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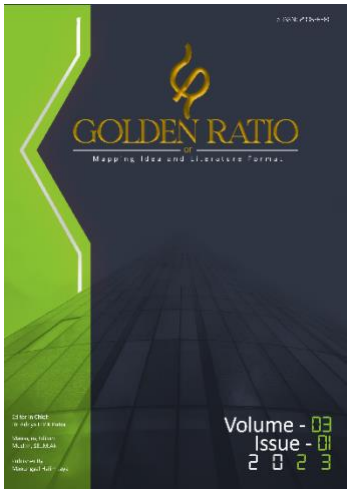

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MAPPING IDEA & LITERATURE FORMAT

Hedging Effectiveness as an International Financial Risk Management Strategy

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Abstract: In the dynamic landscape of global finance, businesses face intricate challenges navigating international markets, necessitating robust risk management strategies. This explores the evolution of hedging as a crucial financial maneuver originating from the 20th-century financial upheavals. Hedging, strategically responding to market fluctuations, has transformed into a sophisticated risk management tool, requiring a nuanced understanding of market dynamics. It serves as a financial shield, particularly in the face of currency fluctuations and interest rate volatility for multinational corporations. The symbiotic relationship between theoretical underpinnings and practical application becomes evident as the narrative unfolds. The story emphasizes the complexities and challenges of financial markets, highlighting the need for strategic and proactive responses. The effectiveness of hedging is portrayed not as a one-size-fits-all solution but as a philosophy ingrained in decision-making processes for businesses operating globally. Real-world case studies dissect the successes and failures of companies employing hedging, bridging theory and application. Hedging is portrayed not as a static set of practices but as a dynamic philosophy adapting to technological advancements. The integration of sophisticated algorithms and artificial intelligence transforms risk management, enabling more precise, agile, and adaptive hedging approaches.

Keywords: Risk Management, International Finance, Currency Fluctuations, Interest Rate Volatility, Financial Instruments

JEL Classification Code: G32, F31

1. INTRODUCTION

In the ever-evolving landscape of global finance, the intricate dance of risk and reward has become increasingly complex. As businesses expand their operations across borders and navigate the dynamic currents of international markets, the need for robust risk management strategies has never been more crucial. One such strategy that has garnered significant attention is hedging – a financial maneuver designed to mitigate the impact of market fluctuations. The genesis of hedging can be traced back to the tumultuous financial landscapes of the 20th century, marked by unprecedented economic upheavals and geopolitical shifts. As markets became increasingly interconnected, financial practitioners sought innovative approaches to shield their investments from the unpredictable tides of risk. Hedging emerged as a strategic response, an artful technique that allowed businesses to safeguard their financial interests in the face of fluctuating currency values, interest rates, and commodity prices.

To comprehend the essence of hedging effectiveness, one must embark on a journey through the corridors of financial history. As markets intertwine on a global scale, the quest for innovative approaches to shield investments from the unpredictable tides of risk becomes an imperative. Thus, hedging emerges not merely as a reactive measure but as a strategic response—a nuanced art allowing businesses to fortify their financial interests amidst the undulating landscapes of currency values, interest rates, and commodity prices. Over the years, what began as a tactical maneuver has evolved into a sophisticated and integral component of international financial risk management. At its core, hedging is a nuanced practice that involves the use of various financial instruments to offset potential losses

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stemming from adverse market movements. It is akin to a financial chess game, where astute players strategically position their pieces to protect against the unpredictability of market forces. The effectiveness of hedging, however, is not a one-size-fits-all proposition. It requires a keen understanding of market dynamics, a foresight into macroeconomic trends, and a judicious selection of hedging instruments.

In the intricate dance of international financial markets, businesses grapple with a multitude of challenges, chief among them the ever-present risks stemming from currency fluctuations and interest rate volatility. Navigating this complex terrain requires strategic acumen and a proactive approach to mitigate uncertainties. Hedging emerges as a vital tool in this endeavor, serving as a financial shield against the capricious nature of global financial dynamics.

Envision a multinational enterprise, a significant global entity with operational reach across multiple continents. In the pursuit of its expansive operations, this corporate entity encounters a myriad of currencies, each exerting its distinct influence on the company's revenue streams and expenditures. The susceptibility to fluctuations in currency exchange rates becomes a palpable concern, thereby presenting a potential menace to the financial well-being of the corporation. Within this contextual framework elucidating the pivotal role of a meticulously executed hedging strategy. This strategic approach, akin to a financial bastion, assumes the role of a safeguard, ensuring the steadfastness of the company's financial performance even amid the tumultuous landscape of currency markets (Chen et al., 2022; Wu et al., 2021). The complexities confronted by businesses in the international arena become conspicuous – a nuanced equilibrium necessitating the adept management of heterogeneous revenue streams and expenditures across a spectrum of currencies.

Delving deeper, the symbiotic relationship between theory and practical application emerges. The theoretical underpinnings of hedging are seamlessly integrated into the real-world challenges faced by multinational corporations. The story paints a vivid picture of the dynamic and unpredictable nature of currency markets, underscoring the need for a strategic and proactive response. Readers are not only enlightened about the theoretical importance of hedging but are also taken on a journey to witness its tangible impact on the financial resilience of companies operating on the global stage. The effectiveness of hedging is not a one-size-fits-all solution. Instead, it requires a nuanced understanding of market dynamics and a judicious selection of hedging instruments, emphasizing the sophistication and adaptability demanded by businesses engaged in international operations. In conclusion, encapsulates the essence of hedging as more than a financial strategy; it emerges as a strategic philosophy ingrained in the decision-making processes of businesses navigating the labyrinth of international financial markets. The journey through serves as a comprehensive guide, providing insights into how hedging (Otero González et al., 2020); (Huffman & Makar, 2004), as a financial shield, becomes an integral aspect of ensuring the stability and resilience of companies in the face of global financial uncertainties.

The effectiveness of hedging, however, is not without its complexities and challenges. Financial markets are dynamic and adaptive, responding to an intricate interplay of economic, political, and social factors. As such, the effectiveness of a hedging strategy hinges on the ability to anticipate and react to these ever-shifting variables. The effectiveness of hedging as an international financial risk management strategy has been extensively studied. Froot & Stein (1998) and Stulz (1984) both highlight the value of hedging in ensuring sufficient internal funds for investment opportunities and deriving optimal hedging policies for risk-averse agents. Allayannis & Ofek (2001) and Glen & Jorion (1993) further explore the use of foreign currency derivatives for hedging and the benefits of currency hedging in international portfolios. Black (1989) and Boudoukh et al., (2019) provide specific models for optimizing currency risk and reward in international equity portfolios, with proposing a practical and integrated approach. Dales & Meese (2001) emphasizes the importance of strategic currency hedging, advocating for the use of portfolio optimization methods.

To truly grasp the essence of hedging effectiveness, one must embark on an exploration into the multifaceted world of financial instruments that comprise the toolkit of risk management practitioners. These instruments, ranging from forward contracts and futures to options and swaps, each play a distinctive role in shaping a resilient hedging strategy. This exploration delves deeply into various financial instruments, exposing their complexities and elucidating the strategic factors that underlie their use in achieving effective hedging. In the vast realm of international finance, where boundaries

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blur, and markets transcend geographical constraints, the imperative for a comprehensive approach to risk management becomes increasingly apparent. Hedging, in this context, transcends its role as a mere financial strategy; it evolves into a philosophy that permeates the very core of business decision-making. As we progress through the story, the investigation goes beyond theoretical ideas, immersing into practical situations with compelling case studies and examples from the real world.

The pages come alive with dissecting the successes and failures of companies that have chosen to embrace hedging as a pivotal element of their risk management philosophy. By examining these real-world experiences, readers gain valuable insights into the tangible impact and intricacies of hedging strategies in diverse business landscapes. The case studies serve as a bridge between theory and application, offering a deeper understanding of how hedging principles align with the dynamic realities of international markets. Furthermore, this narrative does not merely portray hedging as a static set of practices but as a dynamic and adaptive philosophy. It explores the evolving landscape of hedging in the face of technological advancements. In an era dominated by digital progress, the integration of sophisticated algorithms and artificial intelligence emerges as a transformative force, reshaping the traditional contours of risk management. This fusion of finance and technology opens new frontiers in hedging, allowing for more precise, agile, and adaptive approaches.

In an era dominated by digital advancements, sophisticated algorithms and artificial intelligence algorithms are increasingly becoming integral to the execution of hedging strategies. The fusion of finance and technology opens new frontiers in risk management, paving the way for more precise, agile, and adaptive hedging approaches. As we journey through the pages of "Hedging Effectiveness as an International Financial Risk Management Strategy," we encounter the voices of industry experts, financial analysts, and thought leaders who share their insights on the evolving nature of hedging in a globalized economy. In conclusion, we stand at the precipice of a new era in global finance, characterized by unprecedented challenges and opportunities, the role of hedging in mitigating risks and enhancing financial resilience becomes even more pronounced. The pages that follow offer a panoramic view of the past, present, and future of hedging effectiveness – an essential guide for financial practitioners navigating the labyrinth of international markets.

2. LITERATURE REVIEW PROCEDURE

In the ever-evolving landscape of global finance, the quest for effective risk management strategies has become paramount for businesses operating across borders. Among the plethora of tools available, hedging stands out as a critical mechanism for mitigating the impact of volatile international financial markets. This literature review delves into the intricate realm of hedging effectiveness, exploring its nuances, challenges, and contributions to international financial risk management. The genesis of hedging lies in the need to shield businesses from the capricious nature of currency fluctuations, interest rate changes, and commodity price volatility. As the world becomes more interconnected, multinational corporations find themselves increasingly exposed to diverse risks that can erode profits and destabilize financial health. Hedging emerges as a strategic response, allowing businesses to proactively manage and mitigate these risks.

One of the key focal points in evaluating hedging effectiveness is the dynamic nature of financial markets. In a globalized economy, where exchange rates can fluctuate rapidly, businesses need to adopt nimble and adaptive hedging strategies. Research indicates that the timing and selection of hedging instruments play a pivotal role in determining effectiveness. Scholars argue that a one-size-fits-all approach is untenable; instead, companies must tailor their hedging strategies to the unique risk profiles inherent in their operations. Currency risk, perhaps one of the most pervasive challenges faced by international businesses, has been a central theme in the study of hedging effectiveness. As businesses engage in cross-border transactions, they are exposed to the whims of foreign exchange markets. Studies have explored various hedging instruments, such as futures, options, and swaps, revealing that their effectiveness hinges on factors like the degree of exposure, market conditions, and the hedging horizon. The intricacies of managing currency risk through hedging mechanisms underline the necessity for a nuanced and well-informed approach.

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Moreover, the effectiveness of hedging strategies is not immune to the impact of macroeconomic factors. Interest rate fluctuations, for instance, can significantly influence the outcomes of hedging activities. A comprehensive literature review reveals the importance of considering interest rate differentials, yield curve movements, and central bank policies when designing hedging strategies. The interplay between currency risk and interest rate risk further emphasizes the need for a holistic approach to financial risk management. While the literature recognizes the potential benefits of hedging, it also acknowledges the challenges and limitations inherent in its application. Transaction costs, imperfect information, and the inherent uncertainty of financial markets pose formidable obstacles. Scholars argue that a thorough understanding of these challenges is essential for businesses to optimize their hedging strategies and enhance overall risk management efficiency.

The evolution of financial instruments and the advent of sophisticated derivatives markets have expanded the array of tools available for hedging. Options, for example, provide businesses with greater flexibility in managing downside risk while participating in favorable market movements. This dynamic landscape prompts scholars to continually reassess the effectiveness of traditional hedging instruments and explore innovative approaches to enhance risk management practices. In conclusion, the literature on hedging effectiveness as an international financial risk management strategy underscores its critical role in navigating the complexities of global markets. The dynamic nature of financial risks necessitates a nuanced, adaptive, and well-informed approach to hedging. As businesses strive to optimize their risk management practices, continuous research and exploration of innovative hedging strategies will be essential. The interplay of currency risk, interest rate fluctuations, and macroeconomic factors further emphasizes the need for a holistic understanding of financial markets. As the global economic landscape continues to evolve, the quest for effective hedging strategies remains at the forefront of international financial risk management.

Table 1 presents a comprehensive overview of various studies related to hedging effectiveness as an international financial risk management strategy. Each entry provides insights into the authors, year of publication, abstract summary, main findings, and limitations of the respective study. The literature on risk management, particularly in the context of currency exposure and hedging strategies, offers a comprehensive and evolving landscape. In the seminal work by Kenneth A. Froot, D. Scharfstein, and J. Stein (1992), the focus is on the value added by hedging, ensuring sufficient internal funds for optimal investment opportunities. The state of the art involves discussions on risk management strategies, particularly the implications for design and specific approaches like exchange-rate hedging and "nonlinear" instruments. The novelty lies in exploring the costliness of external finance compared to internal funds and its implications for risk management, encompassing shocks to investment and financing opportunities, and strategies involving exchange-rate hedging and "nonlinear" instruments.

René M. Stulz (1984) contributes to the discourse by emphasizing frameworks of law, convention, and policy in active hedging policies, diverging from the conventional technological and formal policy approaches. The novelty resides in the emphasis on leveraging historical records and rich content in national information policy development, bridging gaps in understanding the accumulated historical record's role in shaping national information policy. George Allayannis and Eli Ofek's work in 1997 explores the use of foreign currency derivatives in reducing exchange-rate risk for firms. The decision-making process for using derivatives depends on exposure factors and optimal hedging theories. The paper's novelty lies in demonstrating the significant risk reduction offered by derivatives, coupled with insights into decision-making factors and theories guiding optimal hedging.

J. Glen and Philippe Jorion (1993) present a novel perspective by showcasing statistically significant improvements in portfolio performance through the inclusion of forward contracts. The conditional strategies' implementation adds depth to risk-return tradeoff improvement in global portfolios, distinguishing the paper from existing literature. F. Black's 1989 study introduces the concept of "universal hedging," offering a formula for optimal hedge ratios applicable across diverse investment scenarios. The novelty lies in developing a formula and rules that accommodate different risk scenarios in a perfect world.

Jacob Boudoukh, Matthew Richardson, Ashwin Thapar, and Franklin Wang (2019) revisit optimal currency exposures using a modified mean-variance optimization framework. The novelty lies in decomposing the optimal currency portfolio into practical and implementable "hedge" and "alpha-

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seeking" portfolios based on currency styles, promising lower risk and higher returns. A. Dales and R. Meese (2001) advocate for hedging currency exposure in international investing, relying on portfolio optimization methods. The novelty lies in their recommendation and guidance on calculating hedge ratios from various currency perspectives. Faith Maseki's work in 2017 delves into the unique context of Kenya, emphasizing the impact of globalization on businesses. The novelty lies in exploring the influence of internal and external hedging techniques on non-financial firms' performance, a previously understudied area in the Kenyan context.

Alexandros Koulis, G. Kaimakamis, and Christina Beneki (2018) contribute by comparing time-varying and fixed hedge ratios in American and European stock portfolios. The paper's novelty is in identifying the superior performance of time-varying hedge ratios, especially when analyzing data from peripheral capital markets. J. Ciorciari's study in 2019 explores the challenges of hedging international security risks, demonstrating the complexities and potential failures of governmental hedging strategies in financial and security contexts. Fischer Black's 1989 work introduces "universal hedging," proposing a formula applicable across diverse investment scenarios. The novelty lies in developing a formula and rules that accommodate different risk scenarios in a perfect world.

R. Maurer and Shohreh Valiani (2013) compare the effectiveness of currency forwards and options in controlling foreign currency exposure risk. The novelty lies in evaluating different hedging strategies using a mean lower partial moment model and applying in-sample and out-of-sample analyses. John C. Hull and Alan White (1987) analyze delta hedging schemes for non-exchange-traded foreign currency options. The novelty lies in identifying key factors affecting delta hedging performance and testing the effectiveness of schemes using simulated and real trade data. Nikolas Topaloglou, Hercules Vladimirou, and Stavros A. Zenios (2002) contribute to the literature by developing an integrated simulation and optimization framework for multicurrency asset allocation problems. The novelty lies in demonstrating the effectiveness of selective hedging strategies and the superior performance of the CVaR model.

Simon Benninga, Rafael Eldor, and Itzhak Zilcha (1985) derive optimal hedging and production rules for an exporting firm facing commodity and foreign-exchange uncertainty. The novelty lies in exploring the interdependencies between commodity and foreign-exchange hedging and production decisions. M. Kritzman's 2000 paper challenges the notion of foreign exchange risk washing out over long horizons. The novelty lies in a comprehensive analysis of the impact of currency exposure on risk, including the derivation of minimum risk and optimal exposures to currency forward contracts. Ugur Lel's study in 2006 and 2009 provides comprehensive evidence of the impact of firm- and country-level corporate governance on firms' use of derivatives. The novelty lies in demonstrating that strongly governed firms tend to use derivatives for risk mitigation, while weakly governed firms use derivatives for managerial reasons.

Stephen Phillip Huffman and Stephen D. Makar's study in 2004 examines the effectiveness of hedging techniques in reducing currency risk across different time horizons. The novelty lies in providing evidence of the most effective period for the use of foreign exchange derivatives and geographic sales-to-asset alignment for issuers of foreign-denominated debt. S. Filatov Victor and Rappoport Peter (1992) explore the benefits of diversification across currencies for non-U.S. investors in the 1980s. The novelty lies in highlighting the potential advantages of non-U.S. investors taking on currency exposure to lower international portfolio risks. In summary, these studies collectively contribute to a nuanced understanding of currency exposure, risk management strategies, and the evolving landscape of hedging in both financial and international contexts.

3. CONCLUSION AND PROPOSITION

Based on the interpretation and narration of the previously discussed table, several hypotheses can be formulated as follows:

Hypothesis 1: Strongly governed firms are more inclined to utilize derivatives for hedging currency exposure and mitigating costly external financing, whereas weakly governed firms primarily resort to derivatives for managerial purposes.

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Hypothesis 2: Time-varying hedge ratios estimated through advanced econometric models, such as the Autoregressive Distributed Lag (ARDL) model, demonstrate superior efficiency compared to fixed hedge ratios, particularly when analyzing data from peripheral capital markets.

Hypothesis 3: The introduction of "universal hedging" concepts, proposing optimal hedge ratios applicable across diverse investment scenarios, suggests a practical approach to risk management, promising consistent risk reduction and return enhancement.

Hypothesis 4: The implementation of selective hedging strategies, focusing on specific currency styles and utilizing mean-variance optimization frameworks, leads to improved risk-return profiles for international equity portfolios compared to traditional hedging approaches.

Hypothesis 5: The examination of currency exposure and hedging strategies within the context of specific regions, such as Kenya, reveals unique challenges and opportunities, highlighting the importance of localized studies in understanding risk management practices.

Hypothesis 6: Comprehensive evidence of the impact of corporate governance on firms' use of derivatives suggests that governance structures significantly influence risk management decisions, with implications for both firm performance and financial stability.

Hypothesis 7: The analysis of hedging techniques across different time horizons provides insights into the effectiveness of risk mitigation strategies, offering guidance on optimal timing and approaches for hedging foreign exchange risk.

Hypothesis 8: Non-U.S. investors may benefit from incorporating currency exposure into their international portfolios, as the advantages of diversification across currencies often outweigh the associated volatilities, potentially leading to improved risk-adjusted returns over the long term.

These hypotheses reflect the diverse perspectives and findings within the literature on risk management and hedging strategies, providing avenues for further research and exploration in the field of finance and international business.

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Table 1: Mapping Literature

Title	Authors	Year	Abstract Summary	Main Findings	State of The Art	Novelty
Risk Management: Coordinating Corporate Investment and Financing Policies	Kenneth A. Froot, D. Scharfstein, J. Stein	1992	Hedging adds value to the extent that it helps ensure that a corporation has sufficient internal funds available to take advantage of attractive investment opportunities.	Hedging adds value by ensuring sufficient internal funds; wide-ranging implications for risk management strategies; strategies should depend on various factors and may involve exchange-rate hedging and "nonlinear" instruments.	The "state of the art" in Kenneth A. Froot, D. Scharfstein, J. Stein (1992) involves discussing the potential benefits of hedging for corporations, the wide-ranging implications for the design of risk management strategies, and specific strategies related to exchange-rate hedging for multinationals and the use of "nonlinear" instruments like options.	The novelty in the paper lies in its exploration of the implications of the costliness of external finance compared to internally generated funds on the design of risk management strategies, including the consideration of shocks to investment and financing opportunities, as well as the discussion of exchange-rate hedging strategies and "nonlinear" instruments like options.
Optimal Hedging Policies	René M. Stulz	1984	The analysis of hedging foreign exchange exposure through forward contracts on foreign currencies has been a topic of considerable interest in recent years.	-	The "state of the art" in René M. Stulz (1984) includes presenting a model for value-maximizing firms pursuing active hedging policies, emphasizing the strong frameworks of law, convention, and policy to enable the creation and use of information and knowledge, and highlighting the challenge for government libraries and others to leverage their rich content for maximum return on investment. The paper also discusses the overlooked dimension of the accumulated	The novelty in René M. Stulz's paper lies in its emphasis on the importance of leveraging historical records and rich content in the development of national information policy, as well as the potential oversight of these aspects in favor of technology and formal policy frameworks.

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Title	Authors	Year	Abstract Summary	Main Findings	State of The Art	Novelty
					historical record in national information policy thinking.	
Exchange Rate Exposure, Hedging, and the Use of Foreign Currency Derivatives	George Allayannis, Eli Ofek	1997	The use of foreign currency derivatives significantly reduces the exchange-rate risk firms face.	Firms use of derivatives significantly reduces exchange-rate risk. The decision to use derivatives depends on exposure factors and variables associated with theories of optimal hedging. The level of derivatives used depends only on a firm's exposure through foreign sales and trade.	The paper discusses the use of foreign currency derivatives for hedging or speculative purposes. It mentions that the use of derivatives significantly reduces the exchange-rate risk firms face. The decision to use derivatives depends on exposure factors such as foreign sales and trade, as well as variables associated with optimal hedging theories like size and R&D expenditures. The level of derivatives used depends only on a firm's exposure through foreign sales and trade.	The novelty in George Allayannis, Eli Ofek (1997) lies in their findings that the use of derivatives significantly reduces exchange-rate risk for firms, and that the decision to use derivatives depends on exposure factors and variables associated with theories of optimal hedging.
Currency Hedging for International Portfolios	J. Glen, Philippe Jorion	1993	Forward contracts result in statistically significant improvements in the performance of unconditional portfolios containing bonds over the period 1974 to 1990.	The main findings of the paper are: - Inclusion of forward contracts resulted in statistically significant improvements in the performance of unconditional portfolios containing bonds over the period 1974 to 1990. - Conditional strategies significantly improved the risk-return tradeoff of global	The "state of the art" in J. Glen, Philippe Jorion (1993) is the examination of the benefits of currency hedging for speculative and risk minimization motives in international bond and equity portfolios, the statistically significant improvements in portfolio performance with the inclusion of forward contracts, and the	The novelty in J. Glen, Philippe Jorion (1993) lies in demonstrating the statistically significant improvements in the performance of portfolios containing bonds when forward contracts are included, as well as the implementation of conditional strategies that significantly improve the risk-return tradeoff of global

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Title	Authors	Year	Abstract Summary	Main Findings	State of The Art	Novelty
				portfolios and outperformed unconditional hedging strategies.	implementation of conditional strategies that improve the risk-return tradeoff of global portfolios.	portfolios and outperform unconditional hedging strategies.
Universal Hedging: Optimizing Currency Risk and Reward in International Equity Portfolios	F. Black	1989	Investors can increase their returns by holding foreign stocks in addition to domestic ones.	The main findings of the paper are the derivation of a formula for the optimal hedge ratio in a perfect world scenario, the three rules based on the derived formula, and the emphasis on considering both risk and expected return in determining optimum hedges.	The "state of the art" in F. Black (1989) is the derivation of a formula for the optimal hedge ratio in a perfect world scenario where investors share common views on stocks and currencies, and there are no barriers to international investing. The formula requires inputs such as the average expected returns on the world market portfolio, the average volatility of the world market portfolio across countries, and the average exchange rate volatility across all pairs of countries. The formula provides circumstances for three rules, including hedging foreign equity and hedging less than 100.	The novelty in F. Black (1989) is the development of a formula for the optimal hedge ratio based on specific inputs and the recommendation to hedge foreign equity but less than 100%.
Optimal Currency Hedging for International Equity Portfolios	Jacob Boudoukh, M. Richardson, Ashwin K Thapar, Frank Yong Wang	2019	The optimal currency portfolio uses a dynamic risk model to minimize equity volatility.	The study explores optimal currency exposures in international equity portfolios using a modified mean–variance optimization	The paper discusses the state of the art in optimal currency exposures in international equity portfolios using a modified mean-variance	The novelty in Jacob Boudoukh, M. Richardson, Ashwin K Thapar, Frank Yong Wang (2019) lies in the introduction of a modified mean-variance

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Title	Authors	Year	Abstract Summary	Main Findings	State of The Art	Novelty
				framework. The optimal currency portfolio is decomposed into a “hedge portfolio” and an “alpha-seeking portfolio” based on currency styles, providing lower risk and higher returns than either hedged or unhedged benchmarks.	optimization framework. It decomposes the optimal currency portfolio into a "hedge portfolio" and an "alpha-seeking portfolio" based on currency styles of value, momentum, fundamental momentum, and carry. The method is claimed to provide lower risk and higher returns than either hedged or unhedged benchmarks.	optimization framework for exploring optimal currency exposures in international equity portfolios, along with the decomposition of the optimal currency portfolio into a "hedge portfolio" and an "alpha-seeking portfolio" based on currency styles. The approach is claimed to provide lower risk and higher returns than either hedged or unhedged benchmarks, with practical and implementable characteristics.
Optimal Currency Hedging for International Equity Portfolios	Jacob Boudoukh, Matthew Richardson, Ashwin Thapar, Franklin Wang	2019	The optimal currency portfolio uses a dynamic risk model to minimize equity volatility.	The main findings of the study are the exploration of optimal currency exposures in international equity portfolios using a modified mean–variance optimization framework and the decomposition of the optimal currency portfolio into a “hedge portfolio” and an “alpha-seeking portfolio” based on currency styles, providing lower risk and higher returns than either hedged or unhedged benchmarks.	The "state of the art" in Jacob Boudoukh, Matthew Richardson, Ashwin Thapar, Franklin Wang (2019) is an integrated and economically intuitive approach to currency management that provides lower risk and higher returns than either hedged or unhedged benchmarks. It involves decomposing the optimal currency portfolio into a "hedge portfolio" and an "alpha-seeking portfolio" based on currency styles of value, momentum, fundamental momentum, and	The novelty in the paper lies in the introduction of a modified mean-variance optimization framework for exploring optimal currency exposures in international equity portfolios, along with the decomposition of the optimal currency portfolio into a "hedge portfolio" and an "alpha-seeking portfolio" based on currency styles. Additionally, the practicality and effectiveness of the proposed approach set it apart from existing methods.

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Title	Authors	Year	Abstract Summary	Main Findings	State of The Art	Novelty
					carry. The solution is practical, with realistic and implementable leverage, turnover, and tail-risk characteristics.	
Strategic currency hedging	A Dales, R Meese	2001	A strong case can be made for hedging some portion of the currency exposure associated with international investing.	The main findings of the paper are: - The theoretical and empirical literature provides a strong case for hedging some portion of the currency exposure associated with international investing. - Differences in opinion remain regarding the appropriate methodology for constructing hedge ratios in practice. - The paper advocates the use of portfolio optimization methods and provides examples, along with caveats and guidelines, for the calculation of hedge ratios from various currency perspectives.	The "state of the art" in A Dales, R Meese (2001) is the review of theoretical and empirical literature supporting the rationale for hedging some portion of currency exposure associated with international investing, along with advocating the use of portfolio optimization methods for calculating hedge ratios.	The novelty in A Dales, R Meese (2001) lies in advocating the use of portfolio optimization methods for calculating hedge ratios in international investing, along with providing examples, caveats, and guidelines for the calculation of hedge ratios from different currency perspectives.
Effects of hedging foreign exchange risk on financial performance	Faith Maseki	2017	A range of hedging techniques are accessible for managing currency risk.	Internal hedging has the greatest influence on non-financial firms' performance, firms use both internal and external techniques to manage	The "state of the art" in Faith Maseki (2017) revolves around the importance of hedging and speculation strategies in managing	The novelty in Faith Maseki (2017) lies in its focus on the specific context of Kenya and the examination of the influence of internal and external hedging

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Title	Authors	Year	Abstract Summary	Main Findings	State of The Art	Novelty
				foreign exchange risk, hedging against currency fluctuations should be done carefully to avoid substantial losses.	currency risk, the impact of globalization on the operating environment for businesses in Kenya, and the lack of comprehensive studies on firm exposure to exchange risk in Kenya. The paper also focuses on the effect of foreign exchange rate risk management on the financial performance of non-banking companies listed at the Nairobi Securities Exchange, as well as the influence of internal and external hedging techniques on the performance of non-financial firms. The paper emphasizes the delicate nature of the decision to hedge against currency fluctuations.	techniques on the performance of non-financial firms in the face of increased volatility due to globalization and internationalization. The paper also highlights the lack of previous studies on firm exposure to exchange risk in Kenya.
Hedging effectiveness for international index futures markets	Alexandros Koulis, G. Kaimakamis, Christina Beneki	2018	Time-varying hedge ratios are more efficient than fixed hedge ratios in terms of risk management.	The main findings are: - The ARDL model's time varying hedge ratios are more efficient than fixed hedge ratios in minimizing risk. - More advanced econometric approaches could potentially enhance the effectiveness of the hedging process.	The "state of the art" in Alexandros Koulis, G. Kaimakamis, Christina Beneki (2018) is the comparison of different methods of hedging in American and European stock portfolios using futures contracts, with a focus on the effectiveness of the Autoregressive Distributed	The novelty in Alexandros Koulis, G. Kaimakamis, Christina Beneki (2018) lies in investigating the effectiveness of time-varying hedge ratios estimated through the ARDL model compared to fixed hedge ratios in minimizing risk, determining the influence of parameters on share distribution

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				- The Autoregressive Distributed Lag cointegration model is more efficient than fixed hedge ratios in minimizing risk, especially when analyzing data from peripheral capital markets.	Lag (ARDL) cointegration model in minimizing risk. The paper also highlights the potential of more advanced econometric approaches to enhance the effectiveness of the hedging process.	pattern on the hedge ratio, suggesting that more advanced econometric approaches could enhance the effectiveness of the hedging process, and demonstrating the superior performance of advanced econometric models, particularly the Autoregressive Distributed Lag cointegration model, in minimizing risk, especially when analyzing data from peripheral capital markets.
The variable effectiveness of hedging strategies	J. Ciorciari	2019	Hedging international security risks can be particularly challenging.	Governments adopt hedging strategies to mitigate risks in international affairs, both in the financial sense and against international security hazards. Hedging strategies are generally seen as prudent behavior, but they can fail due to difficulties in calculating risks and the potentially high cost of measures needed to hedge against them. Southeast Asian countries had relatively successful hedging against the risk of financial calamity after the 1997 crisis, but their efforts to hedge against the security risk of Chinese	The "state of the art" in J. Ciorciari (2019) is the discussion of governments' adoption of hedging strategies to mitigate risks in international affairs, both in the financial sense and against international security hazards. It also highlights the challenges and potential failures of such hedging strategies, illustrated through contrasting cases.	The novelty in J. Ciorciari (2019) lies in its examination of the challenges and potential failures of governments' hedging strategies in international affairs, particularly in the financial and security contexts, and its illustration of contrasting cases to support the argument.

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				encroachment in the South China Sea were less effective.		
Universal Hedging: Optimizing Currency Risk and Reward in International Equity Portfolios	Fischer Black	1989	The optimal hedge ratio depends on just three inputs.	The main findings of Fischer Black (1989) include the introduction of the concept of "universal hedging," which provides a formula for the optimal hedge ratio for foreign investments, along with three rules for implementation. This concept applies to all investors holding foreign securities.	The state of the art in Fischer Black (1989) is the development of the "universal hedging" method, which provides a formula for the optimal hedge ratio for foreign investments based on specific inputs related to market portfolio return, market portfolio volatility, and exchange rate volatility.	The novelty in Fischer Black (1989) is the proposal of a universal constant that gives the optimal hedge ratio for foreign investments, applicable to every investor holding foreign securities, regardless of their country of origin or the country of the foreign assets they hold. This concept is termed "universal hedging" and is based on a formula that depends on the expected return on the world market portfolio, the volatility of the world market portfolio, and average exchange rate volatility.
Hedging the exchange rate risk in international portfolio diversification	R. Maurer, Shohreh Valiani	2013	Currency forwards are the most common hedge tool to control the foreign currency exposure risk for international diversified mixed-asset portfolios.	The study aims to compare the effectiveness of currency forwards and currency options in controlling foreign currency exposure risk for international diversified mixed-asset portfolios. It evaluates and compares several hedging strategies using a mean lower partial moment model, in both in-sample and out-of-sample contexts.	The state of the art in R. Maurer, Shohreh Valiani (2013) involves evaluating and comparing currency forwards and currency options as hedge instruments, employing a mean lower partial moment model to address skewed return distributions, and using in-sample and out-of-sample analyses to test the effectiveness of different hedging strategies.	The novelty in R. Maurer, Shohreh Valiani (2013) lies in the comparison of currency forwards and currency options for controlling foreign currency exposure risk, evaluation of different hedging strategies, the use of a mean lower partial moment model, and the application of a block bootstrap test for performance improvement.

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Hedging the Risks from Writing Foreign Currency Options	John C. Hull, Alan White	1987	Delta hedging schemes involving the use of exchange-traded options are analyzed.	The paper identifies key factors affecting the performance of delta hedging for non-exchange-traded foreign currency options, analyzes hedging schemes involving the use of exchange-traded options, and tests the effectiveness of the schemes using both simulated data and real trade data from the Philadelphia exchange between February 1983 and September 1984.	The "state of the art" in John C. Hull, Alan White (1987) is the identification of key factors affecting the performance of delta hedging and the analysis of hedging schemes involving the use of exchange-traded options in the context of banks and financial institutions hedging their risks when writing non-exchange-traded foreign currency options.	The novelty in John C. Hull, Alan White (1987) lies in the identification of key factors affecting the performance of delta hedging and the analysis of hedging schemes involving the use of exchange-traded options for non-exchange-traded foreign currency options. The testing of these schemes using both simulated data and real trade data also contributes to the novelty of the paper.
CVaR models with selective hedging for international asset allocation	Nikolas Topaloglou, Hercules Vladimirou, Stavros A. Zenios	2002	Selective hedging improves the risk-return profile of portfolios regardless of the risk measurement metric.	The main findings include the development of an integrated simulation and optimization framework for multicurrency asset allocation problems, empirical examination of the benefits of international diversification and the impact of hedging policies on risk–return profiles of portfolios, and the superiority of selective hedging as a strategy that improves the risk–return profile of portfolios, regardless of the risk measurement metric, along with the superior ex post results of the CVaR	The state of the art in this paper is the development of an integrated simulation and optimization framework for multicurrency asset allocation problems, utilizing principal component analysis for scenario generation and implementing models that optimize the conditional-value-at-risk (CVaR) metric. The paper also highlights the effectiveness of selective hedging as a superior strategy for improving the risk–return profile of portfolios, regardless of the risk measurement	The novelty in this paper lies in the development of an integrated simulation and optimization framework for multicurrency asset allocation problems, particularly the demonstration of the superiority of selective hedging strategies and the outperformance of the CVaR model in terms of higher returns and lower volatility.

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				model in terms of both higher returns and lower volatility.	metric used. Furthermore, it compares the performance of the CVaR model with a model employing the mean absolute deviation (MAD) risk measure and finds superior ex post results for the CVaR model.	
Optimal international hedging in commodity and currency forward markets	Simon Benninga, Rafael Eldor, Itzhak Zilcha	1985	The optimal foreign-exchange hedge depends on the commodity hedge and the properties of the commodity forward market.	The main findings of the paper are: - The size of the commodity hedge is independent of the properties of the foreign-exchange market. - The optimal foreign-exchange hedge depends on the commodity hedge and the properties of the commodity forward market. - The firm's production decision is independent of its objective function if both forward markets exist, but depends on the consumption beta of the unhedgeable risks in the absence of one or both of the markets.	The "state of the art" in Simon Benninga, Rafael Eldor, Itzhak Zilcha (1985) is the derivation of optimal hedging and production rules for an exporting firm facing commodity-price and foreign-exchange-rate uncertainty. It also discusses the independence of the size of the commodity hedge from the properties of the foreign-exchange market, and the dependence of the optimal foreign-exchange hedge on the commodity hedge and the properties of the commodity forward market. Furthermore, it addresses the firm's production decision in relation to the existence of forward markets.	The novelty lies in exploring the interdependencies between commodity and foreign-exchange hedging, as well as the impact of forward market availability on production decisions for exporting firms.

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Currency Hedging and the Risk of Loss	M. Kritzman	2000	Foreign exchange risk washes out over long horizons.	The paper's main findings include challenging the notion of foreign exchange risk washing out over the long run, demonstrating the impact of exchange rate fluctuations on foreign asset risk, and presenting alternative approaches for measuring risk of loss.	The "state of the art" in M. Kritzman (2000) involves a review of currency arithmetic, demonstration of the impact of exchange rate fluctuations on foreign asset risk, derivation of minimum risk and optimal exposures to currency forward contracts, and the presentation of alternative approaches for measuring the risk of loss and the effect of currency exposure on these measures.	The novelty in M. Kritzman (2000) is the comprehensive analysis of the impact of currency exposure on risk, including the derivation of minimum risk and optimal exposures to currency forward contracts, as well as the presentation of alternative approaches for measuring risk of loss.
Currency Hedging and Corporate Governance : A Cross-country Analysis	Ugur Lel	2006	Strongly governed firms tend to use derivatives to hedge currency exposure and overcome costly external financing.	-	-	-
The effectiveness of currency-hedging techniques over multiple return horizons for foreign-denominated debt issuers	Stephen Phillip Huffman, Stephen D. Makar	2004	Foreign exchange derivatives are effective in the short-term horizon.	The main findings are that issuers of foreign-denominated debt effectively use foreign exchange derivatives and geographic sales-to-asset alignment to reduce currency exposure, with the effectiveness varying across different time horizons. The study also contributes evidence of the time period	The paper presents evidence that issuers of foreign-denominated debt effectively use foreign exchange derivatives and geographic sales-to-asset alignment to reduce currency exposure across different time horizons. It also contributes to the literature by identifying the most effective time periods for	The novelty in Stephen Phillip Huffman, Stephen D. Makar (2004) lies in its examination of the effectiveness of hedging techniques in reducing currency risk across different time horizons using a unique dataset, and its contribution to the literature by providing evidence of the most effective time period for the use of foreign exchange derivatives and geographic sales-

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				when these techniques are most effective.	the use of these hedging techniques.	to-asset alignment for issuers of foreign-denominated debt.
Is Complete Hedging Optimal for International Bond Portfolios	S. FilatovVictor, RappoportPeter	1992	The benefits of diversification across currencies more than offset the cost of the currencies' volatilities for non-US investors in the 1980s.	Non-U.S. investors could have reduced their international portfolios' risks by incorporating currency exposure, as the benefits of diversification across currencies outweighed the cost of the currencies' volatilities. The "free-lunch" argument may overlook important factors that could vary across countries or over time.	The paper discusses how non-U.S. investors could have reduced the risks of their international portfolios by taking on currency exposure, with the benefits of diversification across currencies outweighing the cost of the currencies' volatilities. It also suggests that the "free-lunch" argument may miss something, and investors should be concerned about potential changes in the missing link across countries or over time.	The novelty in the paper lies in exploring the potential benefits of non-U.S. investors taking on currency exposure to lower international portfolio risks and considering how the missing link in the free-lunch argument might change across countries or over time.
Hedging the Exchange Rate Risk in International Portfolio Diversification: Currency Forwards Versus Currency Options	R. Maurer, Shohreh Valiani	2003	Controlling the currency risk for international diversified mixed asset portfolios is an important instrument for controlling and improving investment performance of international investments.	-	-	-
Currency Hedging and Corporate	Ugur Lel	2009	Strongly governed firms tend to use derivatives to hedge currency exposure	Strongly governed firms tend to use derivatives to hedge currency exposure and	The paper provides evidence that strongly governed firms tend to use derivatives to	The novelty in Ugur Lel (2009) lies in providing comprehensive evidence of the impact of firm-

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Governance: A Cross-Country Analysis			and overcome costly external financing.	overcome costly external financing. Weakly governed firms appear to use derivatives mostly for managerial reasons. The results are robust to alternative measures of corporate governance, various subsamples, and potential selection bias.	hedge currency exposure and overcome costly external financing, while weakly governed firms appear to use derivatives mostly for managerial reasons. The results are robust to alternative measures of corporate governance, various subsamples, the use of foreign denominated debt as an alternative strategy to hedge currency exposure, and a potential selection bias. This serves as the first comprehensive evidence of the impact of firm- and country-level corporate governance on firms' use of derivatives.	and country-level corporate governance on firms' use of derivatives, and in demonstrating that strongly governed firms tend to use derivatives to hedge currency exposure and overcome costly external financing.
Can hedging tell the full story? Reconciling differences in United States aggregate- and industry-level exchange rate risk premium	Bill B. Francis, Iftekhar Hasan, Delroy M. Hunter	2008	The aggregate- and industry-level exchange rate risk premiums are different in the United States.	-	-	-
Is there a need for hedging exposure to foreign exchange risk?	I. Moosa	2004	Forward contracts are preferred to money market hedging for large	The main findings of the paper are:	The "state of the art" in I. Moosa (2004) is the evaluation of three strategies	The novelty in I. Moosa (2004) lies in the finding that hedging or not hedging will not make a

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			and non-recurring exposures.	- Hedging or not hedging does not make a difference over a long period of time, even with perfectly accurate forecasts available. - The validity of the unbiased efficiency hypothesis in the long run is confirmed. - Large and non-recurring exposures should be hedged using forward contracts, and an option hedge may be considered to add more flexibility.	of hedging exposure to foreign exchange risk, the conclusion that hedging or not hedging will not make a difference over a long period of time, and the suggestion to use forward contracts for large and non-recurring exposures.	difference over a long period of time, even with perfectly accurate forecasts, due to the validity of the unbiased efficiency hypothesis in the long run. It also suggests specific strategies for hedging large and non-recurring exposures.

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