

# ***The Impact of 'Price Wars' on Corporate Cost Structures and Profitability: A Case Study of SF Holding***

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**Abstract.** In recent years, China's express delivery and logistics sector has expanded steadily; however, intensified homogeneous low-price competition has led to a continuous decline in per-parcel rates, dealing a severe blow to capital-intensive logistics firms. Using SF Holding as a case study, this paper systematically examines the impact of price wars on corporate profitability, cash flow, and intrinsic value, drawing on the Free Cash Flow to the Firm (FCFF) model, financial transmission analysis, and sensitivity testing. The research indicates that SF's direct-operated model is characterised by high cost rigidity and substantial capital investment, and that operational performance is highly dependent on service premiums and stable revenue per parcel. Low-price competition within the industry has led to sharp drops in the growth rates of the company's per-parcel revenue and gross profit, while fixed capital expenditures keep compressing its cash flow margins. Falling prices will progressively erode the company's profits and free cash flow, thereby damaging shareholder value; moreover, SF Express's cash flow is highly sensitive to revenue per consignment, meaning even a slight decline in shipping rates can tip free cash flow from positive to negative.

**Keywords:** logistics industry, price war, SF Holding, FCFF model, free cash flow

## **1. Introduction**

The logistics sector is the 'lifeblood' of the real economy, linking production and consumption as well as China's domestic trade and international trade [1]. Leveraging the integration of the three flows—goods, capital, and information—the express delivery sector permeates the entire industrial chain. Between 2022 and 2025, the sector's revenue increased from 1,056.67 billion yuan to 1,493.93 billion yuan, while the volume of parcels grew from 110.58 billion to 216.51 billion. However, the average price per parcel fell from 9.56 yuan to 6.939 yuan, reflecting the continuing negative effects of low-price competition [2].

There are notable gaps in existing research: Yin Qi et al. confirmed that homogenisation fuels a downward price spiral, but did not analyse the express delivery sector specifically [3]; Li Hong et al. estimated the asset value of SF Express without incorporating the impact of price competition [4]; Jiang optimised the dynamic FCFF model, but applied it only to the asset-light fast-moving consumer goods sector; meanwhile, overseas literature has only qualitatively explored digitalization as a recovery path, leaving a lack of quantitative validation for China's logistics enterprises [5].

In light of these research gaps, this paper takes SF Holding as its case study and employs the FCFF model alongside counterfactual scenarios to quantify the erosion of enterprise value caused by price wars across the dimensions of gross profit, working capital and capital expenditure. It simultaneously analyses the hedging effect of digital investment, thereby addressing the shortcoming in existing research that treats price competition and enterprise valuation as separate issues.

## **2. Overview of SF Express and analysis of its business model**

SF Holding is Asia's leading and the world's fourth-largest integrated logistics service provider. It has built brand equity through standardized management of its directly operated network and high-quality, timely services, and has established a competitive edge via high gross margins, differentiating itself from the industry's low-price competition model [6]. The company has established capital-intensive barriers through its fleet of all-cargo aircraft, aviation hubs, smart sorting centres and directly managed teams, forming a diversified business system centred on high-margin time-sensitive parcels, alongside express freight, cold chain, and international logistics developing in tandem.

SF Express is a capital-intensive enterprise with high fixed costs and significant capital expenditure rigidity, with labour, depreciation of transport capacity, and amortisation of premises and equipment constituting its primary costs. FCFF calculations indicate that while initial capital investments have gradually yielded returns, the rigid cost structure makes it difficult to absorb reductions in unit prices; price cuts would directly undermine the company's cash flow and long-term value [7].

Annual report data indicates that SF Express's revenue for 2023 through 2025 was 258.4, 284.4 and 308.2 billion yuan respectively, corresponding to gross profits of 33.1, 38.9 and 41.0 billion yuan. The growth rate of gross profit in 2025 was a mere 3.6 percent, reflecting a significant loss of growth momentum. Apart from internal factors such as automation upgrades and network expansion, the industry's prolonged price war is a key external factor suppressing revenue per parcel and dragging down gross profit. SF Express's strategy of prioritizing volume over price has already undermined its profitability and the stability of its original business model. The following section will employ the Free Cash Flow to the Firm (FCFF) model to quantitatively analyse the specific impact of the price war on the company's profit quality and long-term value creation capacity.

## **3. Discussion on the relationship between profits and 'price wars' under the FCFF model and the method of proof by contradiction**

Prolonged low-price competition has profoundly altered the financial performance of leading logistics firms, and SF's direct-operated network model suffers the most severe adverse shocks. Drawing on the FCFF model and a counterfactual analysis, this chapter quantifies the negative impact of price cuts on profitability and cash flow, and analyses the financial mechanisms through which low-price competition erodes a company's long-term value.

### **3.1. FCFF retrospective analysis and projections based on data**

Free Cash Flow to the Firm (FCFF) is a core indicator for measuring a company's ability to create value, financial sustainability, and operational quality; it comprehensively reflects profitability, cash-generating capacity, capital investment efficiency, and operational management. This paper employs

the classic FCFF calculation formula:  $FCFF = \text{net operating profit after tax} + \text{non-cash costs} - \text{changes in working capital} - \text{capital expenditure}$ .

Based on SF Holding's 2025 financial data, the company's FCFF for the period was calculated at 12,201,111.68 yuan, with net operating profit after tax acting as the primary cash flow driver. Impacted by price competition within the industry, the company's profit growth has weakened significantly; a decline in per-parcel revenue has caused the gross profit growth rate to fall from 19.2 percent in 2024 to 3.6 percent [8]. To maintain its competitive edge in direct-operated network, on-time delivery services and smart infrastructure deployment, the company has maintained a high level of mandatory capital expenditure; in 2025, capital expenditure accounted for 82.5 per cent of net profit. Long-term infrastructure investment can strengthen the company's competitive barriers, but in the short term it significantly consumes operating cash flow and reduces financial safety margins. Meanwhile, minor optimisations in working capital are insufficient to offset the dual pressures of falling unit prices and high capital expenditure, resulting in financial characteristics characterised by rapid scale expansion, weak profit resilience and insufficient cash flow flexibility.

Research confirms that SF Express's capital-intensive business model, which relies on service premiums, is fundamentally incompatible with the industry's low-price competition [9]. A business strategy of expanding scale through price cuts can stabilise market share only in the short term, while continuously eroding per-parcel gross profit and cash flow generation capacity. The combination of fixed costs and substantial capital expenditure, coupled with routine price wars, will continue to compress the company's profit margins, exacerbate cash flow pressures and weaken its financial resilience. Sensitivity analysis of revenue per parcel further confirms that even a slight decline in unit price can cause FCFF to turn from positive to negative. This demonstrates that low-price competition cannot drive the company's long-term value growth; rather, it exacerbates operational risks and is inconsistent with the company's long-term strategy of high-quality development.

### 3.2. Analysis of the transmission pathways of price wars on SF Express's financial logic

#### 3.2.1. Profitability

Industry-wide price cuts have led to a decline in revenue per parcel. As fixed costs account for over 60 per cent of SF Express's operating costs, it is difficult to adjust costs flexibly. In 2024, its gross profit per parcel stood at 2.3 yuan, with a gross profit margin of 14.8 per cent, leaving limited room for profit buffering. A 10 per cent increase in business volume can only offset a 1.5 per cent decline in unit price, which is insufficient to counteract the industry-wide price reductions of 5-10 per cent; consequently, EBIT margins contract and operating profitability declines [10].

#### 3.2.2. Cash flow perspective

NOPAT is the core source of FCFF; in 2024, this figure stood at approximately 9 billion yuan, supporting the company's transport capacity and digitalisation initiatives. As vicious price competition continuously compresses gross profit margins, the firm's NOPAT has contracted correspondingly, exerting mounting downward pressure on free cash flow. This constrains sustained capital investment under a capital-intensive business model and hinders the consolidation of competitive barriers.

### 3.2.3. Shareholder value perspective

Based on the formula  $EVA = \text{net operating profit after tax} - \text{cost of capital}$ , the impact on profitability will reduce the company's EVA-generating capacity. Prolonged low-price competition will erode the company's intrinsic value, diminish its standing in the capital markets, and curtail the scope for future financing and strategic expansion.

## 3.3. Sensitivity analysis

### 3.3.1. Sensitivity analysis assumptions

This FCFF calculation is based on four standard assumptions: firstly, single-factor isolation, whereby only per-parcel revenue is varied, whilst all other variables are maintained at their baseline levels; secondly, linear profit transmission, whereby changes in revenue fully affect pre-tax profit, without taking into account scale or cost adjustment effects; thirdly, a constant income tax rate, ensuring a linear relationship between revenue and post-tax profit; and fourthly, unchanged operating and investment parameters, with working capital, capital expenditure and non-cash costs held constant.

### 3.3.2. Scenario-based calculation results

To quantify the extent of the impact of changes in per-parcel price on free cash flow, this paper uses a baseline per-parcel revenue of 13.70 yuan as the basis for calculation. Four scenarios are established, with per-ticket revenue decreasing by 3 per cent, 5 per cent, 8 per cent and 10 per cent respectively, and the magnitude of change in FCFF is calculated for each.

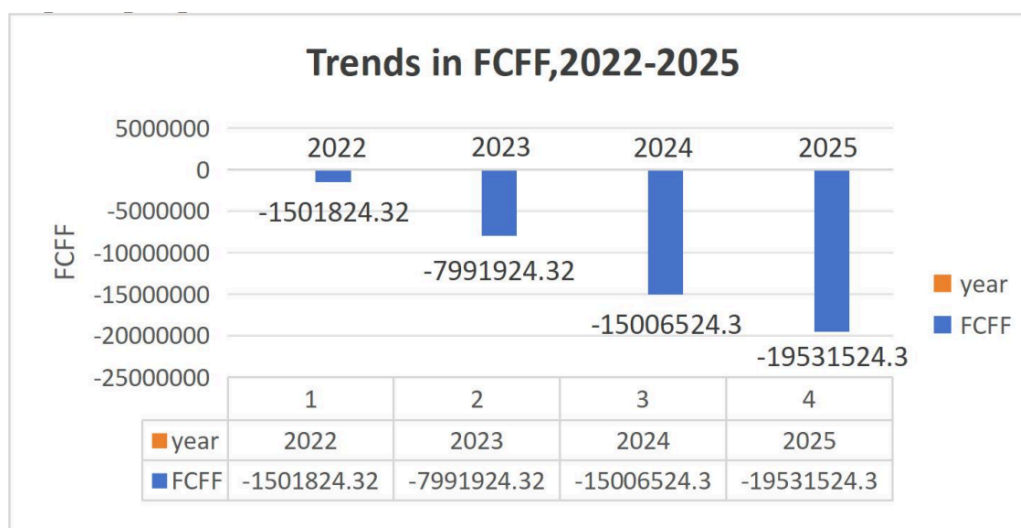


Figure 1. Trends in FCFF, 2022-2025

The results show that when revenue per-parcel revenue fell by 3 per cent to 13.29 yuan, the company's operating revenue and after-tax net profit declined in tandem; FCFF stood at –1,501,824.32 yuan, a decrease of 112.30 per cent compared with the baseline, and cash flow turned from positive to negative; When revenue per ticket fell by 5 per cent to 13.02 yuan, FCFF dropped to –7,991,924.32 yuan, a year-on-year decrease of 165.50 per cent, and cash flow deteriorated significantly; when revenue per ticket fell by 8 per cent to 12.60 yuan, FCFF stood at –

15,006,524.32 yuan, a decline of 223.00 per cent, and the company's cash flow came under severe pressure; When revenue per parcel fell by 10 per cent to 12.33 yuan, FCFF dropped to –19,531,524.32 yuan, a decline of 260.10 per cent, indicating that the company's free cash flow was severely depleted. The above calculations clearly demonstrate the high sensitivity of SF Express's cash flow to the price per parcel.

### 3.3.3. Conclusions of the sensitivity analysis

Projections for 2025 indicate that SF Express's free cash flow is highly sensitive to revenue per parcel, with a base FCFF of 12,201,111.68 yuan. A 3 per cent decline in per-parcel revenue would immediately cause cash flow to turn from positive to negative; a decline of more than 5 per cent would lead to a sustained deterioration in cash flow, which aligns with the range of fluctuations seen in the industry's price wars. Given its high-cost model based on a direct-operated network and air freight, the company's profitability is highly dependent on unit prices and service premiums, and it has extremely low tolerance for low-price competition. Even a modest price reduction could erode the financial safety cushion, demonstrating that a race-to-the-bottom pricing strategy is fundamentally incompatible with the company's long-term value strategy and is not financially sustainable.

## 4. Research summary and implications

This paper employs the FCFF model and sensitivity analysis to demonstrate that SF Express's capital-intensive, direct-operated business model is highly dependent on service premiums. Industry-wide price wars are eroding gross margins and tightening cash flow; even a slight decline in per-parcel revenue is sufficient to cause the FCFF to turn from positive to negative, a trend that runs counter to the company's business logic. Due to limitations arising from the sample period and the use of a single case study, the generalisability of these conclusions is limited.

Companies should pursue a strategy of differentiation, relying on digitalisation to control costs and exercising prudent management of capital expenditure, whilst expanding into high-value-added businesses. Industry leaders must spearhead sector-wide transformation, shifting away from vicious low-price rivalry toward value-oriented and high-quality industrial development.

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