

Financial Report Analysis of BYD Corporation

Shanshan Lin

Wenzhou Polytechnic, Wenzhou, 325000, China

Abstract: Financial reporting analysis is a comprehensive evaluation of accounting information holistically and systematically using a company's balance sheet, income statement, and cash flow statement. It can provide effective decisions for those involved in financial reporting. The purpose of the financial analysis is to improve financial management, as well as to provide relevant financial information for optimal financial decisions. With the rapid progress of technology, the future of new energy vehicles is bright. New energy vehicles are the main direction of the transformation and development of the global automotive industry, and an important engine to promote the sustained growth of the world economy. As the world's leading manufacturer and service provider of new energy vehicles, BYD has an impressive growth prospect. In this paper, we analyze BYD Corporation's financial statement data from 2019 to 2022 and take BYD Corporation as an example. We also analyze the company's financial indicators in four aspects: operating capacity, solvency, profitability, and development capacity. We conclude with a few suggestions for improving the business financial situation of the company.

Keywords: Operating capacity, Solvency, Profitability, Development capacity.

1. Introduction

New energy vehicles are the main direction for the transformation and development of the global automotive industry and a key engine for the sustainable growth of the world economy. At the same time, the development of new energy vehicles is one of the key ways to implement the goal of "carbon peaking by 2030 and carbon neutral by 2060." According to the China Association of Automobile Manufacturers (CAAM), China's new energy vehicle production and sales in 2022 were 7.058 million and 6.887 million, up 96.9% and 93.4% year-on-year, ranking first in the world in terms of production and sales for eight consecutive years. The annual penetration rate of new energy vehicles reached 25.6%, a significant increase of 12.1 percentage points year-on-year. It signifies that China's new energy vehicles have entered a comprehensive market expansion period. BYD, as the world's leading manufacturer and service provider of new energy vehicles, is a typical representative of this.

2. Introduction of BYD

BYD is a high-tech enterprise committed to meeting people's aspirations for a better life through technological innovation. BYD was established in February 1995. With more than 20 years of rapid development, BYD has set up more than 30 industrial parks around the world and achieved a strategic layout on six continents. The business layout of BYD Co., Ltd. covers the fields of electronics, automobiles, new energy, and rail transportation. It plays a pivotal role in these fields. BYD Co., Ltd. builds a zero-emission new energy total solution from energy acquisition, storage, and application in all aspects. BYD is a listed company in Hong Kong and Shenzhen, with a turnover and total market value of over RMB100 billion. In addition, BYD was awarded the "Only Grand Prize in the China Automotive Industry Science and Technology Awards 2021" and the "Most Admired Chinese Companies 2021."

3. Analysis of Key Financial Indicators

3.1. Operating capacity analysis

Table 1. BYD Company Limited 2019-2022 Operating Capacity Analysis

Item	2019	2020	2021	2022
Accounts receivable turnover (times)	2.74	3.68	5.58	11.29
Inventory turnover rate (times)	4.12	4.43	5.03	5.75
Fixed Assets Turnover Ratio (times)	2.71	2.98	3.71	4.39
Total Assets Turnover Ratio (times)	0.65	0.79	0.87	1.07

The accounts receivable turnover ratio of BYD Co. is 2.74, 3.68, 5.58, and 11.29 from 2019 to 2022. In terms of development trends, the accounts receivable turnover ratio has been on the rise. It indicates that the rate of return on accounts receivable of BYD Co. is accelerating, and the efficiency of capital usage is improving. It may be related to the rising competitiveness of the company's products. The company's accounts receivable turnover ratio is lower than the industry average from 2019-2021. It increased by a higher margin in 2022. It indicates that the company does not need to use payment incentives to attract customers when expanding sales, and some products can even be sold on a pre-sale basis. However, compared with the average accounts receivable turnover ratio of 19.09 in the same industry, BYD Co. has much room for improvement.

BYD's inventory turnover ratio is 4.12, 4.43, 5.03, and 5.75 from 2019 to 2022. It indicates that the company's inventory turnover ratio is still relatively stable in general, with an increasing trend year by year. However, compared with the industry inventory turnover ratio of 7.81, the company's inventory turnover ratio is still relatively low. It may lead to a decrease in the company's current ratio. We must be vigilant if we want to promote the company's sustainable development.

BYD Corporation's fixed asset turnover ratio shows a

steady upward trend from 2019 to 2022 of 2.71, 2.98, 3.71, and 4.39. BYD Corporation's fixed asset turnover ratio only reached the industry average of 4.3 in 2022. We need to improve the company's fixed asset turnover ratio by timely disposal of scrapped or destroyed fixed assets.

The total asset turnover ratio of BYD Co. is 0.65, 0.79, 0.87, and 1.07 from 2019 to 2022. Despite the outbreak of COVID-19 in early 2020, the company's total asset turnover ratio has been on an upward trend and is still developing relatively well. The company needs to improve its total asset turnover ratio by expanding sales revenue while disposing of idle or scrap assets on time.

3.2. Profitability analysis

Table 2. BYD Company Limited 2019-2022 Profitability Analysis

Item	Company	2019	2020	2021	2022
GPM	BYD	16.29%	19.38%	13.02%	17.04%
	Great Wall Motor	16.22%	17.21%	16.16%	19.37%
NPM	BYD	1.66%	3.84%	1.84%	4.17%
	Great Wall Motor	4.71%	5.19%	4.93%	6.01%
ROA	BYD	1.09%	3.03%	1.60%	4.49%
	Great Wall Motor	4.09%	4.02%	4.08%	4.58%
ROE	BYD	3.44%	9.47%	4.70%	14.97%
	Great Wall Motor	8.46%	9.60%	11.26%	12.66%

Various profitability indicators of BYD Co. show a wavelike trend from 2019 to 2022.

Although the gross profit margin of BYD Company Limited is slightly lower than that of Great Wall Motor, it is still in the leading position compared with the industry average gross profit margin. It is mainly due to BYD Company Limited has a commitment to the research and development of new energy vehicles, mastering the core technology. The decline of the company's sales profit margin in 2021 is mainly affected by COVID-19. On the one hand, the company's sales revenue decreased, on the other hand, the cost of imported parts and components increased by rising prices.

From the above table, we know that the net profit margin of Great Wall Motor is higher than that of BYD Co. In other words, Great Wall Motor's ability to earn profit through sales in recent years is better than BYD Co.

BYD Company Limited's ROA has been lagging behind Great Wall Motor in recent years, but the gap between the two is narrowing. It indicates that BYD Co. needs to improve its corporate asset utilization rate and dispose of idle assets on time while improving the net profit of its products.

ROE reflects the ability of a company's shareholders to earn income. Compared to Great Wall Motor, BYD's ROE lagged behind and gradually caught up in 2022. BYD Co.'s ROE increases in 2022 mainly due to the company's expanding market share and growing revenue and profit, and cost and expense control by optimizing production lines and purchasing materials through multiple channels.

From the above data, we can see that the company's profitability is better. It is due to BYD's relatively solid position as the leading new energy vehicle in the current consumer market. The company has developed highly competitive new energy vehicles driven by its self-developed

core technologies. The company has established a strong position in the mainstream mass market price segment, with several fast-growing models and solid profitability. The new energy vehicle segment is still in its infancy globally, and as a leading new energy vehicle company, BYD is very confident in sales and profitability.

3.3. Solvency analysis

Table 3. BYD Company Limited 2019-2022 Solvency Analysis

Item	2019	2020	2021	2022
Current Ratio	0.99	1.05	0.97	0.72
Quick Ratio	0.75	0.75	0.72	0.49
Cash Ratio	0.12	0.14	0.33	0.22
Asset-liability ratio	68.00%	67.94%	64.76%	75.42%
Equity ratio	254%	245%	201%	335%

According to the above table, the current ratio of BYD Co. is 0.99, 1.05, 0.97, and 0.72 from 2019 to 2022. It shows a decreasing trend, and the current ratios are all lower than the optimal ratio of two. It shows that the liquidity and short-term solvency of the company is not very good.

The company's quick ratio is 0.75, 0.75, 0.72, and 0.49 from 2019 to 2022. It shows a decreasing trend year by year, and the quick ratio is lower than the best ratio for three consecutive years. It indicates that BYD Co. has short-term debt-servicing risk. It may be due to the high proportion of non-current assets in BYD's total assets and the large proportion of current liabilities in BYD's liabilities. It results in the short-term solvency index not reaching the general average level of the industry.

The overall trend of BYD Corporation's cash ratio is increasing from 2019 to 2022. It indicates that the business is well, and its immediate solvency is steadily improving.

Generally, we believe the asset-liability ratio is more stable to stay between 40% and 60%. BYD's asset-liability ratio is 68.00%, 67.94%, 64.76%, and 75.42% from 2019 to 2022. The asset-liability ratio shows a slight upward trend. It may be due to BYD's investment in project construction in recent years, and the expansion of required capital.

As can be seen from the above table, the company's equity ratio is 254%, 245%, 201%, and 335% from 2019 to 2022. The company's equity ratio shows a trend of first decreasing and then increasing, mainly due to the significant increase in the company's liabilities in 2022. It indicates that the company's long-term solvency is weakening.

The asset-liability ratio is much higher than the industry average. The equity ratio is also higher than the industry average. It indicates that the company is expanding rapidly. There is long-term financial risk.

3.4. Development capacity analysis

Table 4. BYD Company Limited 2019-2022 Development Capacity Analysis

Item	2019	2020	2021	2022
Revenue Growth Rate	-1.78%	22.59%	38.02%	96.02%
Total Assets Growth Rate	0.51%	2.76%	47.16%	66.97%

According to the above table, the revenue growth rate of BYD Co., Ltd. is positive except for 2019 and has significant growth in 2022. It indicates that the market prospect of BYD

Co. products is broad. In addition, our government introduced a series of policies to stimulate auto consumption in 2022, such as consumption subsidies and a halving of purchase tax. While China's independent brands rely on the rapid rise of new energy vehicles, BYD Auto brand competitiveness has increased significantly. Due to continuous technological innovation and breakthroughs, BYD has launched a rich and diverse range of products. In the increasingly competitive market, new energy vehicles are winning the hearts of consumers and helping BYD Auto's independent brand to increase its market share.

The total assets growth rate is the measure of how fast a company can expand its business scale. BYD Corporation has achieved a leapfrog growth rate in total assets from a modest increase in 2019 to 2022. It indicates that BYD Co., Ltd. is still expanding its market territory, and its production scale and capacity are constantly increasing. It requires more assets to be invested to achieve this. BYD Co., Ltd. not only focuses on the domestic market, but also actively lays out the overseas market, accelerating the development of markets in Europe, Asia Pacific, America, and many other regions. At the same time, to meet the market demand, BYD Co., Ltd. has also set up factories overseas and increased its investment in overseas assets. We estimate that the total assets of BYD Company Limited rise in the future.

4. Financial Statement Analysis

4.1. Balance sheet analysis

4.1.1. Asset analysis

According to the balance sheet, the total assets of BYD Company Limited in 2022 are RMB493.9 billion, an increase of RMB198 billion or 66.97% over 2021. We should further analyze the relevant data.

BYD Company Limited's current assets of RMB240.8 billion in 2022 increased by RMB74.7 billion or 45% as compared to 2021. The ratio of current assets to total assets of BYD Company Limited in 2022 is 48.75%. Money capital is RMB51.5 billion, accounting for 21.39%; accounts receivable is RMB38.8 billion, accounting for 16.11%; inventory is RMB79.1 billion, accounting for 32.85%.

Money capital increased by 2% in 2022 as compared to 2021. The accounts receivable increased by 7.11% in 2022 compared to 2021. It indicates that accounts receivable are increasing, and the risk of bad debts is also increasing. Inventory increased by 82.46% in 2022 compared with 2021. Raw materials, turnover materials, products in process, and inventory goods increased to varying degrees. We should pay attention to the possibility of a decline in inventory and inventory turnover.

BYD Company Limited's non-current assets are RMB253.1 billion in 2022, an increase of RMB123.4 billion or 95.14% from 2021. The ratio of non-current assets to total assets of BYD Company Limited in 2022 was 51.25%. Among them, long-term equity investment is RMB15.5 billion, accounting for 6.12%; fixed assets are RMB131.9 billion, accounting for 52.11%; and construction in progress is RMB44.6 billion, accounting for 17.62%.

Long-term equity investments increased by 96.08% in 2022 compared to 2021, mainly due to investments in joint ventures, and investment income received under the equity method. Fixed assets increased by 115.52% in 2022 compared with 2021, mainly due to the acquisition of freehold land, buildings, machinery and equipment, office equipment, and

the transfer of construction in progress. Construction in progress increased by 120.06% in 2022 compared with 2021, mainly due to the investment in the construction of the South China Industrial Zone, East China Industrial Zone, Northwest China Industrial Zone, and Central China Industrial Zone.

4.1.2. Capital analysis

According to the balance sheet, BYD Company Limited had RMB 372.5 billion of liabilities in 2022, an increase of RMB 181 billion or 94.52% over 2021, and we should further analyze the relevant data.

BYD Company Limited's current liabilities in 2022 are RMB 333.3 billion, an increase of RMB 162.0 billion or 94.57% from 2021. The ratio of current liabilities to liabilities of BYD Company Limited in 2022 was 89.48%. Among them, notes payable and accounts payable amounted to RMB143.8 billion, accounting for 43.14%; contract liabilities amounted to RMB35.5 billion, accounting for 10.65%; other payables amounted to RMB122.1 billion, accounting for 36.63%; employee compensation payable amounted to RMB12 billion, accounting for 3.6%; and short-term borrowings amounted to RMB5.2 billion, accounting for 1.56%.

Accounts payable and other payables increased by 129.15% in 2022 compared with 2021. It is an interest-bearing liability. Contractual liabilities increased by 138.26% over the previous year. It mainly represented advance payments received from customers. Employee compensation payable increased by 105.17% compared with 2021. It was short-term compensation to be paid. Short-term loans are all credit loans.

According to the balance sheet, BYD Corporation's 2022 owners' equity of RMB121.4 billion increased by RMB17.2 billion, or 16.51%, compared with 2021. Among them, there is no change in equity from the previous period, indicating a stable shareholder structure of BYD Corporation. The capital surplus increased by RMB0.9 billion in 2022 compared to 2021, mainly due to the provision for share-based payments. The increase of RMB1.8 billion in treasury stock for the period was due to the repurchase of common shares issued by BYD Corporation for employee incentives. The 51.51% increase in surplus and undistributed earnings for the period is due to the annual profits of BYD Corporation staying in business.

4.2. Income statement analysis

4.2.1. Revenue analysis

Table 5. BYD Company Limited revenue composition in 2022

Item	Cell phone parts assembly	Automobiles automobile-related products	Others	Total
Domestic revenue	32,570,786	299,292,589	549,096	332,412,471
Foreign revenue	66,208,401	25,187,269	-	91,395,670
Total	98,779,187	324,479,858	549,096	423,808,141

According to the income statement, the operating revenue of BYD Company Limited in 2022 was RMB423.8 billion, an increase of RMB207.7 billion or 96.08% compared with 2021. Among them, revenue from sales of automobiles, automobile-related products, and other products was RMB324.4 billion, an increase of 151.78% over the previous year. BYD's gross profit margin reached 20.39%, up 3.69% from the previous year. It was the key source of profit. Revenue from cell phone

parts, assembly, and other products was RMB98.8 billion, up 14.30% from the previous year. The gross profit margin of cell phone parts, assembly, and other product revenue was 6.06%, down 1.52% from the previous year.

Classified by region, BYD Corporation's operating revenue in the domestic market is RMB332.4 billion in 2022, an increase of 118.35% over the previous year, with a gross margin of 20.62%, up 5.06% compared with 2021. The company's operating revenue in the overseas market is RMB91.4 billion in 2022, an increase of 43.01% over the previous year, with a gross profit margin of 4.02%, a decrease of 2.96% compared with 2021. It indicates that the revenue of BYD Company Limited is still mainly from the domestic market. While increasing its domestic market share, the company should actively explore overseas markets and continue to work with its partners deeply. BYD Company Limited should cultivate markets to provide differentiated, competitive products and quality services to consumers around the world.

4.2.2. Expenses analysis

Table 6. BYD Company Limited 2021-2022 expenses composition

Item	2022	2021	Year-on-year increase or decrease
Selling expenses	15,060,676	6,081,678	147.64%
G&A expense	10,007,370	5,710,193	75.25%
Finance expense	-1,617,957	1,786,927	-190.54%
R&D expenses	18,654,453	7,990,974	133.44%

According to the income statement, BYD Corporation's 2022 selling expenses of RMB 15 billion increased by RMB 9 billion, or 147.64%, compared to 2021. It is mainly due to the g employee compensation, advertising expenses, and after-sales service expenses. BYD Corporation's general and administrative expenses in 2022 amounted to RMB10 billion, representing an increase of RMB4.3 billion or 75.25% over 2021. It is mainly due to the growth of employee compensation, depreciation, material expenses, and share-based payments. BYD Corporation's finance expenses in 2022 were RMB -1,61 billion, a decrease of RMB 3,405 billion from 2021. It is mainly due to the increase in foreign exchange gain and the reduction of interest expense. BYD Corporation's research and development expenses in 2022 were RMB18.7 billion, an increase of RMB10.67 or 133.44% from 2021. It is mainly due to the massive increase in employee remuneration caused by the growth of BYD Corporation's R&D staff. It was also the increase in depreciation and material expenses for machinery and equipment in the R&D process. It shows that BYD Company Limited attaches great importance to core technology research and development. According to the number of R&D personnel disclosed by 4397 listed companies, BYD tops the list with 69,697 R&D personnel. It is because BYD has a large technology R&D team and strong technology innovation capability that BYD's automotive and battery business, cell phone, and assembly business are in the leading position in the industry.

5. Suggestions for Improving BYD's Financial Situation

5.1. Strengthen asset management

BYD's overall operating capacity is still in the catch-up stage compared with the average level of the industry, especially the turnover rate of accounts receivable, inventory, and fixed assets needs to be improved as soon as possible. BYD Company Limited needs to strengthen the management of accounts receivable, inventory, and fixed assets. BYD Company Limited should establish customer credit files, combine the repayment situation of previous years, use big data to make scientific and reasonable analyses and develop personalized credit policies to collect payments as soon as possible and reduce the risk of bad debt occurrence. We strive to expand sales to reduce the number of merchandise inventory. At the same time, we establish good cooperation with material suppliers to purchase in real-time and decrease the unnecessary backlog of raw materials. BYD Company Limited should dispose of idle or damaged fixed assets to improve the asset turnover rate in time.

5.2. Optimize capital structure

From the analysis of the current ratio and quick ratio, the short-term solvency of the enterprise is not very strong, showing a decreasing trend year by year. But the good thing is that it is relatively stable, and the short-term debt payment of the enterprise will not be a big problem basically. However, the high asset-liability ratio indicates that the long-term solvency of the enterprise is not sufficient, and the enterprise will face long-term debt risk in the future. We suggest that enterprises reasonably optimize their capital structure, broaden financing channels, and appropriately reduce financing costs, thereby reducing long-term debt service risks. At the same time, BYD Company Limited can consider converting some of its long-term liabilities into short-term liabilities.

5.3. Improving R&D efficiency

In recent years, BYD Co., Ltd. has invested heavily in research and development. It indicates that the company management attaches great importance to the development and application of the independent core technology of BYD Co., Ltd. However, the proportion of the total R&D expenditure that can capitalize is not very high. It indicates that the efficiency of the company's R&D needs to be improved. It further affects the profitability of BYD Co., Ltd. Enterprises should make scientific and reasonable R&D plans, conduct in-depth studies on the feasibility of projects, and choose them carefully. At the same time, BYD Co., Ltd. needs to cultivate high-tech talents who are suitable for BYD Co.Ltd.It should build a talent pool and improve R&D efficiency.

6. Conclusion

After a comprehensive analysis of BYD Corporation's financial statements, operating capacity, profitability, solvency, and development capacity, we can conclude the following:

BYD Corporation has assets of RMB 493.9 billion and liabilities of RMB 372.5 billion in 2022. They are significantly higher than last year. The company's operating revenue of RMB424.1 billion is mainly from the sales of

automobiles, automobile-related products, and other products in 2022. The company's total costs are RMB 401.9 billion, with significant increases in operating costs, selling expenses, administrative expenses, and R&D expenses in 2022.

BYD's overall operating capacity is still in the catch-up stage compared to the average level of the same industry. In particular, the turnover ratio of accounts receivable, inventory, and fixed assets needs to be improved as soon as possible. From the analysis of the current ratio and quick ratio, the short-term solvency of the enterprise is not very strong, showing a decreasing trend year by year. But it is good that it is relatively stable, and the short-term debt payment of the enterprise will not be a big problem.

However, the high asset-liability ratio of the enterprise indicates that the enterprise has insufficient long-term debt servicing ability and will face relatively large long-term debt risk in the future. The overall profitability of BYD Company Limited is good. GPS and NPS are slightly lower than Great Wall Motors. But BYD is still in the lead compared to the industry average GPS and NPS. Total-asset turnover and net asset turnover have been lagging behind Great Wall Motor. But the gap between the two is gradually narrowing. The growth rate of operating revenue and total assets of BYD Co. is increasing year by year. There is a substantial leap in 2022. It indicates that BYD Co. has a broad market prospect for its products, and its production capacity and capability are increasing.

Based on the analysis of the above-mentioned financial statements and financial indicators, this paper puts forward several suggestions to improve the current situation of enterprise operation and finance: strengthen asset management, optimize enterprise capital structure, and improve R&D efficiency.

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