

The Effects of the Application of Corporate Financial Derivatives on the Operational Efficiency of Enterprises -- the Case of Southwest Airlines

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Abstract. In a situation where product prices fluctuate freely and international trade is exchanged smoothly, financial derivatives trading is essential for investors to lower risk. Due to the changing risk appetite of investors, financial derivatives trading has taken on different characteristics and the scale of trading has grown rapidly. This paper focuses on the impact of the trend of economic globalization, the majority of companies will use economic and financial derivatives to improve the operational efficiency of company. Using the case of the Southwest Airlines for analysis, an examination of the risks of financial derivatives from three perspectives, as well as recommendations on these three issues. The analysis of these issues provides a clearer understanding of the risks that companies can encounter when using financial derivatives and how to against with such risks. When faced with external risks which are difficult to budget for, there are risk-averse approaches that companies can use and remedial measures could be taken after the risks have occurred. After analyzing for these issues, it is concluded that the effects of the application of corporate financial derivatives on the operational efficiency of enterprises.

Keywords: Financial derivative, market risk, hedging.

1. Introduction

Since the 1970s, the vast majority of Western countries began to allow more room for floating market prices for interest rates and exchange rates. How to use financial derivatives to achieve a balance between corporate risk and return has become a major issue for multinational companies. Due to their extensive operations, multinational corporations are able to take full advantage of chances and raise the value of their companies. These advantages for businesses come with a higher risk exposure, such as those brought on by exchange rate volatility and influencing future cash flows and company value [1]. The rapid growth of international trade under this new international economic system has given international investors more choices in various fields, but also more risks than before, and the existence of risks is complex and varied.

In a situation where product prices fluctuate freely and international trade is exchanged smoothly, financial derivatives trading is essential for investors to lower risk. Due to the changing risk appetite of investors, financial derivatives trading has taken on different characteristics and the scale of trading has grown rapidly. One of the most discussed topic economic issues in corporate finance is the effectiveness of company hedging [2]. Financial derivatives have leapt to become a core component of contemporary capital markets. It is crucial for policymakers, shareholders, and other corporate stakeholders to be conscious of nonfinancial firms' risk management practices and their associated impacts on firm risk and value. The article shows that companies use derivatives to lower risk for a sample of 6896 firms from 47 countries [3].

For most aviation enterprises, jet fuel cost is an important part of the operating cost of aviation enterprises. Once jet fuel prices continue to rise or fluctuate greatly, the operating performance of aviation enterprises will be greatly affected. For example, Southwest Airlines has successfully used futures, options and other financial derivatives to hedge a variety of fuel hedging operations. It has successfully reduced the risk of business operation and gained a large amount of profit. Southwest Airlines maintains a leading position in the airline industry. Southwest Airlines has been profitable for 33 consecutive years since 1973, making it the longest continuously profitable airline. The

company's success is not only due to responding to the market by reducing costs, but also to the choice of an appropriate hedging strategy. This case could be used to analyze the impact of the financial derivatives chosen by the company on its operational efficiency.

2. Problems

2.1. Problems 1: In order to meet the speculative demand of market investors, enterprises use financial derivatives to reduce corporate risks

A financial derivative is a legally binding agreement between more than one party whose worth derives from the value of such an underlying instrument. These underlying market variables typically change in value in response to changes in rates or prices [4]. Investments in financial derivatives can transfer risk to the other side and be used to offset the financial risk that is present. In the case of Southwest Airlines, the hedging strategy that the airline has adopted for jet fuel in the past has ensured the stability and growth of the company's performance. According to the signed contract, if the actual oil price is lower than the spot price, loss of option premium, but if the actual price exceeds the strike price, the company Southwest Airlines will get the fuel at a lower price and make a profit. In the event of volatility in the global economy, fuel supply and demand may be severely mismatched. Effective application of fuel futures and options instruments can significantly hedge the risk of market price fluctuations. Combining futures instruments with spot trading can also provide airlines with enhanced operational flexibility, and additional market gains. Currently, financial derivatives are heavily used in financial markets and are commonly used as effective risk management tools to hedge risks. But along with the success of Southwest Airlines, many companies copied his hedging strategy, but ignored other relevant factors may led to failure. Enterprises usually take hedging as the main basis for hedge entry, but overlook the judgment of the appropriate timing. As a result, the timing of hedge entry is often influenced by the short-term trend of futures prices, ignoring the trend of price market operation and resulting in operations that deviate from the price trend. That will cause companies to incur large losses.

In addition, financial derivatives for companies also have the potential to provide tax avoidance benefits to companies. Research shows that financial derivatives are incredibly flexible and complex, but tax rules on them are relatively straightforward, suggesting that businesses may be able to use financial derivatives to avoid paying taxes [5]. Commodity futures hedging operations can also have an impact on the company. The level of financial derivative usage favorably influences a company's tax avoidance level, according to the test findings regarding the impact of this factor on a company's level of tax avoidance [6].

According to the research, financial derivatives have the benefit of risk avoidance for companies, and also the potential benefit of tax reduction.

2.2. Problem 2: There are many external risks associated with the use of financial derivatives

Market risk, also described as price risk, associated with unfavorable adverse movements in the price of a derivative to the user of the derivative, which is prominently represented in speculative transactions. In practice, full risk hedging is difficult to achieve. These findings offer compelling proof that when businesses are forced to deal with both a severe economic downturn and abrupt changes in exchange rates during the global financial crisis, financing risk hedging presents more of a challenge than operating risk hedging. Korean enterprises were able to successfully use derivatives to hedge operating risk in the face of a severe economic downturn, thereby limiting the value loss brought on by decreased export revenues [7]. No legally binding cap on the price volatility of financial derivative transactions in a completely liberalized market. Some of the underlying indices of financial derivatives are usually subject to unpredictable changes, such as profit rates, exchange rates, etc. Financial derivative deals will be subject to significant risks as a result of these ups and downs, and the market for these products may even go under. There will be a hedging gap when the movement of derivative prices is not precisely proportional to the movement of the price of its underlying

financial product. Many derivatives deals that result in loss-making bankruptcies are directly attributable to market risk. Because derivatives transactions are essentially large in volume and involve large amounts of transactions. In the case of Southwest Airlines, for example, the market economies of scale are uncertain. Fuel is a major raw material for airlines, but it is not the only one. Rising prices of other raw materials also pose a risk to economic growth. Another uncertainty is the forecast and judgment of the market. The market demand for airlines can change, and a sudden and unpredictable economic crisis can have an impact on people's spending power, which in turn reduces the demand for airline business.

The other type of risk, basis risk, is based on the difference between the spot price and the futures price. Southwest Airlines' hedging business forms a futures hedge and a spot hedge. There is no absolute price risk, but it is still exposed to the risk of unsynchronized changes in futures and spot prices, which is the main risk affecting the effectiveness of hedging. Hedging is a way to both reduce business risk and profit from the investment. However, hedging the various resources purchased can be risky if the price trend is uncertain.

2.3. Problem 3: The risks faced by the company when choosing the appropriate financial derivatives will have an impact on the operational efficiency of the company, and these risks can influence the judgment of the company commanders

The risk of not being able to sell financial derivative transactions at a fair price, not being able to hedge their positions, and having to wait for the execution of ultimate delivery is known as liquidity risk. Financial derivatives pose a sizable liquidity risk because they are a newer financial tool. Financial derivatives require the trading of significant amounts of capital, so even when businesses have the ability to do so, they might not be able to hedge their derivative financial assets in the event of significant market fluctuations due to a lack of counterparties, and financial derivative traders might not be able to obtain market prices quickly enough. The market's liquidity and the value of financial derivatives are both affected by changes in these factors, which have an effect on systemic risk [8]. Contracting parties are frequently difficult to locate in cases of significant market fluctuations, particularly when the newer goods have not been introduced for a long time, there are few traders participating, and the market depth is insufficient.

In the case of Southwest Airlines' arbitrage, another risk was the limited potential return, which to many investors is the biggest drawback of arbitrage. This is not unusual. When Southwest limits the risk in a trade, it usually limits the potential return as well. This risk is one of the drawbacks of using an arbitrage policy. Due to the hedging nature of interest hedging, it is usually less risky than one-sided trading, but the gains from hedging are also limited because the risk is fixed. This risk represents a loss to the company if the return is lower under a hedging policy and no side is positively profitable.

The third risk is that price deviations will be corrected and a temporary loss will be suffered in this transaction. If an airline can withstand such a loss, it will eventually turn a profit, but sometimes companies with unstable cash flows cannot afford to lose money for a period of time. Also, if the shorting contract suffers a squeeze that lasts until the contract is closed, the price deviation cannot be corrected and the arbitrage trade will fail.

The risk associated with the counterparty's inability to uphold its contractual obligations is referred to as credit risk. One of these risk categories is default risk. All of these potential risks can affect the judgment of investors, and their presence can adversely affect the operation of the business.

3. Suggestions

3.1. Suggestion 1: It is well documented that financial derivatives can play a positive role in reducing the operational risk of a company

The potential of derivatives has been demonstrated, and in order to succeed in trading with these instruments, it is crucial to be conscious of the dangers involved in their improper use [9]. At the same time, for the managers of the company, they should not only focus on the immediate risks and

benefits when formulating the strategy, but also consider and judge the long-term development of the company. They should also draw lessons from past failures to develop strategies that are conducive to sustainable development and profit maximization, as well as to anticipate and prevent possible future risks. From the point of view that financial derivatives can reduce risk, establish preventive strategies as early as possible, appropriately utilize hedging policies, and pay attention to the timing of the use of corporate hedging policies so that the entire hedging program forms a coherent integration that maximizes corporate benefits.

In the business operation, the enterprise will have a more mature understanding of the running rules and trends of raw material prices and finished product prices in the industry to which it belongs, so that it can reasonably arrange raw material procurement and product sales to maximize its profits. In the case of Southwest Airlines, options are a product where risk does not equal return. The seller's profit is capped at a premium and the risk of loss is very high. Once the price of fuel falls below the strike price of the put option, the airline must pay the difference to the option buyer. Therefore, if fuel prices stay low and do not stay as low as Southwest plans, then Southwest's hedging strategy will be risky and it will incur losses. At the same time, the business will face a number of other risks. Market economies of scale are uncertain. Fuel is a major raw material for airlines, but it is not the only one. Rising prices of other raw materials also pose a risk to economic growth. All of these situations illustrate that when using financial derivatives, companies need to take into account multiple factors and multiple price movements. These are conducive to facilitate the full start of production for greater benefit. At the same time, the use of hedging is needed to hedge price risk if spot instruments are not effective in hedging price risk or if it is more efficient to use hedging to hedge risk. The hedging operation will reduce the company's operating profit when the price is favorable to business operation because of inappropriate hedging operation, which is not in line with the professionalism of business operation. This will happen if a company hedges its hedge simply because it is concerned about the risk and ignores the rising price or changing trend. A major reason why hedging fails is that less thought is given to the risk of futures and options trading itself when using hedging to manage the enterprise's price risk.

3.2. Suggestion 2: External risks are often the most difficult to predict and control as opposed to controllable internal risks

Companies can ensure the achievement of corporate goals and wealth maximization by developing appropriate hedging strategies. Companies should be clear about the real purpose of using financial derivatives, one it can reduce the risk for the operation of the company, and the other is to expand the non-speculative profit. To fully utilize the role of financial derivatives, effectively prevent various risks and reduce the losses that risks may bring for themselves.

Using an occasion study approach might help to mitigate the potential reverse causality problem, which asserts that businesses with superior financial outcomes could want to employ derivatives to manage their risks [10]. Therefore, when businesses conduct transactions, they should carefully select the types of financial derivatives products while also carefully considering their own capacity to withstand risks and their own business goals. In order to prevent the various risks involved in the trading of financial derivatives, counterparties should also tighten internal risk controls, adopt scientific techniques for ongoing evaluation, and set up efficient systems for risk evaluation and prevention as well as business authorization and certification. Even though the use of financial derivatives has the potential to greatly increase the organization's total risk, accountability in reporting financial derivative holdings of an organization is crucial [11].

3.3. Suggestion 3: Enterprises should strengthen and improve the transaction system, standardize contract management, prevent trap clauses, and strictly prohibit non-contractual forms of transactions

Facing the credit risk that may appear in the transaction, such as the counterparty's default to avoid losses. When transaction risks arise, parties should be asked to increase the margin ratio in time to

prevent credit risks; enterprises can always pay attention to the dynamic management of customer information, establish customer credit management, and determine the credit limit that customers can trade according to the situation. Strengthen the supervision of the daily movement of trading funds to reduce the risk of assets at liquidation. The trade ought to concentrate on regulating the actions of solely speculative funds. Although the derivatives market is a useful instrument for reducing asset value risk, inappropriate speculation can exponentially increase risk, which in turn can lead to instability in the overall market. It is also important to establish and maximize the use of dispute resolution mechanisms and recovery mechanisms that benefit your own side.

At the same time some intermediate channels of enterprises manage financial derivatives. For example, in the case of Southwest Airlines, the risk of hedging business needs to be accurately identified and controlled. When manual computing is no longer able to judge the market trend and the timing of adopting financial derivatives, modern information technology, such as ai, cloud computing, etc., can be applied. In the age of information technology, the emergence of AI technology can deal with data problems very well.

4. Conclusion

Reasonable authorization arrangement, and perfect business process are important conditions to reduce the risk of enterprise hedging operation. Placing the appropriate staff in the right positions, increasing the productivity of business operations, and improving staff business training are significant important. At the same time, familiarity with the exchange variety delivery and hedging system, familiarity with the trading process, and comprehensive understanding of hedging are necessary to prevent the risk of hedging and thus better participate in futures investment. And real-time tracking and calculation of hedging ratio through information technology system can reduce misoperation, minimize human errors in trading, lower the possibility of violating laws and regulations in transactions and can stop loss in time. By using data analysis for risk prediction and good use of financial derivatives to reduce the risk of business operations. Through the analysis of the Southwest Airlines case and the summary of the above findings, it can be concluded that the use of financial derivatives by companies can have an impact on the operation of the company.

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