

Analysis of Jiajia Yue Supermarket's Profitability Using an Improved DuPont Analysis

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Abstract: *To facilitate the identification and prevention of operational issues within enterprises, this paper selects Jiajia Yue Supermarket as its case study. The company's profitability is examined in-depth through an improved DuPont analysis that incorporates cash flow theory. This analysis provides objective recommendations.*

Keywords: *Jiajia Yue Supermarket, Improved DuPont Analysis, Profitability*

1. Introduction

Against the backdrop of rapid advancements in big data and internet technology, the market share of online remote shopping continues to rise, correspondingly squeezing the market share of traditional offline retail. Currently, many large supermarket chains are experiencing significant declines in sales revenue and performance levels. Within retail enterprises, profitability is influenced by both internal and external factors. Therefore, comprehensively understanding a company's operational status is particularly crucial.

The traditional DuPont analysis primarily focuses on return on equity (ROE). By examining net profit margin, asset turnover, and equity multiplier, it evaluates a company's economic activities. The data used to calculate these metrics is largely sourced directly from the balance sheet and income statement. Companies often have a high probability of embellishing these two statements for their own benefit. This can easily lead to distorted conclusions. Consequently, over time, some scholars both domestically and internationally have advocated incorporating cash flow as an element into the original framework. Cash flow, based on the cash basis of accounting and derived from the cash flow statement, is less susceptible to manipulation. An improved DuPont analysis system that integrates cash flow-related metrics can provide a more accurate assessment of a company's financial condition[1].

2. Company Profile

Jiajia Yue Supermarket, a subsidiary of Jiajia Yue Group Co., Ltd., is a retail chain specializing in supermarkets with a focus on fresh produce. It operates over 1,100 stores across six provinces including Shandong and Hebei, achieving high-density coverage in the Jiaodong Peninsula. In recent years, impacted by the rise of e-commerce live streaming, the company has faced challenges in profit growth. By 2024, it exhibited a pattern of "increased revenue but not profit," with annual revenue showing slight growth while net profit declined year-on-year. Management responded by implementing store closures. As of September 2025, multiple stores in locations such as Weihai and Linyi have been shut down[2].

3. Application of the Improved DuPont Analysis Method

3.1 Traditional indicators analysis

3.1.1 Return on Equity

Return on Equity (ROE), also known as the net profit margin on shareholders' equity, represents the ratio of a company's net profit to its shareholders' equity. It is used to measure the return on investment for shareholders' equity. As shown in Figure 1 and Table 1, the company's ROE was -0.25% in 2021, indicating a loss. It improved to 1.93% in 2022, turning from negative to positive. In 2023, it surged

significantly to 18.60%, declining to 6.75% in 2024. While still superior to 2021 and 2022 levels, this represents a notable decrease from 2023. Overall, the trend shows initial improvement, followed by a substantial increase, and then a subsequent decline. The reason for this change may be that by the end of 2022, the COVID-19 pandemic was gradually brought under control, and city lockdowns were gradually lifted. People were no longer confined to home-based online shopping and shifted to offline consumption. In 2024, the significant decline may be due to the impact of the rapid development of online e-commerce platforms and the live-streaming sales industry.

Table 1: Return on Equity Statement for Jiajia Yue Supermarket

Financial Indicators	2021	2022	2023	2024
Net Profit (RMB 10,000)	-526.23	3663.44	42825.16	17805.72
Average Shareholders' Equity (RMB 10,000)	207550.38	189975.57	230303.16	263910.49
Return on Equity (%)	-0.25	1.93	18.60	6.75

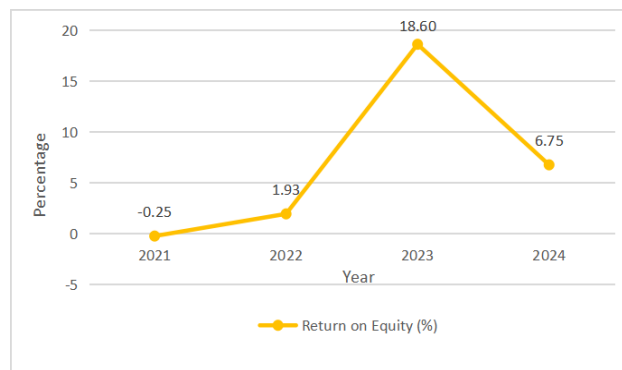


Figure 1: Line Chart of Return on Equity Changes at Jiajia Yue Supermarket

3.1.2 Net Profit Margin

Net profit margin is calculated by dividing a company's net profit by its sales revenue, serving as a measure of the company's profitability over a specific period. A higher ratio indicates greater profitability, demonstrating a positive correlation between the two metrics. As shown in Table 2 and Figure 2, the trend and positive/negative values of the net profit margin largely align with the net return on equity (ROE) analyzed earlier. Derived from the traditional DuPont analysis formula: $ROE = \text{Net Profit Margin} \times \text{Asset Turnover} \times \text{Equity Multiplier}$ —this suggests that the annual fluctuations in a company's asset turnover and equity multiplier may be relatively small. Consequently, the net profit margin emerges as the core variable driving changes in net return on equity.

Table 2: Net Profit Margin Statement for Jiajia Yue Supermarket

Financial Indicators	2021	2022	2023	2024
Net Profit (RMB 10,000)	-526.23	3663.44	42825.16	17805.72
Sales Revenue (RMB 10,000)	1524490.61	1616367.76	1556004.76	1614856.57
Net Profit Margin (%)	-0.03	0.23	2.75	1.10

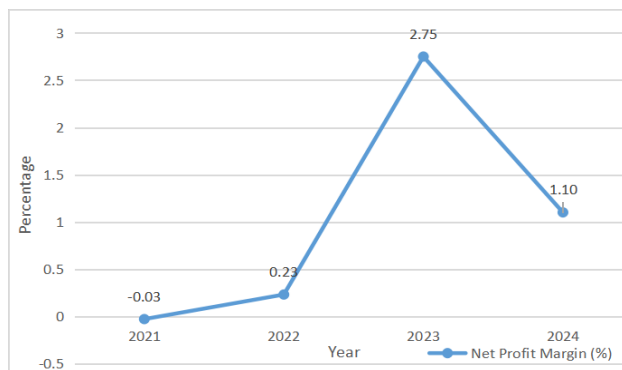


Figure 2: Line Chart of Net Profit Margin Changes at Jiajia Yue Supermarket

3.1.3 Equity Multiplier

The equity multiplier is an indicator used to measure the degree of financial leverage in a company.

Its calculation formula is generally $1/(1-\text{debt-to-equity ratio})$ or $1+\text{equity ratio}$. A higher value indicates greater indebtedness and higher financial risk. As shown in Table 3 and Figure 3, Jiajia Yue Supermarket's equity multiplier remained within the range of 3.4 to 4.6 from 2021 to 2024, exhibiting minimal fluctuation. This validates the earlier hypothesis and can be attributed to two primary factors. First, the inherent advantages of brick-and-mortar supermarkets—operating at the end of the supply chain—eliminate the need for large-scale capital expansion, significantly reducing corporate borrowing and debt. Second, China's macroeconomic policies over the past four years have prioritized stability, resulting in minimal fluctuations in market interest rates and stable financing costs for enterprises.

Table 3: Equity Multiplier Statement for Jiajia Yue Supermarket

Financial Indicators	2021	2022	2023	2024
Total Assets (RMB 100 million)	79.87	87.14	93.00	96.31
Total Owner's Equity (RMB 100 million)	18.82	19.19	26.87	25.91
Equity Multiplier	4.24	4.54	3.46	3.72

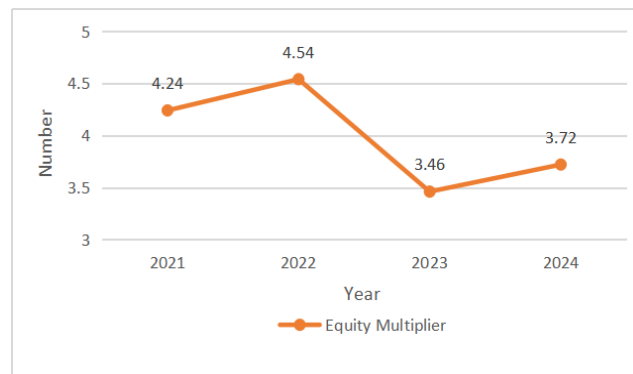


Figure 3: Line Chart of Net Profit Margin Changes at Jiajia Yue Supermarket

3.1.4 Total Asset Turnover Ratio

Total asset turnover refers to the ratio of a company's sales revenue to its average total assets over a specific period. It primarily measures the alignment between a company's investment scale and sales performance. When a company is not experiencing significant growth, a higher total asset turnover generally indicates stronger sales capabilities and better investment returns on assets. As shown in Table 4 and Figure 4, although Jiajia Yue Supermarket's total asset turnover ratio exhibited a gradual decline from 2021 to 2024, it remained relatively stable overall without significant fluctuations, further validating the aforementioned hypothesis. The relatively low total asset turnover ratio may be attributed to short-term increases in average total assets caused by the replacement of refrigeration equipment or merchandise shelving. While such fixed assets provide long-term benefits and ensure sustainable operations, they temporarily slow down the company's total asset turnover rate.

Table 4: Total Asset Turnover Statement for Jiajia Yue Supermarket

Financial Indicators	2021	2022	2023	2024
Net Sales Revenue (RMB 100 million)	152.45	161.64	155.60	161.49
Average Total Assets (RMB 100 million)	77.27	83.51	90.07	94.66
Total Asset Turnover (Times)	1.97	1.94	1.73	1.71

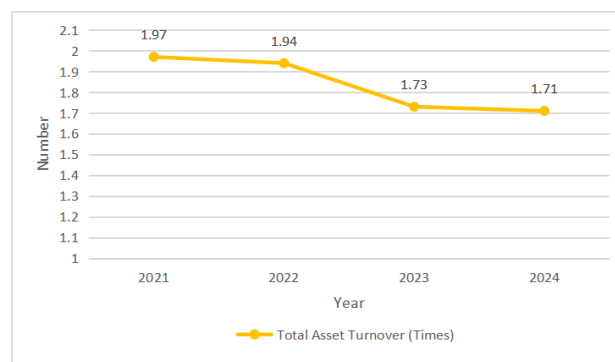


Figure 4: Line Chart of Total Asset Turnover Ratio Changes at Jiajia Yue Supermarket

3.2 Improved Indicators Analysis

To address the limitations of the traditional DuPont analysis framework, this paper incorporates cash flow as a key factor. By utilizing indicators from the traditional framework—specifically the cash-to-sales ratio and cash-to-net profit ratio—it provides a more comprehensive analysis of Jiajia Yue Supermarket's profitability.

3.2.1 Cash-to-Sales Ratio

The cash-to-sales ratio represents the ratio of operating cash inflows to invested resources. It primarily reflects the level of a company's sales volume. As shown in Table 5, Jiajia Yue Supermarket's cash-to-sales ratio over the past four years generally followed a pattern of initial growth followed by decline. In 2021, it stood at 0.47%, a relatively low level; In 2022, it rose to 3.64%, the highest value in the four-year period. This increase resulted from a substantial jump in net cash flow from operating activities—from 71.5781 million yuan in 2021 to 588.7157 million yuan—with the growth rate significantly outpacing that of operating revenue. This likely stems from enhanced cash flow management, such as more efficient collection of accounts receivable or optimized supplier payment terms, leading to a substantial increase in cash inflows from operating activities. In 2023, the ratio declined to 2.33%. This stemmed from a net operating cash flow decrease to RMB 361.7356 million, with the decline being more pronounced than the decrease in operating revenue. This may have resulted from increased cash outflows due to higher procurement costs or slower sales collections. In 2024, the ratio further declined to 0.72%, approaching 2021 levels. This was due to net cash flow from operating activities decreasing further to RMB 116.7756 million, while operating revenue rebounded to RMB 6,148.5657 million. This decline in net cash flow from operating activities may stem from the supermarket adopting more lenient credit policies to expand sales, resulting in increased accounts receivable.

Table 5: Cash-to-Sales Ratio Statement for Jiajia Yue Supermarket

Financial Indicators	2021	2022	2023	2024
Net Cash Flow from Operating Activities (RMB 10,000)	7157.81	58871.57	36173.56	11677.56
Operating Revenue (RMB 10,000)	1524490.61	1616367.76	1556004.76	1614856.57
Cash-to-Sales Ratio (%)	0.47	3.64	2.33	0.72

3.2.2 Cash-to-Net Profit Ratio

The cash-to-net profit ratio is the ratio of net cash flow from operating activities to net profit, reflecting the quality of a company's profitability. The calculated value assesses the company's ability to convert book profits into actual cash flow. A higher ratio indicates stronger collection capabilities and correspondingly lower financial risk, while a lower ratio may imply certain financial risks. As shown in Table 6, Jiajia Yue Supermarket's cash-to-net profit ratio has shown significant fluctuations over the past four years but has ultimately settled into a relatively stable range. Notably, in 2021, this ratio turned negative. This indicates that cash flow from operating activities not only failed to cover net profit but actually moved in the opposite direction of net profit. The core reason was that net profit itself was negative that year, while cash flow from operating activities, though positive, was relatively small. This ultimately resulted in a negative ratio. In 2022, the ratio surged to a high level, reflecting that the growth rate of net cash flow from operating activities significantly outpaced the growth rate of net profit. In 2023, the ratio declined noticeably from 2022 and gradually returned to a reasonable range. This occurred because the growth of net cash flow from operating activities slowed or even decreased, while net profit continued to grow but at a rate that failed to offset the decline in operating cash flow. This may have been due to the supermarket expanding its operational scale that year, leading to increased expenditures in areas like procurement and thereby weakening the growth momentum of operating cash flow. In 2024, the ratio continued to decline slightly and remained at a relatively stable low level. This was due to the persistent reduction in net cash flow from operating activities. Although net profit decreased compared to the previous year, the rate of decline was smaller than that of net cash flow from operating activities. Specifically, the supermarket may have adopted more lenient credit policies to maintain sales volume, leading to increased accounts receivable. Concurrently, net profit experienced a certain decline due to cost control measures or market conditions. The combined effect of these factors ultimately kept the ratio within a low range.

Table 6: Cash-to-Net Profit Ratio Statement for Jiajia Yue Supermarket

Financial Indicators	2021	2022	2023	2024
Net Cash Flow from Operating Activities (RMB 10,000)	7157.81	58871.57	36173.56	11677.56
Net Profit (RMB 10,000)	-526.23	3663.44	42825.16	17805.72
Cash-to-Net Profit Ratio (%)	-1360.21	1607	84.47	65.58

4. Overall Profitability Assessment

Analysis of various indicators reveals that Renrenle's overall profitability remains relatively weak. From the perspectives of operational scale and asset management, while the company's sales performance has shown steady annual growth in recent years, its total asset turnover efficiency has consistently remained at a low level, failing to effectively match sales growth. Both the company's total asset scale and shareholders' equity exhibit a shrinking trend. Combined with the continuous decline in operating cash flow per share, this further reflects the company's insufficient asset utilization efficiency and cash generation capacity. During operations, the company's core challenges center on capital management and cost control. As business expands, it faces delayed collection of accounts receivable and persistent increases in various cost expenditures. These two factors intensify pressure on capital turnover, undermining the stability and controllability of operating cash flow and preventing the establishment of a healthy capital circulation system.

5. Recommendations for Enhancing Profitability

5.1 Implement Customer Credit Grading

Companies should establish credit ratings based on customers' payment history, business scale, and industry reputation. Different credit policies should be implemented for customers at varying levels. The company shall appropriately extend payment terms for core and high-quality customers, while shortening payment terms and requiring partial prepayment from new or low-credit customers to minimize overdue receivables risk at the source. It shall simultaneously establish a dynamic receivables tracking system using financial software to monitor the aging and due dates of each receivable in real time. For payments nearing maturity or already overdue, the company shall assign dedicated personnel to collect via phone calls or written notices. When necessary, it shall negotiate installment repayment plans with customers to enhance collection efficiency.

5.2 Conduct a comprehensive cost review

It is incumbent upon companies to meticulously examine the cost structure across procurement, warehousing, and sales operations in order to ascertain areas exhibiting inadequate cost control. During the procurement process, it is imperative to establish a mechanism for comparing suppliers. This mechanism should involve obtaining quotes from multiple suppliers for essential products. The enhancement of bargaining power can be achieved through centralized purchasing and the establishment of long-term partnerships, thereby leading to a reduction in procurement costs. In the context of warehousing, the optimization of inventory management entails the forecasting of demand based on historical sales data, with the objective of minimizing slow-moving inventory. This approach has been demonstrated to reduce expenses related to storage, labor, and product loss costs[3].

5.3 Establish a Cash Flow Budget Management System

To ensure financial viability and strategic decision-making, companies should develop monthly, quarterly, and annual cash flow budgets by integrating sales plans, cost expenditure projections, and accounts receivable recovery expectations. This approach establishes clear cash flow targets for each period, ensuring orderly fund management. Concurrently, the company shall implement a cash flow early warning mechanism with clearly defined safety thresholds. In the event that actual cash flow deviates from the established budget or approaches the safety threshold, it is imperative to promptly initiate alerts to facilitate the analysis of underlying causes and the adjustment of operational strategies. A more in-depth examination of collaborative endeavors with financial institutions is warranted to ascertain the most advantageous loan rates. This will ensure the preservation of stable operating cash

flow and the establishment of a robust capital circulation system.

6. Conclusion

Through the aforementioned profitability analysis of Jiajia Yue Supermarket over the past four years using the improved DuPont analysis method, the enterprise can identify specific operational deficiencies and promptly implement preventive measures. However, due to the inherent information lag inherent in the DuPont analysis method[4], similar enterprises should not only incorporate cash flow theory into their analytical frameworks but also refine and update their existing systems based on their specific circumstances. This approach aims to achieve precise analysis of operational symptoms and profitability.

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