

# Analysis of Solvency of A-Share Listed Companies in China's Real Estate Industry

Hongxia Hu\* Yuting Wang

School of Management, Shandong University of Technology, Zibo, Shandong, 255000, China

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## ABSTRACT

The real estate industry is a capital-intensive industry and capital has become a particular concern for real estate enterprises. For a long time, China's real estate enterprises rely on high-leverage development and carry out high-debt and high-risk operations. The solvency of real estate enterprises has been the focus of stakeholders' attention. In August 2020, China's regulatory authorities introduced new financing regulations for real estate enterprises. They set up "three red lines," which brought real estate enterprises' solvency into focus once again. This article takes A-share listed companies in China's real estate industry as an example, analyzes and evaluates its debt solvency, and gives suggestions based on new policies and regulations, hoping to provide specific references to the enterpriser's manager and external decision-makers.

## 1. Introduction

As one of China's economic development pillar industries, the real estate industry's development has crucial significance to China's economic growth. The stability of the real estate industry is always affecting the national economy and people's livelihood. The development of the real estate industry will also be affected by more macro-control adjustment policies. In recent years, the Chinese government has emphasized the policy orientation of "housing not for speculation." It has deployed multiple regulatory measures from various aspects such as finance, taxation, public finance, and supervision to guide the real estate industry's steady and healthy development. In recent years, the Chinese government has emphasized the policy orientation of "housing not for speculation." It has deployed multiple regulatory measures from various aspects such as finance,

taxation, public finance, and supervision to guide the real estate industry's steady and healthy development. In August 2020, China's regulatory authorities issued new financing regulations which manage real estate enterprises in the four levels of "red, orange, yellow, green" for real estate enterprises. They also set up "three red lines" (Asset-liability ratio greater than 70% after excluding advances; Net debt ratio greater than 100%; Cash short-debt ratio is less than double) to control the growth of enterprise loans. With the tightening of financing policies in China's real estate industry, the high debt ratio and solvency of real estate enterprises have become the sharp focus once again. Simultaneously, technological innovation, industrial development, scarcity of resources, and macroeconomic uncertainty (such as the novel coronavirus epidemic in 2020) have put the real estate industry under tremendous pressure for survival and development. We must analyze the real estate industry's solvency to

\*Corresponding Author:

Hongxia Hu,

School of Management, Shandong University of Technology, Zibo, Shandong, 255000, China;

Email: hongxiahu1971@sina.com

better respond to complex internal and external situations in this context. This article takes 2010-2019 listed companies in the A-share real estate industry as a research sample. It conducts a descriptive analysis and evaluation of their debt-paying ability, giving suggestions based on new policies and regulations to bring some reference enterpriser's manager and external decision-makers.

## 2. Contents of Solvency Analysis

Solvency is the ability of an enterprise to repay all kinds of debts. Liability, is refers to the enterprise from past transactions or events which are expected, will lead to the outflow of economic benefits from the enterprise 's current obligations including various loans, bonds, payables and items received in advance etc. The solvency of an enterprise is related to the survival of the enterprise. If an enterprise cannot repay its due debts, it may be taken over by creditors or judged bankrupt by the court. It can be seen that solvency is the basis of other capabilities. And it will directly affect the company's operating capacity, profitability, and development capacity. It is an important issue that enterpriser's manager, investors, and creditors are all concerned about extremely.

Seen from different angles or different analytical purposes, the content of solvency analysis is not the same. Different industries (such as the real estate industry), different scales (such as large enterprises), and different types of enterprises (such as state-owned enterprises) have various methods of business. Besides, the focus of the analysis of debt solvency is also different. The real estate industry is a capital-intensive industry with a long project development period, including project approval, planning and design, site selection and land acquisition, project construction, merchandising, property management, etc. Most of the listed companies in the industry implement vertical integration strategies. The business covers diversified business sectors, integrated service sectors, and real estate finance platforms. According to the length of repayment time, the corporate liabilities involved in different links can be divided into current liabilities and non-current liabilities. The analysis of debt solvency in this article mainly includes short-term solvency analysis and long-term solvency analysis.

## 3. Analysis of Short-term Solvency

Short-term solvency is also generally called solvency, which reflects an enterprise's ability to repay current liabilities. It is mainly through the realization of existing assets to repay the short-term debt due. Whether an enterprise can repay its short-term debt or not depends

on how much short-term debt it has and how much liquid assets it can repay. Therefore, short-term solvency analysis is based on the analysis and comparison of current assets and current liabilities<sup>[1]</sup>.

According to the balance sheet, you can understand the scale of a company's current assets and current liabilities. In general, the larger proportion of existing assets, the more vital liquidity of enterprises. However, whether the internal structure of existing assets is reasonable will also affect its actual solvency. For example, accounts receivable may be hard to pay back, poor customer financial conditions, etc. These causes may lead to a long period for the account, bad debts which cannot be realized. Inventory may have low turnover speed and inferior liquidity due to technology, quality, market, and other reasons. Therefore, the analysis of accounts receivable turnover and inventory turnover is also essential in analyzing enterprise short-term debt solvency. The scale of current liabilities is also an important factor that affects an enterprise's short-term debt solvency. It shows the current debt burden that the company incurred whether the term of payment of various liabilities in current liabilities will have a significant impact on the company's short-term solvency fixedly. At the same time, we also need to pay attention to the internal structure of current liabilities. For example, advance collection items are current liabilities that are repaid with goods or services. Short-term loans, taxes payable, and other items are current liabilities that must be repaid in cash. Different current liability projects have different requirements for the liquidity of assets.

The indicator best reflects the company's short-term solvency based on a comparative analysis of the company's current assets and current liabilities. There are two measurement methods: one is to compare the stock of short-term debt and debt-repayable assets; the other is to compare the cash required for debt repayment and the cash flow generated by operating activities. There are also two calculation methods: absolute index (working capital) and relative index (current ratio, quick ratio, cash ratio, cash flow ratio).

Current assets minus current liabilities are the company's working capital, reflecting its ability to provide cash, repay short-term debts, and maintain normal operations in current and future production and operations. The enterprise-scale limits the absolute number index analysis, so the analysis uses more relative number indicators. The ratio of working capital to current liabilities owned by a company is the current ratio, reflecting the company's existing assets to be used to repay existing assets when the short-term debt is due. When analyzing the current ratio, compare the company's

calculated data with the average value of the same industry and the company's historical data. However, this comparison does not explain why the current ratio is high or low usually. It is necessary to analyze current assets and current liabilities, and operational factors to determine the high or low reason. Under normal circumstances, the business cycle accounts receivable and inventory turnover speed are important factors that affect the current ratio. Since the current ratio reflects an enterprise's static status at a certain point in time, it is easy for an enterprise to form a ratio that does not reflect the true operating conditions through some temporary account processing. Therefore, when analyzing the current ratio, we should pay attention to the current assets and current liabilities period before and after business accounting analysis. If the change is large, it should be understood whether the company has carried out "accounting fraud".

In order to eliminate the impact of poor liquidity current assets such as inventories, the quick ratio can partially compensate for the shortcomings of the current ratio indicators. The quick ratio is used to measure the ability of a company's current assets to be realized to repay current liabilities immediately. Quick assets refer to assets that can be realized almost to pay off current liabilities immediately, including monetary funds, trading financial assets, receivables, and so on. Non-quick assets need to wait for an uncertain time to be converted into cash of an uncertain amount, so the short-term debt stock ratio calculated by subtracting non-quick assets from current assets is more credible. When analyzing the quick ratio, it is necessary to notice that the calculation caliber of quick assets may be inconsistent, which affects the comparability and applicability of the indicators. The analysis of the quick ratio should also be carried out in conjunction with the period of the collection of accounts receivable. If the company has low quality of receivables and the seek liquidity, the receivables should be deducted from the quick assets to analyze the cash ratio, that is, the ratio of cash assets (monetary funds, money equivalent, securities) and current liabilities. The cash ratio can accurately reflect the company's direct solvency. However, because the relative idleness of cash assets will reduce the profitability of enterprises, enterprises are not encouraged to retain excessive cash assets.

The debt repayment of an enterprise is a dynamic process, so a dynamic index reflecting the short-term debt repayment ability of the enterprise can be constructed based on the flow data. Cash flow current liabilities ratio is the ratio of cash flow from financing activities to average current liabilities. Cash maturity liabilities ratio is the ratio of cash flow from financing activities to current maturity

liabilities. The size of cash flow from financing activities reflects the ability of an enterprise to generate cash during an accounting period. It is the basic source of funds for repaying the company's due debts. At the same time, it is also the operating results of current accounting year which is different from. So when using the flow indicator, it is necessary to consider the factors that affect the cash flow changes of operating activities in the next fiscal year.

#### **4. Analysis of Long-term Solvency**

Long-term solvency is the ability of an enterprise to repay non-current liabilities. Because the long measured time and the complex factors involved, it is difficult to make reliable predictions about the future flow of funds. Therefore, the analysis of long-term debt solvency is mainly from the scale and structure of assets, profitability and capital flow. Among them, assets are the ultimate material guarantee for debt repayment, profitability is the guarantee of operating income for debt repayment, and flow of funds is the payment guarantee for debt repayment.

Asset-liability ratio is an important indicator that reflects the solvency of an enterprise. It is the ratio of liabilities to assets, reflecting the degree of guarantee of the repayment of debts by assets and the degree of support of debts to asset funds. Interest-bearing liabilities operation has a financial leverage effect, but the financial risk is high, so operators should maintain an appropriate ratio of liabilities to assets, especially the ratio of debenture with interest. When analyzing the ratio of Asset-liability, we should elimination long-term deferred expenses, deferred income tax which are non-realizable asset items, so as to reflect the company's debt level and solvency more truly. In addition, we should pay attention to the correct classification of liabilities and owner's equity and we also should attention influencing factors such as the contingent debt ratio. Non-financial factors are also content that cannot be ignored in the analysis. Not all liabilities are reflected in the financial statement. For example, the reputation of solvency, unrecorded contingent liabilities, etc. will also affect the solvency of the company, and even have a great impact. We should understand the situation of these aspects in the analysis. The same is a measure of long-term debt solvency. Asset-liability ratio reflects the burden of an enterprise, while the shareholder equity ratio and equity ratio measure the degree of enterprise debt guarantee. The measurement of intangible assets lacks a reliable basis and generally cannot be used as a resource for debt repayment. When analyzing the above indicators, it can be conservatively calculated and deducted accordingly.

Times interest earned is the ratio between EBIT and interest cost, and it is an indicator of the enterprise's ability to pay interest on borrowings. It should be noted that when the interest expense is negative (the income of interest is greater than the expense of interest), the denominator of this indicator needs to be filtered to exclude the amount of interest income. Cash flow to debt ratio is to compare cash flow with liabilities to evaluate long-term solvency, which is means the extent to which liabilities paid by cash generated from operating activities. Of course, any single index has one-sidedness and limitation, and cannot fully and comprehensively reflect the solvency of the enterprise. In the analysis, the index must be comprehensively evaluated and the off-balance

sheet influencing factors must be considered [2].

### 5. Descriptive Statistical Analysis of Debt Paying Ability of A-Share Listed Companies in Real Estate Industry

According to the China securities regulatory commission's industry classification guidelines, the following is a sample of China's Shanghai and Shenzhen-listed real estate companies (industry code is K70) that is screened annually to form a sample [3]. Table 1 is a descriptive statistical analysis of the annual solvency indicators of the sample companies result. The data come from the states taian database, and the statistical software is Stata13.

**Table 1.** Descriptive statistics of short-term solvency analysis indicators for the real estate industry from 2010 to 2019

		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Current ratio	Mean	2.07	2.12	2.19	2.13	2.37	1.95	2.04	2.14	2.01	2.16
	Standard error	1.48	2.03	2.49	1.00	3.37	1.08	1.25	2.57	1.08	1.22
	Minimum	0.64	0.48	0.54	0.25	0.31	0.09	0.03	0.26	0.72	0.08
	Median	1.62	1.63	1.75	1.95	1.86	1.72	1.81	1.66	1.81	1.84
	Maximum	10.20	20.94	28.10	8.30	35.02	6.67	11.41	27.56	9.91	9.57
Quick ratio	Mean	1.02	1.08	1.06	0.89	1.12	0.61	0.73	0.85	0.72	0.74
	Standard error	1.43	2.05	2.53	0.82	3.40	0.63	1.08	2.02	0.89	0.58
	Minimum	0.09	0.06	0.16	0.18	0.08	0.05	0.01	0.08	0.06	0.07
	Median	0.53	0.58	0.63	0.64	0.48	0.41	0.46	0.46	0.45	0.60
	Maximum	9.37	20.73	27.76	6.52	34.88	4.79	11.41	20.56	7.04	3.15
Cash ratio	Mean%	41.50%	50.00%	52.10%	51.40%	58.00%	29.50%	43.40%	49.60%	37.10%	41.40%
	Standard error	66.20%	98.10%	109.40%	61.70%	167.10%	33.90%	98.30%	176.00%	50.60%	41.00%
	Minimum%	0.12%	0.42%	0.89%	6.13%	1.28%	0.60%	0.22%	0.63%	0.21%	0.27%
	Median%	20.90%	23.20%	26.70%	32.60%	24.50%	19.30%	22.20%	21.50%	19.20%	31.10%
	Maximum%	485.60%	744.40%	909.20%	469.60%	1525.00%	183.20%	1079.00%	2040.00%	248.00%	268.50%
the ratio of cash to current debts	Mean	0.04	0.10	-0.04	0.08	-0.03	-0.10	-0.10	-0.01	-0.07	-0.07
	Standard error	0.37	0.60	0.38	0.37	0.57	0.34	0.53	0.32	0.44	0.40
	Minimum	-1.86	-1.71	-2.54	-1.43	-5.94	-2.05	-4.15	-2.05	-3.77	-1.37
	Median	0.04	0.08	-0.01	0.12	0.02	-0.05	-0.04	0.01	-0.05	-0.06
	Maximum	2.28	5.42	1.31	0.78	0.69	0.61	1.28	1.15	1.16	1.39
Business cycle	Mean	1900	1900	2100	2800	2200	2800	2100	2500	2500	2000
	Standard error	2000	2200	5500	12000	3300	8200	3900	5500	4300	3000
	Minimum	3.33	0.74	8.54	12.11	1.73	3.36	11.13	3.43	25.27	16.50
	Median	1500	1400	1300	1100	1400	1400	1400	1600	1700	1300
	Maximum	18000	16000	59000	140000	32000	77000	41000	63000	32000	29000

		2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Inventory turnover period	Mean	1900	1800	2100	2800	2300	2900	2200	2500	2400	2000
	Standard error	2000	2200	5600	12000	3300	8300	4000	5600	3900	3000
	Minimum	0.23	0.04	0.32	0.29	8.15	8.45	9.12	10.69	0.17	0.95
	Median	1500	1300	1300	1100	1400	1500	1400	1600	1700	1200
	Maximum	18000	16000	58000	140000	32000	76000	41000	62000	28000	29000
asset-liability ratio	Mean%	63.10%	63.80%	63.70%	63.90%	63.50%	63.00%	62.00%	63.30%	62.80%	68.60%
	Standard error	21.00%	19.80%	19.00%	18.00%	19.30%	19.00%	19.40%	21.30%	18.30%	74.20%
	Minimum%	9.59%	9.13%	8.76%	9.75%	2.82%	15.80%	1.61%	2.51%	10.60%	12.60%
	Median%	68.60%	66.00%	64.90%	66.30%	66.40%	67.40%	66.80%	66.00%	66.00%	65.20%
	Maximum%	94.70%	98.40%	94.00%	95.60%	113.60%	98.80%	92.60%	176.50%	125.20%	864.20%
the ratio of cash to debts	Mean%	2.93%	5.44%	-3.10%	4.81%	1.19%	-7.66%	-6.67%	0.81%	-4.88%	-3.79%
	Standard error	19.70%	28.70%	23.60%	33.80%	18.00%	25.20%	36.50%	18.90%	26.50%	31.10%
	Minimum%	-85.30%	-162.20%	-114.10%	-172.10%	-70.60%	-177.90%	-242.20%	-105.30%	-148.50%	-122.00%
	Median%	2.83%	5.35%	-0.79%	7.20%	1.12%	-3.83%	-2.86%	0.94%	-4.49%	-3.72%
	Maximum%	62.10%	142.10%	71.40%	85.30%	50.80%	44.80%	74.20%	77.50%	110.10%	102.60%
Cash to debt ratio	Mean	4.01	1.96	-12.00	-8.34	1.95	-0.02	1.27	-3.75	-1.00	-4.44
	Standard error	28.35	9.41	150.00	270.00	36.64	13.87	22.20	46.96	14.57	35.38
	Minimum	-57.00	-12.00	-1200.00	-2600.00	-190.00	-53.00	-85.00	-490.00	-76.00	-260.00
	Median	0.20	0.31	0.01	0.88	0.07	-0.26	-0.30	0.10	-0.39	-0.62
	Maximum	240.00	72.77	740.00	770.00	260.00	110.00	190.00	54.04	110.00	120.00
Interest coverage ratio	Mean	12.74	8.53	15.49	12.80	69.70	26.52	24.91	31.06	88.74	11.02
	Standard error	30.82	14.83	42.42	37.07	530.00	96.33	51.94	100.00	640.00	160.00
	Minimum	-9.37	-41.00	-10.00	-140.00	-130.00	-25.00	-9.32	-35.00	-1200.00	-1500.00
	Median	5.98	6.01	6.24	5.38	4.40	5.62	7.60	8.91	9.28	10.64
	Maximum	220.00	110.00	430.00	320.00	5300.00	780.00	340.00	820.00	6400.00	230.00

In terms of short-term solvency indicators, the average current ratio is around 2, and the average speed ratio is on the rise, about 1 in recent years. The short-term solvency of some listed companies is relatively low. The average cash ratio has shown a downward trend in recent years, but they are all greater than the empirical value of 20%, indicating that the company's direct payment ability will not have much problem. But the median and average cash ratio is quite different, indicating that the industry companies vary greatly. The inventory turnover period and the operating cycle are almost the same, indicating that the liquidity of inventory is a key factor affecting the short-term solvency of real estate enterprise. The average value of cash flow and current debt ratio is mostly negative, indicating that the cash generated from operating activities in the current period can not meet its own production

and operation activities, nor can it meet the needs of debt repayment. The company must obtain cash increments in other ways or rely on cash or cash equivalents. In order to ensure the timely payment of debts.

In terms of long-term solvency indicators, the average asset-liability ratio is around 63%, the median is greater than the average, and the maximum is close to 100%, which is consistent with the operating characteristics of China's real estate industry with high debt and leverage. According to data from the 2019 annual report of China's listed real estate enterprises, the "three red lines" stepping rate of TOP100 listed company real estate companies released by Crane shows that nearly half of China's top 100 real estate enterprises are within the restricted range. The mean and median of the times interest earned are both greater than 1, indicating that the income from production

and operation of the enterprise can meet the interest payment needs. The negative value of cash flow debt ratio and cash maturity debt ratio indicate that relying solely on cash flow from operating activities is far from satisfying the need for debt repayment.

In summary, our country's real estate industry has a high asset-liability ratio from 2010 to 2019, which is related to the rapid development of the industry. In the past three decades, China's real estate industry has maintained rapid growth in the context of the government's macro-control policies stimulating domestic demand to promote economic growth and China's urbanization. As a capital-intensive industry, real estate enterprises rely on land dividends and financial dividends to pursue high profits through high leverage and high liabilities expansion. At the same time, many high-indebted companies cannot support the cost of borrowing because of their operating efficiency. They are caught in a vicious circle of borrowing new debts to repay old debts. If the capital structure can not change in time, companies will face bankruptcy. According to statistics disclosed by the Chinese judicial system, after experiencing the impact of the novel coronavirus epidemic in 2020 and years of management and control of "housing not for speculation", the number of bankrupt real estate enterprises has reached 208 in the first half of 2020. In order to reduce the financial risks of the real estate industry, China's real estate industry's financing regulatory policies have continued to tighten. In 2019, the industry's average asset-liability ratio has dropped to 63.10%, and short-term debt solvency indicators have reached more than empirical values, which means that policy regulation is effective. It reduces the power of blind expansion and diversification of real estate enterprises, and the real estate industry gradually returns to a rational, high-quality and healthy expansion and development path. Marked by the four-level management and "three red lines" financing regulations promulgated in August 2020, China's real estate industry has entered a management dividend stage. The industry should adjust its structure to upgrade the industry and the industry chain, and actively promote the conversion of new and old kinetic energy conversion. Mergers and integrations between enterprises are also conducive to the structural optimization and marketization of the entire industry. For enterprises, "reducing debt" has become a major event for most highly leveraged companies. On the one hand, companies increase cash flow through equity financing, and on the other hand, they reduce debt

and optimize debt structure through packaged sales of assets. The differentiation of the real estate industry's competitive landscape has further intensified, which puts higher demands on the management capabilities of operators. Enterprises should invest rationally, focus on the improvement of investment quality and efficiency, accelerate inventory turnover and sales return, rationally optimize asset structure, research and develop advanced technology, and focus on innovation and development<sup>[4]</sup>.

## 6. Conclusions

This article takes 2010-2019 listed companies in the A-share real estate industry as a research sample, conducts a descriptive analysis and evaluation of their debt paying ability. The study found that real estate industry in China has a high overall debt ratio and high financial risks. And the industry competitive landscape is differentiated, and the development of various companies in the industry is unbalanced. In short-term debt paying ability, the main influencing factor is inventory turnover; the net cash flow generated from operating activities cannot meet the company's debt repayment needs. The real estate industry is extremely sensitive to the funds environment and financing supervision policies. Under the multiple policies of the Chinese government's effective control, the financial risks of the real estate industry have been effectively controlled. Under the background of gradually tightening financing supervision, enterprises should speed up capital withdraw, reduce leverage and debt, and optimize asset and capital structures.

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