

The Valuation of Changsha Broad Homes Industrial Group Co., Ltd.

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ABSTRACT

In recent years, the government has continuously issued policies to benefit the fabricated construction industry. Changsha Broad Homes Industrial Group Co., Ltd. is a leading enterprise in China's prefabricated construction industry. It is necessary to evaluate it and grasp investment opportunities. This paper first uses the PEST model to briefly introduce the fabricated construction industry, then describes the business structure, market share, production capacity, core competitiveness, and some profitability metrics of Changsha Broad Homes Industrial Group Co., Ltd., and finally uses PE and PB valuation method to value the company. It is found that the closing price of the company was lower than the estimated value on March 17, 2022. The company is slightly undervalued by the market and its share is suggested to be bought at present. The company has broad prospects and has certain investment value.

Keywords: *Fabricated construction, PEST analysis, PE valuation method, PB valuation method*

1. INTRODUCTION

Under the goal of peak carbon dioxide emissions and carbon neutrality, national and local policies have vigorously promoted the development of prefabricated buildings. The prosperity of this industry continued to improve. On May 25, 2021, 'The opinions on strengthening green and low-carbon construction in the county' issued by the Ministry of Housing and Urban-Rural Development in conjunction with 15 departments required new buildings in the county to vigorously develop green buildings and building energy conservation. Prefabricated buildings are the major focus of carbon reduction in the housing and construction system. The new policy may further improve the proportion of prefabricated buildings and prefabrication rate indicators in the county. Prefabricated buildings in China are mainly composed of prefabricated concrete buildings and prefabricated steel buildings. Prefabricated concrete buildings account for nearly 70% of China. Changsha Broad Homes Industrial Group Co., Ltd. has been engaged in prefabricated construction for more than 20 years, focusing on PC construction and manufacturing. The corporate is not only the first leading enterprise in China's prefabricated construction component market but also the company with the strongest profitability in the industry. Therefore, it is

necessary to evaluate the company and judge whether it has investment value.

Housing industrialization has become an industrial development trend, and the prefabricated building is one of the most prominent sections of it. At present, China's construction industry is still a labor-intensive and relatively backward traditional industry. In the whole production process of housing construction, the traditional construction mode of high energy consumption, high pollution, low efficiency, and extensive operation is still universal, which is incompatible with the current development requirements of new urbanization, industrialization, and informatization. In this way, the production process of housing construction violates the concept of sustainable development and has a large gap with developed countries. After the reform and opening-up, China's economy has developed rapidly, and serious environmental damage is one of the costs. Housing industrialization can greatly reduce the pollution and dust at the construction site. When there are fewer and fewer construction sites in the city, the benefit to air pollution is huge. In addition, Liu pointed out that housing industrialization can not only maximize the simplification of the project in terms of man-hours and costs but also strictly control all links at all levels, which is also a kind of strict monitoring for product quality itself [1]. Pan thought that the modernization of the

construction industry can help the real estate industry effectively reduce the labor force, improve the product quality and shorten the sales cycle [2]. Tang Fen, President of Changsha Broad Homes Industrial Group Co., Ltd., believes that it is inevitable for the development of construction industrialization to move from construction to manufacturing and finally to intelligent manufacturing. Combining vertically and horizontally and going hand in hand is the way of long-term, healthy and sustainable development of enterprises [3]. Changsha Broad Homes Industrial Group Co., Ltd. was established in 2006. The company's resident workers have full assembly production and high-precision technology. In 2014, the company built and operated the platform with internet thinking. Through this platform, the company attempts to digitize all construction, design process, production processes, and construction process [2]. Among the 47 national housing industrialization bases approved by the Ministry of Housing and Urban-Rural Development, the company is the first comprehensive manufacturer of overall residential solutions. It gives full play to the advantages of industrial enterprises and uses the concept of industrial manufacturing to do construction, to change the construction industry from the manual era to the mechanical era, turn the construction site into a factory, turn the construction into a general assembly, turn peasant workers into industrial workers and skilled workers into operating workers. While many enterprises are still weighing whether housing industrialization can be profitable, talking about many obstacles in the early stage of housing industrialization, such as too much capital investment, too high cost, small market scale, people's demand for differentiated housing products, and waiting for the support of national policies and specific incentives, the company has completed the upgrading of technology from the first generation to the fifth generation [4]. In November 2015, the company made a major transformation. It released the 'Yuanda United' industrial cooperation plan for the world and fully opened its technological R & D advantages and market service capabilities accumulated in the field of construction industrialization for 20 years. Li pointed out that through open cooperation, it upgraded from the former 'green building manufacturer' to 'modern service platform for the construction industry, and changed from a semi-closed attitude to cooperation and integration [5]. After 20 years of accumulation, the spring of prefabricated buildings has finally come. With perfect R & D and manufacturing technology, mature operation experience, and serviceability, the company has moved from closure to cooperation, and become more and more stable on the road of green environmental protection, lean and efficient.

Therefore, this paper gives a brief introduction to the current situation of the fabricated construction industry in China and Changsha Broad Homes Industrial Group

Co., Ltd. and then carries out a valuation of the company, analyzes its future development, and judges whether it has investment value.

2. PEST ANALYSIS

2.1. Political factors

The central government of China continues to revise and promulgate policy documents related to prefabricated construction to promote the continuous development of the prefabricated construction industry. In 2016, the guidance on vigorously developing prefabricated buildings issued by the general office of the State Council proposed to strive to make the proportion of prefabricated buildings in the newly-built building area reach 30% in about 10 years. In 2018, China's specification for prefabricated buildings was issued and the evaluation standard for prefabricated buildings began to be implemented. In addition, with the adjustment of the national industrial structure and the advocacy of the construction industry for the concept of green and energy-saving buildings, many places in China have successively issued road dust management regulations to vigorously promote dust control. Under the background of strict environmental protection, traditional building methods are difficult to meet the requirements, while prefabricated buildings have attracted more and more attention because of their characteristics of resource conservation, energy conservation, and environmental protection.

2.2. Economic factors

In 2021, the national economy continued to recover in the face of multiple tests such as the complex and severe international environment and the spread of domestic epidemics. According to the data of the National Bureau of statistics, after preliminary accounting, the annual GDP in 2021 was 114367 billion yuan, showing an increase of 8.1% over the previous year and an average increase of 5.1% in the two years at constant prices. The employment situation was generally stable, and the growth of residents' income was synchronized with economic growth. The average unemployment rate in the national urban survey was 5.1%, showing a 0.5% decline from the average value of the previous year. The per capita disposable income of residents was 35128 yuan in 2021, showing an actual increase of 8.1% after deducting price factors and average growth of 5.1% over the two years. Industrial production continued to develop. In 2021, the added value of industries above the designated size increased by 9.6% over the previous year, with an average growth of 6.1% in the two years.

2.3. Sociocultural Factors

The labor force of peasant workers in China is tightening, and the peasant workers have an aging trend and high-income growth. As shown in Figure 1, the scale of peasant workers in China has increased year by year in the past five years, but the growth rate has slowed down. Figure 2 shows that the proportion of peasant workers aged 16-30 continues to decrease, and the proportion of peasant workers aged over 50 continues to increase, indicating that the peasant workers have an aging trend. From 2018 to 2019, the average monthly income growth rate of construction peasant workers was 8.5%, which is two percentage points higher than the overall average. Construction peasant workers have the fastest growth rate in the overall industry.

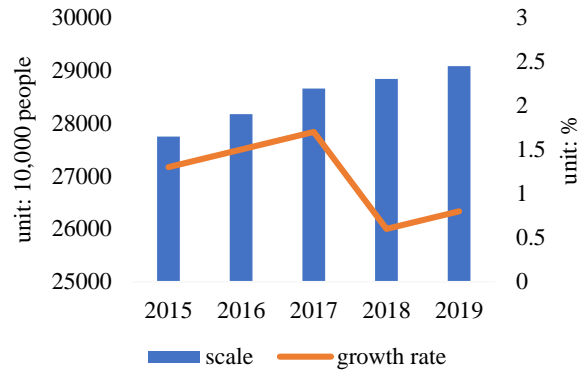


Figure 1 The scale and the growth rate of peasant workers in China from 2015 to 2019

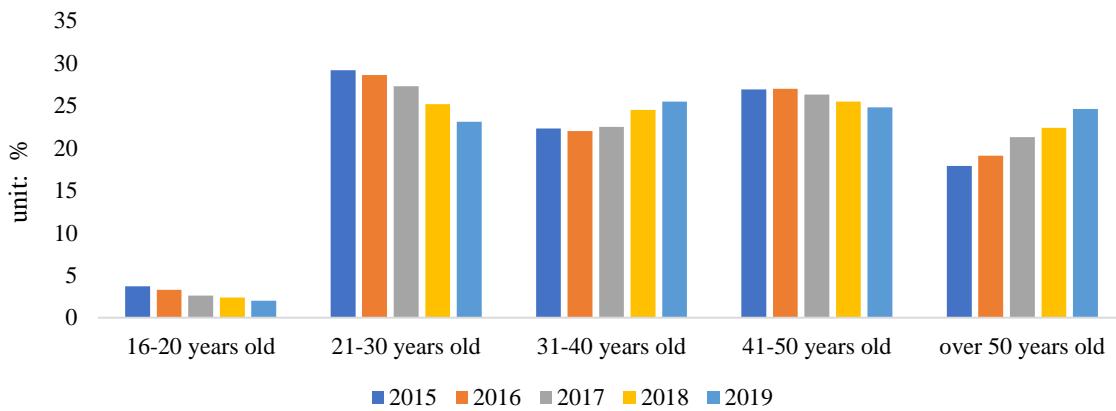


Figure 2 Age composition of peasant workers in China from 2015 to 2019

2.4. Technological Factors

Building industrialization has become an industrial development trend, and the prefabricated building is a prominent part of it. The purpose of construction industrialization is to improve labor productivity, replace manpower with machinery, speed up the construction speed, reduce project cost and improve project quality. China's construction industrialization has gradually developed from traditional construction to mechanized construction, standardized construction, information construction, and intelligent construction [6]. Prefabricated buildings are not only in line with the concept of sustainable development but also the objective requirements of China's social and economic development. The development of prefabricated buildings has become the industrial direction of China's construction industry in the future.

3. CORPORATE DESCRIPTION

3.1. Business structure

PC component manufacturing is the company's main

business and the company has developed module integration business since 2020. As is shown in Figure 3, the business structure of the company consisted of three parts, which were PC component manufacturing, PC production equipment manufacturing, and general construction contracting, when the company was established in 2006. However, in 2016, the company decided to focus on the manufacturing business of PC components and PC production equipment, and further develop the PC component design and production management system. In terms of the engineering construction business, it would no longer sign new contracts, and relevant projects entered the final stage one after another. In 2020, project construction was listed as a discontinued business. According to its 2020 annual report, the company divides the PC prefabricated construction business into two business groups, which are B2B and B2C. The original manufacturing business of PC components and PC production equipment is B2B business group and B2C is the business of Yuanda Meizhai products.

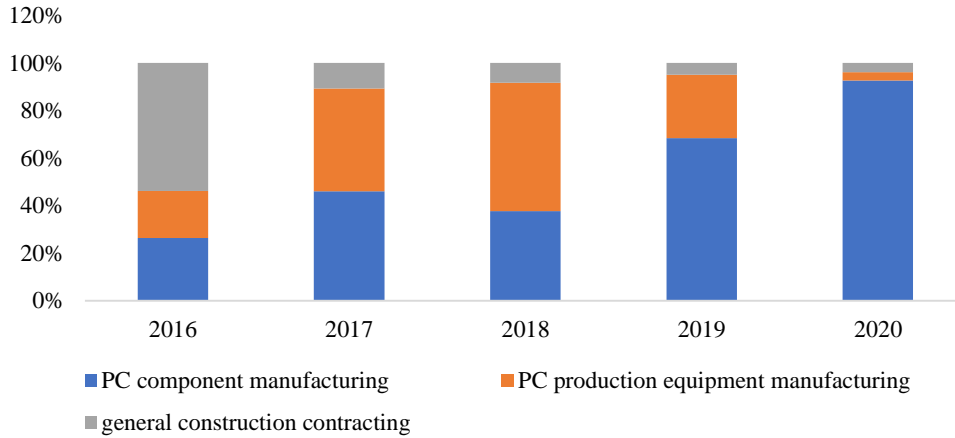


Figure 3 Proportion of revenue of each business segment from 2016 to 2020 [7-9]

3.2. Market concentration

Changsha Broad Homes Industrial Group Co., Ltd. occupies the largest market share in China's prefabricated

building component market. As shown in Table 1 and Table 2, the market shares of the company in China's fabricated building components market in 2017 and 2018 were 15.9% and 13.0% respectively.

Table 1. Market share of major enterprises in China's prefabricated building components market in 2017 (by revenue) [6]

Ranking	Enterprise	Sales (unit: RMB million)	Market share (%)
1	Changsha Broad Homes Industrial Group Co., Ltd.	891.2	15.9
2	Company A	492.6	8.8
3	Company B	449.0	8.0
4	Company C	396.0	7.1
5	Company D	274.8	4.9
	Other companies	3113.0	55.3
	Overall market size	5616.6	100.0

Table 2. Market share of major enterprises in China's prefabricated building components market in 2018 (by revenue) [9]

Ranking	Enterprise	Sales (unit: RMB million)	Market share (%)
1	Changsha Broad Homes Industrial Group Co., Ltd.	1921.7	13.0
2	Company E	1457.8	9.9
3	Company F	678.4	4.6
4	Company G	460.0	2.9
5	Company H	435.6	2.9
	Other companies	9840.1	66.5
	Overall market size	14793.7	100.0

The industrial concentration of prefabricated building components in China has a downward trend in the short term. From 2017 to 2018, the industrial concentration of prefabricated building components in China decreased. The market concentration of top5 enterprises decreased from 44.7% to 33.5%. The track is in its infancy, with a

large number of market participants. There is a price war among some enterprises, and the concentration of head enterprises tends to decline in the short term. In the long run, the market concentration will increase.

3.3. Capacity

As of April 30, 2019, Changsha Broad Homes Industrial Group Co., Ltd. had 15 wholly-owned PC factories and contracted to invest in 85 joint venture factories. The company has 15 wholly-owned PC factories, with a total of 55.5 PC component production lines. It has 7 factories in the central region, 1 in the Beijing Tianjin Hebei region, 6 in the Yangtze River Delta, and 1 factory in the Pearl River Delta. The company has contracted to invest in 85 joint plants, which are located in 79 cities in China, of which 47 joint plants equipped with 196 production lines have commercial production capacity. The company plans to establish a total of 67 joint factories from 2019 to 2024, covering 66 cities with a GDP of more than 100 billion yuan, and further increase penetration and promote the ‘Yuanda residential workers’ brand in China’s PC market.

As shown in Table 3, the income of the PC factory wholly owned by the company is much higher than that of the joint factory. The company usually holds 35% equity of the united factory, so the united factory is not a subsidiary of it.

Table 3. Comparison of income between directly operated factories and joint venture factories from 2018 to 2020 (unit: RMB 1million) [7,8]

	2018	2019	2020
Directly operated factories	2269	3369	2511
Joint venture factories	54	20	17

3.4. Core competitiveness

PC-CPS system can effectively improve the company's production efficiency and cost control, which is the core barrier of Changsha Broad Homes Industrial Group Co., Ltd.. PC-CPS system is an intelligent system for management, operation, and production. Through the nine modules of PC-CPS, including market module, construction module, product module, technical engineering module, production module, supply chain module, manpower module, finance module, and construction module, the company has realized the data sharing and collaboration at all stages of the whole life cycle of prefabricated buildings. With this system, the corporation can realize the breakthrough of the whole building process from virtual space simulation to real space manufacturing and construction and import, coordinate and integrate digital information in all aspects of the whole process. The system can also contribute to analyzing through massive data simulation to realize real-time monitoring based on rich project experience. Driven by the digital data generated according to different needs of customers, flexible manufacturing and customized production are realized. As of October 24,

2019, the company had carried out 95% operation and maintenance management through PC-CPS to achieve controllable quality, construction period, and cost, laying the foundation for large-scale continuous manufacturing of customized products. With the expansion of production scale, the core competitiveness of the company in terms of production efficiency and cost control will become more and more prominent, and continue to promote the continuous improvement of business profitability under the background of rapid business expansion and industrial development.

4. VALUATION

4.1. Revenue

From 2016 to 2020, the income of Changsha Broad Homes Industrial Group Co., Ltd. increased rapidly and expanded significantly in 2019. In 2020, it fell back due to the impact of the epidemic. The company’s five-year compound growth rate is 8.48%. As shown in Figure 4, the company's revenue shows an overall growth trend from 2016 to 2020, rising from 1.67 billion yuan in 2016 to 2.51 billion yuan in 2020, with a compound growth rate of 8.48%. From 2017 to 2018, the year-on-year revenue growth rate remained at about 16%. In 2019, the income increased significantly, with a year-on-year growth rate of 44%. In 2020, affected by the epidemic, the income decreased by 22% year-on-year. Given that the epidemic is not completely over worldwide, it is expected that the company’s revenue will rise slowly in the future.

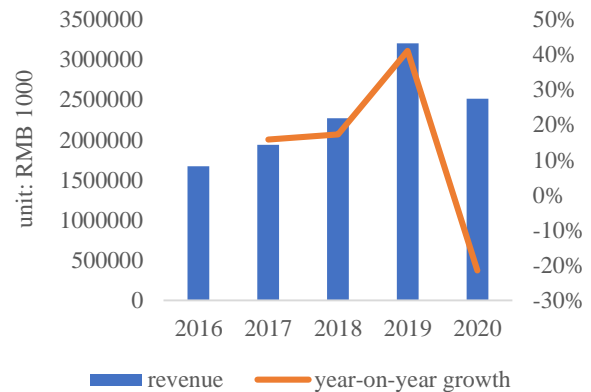


Figure 4 Revenue from 2016 to 2020 [7,8,9]

4.2. Net profit

From 2016 to 2019, the net profit of Changsha Broad Homes Industrial Group Co., Ltd. increased significantly and fell sharply affected by the epidemic in 2020, with a compound growth rate of 5.15% in the past five years. As shown in Figure 5, the net profit of the company increased significantly from 190 million yuan in 2016 to 670 million yuan in 2019. The year-on-year growth rate

was 177% in 2018. In 2020, affected by the epidemic, the company's revenue fell by 22% year-on-year. There was a relatively small decline in the fixed costs while the revenue decreased sharply, resulting in a sharp decline in the company's net profit, down 68% year-on-year. According to the company's 2021 interim report, its profit for the six months ended June 30 was -21.757 million yuan in 2020 and 47.1655 million yuan in 2021,

indicating that it has turned losses into profits. At present, the epidemic situation in China is gradually stable. Factories resume work and production and the income and net profit of the whole industry have gradually increased. Considering that the epidemic at home and abroad is not completely over, it is expected that the net profit of the company will rise slowly in the future.

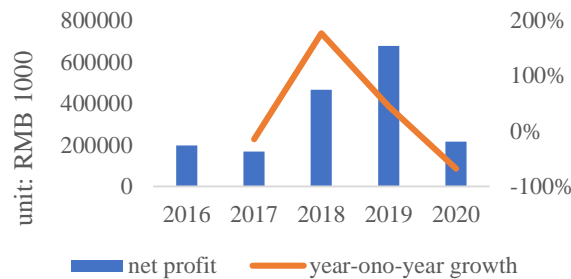


Figure 5 Net profit from 2016 to 2020 [7,8,9]

4.3. Valuation

The company's main business is the production and manufacturing of fabricated PC components. However, at present, there is a lack of pure PC manufacturing

comparable companies in the A-shares market and the H-shares market. Therefore, relevant enterprises in the fabricated industrial chain are selected as comparable companies. Table 4 shows the selected comparable companies, their corporate characteristics, PE and PB.

Table 4. The selected comparable companies, their corporate characteristics, PE and PB

Stock code	Company name	Company feature	PE (March 17, 2022)	PB (March 17, 2022)
600496	Jinggong Steel Building Group	Competitive steel structure building system service provider	12.00	1.17
002541	Honglu Steel Structure	Steel structure assembly manufacturing leader	18.30	3.09
300823	TJK Machinery	Leading enterprise of reinforcement processing equipment	20.00	2.02
002375	Zhejiang YASHA Decoration	Leading enterprise in prefabricated building decoration industry	22.30	0.85
002949	CAPOL	Leading enterprise of prefabricated architectural design	13.50	2.05
603017	ARTS Group	Leading enterprise of prefabricated architectural design	14.80	1.28
600984	Zhejiang Construction Engineering Machinery Group	Leading enterprise of prefabricated construction tower crane leasing service	13.80	1.37
601668	Shanghai Construction Group	Leading enterprise in PC component production market	6.60	0.91
600170	China State Construction	Leading enterprise in PC component production market	4.00	0.64

In terms of PE, through calculation, on March 17, 2022, the average PE of the comparable companies was 14.37, while the PE of Changsha Broad Homes Industrial Group Co., Ltd. was 11.31. The closing price of the company was ¥7.97 on that day, indicating that the EPS was ¥0.70. Therefore, the estimated share price of the company was about ¥10.12, which was a little higher than

the actual price. In terms of PB, the average PB of the comparable companies was 1.54 on March 17, 2022, while the company's PB was 0.77. The book value per share was ¥10.34 and ¥15.95 was the estimated share price, which was higher than the actual one. The corporate shares belong to the H-shares market, but the selected comparable companies are all from the A-shares

market. However, the company's share price is highly consistent with the changing trend of A-share prices and industry share prices. In addition, mainly due to sufficient liquidity, the stock prices of most companies in the A-shares market are overvalued. That is, the stock prices in the A-shares market are usually higher than those in the H-shares market. Considering the results that the estimated value of the company is a little higher than the actual one, it can be concluded that the company is slightly undervalued in the market at present.

5. INVESTMENT PROPOSAL

Construction industrialization and housing industrialization have become industrial development trends. In recent years, the labor force of peasant workers in China has weakened. The aging trend is obvious and the income growth rate of peasant workers is high. In addition, the environmental protection requirements have become stricter and the government has issued several documents to vigorously promote the development of prefabricated buildings. Therefore, prefabricated buildings have become one of the most prominent parts of housing industrialization.

At present, China's PC industry has entered the stage of overcapacity. Although the demand on the demand side is good, the supply has exceeded the demand since there is no core barrier in the production of PC components so the number of factories on the supply side continuously increases. Different enterprises produce similar products, but their profitability varies. There is a price war among enterprises, resulting in a significantly decreasing price of the products and corporate profits in the industry.

Changsha Broad Homes Industrial Group Co., Ltd. is of certain investment value at present. Against the background of rising raw material prices and falling market prices, it was not easy to maintain a gross profit margin of more than 20% in the first half of 2021 [10]. The announcement issued by the company on January 17, 2022 shows that the company's orders have maintained a positive and rapid growth year-on-year, and the profit of the company in 2022 is expected to show an increase. Combined with the previous valuation results, the company is currently a little undervalued by the market, and its share is recommended to be bought at present.

6. CONCLUSION

This paper introduces China's prefabricated construction industry by using PEST analysis, expounds the business structure, market share, production capacity, and core competitiveness of Changsha Broad Homes Industrial Group Co., Ltd. and then values the company based on its past financial data and in combination with

national policies and industry development. It is found that the company's income and net profit increased rapidly from 2016 to 2019, but both fell back due to the impact of the epidemic in 2020. The corporate has certain investment value. At present, it is a little undervalued by the market, and its share is recommended to be bought.

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