Since 2015, the Evergrande group's asset-liability ratio has always been maintained at more than 80%, with the highest asset-liability ratio of 86.25% in 2017. With the introduction of a series of national policies such as "three elimination, one reduction, and one subsidy" in 2016, the asset-liability ratio of the Evergrande group has decreased, but the effect is not obvious. The current ratio and quick ratio have been declining since 2016, leaving only 1.26 and 0.22 respectively by the end of 2020. The pressure of short-term debt repayment has increased, and the problem of insufficient liquidity has gradually become prominent. In addition, the proportion of current liabilities in total liabilities has been rising since 2016, and the proportion of current liabilities reached the highest at 77.27% at the end of 2020, which reflects a certain extent that Evergrande has been dominated by current liabilities for a long time, has a strong dependence on short-term funds, and has a high debt repayment risk. Once the enterprise's capital supply is insufficient, it may default on its debts.

According to the comparison between the mid-2021 annual report and the same period in mid-2020, the senior management of Evergrande has realized the pressure of high debt financial leverage on the company's capital chain and is adjusting policies to alleviate its excessive debt ratio. The asset-liability ratio decreased in the same period in mid-2021. However, the increase of current liabilities further aggravates the reduction of the current ratio and quick ratio, which further expands the debt repayment risk of enterprises[9].

3.1.3. Operational capacity analysis

Table 3 Main indicators of Evergrande group's operating capacity

financial index	2015	2016	2017	2018	2019	2020	2020.6	2021.6
Inventory turnover rate / time	0.35	0.32	0.25	0.29	0.28	0.28	0.15	0.14
Accounts receivable turnover rate / time	15.60	16.52	16.07	16.50	12.21	12.01		
Total asset turnover rate / time	0.21	0.20	0.20	0.25	0.23	0.23	0.12	0.10

Evergrande group's total asset turnover rate is less than 1, which also reflects that real estate is a capital-intensive industry and needs to maintain sufficient cash flow. However, by observing its inventory turnover rate and accounts receivable turnover rate, it is found that they both show an overall downward trend, especially after 2018, which shows that Evergrande's inventory turnover capacity and capital turnover capacity are weakening, the collection cycle is lengthening, and the liquidity of capital is declining. This situation is likely to lead to the extrusion of the group's inventory and the loss of bad debts, which will have a negative impact on Evergrande's operation. This situation continues to deepen in 2021.

3.1.4. Growth capability analysis

Table 4 Main indicators of Evergrande group's growth capacity

financial index	2015	2016	2017	2018	2019	2020	2020.6	2021.6
Growth rate of operating revenue /%	17.71	58.83	47.09	49.89	2.44	6.22	17.47	-16.48
Net profit growth rate /%	-17.01	-51.33	378.73	53.41	53.78	0.37	-13.69	-56.76

Since 2016, the growth rate of Evergrande group's operating revenue has shown a downward trend as a whole, with the most obvious decline of 2.44% in 2019, indicating that the operating revenue of Evergrande group has gradually dried up and insufficient stamina due to the influence of various factors such as the real estate industry and the external environment in the past two years. The negative growth rate of net profit in recent two years also shows that the Evergrande group's net profit has not maintained well sustainable development and its growth ability is insufficient.

To sum up, the Evergrande group's indicators deteriorated in varying degrees from 2015 to 2020. The obvious weakening of profitability, the gradual prominence of debt repayment risk, the high proportion of current liabilities, the decline of operating turnover capacity, the lack of growth capacity, and other problems lead to Evergrande's high operating risk and capital pressure, which is very prone to the risk of capital interruption.

3.2. Evergrande's current financial problems

3.2.1. Blind diversification, profitless than expected

Since its listing in 2009, Evergrande Group has embarked on a "diversified" strategic layout. In addition to its main business of real estate, Evergrande Group has also been involved in many industries such as culture, health, and sports. According to the company's financial statement, Evergrande Group's main business, real estate development, lost about 4 billion yuan in the first half of 2021, and its steady growth in the past decades has stopped. Moreover, Evergrande Bingquan lost 4 billion yuan in three years, while its initial investment was almost 6 billion yuan. Evergrande football club loses more than 1 billion yuan a year. The newly invested Evergrande automobile industry suffered a loss of 4.8 billion yuan, and the huge investment has not yet achieved mass production. The vast majority of Evergrande Health and Culture continues to suffer losses[10].

Evergrande's diversified development path and weak industrial relevance did not form effective synergies and economies of scale, which aggravated its huge debt scale. These did not bring cash flow to Evergrande, but dragged down its liquidity and led it into a debt crisis.

3.2.2. Too much expansion, too much leverage

In the six years from 2015 to 2020, the net profit of Evergrande Group is 17.34 billion yuan, 17.62 billion yuan, 37.05 billion yuan, 37.39 billion yuan, 33.54 billion yuan, and 31.4 billion yuan respectively. In just six years, its net profit totaled 174.34 billion yuan. However, Evergrande's investment speed is much faster than the speed of capital recovery. In the expansion of diversification, there are many investments in industries that are difficult to return in a long period, such as automobiles and agriculture.

In addition, Evergrande Group's business has developed rapidly in recent years, but this is achieved by crazy expansion, which can only be financed by profits and bank loans over the years. According to documents, Evergrande has acquired 293 million square meters of land across the country. The land, which is mostly distributed in China's first-tier cities, is valued at 527.3 billion yuan. Apparently, Evergrande had no choice but to borrow from banks or issue bonds to raise funds. However, borrowing comes at a cost, and Evergrande's debt snowballed in the long run.

At the same time, the economic cycle has brought about fundamental changes in the real estate industry. Evergrande blindly expanded during the economic downturn and swallowed up a large number of assets, which was already dangerous. However, in the period of economic growth, as people's risk preference increases, they will shift more attention to more aggressive investment, which makes Evergrande unable to absorb the previous assets, and many assets cannot be realized as scheduled, but the debts arrive as promised.

3.2.3. Insufficient liquidity exacerbates debt repayment risks

Real estate is a capital-intensive industry, stable cash flow is the foundation of the normal operation of real estate enterprises. From the perspective of cash flow, Evergrande Group is faced with financial constraints, which leads to the suspension of some real estate under it, and the payment to suppliers and contractors is delayed one after another. The delivery of real estate cannot be guaranteed.

Evergrande Group's cash flow generated from operating activities from 2015 to 2020 was only positive in 2018 and 2020, indicating that its receivables collection speed is slow and it needs to rely on more external financing to maintain its normal turnover. On the other hand, it also shows that Evergrande's short-term solvency is relatively weak. Many loans obtained by financing are due and interest payment is imminent, but the enterprise lacks cash and cannot support the interest due. It is difficult to realize the inherent assets, and Evergrande's capital chain is broken, leading to a financial crisis.

3.2.4. Blind diversification, profitless than expected

With the development of the macro economy, China's real estate market policy is becoming stricter. In August 2020, the people’s Bank of China and the Ministry of Housing and Urban-Rural Development proposed the three red lines of financing supervision, requiring real estate companies to reduce leverage to prevent financial systemic risks. Evergrande had been frantically expanding abroad. If it ran out of money, it could continue to borrow from banks or issue corporate bonds to solve the problem of insufficient cash flow. The government stipulates three red lines for the financing of real estate enterprises, which have certain restrictions on the debt ratio, cash flow, and net debt of real estate enterprises. After years of expansion, Evergrande is far away from the three red lines. This means that its access to external financing will be completely closed in the event of liquidity problems unless it falls within the three regulatory red lines set by the government. In the short term, Evergrande's financing standards for real estate enterprises set by the government are quite difficult.

4. EVERGRANDE'S GAME WITH THE GOVERNMENT

4.1. Look at government decisions from a macro perspective

Participants of the game theory model established in this paper were two sides: most real estate companies represented by Evergrande (hereinafter referred to as the "company"), the government agencies responsible for the management of the relevant enterprises (hereinafter referred to as the "government"). We assumed that the two sides are rational decision-makers: the pursuit of government is economic growth and stability, the pursuit of the company is self-interest maximization. The government can maintain financial and economic stability through restrictive policies. For example, it can impose a scaled tax on enterprises or limit the scope of government assistance through legislation, so as to form hard budget soft constraints on enterprise owners. But restricting some of the company's expansion plans, due to their large coverage and relatively low policy flexibility, will affect economic growth. It is assumed that the company chooses high-risk projects as blind expansion and normal projects as normal expansion.

First of all, the company has a full understanding of its optional projects, but the government has an uncertain belief about whether the company will choose high-risk projects when expanding. It believes that the probability of the real estate company choosing high-risk projects is P, and the probability of choosing normal projects is 1-P. In the first round of the game, the government will decide whether to impose some policy constraints on the company based on its own beliefs. If the constraint is carried out, the company will not choose expansion, including normal expansion and blind expansion, and the game is over. If there is no constraint, the company will enter the second round of the game, that is, the company will choose to blindly expand or not expand under high-risk projects, or choose to normally expand or not expand under low-risk projects. No matter what the project, if the company chooses to expand, then enter the third round. At this point, if the company chooses to expand blindly, it is assumed that the company has a high-risk appetite in most projects and most of its assets have low-risk tolerance, which will lead to financial difficulties. In this case, the government will choose to rescue or not to rescue. If the business operation makes the government believe that it is expanding normally and the selected project is a reasonable one, then the government will choose not to restrict the expansion of the policy, and finally achieve a win-win situation for both sides.

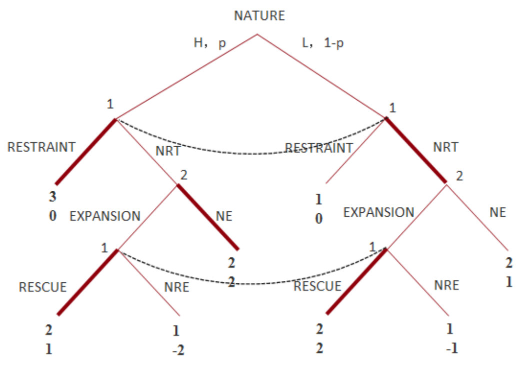

Figure 1 The game between government and company.

4.2. How Evergrande and the Government make decisions

The debt crisis of Evergrande Group is not the optimal solution to maximize social utility, whether the government uses financial taxes to repay Evergrande's debt or let the bankruptcy and reorganization of Evergrande Real Estate freely play. The government's full use of national finance to take over the Evergrande Group will restore its vitality, but the huge national fiscal expenditure needs to be paid by taxpayers, which will increase the economic burden of taxpayers. And objectively for other enterprises in line with the ' big but not down ' approach, regardless of risk blind expansion provides the wrong example. If Evergrande Group is allowed to go bankrupt and restructure, the risk is likely to further expand, generate financial systemic risk, and bring some unstable factors to the society. In addition, according to the semi-annual report of China's Evergrande Group (HK. 3333), Evergrande Group has 231 million square meters of land reserves, with a sales value of more than 3.5 trillion. In addition, the company also has 166 billion investment properties and 519 billion non-real estate business shares, far exceeding its net debt of 2 trillion, indicating that Evergrande Group's solvency is not problematic. Although Evergrande is faced with the problem of high debt, it is slightly different from some enterprises in the crisis of high debt. Evergrande's default is not insolvency, but a lack of time to convert assets into cash flow. Other investors, lenders moderately extend the accounting period, given a certain time for Evergrande Group to resolve the debt risk to provide a good external environment. I believe Evergrande Group's high asset-liability ratio is expected to decline. Therefore, the best way to deal with the Evergrande incident is to combine government assistance with Evergrande's efforts to self-help.

4.2.1. Strategy one: Evergrande Group debt restructuring

The financial debt scale of Huaxia Happiness, which is also a real estate enterprise, is confirmed to be CNY 219.2 billion, and it has passed through difficulties through debt restructuring. Among them, Huaxia Happiness sells assets back to about CNY 75 billion; selling assets takes away about 50 billion yuan of financial debt; the extension or settlement of priority financial debt is about CNY 352 billion; reimbursement is based on the trust beneficiary share of about 22 billion yuan of assets such as holding property, i.e. the trust plan is based on about 22 billion yuan of assets such as holding property with stable cash flow, and the related financial debt is reimbursed by the trust beneficiary share. Finally, it was magically left 18 billion for the ensuing house delivery.

According to China Evergrande Group's official WeChat, the national rework rate of the Group as of December 31, 2021, was 92.9 %, and 37,900 units of the housing delivery were completed in December, which was 1.2 percentage points higher than that of 91.7 % announced on 27th and 26th, and more than 40 percentage points higher than that at the beginning of September. It shows that the recovery progress of Hengda's s hematopoietic function is far more than expected, which is due to the substantial increase in the progress of the delivery building, and the progress of the project's pre-sale release is also accelerating.

With the over-expectation of Evergrande's house delivery quantity, Evergrande's hematopoietic capacity is rapidly recovering. At this time, if debt restructuring is promoted, it can be said to be the most likely balance scheme with all the creditors' interests at the present stage of Evergrande. Combined with the announcement of Evergrande, the probability of this occurrence is very high. Of course, this first requires the strong push of government departments and the consent of different types of debtors

4.2.2. Strategy 2: Bankruptcy reorganization of Evergrande Group

How to resolve the huge debt crisis of Evergrande Group, we can refer to the same huge debt and business layout of HNA Group debt risk successfully resolved ideas. Firstly, HNA Group separates the core assets of the HNA aviation sector represented by ST HNA and its ten subsidiaries from HNA Group and its non-listed entity operating enterprises and shareholding platforms. After the separation, they pay their debts in different ways, and their development is not related to each other.

Different from HNA Group, Evergrande Group's real estate industry is the de-capacity industry that the state strives to deleverage and compress the scale. It is not the core industry with reorganization value like HNA. The goal of government intervention is to prevent social problems caused by the debt crisis of Evergrande Group, mainly to maintain social stability. Whether Evergrande can finally be reborn due to restructuring is not necessarily. Judging from the recent sale of assets by Evergrande, its assets are not able to attract enough strategic investors. The main business of Evergrande Real Estate is in hot water, and it is difficult to find strategic investors with both willingness and ability. The sideline industries such as Evergrande Ice Springs and Evergrande Automobiles do not have core competitiveness. At present, the undertakers of Evergrande Group projects are basically local state-owned enterprises or urban investments, basically to complete the political task of maintaining stability, do not necessarily have a real intention to become strategic investors.

However, because of the current situation, it is difficult to control the claims of foreign creditors to file bankruptcy. On 24 January 2022, Evergrande Group announced that given the current liquidity situation, it will consider the overall financial and debt situation as a whole, respect the interests of all creditors, seek an overall solution to foreign debt and promote foreign debt restructuring. If claims by foreign creditors affect the territory, then Evergrande Group is likely to enter bankruptcy reorganization proceedings passively.

4.2.3. Strategy 3: Retain Evergrande Group and support from the government.

4.2.3.1. Financial regulatory authorities introduce favorable policies

With the temporary stability of the bankruptcy crisis of Evergrande Group, the People's Bank of China, the Securities Regulatory Commission and the Banking and Insurance Regulatory Commission have responded to the Evergrande Group issue. The central bank: ''Support and facilitation will be provided under the existing policy framework for relevant departments where enterprises will pay for and buyback overseas bonds.' CBRC: According to different situations in different regions, we should rationally issue real estate development loans and M & A loans, increase support for indemnification rental housing and promote the stable and healthy development of the real estate industry and the market. China Securities Regulatory Commission (CSRC): ' CSRC will continue to maintain the effective functioning of market financing, support real estate enterprises reasonable financing, and promote the stable and healthy development of capital market and real estate market. This means that the policy will be in accordance with the principles of market-oriented, legalization, Evergrande Group corporate debt risk disposal.

Since the debt crisis of Evergrande Group broke out, the central bank has cut LPR rates on December 20, 2021, January 20, 2022, and February 21, 2022, equivalent to a rate cut on mortgages. The disguised increase in consumer demand for housing, is conducive to Evergrande Group and other real estate enterprises to inventory, accelerate the speed of capital recovery.

Because of the increasing downward pressure on the economy, Evergrande's default is likely to have a risk spillover effect on the entire market and industry. At this time, the financial regulatory authorities have introduced a series of hedging measures, such as the relaxation of the three red lines of housing enterprises and the policy of housing loan concentration, and the provision of special loans by the central bank. All these measures will have a positive impact on the resolution of Evergrande's debt problem.

4.2.3.2. Promotion of central enterprises' bond purchase of most industries

On December 20, 2021, the Central Bank and the CBRC issued a ' Circular on Merger and Acquisition of Financial Services for Risk Disposal Projects for Key Real Estate Enterprises ' to encourage high-quality enterprises to acquire projects for risk-taking and distressed housing enterprises to be implemented throughout the country.

On January 7, 2021, the Central Enterprise Minmetals Trust purchased all the shares and management rights of Hengtuo Real Estate Company in Kunming and Yingqin Real Estate Company in Shunde District, Foshan City. In response to the Xinjing Daily Shell Financial Reporter Cheng Weimiao said: in the face of Evergrande Group project risk, Wukuang Trust to improve the political station, always to ' protect the building, people's livelihood, stability ' as the program of action, to safeguard the interests of investors as the primary goal, actively seek the diversification of assets to deal with and resolve the path. After the repeated demonstration, we believe that obtaining the project company's total equity and management rights, to promote the normal operation, is the best solution to the problem of the Evergrande Group's project. As Wukuang Trust said, debt acquisition is the best solution for Evergrande Group. Buying the project equity of the insurance housing enterprises can effectively resolve the project crisis, protect the rights and interests of the owners, but also alleviate much debt pressure for the thunderstorm housing enterprises. Thus, it can be seen that the government for the state-owned enterprises to buy out the insurance enterprise project ' bridge ', the majority of Evergrande Group industry and project more than 100 central enterprises, state-owned enterprises share to eat, speed up the Evergrande Group capital recovery speed, is a good strategy to solve the debt crisis of Evergrande Group.

Through the above analysis, this paper argues that the financial regulatory authorities issued favorable policies, the central bank to provide directional credit to Evergrande, central enterprises to receive a reasonable price Evergrande Group's part of the industry, to help Evergrande defuse risks. When necessary, state-owned assets can buy part of shares and debt-to-equity swaps.

Evergrande Group should take measures to save itself as soon as possible. First of all, Evergrande Group's investors should take the initiative to assume responsibility in the enterprise crisis, represented by Xu Jiayin, make every effort to pay for the investment, give other investors, employees, owners, suppliers confidence, stable situation. Secondly, the management of Evergrande Group should optimize the capital structure as soon as possible, broaden the financing channels, improve the ability of capital management, reduce financial leverage, improve inventory turnover rate, accelerate the speed of asset liquidation, and overcome the debt crisis.

5. EMPIRICAL ANALYSIS AND ENLIGHTENMENT

5.1. Research design

5.1.1. Research design background

Since 2009, Evergrande, as the largest mainland enterprise in Hong Kong by market value, has successfully issued bonds in 2010, accumulating US $1.35 billion, with a brand value of more than 8 billion. Evergrande has become a well-deserved leading enterprise of China's private real estate enterprises. Since 2016, Evergrande has fully entered mineral water, agricultural grain and oil and other industries, and its debt jumped from 614.9 billion yuan at the end of 2015 to 1.16 trillion yuan in the same period. Since then, Evergrande has opened a highly leveraged trillion debt path. By the middle of 2021, Evergrande's total liabilities will reach 1.97 trillion yuan, and Evergrande's liabilities will increase by 1.36 trillion yuan in five years. It can be seen that Evergrande's debt expansion is a galloping road contrary to regulatory policies. Regulatory deleveraging and Evergrande's leverage finally led to the debt crisis in 2021. This paper aims to explore the impact of capital expansion by means of high financial leverage on the return on net assets by taking the financial data of Listed Companies in 2020 as a sample, setting the cash flow ratio, operating income growth rate and book to market value ratio as the control variables, and selecting the return on net assets as the dependent variable, in order to truly reflect the return level of shareholders' equity and effectively measure the efficiency of the company in using its own capital. Generally speaking, the higher the financial leverage ratio reflects the higher the interest expense, resulting in the lower ROE.

5.1.2. Sample selection and data source

The data of public financial disclosure information of A-share listed companies and other enterprise-related information in this paper are from wind and CSMAR guotai'an data system. Firstly, this paper selects the data of listed companies on Shanghai and Shenzhen A-share main board in 2020 as the research object. As of the completion time of this paper, the 2020 annual audit report is the latest annual report. Selecting the latest data will help to deeply understand the current situation of the general leverage ratio of Listed Companies in the domestic market; Secondly, considering the particularity of financial listed companies, this paper eliminates the data of financial companies; Third, the samples of St, st * or PT listed companies are excluded in this paper; Fourth, the extreme values of 1% and 99% quantiles of relevant indicators have been eliminated in this paper. 1046 sample companies in 2020 were finally selected.

5.1.3. Model setting and variable description

In order to test the correlation between the return on net assets and financial leverage, the following threshold model is set:

$$y_i = \beta_0 + \beta_1 FLR_i + \beta_2 Cashflow_i + \beta_3 Growth_i + \beta_4 BM_i + \varepsilon_i, \quad q_i \le \eta_{FLR}$$

$$y_i = \gamma_0 + \gamma_1 FLR_i + \gamma_2 Cashflow_i + \gamma_3 Growth_i + \gamma_4 BM_i + \varepsilon_i, \quad q_i > \eta_{FLR}$$

Among them, y_i represents the return on net assets of the i enterprise; FLR_i represents the financial leverage ratio of the i enterprise; q_i is the threshold variable of the i enterprise, η_{FLR} is the threshold value of FLR, and $I(\cdot)$ is the indicator function. When the threshold variable value is within the corresponding range, the function value is 1, otherwise it is 0; $Cashflow_i$ is the ratio of the company's cash flow to the company's market value $Growth_i$ represents the growth rate of the company's book value BM_i.

5.1.3.1 return on net assets (ROE)

Return on net assets, also known as return on equity, is the percentage rate obtained by dividing the company's after tax profit by net assets. This indicator reflects the return level of shareholders' equity. Unlike the company's stock price, it reflects the price difference of short-term market fluctuations. This indicator focuses on the ability of self-owned capital to obtain net income. It is the capital appreciation brought by enterprise profits from the perspective of long-term time, which is more stable and overall.

ROE = net profit / average common shareholders' equity

5.1.3.2 financial leverage ratio (FLR)

The data measurement of financial leverage is derived from the audited financial data publicly disclosed by Shanghai and Shenzhen A-share listed companies in their annual reports. Different from the equity ratio, asset-liability ratio and the ratio of long-term liabilities to long-term capital reflecting the company's debt financing ratio, the financial leverage ratio is selected as the comprehensive gross profit. The reason is that no matter how much the enterprise's operating profit is, the debt interest and preferred stock dividend are fixed. When the profit before interest and tax increases, the fixed financial expenses borne by each yuan of profit will be reduced accordingly, which can bring excessive profits to ordinary shareholders, Therefore, financial leverage affects the after tax profit of enterprises, and reflects the degree of liabilities and solvency of enterprises to a certain extent.

FLR = EBIT / operating profit

5.1.3.3 other control variables

5.1.3.3.1 cash flow ratio

Cash flow ratio refers to the ratio of earnings before interest, income tax, depreciation and amortization (EBITDA) divided by the sum of interest or principal and interest. This index reflects the ability of enterprises to obtain enough cash through operation to repay debts and fulfill commitments, which changes inversely with the enterprise's short-term solvency, that is, the higher the cash flow ratio, the better the enterprise's solvency; The lower the ratio, the worse the short-term solvency of the enterprise. This ratio is the core measurement index of the enterprise's short-term solvency, which helps to determine the correlation between the enterprise's short-term solvency and the return of shareholders' equity.

Cash flow ratio (cashflow) = net new flow from operating activities / total assets

5.1.3.3.2 growth rate of operating revenue

The growth rate of operating income refers to the ratio of the increase of operating income of an enterprise this year to the total operating income of the previous year. It is an important indicator to evaluate the growth status and development ability of an enterprise. This control variable can help this paper determine the relevant impact of enterprise growth and development potential on shareholders' equity return.

Growth rate of operating income = operating income of the current year / operating income of the previous year - 1

5.1.3.3.3 book to market ratio (BM)

Book to market ratio is a financial index for listed companies. It refers to the calculated ratio between the book performance of an enterprise and the value of its issued shares. Among them, the stocks with low book value have growth potential; Stocks with higher book value are generally considered to have investment value.

Book to market ratio (BM) = book value / total market value

5.1.4 descriptive statistics

The descriptive statistics of the sample data are shown in the table below

Table 5. descriptive statistics

VARIABLES	N	mean	sd	min	max
ROE	1,046	0.0235	0.417	-10.96	2.379
FLR	1,046	1.249	1.305	-11.83	21.84
Cashflow	1,046	0.0532	0.0693	-0.150	0.258
Growth	1,046	0.0500	0.405	-0.732	2.757
BM	1,046	1.445	1.592	0.0804	9.946

It can be seen from the table that the average return on net assets of 1046 A-share listed companies in Shanghai and Shenzhen in 2020 is 0.0235. At the same time, it can be found from the sample data that there are great differences in the return on net assets among A-share listed companies in different industries, with the maximum value of 2.379 and the minimum value of -10.96, which shows that there are great differences in the profitability of investors among listed companies operating stably in different industries in China. There are great differences in the financial leverage ratio of enterprises under different operating environments, which also reflects the huge differences in the financial leverage ratio of enterprises under different operating environments.

5.2. Enlightenment

5.2.1. Basic assumptions

Hypothesis 1: the level of financial leverage has a threshold effect on the return on net assets of listed enterprises.

The financial leverage ratio is an important indicator to measure the debt degree and debt repayment level of an enterprise. When the financial leverage ratio is low, the debt repayment pressure of the enterprise is small. At this time, the business motivation of the enterprise is stronger and the investors are more optimistic about the enterprise. However, the low debt level also means that the enterprise is small in scale and has a certain degree of uncertainty and individual dominant tendency in the business process, The rate of return on shareholders is relatively insensitive to financial leverage. When the financial leverage ratio is high, the debt level of the enterprise is higher and the operating pressure is greater. At the same time, it also reflects the large-scale effect of the enterprise to a certain extent. At this time, shareholders and upstream and downstream enterprises pay great attention to the debt level and solvency of the enterprise, and the revenue of the enterprise is closely related to the debt level.

Hypothesis 2: under the same other conditions, there is a negative correlation between financial leverage and return on net assets of listed enterprises.

Usually, large-scale enterprises, such as listed companies, pursue a high financial leverage ratio in order to leverage the expansion of new sectors and existing production levels through more loans, so as to achieve the scale effect of operation and reduce operating costs. However, high financial leverage also means that the debt level of the enterprise is high and the debt repayment pressure is large. It is a dangerous signal for investors, upstream and downstream enterprises, and internal companies, which will affect the operation level of the enterprise to a certain extent, such as the reduction of financing, supply, and demand.

5.2.2. Threshold model analysis

This paper uses *stata15.0* software analyzes the public disclosure data of 1046 A-share listed companies in Shanghai and Shenzhen in 2020. Through 300 times of bootstrap method, it tests whether the threshold effect of financial leverage on the return on net assets of listed enterprises exists and the number of thresholds and obtains the test results of threshold effect as shown in the table 6.

Table 6. the test results of threshold effect

parameter	numerical value
Number of Bootstrap Replications	2000
Trimming Percentage	0.15
LM-test for no threshold	52.6340792
Bootstrap P-Value	0.000

The results show that the results of the threshold effect test of financial leverage ratio (FLR) show that there is a single threshold in the model, and the single threshold is significant at the level of 99%. The double threshold and three thresholds are not significant. Therefore, it can be seen from the results that the financial leverage ratio is the threshold variable of the return on net assets of listed companies, and it is a single threshold variable. Under the assumption that the threshold effect of financial leverage is a single threshold effect model, the estimation results of threshold variables are shown in the table below.

Table 7. the estimation results of threshold variables

parameter	numerical value
Threshold Estimate	1.00142087
.95 Confidence Iterval	[0.96264588,1.10067576]
Sum of Squared Errors	142.58934
Residual Variance	0.137634498
Joint R-Squared	0.213684446
Heteroskedasticity Test (p-value)	0.803980276

The following table shows the estimation results of the threshold model under a single threshold.

Table 8. the estimation results of the threshold model under a single threshold

	q<=1.00142087		q>1.00142087	
	Coef.	P-value	Coef.	P-value
FLR	-0.0405^{**} (0.0186)	0.031	-0.00334 (0.00225)	0.139
Cashflow	4.450^{*} (2.392)	0.065	0.611^{***} (0.0678)	0.000
Growth	0.275^{*} (0.155)	0.078	0.0938^{***} (0.0155)	0.000
BM	-0.0841 (0.0759)	0.269	-0.00441 (0.00278)	0.114
_cons	-0.190^{**} (0.0737)	0.011	0.0431^{***} (0.00867)	0.000
N	166		880	
Prob > F	0.030		0.000	

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.2.3. Basic conclusion: maintaining a high financial leverage ratio will have a negative impact on the return on net assets, and this impact is more significant in enterprises with a relatively low financial leverage ratio

It can be seen from the results that according to the public disclosure data of 1046 A-share listed companies in Shanghai and Shenzhen in 2020, there is a threshold effect of high financial leverage on the return on net assets, which is consistent with the first original hypothesis in the previous article, and the threshold is a single threshold effect. In addition, when the financial leverage ratio is less than or equal to 1.00142087, it is negatively correlated with the return on net assets, and the strong correlation is 96.9%, which shows that the return on net assets of listed enterprises with relatively low financial leverage ratio is more sensitive to the level of liabilities. When the financial leverage ratio is greater than 1.00142087, it is also negatively correlated with the return on net assets, but the correlation is weak, which is 86.1%, indicating that the listed enterprises with relatively higher financial leverage ratio have weaker sensitivity to the level of liabilities. Therefore, the second original hypothesis is true.

To sum up, a high financial leverage ratio will have a significant negative impact on the revenue status of enterprises and the rights and interests of investors. This correlation is more significant in enterprises with relatively low debt levels, which also shows that the rapid expansion of enterprise capital, prying up its financial leverage to achieve scale expansion and form scale effect, Have a certain understanding of the negative effects of the double-edged sword of high financial leverage. However, in order to get rid of the more significant negative impact of low leverage on revenue, we can only continue to raise the financial leverage ratio in order to reduce the negative impact.

5.3. Enlightenment

This paper analyzes the financial indicators of Evergrande Group to see the causes of the crisis, analyzes the government's strategic choices from the perspective of game theory, and comes up with some suggestions.

5.3.1. Diversify carefully and try to focus on your core business

Diversification can effectively avoid the risk of enterprise management. Professional management is likely to be vulnerable to macroeconomic depression, resulting in the loss of the whole enterprise, or even bankruptcy. In diversified management, the enterprise will be scattered resources to different products or industries. That is "don't put eggs in one basket", which can avoid the weakness of an enterprise that has a single scope of business scope rely too much on a particularly volatile market. When enterprises suffer setbacks in a product or business field, they can make up for losses by a successful operation in other products or industries, so as to improve their anti-risk ability and minimize risk losses.

But the diversification usually requires the enterprises to invest a lot of manpower and material resources, financial resources, which will reduce the resources allocated to the original advantageous industries. If the synergies between the different businesses are relatively small, with weak promote each other, it can reduce the overall efficiency of resource utilization. This is undoubtedly a waste of the enterprise and is not conducive to development.

In addition, if enterprises adopt diversified operations, they will gradually expand the scale and increase the number of organizations. The original mechanism of division of labor, cooperation, responsibility, and balance of interests in enterprises is likely to be broken, and the difficulty of management coordination is greatly increased, and the complexity of management becomes particularly prominent.

Therefore, for enterprises, diversification must be cautious. In the absence of a clear goal and direction, they should try to focus on the main advantages of the main business, do a good job of solid basic skills, step by step and solid development. It is better for them to have a detailed plan for each step of the diversification strategy, not throw money around without investigation and research, and spend money on guaranteed projects.

5.3.2. Keep the debt ratio under control

High leverage is a double-edged sword and "high debt, high turnover" is the current situation of real estate enterprises. But for enterprises, debt is leverage. If there are good projects, especially in the golden period of the development of the real estate industry, more debt can enable enterprises to obtain greater growth points and enjoy tax advantages, which is conducive to better and faster development of them. However, if the debt ratio is too high, enterprises will be exposed to greater liquidity risk. Especially in the environment of stricter policy, high leverage often means high risk. Since 2015, the Chinese government has made a strategic deployment of "deleveraging" to prevent real estate debt risks and maintain the stability and security of the financial system.

Therefore, real estate enterprises, they must follow national policies, actively reduce the debt ratio, make reasonable use of leverage management, and improve their profitability and ability to steady development.

5.3.3. Balance development speed, a reasonable choice of mode

For enterprises, a good balance of development speed, not blind expansion, is conducive to the steady development of enterprises. In the period of economic upswing and golden development, rapid development is generally a good thing, which can make the scale of enterprises rapidly larger, so as to make more profits. However, if the development speed is too fast to keep up with the management, or blind expansion in the economic downturn cycle, it will be very dangerous to the enterprise. Real estate enterprises should always pay attention to the changes in industrial policies, scientifically anticipate the development situation and grasp the development direction, balance the development speed, avoid systemic risks, and operate steadily.

5.3.4. Continue to push forward financial reform, reduce financing costs and promote sound business operations

The structure of China's financial market is single. Once the indirect financing channels dominated by banks are blocked, it is difficult for enterprises, especially real estate enterprises, to obtain a large number of construction funds from the direct financing channels such as the stock market. At present, the main financing channels of real estate enterprises are banks and other loans. In recent years, the financing cost of indirect financing has been rising year by year, which has pushed up the risk of real estate enterprises, and thus the risk of the overall economy. The government should continue to deepen the construction of a multi-tiered capital market system, help enterprises of all sizes expand financing channels, effectively reduce financing costs, and promote sound and stable economic development.

For the government, if it really wants to avoid the situation of some companies getting bigger and finally falling into financial distress, one way is to limit the size of relevant enterprises through policies and increase the credibility of the government's moral declaration. Another way is to encourage the steady operation of enterprises and establish observable monitoring indicators to promote the steady operation of companies. For enterprises, they should try their best to ensure normal operation and steady development and increase business credit, so as to avoid some restrictive policies. At the same time, in the selection of high-risk projects, they should scientifically evaluate the possibility of bankruptcy, carefully choose a new project, strive to maximize the interests of both sides.

6. CONCLUSIONS

The report Evergrande Group submitted to the government in 2020, showed that it was unable to repay the huge debt, almost leading to a substantial default and bringing great potential risks to the whole market, which had to arouse people's thinking. Based on detailed learning about the background of how the Evergrande group got into a financial crisis, we analyzed the cause of the financial crisis and coping strategies on the basis of other companies through a literature review. Through the Evergrande group of financial indicators, we also studied its own financial crisis causes and used regression analysis to prove that the high leverage has a negative impact on enterprise operation robustness indeed. In addition, this paper constructed a game model to analyze how the government should use policies to promote enterprise operation and how the government and

Evergrande can work together to get out of difficulties. Finally, the enlightenment of the Evergrande event to other enterprises is given.

The results showed that the main reasons for Evergrande's financial crisis are its blind diversification, excessive leverage, poor cash flow management ability, and the objective factor is the tightening of macro policies. At the same time, the best way for Evergrande to get out of the financial crisis is to try to save itself, of course, without the help of the government. Last but not least, other enterprises should take heed of the warning, do not blindly diversify, balance the speed of development, strengthen the ability to predict the economic cycle and policies, and at the same time strengthen the corporate governance ability to improve the company's ability to resist risks. On the other hand, if the government wants to avoid such situations in the future, it needs to make good use of policy tools to promote enterprises to improve their business credibility and help them to operate steadily.

Due to the limited time factor and the author's own level, more detailed relevant data from both the government and Evergrande have not been fully collected. The game model constructed is relatively simple and the analysis needs to be improved. In the future, I hope to further optimize the game model and work out solutions on the basis of in-depth study of game theory and other relevant accounting knowledge, and finally draw some more general conclusions.

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