

A DuPont-based Case Study on Bilibili

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Abstract. The DuPont financial analysis system depicts an organization's present financial status more accurately than many other systems. The improvement of my country's economy has led to higher demands for enterprises' management systems. Businesses must strengthen their internal management. To achieve the aims described above, it's important to evaluate the financial status of businesses, especially listed organisations' management. This article makes a study of Bilibili's financial position from 2019 to 2021 using the DuPont financial analysis system as its primary resource. The profitability of Bilibili, as well as its operational capacity, solvency, and growth potential, are all subjected to an examination by way of a DuPont study. Analysis of four features, discussion of the challenges that its financial management faces.

Keywords: Bilibili; DuPont Analysis; Financial indicator.

1. Introduction

1.1 Background

The culture of the two-dimensional world gave rise to the bilibili. While working on just one field, it simultaneously developed its very own signature platform style. In recent years, as a content creation platform, Bilibili has continued to explore on the road of breaking the circle. In terms of content, it has opened up a diversified content circle such as life and fashion. Formally, it has increased the exploration of OGV long videos and Story Mode short videos. In order to gain the growth of users and the long-term development of the platform, Bilibili has continued to explore on the road of breaking the circle. The number of users continues to rise, the user stickiness is quite strong, and a significant number of the users are young people. In addition, the proportion of young people among the users is significant. The attention of the rest of the globe has been drawn to its current development status as well as its future prospects. However, the external issue has also centered on the company's decision to simplify its revenue structure while also incurring long-term continuing losses. Now it's time to conduct a study of Bilibili's current financial status using the DuPont financial analysis system.

Long before the rise of Bilibili, the most well-known video websites in China's domestic market for video websites were primarily Tencent, iQiyi, and Youku; however, Bilibili relies on free video creation and a variety of video content. Additionally, Bilibili relies on the video barrage, which quickly emerged in the initially stable market structure of video websites. When compared to the TV series, movies, and exclusive variety show videos that are provided by other video sites, Bilibili relies on a large number of two-dimensional exclusive resources, and there are no interludes in the video. The majority of the movies and TV shows require users to be members in order to watch them, and there are generally a lot of advertisements on other video sites. The advertisement has received a lot of positive comments from people, which is encouraging.

However, as a result of the growth of mobile networks and the increased speed at which people live their lives nowadays, people's time is now more fragmented. In a setting like this, new types of video production for shorter lengths of time, such Douyin and Kuaishou, have evolved. The subject matter encompasses a diverse array of topics, including It offers a variety of entertainment options, including food, music, dance, and other activities, and it has few criteria for users who want to contribute videos. While doing so, it will swiftly locate user preferences and promote a big number of content items that are related. In response to these shifts, Bilibili introduced a new short video

format called Story Mode with the intention of providing consumers with a wider variety of experiences.

In addition to having its own benefits, Bilibili also has to contend with a number of difficulties. On the basis of this, the purpose of this study is to carefully comprehend, through DuPont analysis, the financial position of Bilibili Company, and study it in order to recommend appropriate improvement solutions.

1.2 Related research

Jiang and Zhu pointed out that the development of China's accounting industry, accounting theory and practice, after a long period of time, also have made great progress. Faced with the above changes, the traditional DuPont analysis method has less merits. Therefore, operating leverage and financial leverage are added to the financial analysis system to widen the boundary of the traditional DuPont analysis system. The research model not only increases the amount of factors that can affect the DuPont system, but it also offers suggestions for how businesses can use them in other industries [1]. Zhong suggested that the analysis of the sustainable growth rate index should be added concurrently with the cash flow index when using the DuPont analysis method for rural commercial banks with regional advantages, such as small camp size, single income structure, and primarily monetary operation. In order to help businesses make financial decisions for their own development, this upgraded analysis approach will optimise the evaluation effect of the DuPont analysis method [2]. According to Li's analysis of the issues with applying the DuPont analysis method to listed companies, the majority of listed companies have different internal management, and the index ratio recommended by the DuPont analysis system cannot completely satisfy the requirements of analysis. When using the DuPont analysis system, we should make sure that it works well in conjunction with the actual circumstances of business growth [3].

Zhang examined the financial data from TO Electronics Company over a five-year period using the DuPont analysis method, identified the company's shortcomings in fund management and its financial management system, and proposed a strategy to improve the financial organisational structure and create a successful working capital management system to assist TO Electronics Company in strengthening its financial management [4]. An revised the limitations of DuPont system by analyzing the traditional DuPont system and financial statements, and applied the traditional DuPont system and the improved DuPont system to the financial situation of CSG. She also stressed the importance of the DuPont analytical system keeping up with modern trends in addition to the study and analysis of financial data [5]. Feng performed a DuPont analysis on the financial standing of a publishing house and mentioned that the method chiefly reflected the operating ability, debt paying ability, and profitability of the enterprise, but neglected to take into account the ability of the enterprise to grow, and also the impact of dividends paid policy on the enterprise, or incorporate statistical analysis of the enterprise's cash flow. As a result, this study recommended that the DuPont analysis method's comprehensiveness be extended by the addition of cash flow analysis [6].

Shi identified problems in earnings quality analysis by analysing DuPont analysis of publicly traded companies, such as an over-emphasis on historical data, an over-emphasis on profit index analysis, insufficient qualitative analysis, and so on, and supplied feasible and effective solutions [7]. Liu and Wang used the DuPont analysis method to understand the operation status of Yuantong Express Company, and combined it with SWOT analysis to make recommendations on Yuantong Express Company's future development direction and management, as well as to supplement the improvement of the DuPont analysis system [8].

According to wang, Tang, and Yu's study, after the explosive growth of China's paper industry, industry concentration was high and market competition was fierce. As a result, based on the improved DuPont system, this paper diagnosed the profitability decline of the top ten listed companies in China's paper industry and made some recommendations to improve profitability based on the industry's characteristics [9]. In Essentials of Investment Science, American university professor Alex Kane and others included the two indicators of interest burden rate and tax burden rate in the

preceding "three factors" to examine the effects of corporate tax issues on the key indicator of net asset yield. As an end, managers are able to better to intuitively recognise issues with an enterprise's capital structure, which further promotes an enterprise's long-term growth [10].

1.3 Objective

The first chapter of this article explains the development status of the Bilibili Company and lists how the DuPont analysis system is used in many industries in present research. The second chapter explains the current state of the industry in which Bilibili is placed and outlines the Bilibili user group. In the third chapter, it evaluates Bilibili's profitability, solvency, operational ability, and growth capacity using the DuPont analysis methodology and financial indicators; the aforesaid data analysis highlights the obstacles it faces. The study's findings are discussed in the fourth chapter.

2. Industry analysis and user analysis

2.1 Analysis of industry

The Bilibili Company, also called as "Bilibili," was officially founded in 2009, began operating commercially in 2011, went public on NASDAQ in the United States on March 28, 2018, and went public in Hong Kong, China, on March 29, 2021. It is presently China's largest anime community.

Bilibili is currently China's largest animation culture website, and it is quite popular among young Chinese netizens. It states that its mission is to "enrich the cultural lives of China's younger generation" and to promote the concept of "I am a user."

ACG (Animation, Comics, Games) content was produced and shared on bilibili in its early years. An ecosystem that constantly generates high-quality material has been created around users, authors, and content after more than 10 years of development. More than 7,000 multicultural communities are covered by bilibili, which also placed first on QuestMobile Research Institute's lists of "Generation Z Preference APP" and "Generation Z Preference Pan-Entertainment APP" and was named one of the Top 100 Most Valuable Chinese Brands in 2019 by "BrandZ" report.

2.2 Analysis of users

360 Trend data indicates that among users' ages, 16% are under the age of 18, 43% are between the ages of 19 and 24, and 17% are between the ages of 25 and 34. With a 3.67% rise from the previous year, the attention received each month was 1,035,700. (The query period is from August 19 to September 17 in 2022)

And since 2020, Bilibili will be constructed on the most crucial PUGV material and will gradually investigate OGV long videos and Story Mode short videos, while the core PUGV content will primarily increase user generalisation by adding vertical categories. The Bilibili expanded its target users from post-90s (Generation Z) to Genz+(Post-80s), and the average age of users in bilibili steadily improved from 21 in 2021 to 22.8 in 2022 after the users of Bilibili followed the content breakthrough to accelerate their growth; But on the whole, bilibili is still a community dominated by young people. OGV has enhanced the supply of dramas and variety shows in terms of video iteration, but the total amount of OGV material is insufficient from the standpoint of member income to fully pay the costs. Bilibili has increased its investigation into the story mode for brief videos. After a year of operation, Story Mode has 20% of the total video VV in the entire station as of the 22Q1 data disclosure, initially increasing user duration through product iteration of shorter video form. In the last two years, bilibili's active user numbers has continued to increase at a high and consistent rate. The MAU tracked by QM increased to 189 million in June 2022, up 23% year over year; the DAU increased to 55.85 million, up 26% year over year; and the DAU/MAU rose to 30%, indicating an upward trend overall.

3. Financial analysis and discussion based on DuPont analysis

3.1 Evaluation and analysis of profitability based on DuPont analysis

ROE has drastically decreased in 2020, falling from -5.36% in 2019 to -19.83%, a decline of 14.47%, a decrease of 270%, and climbing to -18.28% in 2021;

The net interest rate of total assets has been dropping for close to three years. It decreased from -2.64% in 2019 to -6.46% in 2020, a decrease of 144.70%; in 2021, it fell to -7.62%; and in comparison to -6.46% in 2020, it reduced by 17.96%.

The equity multiplier increased by 1.04, or 51.23%, from 2.03 in 2019 to 3.07 in 2020. It fell to 2.40 in 2021, a reduction of 0.67 or 21.82%.

Table 1. Financial indicators of profitability from 2019 to 2021

	2019	2020	2021
Operating income	678million yuan	1.999 billion yuan	9.384 billion yuan
cost of operation	5.588 billion yuan	959 million yuan	1.341 billion yuan
operating costs	588million yuan	392 million yuan	795 million yuan
Gross profit margin of sales	17.59%	23.67%	20.86%
net profit margin on sales	-19.23%	-25.45%	-35.13%

According to Table 1, the level of profits was generally consistent from 2019 to 2021, as indicated by the fact that the gross profit margin of sales was basically maintained at around 20%. This indicates that the level of profits was reasonably stable. The operational income increased from 6.778 billion yuan in 2019 to 11.999 billion yuan in 2020, and it grew to 19.384 billion yuan again in 2021, which resulted in a further reduction in the loss margin. From 2019 to 2021, the relatively high expenses, high operating costs, and increased R&D investment in sales and operation in bilibili are the primary contributors to the low net profit margin, while the relatively high gross profit margin of sales is the primary driver of the high gross profit margin of sales. A negative net profit margin of sales is achieved primarily due to the fact that Bilibili is required to make ongoing investments in order to finance the purchase of hardware equipment. The operational costs and expenses in 2021 reached a total of 15.341 billion yuan and 5.795 billion yuan, respectively. This was a significant increase from the previous year. The preliminary expenditure made on the margin of net profit will boost the company's future profitability. Because there has not been a significant shift in the percentage of sales that goes toward the net profit over the past three years, this suggests that there has not been a significant growth in the net profit over the course of the last three years.

Table 2. Financial solvency metrics from 2019 to 2021.

	2019	2020	2021
current ratio	2.42	2.13	3.02
Asset-liability ratio	50.79%	67.39%	58.28%
Net cash flow from operating activities	195 million yuan	753 million yuan	-2.647 billion yuan

The current ratio of Bilibili has been maintained at roughly 2 to 3 times during the past three years, as shown in Table 2. This indicates that the company's assets have strong liquidity. The asset-liability ratio can be used to determine whether or not a company is able to get more funding from investors in order to finance its operations and how risky the company appears to potential lenders. The results of Bilibili's asset-liability ratio are presented in Table 2, and they reveal that, on average, this ratio has remained in the range of 40% to 60% over the course of the past three years. This result suggests that the company's management is capable of effectively utilizing money obtained from outside sources. The net cash flow from operating operations has been subject to very considerable

fluctuations over the course of the previous three years. From its current level of 195 million yuan, it is projected to fall to -2.647 billion yuan in 2021, with a net profit of -6.809 billion yuan. The digitized value in question Nevertheless, modifications are permissible in light of the growing investment made during this time period.

Table 3. Financial Indicators of Operating Capacity from 2019 to 2021

	2019	2020	2021
Total assets turnover rate (times)	0.52	0.61	0.51
Accounts receivable turnover rate (times)	12.68	13.34	15.91
Total assets turnover days	690.65	590.78	704.99
Accounts receivable turnover days	28.40	26.98	22.62
Fixed asset turnover rate (times)	14.88	18.78	18.35

Table 3 demonstrates how the turnover rate of all assets has changed over the last three years. The turnover rate of total assets was 0.52 times in 2019, increased to 0.61 times in 2020, and decreased to 0.51 times in 2021, showing that the rate is quick, enterprises are managing their total assets well, and utilization efficiency is high. On the other hand, the lengthy turnover days of fixed assets show that the operating efficiency of fixed assets is low. The average collection period shows a first decline and then an increase from 2019 to 2021, indicating that the accounts receivable liquidation speed is increasing and the ability to recover cash is improved overall. The accounts receivable turnover rate also shows an upward trend, reaching 15.91 times in 2021. Meanwhile, it demonstrates that the company's ability to handle its accounts receivable is stable at a high level, representing the gradual improvement of its competitiveness.

Table 4. Financial Indicators of Growth Ability from 2019 to 2021

	2019	2020	2021
Year-on-year growth rate of operating income	64.16%	77.03%	61.54%
Year-on-year growth of total assets	47.92%	53.81%	118.11%

The operating income growth rate from year to year is a measure of how much an enterprise's operating income has increased or decreased when it is compared to the operating income from the same accounting period the prior year. Its overall range from 2019 to 2021 is roughly 67.58%, which shows that profitability is strong. The scale of total assets has steadily increased over the last three years, and the rate of annual growth of total assets has steadily increased. The overall asset growth rate in 2021 was 118.11%, showing that the size of asset management has significantly increased over the previous three years. In general, Li Li has great potential for growth in the future.

3.2 Problems in profitability

To summarize, the cost of intangible assets that Bilibili uses to purchase animation, comic copyright, and online game products has increased. However, the process of turning this portion of the cost into income, recovering the initial investment, and generating profits will be a lengthy one and will take a long time. It is not possible to realize a profit from it in a short amount of time, the investment realization ability is poor, and the investment realization speed is slow; as a result, it will be impossible to solve the problem of the profit growth being lower than the cost growth for an extended period of time. In addition, the costs of Bilibili's games are determined by using a revenue sharing model. The cost will increase in proportion to the level of income. No matter how quickly "Bilibili" continues to grow its revenue, this will always result in a rise in costs. The rate at which Bilibili's profits are growing has correspondingly slowed down. It is possible that the company's financial performance will be negatively impacted even if the follow-up comics, animations, and game goods are not released in a timely manner.

Additionally, after more than ten years of growth, Bilibili has amassed a sizable following of devoted users, gained the trust of investors, and has a very good user stickiness. However, Bilibili is investigating varied companies, extending profit sectors, and optimizing its current business model. The income structure is weaker in this area. While operating income increases, debt also rises. Bilibili tried to rectify the situation in 2020 by taking a number of steps, however doing so came at a hefty cost. As more video platforms enter the anime market, Bilibili has also demonstrated the limitations of its economic model, which relies heavily on the high-margin game industry. Rapid modifications are required due to the intense rivalry in the same sector.

4. Conclusion

This study examines several financial indicators of Bilibili from 2019 to 2021 using the DuPont analysis technique and categorises them into four categories: profitability, solvency, operating ability, and growth capacity. After investigating Bilibili's financial position, it was discovered that Bilibili's profit model has flaws and is highly reliant on the game business, resulting in a high cost to address this problem in 2020. Furthermore, Bilibili has increased several assets, and it is still a lengthy process to transform the expenses of these investments into profits. If the profit model problem is not solved, Bilibili's losses will worsen. It is not suited for investment at the moment.

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