Mergers in the Logistics Industry: A Case Study of JD Logistics' Acquisition of Deppon Express Using SWOT and CAR Analysis

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Abstract. This study analyzes JD Logistics' acquisition of Deppon Express using SWOT analysis and an event study to assess its financial performance. The findings show that JD Logistics expanded its market share and strengthened its presence in heavy freight and lower-tier cities. However, challenges such as cultural differences, high integration costs, and short-term profitability pressures emerged, while weaknesses in air transportation limited international expansion. Financial analysis indicates that market reactions varied. The cumulative abnormal return (CAR) changes before and after the acquisition reflect market recognition. A t-test shows JD Logistics experienced a significant change in abnormal return (P=0.014), indicating a strong market response, while Deppon Express showed no significant change (P=0.37), suggesting uncertainty about its long-term impact. Overall, the acquisition enhanced both companies' competitiveness and provides insights into M&A strategies in the logistics sector. The study emphasizes the need for optimized management and technological innovation to maximize merger benefits.

1 Introduction

With the rapid rise of e-commerce, China's logistics industry has experienced exponential growth in recent years, leading to an expanding market scale [1]. Increasing competition within the industry has placed logistics enterprises under dual pressures: cost control and service quality enhancement. In response, mergers and acquisitions (M&A) have emerged as key strategic tools for companies seeking rapid expansion, resource integration, and market positioning [2].

Through acquisitions, companies can not only enhance operational efficiency but also expand their business coverage and achieve service diversification [3]. While previous studies have extensively examined M&A activities in the logistics sector, most have focused

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on financial performance and market share changes. However, systematic analyses of the competitive advantages, synergies, and long-term impacts of post-acquisition firms remain relatively scarce. Moreover, existing research has not thoroughly assessed whether such acquisitions are ultimately successful.
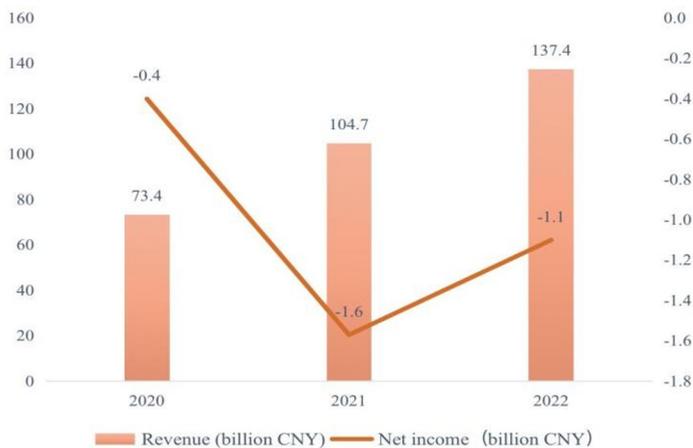
To address this gap, this study examines JD Logistics' acquisition of Deppon Express by constructing an analytical model to evaluate the pre- and post-acquisition changes of both companies. This research aims to provide theoretical insights and practical references for M&A strategies in the logistics industry. The structure of this paper is as follows: First, it introduces the background of JD Logistics and Deppon Express. Next, a SWOT analysis is conducted to examine the strengths, weaknesses, opportunities, and threats associated with the acquisition. Subsequently, the success of the acquisition is assessed by calculating the abnormal return and cumulative abnormal return (CAR) of both companies' stocks before and after the acquisition. Finally, this study provides relevant recommendations based on the findings of the acquisition analysis.
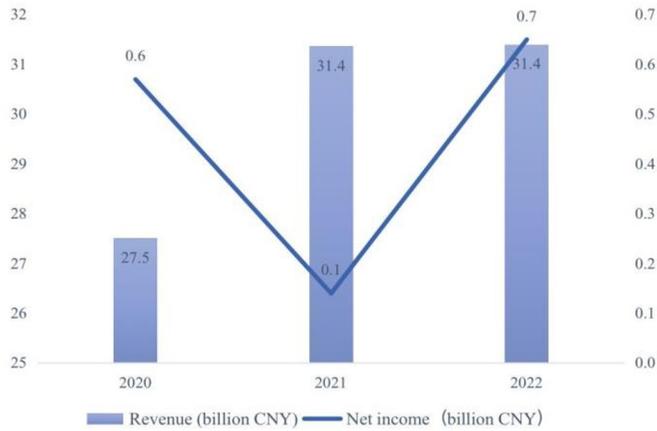
2 Case analysis

Leveraging JD Group's e-commerce ecosystem, JD Logistics excels in warehousing, distribution, and smart logistics [4]. Since its listing on the Hong Kong Stock Exchange in 2021, the company has continued to expand. In contrast, Deppon Express specializes in heavy freight and road transportation, having been listed on the Shanghai Stock Exchange in 2018, but has faced declining profitability and increasing market competition. This acquisition allows JD Logistics to enhance its business layout while providing Deppon Express with capital and resource support. This study examines the acquisition case by first analyzing the financial status of both companies before the transaction.

2.1 Financial overview

Prior to the acquisition, JD Logistics and Deppon Express exhibited certain financial similarities. JD Logistics had experienced continuous revenue growth in recent years but had yet to achieve profitability, relying primarily on capital investment to support its expansion [5]. In contrast, while Deppon Express maintained stable revenue, its profitability had been declining. The following figures present the financial data of both companies from 2020 to 2022.

Fig. 1. The financial status of JD Logistics in the past three years (2020 - 2022)

Fig. 2. The financial status of Deppon Express in the past three years (2020 - 2022)

Based on Figure 1, JD Logistics' revenue grew consistently from 73.4 billion CNY in 2020 to 137.4 billion CNY in 2022, yet its net profit remained negative throughout the period. In contrast, Deppon Express saw a significant revenue increase from 27.5 billion CNY in 2020 to 31.36 billion CNY in 2021, after which it stabilized (as shown in Figure 2). However, both companies experienced a sharp decline in net profit in 2021—JD Logistics' net profit plummeted by 287% compared to 2020, while Deppon Express saw a 74% decline year-over-year.

These financial trends indicate a notable deterioration in both companies' financial health. Deppon Express struggled with profitability under increasing market competition, highlighting its need for stronger capital backing and a more robust platform. Meanwhile, JD Logistics' decline in net profit was likely driven by aggressive expansion and rising acquisition costs. The decision to acquire Deppon Express may have been a strategic move to strengthen its presence in the freight delivery sector while enhancing overall supply chain integration.

3 SWOT analysis of JD logistics' acquisition of Deppon express

3.1 Strengths

As a leading logistics service provider in China, JD Logistics leverages its robust supply chain management capabilities to provide an efficient end-to-end service from warehousing to distribution [6]. It has a significant advantage in last-mile delivery, supported by substantial investments in self-operated warehousing facilities that cover most regions of China. Additionally, JD Logistics is an industry leader in intelligent warehousing technology, utilizing big data and automation systems to optimize inventory management and logistics routing.

3.2 Weaknesses

After acquiring, JD Logistics faced challenges related to corporate culture differences and high integration costs. Deppon Express has long been known for its strict competitive mechanisms, whereas JD Logistics emphasizes efficient execution and rapid market response. These differences in management styles could lead to talent attrition and internal integration

difficulties, ultimately affecting the overall synergy of the acquisition. Additionally, resource and network integration require significant time and financial investment, which may exert short-term pressure on profitability. This acquisition, costing nearly 9 billion CNY, set an industry record and significantly increased JD Logistics' capital expenditures.

3.3 Opportunities

3.3.1 Opportunities for JD Logistics

Through the acquisition of Deppon Express, JD Logistics can expand its market share and optimize its customer structure. Deppon Express has a strong market presence in large-parcel delivery services and lower-tier cities, enabling JD Logistics to further penetrate high-growth markets and meet the increasing demand for e-commerce and cross-border logistics. Furthermore, Deppon Express possesses an extensive network of B2B corporate clients, allowing JD Logistics to diversify its business beyond its existing reliance on JD Group's internal supply chain. This expansion into external business channels reduces dependence on a single market, enhancing both market competitiveness and risk resilience [7].

3.3.2 Opportunities for Deppon Express

By being acquired by JD Logistics, Deppon Express gains access to a more stable order flow and increased business volume through JD.com's marketplace, thereby enhancing its market share. Additionally, the acquisition facilitates technological and managerial upgrades. JD Logistics' strengths in intelligent warehousing technology and efficient management enable Deppon Express to adopt advanced operational models and management practices, leading to improved service quality, enhanced operational efficiency, and ultimately, a stronger competitive position in the logistics market.

3.4 Threats

Limited Expansion in Overseas Markets: As China's domestic logistics market approaches saturation, industry competition is expected to intensify. Although JD Logistics has addressed its shortcomings in land transportation through the acquisition of Deppon Express, it still faces significant limitations in air freight capacity. As shown in Table 1, JD Logistics operates only one-tenth of the air routes compared to SF Express, putting it at a disadvantage in global market expansion. This limitation hinders its ability to integrate into the global supply chain network, restricting its competitiveness in cross-border logistics.

Table 1. Comparison of JD Logistics and SF Holding's Infrastructure in 2021

Category	JD Logistics	SF Express
Transportation Fleet	18,000 trucks and other vehicles	58,000 branch vehicles, 105000 terminal distribution vehicles
Trunk and Branch Routes	——	>130,000
Air Transport Routes	>1000	2,114 domestic and 8,800 foreign routes
Railway Routes	250 (137 are high-speed rail lines)	570 (451 high-speed rail lines)

4 Financial performance analysis of JD Logistics' acquisition of Deppon Express

4.1 Short-Term market performance analysis

This study employs the event study methodology to analyze the short-term performance of the company. Since stock prices often reflect market expectations of a company's future prospects to some extent, this approach calculates the cumulative abnormal returns (CAR) by comparing stock price changes over different event windows before and after the acquisition. This analysis helps determine whether the acquisition has created value for the company's shareholders.

4.1.1 Opportunities for JD Logistics

The "event" refers to JD Logistics' official announcement of the acquisition plan on March 13, 2022. This paper set the first trading day after the announcement as the baseline (t=0). To balance comprehensive analysis and interference control, the event window is set at [-5, +5] days, with a 120-day estimation period [8].

4.1.2 Expected return model

This essay adopts the market model to calculate abnormal return rate (AR) and CAR. The model establishes a linear regression relationship between individual stock returns and market portfolio returns during the estimation period:

$$R_t = \alpha_t + \beta_t \cdot R_{mt} + \varepsilon_t \tag{1}$$

where R_t is actual return rate of the stock, R_{mt} is market return rate (represented by Hang Seng Index and SSE Composite Index), ε_t is regression residual. The expected return rate is calculated as:

$$E(R_t) = \alpha_t + \beta_t \cdot R_{mt} \tag{2}$$

Abnormal return rate (AR) is derived by

$$AR_t = R_t - E(R_t) \tag{3}$$

Cumulative abnormal return rate (CAR) is obtained by:
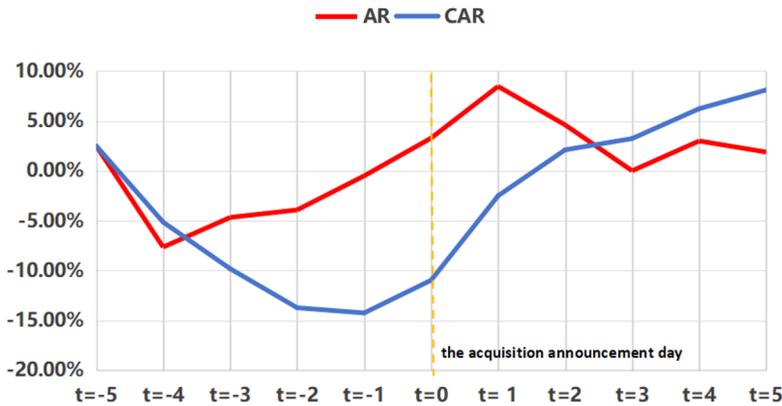
$$CAR_t = \sum AR_t \tag{4}$$

4.1.3 CAR Calculation

Based on Equation (1), this study derived the expected return rates for both companies. Subsequently, the abnormal return rates (AR) and cumulative abnormal return rates (CAR) were calculated using Equations (3) and (4). The specific results are as follows:

(1) Impact on JD Logistics

Table 2. CAR Calculation for JD Logistics

Day	Actual Return	Expected Return	AR	CAR
t=-5	-2.67%	-5.18%	2.50%	2.50%
t=-4	-9.73%	-2.08%	-7.64%	-5.14%
t=-3	-5.85%	-1.19%	-4.67%	-9.81%
t=-2	-2.69%	1.23%	-3.92%	-13.72%
t=-1	-2.86%	-2.36%	-0.51%	-14.24%
t=0	-3.26%	-6.55%	3.28%	-10.96%
t=1	0.98%	-7.48%	8.46%	-2.50%
t=2	15.57%	10.97%	4.60%	2.10%
t=3	9.56%	8.43%	1.13%	3.23%
t=4	2.13%	-0.86%	2.99%	6.22%
t=5	0.42%	-1.46%	1.88%	8.10%

Fig. 3. The change of abnormal return rate and cumulative abnormal return rate of JD Logistics
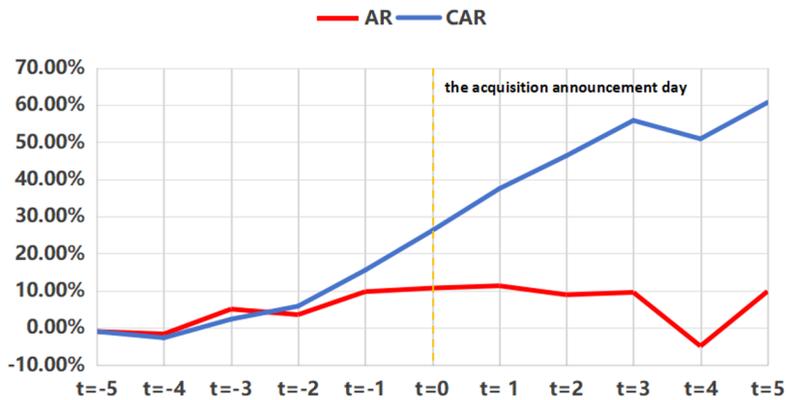
As shown in Table 2, JD Logistics' cumulative abnormal return rate (CAR) reached -14.24% on the day before the merger announcement (t=-1), indicating negative market sentiment toward JD Logistics prior to the acquisition. However, by the fifth day after the announcement (t=+5), the CAR rose to 8.10%, reflecting an increasingly positive market attitude toward the merger, which can also get the same conclusion from Figure 3. This demonstrates that the acquisition successfully altered market expectations for JD Logistics,

as investors recognized its potential value, driving up the company's stock price. Consequently, the merger can be deemed successful for JD Logistics in the long term.

(2) Impact on Deppon Express

Table 3. CAR Calculation for Deppon Express

Day	Actual Return	Expected Return	AR	CAR
t=-5	-0.92%	0.11%	-1.03%	-1.03%
t=-4	-1.85%	-0.17%	-1.69%	-2.72%
t=-3	5.38%	0.38%	5.01%	2.29%
t=-2	3.14%	-0.38%	3.51%	5.80%
t=-1	9.99%	0.29%	9.70%	15.50%
t=0	10.03%	-0.64%	10.67%	26.17%
t=1	9.98%	-1.32%	11.29%	37.46%
t=2	9.99%	1.11%	8.87%	46.33%
t=3	10.03%	0.51%	9.52%	55.85%
t=4	-4.53%	0.43%	-4.96%	50.89%
t=5	9.94%	0.13%	9.81%	60.70%

Fig. 4. The change of abnormal return rate and cumulative abnormal return rate of Deppon Express

As shown in Table 3 and Figure 4, Deppon Express' CAR reached 15.50% on the day before the merger announcement (t=-1), reflecting a positive market response to the acquisition. By the fifth day after the announcement (t=+5), the CAR further rose to 60.70%, indicating strong market confidence in Deppon Express' future development. This suggests that the merger significantly enhanced shareholder value for Deppon Express. Therefore, the merger can be deemed successful for JD Logistics in the long term.

4.1.4 Validating the Impact of the Acquisition

To further verify the significance of the acquisition's impact, this study conducted a t-test on the AR of JD Logistics and Deppon Express. The results are as follows:

Table 4. T-Test for Abnormal Return Rates Before and After JD Logistics' Aquisition

Days	AR Before	AR After	Di
t=-5	2.50%	8.46%	5.96%
t=-4	-7.64%	4.60%	12.24%
t=-3	-4.67%	1.13%	5.80%
t=-2	-3.92%	2.99%	6.91%
t=-1	-0.51%	1.88%	2.39%
Mean of D	0.07		
S.D. of D	0.04		
t -Statistic	4.18		
P- Value	0.01		

Table 5. T-Test for Abnormal Return Rates Before and After Deppon Express' Acquisition

Days	AR Before	AR After	Di
t=-5	-1.03%	11.29%	12.32%
t=-4	-1.69%	8.87%	10.56%
t=-3	5.01%	9.52%	4.51%
t=-2	3.51%	-4.96%	-8.47%
t=-1	9.70%	9.81%	0.11%
Mean of D	0.04		
S.D. of D	0.08		
t -Statistic	1.01		
P-Value	0.37		

This research compared the pre- and post-merger AR of both companies using t-tests to verify whether market reactions to the merger event were statistically significant. The findings reveal distinct differences in market feedback between the two firms after the merger.

First, in Table 4, JD Logistics exhibited significant differences in AR before and after the merger. With a p-value of 0.014 (below 0.05), the results are statistically significant at the 95% confidence level, indicating that the merger had a material impact on JD Logistics.

In contrast, Deppon Express showed no significant differences in AR before and after the merger. The p-value of 0.37 (above 0.05) suggests statistical insignificance at the 95% confidence level (as shown in Table 5).

In conclusion, the merger's effect on stock prices varied significantly between the two companies. The market responded positively to JD Logistics' acquisition, whereas the response to Deppon Express was muted. This divergence may relate to factors such as the firms' market positions, integration expectations, and industry outlook, necessitating further analysis with additional market data.

5 Implications and recommendations

5.1 Implications for mergers and acquisitions in the logistics industry

Mergers in the logistics industry should prioritize the complementarity of network resources and market synergies. Companies should address their weaknesses through acquisitions while leveraging the acquired firm's resources to expand markets and optimize customer structures, ultimately enhancing competitiveness and risk resilience. Additionally, logistics mergers are not only about resource integration but also opportunities for technological collaboration and innovation [9]. Government policies can provide a favourable external environment for post-merger development, and companies should capitalize on technological and policy advantages to improve overall service capabilities. Deppon Express' strong market presence in lower-tier cities offers JD Logistics access to high-growth potential markets. Therefore, companies should strategically plan regional market expansions to meet the diverse needs of customers. Furthermore, financial stability must be thoroughly assessed before mergers, with well-structured integration plans in place to mitigate financial risks and prevent post-merger challenges. Cultural integration is also critical in logistics mergers. Companies should implement effective communication and incentive mechanisms to enhance employee alignment with the new corporate culture [10]. While mergers help address strategic gaps, firms must continuously monitor competitive dynamics. For instance, JD Logistics' weakness in air transportation limits its global expansion capabilities. Thus, post-merger efforts should focus on optimizing internal management, improving resource integration, and adapting to market shifts to remain competitive.

5.2 Policy recommendations

To support mergers, integration, and innovation in the logistics industry, the government should implement various policies to drive high-quality development. First, the government should encourage mergers and resource integration within the logistics sector by providing tax incentives and financial subsidies to reduce acquisition costs. These measures should also promote technological advancements and business optimization, particularly in lower-tier cities, where local governments should enhance support for logistics infrastructure development [11]. Second, policies should facilitate internationalization and air transportation growth. Financial assistance can help companies expand international routes, acquire aviation resources, and foster global logistics cooperation, strengthening domestic

firms' competitiveness in global supply chains. Additionally, the government should accelerate the development of intelligent logistics by encouraging investments in smart warehousing and automated delivery technologies to enhance overall industry efficiency. Finally, promoting green logistics is essential. Policymakers should support the adoption of environmentally friendly technologies, incentivize companies to use sustainable transportation methods, and establish pilot programs for green logistics to achieve long-term sustainable development.

6 Conclusion

This study conducted an in-depth analysis of JD Logistics' acquisition of Deppon Express using SWOT analysis and financial performance evaluation. The findings highlight significant advantages in resource integration, market expansion, and customer structure optimization. The acquisition notably enhanced JD Logistics' capabilities in road transportation and B2B client coverage. Additionally, Deppon Express' strengths in large-item logistics and lower-tier city markets have helped JD Logistics expand its market share and competitiveness in high-growth regions. Furthermore, the acquisition provided opportunities for technological innovation and supply chain optimization by leveraging Deppon's trunk transportation expertise, improving logistics efficiency, and reducing operational costs. However, challenges such as high integration costs, cultural differences, and market competition emerged. Internal resource integration, management style adaptation, and financial risks posed short-term profitability pressures. Moreover, JD Logistics' limitations in air transportation constrained its cross-border logistics and global supply chain integration.

The cumulative abnormal return (CAR) analysis indicated that JD Logistics' CAR was -14.24% on the day before the acquisition announcement (t=-1). However, by the fifth day post-announcement, CAR rebounded to 8.10%, reflecting market recognition of long-term synergies. In contrast, Deppon Express' CAR rose from 15.50% (t=-1) to 60.70% on the fifth day, suggesting a highly positive market response. The t-test results showed a significant difference in JD Logistics' pre- and post-acquisition abnormal returns (P=0.014), indicating a clear market reaction. However, Deppon Express' t-test result (P=0.37) suggested no significant change, implying a less pronounced impact on the company.

While this study provides theoretical and practical insights into the acquisition's impact, limitations remain. First, it primarily focuses on short-term financial performance and market response, with limited discussion of long-term operational effects. Second, it does not extensively explore managerial challenges, cultural integration, or supply chain synergies. Future research could incorporate case studies and interviews to gain a more comprehensive understanding. Additionally, the evolving competitive landscape and the role of technological innovation are crucial areas for further exploration. Long-term performance tracking, comparative studies on different merger models, and internationalization strategies could provide deeper insights for optimizing logistics industry acquisitions.

Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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