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The Role of Investor Behavior in Forming Abnormal Return - An Economic Perspective

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Abstract:

This study aims to conduct a comprehensive analysis of macroeconomic factors influencing abnormal returns and the role of investor behavior in shaping them. Utilizing a systematic literature review, the study is based on the identification of 39 Scopus-indexed articles published between 2014 and 2024, ranging from Quartile Q1 to Q4. The review explores prior research on abnormal returns to identify key findings, macroeconomic factors impacting abnormal returns, and the role of investor behavior in their formation. Using the Research Plan Systematic Literature Review menu in the Watase application, the term "Abnormal Return" was used as the keyword to locate relevant articles. The findings categorize the literature into two main groups: macroeconomic factors affecting abnormal returns and the role of investor behavior in shaping them. Macroeconomic factors such as economic growth, inflation, and general economic conditions significantly influence abnormal returns. Favorable economic conditions enhance company performance, thereby impacting abnormal returns. Furthermore, investor behavior plays a pivotal role, with overreaction to market information often causing abnormal returns, while underreaction can influence long-term return patterns. Investor strategies, including momentum and contrarian trading, are influenced by stock network effects. Understanding these behavioral dynamics is essential to analyzing stock market patterns and their implications for abnormal returns.

Keywords: *Abnormal Return, Macroeconomic Factors, Investor Behavior, Reaction to News, Overreaction and Underreaction*

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1. Introduction

The stock market is widely regarded as one of the most attractive financial instruments for investors across both developed and developing economies. Its dynamic nature, coupled with the potential for high returns, has attracted significant attention from investors, analysts, and researchers alike. In recent decades, the phenomenon of abnormal returns has garnered significant attention in financial research. Abnormal returns refer to the difference between the actual return of an asset and the expected return, as predicted by existing financial models. This discrepancy represents an opportunity for investors to earn returns that exceed or fall short of what is anticipated, often due to factors not captured by traditional financial models. As such, understanding the drivers of abnormal returns is crucial for investors seeking to capitalize on market inefficiencies.

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Various macroeconomic factors are believed to influence abnormal returns, including general economic conditions, market sentiment, political stability, stock market conditions, market volatility, financial market developments, systematic risk, interest rates, monetary policy, and political connections (Ahlgren & Antell, 2017; Beckmann & Czudaj, 2022; Angulo-Ruiz et al., 2018). These factors can shape investor behavior, which in turn can impact market outcomes and stock performance. While prior studies have explored the relationship between individual macroeconomic factors and abnormal returns, the complex interactions between these factors and their collective influence on investor behavior remain inadequately addressed. This lack of comprehensive understanding presents a significant research gap, particularly in emerging markets where these factors may have different effects compared to developed economies.

This study aims to fill this gap by systematically examining how macroeconomic factors influence abnormal returns in the stock market, with a particular emphasis on investor behavior. Specifically, it explores how factors such as market sentiment, political stability, and financial market developments can alter investor decision-making and contribute to the occurrence of abnormal returns. By addressing this research gap, this study contributes to the broader body of knowledge on financial markets, providing insights into the complex interplay between macroeconomic factors, investor behavior, and market performance.

The novelty of this study lies in its methodological approach. It employs a systematic literature review (SLR) to synthesize findings from 39 indexed articles on abnormal returns, published between 2014 and 2024. The articles were identified using the keyword "Abnormal Return" through the Watase application in the Research Plan Systematic Literature Review menu, offering a structured and replicable process for identifying and analyzing relevant studies. This systematic approach allows for a comprehensive review of the current literature, providing a clearer understanding of the factors influencing abnormal returns and their implications for investment strategies.

By examining these sources, this study not only contributes to the academic understanding of abnormal returns but also provides practical insights for investors. Understanding the relationship between macroeconomic variables and abnormal returns can help investors better navigate the complexities of the stock market, enabling them to make more informed and strategic decisions. Additionally, the findings of this study could assist policymakers and financial regulators in identifying key macroeconomic indicators that may need closer monitoring to maintain market stability and investor confidence.

Thus, this study aims to offer a fresh perspective on the phenomenon of abnormal returns, shedding light on the underlying macroeconomic influences and investor behaviors that drive this market anomaly. By bridging the research gap, the study will contribute to the development of more effective investment strategies and a better understanding of the forces shaping modern financial markets.

2. Theoretical Background

Abnormal returns refer to the difference between an asset's actual return and the expected return, as predicted by a financial model. This phenomenon has attracted significant attention in financial research due to its implications for market efficiency and investment strategies. Understanding abnormal returns requires integrating both macroeconomic factors and investor behavior, as these elements help explain the deviations from expected market performance.

Macroeconomic Factors:
Macroeconomic factors encompass broader economic conditions that influence market dynamics, such as economic growth, inflation, monetary policy, and systemic risks. Economic theories suggest that favorable macroeconomic environments—characterized by stable inflation and strong economic growth—enhance corporate performance, positively influencing stock returns. Conversely, adverse economic conditions, such as recessions or inflationary pressures, can introduce market volatility, leading to fluctuations in returns. For instance, economic slowdowns often lead to lower corporate earnings and higher risk, which can reduce investor confidence and affect stock prices (Beckmann & Czudaj, 2022; Ahlgren & Antell, 2017).

Investor Behavior:
Behavioral finance theories provide insights into how psychological biases and decision-making patterns influence investor behavior, thereby impacting abnormal returns. Psychological factors, such as overreaction to market news, can temporarily inflate asset prices, creating return spikes. On the other hand, underreaction to new information may delay necessary price adjustments, leading to market inefficiencies. Trading strategies, such as momentum and contrarian trading, are rooted in these behavioral patterns, which are often influenced by cognitive biases such as anchoring bias, herding behavior, and sentiment-driven decisions (Angulo-Ruiz et al., 2018). These biases contribute to market anomalies, resulting in returns that diverge from the predictions of traditional financial models.

Market Efficiency and Information Flow:
The Efficient Market Hypothesis (EMH) posits that stock prices always reflect all available information, suggesting that it is impossible to consistently achieve abnormal returns. However, the existence of abnormal returns points to inefficiencies or delays in the assimilation of information. These inefficiencies can arise due to various factors, such as macroeconomic shocks or heterogeneous investor responses, which prevent markets from fully incorporating new data in real-time (Beckmann & Czudaj, 2022). This delay in information flow contributes to the occurrence of abnormal returns, as prices take time to adjust to new economic or market realities.
By synthesizing these perspectives, this study explores the dual role of macroeconomic conditions and investor psychology in shaping abnormal returns. It provides a holistic understanding of the factors driving market anomalies, highlighting the complex interplay between economic conditions and behavioral tendencies that influence investor decisions and market outcomes.

3. Methodology

PRISMA is a Systematic Literature Review (SLR) review protocol found in the Watase application which is used in creating a Systematic Literature Review (SLR) Research Plan.

PRISMA is very relevant and effective in conducting comprehensive searches and selecting relevant Scopus articles for literature reviews, thus fulfilling the objectives of this article (Hariningsih et al., 2024). The methods used in creating a Systematic Literature Review, as presented in Figure 1 below:

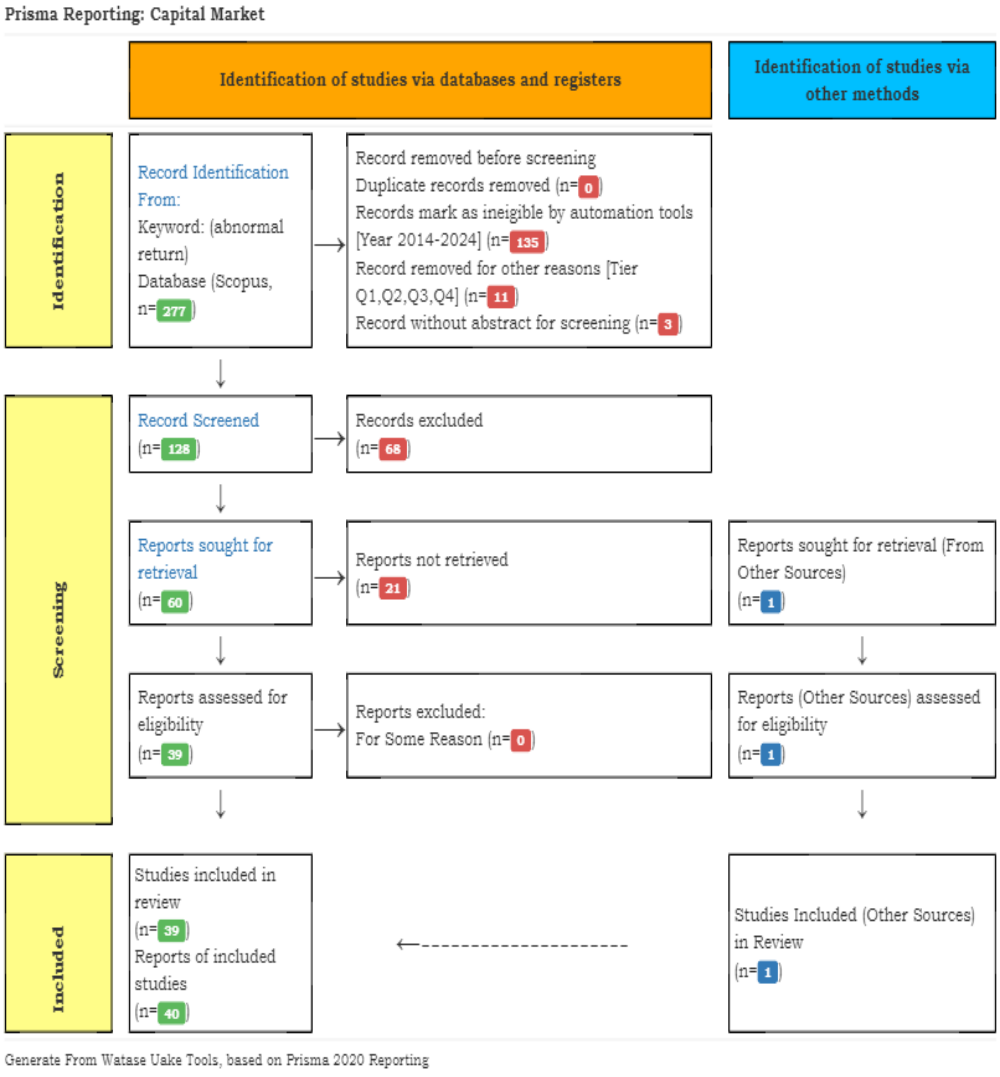

Figure 1: Prisma Reporting

Based on the Prisma Reporting image above, it can be seen that the Systematic Literature Review consists of Three Main Stages, including:

a. Identification Stage
At this stage, the Author selects keywords using the keyword Abnormal Return. The keywords selected are in accordance with the keywords recommended by Watase in making the SLR. The reason the author chose this keyword is because it is relevant to the field of study of Capital Market Accounting. By using the keyword Abnormal Return, the Author managed to identify 277 Scopus articles from 2014 to 2024 with quartiles Q1-Q4. However, of the 277 articles identified, there were articles that were marked as not meeting the requirements by the automation tool in 2014-2024 as many as 135 articles, records were deleted for other reasons with quartiles Q1, Q2, Q3, Q4 as many as 11 articles, and records without abstracts for screening as many as 3 articles, so that the total remaining articles that could be screened were 128 articles.
b. Screening Stage
At this stage, the articles that successfully entered the screening stage were 128 Scopus articles. However, there were 68 articles excluded by Watase, because they were excluded with the keyword abnormal return, so that the remaining articles were 60 articles reported for retrieval and there were articles from other sources (not from Watase) because they were assessed from their eligibility that were relevant to the keyword abnormal return as many as 2 articles. Of the 60 articles that were successfully retrieved, 21 articles could not be retrieved because the article could not be accessed (locked), and there were articles whose DOIs could not be identified, so that the articles that had been assessed for their eligibility that succeeded in the next stage were 39 articles.
c. Included Stage
At this stage, the articles that were successfully made into a Systematic Literature Review (SLR) were 40 articles, which came from 39 included articles and came from 1 included article from other sources.
The following criteria were used to narrow the scope of articles in Scopus:
1) Only articles published in Scopus scientific journals
2) Articles were selected from 2014 to 2024
3) Scopus Quartiles Q1–Q4.

4. Empirical Findings/Result

Year Article Classification

A diagram based on the year of publication according to the keyword Abnormal Return in 2014 to 2024 can be seen in Figure 2 as follows:

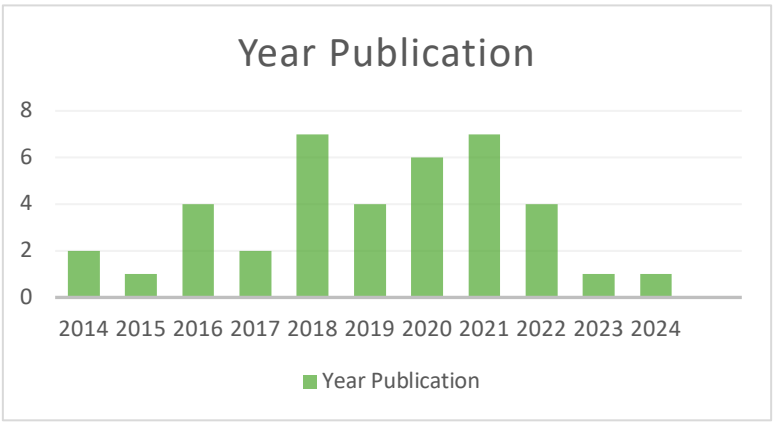

Figure 2: Year Publication

Based on figure 2 above, it is known that the number of articles is 39 articles from 2014-2024. The years 2018 and 2021 are the highest publication years with 7 articles selected based on the results of the watase identification, while 2015, 2023, and 2024 are the lowest publication years with only 1 article successfully identified.

Country Discussed In the Article

A diagram based on the country where the research was conducted can be seen in Figure 3 below:

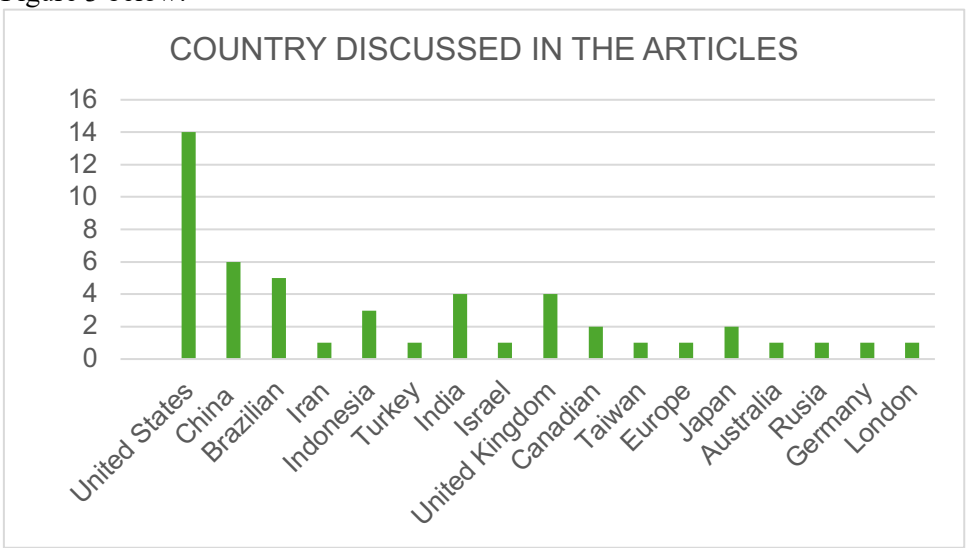

Figure 3: Country Discussed in the Articles

Based on Figure 3 above, the Author identified 17 countries around the world that were the sites of research related to abnormal returns. The United States is the most frequently studied country, with 14 articles using the United States as the research site. Several researchers who use the United States as the focus of their research include:

1) Researchers (Angulo-Ruiz et al., 2018) chose the United States because many large companies operating in the United States have sophisticated marketing practices, and the United States market has industrial diversity and is one of the largest markets in the world. This is in line with the opinion of (Plastun et al., 2021) who chose the United States because the United States stock market is one of the most developed markets in the world and provides a lot of data to conduct analysis from 1890-2018, where research (Plastun et al., 2021) aims to analyze the existence and evolution of price effects after one-day abnormal returns. This opinion is also in line with the reasons (Kolari et al., 2021) for choosing the United States, because the capital market in the United States is one of the largest and most liquid markets in the world, which can provide data on various corporate events, such as mergers and acquisitions, Initial Public Offerings (IPOs), and others.

2) Researchers (Malshe et al., 2020) chose the United States as the place of research, because of the use of data from the American Customer Satisfaction Index (ACSI) and other sources relevant to companies operating in the country.

3) Researchers (Coën & Desfleurs, 2022), chose the United States, because the country has a growing Real Estate Investment Trust (REIT) market, so researchers can analyze the characteristics and financial performance of green-certified REITs.
However, there are articles that examine several countries, such as research conducted by (Gallizo et al., 2014) in Six European Union Countries, namely Belgium, France, Italy, Spain, Sweden, and the United Kingdom, which wanted to analyze data from 23,293 companies from several countries to evaluate the resilience of abnormal profits in various sectors and countries.

Likewise, research conducted by (Plastun et al., 2022) used several countries to analyze the price effects after one-day abnormal returns in various stock markets. (Plastun et al., 2022) can explore differences in market behavior and price effects by comparing ESG and traditional indices in various developed countries such as the United States, United Kingdom, and Japan as well as developing countries such as India and China. This research is in line with research conducted by (Farooq et al., 2021) in several countries, to analyze insurance companies from Eight different countries including Australia, Canada, Germany, United States, United Kingdom, Brazil, India, and Indonesia, with the aim of exploring the impact of the COVID-19 pandemic on abnormal returns that vary between developed and developing countries. In addition, there are several articles that do not explicitly mention the country where the research was conducted, such as the research conducted by (Caporale & Plastun, 2020), which in its article focuses on cryptocurrency markets such as Bitcoin, Ethereum, and Litecoin which are traded globally, and its analysis can be applied to various markets around the world.

With the same researcher in a different article also conducted by (Caporale et al., 2021), which focuses on the foreign exchange market (FOREX) using data from various foreign currencies, including EUR/USD, and analyzing the frequency of abnormal returns and price fluctuations in the FOREX market, which can cover various countries involved in trading the currency.

Quartiles of Research

Quartile is the best international Scopus journal ranking method based on the division of scientific journals into four groups based on quality and impact indicators, consisting of Q1, Q2, Q3, and Q4 which are often measured using impact factors or other metrics. Scopus Q1 is a journal that is in the first quartile in the journal ranking category, and is considered to be of high quality and has a good reputation among academics and researchers. Scopus Q2 is a journal that is in the second quartile in the journal ranking and has good quality and reputation, Q1. Scopus Q3 is a journal that is in the third quartile in the journal ranking which is considered to have moderate quality, and the quality of Q3 Journal is lower than that of Q1 or Q2 journals. While Scopus Q4 is a journal that is in the fourth quartile in the journal ranking and has lower quality compared to journals in higher quartiles (Q1, Q2, Q3). Scopus journals that match the abnormal return keyword have different quartile indexes, as in Figure 4 below:

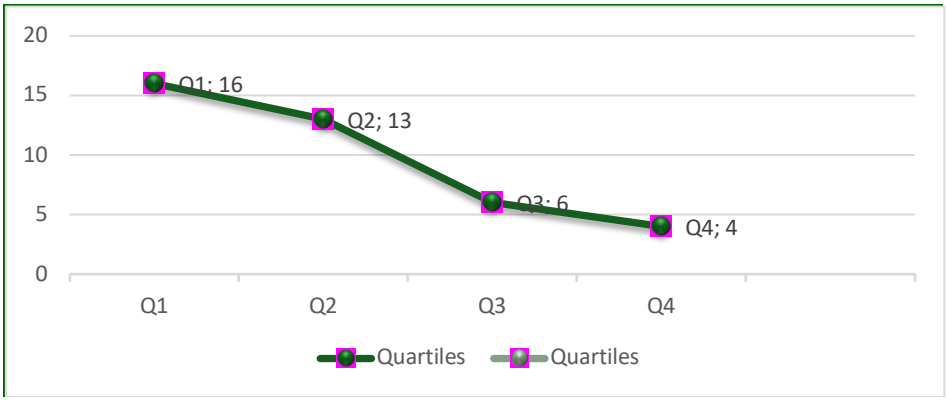

Figure 4: Quartiles of Research

Based on the image above, it is known that as many as 39 articles in this literature review use Scopus journals with quartiles Q1, Q2, Q3, and Q4. In this Systematic literature review, the articles used with Scopus index Q1 journals are 16 articles, Scopus index Q2 journals are 13 articles, and Scopus index Q3 journals are 6 articles, and Scopus journals with index Q4 are 4 articles.

Theory Used in The Articles

In this systematic literature review, 39 articles were identified using the keyword "abnormal return," employing several different theories. The types of theories used are shown in the following Figure 5:

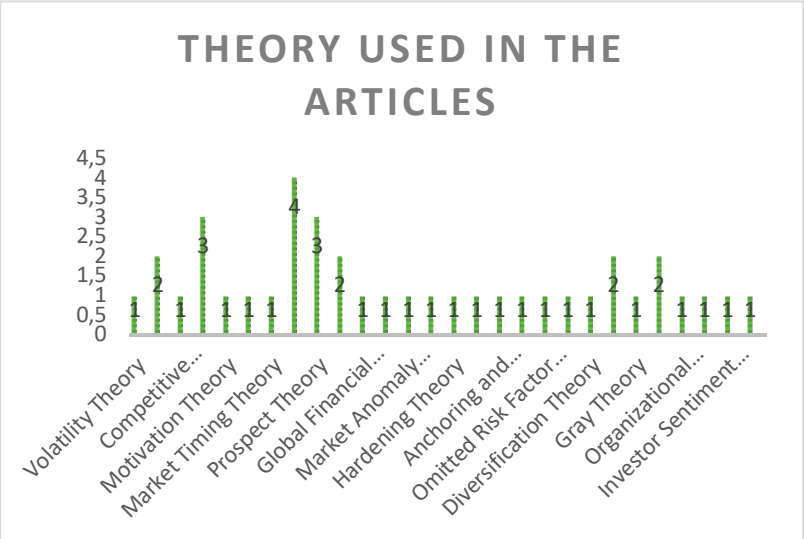

Figure 5: Theory Used in the Articles

The systematic literature review on abnormal returns identified a diverse range of theories used to analyze market behavior, macroeconomic impacts, and investor responses. These theories provide a framework to explain why abnormal returns occur and how they are influenced. For instance, Efficient Market Hypothesis (EMH) posits that all available information is already reflected in stock prices, yet the existence of abnormal returns challenges this theory, revealing inefficiencies in market behavior. Complementary to this, Behavioral Finance Theory highlights how psychological biases, such as overreaction and underreaction, impact investor decisions and deviate from rational market assumptions. Event Study Theory is another common approach, focusing on how specific corporate events (e.g., mergers, acquisitions, or earnings announcements) influence stock prices and generate abnormal returns. Several articles also draw on macroeconomic-related theories. For example, Volatility Theory explains how market fluctuations impact abnormal returns, particularly in periods of economic instability. The Market Timing Theory sheds light on how firms strategically issue shares during favorable market conditions to maximize returns. Other studies employed specialized frameworks such as Prospect Theory, which addresses investor behavior under uncertainty, and Liquidity Provision Theory, explaining the role of market liquidity in price formation. Together, these theories provide a multifaceted understanding of abnormal returns, integrating macroeconomic, psychological, and market-specific factors into a comprehensive analytical framework (Angulo-Ruiz et al., 2018); (Malshe et al., 2020); (Gallizo et al., 2014) ; (Gomes et al., 2019); (Coën & Desfleurs, 2022); (Qu et al., 2018); (Plastun et al., 2024); (Melia et al., 2019); (Tai, 2020); (Zhang et al., 2021); (Lawrey & Morris, 2019); (Doryab & Salehi, 2018).

Types of Methods Used

The types of research methods used by articles according to the keyword abnormal return are 39 articles as shown in Figure 6 below:

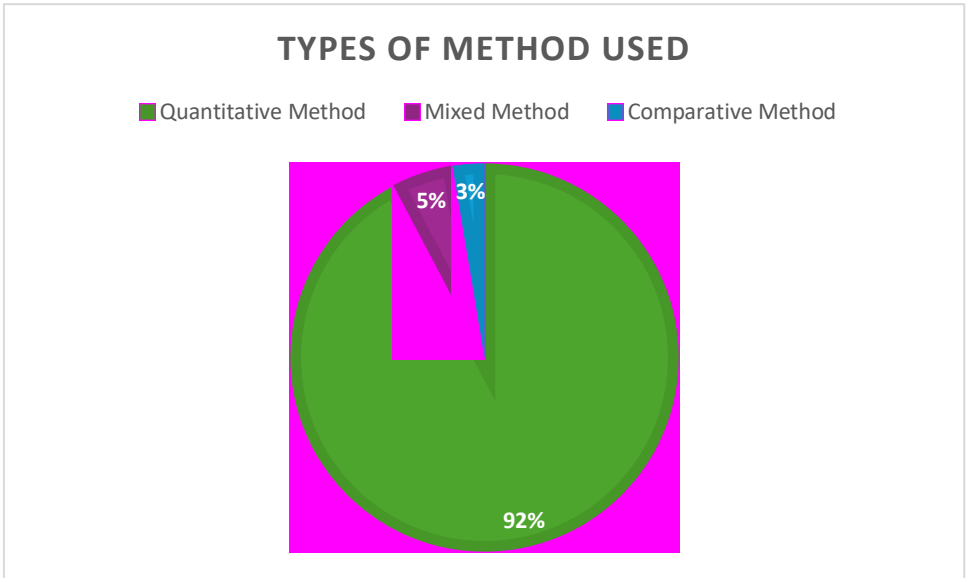

Figure 6: Types of Methods Used

The systematic literature review identified three main types of research methods used in studies on abnormal returns: quantitative, mixed methods, and comparative approaches. Quantitative methods dominated the research, accounting for 92% of the analyzed articles, with techniques such as regression analysis, event study methodologies, and statistical models like Capital Asset Pricing Model (CAPM) and Fama-French frameworks to evaluate abnormal returns. These methods focused on empirical data to measure and analyze relationships between variables. Mixed methods, used in 5% of the articles, combined qualitative and quantitative approaches to provide deeper contextual insights alongside statistical analysis, such as examining investor sentiment through both data trends and behavioral interpretations. Comparative methods, employed in 3% of the studies, involved cross-market or cross-country comparisons to explore differences in abnormal return behaviors under varying economic or market conditions. Collectively, these methodologies reflect a comprehensive approach to understanding the multifaceted nature of abnormal returns across diverse contexts, (Caporale & Plastun, 2021); (Wahyono, 2021); (Plastun et al., 2021); (Gallizo et al., 2014); (Coën & Desfleurs, 2022); (Rocciolo et al., 2022); (Beckmann & Czudaj, 2022); (Kolari et al., 2021); (Egger & Zhu, 2021); (Vo et al., 2020); (Farooq et al., 2021); (Finance, 2016); (Melia et al., 2019); (Brockman et al., 2017); (Lawrey & Morris, 2019); (Ahlgren & Antell, 2017); (Nawangsari & Iswajuni, 2019); (Doryab & Salehi, 2018); (Morris & Boubacar, 2018); (Buchner, 2016); (Dutta et al., 2018).

Macroeconomic Factors in Influencing Abnormal Return

Macroeconomic factors refer to economic conditions affecting the overall economy of a country or region. These factors not only affect a particular company or sector, but can affect the entire market and economy as a whole. In the context of the capital market, macroeconomic factors have a significant impact on investment decisions and stock price movements. In this article, the author aims to see how much macroeconomic factors influence abnormal returns, as presented in Figure 7 below:

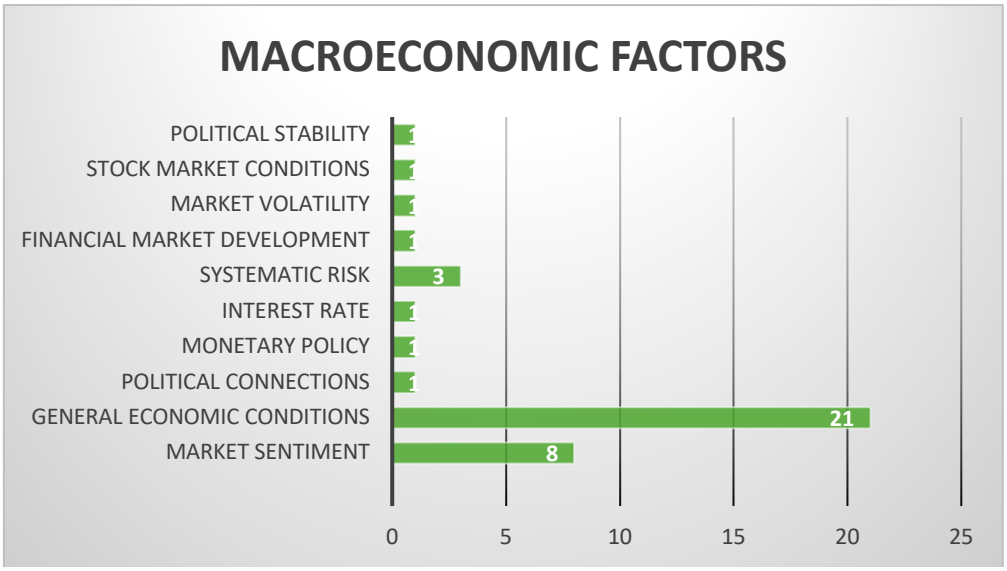

Figure 7: Macroeconomic Factors

Macroeconomic factors play a significant role in influencing abnormal returns, as they encompass economic conditions that broadly impact financial markets and investment decisions. Factors such as economic growth, inflation, interest rates, and market volatility affect corporate performance and investor expectations. In favorable economic conditions, stable growth and controlled inflation typically enhance company performance, which in turn generates positive abnormal returns. Conversely, economic uncertainty, such as crises or recessions, can increase market volatility and lead to sharp price movements, creating abnormal returns. Additionally, monetary policies, such as changes in interest rates, influence corporate capital costs and investment preferences, thereby affecting market returns. Systematic risks, such as geopolitical uncertainty and pandemics, also play a major role by impacting investor sentiment and driving extreme investment decisions. Thus, macroeconomic factors create complex market dynamics that determine abnormal return patterns across various markets and sectors (Caporale & Plastun, 2021); (Angulo-Ruiz et al., 2018); (Beckmann & Czudaj, 2022); (Vo et al., 2020); (Melia et al., 2019);

The role of investor behavior in shaping abnormal returns is pivotal, as it reflects the psychological and decision-making processes that influence market dynamics.

Behavioral finance highlights how biases like overreaction and underreaction impact investment decisions. Overreaction occurs when investors respond too strongly to new market information, causing prices to deviate significantly from their intrinsic values, often resulting in temporary abnormal returns. Conversely, underreaction involves delayed responses to news, leading to gradual price adjustments and potential long-term return anomalies. Additionally, strategies such as momentum trading, where investors follow trends, and contrarian trading, where they act against prevailing market sentiments, are driven by behavioral patterns. Network effects, where investor decisions are influenced by interconnected stocks, further amplify these behaviors. By understanding these dynamics, the role of investor psychology becomes critical in analyzing how collective behavior leads to market inefficiencies and creates opportunities for abnormal returns .(Lawrey & Morris, 2019); (Ahlgren & Antell, 2017); (Doryab & Salehi, 2018); (Jain et al., 2018); (Oliveira et al., 2019); (Rufino & Cavalcante, 2024); (Kolari et al., 2021); (Danbolt et al., 2015); (Morris & Boubacar, 2018); (Coën & Desfleurs, 2022); (Rocciolo et al., 2022); (Nawangsari & Iswajuni, 2019); (Orhun, 2020); (Gao & Xie, 2020);

5. Discussion

The authors discuss various debates and findings related to market behavior, particularly in the context of abnormal returns, R&D effects, and investor sentiment. There is a debate about the existence of momentum effects (where prices tend to continue their trend) versus contrarian effects (where prices tend to reverse after abnormal returns). The study shows that contrarian effects are more pronounced in developed markets, indicating investor overreaction to information. Second, regarding the differences between ESG and traditional indices. The results show that the price effect after abnormal returns is stronger in traditional indices compared to ESG indices, raising questions about how investor preferences for ESG affect market behavior. Third, regarding investor behavior and market anomalies. The study emphasizes the importance of investor behavior in determining asset prices, especially in markets dominated by individual investors, and how irrational behavior can explain market anomalies. Fourth, investor sentiment versus fundamentals. The article also discusses how investor sentiment can lead to irrational price movements, challenging the traditional view that prices always reflect fundamental values. The bottom line is that the article highlights the complexity of the relationship between the various factors that influence the market and the importance of considering behavioral aspects in market analysis. Therefore, further research on the interaction between investor behavior and other external factors is expected to provide additional insights into market dynamics and assist in making better investment decisions..

6. Conclusions

In this systematic literature review, several key conclusions were drawn regarding the role of investor behavior in the formation of abnormal returns. First, this study, based on an analysis of 39 Scopus-indexed articles from 2014 to 2024, highlights that abnormal returns are influenced not only by macroeconomic factors and market

conditions but also by investor sentiment and behavior, which are often irrational. The findings show that investor behavior, including psychological biases and emotions, plays a significant role in shaping abnormal returns in the stock market.

Second, the review identified various macroeconomic factors that affect abnormal returns, such as general economic conditions, market sentiment, political stability, stock market conditions, market volatility, financial market developments, systematic risk, interest rates, monetary policy, and political connections. These factors have a direct impact on investor behavior and contribute to the formation of abnormal returns in the market. Furthermore, the study emphasizes the importance of understanding how investor behavior influences these returns, as it provides valuable insights into market anomalies.

Lastly, the study concludes that investor behavior plays a crucial role in shaping abnormal returns. Investment decisions are often influenced by emotions, risk perceptions, and responses to new information. This can lead to phenomena such as overreaction and underreaction, where investors either inflate asset prices in response to news or fail to adjust prices adequately, creating price movements that deviate from the asset's fundamental value. This finding underscores the importance of understanding behavioral patterns in financial markets. For both practitioners and researchers, recognizing these patterns can help develop more effective strategies for exploiting market opportunities and mitigating risks associated with abnormal returns.

Future studies could explore the interaction between macroeconomic factors and investor behavior in greater depth, particularly by examining how specific events such as political crises or economic recessions affect investor sentiment and abnormal returns. Additionally, research could focus on the role of technology, such as algorithmic trading and social media sentiment, in influencing investor behavior and market anomalies. Further investigations into how behavioral biases vary across different investor types, such as retail versus institutional investors, could also provide valuable insights into the dynamics of abnormal returns.

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