Australian Journal of Business and Management Research
New South Wales Research Centre Australia (NSWRCA)

Volume. 8, Issue. 2, (26-39) ISSN (Online): 1839 - 0846

Exploring the Dynamics Between Leverage and Systematic Risk of Equity Stocks: The Mediating Influence of Profitability and the Moderating Impact of Firm Size

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Received: 11 June, 2024
Final Revision: 25 September, 2024
Accepted: 01 October, 2024
Published: 31 October, 2024
10.52283/NSWRCA.AJBMR.20240802A03

Abstract

This inquiry embarks on a rigorous examination of the existing scholarly works to unravel the complex interplay between leverage and the inherent systematic risk on equity stocks, shedding light on how profitability mediates this relationship and how firm size further influences these dynamics in an organizational scale throughout many decades spanning 1979 to 2024. The study has three key objectives. 1). To aggressively examine and critically analyze prior studies that have explored the relationship between leverage and the systematic risk of equity stocks. 2). To meticulously scrutinize and evaluate studies exploring the intermediary impact of profitability on the correlation between leverage and the systematic risk of equity stocks. 3). To uncover previous studies that have examined the credible moderating effect of company size on the relationship between leverage and systematic risk of equity stock. Inquiry adopted the PRISMA 2020 benchmark in systematic review of the meticulous dissection of numerous prior studies and adoption ensured a structured and advanced academic approach in examining and synthesizing the extant body of literature. The findings starkly reveal a critical void in scholarly literature regarding exhaustive examinations of the intricate interplay between leverage and systematic risk in equity stocks. This void is glaringly evident due to the absence of a consolidated and robust framework that accommodates the diverse array of this study context. The mediating role of profitability in this relationship is largely unexplored across multiple contexts. Additionally, the moderating role of company size in the relationship between leverage and systematic risk has not been widely studied within a unified model.

Keywords: Operating Leverage, Financial Leverage, Systematic Risk, Equity Stock, Profitability, Firm Size

I. Introduction

The exploration of how leverage intertwines with the core systematic risk ingrained in equity stocks has evolved into a crucial focal point in corporate finance, demanding acute scrutiny and exhaustive analysis from academic circles and astute investors alike (Rehman et al., 2019; Younas and Sarmad, 2020; Matemilola, Bany-Ariffin, Azman-Saini, 2013). This burgeoning intrigue is predicated upon a nuanced comprehension of how debt financing exacerbates financial peril and modulates the volatility of stocks, consequentially informing investment adjudications and the methodologies employed in portfolio management (Younas and Sarmad, 2020). Despite this heightened interest, there remains a significant shortfall in empirical research elucidating the influence of leverage alongside macroeconomic variables on the systematic risk of stocks, particularly concerning the complex interplay through mediating and moderating influences within an integrated and cohesive analytical structure. Thus, this

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inquiry delves into the relationship between leverage and the systematic risk associated with equity stocks, exploring how profitability mediation and size moderation influence this dynamic. It aims to unveil insights into stock market behavior, aiding investors in decision-making and portfolio management. By comprehensively analyzing these factors, the study seeks to identify gaps in the current literature and contribute to advancing risk management expertise in this study context.

Background of the Study

Several prominent studies delve into the ramifications of financial leverage on the systematic risk of stocks. These inquiries not only dissect the direct consequences of leveraging on stock volatility but also examine how varying degrees of financial leverage can recalibrate the risk-return profile of equity investments, thereby offering nuanced insights into the intricate dynamics governing corporate finance and investment strategy (Aharon and Yagil, 2019; Qizam, 2017 ; Hamada, 1972 ; Wagdi and Tarek, 2019; Gahlon and Stover, 1979 ; Bowman, 1979 ; Ozdagli, 2009 ; Castagna and Matolcsy, 1978 ; Nawaz et al., 2017; Perinpanathan, 2014 ; Gunarathna, 2016 ; Sudharika et al., 2018; Gamlath, 2019 ; Matemilola, Bany-Ariffin and Azman-Saini, 2013). However, the insights gleaned from these investigations offer merely a cursory comprehension of the direct link between financial leverage and the systematic risk of stocks, glaringly neglecting vital details and complex subtleties, including interaction effects, which presumably play a significant role in the relationship under scrutiny. This stark omission underscores a profound and indefensible gap in the research, necessitating an urgent and thorough reassessment to fully uncover and understand the complete range of dynamics involved in this pivotal relationship.

Moreover, there has been a scant empirical investigation into the influence of operating leverage on the systematic risk of publicly traded stocks across varied contexts. This unexplored area is particularly notable in sectors with high fixed costs, where operating leverage can dramatically affect a company's risk profile. These studies are crucial for understanding how different business models and industry dynamics play a role in shaping the risk characteristics of equity investments, suggesting a need for a more granular analysis of operating leverage's effect in diverse economic and financial landscapes (Houmes, MacArthur and Stranahan, 2012; Alaghi, 2012; Rubinstein, 1973; Triest, Triest and Bartels, 1998; Dantas, Medeiros and Lustosa 2006; Azizah et al., 2020; Silwal, 2022; Lee and Park, 2014). Most of these studies referenced have been centred around developed and emerging economies, pointing to the potential impact of operating leverage on the systematic risk associated with stocks. Despite this, there has been a significant oversight in investigating the pivotal mediating or moderating effects that could play a role in the nexus between operating leverage and the systematic risk of stocks. This lacuna not only compromises the depth and applicability of the research outcomes but also leaves a pronounced gap in the holistic understanding of these dynamics, highlighting a critical area for future scholarly inquiry.

Nonetheless, a dearth of inquiries has explored the impact of financial as well as operating leverage on the systematic risk of stocks in diverse settings (Gershon, Mandelker and Rhee, 1984; Gahlon and Gentry, 1982; Huffman, 1983; Younas and Sarmad, 2020; Rehman et al., 2019; Bhatti et al., 2010; Gupta, Kumar and Verma, 2016; Cai and Zhang, 2011). Prior examinations have underscored that variations in company's leverage metrics significantly impact its equity valuation, engendering outcomes that oscillate between propitious and pernicious, thereby yielding a spectrum of divergent results. These inquiries have precipitated a discourse fraught with contention due to their incongruent conclusions and the debatable pertinence of their insights. For example, a subset of scholarly works posits that an escalation in leverage might engender a diminution in equity prices, as it amplifies investor trepidation concerning the enterprise's adeptness at discharging its debt obligations (Qizam, 2017 ; Castagna and Matolcsy, 1978 ; Nawaz et al., 2017). In contrast, alternative analyses advocate that an augmentation in leverage may fortify stock prices, as it enhances investor conviction in the enterprise's profitability and its trajectory of continued expansion (Aharon and Yagil, 2019).

When delving into the potential interaction effects capable of reshaping and influencing the correlation between leverage encompassing both financial and operational facets and the inherent systematic risk within stocks stands as an imperative yet widely overlooked realm of inquiry in this broader framework. This gap persists, with the significant outlier being the groundbreaking study by Qizam, (2017), which distinctly pinpointed company size as a pivotal moderating factor within this dynamic landscape. However, a comprehensive analytical framework must rigorously assess the intricate interplay between operating and financial leverage and the systematic risk of common stock, factoring in the outcomes of interactions between both types of leverage and the stock's systematic risk, an area not yet fully explored. Such an academic endeavour necessitates a detailed and thorough examination of the complex relationships between operating and financial leverage, alongside the aggregate impact these relationships exert on the systemic risk inherent to common stock. Critical attention must be devoted to the nuanced and multifaceted interaction effects between leverage mechanisms and stock beta, including potential mediating and moderating effects. The conspicuous absence of such an exhaustive analysis in the prevailing literature represents not merely a lacuna but a stark dereliction of scholarly rigor. Additionally, this deficiency severely undermines the robustness of empirical findings and the theoretical sophistication of academic discussions concerning this field of study.

Given this substantial oversight, it is both critical and imperative to undertake a thorough analysis of these pivotal analytical elements that have been egregiously neglected. This endeavour is not just mandatory; it is essential to transcend superficial understanding and delve into the profound complexities governing this specified relationship. Such a circumstance paves the way for innovative research aimed at deciphering the complex dynamics between operating and financial leverage and their influence on the systematic risk of common stock. Specifically, this involves investigating mediating and moderating effects within an integrated, multidimensional framework. Furthermore, grasping the mediating factors that forge the link between leverage and the systematic risk of stocks is vital for investors, scholars, and industry practitioners, offering a nuanced perspective on the dynamics between leverage and systematic risk across different scenarios (Chauhan, 2023). Mediators, acting as intermediate variables or processes between leverage and systematic risk, facilitate a more profound comprehension of the essential mechanisms driving this defined relationship. Such insights are invaluable for refining investment tactics and risk management methodologies, enabling more nuanced decision-making in the financial sector. The relevance of this interconnection may not consistently apply, as illustrated by highly leveraged companies within stable sectors characterized by scant competition and external volatility, where mediators might exert negligible influence on systematic risk (Kanoujiya et al., 2023).This observation underscores the variability in the impact of mediating factors, challenging the prevailing notion that they invariably deepen the understanding of the complex interrelations between leverage and the systematic risk of equity.

Nonetheless, a nascent but growing compendium of research posits that the nexus between leverage (inclusive of both its financial and operational dimensions) and stock beta might be modulated by profitability, wherein elevated profitability levels have the potential to buffer against the deleterious effects engendered by leverage (Chauhan, 2023). Additionally, an extensive array of scholarly works has been devoted to expounding upon the mediating role of profitability, a factor of paramount significance in the analytical deconstruction of this complex interrelation (Novia and Anom, 2019; Natsir and Yusbardini, 2020; Nursetya and Hidayati, 2021; Paramitha, 2020; Li, Ashhari, and Fan, 2022; Nugroho and Halik, 2020; Astawinetu et al., 2023; Mansyur et al., 2020). These scholarly endeavors offer pivotal contributions towards a granular comprehension of profitability as an intermediary mechanism, shedding light on the intricate interplay that orchestrates the relationship between leverage and the systematic risk of equities. Hence, the consensus among scholars and practitioners alike underscores that the results of these studies carry substantial and pivotal implications, impacting both theoretical frameworks and practical applications within the field of financial management and investment strategy (Astawinetu et al., 2023).

Novelty of the Study

This study stands out as the first comprehensive review and synthesis of the extant literature on the interplay between financial and operating leverage and their collective impact on the systematic risk of equity stocks. Study methodically evaluates and integrates a wide array of previous studies, with a particular focus on the mediating role of profitability and the moderating influence of firm size. This conceptual paper amalgamates varied research methodologies and outcomes across different economic environments and industry sectors, presenting a distinct and holistic perspective that is unprecedented in the scholarly community. By meticulously compiling and critically analysing this substantial corpus of studies, the research delivers a groundbreaking analysis of the complex effects of leverage on stock risk. This cohesive synthesis constitutes a significant contribution to the disciplines of the corporate finance and risk management

II. Literature Review and Development of Hypotheses

Strategic Profitability Mediation: Impact on Leverage and Systematic Equity Risk

The empirical evidence from the studies cited unequivocally indicates that profitability exerts a constructive influence as a mediating factor, facilitating a nuanced understanding of the intricate dynamics governing the relationships under scrutiny (Chauhan, 2023; Li, Ashhari and Fan, 2022; Natsir and Yusbardini,2020; Nugroho and Halik, 2020; Astawinetu et al., 2023). Few have shown evidence of both negative and positive mediating effects (Novia and Anom, 2019; Nursetya and Hidayati, 2021). Besides, Paramitha, (2020) discovered evidence

of a partial mediating impact, which was statistically significant. Conversely, Mansyur et al. (2020) reported no mediating effect in the connection under investigation.
Yet, according to Chauhan, (2023), leverage's impact on a stock's beta coefficient and hence its systematic risk is contingent on the firm's profitability. This is grounded in the premise that a company's profitability reflects its risk tolerance and financial stability. Profitable firms can utilize leverage more extensively without significantly raising the beta of their stock, thanks to their solid financial position, thus reducing potential risks. Conversely, firms with low profitability may experience a sharper increase in their stock's beta when employing leverage due to their fragile financial condition, heightening the risks associated with taking on additional debt. To boot, Baker, (1973) asserts a compelling interplay between profitability and leverage, suggesting that profitability not only influences leverage but also that leverage reciprocally impacts profitability. This underscores the pivotal role profitability may play as a mediating force in the intricate relationship between leverage and firm performance. Furthermore, Sonia and Khafid's, (2020) empirical findings fortify this argument, emphasizing profitability as a robust mediating factor in the nexus between leverage and the dissemination of sustainability reports. The pronounced profitability of a business is unequivocally linked to its adept utilization of internal resources, thereby bolstering the firm's resilience against failure (Almomani et al., 2022).

Despite the extensive focus on firm value and performance in prior studies, notably excluding Chauhan, (2023), this analysis uniquely centres on the systematic risk of common stock as the dependent variable. This departure is rooted in the robust evidence linking stock price to corporate performance or value. The research posits that corporate performance serves as a proxy for stock price volatility, as it can either enhance or diminish equity market valuations (Mohamed et al., 2021; Sukesti et al., 2021; Natsir and Yusbardini, 2020; Milosevic-avdalovic and Milenkovic, 2017). Furthermore, the implications of these studies underscore that a highly leveraged firm capable of generating substantial profits may possess superior resources to mitigate associated risks. Conversely, a profit-challenged firm faces heightened instability exacerbated by its debt burden, amplifying industry-wide risks (Baker,1973). Therefore, integrating profitability as a mediating variable offers a more comprehensive insight into the nexus between leverage and systemic stock risk. Moreover, a company's profitability and risk management proficiency play pivotal roles in shaping the leverage-beta relationship. Profitability acts as a mediating factor in the realm of systemic stock risk and leverage, subject to prevailing economic conditions. Notably, profitability's ability to fluctuate at a faster pace compared to leverage implies short-term opportunities for highly profitable firms to assume additional debt without significantly elevating systematic risk. However, over the long term, a decline in profitability could precipitate an increase in systemic risk (Yoewono and Verenathan, 2023; Novia and Anom, 2019; Chauhan, 2023).

The wealth of existing research on the mediating role of profitability underscores its significance in shaping firm dynamics. However, this corpus of literature also reveals notable gaps and areas for further exploration. Yet, Kanoujiya et al. (2023) critically advance the understanding of how leverage impacts the valuation of non-financial firms in India, distinctively highlighting profitability's moderating role. Their study stands out by offering novel insights that challenge and refine previous research, providing a deeper analysis of financial structures and performance interdependencies in emerging markets. The study distinguishes itself by dynamically illustrating how profitability influences the leverage-valuation relationship, uncovering the intricate financial interplays within a unique market environment. Given the empirical and theoretical foundations laid by these studies, there exists a compelling rationale to delve deeper into profitability's mediating effect within a novel research framework. By interrogating diverse perspectives and thoroughly examining the implications, researchers can not only address existing gaps but also pave the way for innovative insights. Therefore, initiating a fresh inquiry into profitability's mediating role holds promise for advancing scholarly understanding and contributing to the evolving discourse on corporate finance.

Decisive Moderation by Firm Size: Redefining Leverage and Systematic Risk Dynamics

Understanding the intricate relationship between leverage and the systematic risk of equity stocks is of paramount importance for all stakeholders within the financial realm (Natsir and Yusbardini, 2020). Delving deeper into the underlying mechanisms empowers researchers to navigate this complex dynamic with precision and insight. Furthermore, the identification of moderating influences serves as a cornerstone for refining risk management strategies, offering investors and firms the tools needed to effectively mitigate potential risks associated with leverage (Panjaitan and Supriati, 2023). The policy implications cannot be overstated, as the insights garnered from such inquiries have the potential to shape regulatory measures, bolstering the stability and resilience of financial markets (Muradoglu, Taskin and Bigan, 2000). Armed with a comprehensive understanding of moderating influences, investors are equipped to make strategic decisions that optimize capital allocation. Thus, bridging this knowledge gap not only propels academic research in finance to new heights but also ignites a spark of innovation and exploration, enriching the broader scholarly discourse with invaluable insights.

Despite their evident importance, existing studies have consistently neglected the integration of moderating interplays into their analytical frameworks, disregarding the undeniable relevance of these dynamics to their research investigations. Nevertheless, sparse studies have unveiled the critical significance of company size in delineating its risk profile. As highlighted by Panjaitan and Supriati, (2023) and Vithessonthi and Tongurai, (2014), the importance of company size as a moderating factor may exhibit a less pronounced effect in developing countries when compared to developed economies. However, despite this observation, there remains a notable scarcity of research dedicated to exploring this specific area of interest.

Subsequent studies have rigorously explored the moderating influence of company size across diverse associations, thereby enriching the discourse and expanding the debate on this topic. For instance, Qizam, (2017) examined the bidirectional relationship between the correlation between financial leverage and systematic risk with company size being the moderator. Moderating effect of firm size between the capital structure and firm value (Al-Momani et al., 2022). The moderating role of firm size on financial characteristics and Islamic firm value in the Indonesian equity market (Santosa, 2020). Firm size as moderator to non-linear leverage-performance relation: an emerging market review (Farooq and Jibran, 2017). The effect of capital structure on financial performance with firm size as a moderating variable of non-financial firms listed at the Nairobi securities exchange (Meshack et al., 2020). Financial leverage and operating performance: Does firm size matter (Vithessonthi and Tongurai, 2014). The moderating effect of firm size on the relationship between capital structure and financial distress of non-financial companies listed in Kenya (Muigai and Muriithi, 2017). Moderating effect of firm size on the leverage-performance relationship (Vithessonthi and Tongurai, 2014). Analyzing the linear and curvature relationship of financing by debt and firms' performance: the moderating role of firm size (Dehghan and Shorvarzi, 2017). In a diverse direction, Dalci et al. (2019) disclosed that firm size has a moderating effect on the relationship between working capital and profitability in German non-financial firms. Zahrani et al. (2023) examined the combined effects of capital structure, profitability, and audit quality on company value, emphasizing the moderating role of company size. Ahmed, Nugraha, and Hagen, (2023) demonstrated that agency costs significantly moderate the relationship between capital structure and firm performance, highlighting the importance of managing these costs to optimize capital effectiveness. Fitriana et al. (2024) revealed that while leverage and tax risk influence company value, company size significantly moderates these effects, offering distinct insights into how scale impacts financial strategies and outcomes. However, the perspectives and implications stand at the forefront of an imminent debate, awaiting critical examination and augmentation.

Study Implications Unveiled: Unleashing Insights

The outcomes of these studies present a discordant narrative. The referral studies robustly affirm that profitability can effectively mitigate the risks associated with leverage; firms with high profitability exhibit reduced susceptibility to the potential perils of increased leverage (Chauhan, 2023; Li, Ashhari and Fan, 2022; Natsir and Yusbardini, 2020). Nonetheless, the extent and character of this mediation are not uniform. Certain studies reveal that there is no mediation effect (Mansyur et al., 2020), while others demonstrate fluctuating outcomes (Novia and Anom, 2019; Nursetya and Hidayati, 2021), encompassing both adverse and favourable impacts. This disparity underscores the significant role of contextual factors, such as industry specifics, firm size, and prevailing economic conditions in shaping the mediating influence of profitability (Baker, 1973; Almomani et al., 2022). These findings underscore the necessity for more nuanced research to decode these interactions more precisely, especially across varying economic landscapes and industry sectors

While certain findings assert the influence of company size on this association, others reveal ambiguous or conflicting results, adding layers of complexity to the understanding of this phenomenon (Vithessonthi and Tongurai, 2014; Dehghan and Shorvarzi, 2017). Furthermore, a predominant trend among these studies underscores the intricate and context-dependent nature of the relationship between leverage, performance, and firm size. Such complexity emphasizes the imperative for additional research to fully grasp the nuances of this phenomenon (Qizam, 2017; Farooq and Jibran, 2017; Santosa, 2020; Muigai and Muriithi, 2017). Therefore, the inquiry into how company size may serve as a moderator in the intricate interplay between leverage (financial and operating) and systematic equity risk stands as a paramount subject for scholarly scrutiny. This unexplored terrain promises to unveil novel insights into the complexities of financial dynamics, demanding rigorous investigation and analysis.

Besides, examining this phenomenon from a distinct perspective unveils a compelling narrative: stocks in developing market companies may demonstrate heightened vulnerability to macroeconomic factors compared to their counterparts in developed markets, even when their sizes are comparable (Panjaitan and Supriati, 2023; Vithessonthi and Tongurai, 2014). Large corporations, fortified by extensive diversification and robust market presence, are better positioned to navigate macroeconomic fluctuations, leading to more stable stock betas (Issah and Antwi, 2017; Simbolon and Purwanto, 2018; Madurapperuma, 2022; Ediriweera and Dissanayake, 2022). Conversely, smaller enterprises may experience disproportionate impacts from macroeconomic shifts, potentially amplifying their systemic risk exposure (Madurapperuma, 2022). Thus, it is undeniable that company size significantly influences the relationship between macroeconomic factors and the stock risk inherent to the market. However, it is noteworthy that this crucial aspect remains unexplored within the current research scope in a multidimensional model hitherto, representing a limitation of this study.

The critical significance of this intricate interplay in understanding broader financial frameworks has been regrettably overlooked in prior research endeavours. Hence, it is imperative to embark on groundbreaking research and analysis, specifically designed to accommodate the diverse contexts of study, to gain an exhaustive comprehension of market dynamics and adeptly manoeuvre through its intricacies. This necessitates a strategic revaluation and augmentation of analytical profundity in future research efforts, intending to attain a thorough understanding and proficient implementation of these insights. This approach will ensure a more robust and nuanced exploration of financial systems, thereby enabling a more effective navigation and management of market complexities.

Conversely, the intensified focus and the sustained curiosity demonstrated by previous research on these specific interactions warrant new ventures into the existing avenues of research, fundamental theories, and the construction of knowledge in this field. Considering the crucial findings, such as the significant role of firm size in diminishing the effects of macroeconomic variables on stock beta, and the evident shortcomings in current analytical approaches, it is essential for upcoming academic inquiries to rigorously examine how firm size acts as a moderator in the dynamics between macroeconomic factors and the systematic risk of stocks. This endeavour will address significant voids in prior studies. Such investigations promise to substantially enhance our comprehension of market operations and risk forecasting, while elucidating the complex interrelations among a company's size, prevailing economic conditions, and the risk profile of its shares. Consequently, this will afford a more sophisticated insight into the nexus between financial stability and market reactivity. The prior discourse reveals a series of significant deficits within the designated field of focus, which have materialized as direct sequels to the foundational conditions extensively outlined earlier. These voids, starkly observable within the current thematic exploration, necessitate an unwavering commitment to meticulous and exhaustive scrutiny, alongside immediate and decisive remedial actions.

Unexplored Territory in Literature

1. Limited studies have been carried out to delve into the ramifications of leverage on the systemic risk present in equity stocks, employing a holistic and multifaceted analytical perspective across a range of different research settings.
2. The intricate interplay between leverage and the systematic risk of equity stocks, and the nuanced mediating effect of profitability therein, remain grossly underexplored within a unified study model across diverse research settings, representing a significant gap in the current academic discourse.
3. The underexplored dynamic of how company size moderates the relationship between leverage and the equity stock inherent to the systematic risk has yet to receive adequate attention within a unified research model across any research setting.

The identification of these aforementioned research voids carries profound significance, equipping investors with essential tools for discerning investment opportunities. Moreover, it empowers policymakers to devise robust strategies that fortify financial stability within publicly traded companies across diverse study contexts. By probing into these gaps, researchers can unravel the intricate dynamics at play, fostering a profound understanding of the interplay between leverage, company size, profitability, and systematic risk of equity stocks. Nevertheless, these conspicuous research gaps crystallize into a pressing problem statement that demands urgent attention and rigorous investigation.

Evident Research Problem

Investors across diverse economies face the daunting task of understanding how leverage and systematic risk affect their investment decisions and stock returns. Establishing a robust mechanism to thoroughly assess the impact of leverage on the systematic risk of equity stocks, including its mediating and moderating effects, is of utmost importance. Despite its potential significance, the current literature lacks the necessary information to develop a comprehensive predictive framework for these relationships across various research contexts.

The pressing nature of the prevailing issue demands the creation of an unyielding model that meticulously maps out and elucidates the intricate interrelations between financial and operating leverages and the systematic risk of common stock. This model must forcefully incorporate specified mediating and moderating interaction effects to leave no room for ambiguity in understanding these critical dynamics.

III. Methodology

In unwavering adherence to the stringent directives delineated by the preferred reporting items for systematic reviews and meta-analyses (PRISMA) 2020, an unparalleled and methodologically impeccable systematic literature review was executed with exacting precision. This review, steadfast in its allegiance to the rigorous edicts of PRISMA, meticulously orchestrated a search strategy of unparalleled specificity, alongside criteria for inclusion and exclusion that were stringently defined (Page et al., 2021). The investigative odyssey traversed the vast expanses of scholarly databases and repositories, including but not limited to Scopus, Oxford journals, Taylor and Francis, JSTOR, Research4Life, Emerald, and seminal texts within the realm of corporate finance. This methodical selection process was dissected into five pivotal phases identification, screening, eligibility, and the ultimate adjudication of prior research for inclusion or exclusion thereby ensuring a review of unparalleled accuracy and exhaustive scope.

In the rigorously defined search across the designated databases, a total of 432 studies were initially unearthed. From this pool, a decisive exclusion was applied to 225 studies for various critical reasons at the initial stage: 123 were eliminated due to redundancy, 31 were deemed irrelevant as they deviated significantly from the thematic boundaries of this research, and 71 were dismissed for a range of other pertinent reasons. This left a core of 207 studies subjected to an intensive screening process. Within this scrutinized subset, 11 studies were further disqualified, where 04 on the grounds of technical inadequacies and 07 were due to duplication, underscoring the stringent selection criteria employed. Ultimately, this exacting process distilled the number to 196 research studies, each rigorously vetted and selected for their relevance and contribution to the systematic literature review at hand. This selection exercise epitomizes the stringent adherence to the PRISMA 2020 guidelines, a testament to the methodological rigor and analytical depth championed in this review, as meticulously depicted in Figure # 01. Figure 01 stands as a visual testament to the exhaustive and methodical approach adopted, reflecting the unparalleled commitment to excellence and precision in the execution of this systematic review.

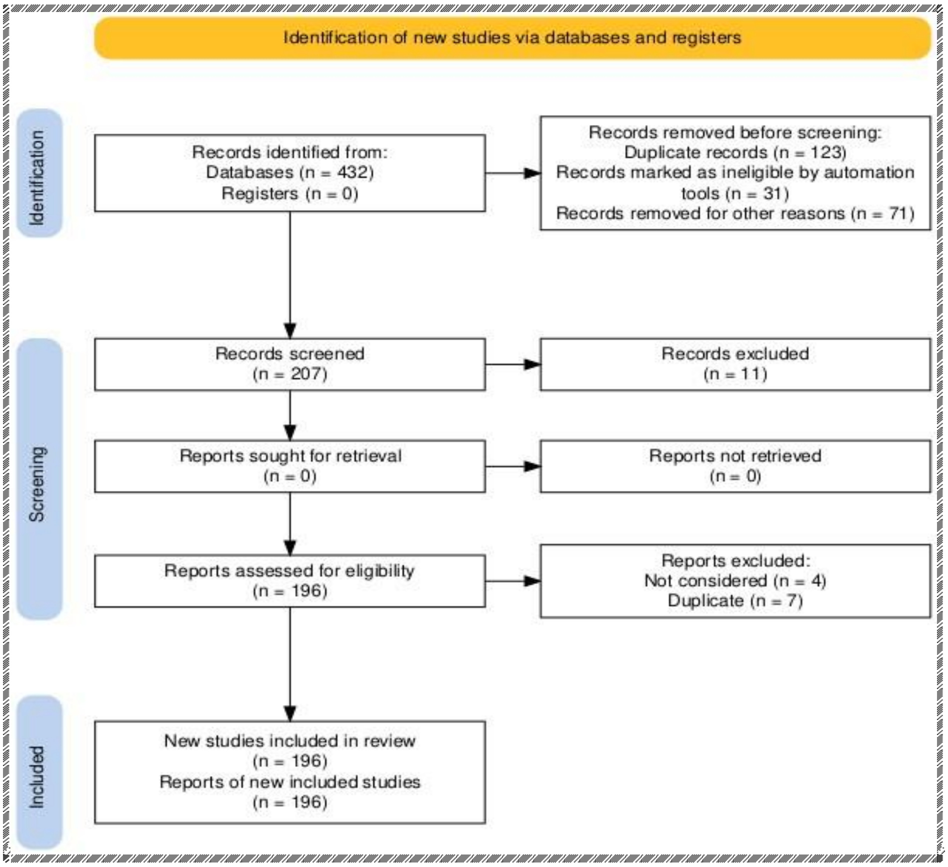

Figure1: PRISMA 2020, Identification of New Studies Via Databases and Registers
Source: PISMA 2020 Output analysis

Figure 2 unambiguously articulates the quintessential data insights, elucidating that, in the interstice from 1979 to 2024, a striking average of 17.02 citations per document was manifested across the 196 documents assiduously curated for this analytical endeavor. This statistic, with its resounding clarity, magniloquently underscores the formidable scholarly impact and irrefragable pertinence of the documents within the purview of this scholarly investigation. Furthermore, the other information elucidated herein holds considerable significance for an array of discernment paradigms.

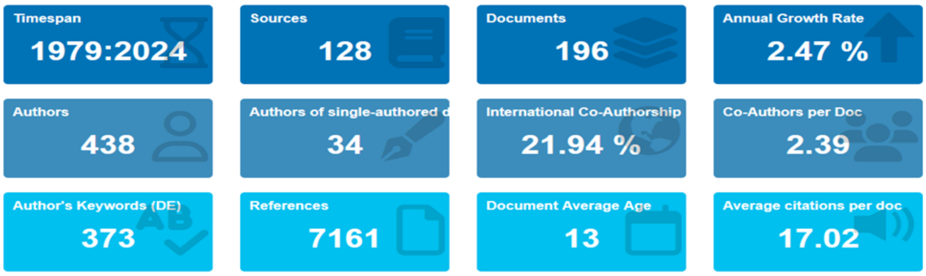

Figure 2: Key Data Intelligence
Source: Biblioshiny Output of analysis

Figure 03 depicts a volatile trajectory in the production of scientific articles from 1979 to 2024, with notable fluctuations during certain intervals, from 1979-2006. The pronounced rise between 2006-2007, followed by a significant downturn from 2007 to 2008, suggests the influence of external factors on these trends. This is further evidenced by a substantial increase from 2008 to 2010, a downturn in 2011, and a resurgence until 2014 before a sharp decrease from 2014 to 2015. A recovery is observed from 2015 to 2021, leading to a discernible decline from 2021 to 2024. These patterns imply a potential saturation in research or a pivot in thematic priorities, underscoring the necessity for comprehensive scrutiny to decipher the underlying dynamics.

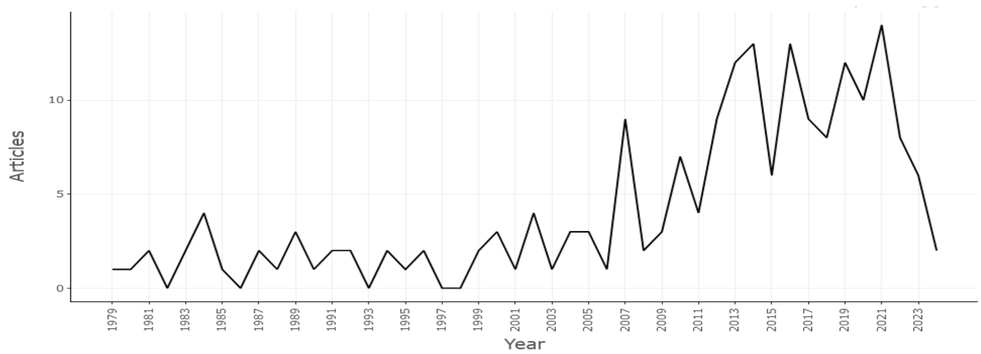

Figure 2: Annual Scientific Production
Source: Biblioshiny Output of analysis

Figure 04 presents a word tree analysis showcasing the 23 most significant keywords in examining the current phenomenon. The visualization employs box sizes to reflect the frequency of keyword usage by authors, with similar keywords being consolidated. The analysis identifies "systematic risk" as the foremost keyword, appearing 95 times. Other notable mentions include "leverage" with 24 occurrences, "beta" with 38, "financial leverage" appearing 48 times, and "operating leverage" appearing 26 times. Frequencies of the remaining keywords are comparatively lower.

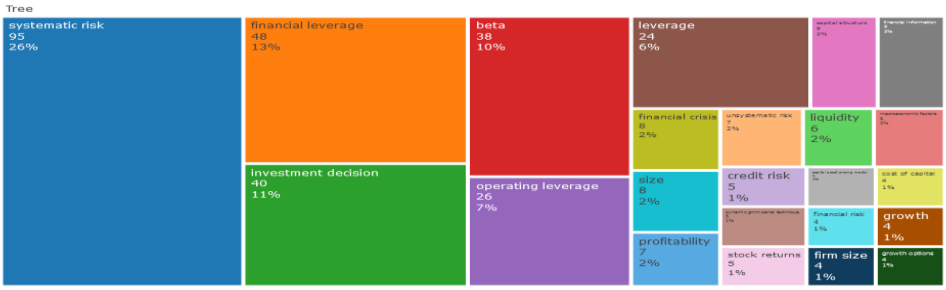

Figure 4: World Tree Analysis
Source: Biblioshiny Output of analysis

Figure 05 presents a comprehensive three-field plot analysis diagram, carefully crafted to explore the sophisticated interactions among the countries of authorship (AU_CO), titles of research projects (TI_TM), and the sources cited (CR_SO) in these scholarly works. This detailed visual representation aims to offer a thorough overview of the global academic landscape, underscoring the intricate links between international collaborations, subject themes, and the scholarly references that underpin these studies. By doing so, it provides valuable perspectives on how research communities worldwide contribute to, and draw upon, a collective pool of knowledge, fostering a deeper understanding of the dynamics at play in the creation and dissemination of academic insights.

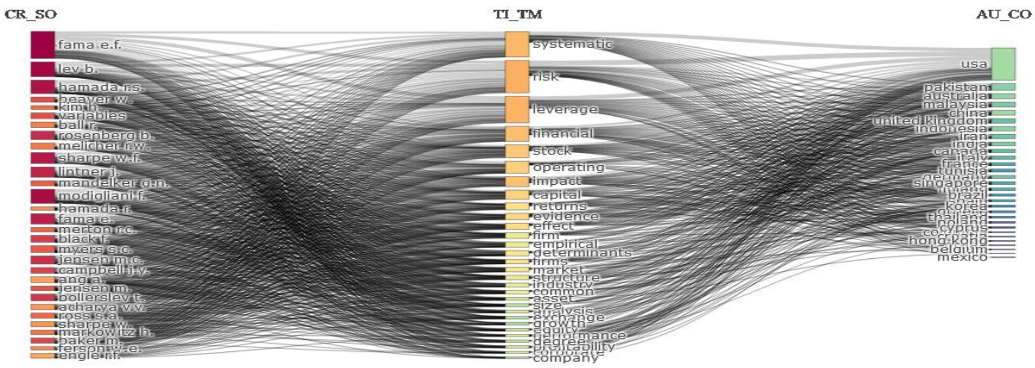

Figure 5: Three-Field Plot
Source: Biblioshiny Output of analysis

Figure 06 elucidates an elaborate cartographic representation, delineating 64 international research consortia, thus unfurling a vast tableau of collaborative ventures spanning the terrestrial expanse. The United States and Canada are conspicuously accentuated, underscoring their preeminent and pivotal alliance within the ambit of global scholarly endeavors. This graphical exposition not merely illuminates the quintessential significance of such synergistic engagements in propelling innovation and the transnational circumscription of knowledge but also accentuates their instrumental efficacy in navigating and surmounting global exigencies. Additionally, it intimates the multifaceted spectrum of disciplines implicated, ranging from the scientific and technological to the health and environmental domains, thereby further cementing the USA and Canada's vanguard status in the orchestration of international research paradigms.

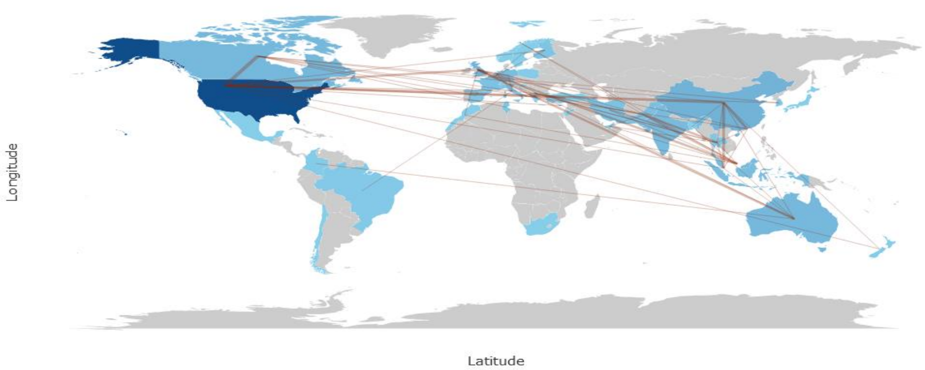

Figure 6: World Tree Map
Source: Biblioshiny Output of analysis

IV. Prospective Avenues for Further Exploration

1. To rigorously assess the influence of leverage on the systematic risk associated with equity stock, employing a cohesive and comprehensive analytical framework.
2. To scrutinize the intermediary role of profitability within the intricate relationship between leverage and the systematic risk of equity stock, utilizing a multifaceted analytical model.
3. To delve into the nuanced moderating impact of company size on the interplay between leverage and the systematic risk of equity stock, employing an integrated and sophisticated study model.

In the quest to propel research initiatives forward, it is crucial to champion the exploration of new frontiers while rigorously integrating pertinent control variables into the study framework. This methodical strategy significantly widens the research spectrum and deepens the level of insight by thoroughly conspiring these impactful elements.

V. Conclusion

This comprehensive study unveils critical yet often overlooked facets of leverage and its influence on stock market dynamics. By exploring the interrelation between financial and operating leverage and their combined impact on the systematic risk associated with equity stocks. The study addresses a notably underexplored domain within a cohesive, analytical framework. Numerous studies have established that leverage significantly influences the systematic risk of stocks. While increased leverage generally heightens risk, the actual impact can vary depending on a company's profitability and size. This variability highlights the complexity of leverage as a financial instrument, capable of either enhancing or diminishing a firm's value based on its financial stability and prevailing market dynamics. Profitability is often viewed as a mediator that can alleviate the negative effects of high leverage by stabilizing the firm’s risk profile. However, this mitigating effect is not universally consistent across different studies, indicating that the effectiveness of profitability as a buffer may depend on factors such as industry, prevailing market conditions, and the specific definitions of leverage used. Conversely, prior studies reveal that firm size plays a critical moderating role in the relationship between leverage and systematic risk. Larger firms tend to experience a less pronounced impact of leverage on their risk profiles due to their extensive resources and market presence, which provide a better capacity to manage and offset risks. In contrast, smaller firms are more susceptible to the adverse effects of increased leverage, often due to their smaller scale and reduced financial flexibility. While the relationship between leverage, profitability, and firm size is established, the extent and nature of these effects remain complex and context dependent.

These observations highlight the urgent need for an in-depth empirical investigation aimed at enriching our understanding of these complex financial interplays. Insights emphasize the need for future scholarly endeavors to explore precisely how the size of an organization affects these financial dynamics. Thus, this calls for the academic community to pursue more detailed and comprehensive research projects, generating new perspectives and achieving a deeper, more integrated understanding of these fundamental phenomena. Exploring the subtle effects of profitability as a mediator within this complex matrix identifies a significant gap in scholarly research. This revelation points to the necessity for a more nuanced and multi-layered analysis to decipher how profitability influences the leverage-systematic risk relationship in equity stocks dynamically.

Similarly, scrutinizing the moderating role of company size on these financial interactions uncovers crucial neglect in existing research findings. To fortify this argument, it is imperative to integrate advanced econometric models that can handle the complexity of these relationships. The application of dynamic panel data analysis, for example, could offer insights into how these variables interact over time, providing a more granular view of the underlying mechanisms. Additionally, including global market data could reveal how different economic environments influence these financial dynamics, offering a comparative analysis that transcends geographical boundaries. Future research should focus on resolving these inconsistencies by incorporating additional variables such as economic cycles, industry specifics, and global market trends. This approach will not only fill existing knowledge gaps but also improve the precision of models used to predict the impact of leverage on systematic risk.

In conclusion, the profound examination of the interrelations between financial and operating leverage and their impact on the systematic risk of equity stocks, coupled with the nuanced roles of profitability and company size, underscores a significant scholarly void. This review not only identifies critical gaps in current financial research but also delineates a roadmap for future empirical investigations in this context. The call for a more nuanced, multi-layered analysis to explore how profitability and company size modulate the leverage-risk nexus in equity stocks is pivotal. It suggests a shift towards a more holistic approach in financial research, one that appreciates the dynamic and multifaceted nature of these relationships. The anticipation of utilizing sophisticated analytical tools and comparative global data promises not only to illuminate the intricacies of these interactions but also to provide actionable insights that could redefine risk management and investment strategies. A novel conceptual framework serves as a clarion call to the academic and financial research communities to embark on a journey of discovery that transcends traditional boundaries. By embracing a more integrated and comprehensive research paradigm, there is an opportunity to not only fill existing empirical gaps but also to forge new pathways in understanding the financial markets. This endeavor aims to enrich the academic literature and contribute significantly to the practical world of finance, where these insights can inform better decision-making and foster financial stability in a rapidly evolving economic landscape. Thus, a uniform multifactor model not only deepens academic understanding with tailored insights but also offers a practical framework that could aid investors and policymakers in emerging markets to more effectively manage and forecast systematic risk dynamics impacting stocks.

Competing interest statement

All the authors hereby declare that they have no conflict of interest to disclose ensuring the integrity and impartiality of this accomplishment

Author (s) Contribution Statement

We hereby acknowledge and express our profound gratitude for the substantial contributions of the corresponding author, author 01, on the ideation and development of this concept. His pivotal role in investigating, synthesizing, and compiling the relevant data and information has been instrumental in conceptualizing and formulating the paper for this publication. Additionally, author 01's involvement in the initial drafting and meticulous refinement of the manuscript has culminated in a scholarly work of significant intellectual merit. This whole process was fully supervised, guided, and enriched by the insights of Author 02 and Author 03 with their expert skills. All three authors have reviewed the two reviewers' comments (AJBMR) and have collectively revised the manuscript to address the reviewers' comments, concerns, and suggestions. The collaboration between authors 01, 02, and 03 has resulted in a more comprehensive and polished manuscript after incorporating the two reviewers' productive comments, ready for publication in the AJBMR journal. Their combined expertise and dedication to improving the quality of the research paper have been instrumental in shaping the outcome. All three authors have played a crucial role in this demanding endeavour, engaging with the work to a degree that enables them to take public responsibility for relevant segments of the content. Moreover, all three authors have committed to being fully accountable for all aspects of the work, ensuring that any questions concerning the accuracy or integrity of any part of it are thoroughly investigated and resolved.

Besides, we are also deeply grateful to the senior editors, editors, consulting editors, and the distinguished members of the Journal of AJBMR editorial board for their exceptional support and collaboration. Their invaluable expertise and unwavering commitment have been pivotal in propelling our endeavours to new levels of excellence.

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