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A Systematic Analysis of the Quality of Profit Growth in Chinese Construction Firms

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Abstract. China is a country with a large land area and a large population, but the infrastructure is relatively poor. After decades of hard work by the Chinese people, they increased dramatically, and the infrastructure has improved significantly. China now has the world's largest range of motorways and high-speed railways. At the same time, thirty years ago, China's per capita residential space was relatively small. Study the quality of profitability of China's construction companies in the golden period through the most representative listed construction companies in China in the last 10 years, and it hopes to study the characteristics of the construction industry and hope to understand some deeper issues through this. The research subjects selected for this report are all public companies listed on the Shanghai Stock Exchange or the Hong Kong Stock Exchange in China. The following three factors have contributed to this improvement: the massive construction of speed railway companies and the construction of high-speed railways. Vigorous development of the real estate industry formed the golden period of China's first three decades of rapid development of construction companies.

1 Introduction

Study the quality of profitability of China's construction companies in the golden period through the most representative listed construction companies in China in the last 10 years, and it hopes to study the characteristics of the construction industry and hope to understand some deeper issues through this. The research subjects selected for this report are all public companies listed on the Shanghai Stock Exchange or the Hong Kong Stock Exchange in China. They are also Fortune 500 companies: China Railway Construction (601186), China Railway (601390), China Communications Construction (601800), and China Construction (601688) [1].

2. Description of Chinese Construction Firms

China Railway Construction (601186, 01186) Introduction: The company is the world's most powerful scale of the mega integrated construction group, ranked 43rd in the world's top 500 in 2023. The main business includes engineering contracting business, accounting for 83.88%; material logistics and other business, accounting for 8.36%; real estate development business, accounting for 3.96%; industrial manufacturing business, accounting for 2.25%; planning and design consulting business, accounting for 1.55%;

China Railway (601390, 00390) Profile: The company is one of the world's largest multi-functional and integrated construction groups and ranked 39th among the world's top 500 companies in 2023. It is able to provide customers with a full range of engineering and industrial products and related services. The company is an industry leader in infrastructure construction, investigation, design and consulting services, and engineering equipment and parts manufacturing. Major businesses include infrastructure construction, 85.88%; other businesses, 6.75%; property development, 3.54%; equipment manufacturing, 2.25%; and design and consulting services, 1.58%.

The research methodology of this report: mainly through the analysis of these listed companies, the level of income from the main business in the past ten years, accounts receivable, the number of bad and doubtful debts, changes in the level of gross profit margins, changes in the level of net profit, rate changes in the level of total profit size, etc., in order to comprehensively analyze China's representative architectural companies, in the last 10 years of rapid development of the period of changes in the corporate profitability, and the quality of the effective winnings.

There are a lot of financial data of listed companies, and focus on choosing to analyse these indicators for the following reasons: Firstly, to analyse the size of the market space of the overall industry and the overall market space through the growth of the main business income of the leading listed companies [2]. Second, to analyse the strong and weak position of listed companies in the whole industry chain through the changes in the amount and size of accounts receivable, and to analyse the management level of listed companies through the

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changes in the number of accounts receivable. Third: to analyse the average level of the industry, as well as the quality of profitability and the management level of the enterprise through the changes in the number and size of bad and doubtful debts. Fourth: Through the gross profit margin of how many changes are needed to analyse the ease of entry into the industry, the relative monopoly, and the industry boom index? It is five: through the net interest rate of the size of the changes to analyse the ease of profitability of enterprises and the level of corporate management, but also according to the law of change to analyse the industry's boom index. Sixth: the total profit can analyse the overall profitability of enterprises, but also, according to the law of change, to analyse the industry boom index, the total amount of change can analyse the industry's market space size. In short, through the above key indicators, we can comprehensively analyse: the listed companies in the industry's strengths and weaknesses, the industry boom index, the management level of enterprises, the development of the industry space, the intensity of competition in the market, the net profit of enterprises, such as the gold content [3]. These key indicators are also enough for us to see an industry and a listed company, which is also why we choose these indicators among many financial data.

The main business of China Railway Construction and China Railway are highly similar, so let's compare and analyse these two companies first.

China Railway Construction (601186) The company is one of the world's most powerful, large-scale, integrated construction groups. The main business includes engineering: data from the Shanghai Stock Exchange Company annual report (Table 1) and China Railway (601390) Data from the annual report of the Shanghai Stock Exchange Company (Table 2).

Table 1. The Shanghai Stock Exchange company annual report Unit: billion yuan

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenue	5867.7	5933.03	6005.39	6293.27	6809.81	7301.23	8304.52	9103.25	10200	11000
Receivable	877.98	1155.29	1280.28	1334.28	1465.04	993.82	1121.39	1256.96	1556.77	1412.3
Bad debt	14.31	15.83	35.65	6	44.7	44.72	50.11	37.25	98.66	79.39
Gross profit rate	10.15%	10.85%	11.45%	9.21%	9.24%	9.78%	9.64%	9.26%	9.6%	10.09%
Net profit ratio	1.78%	1.95%	2.23%	2.36%	2.48%	2.72%	2.72%	2.82%	2.87%	2.9%
Net margin	103.45	117.35	126.45	140	160.57	179.35	201.97	223.93	246.91	266.42

Table 2. China Railway Data from the annual report of the Shanghai Stock Exchange Company Unit: 100 million yuan

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sales eevenue	5604.44	6125.59	6241.04	6433.57	6933.67	7404.36	8508.84	9747.49	10700	11500
Receivables	1230.9	1458.31	1316.6	1405.32	1111.27	1059.09	1037.12	1078.77	1221.2	1223.38
Bad debt	6.88	25.74	34.69	38.79	92.44	82.01	60.34	80.54	79.70	61.28
Gross profit rate	10.82%	10.49%	9.39%	8.91%	10.34%	8.97%	10.69%	9.86%	10.03%	10.38%
Net profit ratio	1.8%	1.75%	1.9%	1.99%	2.06%	2.36%	2.99%	2.81%	2.85%	3.04%
Net margin	93.75	103.6	122.58	125.09	160.67	171.98	236.78	251.88	276.18	312.76

3 Research and analysis: China Railway Construction and China Railway

The main revenue grew in 10 years: 87.46 percent and 105.19 percent, respectively. The company's net profit increased by 157.53% and 233.61%, respectively, in 10 years.

From China Railway Construction and China Railway's main revenue and proportion of analysis: The two companies' main business and industry similarities are relatively close, but China Railway Construction's main business revenue and total net profit growth are weaker than China Railway's.

3.1 Analyzes the reasons for the difference

After analyzing the reasons for the above differences, we can see that the receivables of China Railway Construction with increased business are higher than the magnitude of China Railway. Secondly, the growth rate of the main revenue of China Railway Construction is lower than that of China Railway. Thirdly, the net interest rate of China Railway Construction is slightly lower than that of China Railway for a long time.

After research and analysis, the accounts receivable with the company's business growth and growth may be a relatively normal phenomenon in this industry, but too high accounts receivable will give the company a greater risk of bad debts and greater financial costs, which will give the company's net profit will bring greater losses and potential risks. Although both companies are Chinese state-owned enterprises and are the world's top 500 enterprises, from these three financial indicators, China Railway's management efficiency and profitability are significantly stronger than China Railway Construction.

At the same time, analyse the two companies, hoping to better understand the industry according to 10 years of long-term gross profit margins. Find that the long-term gross margins of both companies are around or below 10% over the 10-year period. Let's look at the long-term net margins of the two companies over a 10-year period. The long-term net margins of both companies over a 10-year period are only around 2%. It is relatively reasonable for a great company to maintain a gross margin of around 30% if it is to remain competitive over the long term. But these two companies 10 years are very low gross margins and analyse the industry and the company's conclusions, mainly the following two points: First, the overall competition in this industry is still very fierce, and the two companies' competitive advantage may come mainly from the Chinese people's hard work and demographic advantages, as well as the spirit and tradition of selling more for less. Second, at the same time, check the China Railway and China Railway Construction website lists some of the best projects, such as the Qinghai-Tibet Railway. The construction of these projects is still quite difficult, and there is also quite high technical content [3]. The gross profit margin of China Railway Construction is still only about 10%, and Europe, the United States, and other large enterprises with higher gross profit margins often more than 50%) and net interest rate levels often more than 20% gap is still large. Chinese enterprises are still in the world's industrial chain division of labor in the middle and lower reaches. Third: for companies with considerable technical difficulties, up to 10 years of gross profit margin of only about 10%, net profit of only about 2%, and there may also be a huge risk of bad and doubtful debts and other companies, with the passage of time, the company itself will also form a competitive barrier. Fourth, construction is not a particularly good industry; it is difficult to make money, is high risk, and has strong technical requirements [4,5]. Fifth, some construction jobs in the construction industry may require a very high level of skill. But at the same time, most building construction companies do not have particularly high requirements, too low barriers to entry, in general, pulled down the construction of gross profit margins and net interest rate levels.

This study analyses two other Fortune 500 construction companies in China.

China Jiaotongjian (601800, 01800) Profile: The company is China's leading transport infrastructure enterprise, the world's largest port, highway, and bridge design and construction company; the world's largest dredging company; China's largest international engineering contracting company; China's largest highway investor with the world's largest fleet of construction vessels, ranked 63rd of the world's top 500 in 2023. Major businesses include infrastructure construction business, accounting for 84.55%; dredging business, accounting for 7.12%; infrastructure design business, accounting for 5.06%; and other businesses, accounting for 3.27%.

China Construction (601668) Profile: The company is one of the investment and construction groups with the most recent professional development, the earliest market-oriented operation, the highest degree of integration, and the largest global scale in China, and is one of the most powerful investors in China, and ranked 13th among the world's top 500 enterprises in 2023. Its main investment directions are in the fields of property development, financing and construction, and comprehensive urban construction. China Construction is the world's largest engineering contractor. Its main businesses include building construction, accounting for 65.17 percent; infrastructure construction and investment, accounting for 20.98 percent; real estate development and investment, accounting for 11.46 percent; survey and design, accounting for 0.47 percent; and other businesses, accounting for 1.92 percent. China Communications Construction (601800) Data from the annual report of the Shanghai Stock Exchange Company is shown in Table 3, and Table 4 shows China Construction (601668) data from the annual report of the company on the Shanghai Stock Exchange.

Table 3. China Communications Construction Data from the annual report of the Shanghai Stock Exchange Company Unit: 100 million yuan

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Revenue	3324.87	3666.73	4044.2	4317.43	4828.04	4908.72	5554.46	6272.86	6858.31	7202.75
Receivable	587.37	599.54	638.46	834.37	680.45	834.55	961.14	1024.21 .	975．6 4	1038.86
Bad debt	18.71	13.01	43.09	44.47	56.93	27.93	44.51	56.50	74.48	99.76
Gross profit rate	13.03%	13．61 %	15.2%	14.9%	13.97%	13.49%	12.76%	13.02%	12.52%	11.65%
Net profit ratio	3.57%	3.75%	3.9%	3.99%	4.42%	4.13%	3.9%	3.08%	3.43%	3.44%
Net margin	121.39	138.87	156.96	167.43	205.81	196.8	200.13	162.06	179.95	191.04

Table 4. China Construction data from the company's annual report on the Shanghai Stock Exchange. Unit: 100 million yuan

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
revenue	6817.92	8000.29	8805.77	9597.65	10500	12000	14200	16200	18900	20600
receivable	836.82	1184.3	1155.57	1386.49	1377.14	1675.53	1539.62	1604.98	1805.99	2104.32
Bad debt	16.66	45.24	37.56	53.65	70.49	104.66	35.38	36.70	126.33	138.48
Gross	17.28%	16.24%	15.52%	15.68%	15.34%	15.68%	15.11%	14.96%	14.95%	13.26%

Profit rate										
Net Profit ratio	4.31%	4.15%	4.08%	4.29%	4.43%	4.62%	4.45%	4.39%	4.11%	3.37%
Net margin	203.99	225.7	260.62	298.7	329．42	382.41	418.81	449.25	515.49	509.5

3.2 Comparative analysis of two companies

China Communications Construction and China Construction's main revenue growth in 10 years were 116.32% and 202.14%, respectively. The company's net profit increased by 57.37% and 142.73% in 10 years. The main businesses of China Communications Construction and China Construction have some similarities but are not exactly the same. This study analyses the development of the two similar but somewhat different industry leaders, industry changes, the quality of corporate profits, and the investment value of the two companies.

Analyzing the main revenue growth of the two leading companies, China Construction is significantly faster than China Communications Construction. The main reason for this is related to China's real estate policy in the last 10 years, including the active demand for improved housing, the Chinese government's land finance policy, and the fact that housing is the most important financial investment tool for the Chinese people. In the last 10 years, China Construction's Industry Prosperity Index has been significantly better than China Communications Construction's.

4 Suggestion

In the last 10 years, China Construction's net profit growth rate is also significantly faster than China Communications Construction's. As we can see from the chart, the main reasons are as follows: one is that the main revenue of China Construction has grown much faster than China Communications Construction. The second is that the net profit margin of China Construction is higher than that of China Communications Construction in most periods [5,6]. Thirdly, the gross profit margin of China Construction is higher than that of China Communications Construction in most periods. It shows that in the past 10 years, China Construction's industry boom index profitability has been significantly better than China Communications Construction's.

The overall earning capacity of China Construction is stronger than that of China Communications Construction in the first 10 years, but the following problems need to be paid attention to: firstly, the gross profit margin of China Construction has been in decline since 2018. At the same time, in 2018, China Construction's net profit margin has been moving downward. From 2018, China Construction's receivables have started to increase, and there has been an acceleration in the last two years. Thankfully, China Construction's bad and doubtful debts have not formed a trend after 2018, although they have increased in some years. This study can draw two conclusions from these data: one: China's real estate industry has basically hit a high point since 2018, the industry boom index has declined, the industry's gross and net profit margins have declined, and receivables have begun to increase, which is bad news for stock investors, especially bond investors. Second, the leading company in China's construction management efficiency is still very high and did not appear to systematically increase in bad debts, indicating that a leading company in the industry downturn to come, on the one hand, will be affected by the industry downturn, but at the same time, also has a stronger anti-risk ability [7,8]. As an investment institution, the choice of large companies will have a greater ability to resist risk. For bond investors to choose a large leading company, the company's management efficiency is very important.

Analysing China Communications Construction from the chart, from 2015, China Communications Construction's gross margin slowed from 15.2% to 11.65% in 2022. However, the company's net profit margin did not trend down from 3.9%, indicating that China Communications Construction's management efficiency is still very high. The company's receivables and bad and doubtful accounts growth rate, main business growth rate, and net profit increase rate are similar with the same convergence. It shows that the transport construction industry, on the whole, is still relatively stable, and the market space is still increasing. The gross profit margin declined slowly, but the company's net profit did not fall at the same time, indicating that the company's management efficiency, cost control, technological advances, and other aspects have been improved [9, 10].

5 Conclusion

First, the four companies are the world's top 500 companies in the construction industry, but in terms of investment value, the overall China Railway in the four companies have more investment value and growth. Management level is also more excellent, and whether it is the stock of institutional investors or bond institutional investors, it is recommended to choose China Railway in the case of the same or similar market valuation level. Second, the gross and net profit margins of the four companies are very low, indicating that the world's top 500 important Chinese enterprises are still in the small and medium-sized parts of the world's industrial division of labor. With small gross and net margins, it will take a long time and continuous improvement for Chinese companies to compete with the world's best. Third, China's real estate industry has begun to show a downward trend after the industry's high point starting in 2018, and there has been no obvious improvement so far. Fourth, China's construction enterprises are slowly improving their market scale, operating experience, and efficiency after a long development period. Due to the low gross profit margin and net interest rate, enterprises

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that want technological progress must maintain relatively low wages. Otherwise, it won't be easy to accumulate the financial strength to achieve sustained technological progress and attract the world's best talent to continue to join. Finally, the construction industry has a low gross profit margin, low net profit margin, more receivables, more bad and doubtful debts, and inevitably, at the same time, the technical requirements are high, and there are many bad debts, so it is difficult to make money. It is also difficult to make money because of the high technical requirements and bad debts. It is also quite risky and difficult for other big companies to enter this industry and form an advantage.

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