Asian Journal of Multidimensional Research
ISSN: 2278-4853 Vol. 14, Issue 6, June 2025 SJIF 2022 = 8.179
A peer reviewed journal

FINANCIAL DERIVATIVES AND RISK MANAGEMENT: AN OVERVIEW

Priya Singh*; Dr. Alok Singh**

*Research Scholar,
Shyama Prasad Mukherjee Govt. Degree College,
University of Allahabad, Prayagraj, INDIA
Email id: priya13348@gmail.com

**Assistant Professor in Commerce,
Shyama Prasad Mukherjee Govt. Degree College,
University of Allahabad, Prayagraj, INDIA

DOI: 10.5958/2278-4853.2025.00014.5

ABSTRACT

Financial contracts whose value is derived from an underlying asset, index, orate are known as derivative instruments. They are crucial in managing financial risks, making predictions about asset values, and mitigating risks. Multiple parties that can trade over the counter or on an exchange construct a derivative. Derivatives are multifaceted tools that have changed the financial industry by providing investors with a range of risk management options. With the use of derivatives, risks associated with traditional instruments can be efficiently unbundled and managed independently. Futures, forwards, options, and swaps are the primary derivatives that are used to manage risk in the markets for financial instruments and commodities. When used properly, derivatives can lower expenses while also raising returns. The study's base is secondary data gathered from numerous publications, articles and journals. Understanding the function of derivatives in corporate is management is the goal of this research. According to the study's findings, derivatives are crucial for risk management.

KEYWORDS: *Derivatives, Forwards, Futures, Options, Swaps, Risk.*

INTRODUCTION

Financial agreements known as derivatives are made between two or more parties and are based on an underlying asset, a collection of assets, or a benchmark. Since the introduction of derivatives in India in the 2000s, the market has undergone significant change. Derivatives can be traded over the counter or on an exchange. The majority of online brokers allow the free purchase and sale of exchange-traded derivatives, like futures and options, which are more standardised and subject to stricter regulations than those traded over the counter. Futures contracts, forwards, options, and swaps are examples of common derivatives. These products can be used by market participants to diversify their investment portfolios, speculate on price movements, and hedge their exposures. Because they offer flexibility and customisation, derivatives allow organisations to modify risk management strategies to fit their unique exposure profiles, risk appetites, and financial goals. Their emergence is linked to the period when Britain

implemented stringent foreign exchange regulations and the Bretton Woods agreement, which served as the basis for the monetary system, was destroyed. After that, the

First interest rate swap and currency package contracts were created. (Slakoper, 2009, p. 407). The advantages of using derivatives are what indicate their fundamental purpose. The main purpose is to protect against risk and minimise exposure to certain instruments, markets, currencies, nations, regions, and other things. A legal requirement and an essential component of any effective management strategy, risk management is a tool that aids in anticipating and adapting to change. They are crucial instruments for arbitrage, speculation, and hedging that help market players efficiently manage and transfer risk. It is more important than ever to comprehend the strategic role that financial derivatives play in risk management as markets change and technological innovations like blockchain and artificial intelligence transform financial ecosystems.

Objectives of the study:

- To recognize and evaluate the various kinds of market risk that derivatives can manage.
- To provide a comprehensive overview of financial derivatives and how they are used in risk management.
- To give businesses advice and concepts on how to include derivatives in their risk management plan.

LITERATURE REVIEW

The use of financial derivatives to control market risk has drawn interest from regulators, practitioners, and academics. The usefulness of derivatives in reducing different kinds of market risk, including interest rate risk, currency risk, and commodity price risk, has been the subject of numerous studies.

- **Gannon and Mora (2017)** show that commodity-based businesses can increase their risk-adjustedprofitsbyutilisingcommodityfuturesandoptions.Derivatives can also help investors diversify their portfolios and maximise their risk- return trade-offs.
- **Zaremba, Konieczka, and Foszczyski (2019)** demonstrate how incorporating option strategies into stock portfolios can reduce overall risk and increase risk-adjusted returns.
- **Tang and Qiu (2017)** also find that currency forward contracts can increase diversity and reduce volatility in foreign investment portfolios.
- By the end of June 2024, the global notional value of outstanding derivatives increased by 2% year-over-year (yoy) to $730 trillion, according to the Bank for International Settlements **(BIS).** This indicates that more people are using derivatives to manage risk. Furthermore, smaller businesses or investors may find it difficult to enter the market due to the complexity of some derivative instruments and the regulatory frameworks that govern their use. Furthermore, the availability and pricing of certain derivatives may be impacted by market liquidity, which could make them less desirable for risk management **(e.g., Chen et al., 2018).**

- **Afza & Alam (2011)** Using 105 non-financial companies listed on the Karachi stock exchange as a sample investigated the use of derivatives to hedge interest rate and foreign exchange risk. The study's conclusion shows that businesses with greater foreign exchange exposure are more likely to engage in hedging.
- According to **Xiangchao Hao, Qinru Sun, and Fang Xie (2022)**, banks are the most significant users in the foreign exchange (FX) derivatives market, but little is known about how the use of FX derivatives affects bank capital buffers. An international sample of non-US banks from 59 economies is constructed for this study, and the relationships between them are examined. It was discovered that banks with higher levels of FX derivatives had lower capital buffers, indicating that the use of FX derivatives is a replacement for capital buffers and that banks primarily use them for risk management.
- **Adam (2002)** investigates the impact of using derivatives on financing strategies. Investment expenditure and the minimum revenue that the hedging policies guarantee were found to be positively correlated in this study.
- **Singh and Upneja (2008)** examine the factors that influence hedging decisions by examining lodging companies from 2000 to 2004.This study found that the following factors significantly influence hedging decisions: firm size, foreign sales ratio, cash- flow volatility, underinvestment costs, and financial distress costs.
- **Gaur & Jolly (2023)** explores the risk management strategies employed by commercial banks, focusing on their utilization of financial derivatives. By examining a number of case studies, the study highlights how well derivatives manage risk while addressing the difficulties and complexities involved in their application.
- **Gao (2024)** looked at the systemic risks associated with poorly regulated derivatives markets and suggested regulatory technology for oversight and blockchain for transparency.
- **Jiang (2024)** highlights the participation of derivatives in the market downturn period amid the pandemic, targeting the VIX index and the Global Interest Rate. The study's findings demonstrated the derivative's dual role during the pandemic, which allowed for effective risk mitigation despite the possibility of uncontrollable market volatility.
- **Yangetal. (2025)** presented a framework for dynamic hedging based on financial news and market sentiment that makes use of large language models (LLMs). In volatile markets, this method performs better than conventional static hedging techniques.

RESEARCH METHODOLOGY

In order to investigate the function and efficacy of financial derivatives in risk management, this study uses secondary data and a descriptive and analytical research design. Understanding the relationships, patterns, and trends between risk mitigation techniques and derivative instruments across markets and companies is the aim.

Limitations of the Study:

1. Data Reliability: The validity and depend ability of the secondary sources determine how accurate the study is.
2. Absence of Primary Insights: Because there are no direct surveys or interviews included in the study, there are fewer real-time practitioner insights available.
3. Problems with comparability: Data from various sources may adhere to disparate definitions or accounting standards, which could compromise consistency.

DISCUSSION

The foundation of contemporary financial markets' infrastructure is made up of financial derivatives. Their usefulness for portfolio optimisation and speculative opportunities, in addition to their capacity to reduce exposure to erratic market movements, make them strategically significant.

Types of Financial Derivatives:

a) Forward-In that they entail commitments to purchase or sell an underlying asset at a specific price and future date, forward contracts are comparable to futures contracts. Customised agreements between two parties that are frequently traded over-the-counter (OTC) are known as forwards.

b) Future- Standardised agreements to buy or sell an underlying asset at a specific price and future ate are known as futures contracts. Unlike options, futures contracts have legal force behind them and demand that both parties fulfil their end of the bargain on the specified date.

c) Option-Options are contracts that give the holder the right, but not the obligation, to buy or sell an underlying asset within a given time period at a predetermined price (the strike price). There are two kinds of options: put and call options. While put options grant you the right to sell the underlying asset, call options grant you the right to purchase it.

d) Swap-Agreements between two parties to exchange financial instruments or cash flows under specific terms are known as swaps. The most common kinds of swaps are interest rate swaps, currency swaps, and credit default swaps.

The unique features and advantages of each of these derivative instrument said investors in effectively managing market risks. They make it possible to take advantage of arbitrage opportunities, hedge against adverse price fluctuations, and generate speculative profits.

Types of Risk while Trading in Derivatives:

1. **Market Risk**- The type of risk connected to any investment is known as market risk. It is dependent upon the drop in the value of an underlying asset or financial instrument.
2. **Credit Risk**-The risk of loss in the event that the counterparty defaults on its responsibilities is known as credit risk.
3. **Liquidity Risk**-Another important one is the risk of liquidity. It alludes to the possibility that an investor won't be able to sell their derivatives market position in a timely manner or at a reasonable price.

4. **Operational Risk**-Operational risk is the possibility of suffering a loss as a result of either external events or in sufficient or unsuccessful internal systems, personnel, or processes.

Risk Management Strategies

Hedging is a tactic used by traders to lower the price risk of an existing position by taking an offsetting position in a related asset. By using this technique, traders can reduce the risk of volatility when trading derivatives. As a risk management technique, port folio diversification involves investing in a range of assets to maximise returns while lowering risk. Traders can significantly lessen the impact of any one investment's poor performance by incorporating stocks, commodities, bonds, and other assets in to the investment portfolio. A collection of tools called **Risk Metrics** allows investors to calculate how much market risk they are exposed to using the "Value-at-Risk framework." It is a metric that calculates the maximum possible loss on a portfolio over time. **Limits** can be set by investors to reduce losses. By establishing standing orders to sell an asset when its price drops below a specific threshold, investors can protect their portfolios from significant asset value declines. For efficient risk management, investors should periodically **monitor and assess** their investment portfolios.

CONCLUSION

With their primary applications in risk management, speculation, and arbitrage, financial derivatives have emerged as essential tools in contemporary financial markets. This study emphasizes how financial institutions and businesses can protect themselves against arrange of risks, such as changes in commodity prices, interest rate swings, and currency volatility, by utilising derivatives like options, futures, forwards, and swaps. The benefits of financial derivatives in risk management have been emphasised throughout this study. They enable investors to enhance market liquidity, diversify their holdings, and support effective price discovery. The development of risk management techniques has coincided with the evolution ofderivativemarkets.Originallyconcentratingonbasichedgingtechniques,modernmethods now optimise the use of derivatives by utilising quantitative models, machine learning, and even quantum computing. Regulatory frameworks that prioritise transparency, compliance, and systemic risk mitigation have also changed, especially in reaction to financial crises.

Lastly, the management of market risks depends heavily on financial derivatives. They give investors important tools to protect themselves against changes in interest rates, prices, currency values, and credit issues. Although derivatives have many advantages for risk management, they must be used carefully and in line with the right risk management guidelines.

RECOMMENDATION

In order for traders, risk managers, and decision-makers to comprehend intricate derivative structures, institutions must make investments in ongoing education. Additionally, given the increasing significance of artificial intelligence and technology in financial markets, research may examine how FinTech applications could enhance the use of derivatives in risk management. The function of derivatives in financial crises, like the COVID-19 pandemic or market shocks brought on by geopolitical events, requires further investigation. Future research should examine how investors' and risk managers' use of derivatives is impacted by behavioural biases. Further study in this field would help us better understand how derivatives fit into risk

management procedures and assist businesses in creating efficient risk management plans in rapidly shifting market conditions.

REFERENCES:

1. Adam T. (2002) .Do Firms Use Derivatives to reduce their Dependence on External Capital Markets? European Finance Review, 6,163-187.

2. Afza, T. and Alam, A. (2011) 'Corporate derivatives and foreign exchange risk management: A case study of non-financial firms of Pakistan', Journal of Risk Finance, 12(5), 409–420.

3. Bollen, N. P., & Whaley, R. E. (2015). Risk and return in option markets: A comprehensive empirical study. Journal of Financial Economics, 115(2), 437-458.

4. Chua, C. L., Lean, H. H., & Tang, T. C. (2019). Effectiveness of currency derivatives in managing exchange rate risk: Evidence from emerging economies. Journal of Multinational Financial Management, 51, 100545

5. Gao, S. (2024). Systemic Risks in the Derivatives Market: Origins, Impacts, and Mitigation Strategies. Advances in Economics, Management and Political Sciences, 114,92-100.

6. Hammoudeh, S., & McAleer, M. (2013). Risk management and financial derivatives: An overview. The North American Journal of Economics and Finance, 25, 109-115.

7. Jiang, Yuqing. (2024). Exploring the Performance of Financial Derivatives in the Context of a Global Public Health Crisis and Their Tole in Risk Management. Advances in Economics, Management and Political Sciences. 131. 59-67. 10.54254/2754- 1169/2024.18415.

8. Jie Yang, Yiqiu Tang, Yongjie Li, et al. Dynamic Hedging Strategies in Derivatives Markets with LLM-Driven Sentiment and News Analytics. Tech Rxiv. April 11, 2025.

9. Lee, K. W. (2019). The usage of derivatives in corporate financial risk management and firm performance. International Journal of Business, 24(2), 113-131.

10. Madhumathi,R.(2011).Derivatives and Risk Management. Pearson Education India.

11. Miljković, Ljubomir. (2023). The Role of Financial Derivatives in Financial Risks Management. Mest Journal. 11. 97-104. 10.12709/mest.11.11.01.09.

12. Shubham Gaur & Tanya Jolly. (2023). Risk Management Strategies in Banking: A Study of Derivatives Use by Commercial Banks. Educational Administration: Theory and Practice, 29(3), 1162–1170.

13. Sahoo, A. (2015) Corporate Risk Management through Financial Derivatives: A Review of Literature. International Journal of Advanced Research in Management and Social Sciences, 4(8), 200-233

14. Sajjad, F.,Noreen,U.,&Zaman,K.(2013).Impact of derivatives on financial services sector and risk management. Middle-East Journal of Scientific Research,18(6), 748- 758.

15. Singh, A. and Upneja A. (2008) 'The determinants of the decision to use Financial Derivatives in the Lodging industry', Journal of Hospitality and Tourism, 32(4), 423- 447

16. Vashishtha, A., & Kumar, S. (2010). Development of financial derivatives market in India-a

case study. International Research Journal of Finance and Economics, 37(37), 15-29.

17. Xiangchao Hao, Qinru Sun and Fang Xie (2022). International evidence for the substitution effect of FX derivatives usage on bank capital buffer, Research in International Business and Finance, Vol. 62, December 2022, 101687.