

Hedging Strategies of China Eastern Airlines in 2022: Navigating the Dual Shocks of COVID-19 and the Russia-Ukraine War

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Abstract. In this paper, the hedging strategy of China Eastern Airlines (CEA) in 2022, which is affected by the dual crises of COVID-19 pandemic and Russia-Ukraine war will be examined. Meanwhile, how these external shocks affect the effectiveness of the CEA's hedging will be described. Specifically, the results of the study show that the pandemic weakened the value of hedging. Global oil prices have been in position due to the decline in passenger demand. the CEA hedges lead to realized losses and deterioration of the firm's financial performance. In contrast, the Russia-Ukraine war triggered a significant increase in fuel prices. However, low hedging ratios and poor timing limited its effectiveness. Worse economic scenarios followed. Additionally, this article highlights the dual nature of hedging by analyzing the financial, managerial and policy dimensions. The research shows that it is not seen as an insurance policy only. Different scenarios of demand-side and supply-side shocks can also determine its value. The CEA experience consequently emphasizes the need for more flexible and adaptive risk management frameworks combined with operational strategies to better protect against risks with high future uncertainty. It also provides inspiration for global airlines and policymakers who are seeking to increase corporate resilience in an era of heightened volatility.

Keywords: Fuel Price Hedging; Airline Risk Management; Crisis Impact; Corporate Resilience.

1. Introduction

The global aviation industry has always been highly sensitive to the external environment [1]. Specifically, volatility in fuel prices and passenger demand are its main sources of risk. The 2020 outbreak brought global air transport to a virtual standstill. Data showed passenger demand fell by more than 60 per cent from 2019, and global airlines accumulated losses of more than US\$370 billion [2]. As a result, the revenue collapse has left China Eastern Airlines generally exposed to huge losses. In 2022, the Russian-Ukrainian war has caused dramatic turmoil in the international energy market leading to the price of crude oil topping US\$100 per barrel [3]. Hence, this also puts new pressure on Chinese airlines to face rapidly rising fuel costs. Risk management has become more difficult as the industry has experienced demand-side shocks followed by supply-side shocks in two years.

In this context, fuel hedging has become more of a concern for CEA as a tool to stabilize costs and reduce financial risk. The hedging is common in the aviation industry, as fuel typically accounts for 30-40 per cent of operating expenses [4]. Therefore, even small price fluctuations can significantly impact profitability. With the use of financial instruments such as swaps, options and futures, airlines can seek to reduce profitability volatility and enhance financial planning by locking in future prices in advance. Some studies have found that hedging can create shareholder value and reduce the risk of unexpected cost increases. However, poor timing or market conditions that run counter to the contractual direction can inflate the risk and make hedging less effective, especially during periods of collapsing demand [5]. Furthermore, the attitude towards hedging varies widely from airline to airline internationally. Extensively researched low-cost carriers such as Southwest Airlines in the US and Ryanair in Europe often actively use options and high hedging ratios. On the other hand, the three major Chinese airlines such as Air China, China Southern and China Eastern generally adopt a more cautious strategy under the influence of regulation and corporate culture. Among them, forwards and swaps are often used at a lower rate to protect against risk. This reflects a combination of regulatory

constraints and risk-averse corporate governance as well as a strategic focus on stability [6]. However, the double crises during the pandemic and the war revealed the strengths and weaknesses of this model. During a pandemic, hedging causes losses by locking in prices above market levels. Also even though the low-ratio hedging strategy provided partial mitigation of cost spikes during the war. But still faced greater losses overall. The emergence of these results provides a unique opportunity to analyze how external conditions affect the effectiveness of the hedging strategy of CEA.

2. Company Description

China Eastern Airlines (CEA), headquartered in Shanghai, is one of China's three state-owned airlines. With a total fleet size of more than 750 aircraft and a route network covering more than 200 cities around the world as of 2022, it is an important backbone in China's civil aviation system. As a Chinese state-owned enterprise, CEA's strategic objective is primarily to undertake national air transport security tasks. On the other hand, its financial position benefits from government support but is also subject to market regulatory constraints. From 2020 to 2022, the epidemic has hit China Eastern Airlines hard. The sharp decline in the corporation's passenger revenues led to consecutive losses. However, the international market recovered though into 2022. Another spike in international energy prices as a result of the Russia-Ukraine conflict further exacerbated the uncertainty in the aviation industry. Within operating costs, fuel expenses typically account for as much as 20-30 per cent of overall costs at CEA. Therefore, sharp fluctuations in fuel prices are directly related to corporate profit and loss. Furthermore, a more conservative hedging policy has been adopted by CEA for a long time. The major instruments are fuel forwards and swaps, with few complex options involved. And the hedge ratio is usually kept at a low level. It is worth mentioning that this strategy has the advantage of avoiding excessive risk exposure, but the disadvantage of being less flexible. Thus, the double crisis of 2022 exposed precisely the limitations of this model.

3. Hedging Strategy

China Eastern's approach to risk management in the period around 2022 reflects a prudent and non-speculative purpose. However, it has produced different results based on changing market conditions. Historically, CEA has relied mainly on simple instruments such as forward purchases and fuel swaps rather than complex option. Hedging activities reduced aircraft fuel costs by about RMB 580 million in 2021 [7]. However, the group is trading a low percentage of aircraft fuel hedges in 2022. This is due to the fact that fuel prices have been low since 2020 as a result of the epidemic forcing a sudden drop in the number of flights. A fact of this operation outlines the exposure of CEA in a year when the oil market shifted sharply from depressed levels to higher ones. Thus, to understand the logic behind the choice made by CEA, it is necessary to separate the decision in two dimensions. Specifically, they can be clearly separated into the choice of hedging structures such as swaps, forwards versus options and the timing and size of hedge coverage. Above all, swaps and forwards lock in price certainty. In other words, at the cost of giving up upside if the market price falls. Options, while more expensive, preserve upside. As a result, CEA's preference for swaps and forwards can be enhanced though for cost predictability and accounting simplicity. But, it reduces flexibility when demand shocks lead to a prolonged period of depressed spot prices. Merkert and Swidan illustrates that the low volatility of forwards may cause the company to suffer losses when the market moves negatively, whereas an option-based strategy protects against downside risk without eliminating the risk altogether [8].

The pandemic experience clearly demonstrates this trade-off across the industry. between 2020 and 2021, as global passenger demand collapsed leading to a collapse in jet fuel prices. A number of airlines that had previously locked in prices through forwards or swaps found themselves paying above market contract prices or recognizing significant market value losses on their hedging positions. For example, Singapore Airlines reported hedge-related losses in its financial year 2020 results. Such

industry results explain the cautious attitude of most airlines. In particular, CEA decided to avoid new hedging transactions in 2022 after the previous years' volatility, so it significantly reduced its hedge coverage. However, the macro environment changed rapidly in early 2022. The Russia-Ukraine conflict triggered a strong supply-side shock. The Brent crude and jet fuel benchmarks spike from 2021 levels to a peak in 2022. Specifically, the average annual price of Brent crude oil rises from around \$70 in 2021 to close to \$99 in 2022 [9]. Under this supply shock regime, the economics of hedging change. While pre-existing locked-in prices or timely swaps can directly protect organizations against rapid increases in spot costs. However, because CEA holds no new hedges in 2022 and because its earlier hedges were non-existent or limited in coverage and maturity. The company is exposed to substantial risk of price spikes. Without active hedging, it must absorb higher aviation fuel input costs. This directly impacted operating margins. The combination of rising fuel prices and still fragile demand dynamics squeezed profitability in both directions.

The deeper financial data can show that the hedging strategy of CEA needs to take into account three interrelated directions. Initially, hedges executed prior to a demand shock or not renewed after taking a loss of interest from a previous contract may become liabilities when the market moves in the opposite direction. This suggests that the timing decision for hedging is critical. More often than not, the percentage of fuel consumption covered by the hedge is more important than the presence of the instrument. In 2022, along with price increases, there will be only limited protection for many carriers that maintain low hedge ratios. the conservative stance of the CEA results in low or zero new coverage in 2022. As a result, this also means that the company will face a higher residual risk exposure. Additionally, in terms of the choice of financial instruments, the approach of CEA is to minimize the use of complex options. The upside flexibility is eliminated by relatively cheaply priced swaps and forwards. This is due to the consideration of the higher cost of options. Even though it can provide some protection due to premiums. Thus, collectively, the carriers that actively hedge or use a richer mix of instruments, while experiencing large real losses when spot prices plummet as a result of the outbreak, gain significantly when supply shocks push prices higher in 2022. The net effect of this is highly dependent on each carrier's use of a combination of the three points above. the conservative strategy of CEA hedges the speculative risk in 2020-2021, but exposes the carrier to the risk of a fuel price spike in 2022. As a result, because of the impact on accounting and net cash flows, the Group's net loss attributable to shareholders in 2022 is estimated by the Company to be approximately RMB37,386 million. This model demonstrates that a static conservative hedging stance is not without risk. It can simply be viewed as a strategic bet on future market stability. As such, it may also pay off or backfire depending on subsequent shocks. From the perspective of the management of CEA, the lesson of 2022 is that hedging policies must be dynamic. And integrated with a broader framework of liquidity and operational flexibility. This means that firms need to explicitly model scenarios where demand and price shocks are decoupled, rather than a fixed approach to different scenarios. In parallel, CEA can adjust hedging ratios and instrument mixes by specifying an observable metric such as forward curve steepness, capacity recovery signals, geopolitical risk indices. As well as integrating option overlays when downside protection is prioritized but upside is required to extend the advantage. In short, the experience of CEA underscores that hedging is neither a cure-all nor inherently harmful. Timing, coverage and choice of financial instrument determine whether hedging stabilizes or undermines financial outcomes.

4. Impact Analysis

The impact of China Eastern Airlines' hedging posture in 2022 can be evaluated along three interrelated dimensions: financial performance, operational decision-making, and strategic or policy-level consequences. Each dimension illustrates how external shocks and internal hedging choices interacted to shape outcomes.

Financial consequences were the most immediate and measurable. China Eastern Airlines' 2022 Annual Report showed a net loss of about RMB 37.386 billion attributable to shareholders. This

figure represented one of the largest losses in the airline's history and marked a sharp decline from previous years [10]. Fuel costs played a central role in this outcome. In 2021, hedging reduced aircraft fuel expenses by RMB 580 million. In 2022, however, the airline entered no new hedging contracts. As a result, it was fully exposed to spot market prices. This decision coincided with a dramatic increase in global jet-fuel prices following the Russia-Ukraine conflict. IATA reported that average jet-fuel prices rose by about 75% in 2022, moving from USD 78.4 per barrel in 2021 to USD 136.3 per barrel [11]. Without hedging, China Eastern Airlines became highly vulnerable to this surge. What had served as a financial buffer in 2021 turned into a missed safeguard in 2022.

The operational impact appeared in route planning, capacity deployment, and cost-control efforts. Fuel typically constitutes a significant portion of an airline's operating costs, around 20-30%, making it the single largest expense for most airlines. This high percentage makes managing fuel costs, and improving fuel efficiency, a critical strategy for airlines to maintain profitability, especially in a competitive industry with narrow profit margins [12]. The 2022 price surge forced airlines around the world to adjust operations. China Eastern Airlines responded with stricter cost discipline. Management deferred fleet expansion and placed greater emphasis on domestic routes. This strategy reflected the fact that international routes are longer and therefore consume more fuel. Other Asian airlines provide useful comparisons. Singapore Airlines and Cathay Pacific also faced rising cost per available seat kilometer (CASK) in 2022. However, both reduced the impact through hedging gains [11]. China Eastern Airlines had no such protection. It therefore carried heavier pressure to manage costs operationally. As a result, its load factor recovery fell behind some regional peers. This case shows that hedging affects more than financial statements. It also shapes tactical choices in network recovery and capacity allocation.

At the strategic level, hedging results influenced how stakeholders judged risk management. Investors and regulators drew two main lessons from China Eastern Airlines' case. The first was that hedging is path-dependent. Tools that protect against one scenario, such as low prices caused by weak demand, may fail or even backfire in another, such as a supply-driven price surge [12]. The second was that fixed hedging ratios carry asymmetric risks. A high or low ratio can help in one situation but hurt in another. China Eastern Airlines adopted a conservative stance during COVID-19. This choice limited speculative losses when prices collapsed [13]. Yet the same approach created exposure when prices surged in 2022. Industry studies by Deloitte and EuroFinance stress that flexibility is the true driver of long-term effectiveness [14, 15]. For China Eastern Airlines, the strategic challenge is clear. It must design a dynamic hedging framework that responds to market signals instead of relying on rigid annual targets.

A further policy dimension emerges because CEA, as a state-owned airline, operates under government oversight and implicit public service obligations. This dual role constrained the company's ability to adopt aggressive financial hedging or speculative positions. State policy during COVID-19 emphasized survival, stability of employment, and maintaining connectivity rather than maximizing short-term shareholder value. Thus, CEA's limited hedging in 2022 partly reflects regulatory conservatism. Yet the negative outcome — larger losses than some peers — may provoke a policy reassessment. A more flexible regulatory stance could allow national carriers to balance stability with adaptive risk management, especially in a volatile geopolitical context [16]. This lesson resonates with comparative research showing that European low-cost carriers like Ryanair or easyJet, with greater autonomy in risk management, have historically used options and dynamic hedging more aggressively to stabilize margins [17].

The long-term implications of 2022 are not only about financial losses but also about institutional learning. From a corporate governance perspective, CEA's case highlights the importance of linking financial risk management to broader corporate strategy. For example, hedging outcomes affected investor confidence, with credit rating agencies citing weak earnings and high leverage in their 2022 outlooks for Chinese airlines [18]. From a sustainability perspective, the experience suggests that fuel hedging should not be viewed as a substitute for structural measures like fleet modernization, sustainable aviation fuel investment, and route optimization, which reduce inherent exposure to fuel

volatility [19]. Moreover, in a context of carbon pricing and energy transition, traditional fuel hedging may gradually be supplemented by hedging instruments linked to carbon credits or sustainable fuels.

In sum, the impact of CEA's hedging strategy in 2022 demonstrates a layered effect: it directly worsened financial outcomes by failing to offset surging fuel prices; it indirectly constrained operational recovery choices relative to competitors; and it strategically exposed weaknesses in the airline's risk management framework and regulatory environment [20]. The broader lesson is that hedging is not a binary choice but a dynamic capability. For CEA, the experience reinforces the necessity of institution aliasing flexible hedging policies, integrating financial tools with operational levers, and aligning risk management with long-term transformation goals.

5. Conclusion

This paper examines the hedging strategy of China Eastern Airlines (CEA) in 2022, characterized by the dual shocks of the COVID-19 pandemic and the Russo-Ukrainian war. The pandemic and the Russia-Ukraine conflict expose the dual nature of risk management tools. Specifically, they may not only exacerbate financial stress, but also provide partial relief. Thus, hedging is not inherently beneficial or harmful in absolute terms. Value is determined by the interaction between market conditions and firm risk. The case also illustrates three important insights. Primarily, the effectiveness of hedging depends not on the use of hedging but on the timing, rate and design of the instrument. Moreover, hedging results can directly affect operational recovery decisions. This is because competitors with hedges, such as Singapore Airlines, are able to manage costs more effectively and restore capacity more quickly. Finally, the study points out that a dynamic and flexible framework needs to combine financial hedging with operational leverage and policy oversight. For EAC, on the other hand, this means not abandoning hedging, but redesigning it as a strategic capability consistent with long-term resilience. For example, dynamic hedging ratios, greater use of options and alignment with measures such as sustainable aviation fuels. Simultaneously, firms need more flexible guidance at the policy level to help China Eastern strike a balance between stability and resilience. In addition, future research could expand the scope of the analysis, such as comparatively analyzing the differences between the three major carriers in China and investigating cross-border hedging practices. This will not only facilitate a more constructive role for regulators in providing targeted support for risk management during crises, but will also contribute to improving the competitiveness of Chinese airlines in the international arena.

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