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Systematic Literature Review of Market Efficiency in Developing Countries

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Abstract: *This study aims to examine market efficiency in developing countries through the Systematic Literature Review (SLR) approach by reviewing 30 scientific articles based on Scopus data and published in the last ten years (2015–2025). Market efficiency is an important concept in modern finance that reflects the extent to which asset prices reflect available information. The results of the study indicate that developing country markets generally have not achieved overall efficiency, either in weak-form or semi-strong form, and are still colored by various market anomalies such as price predictability, seasonal effects, and information asymmetry. This study identifies five main groups of determinants that influence market efficiency, namely market microstructure factors, institutions and regulations, company financial characteristics, macroeconomic dynamics and crises, and investor behavior. These findings emphasize that market efficiency in developing countries is partial, dynamic, and highly influenced by local structural and institutional conditions. The practical implications of these results can be the basis for formulating policies to improve transparency, information quality, and market governance in order to achieve more optimal and sustainable efficiency.*
Keywords: *Market Efficiency, Emerging Markets, Developing Countries, Financial Markets.*

1. Introduction

Market efficiency is one of the main pillars of modern financial theory that examines the extent to which asset prices reflect all available information. According to (Arashi & Rounaghi, 2022), market efficiency occurs when stock prices accurately reflect their intrinsic value based on all available information. This efficiency is categorized into three forms: weak form, semi-strong form, and strong form. The weak form indicates that prices reflect historical information, the semi-strong form reflects public information, while the strong form reflects all information, both public and private (Woo et al., 2020) The concept of the efficient market hypothesis (EMH) introduced by (Fama, 1970), states that no investor can consistently obtain abnormal returns because all information has been reflected in security prices (T. Aydas et al., 2020). In an efficient market, stock prices will adjust quickly to any new incoming information (Fu et al., 2023). Therefore, the returns obtained by investors fully reflect the risks they take, not the result of information advantages (Nik & Marko, 2023). In the context of weak form market efficiency, testing is done by observing the pattern of return movements that follow a random walk pattern

(Budiarso & Pontoh, 2022). Here, the semi-strong form market consists of information and decision efficiency (Junaid et al., 2021).

EMT is effective if three conditions are met. First, there are no transaction costs associated with trading securities. Second, every investor agrees that the price of securities reflects the available information. Third, all information is available to all investors (Ahmed, 2021). Market efficiency also refers to the equal disclosure of information, so that there is no information gap among market players (Mashrur et al., 2020). In an efficient market, all available information has been reflected in the price of securities (Simbolon et al., 2024).

An efficient market is defined as a market that is efficient and fast (Fama, 1970). price changes to incidental information and the independence of price formation time series in competitive markets. This idea is then widely used in developing markets to verify how information relates to stocks, especially in developing markets such as Indonesia where tips are traded. An inefficient market is when investor behavior significantly affects the price of securities, so that stock prices do not reflect the true state of the company. Conversely, an efficient market is when stock prices reflect information about the true state of the company (Shiller, 2003).

Emerging markets are generally characterized by high volatility caused by various factors such as dependence on commodity exports, political instability, and exchange rate fluctuations (Galindo-manrique & Esteban, 2021). Nevertheless, these markets have high growth potential and are attractive to investors, although accompanied by significant risks (Hammed & Salisu, 2023). In a global context, the role of emerging markets is very important because of its influence on economic stability and international investment flows.

Market efficiency in developing countries is not formed automatically, but is greatly influenced by various structural, institutional, and external factors. One of the main determinants is the level of information transparency and the quality of financial data disclosure. Markets that provide accurate, timely, and easily accessible information tend to be more efficient because investors can make decisions based on relevant information (Galindo-manrique & Esteban, 2021). In developing countries, limited access to financial reports, delays in information publication, and lack of information technology infrastructure are the main obstacles to achieving market efficiency (Jourdan et al., 2023). Markets with low liquidity and concentrated share ownership in a handful of parties tend to be more easily manipulated, so market efficiency is low (Khalid et al., 2022). To understand the dynamics of market efficiency comprehensively, a number of studies have used the Systematic Literature Review (SLR) approach to map and evaluate the level of market efficiency. (Woo et al., 2020) systematically reviewed global market anomalies and showed that developing countries are more vulnerable to price deviations and volatility that are not based on fundamentals. (Galindo-manrique & Esteban, 2021) examined the relationship between eco-efficiency and stock market volatility, finding that market efficiency in developing countries is also greatly influenced by aspects of environmental sustainability and transparency. In addition,

research by (Meng et al., 2023) shows that foreign investor participation and market integration through the Stock Connect program in China can improve local efficiency by accelerating information transmission. (T. Aydas et al., 2020) also highlighted the role of logistics infrastructure and trade policies as drivers of long-term market efficiency.

The lack of literature that specifically reviews market efficiency in developing markets is a challenge in itself. Uneven information, the speed of investor response to information, and lack of transparency add to the level of uncertainty in these markets (Meng et al., 2023). Therefore, a deep understanding of market efficiency in developing markets is essential to assist investors, policymakers, and academics in making economic and investment decisions. This study aims to examine market efficiency in developing markets using the Systematic Literature Review approach to provide a comprehensive literature mapping.

2. Research Methods

This section explains the research design, formulation of research problems, literature search, literature criteria, and literature selection.

Research design

This study uses the Systematic Literature Review research method or systematic literature review with a qualitative approach. A systematic literature review is a type of review where empirical findings according to certain eligibility criteria are collected to answer research questions. The author finds, critically evaluates, and synthesizes the results of various studies that raise the same and relevant topics. In this research method, there are three stages: planning, implementation, and reporting. At the planning stage, the researcher determines the subject or topic and research questions. At the implementation stage, literature is searched, literature criteria are determined, data quality checks and assessments, and data extraction and analysis are carried out. At the reporting stage, the researcher writes the results and findings of the study.

Research Question

A research question is a specific question that the researcher wants to answer through the research process. Where this question determines the objectives and methods to be used in this study. This research question is formulated as follows:

RQ1: What are the forms of market efficiency and which ones can be achieved by emerging markets?

RQ2: Are there any common market anomalies found in emerging markets, and how do they affect market efficiency?

RQ3: What are the main determinants or main factors that affect market efficiency in emerging markets?

Problem Formulation

In formulating the research problem, the researcher uses the help of the PICO framework: Population, Intervention, Comparison, and Outcome developed by (Richardson et al., 1995). To find keywords that facilitate the search. The keywords used in this study are Market Efficiency, Emerging Markets, Developing Countries, Financial Markets. Then the keywords are classified in detail into the following PICO framework:

Table 1. Framework PICO

PICO Tool	Criteri
Population	Developing Countries, focus on financial markets such as stock markets
Intervention	Testing market efficiency and detecting market anomalies using approaches such as determinant factor analysis and forms of market efficiency
Comparison	omparison between emerging markets
Outcome	Identification of prevailing forms of market efficiency, types of market anomalies found, main factors influencing market efficiency (determinants)

Literature Search

This study uses secondary data or data obtained from research results that have been published in the form of online journals as well as relevant articles or journals related to the research topic through journal databases indexed in the Scopus database, then to ensure high scientific quality, top priority is given to journals with qualifications Q1 (Quartile 1) and Q2 (Quartile 2). The number of journals or articles used in this study is 30 journals that have been selected and filtered to ensure their quality and relevance using the PRISMA Flow Diagram and Meta analysis by (Page et al., 2021). In addition to filtering the title of the article, the articles searched for are articles from the last 10 years, namely from 2015 to 2025.

Criteria and Literature Selection

In the selection of literature, inclusion criteria are carried out which have been adjusted to the PICO framework with additions that can be seen in the following table:

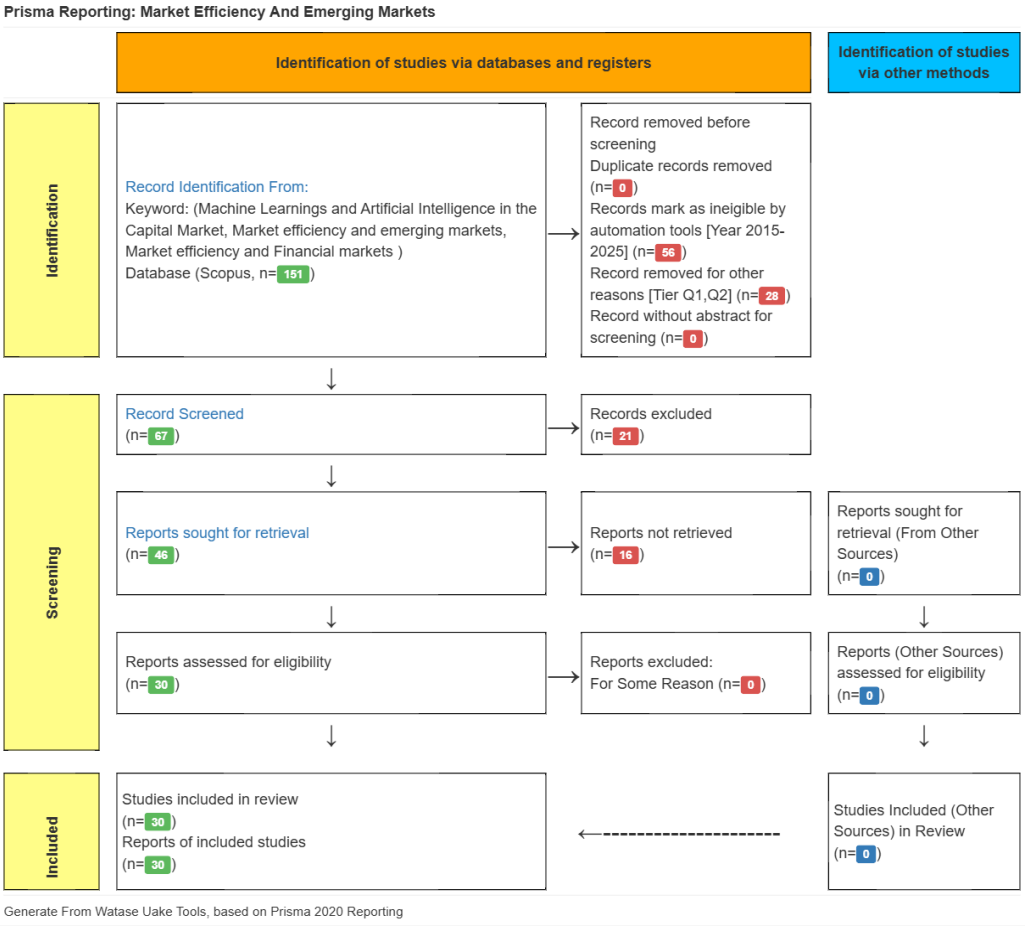
Table 2. Inclusion Criteria

Criteria Level	Category	Inclusion Criteria
General	Publication Year	Articles published in the last 10 years (2015-2025)
	Quality	Article Quality comes from Scopus Q1 and Q2 indexed journals
	Publication Type	Articles are original research articles
	Language	Article Language is written in English
	Accessibility	Articles can be accessed in full-text
Specific	Research Subjects	The research discusses market efficiency in developing countries
	Scientific areas	Included in the fields of accounting, finance, capital markets, business, and management
Specific	Main Topic	The article discusses one or more of the

		following: • Forms of market efficiency (weak-form, semi-strong, strong-form) • General market anomalies (day effect, January overreaction, and others) • Factors that determine market efficiency (liquidity, information, regulation and others

After data collection was carried out, the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta Analysis) method was used (Page et al., 2021) to be able to filter articles according to the research formulation.

Figure 1. Prisma Flow Diagram



Study Description

The number of articles found based on keyword search results from 2015 to 2025 is presented in Figure 2. This graph illustrates the publication trend related to the topic studied in this study. In the period 2015 to 2025, there was an increasing trend in the number of articles found based on keyword search results. 2015 recorded 9 articles, followed by slight fluctuations in the following years, namely 6 articles (2016), 4 articles (2017), and 6 articles (2018). This

number continued to increase to 7 articles in 2019, 9 articles in 2020, and 8 articles in 2021. A significant spike occurred in 2023 with the highest number of 21 articles. Although there was a decrease in 2024 and 2025 to 11 and 6 articles respectively, this figure still reflects relatively high interest compared to the beginning of the period. This finding indicates that the topic studied has received increasing attention in academic literature over the past decade.

3. Research Results

Based on 30 journals that are the core database of this research, it was found that the approach used is focused on quantitative research methods with data types sourced from secondary data and the classification of research results mapped into the following table:

Table 3. Findings of Methods, Data Types and Research Results

	Frequency	Percentage
Research Method		
Quantitative	30	100%
Data Type		
Secondary data	30	100%
Scopus Index		
Quartile 1 (Q1)	12	40%
Quartile 2 (Q2)	18	60%
Research Results		
RQ1: Forms of market efficiency that can be achieved by emerging markets	23	77%
RQ2: Common market anomalies found in emerging markets and their impact on market efficiency	30	100%
RQ3: Main determinants or main factors affecting market efficiency in emerging countries	19	63%

RQ1: **Forms of market efficiency and what can be achieved by emerging markets**

Of the 30 research articles that discuss market efficiency in emerging countries, there are 23 articles that examine the forms of market efficiency and what can be achieved by emerging markets, 30 articles that discuss the general market anomalies found in emerging markets and their impact on market efficiency. Regarding the form of market efficiency and what can be achieved by emerging markets, namely:

1. Weak-form efficiency
   Shows that this form of efficiency is only achieved partially, and is even unstable in the long term (Thazhugal Govindan Nair, 2019).
2. Semi-strong form efficiency
   This efficiency is generally achieved partially and is often limited to certain sectors, such as banking or large companies (Gardijan Kedžo & Tuškan Sjauš, 2021). Semi-strong efficiency is limited to the banking sector in Vietnam (T. D. Q. Le et al., 2022) and semi-strong efficiency is only partially achieved in the manufacturing sector (H. T. M. Le et al., 2024).

RQ2: Common market anomalies found in emerging markets and their impact on market efficiency

Emerging markets still face various market anomalies that significantly hinder the achievement of market efficiency, both in weak and semi-strong forms.

1. Price predictability and return autocorrelation

   Stock prices in emerging markets often exhibit predictable patterns, such as mean reversion, momentum effects, and return autocorrelation, which contradict the random walk assumption of weak-form efficiency (Lekhal & El Oubani, 2020; Nguyen & Parsons, 2022).

   a. Mean reversion: In emerging markets, pairs trading and statistical arbitrage strategies can generate profits due to the mean-reverting behavior of stock prices. This indicates that stock prices do not follow a random walk pattern, but tend to return to their historical average, which is strong evidence of mean reversion and weak-form inefficiency (Balladares et al., 2021).
   b. Momentum effect: The momentum effect is identified as one of the indicators that the market is still not efficient in the weak form (Nguyen & Parsons, 2022).

2. Seasonal Effect

   Phenomena such as the January Effect and Turn-of-the-Month Effect are widely found in emerging markets, allowing investors to gain abnormal returns based on time patterns.

   a. January effect: The significant January effect in several emerging countries indicates that the market is not yet efficient even in the weak form (Eduah et al., 2024)
   b. Turn of the month: Cyclical anomalies such as turn-of-the-month and volume predictability are found, which are unstable (Mallikarjunappa, 2025).

3. Information Asymmetry and Reporting Quality
   a. Information asymmetry: Weaknesses in corporate governance and auditing exacerbate information asymmetry (Nduati Kariuki, 2023).
   b. Reporting Quality: Low quality financial reporting has a negative impact on semi-strong information efficiency (H. T. M. Le et al., 2024).

4. High Volatility and External Impacts

   Market efficiency is also affected by external and macroeconomic factors, such as: Global financial crisis and High volatility

5. Operational Inefficiency and Market Structure

Key determinants or key factors affecting market efficiency in emerging economies

Research on market efficiency in emerging economies has grown rapidly over the past two decades. Based on a systematic review of 19 scientific articles (see Summary Table), there are five main groups of determinants that consistently appear in the literature:

Market Microstructure Factors

Microstructure factors relate to the technical and operational mechanisms of the financial market itself.

a. Market liquidity: High liquidity measured through trading volume and turnover helps prices absorb information quickly. Liquid markets tend to have lower spreads and greater ability for prices to adjust to new information (Arjoon, 2016; Lekhal & El, 2020).
b. Price volatility: Excess volatility is considered a sign of inefficiency because it reflects prices that are too responsive to noise rather than fundamental information (Bira, 2013; Potì et al., 2020)
c. Tick size: A decrease in tick size triggers increased trading and accelerates price corrections to fair value (Poshakwale et al., 2018).

Trading automation & ETFs: The use of automated trading systems and instruments such as ETFs accelerates the integration of information into market prices (Arjoon, 2016), improving market efficiency through increased access to information and transaction execution.

1. Institutional and Regulatory Factors

The quality of institutions and regulatory frameworks are the foundation of information efficiency in markets.

a. Market liberalization and foreign participation (QFII): The presence of foreign institutional investors enhances efficiency as they tend to be more professional, informative, and closely monitor companies (Li et al., 2021).
b. Regulatory strength and enforcement: Developing countries with weak institutions and lax enforcement are more vulnerable to manipulative practices, hindering price efficiency (Nguyen & Parsons, 2021).
c. Financial Reporting Quality: Accurate and transparent financial reporting reduces information asymmetry and agency conflicts, thereby helping investors in efficient decision making (Thi et al., 2024).

2. Financial Factors and Firm Characteristics

The internal characteristics of a firm and financial management decisions influence how information is absorbed by the market.

a. Company size and profitability: Large and profitable companies are more closely monitored by analysts and the media, so their stock prices reflect information more quickly and accurately (Demirbag, et al., 2016; Arjoon, 2016).
b. Business diversification: Industry diversification has been shown to increase efficiency through risk spreading and more mature strategic management. However, international diversification tends to be negative due to additional complexity and limited cross-country information (Gyan et al., 2017).

c. Capital structure and leverage: Financing structure affects efficiency, depending on the context of over or under investment. High leverage can increase risk and obscure efficiency signals (Alhassan & Ohene, 2016; Thi et al., 2024).

3. Macroeconomic Dynamics and Crisis

External factors such as financial crises and economic instability also determine the level of market efficiency.

a. Global financial crisis (2008–2010): Many emerging markets experienced efficiency declines during and after the crisis due to increased uncertainty and liquidity pressures (Isik & Uygur, 2021; Lekhal & El, 2020). However, crises can also drive market corrections and investor learning in the long run.
b. Inflation and environmental dynamics: Macroeconomic uncertainties such as high inflation and volatile business conditions can undermine efficiency by making it difficult for investors to assess fair value (Ofori-boateng et al., 2022).

4. Investor Behavior and Evolutionary Perspective (AMH)

New approaches such as the Adaptive Market Hypothesis (AMH) add a dynamic dimension to the understanding of market efficiency.

a. Investor cognitive biases: Psychological effects such as overconfidence and herding cause prices to deviate from fundamentals. This opens up arbitrage opportunities but also suggests the existence of cycles of inefficiency (Lekhal & El, 2020).
b. Variable efficiency: Unlike the static Efficient Market Hypothesis (EMH), the AMH states that efficiency is cyclical and depends on market conditions, investor experience, and other external factors (Nguyen & Parsons, 2021; Mallikarjunappa et al., 2025).

4. Conclusion

Markets in developing countries are not yet fully efficient, either in weak-form or semi-strong-form. Efficiency is partial, unstable, and limited to certain sectors such as banking. Market anomalies such as price predictability, seasonal effects, and information asymmetry are still common, weakening the efficient market hypothesis (EMH). Efficiency is also influenced by external factors such as global crises and pandemics, in line with the Adaptive Market Hypothesis (AMH) approach. There are five groups of determinants of efficiency: market structure, regulation, company characteristics, macroeconomic dynamics, and investor behavior. Therefore, market efficiency in developing countries is highly contextual and requires institutional, transparency, and regulatory improvements to achieve more optimal and sustainable efficiency.

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