an increase of 8.07 times in this decade. The sharp rise in total assets is mainly due to the sharp rise in total liabilities. In addition, it is observed that the growth rate of total liabilities is actually faster than that of total assets. The excessive debt ratio needs to be paid attention to. The total operating income gradually and steadily increased from 94.1 billion yuan in 2013 to 230 billion yuan in 2022. The operating profit and net profit fluctuated and rose every year from 2010 to 2018, but the profit began to decline seriously in 2018.

After consulting the data, it was found that in 2011, the country implemented the policy of restricting loans and purchases, which affected the development of the national housing market, and the net profit of Evergrande Group was also affected in the same year. From 2013 to 2018, thanks to the new round of growth of the real estate market, Evergrande Group developed more projects across the country, and its net profit kept growing during the period, especially in the two years from 2016 to 2018. But by 2019, profits had shrunk to half of what they were in 2018, and even fell again in 2020. Through the analysis of the main economic indicators of Evergrande Group, we found that although the scale of Evergrande Group has been gradually expanding in the past 10 years, and its operating income has maintained a trend of rising year by year, its profit growth is relatively slow, and even after 2019, there has been a significant decline, and its operating conditions are significantly unstable. In 2023, Evergrande retroactively issued annual reports for 2021 and 2022. It can be clearly seen that in 2022, not only both profit and net profit dropped down into negative, but total revenue shrunk to one-half of its original size. What’ s worse, things aren’t getting any better in 2023 even if they announced a debt restructuring plan on the 22nd of March.

Table 1. 2013–2022 Evergrande Group's Key Financial Indicators (unit 10,000CNY)

Item	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Asset	183833800	210709600	230115900	220657700	188002800	176175200	135086800	75703500	47446209.3	34814819.2
Liability	243741200	258015000	195072800	184804000	157140200	151954400	115833600	61489300	36208409	26880555.8
Revenue	23007300	25257000	50984600	47895900	46781400	31136700	21276300	13395500	11197464.9	9417700.4
Profit	−1049300	−12222800	6583000	8600600	13235000	7755200	3249700	1769700	1777173.6	1869242.3
Net profit	−10591400	−47603500	807600	1728000	3739000	2437200	509100	1046000	1260405.3	1261177.8

Data Source: Financial statements of Evergrande Group

2) *Debt repayment risk analysis*

Horizontal analysis of debt repayment risk

According to the data, the debt ratio of Evergrande Group continues to be higher than the industry average. After the diversification transformation in 2015, Evergrande Group's asset-liability ratio began to rise, and diversification obviously weakened Evergrande Group's solvency. After the diversification strategy transformation, the state of high debt of Evergrande Group increased instead of decreasing, and Evergrande Group assumed higher debt repayment pressure.

Table 2. Comparison between Evergrande Group and the industry's solvency

Item	2020	2021	2022	2023 mid-year
Asset-liability ratio (%)	84.77	122.45	132.59	136.94
Industry average (%)	55.19	54.59	54.39	55.09

Data Source: Financial statements of Evergrande Group

Vertical analysis of debt repayment risk

Generally, the current ratio of real estate enterprises is better between 1.5 and 2.0, and the quick ratio is more appropriate around 1.0. As can be seen from the following table, the change of the current ratio of Evergrande Group from 2013 to 2022 is relatively small, but from 2017, the current ratio has been declining year by year, which indicates that the liquidity of the enterprise has become weak in recent years, and the short-term debt repayment ability has also become weak. Both measures of solvency are falling, suggesting that the liquidity of corporate receivables has deteriorated in recent years. From 2011 to 2020, Evergrande's debt-to-asset ratio fluctuated around 80%, indicating that the company borrowed more. Combining the two indicators that reflect the solvency of enterprises, it can be concluded that Evergrande Group's repayment ability is weak and its financing risk is high.

The main problems of Evergrande Group's financing risk lie in the following points: Firstly, the scale of liabilities in the table is too large, although the scale is expanding every year, the company's liabilities have been as high as 1,158.33 billion yuan since 2016, and even reached 1,950.72 billion yuan by 2020, and the GDP of Suzhou in 2020 is close to 2 trillion yuan, which can be compared with Evergrande Group's debt scale is too large. Much of Evergrande's on-balance-sheet liabilities come from bank loans. As of June 30, 2023, Evergrande may involve 128 banking financial institutions and 121 non-bank institutions such as trust, urban investment, asset management, and small loans, among which the loan balance of domestic banking financial institutions is as high as 216.3 billion yuan. Secondly, off-balance sheet liabilities cannot be estimated, and the huge off-balance sheet liabilities are more frightening than the on-balance sheet liabilities. As one of the external financing platforms, Evergrande Wealth is of great significance to Evergrande Group, but the scale of huge off-balance sheet liabilities cannot be fully and accurately calculated. Thirdly, it issued too much commercial paper. By the end of 2020, Evergrande's commercial bill acceptance balance is 203.5 billion yuan, which is close to the amount of bank loans. However, the loan term of the notes payable is short, and the short-term repayment pressure is great, which makes the debt repayment pressure of enterprises greater.

Table 3. Debt repayment index of Evergrande Group from 2013 to 2022

Item (unit%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Asset-liability ratio	77.21	76.31	81.22	85.75	86.25	83.58	83.75	84.77	122.45	132.59
Current ratio	0.71	0.75	1.26	1.37	1.36	1.40	1.52	1.34	1.43	1.54
Quick ratio	0.18	0.17	0.33	0.38	0.42	0.52	0.62	0.50	0.51	0.56

Data Source: Financial statements of Evergrande Group

3) Operational risk analysis

Horizontal analysis of operational risk

Comparing Evergrande Group with the industry average, it can be found that the total asset turnover ratio of Evergrande Group is lower than the industry average, which indicates that Evergrande's operating capacity is average, and there is still a large gap between Evergrande and the industry average. This is because Evergrande Group implemented the diversification strategy and the layout rhythm was too fast, ignoring the recovery of accounts receivable. Many of Evergrande's new investment industries are unfamiliar areas unrelated to the main business, there are still problems in short-term profitability, and the recovery time of accounts receivable is uncertain, which will reduce the capital liquidity of enterprises. On the whole, the operating capacity of Evergrande Group has become worse and worse in the past ten years, indicating that diversification has increased the operational risks of the company.

Table 4. Comparison between Evergrande Group and the industry's operation capacity

Item unit(%)	2020	2021	2022	2023 mid-year
Total Asset Turnover Ratio	0.23	0.11	0.12	0.07
Industry Average	0.32	0.33	0.30	0.14

Data Source: Financial statements of Evergrande Group

Vertical analysis of operational risk

As can be seen from the following table, the total asset turnover of Evergrande Group has been declining since 2013, and the efficiency of asset use of the enterprise can be reflected according to the total asset turnover. Its decrease indicates that the ability of enterprises to operate with their own assets is weakened, which will affect the development of enterprises. The diversification strategy transformation of Evergrande Group has occupied a large amount of capital of the enterprise and reduced the asset turnover rate and operation level of the enterprise. The total asset turnover rate has rebounded from 2018 to 2020, because the financing policy began to tighten in 2018, and Evergrande began to gradually improve the turnover of assets in 2018, which can be improved. In the period from 2013 to 2022, the turnover rate of accounts receivable of Evergrande Group is also gradually declining. Such a sharp decline also reflects that Evergrande Group's accounts receivable collection period has become longer, which virtually increases the possibility of bad debts of the enterprise, and has an adverse impact on the future cash flow of the enterprise and the development of various production and business activities. Liquid asset turnover is also declining, from 38% in 2013 to 8% in 2023.

By analyzing the operating risks of Evergrande Group, it can be seen that its accounts receivable turnover has shown a downward trend after the implementation of diversified transformation measures, which is caused by the decline in the utilization rate of funds caused by the excessively long average collection period of Evergrande Group. Evergrande's diversification strategy involves a lot of fields, which require a lot of funds in the early stage of preparation, which will also affect the turnover rate of all accounts receivable of the enterprise. It is also because in the past 10 years, its diversified industries have a great demand for capital, occupying a large amount of working capital of enterprises. We found that the diversification strategy increased the operational risks of Evergrande Group and weakened the operational capacity of the enterprise.

Table 5. Operation capacity index of Evergrande Group from 2013 to 2023

Items unit(%)	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Receivables Turnover Ratio	23.99	18.06	15.93	16.93	16.07	16.78	12.28	12.01	9.06	13.49	7.28
Current Turnover Ratio	0.38	0.33	0.27	0.25	0.24	0.30	0.28	0.27	0.13	0.13	0.08
Total Asset Turnover Ratio	0.32	0.27	0.22	0.20	0.20	0.26	0.23	0.23	0.11	0.12	0.07

Data Source: Financial statements of Evergrande Group

4) Investment risk analysis

Horizontal analysis of investment risk

Based on data from recent years, it clear to see that the whole consumer market experience distinct turmoil which is reflected in the indicators such as ROA and net profit margin. In 2021, the ROA dropped from 0.98% to 0.01% and the net profit margin plummeted from −49.26% to −127.41%. However, the changes in gross profit margin is not that obvious compared to the two indicators mentioned above. So it can be concluded that the expense on other aspects than operating cost had increasing significantly in the couple of years. China Evergrande suffered the severe impact as a part of the integral market as well. Also in the year 2021, the ROA plunged below −20% and the value of net profit margin declined dramatically to −271.69%. Nevertheless, the indexes below provided by Evergrande's annual report shows progressive operating condition by the substantial promotion in all indicators below when the industry average value went down continuously in 2022.

Table 6. Comparison between Evergrande Group and the industry's profitability

Item (unit:%)	2020	2021	2022	2023 mid-year
ROA	0.36	−21.60	−5.37	−1.84
Industry Average	1.45	0.98	0.01	0.03
Net Profit Margin	6.16	−271.69	−54.68	−30.44
Industry Average	−69.46	−49.26	−127.41	35.72
Gross Profit Margin	24.17	−7.38	10.86	7.64
Industry Average	35.89	36.32	32.85	33.63

Vertical analysis of investment risk

As can be seen from the following table, the return on assets of Evergrande Group has been showing a trend of fluctuation and decline. After the diversification layout was basically completed in 2016, the return on assets increased slightly. This is because Evergrande issued additional shares in the capital market for two consecutive years in 2017 and 2018, which made the return on equity of Evergrande Group significantly increase by 13.63%. At the same time, the return on assets of the enterprise increased by 1.98%. The net profit margin on sales has been declining, and in 2020 the net profit margin on sales is −54.68%, and the gross profit margin on sales is only 10.86%.

Especially since 2018, these three indicators have been declining as a whole, which shows that Evergrande Group has made low profits and poor investment in recent years. When investing in new areas, Evergrande did not make good project planning in advance, but invested large amounts of money, so misuse of funds but did not use in appropriate projects, resulting in low quality of the projects it invested in. In theory, a variety of investment areas can reduce the business risk of enterprises, but this requires a high level of management and operation ability of enterprises. Evergrande's investment ability in unfamiliar areas is limited, and its competitiveness in the market is insufficient. For example, Evergrande Ice Spring in the fast-moving consumer goods sector lost 4 billion yuan in three years, and finally could only sell the business at a low price. Similarly, other businesses in the FMCG sector, such as grain, oil and dairy products, also have huge losses. The new energy vehicle sector has invested a total of 29.4 billion yuan since 2019, and its profit has been 0. Blindly entering unrelated fields, but also making large investments, the wrong choice in the investment field, the positioning is not accurate enough, the market is not in place, and diversified operation has reduced Evergrande's profitability.

Table 7. Profitability index of Evergrande Group from 2013 to 2022

Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ROA	8.66	7.59	5.11	4.00	5.21	7.19	4.26	3.32	−29.77	−4.05
Net Profit Margin	14.56	16.09	12.94	8.28	11.90	14.23	7.00	6.16	−271.69	−54.68
Gross Profit Margin	29.52	28.53	28.10	28.10	36.09	36.24	27.84	24.17	−7.38	10.86

5) Liquidity risk analysis

The net cash flow generated by Evergrande Group's financing activities in 2016 was as high as 273 billion yuan, and it was also about 150 billion yuan in 2017 and 2019, indicating that the company raised a large amount of funds in these years, and it turned negative in 2018, but its amount was only about 17.6 billion yuan. The dividend amount of the consolidated statement of the enterprise in the year reached 27.684 billion yuan, indicating that the company carried out more profit distribution in 2018. In 2020, it increased to −76.8 billion yuan, and the dividend amount in the consolidated statement of that year was as high as 57.779 billion yuan. It can be seen that in these five years, Evergrande Group has been supporting the operation of the company through a large number of external financing. Similarly, the net cash flow generated by the company's operations was positive only in 2018 and 2020, and was negative in the other three years, and the amount was large, indicating that Evergrande Group's diversified layout did not bring positive profits to the company. The net cash flow generated by the company's investment activities is even more exaggerated, and all are negative, which indicates that Evergrande's diversified strategic layout of investment activities has been consuming the company's funds. The company's own operating conditions are not good, and investment activities have been consuming funds, so Evergrande can only rely on continuous financing to borrow large amounts of loans to support the daily operation of the enterprise. Evergrande Group alleviates its own financial pressure by constantly squeezing suppliers, while accessing loans from financial institutions including domestic bonds and US dollar bonds. The company borrowed heavily to diversify investment and expansion, and the invoices owed to suppliers, although they do not pay interest, have a short period of time and must be repaid when due. The borrowed domestic debt also contains a large number of perpetual bonds, and the interest rate of perpetual bonds is high, which puts higher requirements on the cash flow held by Evergrande, and this measure will affect the robustness of the subsequent financial.

Table 8. Cash flow of Evergrande Group from 2013 to 2022

Items	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net Cash Flows from Operations	−3,887,124	−4,548,454	−2,374,900	−5,861,000	−15,097,300	5,474,900	−6,735,700	11,006,300	−5,160,100	−1,221,700
Net Cash Flows from Investment	−1,313,450	−1,239,077	−1,255,300	−11,955,900	−4,748,200	−6,036,300	−5,530,800	−2,412,800	−1,440,700	−1,310,100
Net Cash Flows from financing	7,441,222	4,759,817	10,944,600	27,307,900	15,291,300	−1,765,100	14,316,300	−7,688,500	−8,730,100	2,421,500

C. Financial Risk Analysis Model and Evaluation of Evergrande Group

1) Model evaluation--Altman Z-Score model (Edward Altman, 1968)

Definition

It is a formula for determining whether a company, notably in the manufacturing space, is headed for bankruptcy. The formula takes into account profitability, leverage, liquidity, solvency, and activity ratios.

Formula

$$Z = 1.2\times1 + 1.4\times2 + 3.3\times3 + 0.6\times4 + 0.999\times5$$

where:

X1 = working capital / total assets

X2 = retained earnings / total assets

X3 = earnings before interest and tax / total assets
X4 = market value of equity / total liabilities
X5 = sales / total assets

Explanation of the meaning of variables

X1 reflects liquidity and size. Current capital = current assets-current liabilities, the higher the current capital, the lower the risk of insolvency and a reflection of short-term solvency.

X2 measures the profit accumulated by the enterprise and reflects the number of years the enterprise has been in business.

X3 measures the productive capacity of an enterprise's assets without taking into account the effects of taxation and financing, and is a measure of the profitability of an enterprise's use of its total creditors' and owners' equity. The higher the ratio, the more effective the enterprise's assets are utilized and the higher the level of management.

X4 measures the extent to which the value of the enterprise can decline before it becomes insolvent, reflects the relative relationship between capital provided by shareholders and capital provided by creditors, and reflects the stability of the enterprise's underlying financial structure. A high ratio is associated with a low-risk, low-reward financial structure, and this indicator also reflects the extent to which the capital invested by creditors is protected by the capital of shareholders.

X5 measures the ability of the enterprise to generate sales. It indicates the effectiveness of the enterprise's asset utilization. The higher the indicator, the more efficiently the assets are being utilized, indicating that the enterprise is having good results in increasing revenue.

Assessment Criteria

$Z<1.8$, Bankruptcy zone; $1.8\leq Z<2.99$, Grey zone; $2.99<Z$, Safe zone.

A score below 1.8 means it's likely the company is headed for bankruptcy, while companies with scores above 3 are not likely to go bankrupt. Investors may consider purchasing a stock if its Altman Z-Score value is closer to 3 and selling or shorting a stock if the value is closer to 1.8.

2) Marking scheme

Summarizing the relevant financial data of China Evergrande for 2013–2022 is as follows:

Table 9. Financial data of Evergrande Group

Report year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net Working Capital	10,118,093	11,541,323	15,566,300	38,024,100	43,809,200	41,629,500	49,677,900	39,768,100	−62,731,500	−68,773,400
Retained Earning	1,261,178	1,260,405	1,046,000	509,100	2,437,200	3,739,000	1,728,000	807,600	−47,603,500	−10,591,400
EBIT	2,543,029	3,120,657	3,144,500	4,219,100	8,519,900	13,475,700	9,168,800	8,050,500	−65,377,300	−7,858,900
Equity	7,934,263	11,237,800	14,214,200	19,253,200	24,220,800	30,862,600	35,853,700	35,043,100	−47,305,400	−59,907,400
Operating Revenue	9,417,700	11,197,465	13,395,500	21,276,300	31,136,700	46,781,400	47,895,900	50,984,600	25,257,000	23,007,300
Total Assets	34,814,819	47,446,209	75,703,500	135,086,800	176,175,200	188,002,800	220,657,700	230,115,900	210,709,600	183,833,800
Total liabilities	26,880,556	36,208,409	61,489,300	115,833,600	151,954,400	157,140,200	184,804,000	195,072,800	258,015,000	243,741,200

Table 10. Z-score rating table model

Report year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
X1	0.29063	0.24325	0.20562	0.28148	0.24867	0.22143	0.22514	0.17282	−0.29772	−0.37411
X2	0.03623	0.02656	0.01382	0.00377	0.01383	0.01989	0.00783	0.00351	−0.22592	−0.05761
X3	0.07304	0.06577	0.04154	0.03123	0.04836	0.07168	0.04155	0.03498	−0.31027	−0.04275
X4	0.29517	0.31036	0.23117	0.16621	0.15940	0.19640	0.19401	0.17964	−0.18334	−0.24578
X5	0.27051	0.23600	0.17695	0.15750	0.17674	0.24883	0.21706	0.22156	0.11987	0.12515
Z	1.08785	0.96813	0.71863	0.70319	0.74956	0.89652	0.75150	0.65687	−1.68770	−0.69310

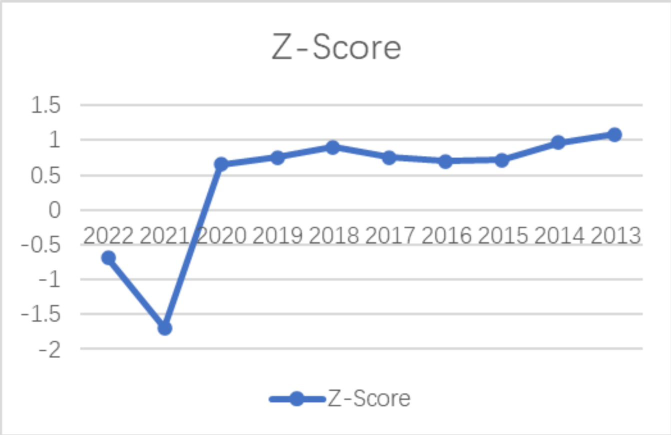

Fig. 1. Z-score trend chart.

From Fig. 1, we could find the Z-score value of China Evergrande is been in the bankruptcy zone in the recent years, which is fluctuates around 1 and shows a overall downward trend. However, the situation went even worse in 2021, the Z value plummeted below 0 to −1.68. In the following years, the value rebound to −0.69 which indicates the financial position has improved in 2022, but it is still negative. According to the data in recent years, the Z value fluctuates little and is always below 2.9, indicating that the company's financial risks are large, and China Evergrande needs to increase early warning and improve management ability to prevent and reduce financial risks.

D. Causes of Financial Risks of Evergrande Group

1) Internal causes of financial risks of Evergrande Group

Financing

The capital structure of enterprises is unreasonable, the scale of debt is too large, the financing channels are single, and the enterprises over-rely on bank intermediaries.

The real estate industry has high requirements for funds, because the industry's sales procedures are cumbersome, it is often difficult to fully recover the invested funds in the short term, only phased recovery, a long period of capital recovery, enterprises want to continue to operate, they have to borrow to maintain operations, which leads to the asset-liability ratio of housing enterprises is generally high. For real estate enterprises, 0.8 is the risk critical value of the asset liability ratio, while other industries have a lower indicator. From 2016 to 2023, Evergrande Group's asset liability ratio is not only much higher than the industry average, but also basically exceeds the risk critical value of 0.8. Although the moderate high leverage can enrich the group's capital and seize more investment opportunities, the high leverage of Evergrande Group has long been out of the benign track, and huge loans will generate high interest, thereby causing pressure on the production operation of the enterprise. In recent years, the scale of short-term liabilities of Evergrande Group continues to rise, and the debt structure is unreasonable, which will exert great pressure on the capital chain of the enterprise and easily lead to financial risks.

The interest rate largely affects the cost of enterprises, and the higher the interest rate, the higher the cost that enterprises need to pay for borrowing funds. According to the financial data of Evergrande Group, the average borrowing interest rate of Evergrande Group at the end of 2022 is 9.49%, which is much higher than that of peers. At the same time, Evergrande Group needs to repay the amount of new loans every year, and the debt repayment pressure is large.

Investment

With the further development of China's economy, the problem of oversupply in the real estate industry has become increasingly serious. In the past, the speculative behavior of investors promoted the blind expansion of the industry, and the real estate enterprises also showed a "high inventory and high leverage" business state, and a large amount of capital flowed into the real estate industry, resulting in the industry bubble. Since 2016, China has launched the flag of de-leveraging and inventory clearance, and has promulgated many policies in this direction to curb speculation in the industry. The attitude of the national policy towards the real estate industry has changed a lot. In 2020, the new coronavirus epidemic spread in China, and the growth rate of real estate development investment in the country showed negative growth in the first five months of 2020. In 2021, the implementation of the "three red lines" of housing enterprises and the "two red lines" of banks, as well as the introduction of policies such as "centralized land supply three times a year in many major cities," "guidance system for second-hand housing transactions" and "increasing the period of social security tax payment," have formed a triangle on the capital side, the supply side and the demand side to stabilize housing prices, although affected by the new coronavirus epidemic. It may stimulate people's subsequent demand for house purchases, but the implementation of these policies will inevitably shrink the profits of housing enterprises' housing development business. Even so, Evergrande continues to expand, stockpiling land in third- and fourth-tier cities. This is undoubtedly to Evergrande Group's capital turnover added new pressure.

Operation

The turnover rate of total assets and inventory of Evergrande Group is relatively low, and the turnover rate of accounts receivable of Evergrande Group is extremely lower than the good value of the industry, which indicates that the enterprise has a serious inventory backlog and the speed of capital recovery is extremely slow. For a long time, Evergrande Group has not paid enough attention to the speed of receivables collection because of its high profits and strategic financial support.

The competitiveness of other industries under the enterprise is insufficient. Over the years, Evergrande Group has successively expanded other industries and diversified. It owns eight major industries, including Evergrande Real Estate, Evergrande New Energy Vehicles, Evergrande Property, RV Bao and Evergrande Ice Spring. However, due to the lack of feasibility analysis of projects in advance, some projects have suffered huge losses, such as Evergrande Ice Spring and Evergrande Football. At present, the income of Evergrande Group mainly comes from the real estate development business, accounting for more than 95%, and the competitiveness of other industries is poor.

Income distribution

The main causes of income distribution risk come from the decline in corporate profitability and high debt. Evergrande Group's net profit has been declining since 2018. Although operating income continues to rise, the rising speed of corporate cost is stronger than that of operating income, resulting in the sagging overall profit level of the group, which can be evidenced by the net profit rate of sales and the return on equity. The second is the liabilities of the enterprise. In 2020, Evergrande Group's business tickets were delayed one after another across the country, which made people suspicious of the capital chain of Evergrande Group, which was mainly caused by the decision-making mistakes of the management. In general, the enterprise failed to see the economic situation clearly in the case of declining profitability, blindly expanded, and made mistakes in decision-making, which increased the risk of corporate income distribution.

2) External causes of Evergrande Group's financial risks

The impact of the novel coronavirus epidemic has led to a decline in housing sales and a prolonged fund recovery cycle. Due to the impact of the COVID-19 epidemic, most of China's housing enterprises are at the peak of debt, and if the housing fails to sell and fails to find other ways to raise funds, the housing enterprises will be at risk of insolvency, especially those with large projects under construction and land reserves, single financing channels or high capital costs. The spread of the epidemic has made the road of sales collection of housing enterprises hindered, and the financial risk is also very high due to the pressure of capital turnover.

Three red lines and other policies have been issued, and the state has strengthened its regulation and control of the real estate industry. In order to regulate the blind financing behavior of developers and curb the growth of interest-bearing debt in the real estate industry, the central bank and the Ministry of Housing and Urban-Rural Development have implemented three red lines across the industry since January 1, 2021, and the state has strengthened its regulation and control policies on the real estate market. In order to deleverage and reduce debt, many real estate developers have continuously exposed negative news, resulting in slow corporate housing transactions. The repatriation of funds slowed further. At the same time, in response to the centralized management system policy of real estate loans issued by the central bank, major domestic banks have limited the amount of housing loans every quarter, resulting in the residential housing loan amount is quite tight, and the lending time is prolonged, which further delays the speed of real estate developers' fund withdrawal and increases the financial risk probability of real estate enterprises.

IV. Conclusion

At present, real estate companies are facing more and more stringent government risks and corresponding industrial risks, and the investment return of the entire industry is declining. In order to achieve the dual purpose of better diversification of business risks and improve corporate earnings, the head real estate companies have generally begun to implement strategic changes, whether it is the transformation of the asset-light operation model represented by Wanda or the transformation of the diversified business strategy represented by Evergrande, which are important breakthroughs for the transformation of Chinese real estate companies. Due to the property of high assets and high debt of housing enterprises, they are also saddled with high debt, and diversified development is not smooth sailing, which often increases more financial risks for housing enterprises. Evergrande Group is the first leading real estate company to implement strategic transformation and diversified operations, which has a strong representation.

First of all, this paper analyzes the development status and financial risks of Evergrande Group, and draws a conclusion that the real estate industry has become less profitable and its development speed has slowed down. In addition, due to the economic downturn affected by the epidemic in recent years, Evergrande Group itself also meets the conditions for diversification in the face of such an unfavorable macro environment, which is also its strategic attempt to carry out relying on its own resources. However, in just a few years, Evergrande Group's rapid business layout in a number of unfamiliar market areas has led to the emergence of diversified financing risks, diversified liquidity risks and diversified investment risks.

Secondly, this paper analyzes the operating conditions and financial performance of Evergrande Group in the past 10 years, thus identifying the financial risks in the implementation of the diversification strategy of Evergrande Group, and combining the specific financial indicators of related risks, it is concluded that the financing risk has the greatest impact on the enterprise's risk rating. The main real estate business itself is highly indebted, and it also needs large-scale financial support when it continues to layout diversified industries, but the diversified financing pattern has not been fully realized, so the financing risk will rise. Diversification investment risks are caused by the lack of experience and understanding of the new business areas that the enterprise has just entered, the improper selection of the industry, the blind investment, and the lack of sufficient professional talent reserve, which are prone to the problems of unreasonable cost control, fast investment layout, and low quality of products and services. However, the main reason for the unstable risk of diversified operation lies in the fact that the operation of relevant businesses in the real estate industry depends on high debts, which requires a large amount of funds and resources. In the short term, Evergrande Group will also consume a huge amount of funds in order to expand new fields, and relevant businesses involve a wide range of areas, cannot support each other, and are still in the development stage. Unable to generate results and positive cash flow for the Group in a short period of time.

Finally, the research on the financial risk evaluation results of Evergrande Group in the implementation of diversification in recent years shows that Evergrande Group has not made outstanding achievements in the implementation of diversification strategy, but has a lot of financial risks. It can be seen that the importance of strictly controlling financial risks is self-evident. In order to effectively reduce the risks arising from the implementation of diversified operations, Evergrande can put forward relevant measures to prevent and control the financial risks of the enterprise from the aspects of expanding investment and financing channels to achieve diversified financing pattern, focusing on the coordination of major industries, dividing the existing business portfolio, etc., and form suggestions conducive to the future development of the enterprise.

Conflict of Interest

The author has claimed that no conflict of interest exists.

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