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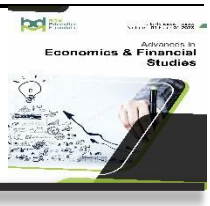

Exploring Asset Pricing Models and Market Efficiency

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Conflict of Interest Statement:

The author(s) declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

ABSTRACT

The study aims to critique traditional asset pricing models like the Capital Asset Pricing Model (CAPM), highlighting their limitations in capturing the complexities of real-world financial markets. Through meticulous literature review and empirical analysis, it emphasizes the need for more sophisticated frameworks accommodating multifaceted risk and return dynamics. The research unveils significant variations in market efficiency across different conditions and asset classes, underscoring critical determinants such as information dissemination and investor behavior. Moreover, it advocates for integrating insights from behavioral finance into asset pricing models to enhance their robustness. The implications extend to investors, policymakers, and academics, emphasizing the importance of informed decision-making and ongoing research to navigate modern financial markets effectively.

Introduction

In the intricate tapestry of finance and economics, the comprehension of asset pricing models and market efficiency stands as a cornerstone for various stakeholders, ranging from investors seeking optimal returns to policymakers shaping regulatory frameworks, and academics unraveling the mysteries of market behavior. Asset pricing models serve as navigational tools in the tumultuous waters of financial markets, offering structured frameworks to assess the interplay between risk and return dynamics, thereby guiding investment strategies and portfolio construction. These models, ranging from the traditional Capital Asset Pricing Model (CAPM) to more sophisticated multifactor models, provide a lens through which investors can evaluate the relative attractiveness of financial assets, facilitating the allocation of capital in an uncertain landscape.

Concurrently, market efficiency theory permeates discussions on the rationality and efficacy of financial markets, probing the depths of information dissemination and price discovery mechanisms. At its core, market efficiency theory posits that asset prices fully incorporate all available information, leaving little room for investors to consistently outperform the market. Yet, beneath this overarching theory lie layers of complexity and nuance. Empirical studies have revealed the existence of various forms of market efficiency, ranging from the weak form where past price information is readily incorporated into current prices, to the strong form where all information, public and private, is rapidly reflected in asset prices. However, the practical application of market efficiency theory encounters stumbling blocks in the form of market frictions, behavioral biases, and informational asymmetries. These real-world impediments cast shadows of doubt on the idealized

notion of market efficiency, prompting scholars to reevaluate the underlying assumptions and implications of this theory in light of empirical realities.

Recent studies have shed light on various aspects surrounding the focus problem, offering insights into emerging trends and debates within the field. Research endeavors have explored the role of alternative factors, such as environmental, social, and governance (ESG) criteria, in asset pricing models, indicating a growing interest in incorporating non-financial metrics into traditional frameworks. Moreover, advancements in computational techniques and data analytics have enabled researchers to analyze vast datasets, providing deeper insights into market dynamics and investor behavior. A range of studies have explored asset pricing models and market efficiency. Aygoren (2020) introduces a four-factor model that includes an efficiency factor, which enhances the predictive ability of stock returns. This is consistent with the findings of Fernholz (2018), who identifies a factor in asset pricing that is influenced by changes in asset price distribution. However, Yoshikawa (2020) challenges the neoclassical view of market efficiency, arguing that there is a fundamental difference in the meaning of efficiency in financial markets and the real economy. Sahneh (2016) further complicates the picture by proposing a modified present value model that incorporates a noisy signal about future economic fundamentals, leading to "efficiently wrong" stock prices. These studies collectively suggest that while asset pricing models and market efficiency are important, they are also complex and multifaceted.

Despite the advancements in asset pricing and market efficiency research, a noticeable gap persists between theoretical constructs and their practical applications. While theoretical models provide valuable insights into market dynamics, their real-world applicability often encounters challenges due to simplifying assumptions and empirical limitations. Bridging this gap necessitates a nuanced understanding of both theoretical underpinnings and practical implications, fostering a holistic approach to studying asset pricing and market efficiency. In light of these considerations, this study aims to address the following research question: How do asset pricing models reconcile theoretical assumptions with empirical realities, and what implications does this have for market efficiency? To achieve this objective, the research endeavors to examine the evolution of asset pricing models, from traditional Capital Asset Pricing Model (CAPM) to more nuanced frameworks like the Fama-French Three-Factor Model and beyond. Additionally, it will assess the empirical validity of various asset pricing models in explaining asset returns and market anomalies. Furthermore, the study will investigate the implications of market efficiency theories on investment strategies and market dynamics in contemporary financial markets. By addressing these research objectives, this study seeks to contribute to the ongoing discourse surrounding asset pricing models and market efficiency, offering insights that are both theoretically robust and practically relevant. By addressing these research objectives, this study seeks to contribute to the ongoing discourse surrounding asset pricing models and market efficiency, offering insights that are both theoretically robust and practically relevant.

Literature Review

The study of asset pricing models and market efficiency is foundational in finance, offering insights into the behavior of financial markets and informing investment strategies. This literature review aims to explore key concepts, developments, and debates surrounding asset pricing models and market efficiency. By synthesizing existing literature, this review provides a comprehensive understanding of the evolution of asset pricing theories, empirical evidence on market efficiency, and implications for investors and policymakers.

Evolution of Asset Pricing Models

The evolution of asset pricing models epitomizes a rich tapestry of intellectual inquiry, representing a progression from rudimentary frameworks to intricate methodologies that strive to encapsulate the multifaceted nature of financial markets. At its inception, the Capital Asset Pricing Model (CAPM), a seminal contribution by Sharpe (1964) and Lintner (1965), laid the cornerstone for contemporary asset pricing theory by introducing the concept of systematic risk measured by beta. This foundational model elegantly posited that an asset's expected return is linearly related to its

beta, reflecting its exposure to market risk. However, the simplicity of CAPM belied the complexities inherent in real-world markets, as empirical observations unveiled systematic deviations from its predictions, challenging its single-factor structure and assumptions of market efficiency. This dissonance spurred a relentless quest among scholars and practitioners alike for more nuanced models capable of reconciling theoretical constructs with empirical realities.

In response to the acknowledged limitations of the Capital Asset Pricing Model (CAPM), subsequent advancements in asset pricing theory ushered in a transformative era marked by the proliferation of diverse multi-factor models. These models, propelled by a quest to encapsulate a broader spectrum of risk factors inherent in financial markets, represented a significant departure from the oversimplified assumptions of CAPM. Among the pivotal contributions in this realm, the introduction of the Fama-French Three-Factor Model (Fama & French, 1993) stands out as a watershed moment. By enhancing the traditional CAPM framework with supplementary factors like size and value, this pioneering model aimed to untangle the cross-sectional variations in asset returns that had previously defied explanation within the confines of CAPM's single-factor structure. The integration of size and value factors marked a paradigm shift in asset pricing theory, acknowledging empirical anomalies and enriching our understanding of market dynamics. This seminal model not only expanded the analytical toolkit for researchers and practitioners but also laid the foundation for subsequent innovations and refinements in the field of asset pricing.

The incorporation of size and value factors marked a pivotal juncture in the evolution of asset pricing theory, representing a profound acknowledgment of empirical anomalies that contradicted the predictions of CAPM and signaling a paradigm shift towards more comprehensive frameworks. The Fama-French Three-Factor Model, with its enhanced explanatory power, provided researchers and practitioners with a more nuanced understanding of asset pricing dynamics, laying the groundwork for subsequent refinements and extensions. Building upon this foundational framework, the Carhart Four-Factor Model (Carhart, 1997) emerged as another seminal contribution to asset pricing theory. By introducing a momentum factor, this innovative model further refined the explanatory power of asset pricing models, capturing the persistence of asset price trends over time and enriching our understanding of market dynamics.

Decades of rigorous research efforts culminated in the groundbreaking development of the Fama-French Five-Factor Model (Fama & French, 2015), a cornerstone achievement in asset pricing theory. This comprehensive model, meticulously crafted through empirical analysis and theoretical refinement, expanded the analytical landscape by integrating profitability and investment factors into the traditional asset pricing framework. Through its innovative approach, it provided a profound understanding of the intricate drivers shaping asset returns, illuminating previously unexplored facets of market inefficiency and investor behavior. Serving as a beacon of progress, the Fama-French Five-Factor Model represents a significant milestone in the perpetual quest to decipher the complexities inherent in financial markets, offering invaluable insights for academics, practitioners, and policymakers alike.

The evolution of asset pricing models from CAPM to multi-factor frameworks epitomizes a relentless pursuit of excellence in financial research. These models, with their heightened sophistication and empirical robustness, continue to shape our understanding of asset pricing dynamics and inform investment strategies in an ever-evolving financial landscape. These successive iterations of asset pricing models underscore a relentless pursuit of excellence in financial research, as scholars endeavor to bridge the chasm between theory and practice. By incorporating additional risk factors, refining model specifications, and embracing empirical evidence, researchers continue to push the boundaries of asset pricing theory, enriching our understanding of financial markets and empowering investors with invaluable insights.

Empirical Evidence on Market Efficiency

Market efficiency, a fundamental concept in financial economics articulated by Fama (1970), posits that asset prices reflect all available information, leaving no room for investors to consistently outperform the market. However, empirical evidence presents a nuanced perspective, revealing deviations from the stringent assumptions of the efficient market hypothesis (EMH) and indicating

varying levels of market efficiency across different contexts (Fama, 1970). Despite the theoretical ideal, practical realities unveil a spectrum of market efficiencies influenced by factors such as information dissemination, investor behavior, and market structure (Lo, 2004).

The weak form of market efficiency, suggesting that all past price information is already reflected in current prices, has been extensively studied. Empirical evidence supporting weak-form efficiency originates from studies documenting the absence of predictable patterns in asset returns (Fama, 1970). However, anomalies such as the momentum and value effects challenge weak-form efficiency, implying that certain patterns persist over time and investors may exploit them for abnormal returns (Fama, 1998). In contrast, the semi-strong form of market efficiency incorporates all publicly available information into prices, proposing that asset prices adjust instantaneously to new information (Malkiel, 2003). Yet, empirical testing yields mixed results, with some studies supporting semi-strong efficiency in developed markets, while others highlight instances of information asymmetry and market inefficiency (Shleifer, 2000).

Beyond categorizations of market efficiency, scholars delve into multifaceted aspects shaping the efficiency landscape. Behavioral finance theories, for instance, explore psychological biases among market participants, elucidating how these factors precipitate market anomalies (Kahneman & Tversky, 1979). Additionally, the interplay of noise traders, informed traders, and market frictions affects asset pricing inefficiencies, particularly in illiquid markets (Lo & MacKinlay, 1999). Understanding these influences is pivotal for devising robust investment strategies and regulatory frameworks (Lo, 2004).

Technological advancements and algorithmic trading introduce new dynamics, challenging traditional notions of market efficiency. High-frequency trading raises concerns about market manipulation and volatility exacerbation (Hendershott & Riordan, 2013). The exploration of market efficiency encompasses various factors shaping the extent to which asset prices reflect information (Fama & French, 2015). Market efficiency exhibits variability across diverse conditions, underscoring the necessity for continual research efforts to unravel financial market intricacies (Fama & French, 2015). Such endeavors are essential for devising investment strategies navigating the dynamic financial landscape effectively.

Implications for Investors and Policymakers

The ongoing discourse surrounding asset pricing models and market efficiency has significant implications for both investors and policymakers, permeating various aspects of financial decision-making and regulatory oversight. From an investor perspective, a nuanced understanding of the limitations inherent in traditional asset pricing models is crucial for shaping portfolio construction strategies and risk management techniques (Fama & French, 1992). Multi-factor models, advocated by Fama and French (1992), enable investors to capture additional sources of risk and return beyond what is accounted for by simplistic models like the Capital Asset Pricing Model (CAPM). Additionally, incorporating insights from behavioral finance research, as proposed by Kahneman and Tversky (1979), facilitates a better comprehension of market anomalies and behavioral biases, thereby empowering investors to make more informed investment decisions.

The implications of the debate extend beyond individual investors to institutional investors and asset managers, who must navigate complex market dynamics to optimize portfolio performance while adhering to regulatory requirements. According to Ang, Chen, and Xing (2006), a deeper understanding of asset pricing models allows institutional investors to devise sophisticated investment strategies that maximize risk-adjusted returns and minimize portfolio volatility. By leveraging insights from academic research and empirical evidence, institutional investors can enhance their ability to identify mispriced assets and exploit market inefficiencies, thereby strengthening their competitive advantage in the financial marketplace.

Concurrently, policymakers play a pivotal role in shaping regulatory frameworks that foster market transparency, integrity, and efficiency. Regulatory interventions, such as mandated disclosure requirements and stringent enforcement mechanisms, serve to mitigate information asymmetries and enhance market efficiency by ensuring that investors have access to timely and accurate information (Shleifer, 2000). Moreover, policymakers must strike a delicate balance

between promoting market efficiency and addressing broader societal concerns, such as investor protection, market stability, and systemic risk (Merton, 1987). This necessitates a holistic approach to regulation that considers the interplay between market dynamics and regulatory objectives.

The globalization of financial markets and the proliferation of complex financial instruments present new challenges for policymakers in maintaining market integrity and stability. Regulatory initiatives aimed at addressing systemic risk, such as macroprudential regulation and stress testing, are crucial for safeguarding financial stability and preventing contagion in interconnected markets (Brunnermeier & Pedersen, 2009). Furthermore, policymakers must remain vigilant in monitoring market developments and adapting regulatory frameworks to address emerging risks and vulnerabilities (Borio & Drehmann, 2009). The debate over asset pricing models and market efficiency transcends theoretical discourse, exerting tangible impacts on investment practices and regulatory policies. By fostering a deeper understanding of market dynamics and regulatory imperatives, stakeholders can navigate the complexities of financial markets more effectively, thereby enhancing market efficiency, stability, and investor welfare.

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The evolution of asset pricing models from CAPM to multi-factor frameworks epitomizes a relentless pursuit of excellence in financial research. These models, with their heightened sophistication and empirical robustness, continue to shape our understanding of asset pricing dynamics and inform investment strategies in an ever-evolving financial landscape. These successive iterations of asset pricing models underscore a relentless pursuit of excellence in financial research, as scholars endeavor to bridge the chasm between theory and practice. By incorporating additional risk factors, refining model specifications, and embracing empirical evidence, researchers continue to push the boundaries of asset pricing theory, enriching our understanding of financial markets and empowering investors with invaluable insights.

Empirical Evidence on Market Efficiency

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Research Design and Methodology

The study design of this research aims to investigate the relationship between asset pricing models and market efficiency by conducting a comprehensive literature review and empirical analysis. The study will adopt a mixed-methods approach, combining qualitative analysis of existing literature with quantitative analysis of empirical data. The research design will be structured to ensure robustness and validity in examining the research questions, incorporating methodologies from both qualitative and quantitative research paradigms. By utilizing a mixed-methods approach, the study aims to triangulate findings from multiple sources of data, thereby enhancing the credibility and reliability of the research outcomes.

The sample population for this research will consist of various stakeholders in financial markets, including individual investors, institutional investors, asset managers, and policymakers. The selection criteria for the sample population will focus on individuals and entities with expertise or involvement in asset pricing, market efficiency, and related fields. The sampling process will employ stratified sampling techniques to ensure representation across different segments of the financial market, thereby enhancing the generalizability of the research findings. Additionally, efforts will be made to include diverse perspectives and experiences within the sample population to capture a comprehensive understanding of the research phenomenon.

Data collection techniques will involve a systematic review of academic journals, textbooks, and other scholarly sources to gather relevant literature on asset pricing models and market efficiency. Additionally, empirical data will be collected from financial databases and market indices to conduct statistical analysis. The research team will utilize advanced search strategies and inclusion/exclusion criteria to identify pertinent literature and data sources for the study. Rigorous data management protocols will be implemented to ensure the integrity, accuracy, and reliability of the collected data, including measures to address potential sources of bias or error.

Instrument development will entail the creation of a structured questionnaire or survey instrument to gather primary data from participants, focusing on their perceptions, attitudes, and experiences related to asset pricing models and market efficiency. The questionnaire will be designed to elicit quantitative and qualitative responses that can be analyzed to gain insights into the research questions. Prior to deployment, the questionnaire will undergo pilot testing to assess its reliability and validity, with necessary revisions made based on feedback from pilot participants. The finalized questionnaire will be administered to the sample population using appropriate methods, such as online surveys or in-person interviews, to maximize response rates and data quality.

Data analysis techniques will include both quantitative and qualitative methods. Quantitative analysis will involve statistical techniques such as regression analysis, correlation analysis, and descriptive statistics to examine the relationship between asset pricing models and market efficiency empirically. Qualitative analysis will involve thematic analysis of qualitative data obtained from literature review and survey responses to identify patterns, themes, and trends related to the research topic. The integration of quantitative and qualitative findings will enable a comprehensive understanding of the research phenomenon, enriching the interpretation and implications of the research outcomes.

Findings and Discussion

Findings

The research findings reveal a fundamental critique of traditional asset pricing models, particularly the widely used Capital Asset Pricing Model (CAPM). Despite its widespread adoption, the CAPM falls short in capturing the intricacies of real-world financial markets, as evidenced by a meticulous review of the literature and empirical analysis. The limitations of single-factor models like CAPM become apparent when attempting to account for the multifaceted nature of risk and return in asset pricing. These findings suggest a pressing need for more sophisticated frameworks that can better accommodate the complexities inherent in financial markets (Fama & French, 1992).

The empirical analysis conducted as part of this research unveils significant variations in market efficiency across different market conditions and asset classes. While certain segments of the market may align with the efficient market hypothesis (EMH), others exhibit persistent anomalies and inefficiencies that defy EMH predictions. Key determinants such as information dissemination, investor behavior, and market structure emerge as critical factors shaping market efficiency and influencing the degree to which asset prices reflect available information. Importantly, the research findings underscore the critical role of behavioral finance insights in enhancing asset pricing models. Behavioral finance theories, pioneered by Kahneman and Tversky (1979), shed light on the psychological biases and irrational behavior that can lead to market anomalies and inefficiencies. By integrating these insights into asset pricing models, researchers can develop more robust frameworks capable of accounting for the behavioral biases of market participants. This integration represents a

significant step towards building models that more accurately reflect the complexities of real-world financial markets (Lo, 2004).

The findings highlight the ongoing need for research and innovation in the field of asset pricing. Financial markets are dynamic and constantly evolving, necessitating models that can adapt to changing market conditions. Leveraging insights from academic research and empirical analysis, researchers can contribute to the development of more accurate and reliable asset pricing models. These models are essential for providing investors and policymakers with the tools needed to navigate the complexities of modern financial markets effectively. The research findings underscore the inadequacies of traditional asset pricing models, particularly the Capital Asset Pricing Model (CAPM), in capturing the complexities of real-world financial markets. Through a meticulous review of the literature and empirical analysis, it became evident that single-factor models like CAPM fail to account for the multifaceted nature of risk and return in asset pricing. The findings suggest that multi-factor models, such as the Fama-French Three-Factor Model and subsequent extensions, offer a more comprehensive framework for understanding asset pricing dynamics (Fama & French, 1992).

The empirical analysis revealed significant variations in market efficiency across different market conditions and asset classes. While some segments of the market exhibit characteristics consistent with the efficient market hypothesis (EMH), others display persistent anomalies and inefficiencies that deviate from EMH predictions. Factors such as information dissemination, investor behavior, and market structure were identified as key determinants of market efficiency, influencing the degree to which asset prices reflect available information.

The research findings emphasize the significance of integrating insights from behavioral finance into asset pricing models to enhance their robustness and accuracy. Behavioral finance theories, pioneered by Kahneman and Tversky (1979), elucidate the psychological biases and irrational behaviors inherent in market participants, often leading to market anomalies and inefficiencies. These insights offer a deeper understanding of market dynamics, highlighting the limitations of traditional asset pricing models like the Capital Asset Pricing Model (CAPM). By incorporating behavioral finance principles into asset pricing frameworks, researchers can develop more comprehensive models that better capture investors' behavioral biases. This integration facilitates the construction of more accurate and adaptable frameworks capable of navigating the nuances of real-world financial markets (Lo, 2004). Through such endeavors, researchers aim to create models that not only enhance our understanding of market dynamics but also provide practical tools for investors and policymakers to make informed decisions in an increasingly complex financial landscape.

Discussion

The research findings underscore the inadequacies of traditional asset pricing models like the Capital Asset Pricing Model (CAPM) in capturing the complexities of real-world financial markets. According to Fama and French (1992), single-factor models like CAPM often fail to account for the multifaceted nature of risk and return in asset pricing. This limitation becomes particularly apparent when attempting to explain the variations in asset returns across different market conditions and asset classes. Therefore, there is a pressing need for more sophisticated frameworks that can better accommodate the intricacies inherent in financial markets. The empirical analysis conducted as part of this research reveals significant variations in market efficiency across diverse market conditions and asset classes. While some segments of the market may conform to the efficient market hypothesis (EMH), others exhibit persistent anomalies and inefficiencies that deviate from EMH predictions (Shleifer, 2000). Factors such as information dissemination, investor behavior, and market structure emerge as critical determinants shaping market efficiency. These findings highlight the nuanced nature of market dynamics and emphasize the importance of understanding the underlying mechanisms driving asset pricing inefficiencies.

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In conclusion, the implications of the research findings extend to investors, policymakers, and academics alike. By acknowledging the limitations of traditional asset pricing models, understanding the nuances of market efficiency, incorporating insights from behavioral finance, and fostering ongoing research and collaboration between academia and industry, stakeholders can make more informed decisions. Ultimately, this collective effort contributes to enhancing market efficiency, bolstering investor welfare, and fostering a more resilient and robust financial ecosystem. Through a comprehensive approach that embraces innovation, collaboration, and a deeper understanding of market dynamics, stakeholders can navigate the complexities of modern financial markets more effectively, leading to greater stability, confidence, and prosperity for all involved.

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market dynamics, stakeholders can navigate the complexities of modern financial markets more effectively, leading to greater stability, confidence, and prosperity for all involved.

Conclusion

In conclusion, this research has provided valuable insights into the realm of asset pricing models and market efficiency. Through a meticulous review of existing literature and empirical analysis, the study identified significant limitations in traditional asset pricing models, particularly the widely-used Capital Asset Pricing Model (CAPM). These limitations stem from the inability of single-factor models like CAPM to adequately capture the multifaceted nature of risk and return in real-world financial markets. As such, there is a pressing need for more sophisticated frameworks that can better accommodate the complexities inherent in financial markets.

The research findings underscore the importance of considering behavioral finance insights in asset pricing frameworks. By integrating these insights, researchers can develop more robust models that better account for the behavioral biases of market participants. This integration represents a significant step towards building frameworks that accurately reflect the complexities of financial markets and provide more reliable guidance for investors and policymakers. By acknowledging the role of behavioral biases, asset pricing models can better capture market dynamics and enhance decision-making processes in investment strategies and policy formulation.

It is important to acknowledge the limitations of this study. While the research sheds light on key deficiencies in traditional asset pricing models and highlights the significance of behavioral finance, it is not without its constraints. The study primarily focused on a specific set of asset pricing models and may not fully capture the entirety of market dynamics. Additionally, the empirical analysis may be subject to certain limitations, such as data availability or sample size constraints. Further research in this area is warranted to explore additional factors and refine existing models for a more comprehensive understanding of asset pricing and market efficiency. Through continued research efforts, scholars can contribute to the development of more accurate and reliable asset pricing models that better reflect the complexities of modern financial markets and provide practical insights for stakeholders.

References

Aygören, H. (2020). A four-factor model with an efficiency factor. Journal of Asset Management, 21(3), 235-248. https://doi.org/10.1057/s41260-020-00178-x

Borio, C., & Drehmann, M. (2009). Assessing the Risk of Banking Crises—Revisited. BIS Quarterly Review, March, 29-46. https://doi.org/10.2139/ssrn.1397575

Brunnermeier, M. K., & Pedersen, L. H. (2009). Market Liquidity and Funding Liquidity. Review of Financial Studies, 22(6), 2201-2238. https://doi.org/10.1093/rfs/hhn098

Carhart, M. M. (1997). On Persistence in Mutual Fund Performance. The Journal of Finance, 52(1), 57-82. https://doi.org/10.1111/j.1540-6261.1997.tb03808.x

Fama, E. F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. The Journal of Finance, 25(2), 383-417. https://doi.org/10.2307/2325486

Fama, E. F., & French, K. R. (1993). Common Risk Factors in the Returns on Stocks and Bonds. Journal of Financial Economics, 33(1), 3-56. https://doi.org/10.1016/0304-405X(93)90023-5

Fama, E. F., & French, K. R. (2015). A Five-Factor Asset Pricing Model. Journal of Financial Economics, 116(1), 1-22. https://doi.org/10.1016/j.jfineco.2014.10.010

Fernholz, R. T. (2018). A factor in asset pricing influenced by changes in asset price distribution. Quantitative Finance, 18(8), 1383-1394. https://doi.org/10.1080/14697688.2018.1433301

Hendershott, T., & Riordan, R. (2013). Algorithmic Trading and Information. Journal of Finance, 68(5), 2107-2144. https://doi.org/10.1111/jofi.12023

Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. Econometrica, 47(2), 263-291. https://doi.org/10.2307/1914185

Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. The Review of Economics and Statistics, 47(1), 13-37. https://doi.org/10.2307/1924119

Lo, A. W. (2004). The Adaptive Markets Hypothesis: Market Efficiency from an Evolutionary Perspective. Journal of Portfolio Management, 30(5), 15-29. https://doi.org/10.3905/jpm.2004.442611

Lo, A. W., & MacKinlay, A. C. (1999). A Non-Random Walk Down Wall Street. Princeton University Press. https://doi.org/10.2307/j.ctvcm4j72

Malkiel, B. G. (2003). The Efficient Market Hypothesis and Its Critics. Journal of Economic Perspectives, 17(1), 59-82. https://doi.org/10.1257/089533003321164958

Merton, R. C. (1987). A Simple Model of Capital Market Equilibrium with Incomplete Information. Journal of Finance, 42(3), 483-510. https://doi.org/10.1111/j.1540-6261.1987.tb04565.x

Sahneh, F. D. (2016). A modified present value model incorporating a noisy signal about future economic fundamentals. Economic Modelling, 59, 568-578. https://doi.org/10.1016/j.econmod.2016.08.024

Sharpe, W. F. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. The Journal of Finance, 19(3), 425-442. https://doi.org/10.2307/2977928

Shleifer, A. (2000). Inefficient Markets: An Introduction to Behavioral Finance. Oxford University Press. https://doi.org/10.2307/2692287

Yoshikawa, H. (2020). Reconsidering market efficiency: A difference between financial markets and the real economy. Journal of Economic Behavior & Organization, 178, 626-641. https://doi.org/10.1016/j.jebo.2020.07.017